MINFILE NUMBER: **093L 001**

NATIONAL MINERAL INVENTORY: 093L1 Ag1

NAME(S): **EQUITY SILVER**, SAM GOOSLY, S.G., MAIN, WATERLINE, SOUTHERN TAIL, EQUITY, NORTHERN

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093L01W
BC MAP:
LATITUDE: 54 11 22 N
LONGITUDE: 126 15 48 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main ore zone, 4 kilometres east of Goosly Lake on the drainage divide between Foxy Creek on the north and Buck Creek on the south.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6008059
EASTING: 678550

COMMODITIES: Silver, Copper, Gold, Antimony, Arsenic

MINERALS

SIGNIFICANT: Tetrahedrite, Chalcopyrite, Argentite, Sphalerite, Galena, Pyrargyrite, Arsenopyrite, Magnetite, Hematite, Pyrite, Pyrrhotite, Specularite
ASSOCIATED: Quartz, Sericite, Muscovite, Pyrophyllite, Dumortierite
ALTERATION: Clay, Chlorite, Specularite, Sericite, Pyrolusite, Andalusite, Tourmaline, Scorzalite
COMMENTS: Also corundum, pyrite and quartz.
ALTERATION TYPE: Argillic, Tourmalinz'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated, Stockwork
CLASSIFICATION: Replacement, Hydrothermal, Epigenetic, Porphyry
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Skeena	Undefined Formation	
Eocene			Goosly Intrusions

ISOTOPIC AGE: 57.2 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Whole Rock

LITHOLOGY: Volcanic Breccia
Porphyritic Gabbro
Syeno Monzonite
Tuff
Conglomerate

HOSTROCK COMMENTS: A small quartz monzonite stock west of the deposit was dated at 57.2 Ma. A gabbro-monzonite stock was dated at 48 Ma.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

Silver, copper and gold are produced from the Equity Silver deposit. In addition antimony and arsenic were leached from the concentrate and recovered as byproducts; however, due to metallurgical difficulties this process was discontinued.

The mineral deposits are located within an erosional window of uplifted Cretaceous age sedimentary, pyroclastic and volcanic rocks near the midpoint of the Buck Creek Basin. Strata within the inlier strike 015 degrees with 45 degree west dips and are in part correlative with the Lower-Upper Skeena(?) Group. Three major stratigraphic units have been recognized. A lower clastic division is composed of basal conglomerate, chert pebble conglomerate and argillite. A middle pyroclastic division consists of a heterogeneous sequence of tuff, breccia and reworked pyroclastic debris. This division hosts the main mineral deposits. An upper sedimentary-volcanic division consists of tuff, sandstone and conglomerate. The inlier is flanked by flat-lying to shallow dipping Eocene andesitic to basaltic flows and flow breccias of the Francois Lake Group (Goosly Lake and Buck Creek formations).

Intruding the inlier is a small granitic intrusive (57.2 Ma) on

CAPSULE GEOLOGY

the west side, and Eocene Goosly Intrusions gabbro-monzonite (48 Ma) on the east side.

The chief sulphides at the Equity Silver mine are pyrite, chalcopyrite, pyrrhotite and tetrahedrite with minor amounts of galena, sphalerite, argentite, minor pyrargyrite and other silver sulphosalts. These are accompanied by advanced argillic alteration clay minerals, chlorite, specularite and locally sericite, pyrophyllite, andalusite, tourmaline and minor amounts of scorzalite, corundum and dumortierite. The three known zones of significant mineralization are referred to as the Main zone, the Southern Tail zone and the more recently discovered Waterline zone. The ore mineralization is generally restricted to tabular fracture zones roughly paralleling stratigraphy and occurs predominantly as veins and disseminations with massive, coarse-grained sulphide replacement bodies present as local patches in the Main zone. Main zone ores are fine-grained and generally occur as disseminations with a lesser abundance of veins. Southern Tail ores are coarse-grained and occur predominantly as veins with only local disseminated sulphides. The Main zone has a thickness of 60 to 120 metres while the Southern Tail zone is approximately 30 metres thick. An advanced argillic alteration suite includes andalusite, corundum, pyrite, quartz, tourmaline and scorzalite. Other zones of mineralization include a zone of copper-molybdenum mineralization in a quartz stockwork in and adjacent to the quartz monzonite stock and a large zone of tourmaline-pyrite breccia located to the west and northwest of the Main zone.

Alteration assemblages in the Goosly sequence are characterized by minerals rich in alumina, boron and phosphorous, and show a systematic spatial relationship to areas of mineral deposits. Aluminous alteration is characterized by a suite of aluminous minerals including andalusite, corundum, pyrophyllite and scorzalite. Boron-bearing minerals consisting of tourmaline and dumortierite occur within the ore zones in the hanging wall section of the Goosly sequence. Phosphorous-bearing minerals including scorzalite, apatite, augelite and svanbergite occur in the hanging wall zone, immediately above and intimately associated with sulphide minerals in the Main and Waterline zones. Argillic alteration is characterized by weak to pervasive sericite-quartz replacement. It appears to envelope zones of intense fracturing, with or without chalcopyrite/tetrahedrite mineralization.

The copper-silver-gold mineralization is epigenetic in origin. Intrusive activity resulted in the introduction of hydrothermal metal-rich solutions into the pyroclastic division of the Goosly sequence. Sulphides introduced into the permeable tuffs of the Main and Waterline zones formed stringers and disseminations which grade randomly into zones of massive sulphide. In the Southern Tail zone, sulphides formed as veins, fracture-fillings and breccia zones in brittle, less permeable tuff. Emplacement of post-mineral dikes into the sulphide-rich pyroclastic rocks has resulted in remobilization and concentration of sulphides adjacent to the intrusive contacts. Remobilization, concentration and contact metamorphism of sulphides occurs in the Main and Waterline zones at the contact with the postmineral gabbro-monzonite complex.

The Equity Silver mine was British Columbia's largest producing silver mine.

The Southern Tail deposit has been mined out to the economic limit of an open pit. With its operation winding down, Equity Silver Mines does not expect to continue as an operating mine after current reserves are depleted. Formerly an open pit, Equity is mined from underground at a scaled-down rate of 1180 tonnes-per-day. Proven and probable ore reserves at the end of 1992 were about 286,643 tonnes grading 147.7 grams per tonne silver, 4.2 grams per tonne gold and 0.46 per cent copper, based on a 300 grams per tonne silver-equivalent grade. Equity has also identified a small open-pit resource at the bottom of the Waterline pit which, when combined with underground reserves, should provide mill feed through the first two months of 1994 (Northern Miner - May 10, 1993).

Equity Silver Mines Ltd. ceased milling in January 1994, after thirteen years of open pit and underground production. Production totalled 2,219,480 kilograms of silver, 15,802 kilograms of gold and 84,086 kilograms of copper, from over 33.8 Million tonnes mined at an average grade of 0.4 per cent copper, 64.9 grams per tonne silver and 0.46 gram per tonne gold.

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/12/30 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 002** NATIONAL MINERAL INVENTORY: 093L2 Ag1

NAME(S): **SILVER QUEEN**, SILVER QUEEN MINE, NADINA, OWEN LAKE, MACKAY, WRINCH, PORTAL, MINE HILL, CHISHOLM, COLE, CAMP, EARL, NO. 3, NG

STATUS: Past Producer Underground
REGIONS: British Columbia
NTS MAP: 093L02E
BC MAP:
LATITUDE: 54 05 00 N
LONGITUDE: 126 42 58 W
ELEVATION: 808 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Portal of the Earl adit, located on the east side of Owen Lake, 32 kilometres south of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5995205
EASTING: 649396

COMMODITIES: Zinc, Silver, Gold, Lead, Copper, Cadmium, Germanium, Indium, Gallium, Bismuth

MINERALS

SIGNIFICANT: Sphalerite, Chalcopyrite, Galena, Tetrahedrite, Tennantite, Pyrite
ASSOCIATED: Quartz, Rhodochrosite, Siderite, Barite, Pyrobitumen
COMMENTS: Rare pyrobitumen
ALTERATION: Clay, Carbonate, Chlorite, Epidote, Pyrite, Limonite, Jarosite
ALTERATION TYPE: Argillic, Pyrite, Carbonate
MINERALIZATION AGE: Tertiary

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: l05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous-Tertiary	Endako	Tip Top Hill	
Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 74.0 +/- 1.0 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Dacitic Andesite, Dacite, Dacitic Tuff, Dacitic Tuff Breccia, Microdiorite, Basaltic Dike, Porphyritic Felsite Dike

HOSTROCK COMMENTS: Mine Hill microdiorite dated by N. Church, 1973 (Map 11).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: NO. 3 REPORT ON: Y

CATEGORY: Measured YEAR: 1995
QUANTITY: 644041 Tonnes

COMMODITY	GRADE	
Silver	163.8000	Grams per tonne
Gold	2.9400	Grams per tonne
Zinc	5.4300	Per cent

COMMENTS: Defined reserves of the central/north end of the No. 3 vein.
REFERENCE: George Cross News Letter No.61 (March 26), 1996.

INVENTORY

ORE ZONE: NO. 3 VEIN REPORT ON: Y

CATEGORY: Measured YEAR: 1995
QUANTITY: 399124 Tonnes

COMMODITY	GRADE	
Silver	401.0000	Grams per tonne
Gold	8.2900	Grams per tonne
Zinc	7.6000	Per cent

COMMENTS: Defined reserves of the south end of the No. 3 vein.
REFERENCE: George Cross News Letter No.61 (March 26), 1996.

ORE ZONE: CAMP REPORT ON: Y

CATEGORY: Inferred YEAR: 1995
QUANTITY: 204097 Tonnes

COMMODITY	GRADE	
Silver	829.5000	Grams per tonne
Gold	0.9900	Grams per tonne
Zinc	4.0000	Per cent

COMMENTS: Inferred reserves of the Camp vein.
REFERENCE: George Cross News Letter No.61 (March 26), 1996.

CAPSULE GEOLOGY

The Silver Queen mine area is primarily underlain by a series of volcanic rocks and intrusions. The volcanic rocks consist mainly of dacites and dacitic andesites which are likely part of the Upper Cretaceous-Eocene Endako Group (Tip Top Hill Formation). A sill-like body of microdiorite intrudes these volcanic rocks and is referred to as the Mine Hill microdiorite which is part of the Middle-Late Bulkley Intrusions. This intrusive sill is dated as 74.0 Ma +/- 1.0 Ma (Map 11). The volcanics and microdiorite have been intruded by dikes and sills of porphyritic felsite and by basalt dikes.

Approximately 20 mineralized veins have been discovered. The four main quartz vein systems are the Wrinch, Portal, Chisholm and Cole systems. The average width of the veins is 0.9 to 1.2 metres with local increases up to about 4.6 metres. In general the veins occupy northwest striking fractures that cut the volcanics, the microdiorite and the felsite porphyry and the basalt dikes. Chalcopyrite-sphalerite and sphalerite-galena are the two general types of sulphide mineralization occurring in the veins but there are gradations between the two types. Good gold and silver values are generally associated with the chalcopyrite-sphalerite veins. Other sulphide minerals include tetrahedrite, tennantite and pyrite. The gangue is mainly cherty quartz, carbonate minerals such as rhodochrosite and siderite, some barite and rarely pyrobitumen. Local intense alteration of wallrock along veins and fissures has resulted in a mixture of clay and carbonate minerals, some chlorite, minor epidote and disseminated pyrite.

The age of mineralization is thought to be Early Tertiary and probably Eocene. A 1986 report indicates that concentrations of gallium, germanium and indium are also present. Assay results gave values of 20 to 188 grams per tonne (0.0188 per cent) gallium, 20 to 128 grams per tonne germanium (0.0128 per cent), and 17.1 to 25.7 grams per tonne (0.0026 per cent) indium (Property File - Houston Metals Corporation, Press Release, 1986).

The Wrinch vein system is the most important and has been the focus of most of the mining and development work. The overall strike of the veins is about 130 degrees and are traceable over a length of more than 1300 metres. These veins are generally banded with sphalerite as the predominant sulphide with pyrite, chalcopyrite and galena. The gangue minerals consist mainly of cherty quartz, carbonate minerals (rhodochrosite) and barite.

The Portal vein system contains some of the most spectacular metal grades found on the property. The ore reserve in this system appears small due to the position of the veins which are generally less than 30 vertical metres from surface. A quartz-chalcopyrite sample from Vein No. 5 assayed 9.6 grams per tonne gold, 829.7 grams per tonne silver, 7.2 per cent copper, 0.17 per cent lead, 0.17 per cent zinc, 0.11 per cent bismuth, and 0.01 per cent barium.

The Chisholm vein system (093L 216) consists of three subparallel veins located about 1200 metres south of Mine Hill. The veins strike about 125 degrees and dip northeast. The minerals are mainly argentiferous sphalerite, galena, pyrite and minor chalcopyrite. The host rocks consist of highly altered dacitic tuffs and tuff breccias. The veins are mainly the result of fissure-filling as indicated by their vuggy structure and the colloform banding of the ore minerals and gangue. The gangue

CAPSULE GEOLOGY

constituents are mainly cherty quartz, carbonate minerals such as

The Cole system lies to the northeast of the Diamond Belle occurrence (093L 162). These veins uniformly carry low-temperature assemblages of sphalerite-pyrite-galena.

Widespread alteration on the property is present. The alteration is manifested in the development of numerous limonite and jarosite gossans and appears to be the result of pervasive kaolinization-pyritization. It is thought that the alteration is greater than would normally be if associated with the emplacement of known vein systems. A deep and broad source of mineralizing solutions is suspected and a replacement-type sulphide body is suspected.

An extensive drill program was carried out in 1987 to delineate the Camp vein system, 500 metres southwest of the No. 3 vein, which consists of about 5 veins striking northwest immediately west of the camp buildings. Inferred reserves for the Camp vein are 204,100 tonnes grading 4.0 per cent zinc, 754.2 grams per tonne silver and 0.89 gram per tonne gold (Open File 1992-1).

Inferred reserves for the No. 3 vein are 632,300 tonnes grading 6.52 per cent zinc, 235.9 grams per tonne silver and 3.49 grams per tonne gold. Inferred reserves for the Footwall vein are 163,200 tonnes grading 6.1 per cent zinc, 310.28 grams per tonne silver and 2.05 grams per tonne gold (Open File 1992-1).

Proven/probable/possible reserves at the Silver Queen property are 1,726,211 tonnes grading 6.19 per cent zinc, 327.71 grams per tonne silver and 2.74 grams per tonne gold (Houston Metals Corp. Annual Report 1988).

The south end of the No. 3 vein has defined reserves of 399,124 tonnes grading 8.29 grams per tonne gold, 401 grams per tonne silver and 7.6 per cent zinc. The central/north end of the No. 3 vein has defined reserves of 644,041 tonnes grading 2.94 grams per tonne gold, 163.8 grams per tonne silver and 5.43 per cent zinc. The Camp vein has inferred reserves of 204,097 tonnes grading 0.99 grams per tonne gold, 829.5 grams per tonne silver and 4 per cent zinc (George Cross News Letter No.61 (March 26), 1996).

The George Lake Lineament, located parallel and 600 metres northeast of No. 3 vein, has a strike length of 1.5 kilometres. A 1.4-metre intersection graded 11.6 grams per tonne gold (Kettle River Resources Ltd. website).

As part of an effort to assess the feasibility that the Silver Queen veins may represent the top or distal portion of a larger system which may have bulk tonnage potential, New Nadina Explorations Ltd. with support from the Explore B.C. Program launched on a project of compilation and digitizing of previous work, including all plans and sections of mine workings. This work together with modelling of the deposit and analysis of satellite imagery defined targets with bulk tonnage potential which warrant testing (Assessment Report 25370). Kettle River Resources Ltd. owns 15.8 per cent of New Nadina.

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EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1997/05/07 REVISED BY: VAP FIELD CHECK: N

MINFILE NUMBER: **093L 003** NATIONAL MINERAL INVENTORY: 093L2 Ag3

NAME(S): **GRUBSTAKE**, FAR, MO,
TSALIT 1

STATUS: Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L02W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 08 48 N NORTHING: 6001928
LONGITUDE: 126 52 28 W EASTING: 638829
ELEVATION: 1265 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Tsalit Mountain, 32 kilometres southwest of Houston.

COMMODITIES: Silver, Copper, Gold, Zinc, Iron, Nickel, Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite, Sphalerite, Galena, Stibnite, Chalcocite, Molybdenite, Pyrrhotite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite, Azurite, Limonite
COMMENTS: "Manganese oxides".
ALTERATION TYPE: Sericitic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Skeena	Undefined Formation	
Eocene			Nanika Intrusions

LITHOLOGY: Rhyolite
Volcanic Breccia
Tuff
Quartz Monzonite
Porphyritic Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	13.7000	Grams per tonne
Copper	0.2600	Per cent
Iron	10.7200	Per cent
Nickel	0.0160	Per cent
Zinc	0.1200	Per cent

COMMENTS: Sample of pyrrhotite-rich mineralization.
REFERENCE: Minister of Mines Annual Report 1970, page 147.

CAPSULE GEOLOGY

The area of the showings is primarily underlain by Mesozoic Skeena Group rocks consisting of basaltic lava flows, tuff breccia, flow-banded rhyolite, chert and argillite. Rhyolite dikes and sills in the area have been dated (K-Ar 76.5 plus or minus 3.0 million years) as Upper Cretaceous. The Skeena Group rocks are intruded by an Eocene Nanika Intrusion comprised of quartz monzonite and porphyritic monzonite.

One type of mineralization is hosted by a quartz filled shear zone with a width of approximately 3 metres that occurs in a sheared and sericitized rhyolite with patchy azurite staining. The mineralization consists of chalcopyrite, pyrite, stibnite, galena and sphalerite with secondary chalcocite, malachite, azurite, limonite and manganese oxides. A small amount of molybdenite has also been

CAPSULE GEOLOGY

reported in the vein. Values up to at least 233.14 grams per tonne silver and 2.06 grams per tonne gold have been obtained. In 1929, a 3.0 metre sample across the shear assayed 233.14 grams per tonne silver and 0.9 per cent copper (Minister of Mines Annual Report 1929, page 175).

The other type of mineralization occurs over widths of 12 to 15 metres in a tuff breccia consisting locally of rhyolitic breccia fragments in an andesitic matrix. Pyrrhotite, chalcopyrite, sphalerite, and pyrite have selectively replaced the matrix and penetrated cracks in the coarse fragments. In 1929, a sample across 13.7 metres assayed 20.57 grams per tonne silver and 0.4 per cent copper (Minister of Mines Annual Report 1929, page 175). A recent mineralized grab sample from the same area assayed 13.7 grams per tonne silver, 0.26 per cent copper, 0.12 per cent zinc, 10.72 per cent iron and 0.016 per cent nickel (Geology, Exploration and Mining 1970, page 147). Also, similar mineralization is visible in trenches and pits several metres to the north and east of the main showing. A company report quotes seven assays on grab samples from this area averaging 30.86 grams per tonne silver and 0.18 per cent copper (Geology, Exploration and Mining 1970, page 147).

BIBLIOGRAPHY

EMPR AR 1929-175; 1966-103; 1968-139
EMPR ASS RPT 3064, 3096
EMPR GEM *1970-141-149,Fig.17; 1971-172
EMPR MAP 69-1
EMPR PF (Richards, T.A., (1988): Prospecting - Geochemical Reports on the Tsalit 1 Claim, Nov.25, 1988)
EMR MP CORPFILE (Mexxon Mines Ltd.; Maverick Mountain Resources Limited)
GSC BULL 270
GSC MAP 278A; 671A; 971A
GSC OF 351
GSC SUM RPT 1929A, p. 91
WWW http://www.infomine.com/index/properties/TSALIT_CLAIMS.html

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/26 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 004**

NATIONAL MINERAL INVENTORY: 093L2 Zn1

NAME(S): **CODE**, FEN, RED

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02W
BC MAP:
LATITUDE: 54 10 19 N
LONGITUDE: 126 56 48 W
ELEVATION: 884 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of trenching shown on Figure 42 (Geology, Exploration and Mining, 1972).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6004600
EASTING: 634031

COMMODITIES: Zinc, Lead, Silver

MINERALS
SIGNIFICANT: Sphalerite, Galena, Pyrite
COMMENTS: Manganese encrustations along cracks.
ALTERATION: Clay
ALTERATION TYPE: Argillic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn; I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Acid Pyroclastic
Tuffaceous Breccia
Dacitic Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

Mineralization occurs in an elliptical window of Jurassic Hazelton Group acid pyroclastic rocks consisting mainly of bleached dacitic tuffs and tuff breccias. Sulphide mineralization consists of pyrite, sphalerite, and galena. Pyrite occurs disseminated and in veinlets, sphalerite occurs mainly in small veins and galena sometimes accompanies the sphalerite. The mineralization is often accompanied by intense clay alteration, silicification in places and manganese encrustations on cracks.

BIBLIOGRAPHY

EMPR AR 1965-81; 1967-109; 1968-139
EMPR ASS RPT 799, 1229, 2734, 2898, 3257, 3646, 6320, 7821, 8247, 8354, 9605, 9647, 10003, 10156, 11286, 13096, 14029, 19458, 21663, 23034
EMPR EXPL 1976-147; 1977-192; 1978-216; 1979-226; 1980-340; 1982-307; 1983-438; 1984-325
EMPR GEM 1970-149; 1971-172; *1972-373-379,Fig.40,42
EMPR MAP 69-1
EMPR OF 1994-14; 1999-2
GSC BULL 270
GSC MAP 671A
GSC OF 351
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 005**

NATIONAL MINERAL INVENTORY: 093L7 Au2

NAME(S): **BOB CREEK PLACER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 18 25 N
LONGITUDE: 126 38 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer area located on Bob Creek where it joins Buck Creek, 9.7 kilometres south of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6020253
EASTING: 653868

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
COMMENTS: Placer.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Unnamed/Unknown Formation	

LITHOLOGY: Gravel

HOSTROCK COMMENTS: Recent gravel.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

Around the junction of Bob and Buck creeks, bedrock consists of Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic to rhyolitic tuff flows and breccia. These are overlain by younger Francois Lake Group, Upper Cretaceous Tip Top Hill volcanics and Eocene Buck Creek volcanics. The Jurassic and Cretaceous volcanics are intruded by Bulkley Intrusive gabbro stock and associated feldspar porphyry dikes.

The Bob Creek canyon hosts hydrothermally altered volcanics with a large gossanous zone which is completely altered to an earthy mixture of sericite, kaolinite and limonite. These altered volcanics host mineralization (described in 093L 009-Bob Creek) and are considered to be the source of the placer gold since no gold was found in the stream above this zone.

A large tonnage of rimrock gravels were washed by hand mining methods and several grams of coarse angular gold with fine flakes were found near the foot of the canyon.

BIBLIOGRAPHY

EMPR AR 1905-114; 1914-234; 1916-127; 1928-172; 1929-204; 1933-99; 1936-C37
GSC SUM RPT 1929A, pp. 92,93
GSC P 40-18
GSC MAP 671A
EMPR MAP 69-1, p. 11
GSC OF 351
EMPR FIELDWORK 1985, pp. 121-123
EMPR BULL *78 (in press)
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/17 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 006**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAIN**, MORICE MOUNTAIN, MOUND, RAVEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07W
BC MAP:
LATITUDE: 54 16 00 N
LONGITUDE: 126 49 06 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west flank of Morice Mountain, adjacent to the southeast corner of D.L. 3903, 15 kilometres south of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6015388
EASTING: 642081

COMMODITIES: Silver Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Andesite
Rhyolite
Breccia
Tuff
Granodiorite
Quartz Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Morice Mountain area is underlain by the Lower to Middle Jurassic Hazelton Group volcanics of the Telkwa Formation which have been intruded by plugs of Nanika Intrusions. The Telkwa Formation is composed primarily of breccia, tuff and flows of andesitic to rhyolitic composition while the Eocene Nanika Intrusions are composed of granodiorite, quartz monzonite and felsite which are in part porphyritic.

The showing is called the north breccia zone and occurs in andesitic tuffs and breccia. The breccia is comprised of angular fragments of lithic tuff infilled by quartz which hosts pyrite and chalcopyrite. In 1977, 143 metres of diamond drilling was completed. Samples from this drilling collected in 1986 assayed trace gold, 0.8 to 2.8 grams per tonne silver, trace to 0.07 per cent copper.

BIBLIOGRAPHY

EMPR ASS RPT 6311 (Fig.2), *10563, *15259
EMPR GEM 1970-155
EMPR EXPL *1977-E193; 1982-310; *1986-354
GSC OF 351
EMPR MAP 69-1
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/26 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 007**

NATIONAL MINERAL INVENTORY: 093L7 Cu2

NAME(S): **SUCCESS**, RAVEN, MOUND, VAN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07W
BC MAP:
LATITUDE: 54 17 02 N
LONGITUDE: 126 48 52 W
ELEVATION: 1066 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west flank of Morice Mountain on the north side of an incised creek, 15 kilometres southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6017312
EASTING: 642275

COMMODITIES: Copper, Silver, Gold

MINERALS
SIGNIFICANT: Chalcopyrite, Bornite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite, Azurite, Clay, Chlorite
ALTERATION TYPE: Silicific'n, Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Breccia, Disseminated
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Brecciated Siliceous Andesite
Rhyolite
Granodiorite
Quartz Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Morice Mountain area is underlain by Lower to Middle Jurassic Hazelton Group volcanics of the Telkwa Formation which have been intruded by plugs of Nanika Intrusions. The Telkwa Formation is comprised of variegated red, maroon, green to grey basaltic to rhyolitic flows, tuffs, and breccia. The Eocene Nanika Intrusions are composed of granodiorite, quartz monzonite and felsite dikes which are in part porphyritic.

The "Lower showing", located at 1066 metres elevation, consists of pyrite, chalcopyrite, and bornite which is exposed for 20 metres in a silicified and brecciated zone in the andesites. The shear strikes approximately 165 degrees and is mineralized over a 37 metre length. Irregular clots of sulphides associated with quartz infill the fragmented breccia. Occasionally, quartz grains form up to 5 centimetre euhedral crystals.

Silicification has bleached the black andesite to give the rock a dacitic appearance. The quartz infilling is vuggy. Minor chloritization occurs in the mafic minerals with minor clay alteration near chalcedony veining.

In 1986 samples were collected from the old trenches. Massive pyrite with bornite from altered andesite assayed 0.022 grams per tonne gold, 96 grams per tonne silver and 8.8 per cent copper. Andesite with quartz veining containing pyrite, malachite and azurite assayed 0.08 grams per tonne gold, 19 grams per tonne silver and 1.58 per cent copper.

BIBLIOGRAPHY

EMPR AR *1930-142,143; 1931-74; 1932-85; *1966-103
EMPR ASS RPT 797, 2844, 6311, *10563, *15259, 19568
EMPR GEM 1970-155; 1977-E193
EMPR EXPL *1982-310; *1986-354

BIBLIOGRAPHY

GSC P *40-18, p. 16
EMR MP CORPFILE (Moramulca Mines Ltd.)
GSC MAP 671A
EMPR MAP 69-1
GSC OF 351
EMPR OF 1994-14
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/13 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 008**
NATIONAL MINERAL INVENTORY: 093L7 Cu4

NAME(S): **PEACOCK**, BLACK HAWK, SIL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 17 05 N
LONGITUDE: 126 44 57 W
ELEVATION: 1220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the headwaters of Peacock Creek, 15 kilometres south-southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6017538
EASTING: 646520

COMMODITIES: Silver Copper Gold

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Pyrite Specularite
COMMENTS: Copper carbonates.
ASSOCIATED: Quartz
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Dacite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1930
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	83.0000	Grams per tonne
Gold	1.4000	Grams per tonne
Copper	0.8000	Per cent

COMMENTS: Selected sample.
REFERENCE: Minister of Mines Annual Report 1930, pages 141-143.

CAPSULE GEOLOGY

The area is underlain by Hazelton Group dacitic to andesitic flows of the Lower Jurassic Telkwa Formation. Widely scattered, one to 16 centimetre wide quartz veins carry pyrite, minor chalcopyrite and bornite. A selected sample of mineralization from a quartz vein striking 065 degrees, assayed 2.06 grams per tonne gold, 82.29 grams per tonne silver and 10.1 per cent copper.

At 1420 metres elevation on the Black Hawk claim, a shaft driven in sheared andesitic volcanics exposed pyrite, chalcopyrite, copper carbonates, and specularite. A selected sample in 1930 assayed 1.4 grams per tonne gold, 82.3 grams per tonne silver, and 0.8 per cent copper.

BIBLIOGRAPHY

EMPR ASS RPT 7134
EMPR AR 1929-175; 1930-141-143; 1932-85
EMPR EXPL 1979-227
GSC MAP 671A; 971A
GSC P 40-18A
GSC OF 351

BIBLIOGRAPHY

EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/17 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 009** NATIONAL MINERAL INVENTORY: 093L7 Au1

NAME(S): **BOB CREEK**, GOLD BRICK, BUCK, BETH, HOPE, RISK, NEW BUCK, GODFREY , LORNE

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L07E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 18 15 N NORTHING: 6019959
LONGITUDE: 126 37 41 W EASTING: 654330
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the junction of Buck and Bob Creeks, about 10.6 kilometres south of Houston.

COMMODITIES: Gold Silver Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite Tetrahedrite Arsenopyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate Barite
ALTERATION: Limonite Kaolinite Jarosite Hematite Hydrozincite Gypsum Sericite Chlorite
ALTERATION TYPE: Sericitic Oxidation Argillic Silicific'n
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 78.1 +/- 2.8 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Sericitized biotite

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal Porphyry
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Francois Lake	Tip Top Hill	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 80.6 +- 2.8 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite
Rhyolite Breccia
Andesitic Tuff
Gabbro
Quartz Feldspar Porphyry Dike

HOSTROCK COMMENTS: Gabbro intrusive age reference (Fieldwork 1985, p. 123).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1936
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Silver	34.2000	Grams per tonne
Gold	21.9000	Grams per tonne
Zinc	1.1000	Per cent

COMMENTS: Seventy-seven tonnes of ore mined from a 9.0 metre adit.
REFERENCE: Minister of Mines Annual Report 1936, page C37.

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanics of the Telkwa Formation are located around the junction of Bob and Buck creeks. The rocks are comprised of andesitic to rhyolitic tuffs, flows and breccia. The most common unit is a massive tuff breccia with thin intercalations of accretionary lapilli and siltstone.

The host rock for mineralization is a belt of altered felsic volcanics, 600 metres wide, exposed in the Bob Creek canyon. These volcanics are part of the Francois Lake Group, Upper Cretaceous Tip Top Formation, and are crosscut by quartz-feldspar porphyry

CAPSULE GEOLOGY

feeder dikes and breccias. Younger, Tip Top Hill volcanics overlie the felsic volcanics east of the canyon. These are comprised of altered andesitic tuffs and breccias which underlie Eocene Buck Creek volcanics comprised of fine-grained dacitic lavas and breccias (Bulletin 78, Figure 1).

A gabbro stock intrudes the Jurassic and Cretaceous volcanics south of the canyon. Also, feldspar porphyry dikes intrude the Hazelton rocks. A potassium/argon age determination of biotite from the gabbro stock gives a Late Cretaceous age of 80.6 plus or minus 2.8 million years (Fieldwork 1985, page 123).

The Bob Creek canyon hosts a large gossanous zone, which is completely altered to an earthy mixture of sericite, kaolin, and limonite. The rock is oxidized and leached and hosts jarosite, hematite, hydrozincite and gypsum flakes in fractures. Mineralization occurs in veinlets, stringers and as minor disseminations in these hydrothermally altered rocks.

In the rhyolite breccia, sulphides occur in veinlets, disseminations or as coarse grains and fracture-fillings. In 1984, drilling intersected mineralized quartz-carbonate stringers hosting pyrite, sphalerite, galena, marcasite, chalcopyrite and arsenopyrite.

The main exploration target is midway between the canyon and the north contact with the gabbro. The target is an elliptical 80 by 50 metre area with gold and silver assays ranging over 4 grams per tonne and 35 grams per tonne respectively. The age of mineralization was determined as 78.1 plus or minus 2.8 million years from potassium/argon analyses of sericitized biotite from a hydrothermally altered porphyry in the canyon area.

On the Buck group two adits were driven along shear zones containing irregular stringers of galena, sphalerite with quartz and barite gangue. A selected sample assayed trace gold, 1450 grams per tonne silver, 7.0 per cent lead and 7.0 per cent zinc. A short adit driven on the right side of the creek exposed disseminations and small seams of pyrite, sphalerite and minor galena. A sample assayed 50 grams per tonne gold, 75.4 grams per tonne silver, 0.4 per cent lead and 1.8 per cent zinc.

In 1936, 77 tonnes of ore was mined from a 9 metre adit and produced 21.9 grams per tonne gold, 34.2 grams per tonne silver and 1.1 per cent zinc.

BIBLIOGRAPHY

EMPR AR 1914-234; 1916-127,128; 1927-140; 1928-172-173; 1930-143; 1932-85; 1933-98,99; 1936-C37; 1952-95; 1957-12; 1965-80-81; 1968-138
EMPR ASS RPT 6304, 6484, 6737, 6912, *10166, 11976, 12521, *13425, *14698, 18665, 18666, 19229, 19879, 19883, 19889
EMPR BULL (1932) 3; 64; 78 (in press)
EMPR EXPL 1977-E193; 1978-E218; 1981-222; *1983-411; *1984-327; *1986-352
EMPR FIELDWORK *1985, pp. 121-123,Fig. 17-1
EMPR GEM 1969-122,Fig. 13; 1970-119-128; *1972-353-359
EMPR GEOL 1977-1981, p. 121
EMPR MAP 11; 69-1
EMPR OF 1994-14
EMPR P 1986-1; *1990-2
EMPR PF (Crandall, J. and Nevin, A. (1977): Report on Geological and Geochemical Work Conducted on the New Buck, Godfrey, and Lorne Claims, Omineca Mining Division, B.C.; Berreta, M. (1977): I.P. Report for Bob Creek Property; Mid Mountain Mining Ltd., Prospectus, 1977; *Kermeen, J.S. (1987): Report on the Bob Creek Gold-Silver Project, Mar.31, 1987 in Prospectus for Bard Silver and Gold Ltd., Nov.30, 1987; *Jones, A.G. (1987): The Premier Prospect on the Bob Creek Gold-Silver Project in Prospectus for Bard Silver and Gold Ltd., Nov.30, 1987)
EMR MP CORPFILE (Houston Gold Mines Ltd.; Lucky Strike Mines Ltd.)
GSC BULL 270
GSC MAP 40-18A; 278A; 671A; 971A
GSC OF 351
GSC P 36-20, pp. 121-123; 40-18
GSC SUM RPT 1929A, p. 93A
GAC Program Abstracts 1983, Vol. 8, p. A12
GCNL #38,#55,#122, 1988
N MINER Feb.28, 1985
PR REL Royal County Minerals Corp., Feb.13, 17, 2003
V STOCKWATCH Jul.6,Aug.12,25, 1988; *Apr.4,10, 1989
Placer Dome File

MINFILE NUMBER: **093L 010**

NATIONAL MINERAL INVENTORY: 093L7 Cu5

NAME(S): **STAR KLONDIKE**, DUNGATE, HOT, CU, TRAC LAKE, KLONDIKE, STAR, CHIEF, NC

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 22 09 N
LONGITUDE: 126 33 36 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of area of drilling. Property located 6.2 kilometres southeast of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6027341
EASTING: 658507

COMMODITIES: Copper, Molybdenum, Silver, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Bornite, Pyrite, Magnetite
ALTERATION TYPE: Albitic, Sericitic, Carbonate, Silicific'n
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 56.2 +- 3.0 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Biotite

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

ISOTOPIC AGE: 56.2 +/- 3.0 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Feldspar Porphyry
Andesite
Rhyolite
Tuff
Breccia

HOSTROCK COMMENTS: Intrusive age from N. Church 1972 (Preliminary Map 11).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine, Plutonic Rocks

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1969
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.2800	Per cent

COMMENTS: Quartz rich section of DDH-2 70 to 80 metres. Drill intersects altered porphyry with narrow seams of magnetite & minor chalcopyrite.
REFERENCE: Assessment Report *5935.

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	2.2000	Grams per tonne
Gold	0.3600	Grams per tonne
Copper	0.1240	Per cent

COMMENTS: Sample from Star Klondike zone, sample #20766.
REFERENCE: Property File - Fairbank, B.D., 1987.

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanic rocks are intruded by a Nanika Intrusive quartz feldspar porphyry stock dated at 56.2 plus or minus 3.0 million years (Preliminary Map 11). The volcanic rocks

CAPSULE GEOLOGY

range in composition from basalt to rhyolite and are comprised mainly of pyroclastics and breccias. Copper, zinc and silver mineralization occur in the volcanics (refer to Deer - 093L 011).

Mineralization consisting mainly of chalcopyrite, magnetite, molybdenum and pyrite occurs as disseminations and fracture fillings in the porphyry intrusive and in the immediately adjacent Hazelton volcanics. Minor bornite has also been reported. Some albitization, carbonate alteration, sericitization, and kaolinization have taken place and one zone exhibits intense silicification. Only subeconomic grades of mineralization were encountered in fairly extensive drilling. Copper grades from within the porphyry system ranged from 0.01 to 0.54 per cent while grades from the country rock ranged from 0.01 to 0.18 per cent (Church, 1972). Gold grades from trace to 0.69 grams per tonne and silver grades from 0.69 to 13.7 grams per tonne were reported from Noranda's drill core samples (Assessment Report 5935).

Samples collected from the Star Klondike zone in 1986 ranged from 0.05 to 0.36 grams per tonne gold, 2.1 to 2.7 grams per tonne silver and 0.07 to 0.19 per cent copper (1988 Prospectus for Amanda Resources).

BIBLIOGRAPHY

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EMPR EXPL 1975-140; 1976-148
EMPR GEM *1972-384-390; 1974-259; 1986-351
EMPR AR 1965-80; 1966-103; 1968-138
EMR MP CORPFILE (Mexxon Mines Ltd.)
EMPR MAP 11; 69-1
EMPR BULL 64; *78 (in press)
GSC OF 351
GSC BULL 270
EMPR PF (Branchflower, J., (1974): Percussion Drilling report on the Dungate Creek Prospect, Northeast B.C. for Canadian Superior Exploration Ltd.; Company files and geological compilations by Canadian Superior Exploration Ltd.; miscellaneous maps; *Fairbank, B.D., (1987): Geological and Geophysical Report on the Trac Lake property, Aug.31, 1987; *Amendment No. 1 to the Prospectus of Amanda Resources Ltd., Sept.16, 1988; Amanda Resources Prospectus dated Apr.27, 1988)
EMPR P *1990-2
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/17 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 011**

NATIONAL MINERAL INVENTORY: 093L7 Cu10

NAME(S): **DEER**, MUD LAKE, TRAC, TRAC LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 23 46 N
LONGITUDE: 126 34 20 W
ELEVATION: 808 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6030310
EASTING: 657610

COMMENTS: Copper showings from Assessment Report 1608 and Deer zone location from 1988 Prospectus for Amanda Resources (Fig. 3).

COMMODITIES: Copper, Zinc, Silver, Fluorite

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite, Galena, Fluorite, Pyrite, Perthite, Magnetite
ASSOCIATED: Quartz, Carbonate, Fluorite, Ankerite
ALTERATION TYPE: Potassic, Silicific'n, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal, Volcanogenic, Industrial Min.
TYPE: L04 Porphyry Cu ± Mo ± Au
I05 Polymetallic veins Ag-Pb-Zn±Au
G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Rhyolitic Pyroclastic
Rhyolite
Felsite
Porphyritic Andesite
Volcanic Breccia
Aplite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1986

COMMODITY	GRADE	
Silver	27.9000	Grams per tonne
Copper	4.5600	Per cent
Zinc	3.1000	Per cent

COMMENTS: Sample from Deer zone, sample #20755.
REFERENCE: Property File - Fairbank, B.D., 1987.

CAPSULE GEOLOGY

The area is underlain by a steeply dipping sequence of rhyolitic pyroclastics of the Lower Jurassic Hazelton Group, Telkwa Formation. The rocks consist of porphyritic andesite, flow breccias, rhyolite and tuffs. An aplite dike with a width of approximately 3 metres intrudes the volcanic sequence.

Reports indicate that chalcopyrite, galena, sphalerite, and pyrite mineralization occurs in both the volcanic rocks and the aplite dike. In 1972, a sample from the aplite dike assayed 1.5 per cent copper with traces of gold and silver (Assessment Report 3767). Chalcopyrite occurs in areas of K-feldspar alteration as fine disseminations, along fractures and along narrow, widely spaced quartz veins. Galena, sphalerite and fluorite occur as coatings along fractures and in narrow quartz-carbonate veins in siliceous, ankeritic felsite. In 1986, pyrrhotite and magnetite were noted in areas where disseminations are more abundant. K-feldspathization, silicification and carbonate alteration occur in the area.

CAPSULE GEOLOGY

Around the Deer zone occurrence, exposures of copper occur for a known distance of about 750 metes with localized exposures of lead, zinc and silver. Grab samples from these showings contained from 0.06 to 4.56 per cent copper, 0.2 to 7.8 per cent zinc and 2.05 to 27.8 grams per tonne silver (Amanda Resources, Prospectus, 1988).

The hosting rhyolitic pyroclastic belt averages 400 to 600 metres in width and extends for about 5.2 kilometres in length. Toward the north end of the belt, poorly-bedded breccias suggest that an explosive volcanic vent may be present. It has been proposed that the Deer zone mineralization may be of volcanogenic type (Amanda Resources, Prospectus, 1988).

BIBLIOGRAPHY

EMPR ASS RPT *1608, 3767, *15383, 18463
EMPR GEM *1972-391-393
EMPR EXPL 1986-351
EMPR MAP 11; 69-1
GSC OF 351
GSC BULL 270
EMPR BULL 64; *78 (in press)
EMPR PF (*Fairbank, B.D., (1987): Geological and Geophysical Report on the Trac Lake property, Aug.31, 1987; Amanda Resources Prospectus dated Apr.27, 1988; *Amendment No. 1 to the Prospectus of Amanda Resources Ltd., Sept.16, 1988)
EMPR OF 1992-16; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/24 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 012**

NATIONAL MINERAL INVENTORY: 093L8 Cu1

NAME(S): **BORNITE**, BAR, DANA, TEX

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L08W
BC MAP:
LATITUDE: 54 29 40 N
LONGITUDE: 126 25 33 W
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located south of Perow, just west of Gilmore Lake approximately 20 kilometres northeast of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6041586
EASTING: 666711

COMMODITIES: Copper, Silver, Lead, Zinc, Barite

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Tetrahedrite, Galena, Sphalerite, Barite
ASSOCIATED: Quartz, Calcite, Barite, Pyrite, Jasper
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Epithermal, Industrial Min.
TYPE: H05 Epithermal Au-Ag: low sulphidation, L01 Subvolcanic Cu-Ag-Au (As-Sb)
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: 0300 x 0020 x 0007 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesitic Pyroclastic
Rhyolite Pyroclastic
Tuff
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1986

COMMODITY	GRADE	
Silver	65.1400	Grams per tonne

REFERENCE: Assessment Report 15479.

CAPSULE GEOLOGY

The area is underlain by Jurassic Hazelton Group volcanics comprised of andesitic to rhyolitic flows, tuffs, and breccia which strike uniformly northwest and dip about 80 degrees northeast. Mineralization consisting of chalcopyrite, bornite, and tetrahedrite occurs mainly as fragmental rims and disseminations in the matrix of a very strongly silicified andesitic to rhyolitic pyroclastic rock. Minor galena and sphalerite have also been reported. Scattered specks of chalcopyrite also occur in a strongly silicified, buff coloured rhyolite approximately 150 metres to the north. Silver values up to at least 65.14 grams per tonne have been obtained. Barite occurs in small veins (Assessment Report 15479).

In 1986, a surface projection of a low-grade copper-silver bearing zone was defined by diamond drilling. The zone is approximately 300 metres long and up to 7 metres wide, striking northwest-southeast.

The drilling intersected a strongly silicified, stratabound zone with sporadic stockwork development over 20 metres in true thickness, and with a steep northeast dip. Within the zone, weak copper-silver mineralization occurs as disseminations and irregular microvein fillings of chalcopyrite and tetrahedrite. Gangue minerals include

CAPSULE GEOLOGY

quartz, calcite, barite, pyrite and jasperoid. The zone appears to be faulted 50 metres below the surface and may be a favourable host for an epithermal precious/base metal deposit.

BIBLIOGRAPHY

EMPR ASS RPT 1153, *6495, *15479
EMPR EXPL 1977-194; 1987-C304
EMR MP CORPFILE (Mexxon Mines Ltd.)
EMPR MAP 11; 69-1
GSC OF 351
GSC BULL 270
EMPR BULL *78 (in press)
EMPR P *1990-2

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1987/08/24	REVISED BY:	LLC	FIELD CHECK:	N

MINFILE NUMBER: **093L 013**

NATIONAL MINERAL INVENTORY: 093L9 Cu2

NAME(S): **JOKER**, SPRING

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 31 39 N
LONGITUDE: 126 08 23 W
ELEVATION: 1132 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: At elevation of 1132 metres along west fork of Ailport Creek, 10.5 kilometres east-northeast of Topley.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6045978
EASTING: 685087

COMMODITIES: Copper Barite

MINERALS
SIGNIFICANT: Chalcopyrite Barite
ASSOCIATED: Barite Calcite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Industrial Min.
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION: STRIKE/DIP: 340/80E TREND/PLUNGE:
COMMENTS: Mineralized barite vein, 0.5 metres in width.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Brecciated Feldspar Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The area is underlain by Lower to Middle Jurassic Hazelton Group volcanics. A barite vein approximately 0.5 metres wide striking 340 degrees and dipping 80 degrees east is mineralized with chalcopyrite in a gangue of barite and calcite. The vein is contained in a coarsely crystalline feldspar porphyry breccia. A couple of small barite-calcite veins that are slightly mineralized with chalcopyrite also occur in the area. Only trace amounts of gold and silver are reported.

BIBLIOGRAPHY

EMPR AR 1930-145
GSC SUM RPT 1928A, p. 76
GSC MAP 671A; 971A
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR ASS RPT *16193
EMPR EXPL *1987-C304

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 014**

NATIONAL MINERAL INVENTORY: 093L9 Ag4

NAME(S): **EVERGREEN**, MAPLE LEAF

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 34 02 N
LONGITUDE: 126 12 53 W
ELEVATION: 1433 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the northeast slope of Mt. McCrea, about 10 kilometres northeast of Topley.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6050201
EASTING: 680059

COMMODITIES: Lead, Copper, Zinc, Gold

MINERALS

SIGNIFICANT: Galena, Chalcopyrite, Sphalerite, Pyrite
ASSOCIATED: Quartz, Barite, Calcite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Basalt
Tuff
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The area is mainly underlain by andesitic and basaltic flows, tuffs, and breccias of the Jurassic Hazelton Group. One showing consists of a two metre wide shear zone containing highly altered and silicified country rock with small amounts of galena and chalcopyrite. Approximately 120 metres vertically higher, another showing consists of two quartz veins in andesite approximately 46 metres apart that are sparsely mineralized with chalcopyrite, galena, and sphalerite. These veins also appear to be in shear zones. One vein varies in width from 0.3 to 0.6 metres while the other vein is from 30 to 35 centimetres in width. Gold and silver values are apparently low.

BIBLIOGRAPHY

EMPR AR 1926-144; 1928-176; 1930-144; 1931-75
GSC SUM RPT 1928A, p. 75
GSC MAP 671A; 971A
GSC P 40-18A
GSC OF 351
GSC BULL 270
EMPR MAP 69-1
EMPR ASS RPT 16193
EMPR EXPL 1987-C304

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 015** NATIONAL MINERAL INVENTORY: 093L9 Ag1

NAME(S): **GOLDEN EAGLE**, SUNSET

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L09E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 34 32 N NORTHING: 6051076
LONGITUDE: 126 14 06 W EASTING: 678712
ELEVATION: 1204 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mine symbol on 1:50,000 topographic sheet.

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS
SIGNIFICANT: Tetrahedrite Freibergite Sphalerite Galena Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate Rhodochrosite
ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Volcanic Breccia
Andesite
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	11.0000	Grams per tonne

COMMENTS: Sample taken over 3.0 metres.
REFERENCE: Assessment Report 15063.

CAPSULE GEOLOGY

The area is mainly underlain by andesitic and basaltic flows, tuffs and breccias of the Jurassic Hazelton Group. The principal mineralization on the Golden Eagle property is associated with two more or less parallel shear zones approximately 21 metres apart. The zones are 0.6 to 1.5 metres wide, strike northwest and dip northeast at 30 to 75 degrees. Lenticular quartz-carbonate veins up to about 46 centimetres wide occur on the footwall side of the shear zones. Minor rhodochrosite is reported to occur in these veins. At some points the quartz is heavily mineralized with sphalerite, galena, chalcopyrite, tetrahedrite, freibergite and pyrite. High silver values are common as well as significant gold values. Minor amounts of sulphides including tetrahedrite occur as disseminations and along fractures in the altered, "bleached" volcanics. In 1986, 11.0 grams per tonne silver occurred over 0.3 metres in the altered volcanics (Assessment Report 15063).

BIBLIOGRAPHY

EM EXPL 2001-1-9
EMPR AR 1927-148; 1928-174,420; 1929-179,429; 1930-143; 1931-75; 1932-85; 1933-99; 1934-A24,C12; *1937-C24; 1938-B36,C49; 1939-56,58,92; 1940-23,41,43,78; 1941-24,41,55; 1942-31; 1952-95
EMPR ASS RPT *15063, 16193
EMPR EXPL *1986-355; 1987-C304

BIBLIOGRAPHY

EMPR MAP 69-1
EMR MP CORPFILE (Topley Consolidated Mining and Development Company, Limited; Topley Silver Limited; Norex Resources Ltd.)
GSC MAP 40-18A; 671A; 971A
GSC P 40-18, p. 15; 36-20, p. 152
GSC SUM RPT 1928A, p. 74
GSC BULL 270
GSC OF 351
IPDM Dec. 1985

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/14 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 016** NATIONAL MINERAL INVENTORY: 093L9 Ag2

NAME(S): **SILVER CUP**, CUP, GOLD

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L09W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 34 43 N NORTHING: 6051365
LONGITUDE: 126 15 19 W EASTING: 677389
ELEVATION: 1064 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

COMMODITIES: Silver Lead Gold Copper Zinc

MINERALS

SIGNIFICANT: Tetrahedrite Freibergite Silver Sphalerite Galena Chalcopyrite Specularite Pyrite
ASSOCIATED: Quartz Ankerite Tourmaline
ALTERATION: Dolomite Muscovite Quartz Illite Pyrite Tourmaline
ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Rhyolite
Andesite
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	78.4000	Grams per tonne
Gold	0.3200	Grams per tonne
Copper	0.1900	Per cent
Lead	5.7000	Per cent
Zinc	2.7000	Per cent

COMMENTS: Across 0.2 metre of core.
REFERENCE: Assessment Report 20948, page 6.

CAPSULE GEOLOGY

The area is mainly underlain by rhyolite, andesite, and tuff of the Jurassic Hazelton Group. The original interest on the property was in two approximately parallel, flat dipping quartz veins about 210 metres apart. They vary from about 0.9 to 1.8 metres in width. A number of other small quartz and quartz-carbonate veins are also present. Mineralization includes tetrahedrite, freibergite, native silver, galena, sphalerite, chalcopyrite, and pyrite. Ankerite is believed to be the dominant carbonate and tourmaline is present in small amounts.

Recently, attention has been focused on highly bleached and altered zones containing sulphide mineralization as disseminations and veinlets which surround the veins. Some samples have yielded relatively high gold and silver values. Petrographically the alteration consists of carbonate (dolomite), muscovite, quartz, plus or minus illite with minor pyrite and tourmaline.

Diamond drilling in 1990 intersected mineralized quartz-carbonate veins where one hole analysed 0.32 gram per tonne gold, 78.4 grams per tonne silver, 0.19 per cent copper, 5.7 per cent lead

CAPSULE GEOLOGY

and 2.7 per cent zinc over 0.2 metre of core (Assessment Report 20948, page 6).

BIBLIOGRAPHY

EMPR ASS RPT 6771, 9938, 10656, 11840, 13174, 14361, *15063, 16193, 20948
EMPR EXPL 1978-219; 1982-311; 1983-443; 1984-328; *1986-355; 1987-C304
EMPR AR 1924-98; 1927-147; 1928-176; 1930-144; 1931-75; 1934-C13; 1935-C39; *1937-C27-C32; 1938-B36,B38; 1939-56,58; 1941-44; 1942-31; 1952-95; 1953-42; 1965-90
GSC P 36-20, p. 153; 40-18, p. 14
GSC SUM RPT 1928A, p. 74
GCNL #114,#205, 1982; #182, 1983; #72,#112, 1984; #14, 1986
IPDM Dec. 1985
GSC MAP 671A; 971A
EMR MP CORPFILE (Bishop Resources Development Ltd.)
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
World Investment News Jan., 1987
EMPR PF (Miscellaneous property maps)
EMPR OF 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/14 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 017**

NATIONAL MINERAL INVENTORY: 093L9 Ag3

NAME(S): **TUYA**, THREE STAR, SHEILA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 35 06 N
LONGITUDE: 126 14 43 W
ELEVATION: 1143 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6052101
EASTING: 678007

COMMODITIES: Silver, Gold, Zinc, Copper, Lead, Antimony

MINERALS

SIGNIFICANT: Sphalerite, Chalcopyrite, Specularite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite, Azurite, Epidote
COMMENTS: "Manganese oxide".
ALTERATION TYPE: Epidote, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 095/30N
TREND/PLUNGE:
COMMENTS: Attitude of principal shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: STOCKPILE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1939
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Silver	946.3000	Grams per tonne
Gold	7.9000	Grams per tonne
Copper	1.5000	Per cent
Antimony	0.7000	Per cent
Zinc	10.0000	Per cent

COMMENTS: Shipment of 0.42 tonnes of ore.
REFERENCE: Minister of Mines Annual Report 1939, page 59.

CAPSULE GEOLOGY

The occurrence is primarily hosted by epidotized andesite breccia of the Jurassic Hazelton Group. Mineralization is associated with shear zones. The principal showing consists of mineralized quartz bands along the sides of a shear zone having a width of 1.8 to 2.4 metres. The hangingwall band is 25 to 38 centimetres wide and is sparsely mineralized while the footwall side is 23 to 46 centimetres wide and is well mineralized. Mineralization consists of sphalerite, pyrite, chalcopyrite, specularite, azurite, malachite, and manganese oxide. Two samples reportedly assayed 7.89 and 4.11 grams per tonne gold and 946.3 and 61.7 grams per tonne silver. At least two other shear zones occur on the property. A shipment of 0.42 tonnes of ore in 1939 assayed 7.9 grams per tonne gold, 946.3 grams per tonne silver, 1.5 per cent copper, 10.0 per cent zinc and 0.7 per cent antimony (Minister of Mines Annual Report 1939, page 59).

BIBLIOGRAPHY

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BIBLIOGRAPHY

1940-45
GSC P 40-18, p. 15
GSC MAP 671A; 971A
EMPR ASS RPT *15063, 16193
EMPR EXPL 1986-355; 1987-C304
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR PF (Lay, D., (1937): Special Report for Minister of Mines)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/14 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 018** NATIONAL MINERAL INVENTORY: 093L9 Ag2

NAME(S): **TOPLEY RICHFIELD**, RED TOP, RICHFIELD

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L09W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 35 47 N NORTHING: 6053322
LONGITUDE: 126 15 48 W EASTING: 676791
ELEVATION: 1267 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Topley Richfield occurrence is located on the southwest slope of Tachek Mountain about 10 kilometres north of Topley and 35 kilometres northeast of Houston.

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS
SIGNIFICANT: Pyrite Gold Silver Tetrahedrite Arsenopyrite Galena Sphalerite Chalcopyrite
ASSOCIATED: Quartz Ankerite Calcite
ALTERATION: Siderite Ankerite
ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au H05 Epithermal Au-Ag: low sulphidation
G04 Besshi massive sulphide Cu-Zn
DIMENSION: STRIKE/DIP: 350/45S TREND/PLUNGE:
COMMENTS: Alteration zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Telkwa	
Triassic-Jurassic			Topley Intrusions

LITHOLOGY: Feldspar Crystal Tuff
Lithic Tuff
Greywacke
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
COMMENTS: In the eastern section of the Skeena Arch.

INVENTORY

ORE ZONE: TOPLEY-RICHFIELD REPORT ON: Y

CATEGORY: Indicated YEAR: 1989
QUANTITY: 181420 Tonnes

COMMODITY	GRADE	
Silver	191.9600	Grams per tonne
Gold	4.2500	Grams per tonne

COMMENTS: Drill indicated.
REFERENCE: Canadian Mines Handbook 1989-90, page 327.

CAPSULE GEOLOGY

The Topley Richfield property is underlain by Lower-Middle Jurassic Hazelton Group rocks in the eastern part of the Skeena Arch. Overburden in the area can be in excess of 50 metres thick. Mineralization is hosted primarily in pyroclastic rocks comprised of feldspar crystal tuff with lesser lithic tuffs, greywackes and thin beds of argillite. This sequence is part of the Telkwa Formation (Hazelton Group) and is conformably overlain by pyroxene-bearing andesitic flows of the Nilkitkwa Formation (Hazelton Group). The contact between these two formations is located on the western portion of the property and strikes 170 degrees dipping 45 degrees to the southwest.

Mineralization is structurally controlled and occurs in two alteration zones which strike north-northwest (350 degrees) and dip 45 degrees to the southwest. The zones range from 10 to 40 metres in

CAPSULE GEOLOGY

width and are about 25 metres apart. They are characterized by pervasive silicification, brecciation, sideritic alteration and quartz and calcite veining. Bladed ankerite occurs commonly in calcite vugs. Pyrite is the most abundant sulphide with minor native gold, native silver, tetrahedrite, arsenopyrite, galena, sphalerite and chalcopyrite occurring as stringers, disseminations and blebs.

Lenses containing stronger sulphide mineralization occur within the alteration zones and are called the B/C and D zones. These lenses vary in width from 1 to 5 metres apart and rake to the southwest. The mineralization occurs in several narrow bands separated by unmineralized zones and makes up about 10 to 15 per cent of the lenses. Two intersections in the B/C lens in 1980 assayed 5486 grams per tonne silver over 20 centimetres, and 4.8 grams per tonne gold with 202 grams per tonne silver over 7.6 metres respectively (Assessment Report 9294).

Faulting in the area has offset the main workings and displaced the main alteration zones by about 100 metres along a right-lateral fault.

Significant development from 2 levels occurred from 1927 to 1929 with significant recent evaluation occurring from 1979 to 1987.

Drill indicated reserves at Topley Richfield are 181,420 tonnes grading 4.25 grams per tonne gold and 191.96 grams per tonne silver (Canadian Mines Handbook 1989-90, page 327).

BIBLIOGRAPHY

EMPR AR 1924-98; *1926-138-143; *1927-140-147; 1928-173; 1929-179; 1930-363; 1935-C39; 1937-C26; 1941-43; 1946-89; 1951-117; 1952-95; 1955-25; 1956-28
EMPR ASS RPT 5438, 5553, 5707, 7817, 7957, 8525, 9294, 9563, 9875, 11454, 11704, 17374
EMPR BULL 1 (1929), p. 26; 64
EMPR ENG INSP Fiche No. 61663, 61664
EMPR EXPL 1975-E140; 1979-228; 1980-343; 1981-64,142; 1983-443; *1987-B50-B53; 1988-C170
EMPR GEOL 1975-G65
EMPR MAP 64; 65 (1989); 69-1
EMPR OF 1992-1
EMPR PF (Whiting, F.B. (1980): Geological Report on the Richfield Property in Statement of Material Facts, Feb. 22, 1980; miscellaneous maps; Sirius Resource Corporation, Statement of Material Facts #117/88, p. 7)
EMR MIN BULL MR 198, p. 237; 223 B.C. 229
EMR MP CORPFILE (Porcupine Goldfields Development and Finance Company; Topley Richfield Mining Company, Limited; Seemor Mines Limited; Cobre Exploration Limited)
GSC MAP 671A; 971A; 1424A
GSC OF 351
GSC P 36-20, p. 154; 40-18, p. 13
GSC SUM RPT 1928 Part A, pp. 71-74
GCNL #11,#18,#98,#113,#200, 1980; #27,#32, 1981; #206, 1982
N MINER Feb.12,Aug.13, 1981
WWW http://www.infomine.com/
Placer Dome File
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/03/03 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 019** NATIONAL MINERAL INVENTORY: 093L9 Au1

NAME(S): **JACK RABBIT**, SAW, SUSAN, MEGAN

STATUS: Showing MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L09W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 34 12 N NORTHING: 6050027
LONGITUDE: 126 24 36 W EASTING: 667427
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Claims are on a branch stream entering Johnny David Creek, 10 kilometres northwest of Topley or approximately 6.4 kilometres north of Perow.

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Anhydrite Calcite
ALTERATION: Malachite Epidote Kaolinite Hematite Chlorite Magnetite Siderite
ALTERATION TYPE: Oxidation Epidote Sericitic Argillic Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) L04 Porphyry Cu ± Mo ± Au
DIMENSION: STRIKE/DIP: 160/70W TREND/PLUNGE:
COMMENTS: Mineralized shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Quartz Feldspar Porphyry Dike
Quartz Monzonite

HOSTROCK COMMENTS: Porphyry Intrusion.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1927
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Gold	42.5000	Grams per tonne
Copper	9.4000	Per cent

COMMENTS: 40 centimetre vein sample.
REFERENCE: Minister of Mines Annual Report 1928, page 177.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation, comprised mainly of andesitic to rhyolitic flows, tuff and breccia. South of the property the Hazelton rocks are underlain by Upper Triassic Takla Group volcanics comprised of dark green tuffs, flows and shales. North of the property, Tertiary Endako Group volcanics of the China Nose Breccias (Geological Survey of Canada Open File 351) overlie the Hazelton rocks. They are comprised of very magnetic, uniformly black, basaltic flows and sediments.

The Hazelton rocks are comprised of variegated red, maroon to green breccia and tuff. Anhydrite infills fractures with calcite

CAPSULE GEOLOGY

infilling in cavities and veinlets. Epidote is abundant. The volcanics are crosscut by a beige to buff coloured porphyry dike. The dike is 20 metres wide and hosts angular laths of bleached feldspar and rounded quartz eyes. Alteration consists of sericite and kaolinite minerals with 1.0 to 2.0 per cent disseminated pyrite and malachite. Malachite occurs in fractures or as rims on pyrite and chalcopyrite grains.

Near the quartz-feldspar porphyry dike of quartz monzonite composition, is a mineralized shear zone striking 160 degrees and dipping 70 degrees west. The gouge zone hosts fault breccia cemented with quartz and clay. It is bleached to pale green and hosts minor specular hematite. The shear cuts grey rhyolite and an andesitic fragmental rock with siderite, epidote, calcite, and malachite in the fractures.

In 1927, the Jack Rabbit mineralized shear was sampled. A 40 centimetre vein sample assayed 42.5 grams per tonne gold, 171.4 grams per tonne silver, and 9.4 per cent copper. Another 120 centimetre sample assayed 10.3 grams per tonne gold, 89.1 grams per tonne silver, and 2.5 per cent copper (Minister of Mines Annual Report 1928, page 117).

In 1986, a grab sample of highly oxidized dump material assayed 0.28 grams per tonne gold, 4.1 grams per tonne silver, and 1.82 per cent copper. Also, a chip sample across 1.5 metres above a collapsed adit assayed 4.9 grams per tonne gold, 6.5 grams per tonne silver, and 0.22 per cent copper (Assessment Report 16071).

Widespread weak copper mineralization ranging from 0.02 to 0.07 per cent, is reported to occur in intrusive and volcanic rocks away from the vein and within an area about 60.0 metres in length along a creek east of the Jack Rabbit showing. In 1966, two samples taken above an old tunnel assayed 0.27 and 0.17 per cent copper.

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EMPR AR 1928-177; 1930-144; 1933-99; 1937-342
EMPR ASS RPT 2738, *4760, *13845, *16071
EMPR EXPL *1976-E148; *1985-C313; 1987-C304; 1998-19-31
EMPR GEM 1970-157; 1973-342
EMPR MAP 69-1
GSC BULL 270
GSC MAP 671A; 971A
GSC OF 351
GSC P 40-16, p. 16
GSC SUM RPT 1928A, p. 76

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/07/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 020**

NATIONAL MINERAL INVENTORY: 093L10 Cu1

NAME(S): **BLACK MOUNTAIN**, LUCKY, LADY, PEHU, RANDOLPH, CAT, PEELER, JAVA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 35 09 N
LONGITUDE: 126 31 21 W
ELEVATION: 1286 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6051527
EASTING: 660094

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Hematite
ASSOCIATED: Calcite
ALTERATION: Hematite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Andesite
Andesitic Volcanic
Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau
Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1928

COMMODITY	GRADE	
Silver	137.1000	Grams per tonne
Copper	6.0000	Per cent

COMMENTS: Mineralization occurs along bedding plane.
REFERENCE: Minister of Mines Annual Report 1928, page 177.

CAPSULE GEOLOGY

The area is mainly underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation which are intruded by Early Jurassic Topley Intrusions. Mineralization occurs in veins and fractures in andesitic volcanic rocks and consists of chalcopyrite, bornite, calcite, and hematite. A 1928 report referred to mineralization along bedding planes and a sample gave 137.1 grams per tonne silver and 6.0 per cent copper (Minister of Mines Annual Report 1928, page 177).

BIBLIOGRAPHY

EMPR EXPL 1988-C170,171
EMPR GEM 1969-120; 1970-158
EMPR AR 1928-177; 1967-107; 1968-136
EMPR ASS RPT 1559, 1667, *17553, 17688
EMR MP CORPFILE (Mexxon Mines Ltd.; Key Point Mines Co. Ltd.)
GSC OF 351
EMPR MAP 69-1
GSC MAP 671A
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208

BIBLIOGRAPHY

EMPR PF (Singhai, G.C. (1988): Report on Perrow 300, Peeler and Java 300 Mineral Claims in Prospectus for Crisan Resources Ltd., Jan. 5, 1989).

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 021**

NATIONAL MINERAL INVENTORY: 093L9 Cu4

NAME(S): **RAINBOW**, A.E. WATSON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 33 40 N
LONGITUDE: 126 11 06 W
ELEVATION: 1351 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located on hills east of the summit of Mt. McCrea, approximately 9.7 kilometres northeast of Topley in a direct line.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6049598
EASTING: 682008

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Specularite
ASSOCIATED: Hematite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesitic Breccia
Andesite
Rhyolite
Tuff
Volcanic Flow

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1928
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	6.0000	Per cent

COMMENTS: Selected sample also showed trace gold and silver.
REFERENCE: Minister of Mines Annual Report 1928, page 176.

CAPSULE GEOLOGY

The showing is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic to rhyolitic flows, tuffs, and breccia. Mineralization occurs along bedding planes and in fractures within the andesitic breccia and flows. The mineralization consists of chalcopyrite and specularite.

At elevation 1362 metres, bedding and jointing planes in the volcanics host chalcopyrite over 2.1 metres. The bedding strikes 306 degrees and dips steeply southwest. In 1928, a selected sample assayed 6.0 per cent copper, trace silver, and trace gold. A surface sample of a stringer from this showing assayed 1.0 per cent copper (Minister of Mines Annual Report 1928, page 176). Approximately 122 metres south of this showing, an open cut in volcanics striking 080 degrees and dipping southeast, shows copper mineralization in small fractures striking 018 degrees and dipping steeply southeast. A selected sample assayed 2.1 per cent copper (Minister of Mines Annual Report 1928, page 176).

At elevation 1384 metres, specular hematite occurs along bedding planes in the volcanic flows. Minor chalcopyrite occurs with the hematite and a selected sample of the specularite assayed 0.2 per cent copper (Minister of Mines Annual Report 1928, page 176).

BIBLIOGRAPHY

EMPR AR 1928-176

BIBLIOGRAPHY

GSC MAP 671A
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 022** NATIONAL MINERAL INVENTORY: 093L10,15 Au1

NAME(S): **DOME MOUNTAIN (FORKS)**, FORKS

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L10E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 44 25 N NORTHING: 6068487
LONGITUDE: 126 37 16 W EASTING: 653141
ELEVATION: 1350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: At the confluence of two creeks on the eastern flank of Dome Mountain, 35 kilometres east of Smithers.

COMMODITIES: Gold Silver Zinc Lead Copper
Antimony

MINERALS
SIGNIFICANT: Sphalerite Galena Chalcopyrite Arsenopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Sericite Carbonate Fuchsite
ALTERATION TYPE: Sericitic Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I01 Au-quartz veins I02 Intrusion-related Au pyrrhotite veins
I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 30 x 10 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Orebody.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Tuff
Schistose Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: FORKS REPORT ON: Y

CATEGORY: Indicated YEAR: 1985
QUANTITY: 20000 Tonnes

COMMODITY	GRADE	
Gold	23.6000	Grams per tonne

COMMENTS: Drilling in 1985 defined a geological reserve.
REFERENCE: Fieldwork 1986, page 212.

CAPSULE GEOLOGY

At the Dome Mountain (Forks) occurrence, the original showing was in the creek bed, in a northeast trending shear zone in schistose andesites of the Lower-Middle Jurassic Nilkitkwa Formation (Hazelton Group). The orebody (10 by 30 metres long) was reported as quartz heavily charged (5 to 10 per cent) with galena, arsenopyrite, pyrite and sphalerite. Later tunnelling outlined two quartz veins averaging 30 to 150 centimetres in width hosted in sericite-carbonate-fuchsite altered and foliated tuffs. The veins contain pyrite, galena, sphalerite and arsenopyrite. One vein, trending northwest and dipping northeast averages (weighted) 42.1 grams per tonne gold and 85.4 grams per tonne silver over 12 metres. The other vein trends northeast and averages 15.3 grams per tonne gold and 59.0 grams per tonne silver.

Drilling in 1985 defined a geological reserve of 20,000 tonnes grading 23.6 grams per tonne gold (Fieldwork 1986, page 212).

BIBLIOGRAPHY

EMPR AR 1915-77; 1916-130; 1918-122; *1922-103; 1923-111; 1924-96
EMPR ASS RPT *13277, *13827, *15614, *15659, 16171

BIBLIOGRAPHY

EMPR EXPL 1984-329; 1987-C306
EMPR FIELDWORK *1984, pp. 193-213; *1986, pp. 201-222; 1988, pp. 195-208
EMPR MAP 65 (1989); 69-1
EMPR MINING 1981-1985
EMPR OF *1987-1; 1992-1
EMPR PF (Canadian United Minerals Inc. 1987; A.J. Gaul, 1922; Canadian Silver Standard Mines Ltd.: Annual Report 1986; Claim Maps; Teeshin Resources Ltd., 1987 Annual Report)
GSC OF 351
GCNL #193,#236, 1980; #29, 1981; #155, 1982; #99,#135,#153,#178,#179, #206,#225,#240, 1985; #15,#19,#27,#31,#58,#70,#109,#112,#130,#147, #154,#176,#182,#192,#204,#207,Dec.2,18, 1986; #32,#73,#76,#94,#98, #169,#174,Nov.18, 1987; #65,#66, 1988
IPDM Nov.,May/June 1985; Feb. 1986
N MINER Dec.30,May 2, 1985; Jan.6,20,27,Feb.17,24,Mar.31,May 12, Jun.30,Nov.17, 1986; Jan.5,Nov.30, 1987; Apr.4, 1988
V STOCKWATCH Apr.14,16,May 22,Jun.18,Sept.3,Nov.17, 1987
WIN Vol. 1, #7, June 1987
WWW http://www.infomine.com/index/properties/DOME_MOUNTAIN.html
B.C. Business Magazine, Apr. 1986
North American Gold Mining Industry News Vol. 3, #15, Oct.11,Jul.19, Jun., Nov.8, 1985

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/03 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 023** NATIONAL MINERAL INVENTORY:

NAME(S): **FREE GOLD (DOME MOUNTAIN)**, SK, BABINE GOLD MINES

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L15E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 45 17 N NORTHING: 6070136
LONGITUDE: 126 36 06 W EASTING: 654337
ELEVATION: 1245 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the eastern flank of Dome Mountain, 35 kilometres east of Smithers.

COMMODITIES: Gold Silver Zinc Lead Copper

MINERALS
SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite Tetrahedrite Gold
COMMENTS: "Rare free gold and tetrahedrite".
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Clay Limonite
COMMENTS: Type also includes clay.
ALTERATION TYPE: Chloritic Silicific'n Potassic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: l05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
COMMENTS: #2 vein traced for 225 metres; #3 vein traced for 120 metres, both occur 4.5 to 13.5 metres apart. Dimension ranges from a few centimetres to 2 metres in width.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Quartz Feldspar Porphyry

HOSTROCK COMMENTS: Porphyry Intrusions.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	34.0000	Grams per tonne
Gold	31.5000	Grams per tonne
Copper	0.1400	Per cent
Lead	0.4600	Per cent
Zinc	5.6000	Per cent

COMMENTS: Free gold analysis.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

Unlike the other showings on Dome Mountain which occur in foliated and altered tuff, the Free Gold veins are hosted in massive dark green andesite which is only slightly altered and lacks foliation. Interbedded andesite, tuff, and breccia of the Lower Jurassic Nilkitkwa Formation (Hazelton Group) strike northwest and are intruded by irregular dike-like quartz porphyry bodies and several small diorite plugs and dikes. The andesitic tuffs exhibit moderate chlorite alteration with minor epidote along fractures. The quartz feldspar porphyry intrusive shows weak potassium feldspar flooding and clay alteration.

Structurally, the rocks are cut by high angle faults and

CAPSULE GEOLOGY

shears oriented from 290 to 330 degrees. The shears host narrow bands of intense chlorite alteration and orange limonitic weathering associated with smooth slickensided surfaces. The slickensides show many stages of movement at variable orientations. The faulting and shearing is believed to be the main control for the quartz veining.

Five major veins have been discovered and many smaller quartz veins, varying from a few centimetres to 2 metres in width. Most dip steeply northeast, east of the main showings some shallow-dipping veins are also present. Some of the veins may merge at depth as indicated by conveying strike and dip directions. The veins contain up to 20 per cent finely disseminated or banded pyrite, with minor amounts of sphalerite, galena, tetrahedrite, and chalcopyrite and rare free gold. The gold occurs mainly as grains in galena and chalcopyrite and microveinlets in fractured pyrite. A test shipment of 680 pounds from vein #3 in 1938 averaged 61 grams per tonne gold, 75 grams per tonne silver, 1.54 per cent lead, 5.87 per cent zinc, 0.15 per cent copper, 0.02 per cent arsenic, 10.38 per cent sulphur. In 1940 another 2715 tonnes of high grade ore was shipped. In 1981, 186 tonnes was shipped which returned a grade of 47.3 grams per tonne gold.

Free Gold Analyses
(all values in ppm)

	Au	Ag	Cu	Pb	Zn
84	31.5	34	1400	4600	56000
85A	18.5	105	1300	4700	12400

84- quartz vein from trench with sphalerite, trace galena, and chalcopyrite
85A-quartz vein with sphalerite, trace of galena (D. MacIntrye, 1987).

BIBLIOGRAPHY

EMPR FIELDWORK *1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208
EMPR AR 1915-77; 1916-130; 1918-122; 1933-98; 1934-C11; *1938-B15; 1940-55; 1951-113; 1967-90
GSC P *40-18, p. 9
EMPR PF (Canadian United Minerals Inc., 1987; Free Gold Maps)
EMPR BULL 3, 1932, p. 16
EMPR EXPL 1976-E196; 1978-221; 1979-230; 1984-329; 1985-315; 1986-356; 1987-C308
EMPR ASS RPT 6194, 6619, 13277, 13827, 14407, *15830, 16193
EMR MRI 80-7, p. 217
EMPR MAP 69-1
GSC OF 351
EMPR OF 1987-1
GCNL #185, 1982; #70,#147,#207, 1986; #32,#73,#76,#94,#98,#169,#174, Nov.18, 1987; #65,#66, 1988
N MINER Jan. 30, 1985; Jan. 6,20, 1986; Apr. 4, 1988
NAGMIN Oct. 11, 1985
VSW May 22, 1987
Reako Explorations Ltd. and Panther Mines Ltd., (1981): Stage One Report, Free Gold Property, Smithers, British Columbia
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/21 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 024**

NATIONAL MINERAL INVENTORY: 093L15 Au2

NAME(S): **ASCOT**, PIONEER, ST. EUGENE, M.S., BOW, BOLO, COSWAN, TRENCH 14, PYRITE, TEXASGULF, EASTERN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L15E
BC MAP:
LATITUDE: 54 46 15 N
LONGITUDE: 126 43 56 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On Canyon Creek, near its headwaters. Location of Coswan showing. The Trench 14 lies 1.5 kilometres to the northeast and the Texasgulf showing lies 7.5 kilometres to the northeast near Newell Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6071649
EASTING: 645879

COMMODITIES: Zinc, Lead, Barite, Copper, Molybdenum, Silver, Gold

MINERALS
SIGNIFICANT: Pyrite, Sphalerite, Galena, Barite, Chalcopyrite, Chalcocite, Tetrahedrite, Arsenopyrite
ASSOCIATED: Calcite, Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Stratabound
CLASSIFICATION: Epigenetic, Exhalative, Industrial Min.
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag; I05 Polymetallic veins Ag-Pb-Zn±Au
COMMENTS: Veins or lenses (discontinuous) and bands.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Limy Siltstone, Felsic Tuff, Limestone

HOSTROCK COMMENTS: Limy siltstone and felsic tuff overlie amygdaloidal basalts.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Ascot property, covering a 5-kilometre belt of mineral showings, is situated in the Babine Mountains 30 kilometres east of Smithers. It is at the topographic divide between Canyon Creek, which flows southwest to the Bulkley River, and Stimson Creek which drains northwest to the Fulton River and Babine Lake. Access is by means of an unmaintained dirt road which leaves the Smithers-Babine Lake road at Kilometre 21 and ascends Canyon Creek. The inactive Dome Mountain gold mine (093L 276) is 8 kilometres southwest of the centre of the Ascot claims.

Galena-sphalerite-barite showings were discovered near the head of Canyon Creek in 1951 but not explored at that time. The earliest significant work, in 1967-1969, was by Texas Gulf Sulphur Company which acquired the property as a result of a reconnaissance silt survey. Geological mapping, soil geochemistry and EM surveys were done, followed by one drill hole. During the 1970s and 1980s the main showings were re-staked and/or optioned numerous times.

Minor programs were conducted by prospectors and companies, including Geostar Mining Corporation (1984), Noranda Exploration Company (1985) and Canadian United Minerals Ltd. (1986). A comprehensive program was conducted in 1987 by Geostar Mining Corporation. It included backhoe trenching which revealed several new mineral occurrences. The most recent work was performed by Alliance Mining Inc. in 1996.

Mineralization is hosted in limey siltstone and felsic tuff of the Lower Jurassic Nilkitkwa Formation (Hazelton Group). Underlying the sediments are amygdaloidal basalts. The main showing (Coswan) consists of thin bands of light coloured sphalerite and specks of galena and tetrahedrite in limy siltstone. Pyrite and chalcopyrite

CAPSULE GEOLOGY

are also reported as disseminations and along bedding in limestones. Barite, sphalerite, chalcopyrite, and arsenopyrite occur at the fault contact of amygdaloidal basalt and limy sediments. To the northeast, near the headwaters of Canyon Creek, drilling intersected pyrite, sphalerite, and galena as disseminations and hairline fracture fillings in felsic tuff and siltstone; above the mineralized section a diorite sill intrudes thinly bedded argillites.

Ascot Property Analyses
(all values in ppm)

	Au	Ag	Cu	Pb	Zn	Mo	Hg	As
61-A					2600			
63-1	0.10	<10	17		23	4	0.02	1400
68-1				56000				

(Fieldwork, 1986, page 217).

A trench (Trench 14) on the north side of Canyon Creek uncovered mineralization grading 6.5 per cent zinc and 50 grams per tonne silver across an estimated true width of 8 metres (Assessment Report 16928).

Mineralization (Texasgulf) near Newell Creek, 3.5 kilometres northeast of the main showing, tested by a Texas Gulf drill hole, consists of finely disseminated sphalerite and galena in felsic tuff. A 14.6-metre composite sample assayed 0.67 per cent zinc and 0.12 per cent lead (Assessment Report 6784). East (1.5 kilometres) of the Texasgulf showing, the Eastern showing contains disseminated chalcopyrite and sphalerite with hornfelsed felsic tuffs and andesite.

Weymin Mining Corp. plans to acquire the property from Alliance Mining Ltd. in 1999.

BIBLIOGRAPHY

EM EXPL *1998, pp. C-2-C-4; 2000-1-8
EMPR AR 1908-64; 1909-85; 1911-109; 1934-C11; *1968-121
EMPR ASS RPT 1702A-C, 2139, 2140, 2141, 6784, 6937, *10076, *14307, *14616, 16696, 16928, 19588, 24007, 24957
EMPR EXPL *1978-222; *1985-C320; *1986-359; 1988-C173
EMPR FIELDWORK 1984, pp. 193-213; *1986, pp. 201-222; 1988, pp. 195-208
EMPR GEM 1969-100; 1970
EMPR MAP 69-1
EMPR OF *1987-1
EMPR PF (Rpt by Geostar Mining Corp. 1985; *Geological Report - Ascot Property, prepared for Alliance Mining Inc., by B.J. Price Geological Consultants Inc., October 25, 1996, 77 pages (from Weymin Mining Corp. Web site, June 1999))
GSC BULL 270
GSC MAP 671A; 971A
GSC OF 351
GSC P 40-18
GSC SUM RPT 1910-97
GCNL #154, 1985; #71(Apr.14), 1999
PR REL Weymin Mining Corp., June 7, 1999

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEL SANTO**, DEEP CREEK, DEL, BURN, DEL/SANTO

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 39 30 N
LONGITUDE: 126 41 31 W
ELEVATION: 1065 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the headwaters of Deep Creek (Assessment Report 17255, Figure 2).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6059219
EASTING: 648882

COMMODITIES: Copper, Zinc, Silver, Gold, Lead

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrrhotite, Sphalerite, Tetrahedrite, Magnetite
ALTERATION: Chlorite, Epidote, Magnetite, Pyrolusite
ALTERATION TYPE: Chloritic, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Stratabound
CLASSIFICATION: Volcanogenic, Epigenetic
TYPE: G04 Besshi massive sulphide Cu-Zn
DIMENSION: Metres
STRIKE/DIP: 130/
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
Tertiary			Unnamed/Unknown Informal

ISOTOPIC AGE: 47.1 +/- 1.6 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Chlorite Epidote Amygdaloidal Andesite
Amygdaloidal Basalt
Biotite Granodiorite
Chert
Siltstone
Argillaceous Limestone

HOSTROCK COMMENTS: Middle Jurassic Smithers Formation tuffaceous sandstone occurs to the east of the property.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1986

COMMODITY	GRADE	
Silver	562.0000	Grams per tonne
Gold	0.0200	Grams per tonne
Copper	1.1600	Per cent
Lead	0.0260	Per cent
Zinc	0.3100	Per cent

REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

The Del Santo prospect is located near the headwaters of Deep Creek and the main showing is comprised of a north-trending band of massive pyrrhotite, chalcopyrite, and minor sphalerite which occupies a fold closure. The host rock is an east dipping chlorite-epidote altered amygdaloidal andesitic basalt of the Lower Jurassic Hazelton Group, Nilkitkwa Formation. Overlying the massive sulphide mineralization and to the east of the property are thinly bedded shaly siltstones and argillaceous limestones of the Middle Jurassic Hazelton Group, Smithers Formation. A biotite granodiorite intrusion

CAPSULE GEOLOGY

is exposed to the southeast of the showing and has been dated at 47.1 +/- 1.6 million years.

Samples taken from the main mineralized zone in 1986, assayed 0.02 grams per tonne gold, 562 grams per tonne silver, 1.16 per cent copper, 0.026 per cent lead, and 0.31 per cent zinc (Fieldwork 1986, page 217).

Telkwa Gold Corporation drilled in 1998 and conducted fieldwork in 1999.

BIBLIOGRAPHY

EM EXPL 1999-1-11; 2000-1-8; 2001-1-9
EMPR AR 1928-168; 1929-170
EMPR ASS RPT 1665, 2238, 2543, 7286, *17255, 17478, 17874, 23023
EMPR EXPL 1979-228; *1988-C170; 1998-19-31
EMPR FIELDWORK 1984, pp. 193-213; *1986, pp. 201-222; *1988, pp. 195-208
EMPR GEM 1969-120; 1970-158
EMPR MAP 69-1
EMPR OF *1987-1; 1994-14; 1999-2; 1999-14
GSC BULL 270
GSC MAP 671A; 971A
GSC OF 351
GSC P 40-18, p. 12
PR REL Telkwa Gold Corporation, Aug.19, Dec.22, 1998; July 19, 1999
WWW http://www.infomine.com/index/properties/DEL_SANTO__GROUSE.html
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/03 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 026** NATIONAL MINERAL INVENTORY: 093L10 Zn1

NAME(S): **COPPER CROWN (L.6472)**, RUBY (L.6474), GROUSE MOUNTAIN, COPPER HILL, LEN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L10E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 33 30 N NORTHING: 6048010
LONGITUDE: 126 43 55 W EASTING: 646661
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located just east of Coppermine Lake on crown Grants Lot 6472, and Lot 6474 on Grouse Mountain, 25.7 kilometres southeast of Telkwa; location of mineralization from Geology, Exploration and Mining 1972, Figure 52.

COMMODITIES: Zinc Silver Copper

MINERALS
SIGNIFICANT: Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Chlorite Mica Limonite Clay Epidote
ALTERATION TYPE: Argillic Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) G04 Besshi massive sulphide Cu-Zn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Hazelton	Ashman	

LITHOLOGY: Tuff
Fossiliferous Limestone
Siltstone
Argillite
Greywacke
Breccia
Mafic Dike
Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: Syn-mineralization Post-mineralization GRADE:

INVENTORY

ORE ZONE: RUBY REPORT ON: Y

CATEGORY: Inferred YEAR: 1986
QUANTITY: 317485 Tonnes

COMMODITY	GRADE	
Silver	30.1600	Grams per tonne
Copper	0.3800	Per cent
Zinc	4.2300	Per cent

REFERENCE: Northern Miner - November 17, 1986, page 13.

ORE ZONE: RUBY REPORT ON: Y

CATEGORY: Indicated YEAR: 1986
QUANTITY: 453550 Tonnes

COMMODITY	GRADE	
Silver	25.7100	Grams per tonne
Copper	0.3200	Per cent
Zinc	4.3500	Per cent

COMMENTS: Probable reserves.
REFERENCE: Northern Miner - November 17, 1986, page 13.

INVENTORY

ORE ZONE: TOTAL REPORT ON: N

CATEGORY: Unclassified YEAR: 1984
QUANTITY: 653112 Tonnes

COMMODITY	GRADE	
Silver	13.7100	Grams per tonne
Copper	0.4200	Per cent
Zinc	0.3000	Per cent

REFERENCE: Northern Miner - March 29, 1984.

CAPSULE GEOLOGY

The Copper Crown and Ruby zones occur in Middle to Upper Jurassic Hazelton Group rocks of the Ashman Formation. This formation is comprised mainly of a sedimentary sequence hosting marine black shale, argillite, siltstone and greywacke with intercalated tuffs and breccia (Fieldwork 1988, Figure 1-23-2).

The more competent units are well jointed or cleaved and often display tectonic breccias in the vicinity of faults. Alteration has mainly affected the feldspar and ferromagnesium minerals producing mica and clay minerals, chlorite, limonite, and less commonly epidote.

The Hazelton rocks on Grouse Mountain are intruded by dikes and small stocks which strike north-northwest and dip south-southwest, and range between 10 to 60 metres in width. These include feldspar porphyry, biotite-feldspar porphyry and aphanitic basic dikes.

A large dike on the west side of the mountain hosts bladed feldspar porphyry with large plagioclase phenocrysts in the order of 4 centimetres in length and 0.5 centimetres thick. A second tablet porphyry dike parallels and locally crosscuts the bladed feldspar porphyry. A number of large dikes exposed in the north and central parts of the map area are possibly related to the bladed and tablet porphyries. The dikes are considered post mineralization as they crosscut areas in the Ruby zone. In addition to these intrusions, the area is traversed by numerous aphanitic mafic dikes which are light grey in color, granular in texture, and seldom more than 4.6 metres wide.

Mineralization consists of fine-grained sphalerite and chalcopyrite as breccia fillings in the northeast trending zones which are subparallel to the strata comprised of minor fossiliferous limestone and mainly a coarse tuff sequence. Also, in some areas there are massive sulphide fracture-fillings.

The Copper Crown zone is a dilated segment, 122 metres in length, of an extensive system of sulphide-bearing gash fractures which include the Ruby zone 366 metres to the southwest. Mineralization consists of subparallel lenses and joint fillings of sphalerite and chalcopyrite which crosscut bedding and are distributed in varying concentrations over 15 metres.

In 1985 a sample from a 2.0 metre open cut assayed 0.137 grams per tonne gold, 125.48 grams per tonne silver, 5.62 per cent copper, 0.01 per cent lead and 0.05 per cent zinc. Another sample, from a backhoe trench, covering 0.4 metres, assayed 0.069 grams per tonne gold, 367.54 grams per tonne silver, 12.6 per cent copper, 0.11 per cent lead, and 3.57 per cent zinc (Assessment Report 14256).

The Ruby zone which continues to the southwest more or less from where the Copper Crown zone ends, dips steeply to the northwest and is divided into three southwest shoots over a strike length of approximately 335 metres. The shoot furthest to the southwest appears to be the best mineralized. It is terminated against the large bladed feldspar porphyry dike and is crosscut by the younger tablet feldspar porphyry. The showing is banded, displaying a layer adjacent to the footwall composed mainly of quartz with blebs of pyrite and chalcopyrite, and toward the hangingwall, masses of pyrite, chalcopyrite, and sphalerite alternating with solid and brecciated country rock. To the northeast the zone widens to a multi-vein system hosting disseminated mineralization comprised mainly of sphalerite.

In 1985, samples from open cuts assayed 0.03 grams per tonne gold, 505.7 grams per tonne silver, 3.84 per cent copper, 0.03 per cent lead, 7.72 per cent zinc over 2.3 metres and 0.06 grams per tonne gold, 294.17 grams per tonne silver, 1.72 per cent copper, 0.68 per cent lead, and 15.42 per cent zinc over 1.2 metres (Assessment Report 14256).

Inferred reserves of the Ruby zone are 317,485 tonnes grading 30.16 grams per tonne silver, 0.38 per cent copper and 4.23 per cent zinc; probable reserves of the same zone are 453,550 tonnes grading 25.71 grams per tonne silver, 0.32 per cent copper and 4.35 per cent zinc (Northern Miner - November 17, 1986, page 13). Unclassified reserves of Copper Crown are 653,112 tonnes grading 13.71 grams per tonne silver, 0.42 per cent copper and 0.3 per cent zinc (Northern

CAPSULE GEOLOGY

Miner - March 29, 1984).

BIBLIOGRAPHY

EMPR AR 1914-227; *1915-65-67; 1916-126; 1917-111; 1920-90,260,349; 1923-113; 1924-97; 1925-140; 1926-135; 1927-138; *1951-113-117; 1952-94; 1965-74
EMPR GEM 1970-158; *1972-397-417,*Fig. 49,*Fig. 52
EMPR EXPL 1977-E196; *1980-344; *1983-444; *1985-C314
EMPR ASS RPT 726, *6429, *9087, *12374, *14256
EMPR FIELDWORK *1988, pp. 195-208
EMPR PF (Grouse Mountain maps and photographs; Report on Copper Ridge Silver Zinc Mines Ltd., Telkwa, B.C. by H. Hill, L. Starck and Associates, Aug. 29, 1961)
EMPR MAP 65; 69-1
EMPR P *1990-2
EMR MIN BULL MR 198, p. 237; 223 B.C. 230
EMR MP CORPFILE (Cassiar Crown Copper; Copper Ridge Mines Ltd.; Trans-continental Resources Ltd.; Principal Exploration and Mining Ltd.; Ramm Ventures Corp.)
GCNL Dec. 12, 1983; Mar. 19, 1984
N MINER Mar. 29, 1984
GSC MAP 671A
GSC OF 351
GSC BULL 270
GSC P 40-18A
GSC SUM RPT *1915, pp. 65-67, Map 1608
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/14 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 027**
NATIONAL MINERAL INVENTORY: 093L10 Ag5

NAME(S): **HUBER**, MINERAL HILL, BUTTE, GRANBY, GRANITE, LONE PINE, INDEPENDENT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 31 10 N
LONGITUDE: 126 44 06 W
ELEVATION: 870 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showings occur near the base of the western slopes between Mineral Hill and Grouse Mountain, 30 kilometres southeast of Telkwa.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6043678
EASTING: 646603

COMMODITIES: Silver, Lead, Copper, Zinc, Molybdenum, Gold

MINERALS
SIGNIFICANT: Chalcopyrite, Galena, Pyrite, Molybdenite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Bulkley Intrusions

ISOTOPIC AGE: 70 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granite, Monzonite, Alaskite, Diorite Porphyry, Hornfels, Andesite, Rhyolite, Breccia, Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE: Hornfels

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1978
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Molybdenum	0.0170	Per cent

COMMENTS: Note: grade is molybdenite (MoS2). Reserves in 1976: Ag-12.0; Cu-0.008; Pb-0.048; Zn-0.006; and MoS2-0.002.
REFERENCE: Assessment Report 7117 (Reference for 1976: Assessment Report 6152).

CAPSULE GEOLOGY

The Huber Group covering Mineral Hill Claims A, B, C, and D are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation. The rocks are comprised of fine-grained red, green to black andesitic to rhyolitic flows and associated breccia, tuff with coarse grey green and purple lapilli tuff.

The volcanics are intruded by four stages of Bulkley Intrusions dated at 70 million years. Porphyritic granite, alaskite, fine-grained monzonite and dacite intrude the Telkwa rocks. The volcanics are altered and hornfelsed near the contact.

Mineralization is associated with a complex series of quartz

CAPSULE GEOLOGY

veins and veinlets which crosscut the hornfelsed host rock and is disseminated in the porphyry intrusives.

In 1978, the Granby showing (Granite zone) was drilled and minor disseminated molybdenite was found in the porphyry granite north of the Breccia and Alaskite zones (Mineral Hill-093L 028). Molybdenite averaged 0.017 per cent over the length of the hole (Assessment Report 7117).

In 1976, 12 drill holes, north of the porphyry granite, were drilled in a thin cap of hornfelsed host rock which resembled the Breccia zone to the southwest and hosted minor chalcopyrite and molybdenite. In 1983, a sample of a quartz vein in a dacitic tuff outcropping hosted chalcopyrite and assayed 0.005 grams per tonne gold, 12.0 grams per tonne silver, 0.008 per cent copper, 0.048 per cent lead, 0.006 per cent zinc and 0.002 per cent MoS_2 (Assessment Report 6152).

In 1914, the Lone Pine showing was described as occurring in argillaceous volcanics. It consists of a quartz vein striking north and dipping 75 degrees east, hosting galena, pyrite, and chalcopyrite. Samples from a 4.5 tonne stockpile averaged 1.7 grams per tonne gold, 2962 grams per tonne silver, 3.7 per cent copper and 24.7 per cent lead (Minister of Mines Annual Report 1915, page 78).

In 1917, the Independent showing consisted of a 1.0 metre wide quartz vein which hosted chalcopyrite, pyrite, quartz gangue, and silicified wallrock. A 13.6 tonne stockpile was estimated to average 12 per cent copper and 102.8 grams per tonne silver (Minister of Mines Annual Report 1917, page 122).

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EMPR AR *1915-78; 1917-122; *1927-138; *1965-75,109-112,Fig. 10;
1966-102; 1967-107
EMPR ASS RPT 509, 510, 757, 2285, 2517, *6152, *7117, *9135, *12180,
17341, 21635, 22862
EMPR EXPL 1975-E142; *1976-E149; *1977-E195; 1978-E219; *1981-6;
*1983-445; 1988-C171
EMPR MAP 69-1
GSC MAP 671A
GSC OF 351
GSC BULL 270, p. 73
W MINER Feb. 1966
EMPR GEOLOGY 1977-1981, pp. 125-127,Fig. 41
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/15 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 028**

NATIONAL MINERAL INVENTORY: 093L10 Mo1

NAME(S): **MINERAL HILL**, BRECCIA, ALASKITE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 30 55 N
LONGITUDE: 126 44 16 W
ELEVATION: 892 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Claims lie on the lower west slopes of a hill just east of Fishpan Lake, 4.8 kilometres south of the Grouse Mountain Summit or 14 kilometres north-northwest of Houston. Location is main zone of molybdenum mineralization.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6043209
EASTING: 646438

COMMODITIES: Molybdenum, Copper, Silver, Lead, Zinc

MINERALS

SIGNIFICANT: Molybdenite, Chalcopyrite, Galena, Tetrahedrite, Pyrite, Pyrrhotite
ASSOCIATED: Quartz, Siderite
ALTERATION: Chlorite, Hematite
ALTERATION TYPE: Chloritic, Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Breccia
CLASSIFICATION: Porphyry, Hydrothermal, Igneous-contact
TYPE: L05 Porphyry Mo (Low F- type), I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic to Cretaceous-Tertiary	Hazelton	Telkwa	Bulkley Intrusions

ISOTOPIC AGE: 70 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyry Granite, Alaskite, Monzonite, Hornfels, Andesite, Dacite, Rhyolite, Breccia, Tuff, Lapilli Tuff

HOSTROCK COMMENTS: Also includes aplite vein.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE: Hornfels

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1978
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	41.8300	Grams per tonne
Copper	0.0400	Per cent
Lead	1.8300	Per cent
Zinc	1.2700	Per cent

COMMENTS: A 10.0 metre drill sample.
REFERENCE: Assessment Report 7117.

INVENTORY

ORE ZONE: BRECCIA REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1978
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Molybdenum	0.0620	Per cent

COMMENTS: Grade in molybdenite (MoS2). Average MoS2 value over entire length of hole 78-1.
REFERENCE: Assessment Report 7117.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation. The rocks are comprised of fine-grained red, green to black andesitic to rhyolitic flows and associated breccia, tuff with coarse grey, green and purple lapilli tuff.

The volcanics are intruded by four stages of Bulkley Intrusions dated at 70 million years. Porphyritic granite, alaskite, fine-grained monzonite and dacite intrude the Telkwa rocks. The volcanics are altered and hornfelsed near the contact.

Molybdenum is associated with quartz veins in the Alaskite zone as well as in the quartz-siderite cement of the fractured hornfels or Breccia zone.

The Alaskite zone consists of a dike-like, leucocratic, coarse-grained granite which hosts disseminated molybdenite in aplitic veins in the granite and alaskite. In 1978, a drill hole in this zone encountered mineralization throughout its entire length. The host rock is hornfelsed around the alaskite and both are crosscut by quartz veins and veinlets hosting molybdenite with minor chalcopyrite. The entire drill length averaged 0.057 per cent molybdenite. Some of the quartz veining molybdenite occurs with pyrite, chalcopyrite, galena, tetrahedrite, and pyrrhotite. In 1978, a 10 metre drill sample assayed 41.83 grams per tonne silver, 0.04 per cent copper, 1.83 per cent lead, and 1.27 per cent zinc (Assessment Report 7117).

The Breccia zone consists of hornfelsed host rock which is highly fragmented in places and is crosscut by a complex series of quartz veins and veinlets. Some of the coarser, pegmatitic veins host chalcopyrite and molybdenite while other quartz veins host only molybdenum. Molybdenite also occurs in the quartz-siderite cement in the brecciated rock or as thin films along chloritic fractures. In 1978, a drill hole encountered mineralization throughout its entire length which averaged 0.062 per cent molybdenite (Assessment Report 7117). Between 1966 and 1969, ten trenches in this area averaged 0.02 to 0.08 per cent MoS2 and 0.02 to 0.41 per cent copper. As well, younger quartz veins hosting tetrahedrite averaged 41.5 to 274.3 grams per tonne silver (Property File: Wilkinson, W.J., 1979).

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EMPR EXPL 1975-E142; 1976-E149; 1977-E195; *1978-E219; 1981-6; 1983-445; 1988-C171
EMPR ASS RPT 509, 510, 757, 2285, 2517, 6152, *7117, 9135, *12180, 17341, 21635, 22862
EMPR MAP 69-1
GSC OF 351
GSC BULL 270, p. 73
EMPR GEOLOGY 1977-1981, pp. 125-127,Fig. 41
EMPR PF (Wilkinson, W.J.: Report-Appendix of Logs of Diamond Drill and Percussion Drill Holes - Jan. 31, 1979; Huber-Mineral Hill Molymines Ltd.- geology maps)
EMPR OF 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/15 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 029**
NATIONAL MINERAL INVENTORY: 093L10 Ag6

NAME(S): **PETE (MICKEY)**, MINERAL HILL F & G, MICKEY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 31 30 N
LONGITUDE: 126 41 56 W
ELEVATION: 1219 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the northern end of Mineral Hill, 25.8 kilometres south-east of Telkwa.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6044372
EASTING: 648919

COMMODITIES: Silver, Lead, Zinc, Copper, Gold

MINERALS
SIGNIFICANT: Tetrahedrite, Galena, Sphalerite, Pyrite, Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal, Igneous-contact
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, I01 Au-quartz veins
DIMENSION:
STRIKE/DIP: 360/12E
TREND/PLUNGE:
COMMENTS: Mineralized quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Bulkley Intrusions

ISOTOPIC AGE: 70 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Rhyolite
Dacite
Breccia
Tuff
Diorite Porphyry
Porphyritic Granite
Monzonite
Alaskite

HOSTROCK COMMENTS: Also includes granodiorite dike and diorite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact, Regional
Plutonic Rocks RELATIONSHIP: Syn-mineralization, Post-mineralization
GRADE:

INVENTORY

ORE ZONE: VEINLETS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Copper	0.0850	Per cent
Zinc	1.4000	Per cent

COMMENTS: Sample of pyritic veinlets.
REFERENCE: Assessment Report 12180.

CAPSULE GEOLOGY

The Pete claims and Mineral Hill F and G claims are underlain by Lower Jurassic Hazelton Group rocks of the Telkwa Formation. The volcanics consist of fine-grained red, green to black andesitic to rhyolitic flows and associated breccia, tuff with coarse grey, green, and purple lapilli tuff.

To the south and west, the Mineral Hill (093L 028) and Huber (093L 027) claims are intruded by four stages of Bulkley Intrusions, dated at 70 million years. Locally, only scattered dikes comprised of medium-grained granodiorite and a small intrusive diorite intrude

CAPSULE GEOLOGY

the massive fragmental volcanics.

Mineralization occurs in a 30 centimetre wide quartz vein in altered fine-grained rhyolite and dacite close to the volcanic-diorite intrusive contact. The quartz vein hosts disseminated galena, tetrahedrite, pyrite, sphalerite and minor chalcopyrite. In 1984, a chip sample across the vein assayed 0.095 grams per tonne gold, 107 grams per tonne silver, 0.04 per cent copper, 0.075 per cent lead, 0.04 per cent zinc, and trace molybdenum. A grab sample assayed 0.105 grams per tonne gold, 1824 grams per tonne silver, 0.14 per cent copper, 7.72 per cent lead, and 0.3 per cent zinc (Assessment Report 12180).

In 1968, a sample from an old adit driven along a mineralized quartz vein assayed 891 grams per tonne silver, 2.69 per cent lead, and 48.69 per cent zinc. Other quartz veins located 150 to 300 metres south of the adit assayed 1789 grams per tonne silver (Geology 1977-1981).

Further to the east, sphalerite occurs in rusty pyritic veinlets in dacite. In 1983, a sample assayed 171.4 grams per tonne silver, 0.085 per cent copper, and 1.4 per cent zinc (Assessment Report 12180).

BIBLIOGRAPHY

EMPR AR 1926-137; 1965-109-112; 1966-102; 1967-107
EMR MP CORPFILE (Molymine Explorations Ltd.)
EMPR EXPL *1983-445
EMPR ASS RPT *12180
EMPR MAP 69-1
GSC MAP 671A
GSC OF 351
GSC BULL 270, p. 73
EMPR GEOLOGY 1977-1981, pp. 125-127,Fig. 41

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/15 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 030**
NATIONAL MINERAL INVENTORY: 093L7,10 Cu1

NAME(S): **LAKEVIEW**, THREE LAKE, LV

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L07E 093L10E
BC MAP:
LATITUDE: 54 30 00 N
LONGITUDE: 126 36 06 W
ELEVATION: 1135 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east flank of Wilson Mountain, 10 kilometres northeast of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6041801
EASTING: 655305

COMMODITIES: Silver, Copper, Zinc, Lead, Gold

MINERALS
SIGNIFICANT: Chalcopyrite, Sphalerite, Specularite, Pyrite
ASSOCIATED: Quartz, Carbonate, Hematite
ALTERATION: Malachite, Epidote, Hematite, Limonite, Chlorite
ALTERATION TYPE: Silicific'n, Epidote, Chloritic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Breccia
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: K02 Pb-Zn skarn; K01 Cu skarn; L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION:
STRIKE/DIP: 320/85
TREND/PLUNGE:
COMMENTS: Mineralized fracture system.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Rhyolite Pyroclastic, Limestone, Breccia, Andesite, Tuff, Basic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact, Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization, Post-mineralization
GRADE:

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1955
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Gold	1.0300	Grams per tonne
Copper	7.7000	Per cent
Zinc	0.6000	Per cent

COMMENTS: Drilling intersected 1.3 metres (drill width) of mineralization.
REFERENCE: Assessment Report 12316.

CAPSULE GEOLOGY

The showing occurs in Lower Jurassic Hazelton Group volcanics of the Telkwa Formation which consist of andesitic to rhyolitic flows, tuffs, and breccias with minor intercalated limestone. Locally, the volcanics are moderately to intensely silicified, chloritized and epidotized with abundant specular hematite. The volcanics are cross-cut by basic dikes which trend northwest and dip near vertically. The post-mineral basic dikes average 1.3 metres in width and show limonitic alteration on surface.

Vein system mineralization occurs in grey-green, unsorted fragmental breccia which hosts chalcopyrite and black sphalerite with quartz, carbonate, and hematite gangue. Mineralization is associated with the silicification of bedded, Hazelton rhyolitic pyroclastics

CAPSULE GEOLOGY

with intercalated limestone-specular hematite beds. The length of the mineralized zone is in excess of 400 metres along a strike of 040 degrees and dips near vertical to 70 degrees northwest.

The individual mineralized bed are up to 3.0 metres in width with an average of 1.8 metres of massive specular hematite, chalcopyrite, sphalerite, and pyrite. Drilling in 1955, cut the southern end of the vein, 1.3 metres in width, which assayed 1.03 grams per tonne gold, 171.4 grams per tonne silver, 7.7 per cent copper, and 0.6 per cent zinc (Assessment Report 12316).

Silver values apparently are directly related to the amount of chalcopyrite present and zinc with minor lead values appear to be directly related to the amount of specular hematite present.

In 1977, sampling of an epidote skarn assayed 154.0 grams per tonne silver, trace gold, 12.5 per cent zinc, 0.02 per cent lead, and 0.21 per cent copper. Also a sample of the high grade ore from the south dump assayed 518.0 grams per tonne silver, trace gold, 5.3 per cent copper, and 0.14 per cent zinc (Assessment Report 12316).

BIBLIOGRAPHY

EMPR AR 1909-85; 1917-112; 1926-144; 1966-102; 1967-108; 1968-138
EMPR GEM 1969-121; 1970-151; 1971-173
EMPR EXPL *1983-442; 1988-C169
EMPR ASS RPT *2145, 2732, *12316, 13093, 17852
EMR MP CORPFILE (Buval Exec. Mining Ind. Ltd.; Abaca Resource Ind. Ltd.; Butler Mountain Minerals Corp.)
GCNL #146, 1982; #14, 1983; #246, 1985
EMPR GEOLOGY *1977-1981, pp. 123-124,Fig. 40
EMPR BULL 64, Fig. 8
EMPR MAP 69-1
GSC MAP 671A
GSC OF 351
GSC BULL 270
EMPR PF (Lakeview - Three Lakes maps)
N MINER Jan. 27, 1983
IPDV Feb. 1986

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/16 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 031**

NATIONAL MINERAL INVENTORY: 093L7 Cu6

NAME(S): **WALCOTT**, CANYON, COPPER #2, CONFEDERATION, BLACK BEAR, VAINO, SILVER STREAM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07W
BC MAP:
LATITUDE: 54 26 20 N
LONGITUDE: 126 49 16 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of the Bulkley River, on a creek locally known as Sunrise Creek, 12.0 kilometres west-northwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6034541
EASTING: 641308

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Magnetite, Chalcopyrite, Pyrite
ASSOCIATED: Quartz, Calcite, Garnet
ALTERATION: Malachite, Garnet, Epidote, Pyroxene, Silica, Chlorite
ALTERATION TYPE: Skarn, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Skarn, Replacement, Epigenetic
TYPE: K01 Cu skarn, K03 Fe skarn
DIMENSION:
STRIKE/DIP: 230/60N
TREND/PLUNGE:
COMMENTS: Mineralized shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite, Basalt, Rhyolite, Tuff, Breccia, Chert, Diorite

HOSTROCK COMMENTS: Late Cretaceous to Eocene dioritic intrusive.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional
Plutonic Rocks
RELATIONSHIP: Syn-mineralization, Post-mineralization
GRADE:

INVENTORY

ORE ZONE: OPENCUT
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1928
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	260.4000	Grams per tonne
Gold	1.4000	Grams per tonne
Copper	3.2000	Per cent

COMMENTS: Sample of best mineralization from an open cut.
REFERENCE: Minister of Mines Annual Report 1928, page 170.

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Gold	1.4700	Grams per tonne
Copper	0.5000	Per cent

COMMENTS: A 2.25 metre intersection from the 'O' zone.
REFERENCE: Assessment Report 17057.

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1931
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	5.5000	Grams per tonne
Copper	0.6000	Per cent

COMMENTS: Sample taken across 2.7 metres assayed trace gold.
REFERENCE: Minister of Mines Annual Report 1931, page 75.

CAPSULE GEOLOGY

The showings are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic to rhyolitic flows, tuffs and breccia.

An open cut on the Vaino claim exposed chalcopyrite with malachite staining in altered andesitic volcanic rock. In 1928, a sample of best mineralization assayed 1.4 grams per tonne gold, 260.6 grams per tonne silver and 3.2 per cent copper (Minister of Mines Annual Report 1928, page 170).

Adjoining the Vaino on the west are the Black Bear and Silver Stream groups, which host a 4.6 metre shear zone in the volcanics which is sparsely mineralized with chalcopyrite, pyrite, and malachite. The shear strikes 230 degrees across the creek and dips 60 degrees northwest. In 1931, a sample taken across 2.7 metres assayed trace gold, 5.5 grams per tonne silver, and 0.6 per cent copper (Minister of Mines Annual Report 1931, page 75).

At elevation 777 metres, on the Confederation Group, basaltic rocks near a rhyolitic contact are mineralized with magnetite and minor chalcopyrite. In 1928, a selected sample of the best mineralization assayed 0.3 per cent copper and traces of silver and gold (Minister of Mines Annual Report 1928, page 170).

In 1986 these showings were restaked as the Canyon Claims. Rhyolitic volcanics of the Telkwa Formation striking east-west and dipping 45 degrees north are reported to be in contact with a Late Cretaceous to Eocene diorite intrusive. Magnetite, chalcopyrite, pyrite, gold and silver mineralization occur in bands of chert which appear to strike southeast and dip 45 degrees northeast, ranging between 1.0 to 2.0 metres in thickness.

In 1986, 33 rock samples collected in an area approximately 500 metres by 500 metres in the vicinity of the old trenches ranged between trace to 7.6 grams per tonne gold, 0.3 to 29.8 grams per tonne silver, and 0.02 to 39.0 per cent copper, and with average values of 0.6 grams per tonne gold, 5.2 grams per tonne silver and 2.5 per cent copper (Assessment Report 15357).

Work in 1987 was carried out on a number of skarn zones exposed on the south cliffs of Emerson Creek. Four zones, the A, O, Palmer and Lake, were mapped and consist of minor-massive replacement of the volcanics by magnetite, garnet, silica, pyroxene and epidote. The common host for the replacement is intensely chloritized fragmental andesite. The replacement commonly occurs in fine to coarse bands, often sub-parallel to bedding. Magnetite +/- garnet forms the outer edge of a replacement bed. Pyrite is common, usually with the garnet bands, and up to 1-2 per cent chalcopyrite occurs locally in the magnetite.

Gold values vary with the amount of copper present. A sample 2.25 metre sample from the O zone assayed 1.47 grams per tonne gold and 0.5 per cent copper (Assessment Report 17057).

BIBLIOGRAPHY

EMPR AR *1928-170; *1931-75; *1967-108
EMPR GEM 1970-156
EMPR EXPL *1986-C354-355; *1988-C169
EMPR ASS RPT 2308, 2309, 10903, *15357, *17057
GSC P 36-20, p. 120
EMR MP CORPFILE (Molymine Exploration Ltd.)
GSC MAP 671A
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 032**

NATIONAL MINERAL INVENTORY: 093L7 Mo1

NAME(S): **EMERSON**, BARR, LYBDENUM, GOOCH, JAILBIRD

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07W
BC MAP:
LATITUDE: 54 26 20 N
LONGITUDE: 126 53 46 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6034393
EASTING: 636444

COMMENTS: Located 5 kilometres west of the Bulkley River or 5 kilometres north-east of the junction of the Bulkley and Morris Rivers, approximately 15 kilometres west-northwest of Houston.

COMMODITIES: Molybdenum, Silver, Gold, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Molybdenite, Pyrite, Galena, Sphalerite, Tetrahedrite
ASSOCIATED: Quartz
ALTERATION: Clay, Sericite, Quartz
ALTERATION TYPE: Argillic, Silicific'n, Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Porphyry, Igneous-contact, Hydrothermal, Epigenetic
TYPE: L05 Porphyry Mo (Low F- type); L04 Porphyry Cu ± Mo ± Au
I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Quartz Feldspar Porphyry
Rhyolite
Breccia
Andesite
Dacite
Lapilli Tuff
Greywacke
Siltstone

HOSTROCK COMMENTS: Late Cretaceous to Eocene porphyry intrusion.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact, Regional
RELATIONSHIP: Plutonic Rocks; Syn-mineralization, Post-mineralization
GRADE:

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1982
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	0.0950	Grams per tonne
Copper	0.1250	Per cent
Molybdenum	0.0540	Per cent

COMMENTS: Chip samples from veins assayed gold, copper, and molybdenite (MoS2).
REFERENCE: Assessment Report 10903.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	2043.0000	Grams per tonne
Gold	1.4400	Grams per tonne
Copper	1.5100	Per cent
Lead	8.7400	Per cent
Zinc	7.3100	Per cent

COMMENTS: Chip sample from a galena-sphalerite stringer in altered tuff, from trench 86-24.
REFERENCE: Assessment Report 15378.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised mainly of andesitic to dacitic pyroclastics, flows, breccia, and red to green tuffs with lapilli tuff. Minor interbedded greywacke, tuffaceous siltstone and shales strike north-northeast and dip between 15 and 35 degrees east.

The volcanics are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry plug which is intensely fractured and argillized. The intrusive plug is surrounded by Late Cretaceous to Early Tertiary Ootsa Lake volcanics comprised of flow banded rhyolite, rhyolitic crystal tuff and porphyritic quartz-eye rhyolites which are thought to be the extrusive equivalents of the porphyry stock. An advanced argillic alteration zone envelopes the intrusive and extrusive equivalents and is recognized by quartz and clay replacement of the feldspar.

Both the rhyolites and the quartz-feldspar porphyry are intensely fractured and invaded by several generations of quartz veins and veinlets which occur in parallel fractures or are multidirectional and crosscutting. A rare set of drusy veinlets are accompanied by an abundance of pyritohedral pyrite crystals. Also, minor late stage vuggy chalcedonic quartz veining hosts grey silica encapsulated by sulphide patches.

Molybdenite occurs in the quartz vein stockworks which are associated with the alteration envelope in the intrusive rocks. Pyrite is widespread throughout the argillic zone. In 1986 trenching uncovered scattered silver-rich, galena-sphalerite-tetrahedrite veins and veinlets associated with the contact zone in the altered volcanic rocks.

In 1982, chip samples of the veins assayed 0.095 grams per tonne gold, 0.381 per cent copper, 0.054 per cent MoS_2 and 0.025 grams per tonne gold and 0.125 per cent MoS_2 (Assessment Report 10903). In 1986, a sample of a pyrite-rich block assayed 0.55 grams per tonne gold, 6.9 grams per tonne silver, 0.01 per cent copper, 0.02 per cent lead and 0.01 per cent zinc. A sample from a galena-sphalerite stringer in altered tuff assayed 1.44 grams per tonne gold, 2403 grams per tonne silver, 1.51 per cent copper, 8.74 per cent lead and 7.31 per cent zinc (Assessment Report 15378).

Locally, a breccia pipe occurs along the north side of the quartz-feldspar porphyry. The breccia has a highly siliceous matrix with intensely argillized and sericitized fragments. In 1978, a sample of the breccia assayed 0.44 per cent MoS_2, trace to 6.6 per cent lead, trace to 0.02 per cent tungsten, trace to 0.037 per cent tin and 0.2 to 1.0 per cent fluorine (Assessment Report 7060).

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EMPR AR 1965-80; 1966-103; *1967-108; 1968-137
EMPR GEM 1969-122; 1970-156; 1971-174
EMPR EXPL *1978-E218; *1982-309-310; *1986-C353; 1987-C302; 1988-C169
EMPR ASS RPT 869, 1139, 2308, 2309, 3077, *7060, *10903, *14174, *15378, *16238, 16980
EMPR MAP 69-1
GSC OF 351
GSC MAP 671A
EMPR FIELDWORK 1985, pp. 121-123
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/01 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 033**
NATIONAL MINERAL INVENTORY: 093L11 Ag4

NAME(S): **HOPE**, HANKIN BASIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 32 09 N
LONGITUDE: 127 04 47 W
ELEVATION: 1380 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located on the right bank of the east fork of Goathorn Creek, in the vicinity of Old Tom ? (093L 034), 19 kilometres south of Telkwa. Showing is located in the Hankin Basin area (refer to sketch map in Minister of Mines Annual Report 1911, page 100).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6044837
EASTING: 624244

COMMODITIES: Silver Gold Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION: STRIKE/DIP: 320/80N TREND/PLUNGE:
COMMENTS: Mineralized quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Felsite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1932
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Gold	1.4000	Grams per tonne
Copper	10.0000	Per cent

COMMENTS: Sample of best mineralization.
REFERENCE: Minister of Mines Annual Report 1932, page 85.

CAPSULE GEOLOGY

The showing is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of variegated red, green, maroon to grey andesitic to rhyolitic flows, tuffs and breccia. The volcanics have undergone extensive faulting and shearing. They are intruded by a Late Cretaceous to Eocene intrusions comprised of granodiorite with associated felsite dikes.

A quartz vein with a maximum exposed width of 0.75 metres strikes 320 degrees and dips steeply northeast in the andesitic volcanics. The vein is mineralized with chalcopyrite and pyrite. A sample of the best mineralization assayed 1.4 grams per tonne gold, 171.4 grams per tonne silver and 10 per cent copper. A sample of the oxidized portion of the vein assayed 1.4 grams per tonne gold, 185.1 grams per tonne silver and 1.0 per cent copper (Minister of Mines Annual Report 1932, page 85).

BIBLIOGRAPHY

EMPR AR 1911-100(map); *1932-85
GSC MAP 44-23; 989
EMPR MAP 69-1
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 034**

NATIONAL MINERAL INVENTORY: 093L11 Cu2

NAME(S): **OLD TOM**, HANKIN, LORING, LAVA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 32 19 N
LONGITUDE: 127 06 08 W
ELEVATION: 1128 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6045107
EASTING: 622780

COMMENTS: Located on the east side of Hankin Basin, on the east fork of Webster Creek on D.L. 631, approximately 19 kilometres south of Telkwa; location of diamond drillhole 1-78 (Assessment Report 7070).

COMMODITIES: Copper, Silver, Gold, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Chalcocite, Pyrite, Magnetite, Sphalerite, Tetrahedrite
ASSOCIATED: Quartz, Calcite
ALTERATION: Epidote, Chlorite, Mica
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite, Rhyolite, Tuff, Breccia, Black Argillite, Felsite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact, Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization, Post-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1978
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	8.9000	Grams per tonne
Copper	0.4100	Per cent

COMMENTS: DDH-1 intersects 1.0 metre wide mineralized zone, also showed low gold, zinc and cadmium.
REFERENCE: Assessment Report 7070.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of variegated red, maroon, green to grey andesitic to rhyolitic flows, tuffs and breccia. The volcanics have undergone extensive faulting and shearing. They are intruded by Upper Cretaceous to Eocene intrusions comprised of granodiorite with associated light colored felsite dikes.

Sulphide mineralization conforms to bands of shallowly dipping volcanics which host pyrite, chalcopyrite, chalcocite and magnetite with lesser sphalerite and tetrahedrite. Gangue minerals consist of quartz, epidote, calcite, chlorite with micas and altered wall rock.

In 1978, Drill Hole #1, on the Old Tom claim, cut grey to black flat lying andesite and intersected a 1.0 metre wide altered band

CAPSULE GEOLOGY

which assayed 0.41 per cent copper, 8.9 grams per tonne silver with low gold, zinc and cadmium. At 17.7 metres another 1.9 metre wide intersection assayed 0.16 per cent copper, 3.0 grams per tonne silver with low gold and zinc (Assessment Report 7070).

A second drill hole in grey to black, flat lying argillite intersected a 3.0 metre sulphide band which assayed 0.68 per cent copper, 18.2 grams per tonne silver and 0.96 grams per tonne gold. Another intersection at 90.5 metres assayed 0.05 to 0.37 per cent copper with low gold and silver (Assessment Report 7070).

BIBLIOGRAPHY

EMPR AR 1899-657; 1900-790; 1901-991; 1902-47; 1903-52; 1905-125; 1907-78; 1908-64; 1909-85; 1911-110,Map after p. 100; 1914-224; 1968-129
EMPR GEM 1969-86; 1970-159; 1972-417; *1973-345; 1976-E151; *1978-E220
EMPR EXPL 1980-345; *1981-188
EMPR ASS RPT 1810, 1880, *4831, *7070, *10043
GSC SUM RPT 1907, p. 20
GSC MAP 989
EMPR MAP 69-1
GSC OF 351
EMPR GEOLOGY 1977-1981, p. 129
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC P 44-23

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 035**

NATIONAL MINERAL INVENTORY: 093L11 Cu2

NAME(S): **HANKIN**, LAVA, FOREST, TELKWA, HANKIN BASIN, LION, CAMOSUN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 31 30 N
LONGITUDE: 127 05 56 W
ELEVATION: 1340 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6043599
EASTING: 623036

COMMENTS: Located along the west fork of Goathorn Creek in the Hankin Basin area (refer to Minister of Mines Annual Report 1911, map after page 100); approximately 1.5 kilometres east of Crater Lake, 19.3 kilometres south of Telkwa; showing location (Assessment Report 1810).

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Magnetite Pyrite Bornite Tetrahedrite
ASSOCIATED: Quartz Calcite Epidote
ALTERATION: Epidote Chlorite Mica
ALTERATION TYPE: Chloritic Epidote Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Quartz Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional
PHYSIOGRAPHIC AREA: Hazelton Ranges
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE:

INVENTORY

ORE ZONE: DUMP
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1914
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Silver	57.9000	Grams per tonne
Gold	1.0000	Grams per tonne
Copper	2.8000	Per cent

COMMENTS: Sample taken from dump material from 9.0 metre adit on Telkwa claim.
REFERENCE: Minister of Mines Annual Report 1914, page K225.

CAPSULE GEOLOGY

The claims in the Hankin Basin area are underlain by Lower Jurassic Hazelton Group rocks of the Telkwa Formation comprised of variegated red, maroon, green to grey andesitic to rhyolitic flows, tuffs and breccia with minor intercalated sediments. The volcanics have undergone extensive faulting and shearing. The rocks lie nearly horizontal and are well exposed on both sides of the creek. They are intruded by a series of roughly parallel quartz-porphyry dikes, averaging 30 centimetres in width, which strike 025 degrees and dip from 50 to 70 degrees southeast. The dikes are related to the Upper Cretaceous to Eocene intrusives comprised of granodiorite and quartz diorite.

CAPSULE GEOLOGY

Mineralization is developed along the bedding planes of the volcanics and generally shows enrichment near the dike contacts. The mineralization includes pyrite, chalcopyrite, and magnetite disseminated in a gangue of altered country rock, quartz and epidote. A sample from dump rock on the Telkwa claim assayed 1.0 grams per tonne gold, 57.9 grams per tonne silver, and 2.8 per cent copper (Minister of Mines Annual Report 1914, page K225).

In 1968 and 1969, mapping and drilling indicated the mineralization is comprised of bands conforming with the low dipping volcanics and consisting of pyrite, chalcopyrite, chalcocite, and magnetite with lesser bornite and tetrahedrite in siliceous volcanic rocks. The gangue minerals consist of quartz, epidote, calcite, chlorite, micas, and altered wall rock.

BIBLIOGRAPHY

EMPR AR 1899-657; 1900-790; 1901-991; 1902-47; 1903-52; 1905-125; 1907-78; 1908-64; 1909-85; 1911-110,*Map after p. 100; *1914-224; 1968-129
EMPR GEM 1969-86; *1970-159; *1972-417; *1973-345; 1976-E151; 1978-E220
EMPR EXPL 1980-345; 1981-188
EMPR ASS RPT *1810, 1875, 1880, 4811, *4831, 7070, 8624, *10043, 11903
GSC SUM RPT 1907, p. 20
GSC MAP 989
EMPR MAP 69-1
GSC OF 351
EMPR GEOLOGY 1977-1981, p. 129
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC P 44-23

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 036**

NATIONAL MINERAL INVENTORY: 093L11 Cu3

NAME(S): **LORING**, LAVA, HANKIN, SLUMP BLOCK, COPPER 2, ADELAIDE, HANKIN 23,24, STIRLING, BIG BLUE, YELLOWHAMMER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 30 30 N
LONGITUDE: 127 07 00 W
ELEVATION: 1555 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Hankin Basin on an eastern fork of Webster Creek, 20.9 kilometres south of Telkwa; slump block location (Assessment Report 10043, 11903).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6041713
EASTING: 621936

COMMODITIES: Copper, Silver, Molybdenum, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Molybdenite, Magnetite
ALTERATION: Malachite, Epidote, Limonite, Pyrite
ALTERATION TYPE: Epidote, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au; D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Hornfels
Andesite
Amygdaloidal Rhyolite Dike
Tuff
Breccia
Intrusive Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact, Regional
RELATIONSHIP: Syn-mineralization, Post-mineralization
GRADE: Hornfels

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1974
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.3000	Per cent

REFERENCE: Assessment Report 4831.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of variegated red, maroon, green to grey andesitic to rhyolitic flows, tuffs, and breccia with minor intercalated sediments. The volcanics are intruded by an Upper Cretaceous to Eocene intrusions comprised of granodiorite and quartz monzonite with dikes of granodiorite, felsite and rhyolitic quartz porphyry.

Alteration and mineralization associated with a quartz feldspar porphyry stock is related to a hornfelsed zone hosting pyrite and magnetite and with porphyritic stages within the stock hosting alteration related to fracture controlled stockworks bearing pyrite, minor chalcopyrite and trace molybdenite.

Locally, the flat lying volcanics contain disseminated chalcopyrite over widths of 1.2 to 3.0 metres. A sample over 1.8 metres on the Stirling claim assayed trace gold, 41.1 grams per tonne silver, and 1.0 per cent copper. A sample across 1.2 metres on the Adelaide

CAPSULE GEOLOGY

claim assayed trace gold, 30.9 grams per tonne silver, and 1.8 per cent copper (Minister of Mines Annual Report 1914, page K224).

In 1968 and 1970 disseminated chalcopyrite with molybdenite in a quartz stockwork was mapped along fractures in the flat lying volcanics near granodiorite and feldspar porphyry dikes (refer to Lava, 093L 037).

The main showing, on Hankin 23-24, is called the Slump Block and is comprised of a roughly rectangular mass of gently dipping volcanics approximately 60 metres wide and 150 metres long. A major amygdaloidal rhyolite dike cuts the Hazelton volcanics and forms a gossanous zone 100 metres east of the Slump Block which contains epidote, limonite, pyrite, magnetite with minor chalcopyrite and malachite. In 1974 drilling indicated 0.3 per cent copper is associated with this zone (Assessment Report 10043, page 7).

BIBLIOGRAPHY

EMPR AR 1901-991; 1902-47; 1903-52; 1905-84; 1910-110,*Map after p. 100; *1914-224; 1968-129
EMPR GEM 1969-86; *1970-159; 1972-417; *1973-345; 1976-E151; 1978-220
EMPR EXPL *1980-345; *1981-188
EMPR ASS RPT 1810, 1875, 1880, *4811, *4831, *10043, 11903, 21765
GSC SUM RPT 988, Addendum p. 2
GSC MAP 989
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16; 1993-21; 1994-14
Taylor, B., (1980): Report on the Copper 1-4 Claims, Jan.31, 1980 in Statement of Material Facts for Mecca Minerals Limited, dated Jul.15, 1980
GSC OF 351
GSC P 44-23

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 037**
NATIONAL MINERAL INVENTORY: 093L11 Cu3

NAME(S): **LAVA**, LORING, HANKIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 30 49 N
LONGITUDE: 127 06 40 W
ELEVATION: 1215 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of mineralization along Loring Creek from Assessment Report 1810, Figure L-G-2-68.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6042310
EASTING: 622279

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Malachite Molybdenite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type) L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Siliceous Volcanic
Siliceous Pyroclastic
Rhyolite Flow
Basalt
Tuff
Breccia
Quartz Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional
PHYSIOGRAPHIC AREA: Hazelton Ranges
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE: Greenschist Hornfels

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of siliceous pyroclastics, mainly basalt and rhyolite flows, quartz feldspar ash flows, tuff and breccia. These volcanics are intruded by a Late Cretaceous to Eocene intrusions comprised of granodiorite and quartz-feldspar porphyry with associated dike swarms.

In 1968 and 1970 molybdenite in a quartz stockwork with disseminated chalcopyrite and malachite along fractures was mapped in flat lying volcanics along Loring Creek (refer to molybdenite stockwork showing in Assessment Report 1810). This mineralization is associated with granodiorite and quartz-feldspar porphyry dikes which crosscut the silicified volcanics.

BIBLIOGRAPHY

EMPR AR 1901-991; 1902-47; 1903-52; 1905-84,125; 1914-224; *1968-129
EMPR GEM 1969-86; *1970-159; 1973-346
EMPR EXPL 1980-345; 1981-188
EMPR ASS RPT *1810, 1875, 1880, 4811, 10043, 11903, 21765
GSC SUM RPT 988, Addendum p. 2
GSC MAP 989
GSC OF 351
GSC P 44-23
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16; 1993-21; 1994-14
EMPR MAP 69-1

DATE CODED: 1989/04/10 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 038**

NATIONAL MINERAL INVENTORY: 093L11 Cu11

NAME(S): **MARMOT**, CRATER LAKE, LAVA, CHIMNEY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 31 25 N
LONGITUDE: 127 08 05 W
ELEVATION: 1585 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Chimney showing located on the east side of Webster Creek just west of Crater Lake, approximately 20 kilometres south of Telkwa (Assessment Report 10043).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6043382
EASTING: 620722

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Chalcocite Tetrahedrite Hematite Specularite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Azurite Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Hazelton Ranges
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE: Greenschist Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	108.7000	Grams per tonne
Copper	4.2600	Per cent

COMMENTS: Average sample taken from the Chimney zone.
REFERENCE: Assessment Report 4811.

CAPSULE GEOLOGY

The showing is within Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation, Red Tuff Member comprised mainly of red, well-bedded tuff and minor ash flow tuff. These pyroclastics are intruded by a Late Cretaceous to Eocene intrusions comprised of grano-diorite and quartz diorite with associated dikes and sills.

Locally, the Hazelton Group rocks are broken by faults and are intruded by numerous granodiorite stocks and sills. Structurally, the rocks form a broad anticline which strikes north-northwest and plunges north with its axis through Crater Lake. The limbs find expression on the steep walls of the Hankin Basin. Faults and shear zones predominate in the cliffs above the lake and along Webster Creek. Block faults with variable displacement are common.

The main mineralization occurs just west of Crater Lake on the east side of Webster Creek in the "Chimney zone". The Chimney zone is a structural zone 30.5 metres in length which consists of narrow veins traversing faults or shears in dark green and maroon andesitic

CAPSULE GEOLOGY

tuff. Surface expressions of the veins show secondary enrichment and contain epidote. These are crosscut by calcite and quartz stringers which carry malachite, bornite, chalcopyrite, azurite, chalcocite, tetrahedrite, hematite and minor disseminated specularite. In 1973, assays over 24.4 metres ranged between 0.76 to 15.6 per cent copper and 29.8 to 425.1 grams per tonne silver. The showing averaged 4.26 per cent copper and 108.7 grams per tonne silver (Assessment Report 4811).

Other samples taken about 500 metres south of the Crater Lake and the Chimney zone, on the Webster and Hankin claims, ranged between 0.76 to 6.75 per cent copper and 10.9 to 21.6 grams per tonne silver (Assessment Report 4811).

BIBLIOGRAPHY

EMPR AR 1903-52; 1905-125; 1907-78; 1908-64; 1909-85; 1911-110,Map after p. 100; 1914-224; 1968-129
EMPR GEM 1969-86; 1970-159; 1972-417; *1973-345; 1976-E151; 1978-E220
EMPR EXPL *1980-345; *1981-188
EMPR ASS RPT 1810, 1880, *4811, *4831, *7070, *8624, *10043, *11903
GSC P 44-23
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16
Taylor, B., (1980): Report on the Copper 1-4 Mineral Claims, Jan.31, 1980 in Statement of Material Facts for Mecca Minerals Limited, dated Jul.15, 1980
EMR MP CORPFILE (Mecca Minerals Ltd.)
GSC OF 351
EMPR GEOLOGY 1977-1981, p. 129

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 039**

NATIONAL MINERAL INVENTORY: 093L11 Cu11

NAME(S): **CRATER LAKE**, COPPER 1-4, LAVA, CIRQUE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 31 21 N
LONGITUDE: 127 07 34 W
ELEVATION: 1585 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6043273
EASTING: 621282

COMMENTS: Located on the west wall of the inner depression of Crater Lake, approximately 20 kilometres south of Telkwa; location of Cirque showing (Assessment Report 10043).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Chalcocite Tetrahedrite Hematite Specularite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Azurite Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Stockwork
CLASSIFICATION: Epigenetic Hydrothermal Igneous-contact
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) L04 Porphyry Cu ± Mo ± Au
D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesitic Tuff
Bedded Tuff
Ash Flow Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Hazelton Ranges
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1973

COMMODITY	GRADE	
Silver	101.8000	Grams per tonne
Copper	1.5500	Per cent

COMMENTS: 3.0 metre sample
REFERENCE: Assessment Report 4811.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation, Red Tuff Member comprised mainly of red, well-bedded tuff and minor ash flow tuff. These pyroclastics are intruded by a Late Cretaceous to Eocene intrusion comprised of granodiorite and quartz diorite with dikes of granodiorite, felsite and rhyolitic quartz porphyry.

Alteration and mineralization associated with the central stock is related to a hornfelsed zone hosting pyrite and magnetite and with porphyritic stages within the stock hosting alteration related to fracture controlled stockworks bearing pyrite, minor chalcopyrite, and molybdenite. Away from the stock where small diorite stocks, and sills intrude the volcanics mineralization consists of pyrite, chalcopyrite, minor bornite, with epidote and chlorite.

In the Crater Lake area, the Hazelton Group rocks are broken by faults and intruded by numerous granodiorite and quartz monzonite stocks and sills. Structurally the rocks form a broad anticline which

CAPSULE GEOLOGY

strikes north-northwest and plunges north with its axis through Crater Lake. Faults and shear zones predominate in the cliffs above the lake and along Webster Creek. Block faults with variable displacements are common.

Mineralization occurs in narrow veins which traverse the faults and shears. Veins along the west wall of the inner depression of Crater Lake, known as the Cirque showing, host hematite, bornite, malachite, azurite, chalcopyrite, chalcocite and tetrahedrite. Southwest of the lake, copper staining occurs in bands along the cirque wall. In 1974, this chalcocite mineralized horizon was called C2 and consisted of very fine disseminated chalcocite in a band of green andesitic tuff. The zone is approximately 15.2 metres wide and in 1973 a 3.0 metre section assayed 101.8 grams per tonne silver and 1.55 per cent copper (Assessment Report 4811).

BIBLIOGRAPHY

EMPR AR 1903-52; 1968-129
EMPR GEM 1969-86; *1973-345; 1976-E151; *1978-E220
EMPR EXPL *1980-345; *1981-188
EMPR ASS RPT *4811, *7070, 8624, *10043, *11903
GSC P 44-23
EMPR MAP 69-1
EMR MP CORPFILE (Mecca Minerals Ltd.)
GSC OF 351
EMPR GEOLOGY 1977-1981, p. 129
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16
Taylor, B., (1980): Report on the Copper 1-4 Mineral Claims, Jan.31, 1980 in Statement of Material Facts for Mecca Minerals, Jul.15, 1980
GCNL #60,#214, 1978

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 040**

NATIONAL MINERAL INVENTORY: 093L11 Cu4

NAME(S): **IDAHO**, MOHOCK, HUNTER BASIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 31 37 N
LONGITUDE: 127 09 59 W
ELEVATION: 1623 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southeast side of Cabinet Creek in Hunter Basin, approximately 20 kilometres south-southeast of Telkwa (see sketch map in Minister of Mines Annual Report 1925, page 140).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6043699
EASTING: 618663

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Bornite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: D03 Volcanic redbed Cu L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: STRIKE/DIP: 055/80S TREND/PLUNGE:
COMMENTS: Mineralized quartz vein on the Idaho claim.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Amygdaloidal Andesite
Andesite
Rhyolite
Tuff
Andesitic Breccia
Quartz Feldspar Porphyry
Felsite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1914
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	706.3000	Grams per tonne
Gold	2.7000	Grams per tonne
Copper	5.4000	Per cent

COMMENTS: 1.0 metre sample.
REFERENCE: Minister of Mines Annual Report 1914, page 219.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of andesitic to rhyolitic flows, tuffs and breccia with minor intercalated sediments. South of the claims a Late Cretaceous to Eocene quartz-feldspar porphyry stock intrudes the volcanics with associated felsite dikes.

The Idaho workings at elevation 1623 metres, consists of a 2.5 metre hole in amygdaloidal andesite which hosts minor bornite and chalcopyrite. To the south, a quartz vein up to 30 centimetres in width strikes 055 degrees and dips steeply southeast. Mineralization consists of bornite over 2.5 to 10 centimetres width on the hanging-wall.

The Mohock adjoins the Idaho farther up the hill. The Mohock showing is a breccia zone striking 095 degrees in highly chloritized,

CAPSULE GEOLOGY

green andesite. The reddish, brecciated dike rock hosts disseminated bornite and chalcopyrite across a width of 1.2 to 1.5 metres. In 1914, a sample taken across 1.0 metres assayed 2.7 grams per tonne gold, 706.3 grams per tonne silver and 5.4 per cent copper (Minister of Mines Annual Report 1914, page 219).

BIBLIOGRAPHY

EMPR AR 1904-102; 1905-84; 1908-64; 1909-85; 1911-112; *1914-219; *1925-140
EMPR MAP 69-1
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC SUM RPT 1906, p. 40; 1915, p. 64
GSC MAP 971A
GSC OF 351
GSC P 44-23

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 041**

NATIONAL MINERAL INVENTORY: 093L11 Cu4

NAME(S): **KING (HUNTER BASIN)**, JACKPOT, MEG, WEB, HUNTER BASIN, HB

STATUS: Past Producer Underground
MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L11E
UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 31 01 N
NORTHING: 6042574
LONGITUDE: 127 10 26 W
EASTING: 618206
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southeast side of Hunter Basin, at the head of Cabinet Creek, 21 kilometres south-southwest of Telkwa.

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Chalcocite Tetrahedrite Pyrite Pyrrhotite Galena Specularite Magnetite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION: STRIKE/DIP: 065/10S TREND/PLUNGE:
COMMENTS: Mineralized fissure vein infilling.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Argillite
Greywacke
Quartz Feldspar Porphyry
Felsite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1915
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	164.5000	Grams per tonne
Gold	1.0000	Grams per tonne
Copper	2.0000	Per cent

COMMENTS: 1.2 metre wide vein sample.
REFERENCE: Minister of Mines Annual Report 1914, page 220.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of andesitic to rhyolitic flows, tuffs and breccia with minor intercalated sediments. To the south, the volcanics are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry and associated satellitic felsite dikes. Mineralization occurs as disseminations and fissure vein fillings with the vein-type predominating. The mineralization includes bornite, chalcopyrite, chalcocite and tetrahedrite with minor amounts of pyrite, pyrrhotite, galena, specularite and magnetite.

On the King claim a silicified fracture zone 15 to 61 centimetres wide, striking 065 degrees and dipping very slightly to the southeast, is heavily mineralized with bornite, chalcopyrite, tetrahed-

CAPSULE GEOLOGY

rite, and specularite with minor magnetite in pockets or irregular lenses. In 1914, a whole vein sample, 1.2 metres in width, assayed 1.0 grams per tonne gold, 164.5 grams per tonne silver, and 2.0 per cent copper. Also a sample from the "West showing", the western end of the vein, comprised of bornite mixed with magnetite assayed 6.8 grams per tonne gold, 884.5 grams per tonne silver, and 29.0 per cent copper (Minister of Mines Annual Report 1914, page 220).

In 1914 to 1915 about 37 tonnes of ore was shipped from a 7.7 metre shaft on the King claim and from open cuts on the Rainbow claim (093L 044). In 1925 new crosscut adits and drifting continued on a new discovery on the King claim and ore was shipped in 1940-1941 until the mine closed in 1941.

In 1940, 41 tonnes of ore was mined and 6.3 tonnes were shipped and produced 240 grams of gold, 4183 grams of silver and copper. In 1941, 225 tonnes were mined and produced 7166 grams gold, 193,779 grams silver and copper combined production from the King and Rainbow (093L 044) claims for the period 1915 to 1941 totals 269 tonnes of sorted ore which produced 8160 grams gold, 283,366 grams silver and 42710 kilograms copper.

In 1962, Canadian Mining Co. Inc., shipped 24.5 tonnes of ore from Hunter Basin which produced 8160 grams gold, 283,366 grams silver and 1647 kilograms copper.

BIBLIOGRAPHY

EMPR AR 1904-102; 1905-83,126; 1906-98; 1908-64; 1909-85; *1911-111; *1914-219; *1925-139,140; 1939-99; *1940-74,84; 1941-72; 1962-A46; *1967-91
EMPR ASS RPT *1086, 19555
EMPR GEM 1969-86; 1970-160; 1971-176; 1972-418
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16; 1993-21; 1994-14
GSC SUM RPT 1906, p. 40; *1915, p. 64
EMPR MAP 69-1
EMR MP CORPFILE (Hunter Basin Mines Ltd.)
GSC MAP 971A
GSC OF 351
GSC P 44-23
EMPR PF (Maps)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 042** NATIONAL MINERAL INVENTORY: 093L11 Ag1

NAME(S): **HUNTER**, RIEGLE, HB, AJ, HUNTER BASIN, TRIBUNE, VIEW, PTARMIGAN

STATUS: Developed Prospect Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L11E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 31 35 N NORTHING: 6043603
LONGITUDE: 127 11 13 W EASTING: 617334
ELEVATION: 1490 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Cabinet Creek on the northwest side of Hunter Basin, approximately 19 kilometres south-southwest of Telkwa (see sketch map in Minister of Mines Annual Report 1925, page 140).

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Chalcocite Specularite Tetrahedrite Pyrite Pyrrhotite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: D03 Volcanic redbed Cu L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: STRIKE/DIP: 090/25N TREND/PLUNGE:
COMMENTS: Disseminated mineralization occurs along one thin bed of volcanic rock.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Argillite
Greywacke
Quartz Feldspar Porphyry
Felsite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1914
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Silver	2523.4000	Grams per tonne
Gold	0.6900	Grams per tonne
Copper	1.2000	Per cent

COMMENTS: Sample from 23 tonnes of ore.
REFERENCE: Minister of Mines Annual Report 1914, page 221.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of red, purple, grey to green andesitic to rhyolitic flows, tuffs and breccia with minor intercalated sediments. The volcanics are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry intrusion and associated satellitic felsite dikes.

Mineralization occurs as disseminations and fissure vein fillings with the vein-type predominating. Mineralization includes bornite, chalcopyrite, chalcocite, and tetrahedrite with minor amounts of pyrite, pyrrhotite, galena, and specularite.

Disseminated mineralization occurs along one thin bed of volcanic

CAPSULE GEOLOGY

rock on the Hunter claim which strikes east-west and dips 25 degrees north. The bed is traceable for 91 metres and host bornite and specularite over widths of 15 to 91 centimetres, with local, high grade mineralization over widths of 20 to 30 centimetres.

In 1914 several open cuts and a 4.8 metre adit exposed localized high grade mineralized lenses. A sample taken from a dump of about 23 tonnes of ore assayed 0.69 grams per tonne gold, 2523.4 grams per tonne silver and 1.2 per cent copper (Minister of Mines Annual Report 1914, page 221).

The Tribune claim adjoins the Hunter claim on the south side and hosts a mineralized quartz vein which was exposed within a 35 metre crosscut tunnel (refer to Tribune - 093L 255) located north of the Hunter workings and northeast of the Colorado workings (093L 043).

BIBLIOGRAPHY

EMPR AR 1903-53; 1904-102; 1911-112,Map after p.100; *1914-221;
1915-444; 1916-91; *1925-139,*140; 1929-171; 1939-99; 1967-91
EMPR GEM 1969-86; *1970-160; *1971-176; *1972-418
EMPR ASS RPT *1086
GSC SUM RPT 1906, p. 40; *1915, p. 65
GSC MAP 971A
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16
GSC OF 351
EMR MP CORPFILE (Hunter Basin Mines Ltd.)
GSC P 44-23
EMPR PF (Jones, H.M., (1967): Geological Report on the Al-4 Claim,
Hunter Basin Area, B.C., Feb. 4, 1986; miscellaneous maps)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 043** NATIONAL MINERAL INVENTORY: 093L11 Ag2

NAME(S): **COLORADO**, HUNTER BASIN, SILVER HILL

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L11E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 31 46 N NORTHING: 6043931
LONGITUDE: 127 11 37 W EASTING: 616894
ELEVATION: 1737 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Hunter Basin, at the head of Cabinet Creek, 21 kilometres south-southwest of Telkwa; location of Colorado tunnel from Assessment Report 10918.

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Tetrahedrite Bornite Chalcopyrite
ASSOCIATED: Quartz Calcite Clay
ALTERATION: Malachite Chlorite Zeolite Clay
ALTERATION TYPE: Argillic Silicific'n Zeolitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION: STRIKE/DIP: 022/75N TREND/PLUNGE:
COMMENTS: Mineralized fissure vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Argillite
Greywacke
Quartz Feldspar Porphyry
Felsite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1914
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Silver	2372.5000	Grams per tonne
Gold	0.6900	Grams per tonne
Copper	6.5000	Per cent

COMMENTS: Sample of unsorted ore from dump material.
REFERENCE: Minister of Mines Annual Report 1914, page 221.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of red, purple, green to grey rhyolitic to andesitic flows, tuffs and breccia with minor intercalated sediment. Approximately 1.6 kilometres south, the volcanics are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry stock and locally by satellitic felsite dikes.

A calcite and quartz filled fissure vein from 30 to 61 centimetres wide strikes 022 degrees and dips 75 degrees northwest. The vein lies on a fault contact with a fine-grained, silicified grey volcanic which forms the hangingwall and a coarse-grained grey tuff which hosts tetrahedrite on the footwall. The quartz vein is separated from the host rock by a 1 centimetre thick clay zone. The

CAPSULE GEOLOGY

quartz vein is 30 to 60 centimetres wide and hosts chalcopyrite, tetrahedrite, and electrum with malachite staining near the tetrahedrite and quartz. Pale yellow electrum forms small wire-like crusts near the tetrahedrite veins. In this vicinity there is a heavy, grey to white clay on the hangingwall of the vein estimated at 20 centimetres width.

Northeast and on strike from the tunnel, fractures resulting from strong fracturing in the volcanics host abundant calcite, quartz, clay, zeolites, and chlorite. Several occurrences of malachite appear along fracture zones between the Colorado Tunnel and the Tribune (093L 255) Shaft.

The Colorado workings consisted of 2 drift adits both about 46 metres long with a 15 metre connecting raise. In 1914 a sample from the dump of unsorted ore assayed 0.69 grams per tonne gold, 2372.5 grams per tonne silver and 6.5 per cent copper (Minister of Mines Annual Report 1914, page 221).

In 1914, about 38 tonnes of ore was shipped from this property. From this ore 155,515 grams of silver and 2722 kilograms of copper were recovered.

BIBLIOGRAPHY

EMPR AR 1909-85; 1911-112,Map 100; *1914-173,220,509
EMPR GEM 1969-86; 1970-160
EMPR EXPL *1982-312; 1988-C171
EMPR ASS RPT *10918, 17448
EMPR MAP 69-1
EMPR OF MAP 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC SUM RPT *1915, p. 65
GSC MAP 278A; 971A
GSC P 44-23
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/08/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 044** NATIONAL MINERAL INVENTORY: 093L11 Cu4

NAME(S): **RAINBOW (HUNTER BASIN)**, HUNTER BASIN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L11E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 31 19 N NORTHING: 6043125
LONGITUDE: 127 10 36 W EASTING: 618012
ELEVATION: 1524 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southeast side of Hunter Basin, at the head of Cabinet Creek, 21 kilometres south-southwest of Telkwa. The claim adjoins the King (093L 041) which is to the south at a higher elevation.

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Bornite Chalcopyrite Chalcocite Specularite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Argillite
Greywacke
Quartz Feldspar Porphyry
Felsite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: SHAFT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1914
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Gold	2.0000	Grams per tonne
Copper	2.9000	Per cent

COMMENTS: 5.4 tonnes of ore from 3.0 metre shaft.
REFERENCE: Minister of Mines Annual Report 1914, page 219.

CAPSULE GEOLOGY

The Rainbow claim is underlain by Lower Jurassic Hazelton Group volcanics comprised of red, purple, green to grey andesitic to rhyolitic flows, tuffs and breccia with minor intercalated sediments. The volcanics are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry stock and associated felsite dikes.

A fracture zone with quartz infilling in a shattered, porphyritic volcanic rock hosts mineralization up to 6 metres in width. Mineralization consists of chalcopyrite, bornite, and specularite which occur as irregular lenses. Approximately 5.4 tonnes of ore taken from a 3 metre shaft along this vein in 1914, assayed 2.0 grams per tonne gold, 171.4 grams per tonne silver and 2.9 per cent copper (Minister of Mines Annual Report 1914, page 219).

Combined production from the King (093L 041) and Rainbow claims (listed under Hunter Basin) for the period 1915 to 1941 totalled 269 tonnes of sorted ore which produced 8160 grams gold, 283,366 grams silver and 42,710 kilograms copper.

BIBLIOGRAPHY

EMPR AR 1904-102; 1905-83,127; *1906-98; 1908-64; 1909-85; 1911-111;
*1914-219; *1925-140
GSC SUM RPT 1906, pp. 40,41; 1915, p. 64
EMPR MAP 69-1
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC MAP 971A
GSC P 44-23
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 045**

NATIONAL MINERAL INVENTORY: 093L6 Cu8

NAME(S): **FOG (FLY)**, S.L. 15, SUNSETS CREEK, WEBSTER 2

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 29 04 N
LONGITUDE: 127 10 28 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Claims are 35 kilometres due south of Smithers or approximately 10 kilometres east of Mooseskin Johnny Lake at the head of Sunsets Creek. Trench location within Zone 1 (Minister of Mines Annual Report 1967, page 98, figure 11).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6038957
EASTING: 618264

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite Pyrite Magnetite
ASSOCIATED: Quartz
ALTERATION: Sericite Garnet
COMMENTS: Calc-silicate and garnet in skarns along contact zone.
ALTERATION TYPE: Argillic Sericitic Potassic Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Skarn Igneous-contact
TYPE: L05 Porphyry Mo (Low F- type) L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Tuff
Breccia
Hornfels
Skarn
Andesite
Rhyolite
Quartz Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE: Hornfels

INVENTORY

ORE ZONE: 1
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0400	Per cent
Molybdenum	0.0250	Per cent

COMMENTS: West showing - quartz sericite zone.
REFERENCE: Assessment Report 8444.

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic to rhyolitic flows, tuff and breccia are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry stock. The intrusion is an epizonal body which produced a domal effect on the Hazelton rocks.

Locally, the volcanics are comprised of fragmental tuff with minor intercalated flows. The volcanics are moderately to intensely hornfelsed as the intrusive margin is approached. In some areas the volcanics are skarned producing calc-silicate minerals and garnet with or without disseminated chalcopyrite and magnetite. Disseminated pyrite in the volcanics increases towards the contact.

Hydrothermal alteration in the core area of the intrusive

CAPSULE GEOLOGY

produced argillic alteration due to the breakdown of feldspar. As well, widely spaced sub-parallel quartz veins, ranging between 2 to 5 centimetres in widths host pyrite, chalcopyrite, and molybdenite.

Two quartz-sericite zones, approximately 200 metres in diameter, host pyrite, molybdenite, and minor chalcopyrite along joints and fractures.

Potassic alteration occurs lower and vertically beneath the two quartz-sericite zones and is characterized by pink feldspar envelopes along fractures and in quartz veins.

Molybdenum mineralization is associated with the west and east (093L 046 - Fog) quartz-sericite zones as well as with the subparallel quartz veins. In 1980, a sample from the west Zone 1 (S.L. 15) showing assayed 0.025 per cent molybdenum and 0.04 per cent copper. Another sample from a shear assayed 0.003 per cent molybdenum and 0.11 per cent copper (Assessment Report 8444).

BIBLIOGRAPHY

EMPR AR 1905-128; 1914-222; *1967-97-100; *1968-128
EMPR GEM 1970-151
EMPR EXPL *1980-341,342; 1983-440
EMR MP CORPFILE (Whitesail Mines Ltd.)
EMPR MAP 69-1
GSC OF 351
EMPR ASS RPT *1605, *1922, *8444, 8624, 11903
EMPR P *1990-2

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 046**

NATIONAL MINERAL INVENTORY: 093L6 Cu8

NAME(S): **FOG**, S.L. 6, SUNSETS CREEK, WEBSTER 1

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 29 01 N
LONGITUDE: 127 09 15 W
ELEVATION: 1753 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Claims are 35 kilometres due south of Smithers or approximately 10 kilometres east of Mooseskin Johnny Lake at the head of Sunsets Creek. Trench location within Zone 2 (Minister of Mines Annual Report 1967, page 98, figure 11).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6038899
EASTING: 619580

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Sericite Garnet Magnetite
COMMENTS: Calc-silicate minerals occur in skarn.
ALTERATION TYPE: Argillic Sericitic Potassic Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Porphyry Skarn
TYPE: L05 Porphyry Mo (Low F- type) L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Quartz Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE: Hornfels

INVENTORY

ORE ZONE: 2
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0800	Per cent
Molybdenum	0.6450	Per cent

COMMENTS: Sample from east quartz sericite zone.
REFERENCE: Assessment Report 8444.

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic to rhyolitic flows, tuff and breccia are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry stock. The intrusion is an epizonal body which produced a domal effect on the Hazelton rocks.

Locally, the volcanics are comprised of fragmental tuff with minor intercalated flows. The volcanics are moderately to intensely hornfelsed as the intrusive margin is approached. In some areas (093L 045 - Fog/Fly) the volcanics are skarned producing calc-silicate minerals and garnet with or without disseminated chalcopyrite and magnetite. Disseminated pyrite in the volcanics increases towards the contact.

Hydrothermal alteration in the core area of the intrusive produced argillic alteration due to the breakdown of feldspar.

CAPSULE GEOLOGY

As well, widely spaced sub-parallel quartz veins, ranging between 2 to 5 centimetres in width host pyrite, chalcopyrite and molybdenite.

Molybdenum mineralization is associated with two quartz-sericite alteration zones. The east zone (S.L. 6) is in excess of 200 metres in diameter and hosts pyrite, molybdenite, and minor chalcopyrite along joints and fractures.

Potassic alteration occurs vertically beneath the two quartz-sericite zones and is characterized by pink feldspar envelopes along fractures and in quartz veins.

In 1980, samples from the eastern quartz-sericite zone (Zone 2) assayed 0.645 per cent molybdenum, 0.08 per cent copper and 0.252 per cent molybdenum, 0.01 per cent copper, respectively. The latter is a 0.5 metre channel sample (Assessment Report 8444).

BIBLIOGRAPHY

EMPR AR 1905-128; 1914-222; *1967-97-100; 1968-128
EMPR GEM 1970-151
EMPR EXPL *1980-341,342; 1983-440; 1988-C169
EMR MP CORPFILE (Whitesail Mines Ltd.)
EMPR MAP 69-1
GSC OF 351
EMPR ASS RPT *1605, *1922, *8444, 8624, 11903, 17977

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/11 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 047**

NATIONAL MINERAL INVENTORY: 093L6 Cu9

NAME(S): **DENY NORTH**, DOMINION, DOM, NORTH, FRIENDLY TRENCH

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 28 00 N
LONGITUDE: 127 08 56 W
ELEVATION: 1920 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the headwaters of Denys Creek, 33 kilometres west of Houston or 25 kilometres southwest of Telkwa.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6037023
EASTING: 619972

COMMODITIES: Silver, Lead, Zinc, Copper, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Sphalerite, Galena, Bornite, Magnetite
ASSOCIATED: Quartz
ALTERATION: Malachite, Azurite, Epidote, Limonite
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite Tuff, Dacite, Basalt, Tuff, Breccia, Granodiorite, Porphyritic Dike, Diorite Sill

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	70.2000	Grams per tonne
Gold	2.2100	Grams per tonne

COMMENTS: Average of 30 samples of vein material.
REFERENCE: Assessment Report 10011.

CAPSULE GEOLOGY

The Dominion area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised mainly of andesitic to dacitic flows, tuff and breccia and epidotized vesicular basalt. The volcanics are intruded by a Late Cretaceous to Tertiary granodiorite stock with associated quartz monzonite and porphyry dikes. In the central portion of the property there is a dark brown, strongly magnetic diorite sill which discordantly cuts the strata.

The North showing (Friendly Trench), at 1920 metres elevation consists of a quartz vein fissure filling in brittle, and dense andesitic tuff which is magnetite rich. The vein is 1.0 metre wide and dips gently west. Limonite boxworks surround the vein system. Mineralization consists of chalcopyrite, pyrite, sphalerite, galena, bornite, malachite, and azurite.

CAPSULE GEOLOGY

In 1980, 30 samples of vein materials averaged 70.2 grams per tonne silver and 2.21 grams per tonne gold (Assessment Report 10011). In 1985 2 chip samples assayed 1.6 per cent copper, 13 per cent zinc, 7.2 per cent lead, 117.0 grams per tonne silver, 3.0 grams per tonne gold and 3.3 per cent copper, 21 per cent zinc, 0.4 per cent lead, 156.0 grams per tonne silver and 0.3 grams per tonne gold, respectively (Assessment Report 13191).

BIBLIOGRAPHY

EMPR AR 1906-99; 1908-64; 1909-85; 1968-128
EMPR GEM *1969-87-91; 1972-383; 1973-341
EMPR EXPL *1981-180; *1984-326; 1988-C169
EMPR ASS RPT *4813, *10011, *13191, 17977
GSC SUM RPT 1906, p. 41
GSC P 44-23
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR PF (Location maps of mineralized outcrops)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 048**

NATIONAL MINERAL INVENTORY: 093L6 Cu13

NAME(S): **B**, ERIN, ERIN 2-4

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 22 49 N
LONGITUDE: 127 06 40 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Houston-Tommy Creek, 32 kilometres west northwest of Houston, location of mineralized trenches around Haven Lake (Assessment Report 17994, figure 3).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6027477
EASTING: 622677

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Chalcocite, Tetrahedrite, Malachite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Epidote, Malachite, Azurite, Carbonate, Rhodochrosite
ALTERATION TYPE: Oxidation, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia, Stockwork, Vein
CLASSIFICATION: Porphyry, Epigenetic, Hydrothermal
TYPE: D03 Volcanic redbed Cu; L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Andesitic Tuff
Rhyolite
Dacite
Tuff
Quartz Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE: Hornfels

CAPSULE GEOLOGY

The property is predominantly underlain by Lower Jurassic Hazelton Group rocks of the Telkwa Formation. These rocks are comprised mainly of maroon and lesser green andesitic tuffs with minor associated dacite and rhyolitic volcanics. The felsic volcanics are fine-grained to aphanitic and are buff to pale green in colour. Locally, glassy maroon and grey crystal tuffs are present. Bedding strikes south and dips 25 to 45 degrees southwest.

A quartz feldspar porphyry intrusive, probably related to the Late Cretaceous Bulkley Intrusions, was mapped in the southeast part of the property. The contact strikes 088 degrees and dips about 74 degrees north.

Alteration consists of patchy epidote in andesite, with or without irregular quartz and carbonate veinlets. In the area of the old trenches, dug between 1965 and 1969 on the 'B' group claims, rhodochrosite is widespread and may be related to the mineralization (refer to Erin - 093L 298).

Mineralization occurs in the central property area exposed in bulldozer trenches. Bornite, chalcopyrite, tetrahedrite, chalcocite, malachite and azurite occur as massive to locally disseminated patches in andesite and locally in quartz veins and stringers. Assays from trenches with mineralization reported high copper and silver with local gold values.

In 1988, a sample of massive copper mineralization assayed 15.60 per cent copper and 268.45 grams per tonne silver. A sample taken from a quartz vein in a trench with about 10 per cent chalcopyrite and 20 per cent bornite assayed 5.50 per cent copper, 1698.9 grams per tonne silver and 0.48 grams per tonne gold (Assessment Report 17994).

BIBLIOGRAPHY

EMPR AR 1965-80; 1966-103
EMPR ASS RPT 1189; *17994, 19360
EMPR MAP 69-1
EMPR OF 1990-5; 1994-14
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **DENY SOUTH**, DOMINION, DOM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 27 00 N
LONGITUDE: 127 09 06 W
ELEVATION: 1675 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the headwaters of Denys Creek, south of (093L 047), and 25 kilometres southwest of Telkwa.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6035164
EASTING: 619840

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Bornite Specularite Magnetite
ASSOCIATED: Calcite
ALTERATION: Malachite Azurite Epidote Chlorite
ALTERATION TYPE: Epidote Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: D03 Volcanic redbed Cu L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: STRIKE/DIP: 270/80N TREND/PLUNGE:
COMMENTS: Predominant direction of mineralized fractures.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite Flow
Basalt Flow
Rhyolite
Tuff
Breccia
Granodiorite
Porphyry Dike
Diorite Sill

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1974
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	25.0000	Grams per tonne
Copper	2.7200	Per cent

COMMENTS: Five metre sample from drill core.
REFERENCE: Assessment Report 4813.

CAPSULE GEOLOGY

The Dominion area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised mainly of andesitic to dacitic flows, tuff and breccia with epidotized vesicular basalt. The volcanics are intruded by a Late Cretaceous to Tertiary granodiorite stock and associated porphyry dikes. Due west northwest of the andesite containing the south showing is a dark brown, strongly magnetic diorite sill which discordantly cuts the strata.

The South showing (located south of 093L 047 - Deny North) occurs in an andesitic to basaltic flow which exhibits well defined epidote alteration. Mineralization occurs as disseminations and in seams and fractures which crosscut the volcanic host rock. Fractures predominantly strike northwest and dip steeply northeast. Mineralization consists of mainly chalcopyrite, chalcocite, bornite, and is also rich in specularite. Moderate chlorite alteration with

CAPSULE GEOLOGY

some calcite stringers also occurs in the volcanics as well as spectacular malachite and azurite staining along fractures.
In 1974, a 5 metre core sample assayed 2.72 per cent copper and 25 grams per tonne silver (Assessment Report 4813).

BIBLIOGRAPHY

EMPR AR 1906-99; 1908-64; 1909-85; 1968-128
EMPR GEM *1969-87-91; 1972-383; 1973-341
EMPR EXPL *1981-180; *1984-326
EMPR ASS RPT *4813, *10011, *13191
GSC SUM RPT 1906, p. 41
GSC P 44-23
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR PF (Cooke, D.L.,(1974): Petrographic Report on Five Thin Sections, Dominion Basin, Telkwa, British Columbia for Maharaja Minerals Inc., Feb.22, 1974)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 050**

NATIONAL MINERAL INVENTORY:

NAME(S): **DENY EAST**, DOMINION, DOM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 27 30 N
LONGITUDE: 127 08 36 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the headwaters of Denys Creek, south of (093L 047), and 25 kilometres southwest of Telkwa.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6036105
EASTING: 620356

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Malachite
ASSOCIATED: Quartz
ALTERATION: Limonite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION: STRIKE/DIP: 320/ TREND/PLUNGE:
COMMENTS: Mineralized vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Basaltic Andesite
Andesite
Rhyolite
Tuff
Breccia
Granodiorite
Porphyry Dike
Diorite Sill

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

The Dominion area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised mainly of andesitic to dacitic flows, tuff and breccia with epidotized vesicular basalt. The volcanics are intruded by a Late Cretaceous to Tertiary granodiorite stock with associated quartz porphyry dikes. Due west of the andesite hosting the South showing (093L 049 - Deny South) is a dark brown, strongly magnetic diorite sill which discordantly cuts the strata.

The East showing (located southeast of 093L 047 - Deny North) consists of a 15 centimetre wide vein which strikes 320 degrees and is traceable for 71 metres. The mineralized vein is surrounded by limonitic boxworks and is contained within a contact zone between pink basaltic andesite and grey andesite. The contact zone is approximately 20 metres wide and is highly fractured. A host of quartz veins and veinlets containing chalcopyrite and malachite crosscut and infill the fractured zone.

BIBLIOGRAPHY

EMPR AR 1906-99; 1908-64; 1909-85; 1968-128
EMPR GEM *1969-87-91, 1972-383, 1973-341
EMPR EXPL 1981-180, *1984-326
EMPR ASS RPT 4813, *10011, *13191
GSC SUM RPT 1906, p. 41
GSC P 44-23
EMPR MAP 69-1
GSC OF 351

BIBLIOGRAPHY

GSC BULL 270

DATE CODED: 1985/07/24
DATE REVISED: 1988/07/07

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 051**

NATIONAL MINERAL INVENTORY:

NAME(S): **NUMBER 51**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 21 48 N
LONGITUDE: 127 03 48 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Map 69-1, #51.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6025676
EASTING: 625832

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Porphyritic Granodiorite
Quartz Diorite
Volcanic

HOSTROCK COMMENTS: Unspecified rock type, quartz monzonite and quartz diorite intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

CAPSULE GEOLOGY

Molybdenum mineralization is reported to occur in a Cretaceous-Tertiary porphyry stock intruding Lower Jurassic volcanics of the Hazelton Group.

BIBLIOGRAPHY

EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24
CODED BY: GSB
FIELD CHECK: N
DATE REVISED: 1987/03/26
REVISED BY: LLD
FIELD CHECK: N

MINFILE NUMBER: **093L 052**

NATIONAL MINERAL INVENTORY: 093L3 Cu1

NAME(S): **KING**, QUEEN, JACK, P.I., SQUEEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L03W
BC MAP:
LATITUDE: 54 00 51 N
LONGITUDE: 127 20 14 W
ELEVATION: 1290 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 6.9 kilometres south of McBride Lake on the north slope of Tableland Mountain.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5986377
EASTING: 608953

COMMODITIES: Molybdenum Copper

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite Arsenopyrite Pyrrhotite Pyrite
ALTERATION: Chalcedony Limonite
ALTERATION TYPE: Silicific'n Potassic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Breccia Disseminated
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type) L04 Porphyry Cu ± Mo ± Au
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 3000 x 2000 Metres STRIKE/DIP: 345/43N TREND/PLUNGE:
COMMENTS: General shearing orientation, stockwork orientation.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Plagioclase Biotite Porphyry Monzonite

HOSTROCK COMMENTS: Quartz diorite stock.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Pre-mineralization GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.1500	Per cent

COMMENTS: Assay from Energy, Mines and Petroleum Resources Laboratory.
REFERENCE: Open File 1991-1.

CAPSULE GEOLOGY

A previously undated, unmapped plagioclase-biotite porphyry intrudes sediments of the Lower Cretaceous Skeena Group. The intrusion could possibly be related to the Eocene Nanika intrusions. The sedimentary package consists predominantly of greywacke, shale, conglomerate with minor coal.

The silicified quartz diorite to quartz monzonite hosts disseminated and fracture filling molybdenite, chalcopyrite, pyrite as pyritehedrons and arsenopyrite. A breccia zone is reported to host arsenopyrite, pyrite, and pyrrhotite. Both the medium-grained monzonite matrix and dark, angular fragments contain minor disseminated sulphides.

A grab sample taken in 1990 assayed 0.015 per cent copper, 0.0118 per cent nickel, and 0.0811 per cent arsenic (Open File 1991-1).

BIBLIOGRAPHY

EMPR ASS RPT *1809
EMPR GEM 1969-151

BIBLIOGRAPHY

EMPR AR 1968-140
EMPR MAP 69-1
GSC OF 351
GSC BULL *270
EMPR FIELDWORK *1990 (Desjardins, et al)
EMPR OF *1991-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/10 REVISED BY: RLA FIELD CHECK: Y

MINFILE NUMBER: **093L 053**

NATIONAL MINERAL INVENTORY: 093L3 Mo1

NAME(S): **LUCKY SHIP**, SAM, RAM, ROAD

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L03W
BC MAP:
LATITUDE: 54 01 37 N
LONGITUDE: 127 29 18 W
ELEVATION: 1260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Most pronounced zone of mineralization noted during field evaluation.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5987577
EASTING: 599022

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Quartz Carbonate
ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Breccia
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type) I05 Polymetallic veins Ag-Pb-Zn±Au
COMMENTS: General north to northeast structural trend.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Rhyolite Porphyry
Breccia
Quartz Monzonite Porphyry
Lapilli Tuff
Crystal Lithic Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Hornfels

INVENTORY

ORE ZONE: LUCKY SHIP
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1983
QUANTITY: 18142000 Tonnes

COMMODITY	GRADE	
Molybdenum	0.0950	Per cent

COMMENTS: Geological reserves mineable by open pit. Grade given was 0.16 per cent MoS2; conversion to Mo using the factor 1.6681.
REFERENCE: VSE Listing Statement 2956, Canamax Resources Inc., July 1983.

CAPSULE GEOLOGY

The Lucky Ship stock cuts and has extensively silicified airfall lapilli and crystal-lithic tuffs of the siliceous pyroclastic facies of the Lower-Middle Jurassic Telkwa Formation (Hazelton Group). The stock, like most other Eocene Nanika Intrusions, is a multiphase body and has two porphyry and two breccia phases. The majority of the plug is a white aphanitic rock with sparse quartz and feldspar phenocrysts which have been variably silicified and kaolinized. The other porphyry phase is unaltered, light grey and has abundant (greater than 25 per cent) phenocrysts. The breccias are comprised mostly of fragments from the first porphyry but can be distinguished.

The Lucky Ship occurrence is marked by an extensive gossanous zone resulting from carbonatization and oxidation of pyrite and chalcopyrite. Sulphides may comprise from 2 to 10 per cent of some samples, but appear to be preferentially concentrated in the more mafic phases of the rhyolite breccia. Molybdenite mineralization predominates and is associated with the initial porphyry but has been overprinted by a later unmineralized rhyolite porphyry phase.

CAPSULE GEOLOGY

Sulphides are concentrated in an annular zone of intense silicification and quartz veining around the late-stage quartz monzonite porphyry plug. Distal hornfelsed Telkwa rocks may have 2 to 3 per cent pyrite.

Geological reserves mineable by open pit are 18,142,000 tonnes grading 0.095 per cent molybdenum (Vancouver Stock Exchange Listing Statement 2956, Canamax Resources Inc., July 1983). Grade given was 0.16 per cent MoS2; conversion to Mo using the factor 1.6681.

BIBLIOGRAPHY

EMPR AR 1957-12; 1963-28; 1964-53; *1965-84-87; 1966-104; 1967-109; 1968-139
EMPR BULL *64, p. 126
EMPR MAP 58; 65 (1989); 69-1
EMPR ASS RPT 21645
EMPR PF (Geological Map (1966) 1:2400 scale; various maps)
EMR MP CORPFILE (Wharf Resources Ltd; Southwest Potash Corporation; Amax Exploration Inc.)
EMR MIN BULL MR 198, p. 237; 223 B.C. 228
GSC OF 351
GSC P 68-56
GSC MAP 971A
GSC BULL 270
GCNL #210,#224, 1965
EMPR OF 1991-1; 1992-1; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/23 REVISED BY: RLA FIELD CHECK: Y

MINFILE NUMBER: **093L 054**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHLORE**, HOPE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04W
BC MAP:
LATITUDE: 54 07 19 N
LONGITUDE: 127 51 56 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of Chlore claim block.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5997684
EASTING: 574143

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrrhotite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Eocene			Unnamed/Unknown Informal

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The area is mainly underlain by the Jurassic Hazelton Group volcanics which has been intruded by plutonic rocks. The occurrence is associated with an Eocene granodiorite intrusion.

Mineralization consists of pyrite, chalcopyrite, molybdenite and minor pyrrhotite. Pyrite, chalcopyrite and pyrrhotite generally occur as disseminations although locally, they are found along fractures and quartz veinlets. Molybdenite generally occurs in quartz veinlets and only rarely as disseminations.

BIBLIOGRAPHY

EMPR ASS RPT *5466
EMPR GEM 1974-257
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 055**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAL**, FOG

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04W
BC MAP:
LATITUDE: 54 09 07 N
LONGITUDE: 127 53 36 W
ELEVATION: 1860 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of Sal claim group.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6000993
EASTING: 572276

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Pyrite
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stockwork
CLASSIFICATION: Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Jurassic			Topley Intrusions

LITHOLOGY: Volcanic Breccia
Andesite
Breccia
Tuff
Monzonite
Aplite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: FLOAT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1929
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	20.6000	Grams per tonne
Gold	0.1700	Grams per tonne
Copper	1.6000	Per cent

COMMENTS: Mineralized float from gossanous area.
REFERENCE: Minister of Mines Annual Report 1929, page 178.

CAPSULE GEOLOGY

The area is underlain by the Jurassic Hazelton Group volcanics which have been intruded by monzonitic stocks and plugs that are likely part of the Jurassic age Topley Intrusions. Extensive aplitic dike swarms intrude these rocks. Minor pyrite, chalcopyrite, and chalcocite mineralization occurs in heavily epidotized sections of the Hazelton Group consisting mainly of breccias, flows, and tuffs of andesitic composition. Gossanous zones occur with the copper sulphides in the volcanic rocks.

Mineralized float from this area was sampled by D. Lay in 1929 and assayed 0.17 grams per tonne gold, 20.6 grams per tonne silver, and 1.6 per cent copper (Minister of Mines Annual Report 1929, page 178).

BIBLIOGRAPHY

EMPR ASS RPT 3875
EMPR GEM 1972-381
EMPR AR 1929-178
EMPR MAP 69-1
GSC OF 351

BIBLIOGRAPHY

GSC BULL 270

DATE CODED: 1985/07/24
DATE REVISED: 1988/08/25

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 056**

NATIONAL MINERAL INVENTORY: 093L5 Ag1

NAME(S): **SNOWFLAKE**, KITMAN, KITWAN, TATSI

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05W
BC MAP:
LATITUDE: 54 19 51 N
LONGITUDE: 127 45 52 W
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: There is some confusion in the Minister of Mines Annual Report about where this showing is located. The 1918 reference states that it is "at the head of the Kitniakwa River" and the 1921 reference states that it is "12 miles up the Kitniakwa River on Gabriel Creek about 1/2 mile from the Kitniakwa River". The location quoted here is based on the 1921 description.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6021035
EASTING: 580345

COMMODITIES: Silver Copper

MINERALS
SIGNIFICANT: Arsenopyrite Silver Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION: STRIKE/DIP: 155/75W TREND/PLUNGE:
COMMENTS: Mineralized dioritic porphyry dike.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Dioritic Porphyry Dike
Andesite
Tuff
Breccia
Granodiorite
Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic flows, tuffs and breccias. The volcanics are intruded by a large Jurassic Topley Intrusion comprised of granodiorite and monzonite.

The showing consists of a dioritic porphyry dike which cross-cuts red andesite and ranges between 2 to 2.5 metres striking 155 degrees and dipping 75 to 80 degrees southwest. Mineralization along the hangingwall of the dike consists of quartz and carbonate infilling hosting arsenopyrite, chalcopyrite, and native silver. Reports indicate the silver content is good and the copper values are low.

The well defined footwall to the dike also hosts mineralized quartz-carbonate gangue along the contact with the andesite.

BIBLIOGRAPHY

EMPR AR 1918-53; 1921-94; 1926-124
EMPR MAP 69-1
GSC BULL 270
GSC OF 351
GSC P 44-23
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 057**

NATIONAL MINERAL INVENTORY: 093L5 Au1

NAME(S): **CASCADE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05W
BC MAP:
LATITUDE: 54 15 59 N
LONGITUDE: 127 56 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Property reported to be on the east side of Clore River, 29 kilometres above its junction with the Zymoetz River.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6013684
EASTING: 569363

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Unknown
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Tuff
Breccia
Granodiorite
Monzonite

HOSTROCK COMMENTS: Porphyry Intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic flows, tuffs and breccia. The Hazelton rocks are intruded by a Cretaceous to Tertiary porphyritic stock.

The showing consists of a flat lying quartz vein which hosts values of gold and silver.

BIBLIOGRAPHY

EMPR AR 1948-76
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 058**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALLIE**, LIMONITE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12W
BC MAP:
LATITUDE: 54 33 59 N
LONGITUDE: 127 49 06 W
ELEVATION: 1447 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located north of Limonite Creek in the Telkwa Pass area, 49 kilometres southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6047183
EASTING: 576401

COMMODITIES: Copper Silver Iron

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Magnetite Limonite
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Sericite Limonite
ALTERATION TYPE: Propylitic Sericitic Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Industrial Min.
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Granodiorite
Quartz Porphyry
Biotite Feldspar Porphyry
Andesite
Tuff
Breccia

HOSTROCK COMMENTS: Nanika Intrusive locally known as the Howson Batholith.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: ALLIE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1969
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	10.3000	Grams per tonne
Copper	0.1700	Per cent

COMMENTS: Average of four grab samples averaging 1.5 metre across.
REFERENCE: Assessment Report 2413.

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanics of the Telkwa Formation are comprised of green and purple andesitic flows, tuffs and breccia. The rocks are highly fractured with chloritic alteration and host disseminated pyrite. The volcanics are intruded by an Eocene Nanika Intrusion, locally known as the Howson batholith, comprised mainly of medium-grained granodiorite. Small stocks and dikes of biotite-feldspar porphyry and quartz porphyry intrude the volcanics along the eastern margin of the contact with the granodiorite.

The intrusive granodiorite hosts minor disseminated pyrite and chalcopyrite. The quartz porphyry dikes crosscut the granodiorite and volcanic flows. They are light colored and are intensely seri-citized and host minor disseminated magnetite. The biotite feldspar porphyry dikes crosscut both the granodiorite and the volcanics. They host secondary biotite and are propylitic with widespread chlorite and epidote.

A dioritic dike, 30 to 60 metres wide, trending north-south crosscuts the granodiorite and is very magnetic hosting disseminated

CAPSULE GEOLOGY

magnetite.
The chalcopyrite associated with the granodiorite occurs mainly in quartz stringers and along pyritic shears. Pyrite is widely disseminated throughout both the volcanics and the intrusive. In 1969, four grab samples averaging 1.5 metres across a gossanous zone averaged 0.17 to 0.03 per cent copper and trace to 10.3 grams per tonne silver (Assessment Report 2413).
Two large gossans are exposed on the claims. The Upper Gossan consists of 91 by 122 metres of limonite and the Lower Gossan, on Many Bear Creek, consists of a 61 metre wide limonitic zone.

BIBLIOGRAPHY

EMPR GEM *1969-79; 1970-161
EMPR ASS RPT *2413
EMPR MAP 69-1
GSC BULL 270
GSC MAP 971A
GSC OF 351
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/04 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 059**

NATIONAL MINERAL INVENTORY:

NAME(S): **JOHN**, LORI, SWAN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L08W
BC MAP:
LATITUDE: 54 26 00 N
LONGITUDE: 126 25 06 W
ELEVATION: 1067 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 16 kilometres east-northeast of Houston, east of the Apex claim showing (093L 245 to 247).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6034806
EASTING: 667446

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Magnetite Carbonate
ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Tertiary			Bulkley Intrusions

LITHOLOGY: Vesicular Basalt
Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The claims are reportedly underlain by Eocene Francois Lake Group, Buck Creek Formation basalts which are thought to be part of the Swan Lake phase. Recent mapping indicates that these amygdaloidal basalts and vesicular basalts with interbedded andesitic to rhyolitic flows are correlative with the Jurassic Hazelton Group (Bulletin 78, Figure 1).

The volcanics are intruded by a Tertiary Bulkley Intrusion comprised of gabbro which is strongly magnetic and hosts disseminated pyrite. Associated quartz and quartz-carbonate veins crosscut the volcanics.

The showing consists of mineralized infilling in a fault in the basalt. Vein materials are minor chalcopyrite, pyrite and quartz.

BIBLIOGRAPHY

EMPR GEM *1973-342
EMPR EXPL 1980-342
EMPR ASS RPT *4762, 8870
EMPR MAP *11; 69-1
EMPR BULL 64; *78 (in press)
GSC BULL 270
GSC OF 351

DATE CODED: 1989/04/11
DATE REVISED: 1989/08/24
CODED BY: LLD
REVISED BY: LLD
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 060**
NATIONAL MINERAL INVENTORY: 093L5 Cu3

NAME(S): **BL**, BURNIE LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05E
BC MAP:
LATITUDE: 54 24 29 N
LONGITUDE: 127 36 30 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On East side of Burns Lake, 51 kilometres southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6029816
EASTING: 590326

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu
L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

CAPSULE GEOLOGY

The showing occurs in andesitic volcanic rocks of the Lower Jurassic Hazelton Group, just east of the contact with a tongue of Jurassic to Cretaceous granodiorite. Minor amounts of copper coats fracture faces in the volcanics.

BIBLIOGRAPHY

EMPR AR 1968-127
EMPR ASS RPT *1646, 17975
EMPR MAP 69-1
GSC P 44-23
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24
CODED BY: GSB
FIELD CHECK: N
DATE REVISED: 1987/03/09
REVISED BY: LLD
FIELD CHECK: N

MINFILE NUMBER: **093L 061**

NATIONAL MINERAL INVENTORY: 093L6 Cu5

NAME(S): **PRINCESS**, CACHE, SQ

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 26 43 N
LONGITUDE: 127 26 55 W
ELEVATION: 1676 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the summit at the head of Howson Creek, 42 kilometres south-southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6034173
EASTING: 600601

COMMODITIES: Zinc Copper Silver

MINERALS
SIGNIFICANT: Sphalerite Chalcopyrite Hematite
ASSOCIATED: Quartz Calcite
ALTERATION: Hematite
ALTERATION TYPE: Epidote Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Jurassic-Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Pyroclastic
Porphyry
Acid Dike
Basic Dike

HOSTROCK COMMENTS: Hazelton volcanics are intruded by both Bulkley and Topley Intrusives.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

The area is underlain by Jurassic Hazelton Group volcanics that have been intruded by Late Cretaceous Bulkley and Jurassic Topley Intrusions. In the vicinity of the occurrence, the rocks are mainly andesitic flows and pyroclastic strata of the Hazelton Group which have been cut by numerous basic and acid dikes. The volcanics are generally strongly chlorite and epidote altered.

The Princess showing occurs in highly sheared and epidotized fine-grained, greenish volcanics. Mineralization consists of several narrow shears and veinlets of hematite, iron-rich sphalerite and chalcopyrite in a gangue of white calcite and quartz.

BIBLIOGRAPHY

EMPR AR 1909-275; 1966-92; 1967-91-97,Fig. 9; 1968-127
EMPR ASS RPT 919, 929
EMPR PF (*Hunter, S.J. (1966): Howson Basin Property, Telkwa River Area; Norcan Mines Ltd. Prospectus)
*Hunter, S.J. (1967): Howson Basin Property; Telkwa River Area)
EMPR MAP 69-1
GSC BULL 270
GSC P 44-23
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/11/28 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 062**

NATIONAL MINERAL INVENTORY: 093L6 Cu2

NAME(S): **WAR EAGLE**, ANNA EVA

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 27 26 N
LONGITUDE: 127 24 31 W
ELEVATION: 1631 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southeast side of Howson Creek Basin, 39 kilometres south-southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6035560
EASTING: 603164

COMMODITIES: Copper, Silver, Zinc

MINERALS
SIGNIFICANT: Chalcopyrite, Bornite, Sphalerite, Hematite, Pyrite
ASSOCIATED: Calcite
ALTERATION: Limonite, Epidote
ALTERATION TYPE: Oxidation, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Breccia, Disseminated
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), D03 Volcanic redbed Cu
DIMENSION:
STRIKE/DIP: 305/
TREND/PLUNGE:
COMMENTS: Mineralized gossan crosscut by post-mineral calcite veins.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Basalt
Tuff
Volcanic Breccia
Porphyritic Granodiorite
Quartz Feldspar Porphyry
Felsite
Aplite

HOSTROCK COMMENTS: Porphyry Intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

CAPSULE GEOLOGY

The area is mainly underlain by Lower Jurassic Hazelton Group andesitic to basaltic flows, tuffs, and breccia. Late Cretaceous to Eocene granodiorite, granite, quartz-feldspar porphyry, aplite and felsite in the form of dikes, sills and small stocks intrude the Hazelton rocks. Several small occurrences of copper-silver mineralization are related mainly to fracturing and brecciation in the epidotized volcanics. Mineralization consists of pyrite, chalcopyrite, hematite, bornite, and locally, sphalerite. There are also minor patches of disseminated chalcopyrite.

A large gossanous area located about 800 metres southeast of the vein showings is associated with a felsitic stock. The gossan is a predominant shear striking 305 degrees and is marked by a 15 to 23 metre zone of iron oxide (limonite) and is mineralized with pyrite and minor chalcopyrite. Post-mineral coarse-grained calcite veins crosscut this zone.

BIBLIOGRAPHY

EMPR ASS RPT 917, 918, 919, 929, *3485, 20601
EMPR GEM 1972-382
EMPR AR 1906-99; 1909-85; 1911-113,288; 1966-92; 1967-91-97; 1968-127
EMPR PF (*Hunter, S.J., (1966): Howson Basin Property; Telkwa River Area; Norcan Mines Ltd. Prospectus; Miscellaneous maps - (various scales); *Hunter, S.J., (1967): Howson Basin Property, Telkwa

BIBLIOGRAPHY

River Area; Thompson, W.D., (1967): Report on Howson Creek Groups)
GSC P 44-23
GSC MAP 971A
GSC OF 351
GSC BULL 270
EMPR MAP 69-1
EMR MP CORPFILE (Accent Resources Ltd.; Pathfinder Resources Ltd.)
EMPR OF 1990-5; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 063**

NATIONAL MINERAL INVENTORY: 093L6 Cu1

NAME(S): **SANTA MARIA**, FOOTWALL, S.H.

STATUS: Past Producer — Underground
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 28 00 N
LONGITUDE: 127 22 15 W
ELEVATION: 1280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.2 kilometres west of Mooseskin Johnny Lake, 37 kilometres south-southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6036667
EASTING: 605589

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Bornite Tetrahedrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Azurite Epidote Calcite Zoisite Sericite Prehnite
ALTERATION TYPE: Silicific'n Propylitic Oxidation Zeolitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Breccia
CLASSIFICATION: Porphyry Igneous-contact
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Lapilli Tuff
Volcanic Breccia
Rhyolite
Quartz Porphyry
Felsite
Aplite

HOSTROCK COMMENTS: Porphyry Intrusion.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

West dipping Lower Jurassic Hazelton Group volcanics consisting mainly of lapilli tuff and volcanic breccia have been intruded by a Late Cretaceous to Eocene composite quartz porphyry/aplite/felsite sill or dike. The two main mineralized fracture structures occur at the east and west contact zones of this intrusion. These zones have been referred to as the Santa Maria or Footwall vein and the S.H. or Hanging Wall vein. The vein system strikes 330 degrees and dips moderately to steeply southwest. The Santa Maria vein has a strike length of over 518 metres. The vein systems have a surface width of 76 to 91 metres. The mineralization consists of chalcopyrite, chalcocite, bornite, tetrahedrite, malachite, azurite and pyrite. Other veins or mineralized fracture zones are also present. On a local scale the mineralization occurs within quartz veins and variably silicified, composite fracture-breccia zones. Strong propylitic alteration and minor silicification occur adjacent to the fracture zones. Alteration products consist of epidote, calcite, sericite, zoisite and prehnite.

BIBLIOGRAPHY

EMPR ASS RPT 917, 918, 919, 929, *3485, 20601
EMPR AR 1916-91,125; 1917-118,447; 1918-117; 1966-92; 1967-91-97; 1968-127
EMPR PF (*Hunter, S.J., (1966): Howson Basin Property; Telkwa River Area; Norcan Mines Ltd. Prospectus, Nov. 1966; Location and geology maps (various scales); *Hunter, S.J., (1967): Howson Basin Property; Telkwa River Area in 093L 062)
EMPR MAP 69-1

BIBLIOGRAPHY

GSC MAP 971A
GSC P 44-23
GSC BULL 270
GSC OF 351
EMR MP CORPFILE (Accent Resources Ltd.; Bethex Explorations Ltd.;
Pathfinder Resources Ltd.)
EMPR OF 1990-5; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 064**

NATIONAL MINERAL INVENTORY: 093L6 Cu4

NAME(S): **EVENING**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 28 00 N
LONGITUDE: 127 26 29 W
ELEVATION: 1280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north side of Howson Creek, 39 kilometres south-southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6036563
EASTING: 601016

COMMODITIES: Copper Lead

MINERALS
SIGNIFICANT: Chalcopyrite Hematite Pyrite Galena
ASSOCIATED: Quartz
ALTERATION: Epidote Chlorite
ALTERATION TYPE: Epidote Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite Tuff
Andesite
Diabase Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Mineralization consisting mainly of chalcopyrite, pyrite, galena and hematite is associated with narrow irregular shears in highly epidotized and chloritized fine-grained andesitic tuffs and/or flows of the Lower Jurassic Hazelton Group. In at least one case, the shear is adjacent to and within a diabase dike. The mineralized shears trend northeast to east and dip moderately north.

BIBLIOGRAPHY

EMPR ASS RPT 918, 919, 929, *21722
EMPR AR 1905-83; 1906-99; 1907-79; 1909-85; 1911-114,288; 1913-105; 1916-125; 1917-117; 1966-92; 1967-95,Fig. 9; 1968-127
EMPR PF (*Hunter, S.J. 1966: Howson Basin Property; Telkwa River Area, Norcan Mines Ltd. Prospectus; Miscellaneous maps; *Hunter, S.J. 1967: Howson Basin Property; Telkwa River Area)
GSC MAP 971A
GSC P 44-23
EMR MP CORPFILE (Accent Resources Ltd.; Bethex Explorations Ltd,; Pathfinder Resources Ltd.)
GSC SUM RPT 1906, p. 42
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR OF 1990-5; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1986/12/01 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 065**

NATIONAL MINERAL INVENTORY: 093L6 Cu7

NAME(S): **SILVER HEELS**, JOKER, WHISPERING WIND

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 28 45 N
LONGITUDE: 127 27 36 W
ELEVATION: 1768 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located in the basin of Evening Creek, a tributary of Howson Creek, approximately 37 kilometres southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6037928
EASTING: 599780

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite Specularite Pyrite
ASSOCIATED: Quartz
COMMENTS: Gangue consists of quartz and altered country rock.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1917
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	34.2900	Grams per tonne
Copper	3.0000	Per cent

COMMENTS: 3.6 metre sample.
REFERENCE: Minister of Mines Annual Report 1917, page 117.

CAPSULE GEOLOGY

A dike 15 to 18 metres wide with a north strike and an east dip of 75 to 80 degrees occurs in andesite of the Lower Jurassic Hazelton Group. In the andesites on the west side of the dike, about 4.6 metres of mineralization consisting of chalcopyrite, specularite, and pyrite in a gangue of quartz and altered country rock was exposed. A 1917 sample across 3.6 metres assayed 34.29 grams per tonne silver, 2 to 3 per cent copper, and trace gold (Minister of Mines Annual Report 1917, page 117). About 1.2 metres of chalcopyrite and specularite mineralization was reported from the east side of the dike.

BIBLIOGRAPHY

EMPR ASS RPT 919, 929
EMPR AR 1907-79; 1908-64; 1917-117; 1966-92; 1967-91,Fig.9; 1968-127
EMPR PF (*Hunter, S.J. 1966: Howson Basin Property; Telkwa River Area, Norcan Mines Ltd. Prospectus; *Hunter, S.J. 1967: Howson Basin Property; Telkwa River Area)
EMR MP CORPFILE (Accent Resources Ltd.; Pathfinder Resources Ltd.)
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 066** NATIONAL MINERAL INVENTORY: 093L6 Cu3

NAME(S): **DUCHESS (L.1820)**

STATUS: Prospect Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L06W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 28 04 N NORTHING: 6036668
LONGITUDE: 127 27 17 W EASTING: 600149
ELEVATION: 1433 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Howson Creek, 40 kilometres south-southwest of Smithers.

COMMODITIES: Copper Silver Gold Zinc Lead

MINERALS
SIGNIFICANT: Chalcopyrite Tetrahedrite Hematite Pyrite Sphalerite Galena
ASSOCIATED: Quartz
ALTERATION: Epidote Garnet Quartz
ALTERATION TYPE: Epidote Skarn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
L04 Porphyry Cu ± Mo ± Au
DIMENSION: Metres STRIKE/DIP: 170/80E TREND/PLUNGE:
COMMENTS: Mineralized shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Breccia
Basic Dike
Skarn

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine

CAPSULE GEOLOGY

A mineralized shear zone occurs in volcanics of the Lower Jurassic Hazelton Group. The zone has an attitude of 170 degrees and dips 80 degrees east with mineralized widths ranging up to about 3.7 metres. Mineralization consists of chalcopyrite, tetrahedrite, sphalerite, galena, hematite, and pyrite with quartz. The shear is near the contact between fine-grained epidotized andesite to the west and tuff to the east. The volcanics are cut by feldspar porphyry dikes that carry only minor amounts of sulphide. Pre-mineral and post-mineral faulting and shearing is common.

A major fault strikes 350 degrees and dips 70 degrees west approximately 150 metres west of the Duchess adits. The fault is exposed along the bottom of a steep gully, where it parallels a basic dike with narrow breccia zones. A zone of quartz-garnet-epidote skarn extends from the west side of the gully eastward to the workings and bulldozer trenches.

BIBLIOGRAPHY

EMPR ASS RPT 918, 919, 929, *21722
EMPR AR 1906-99; 1907-79; 1911-114; 1916-125; 1917-117; 1926-138; 1928-168; 1929-169; 1952-95; 1966-92; 1967-92,Fig.9; 1968-127
EMPR PF (*Hunter, S.J. 1966: Howson Basin Property; Telkwa River Area, Norcan Mines Ltd. Prospectus; Miscellaneous maps; *Hunter, S.J. 1967: Howson Basin Property; Telkwa River Area)
GSC SUM RPT 1906, p. 42; 1907, p. 21
GSC MAP 971A
GSC P 44-23
EMR MP CORPFILE (Accent Resources Ltd.; Bethex Explorations Ltd.;

BIBLIOGRAPHY

Pathfinder Resources Ltd.)
EMPR EXPL 1983-441
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR OF 1990-5; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 067**

NATIONAL MINERAL INVENTORY: 093L6 Cu3

NAME(S): **COUNTESS (L.1826)**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 28 19 N
LONGITUDE: 127 27 17 W
ELEVATION: 1676 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Crown Grant Lot 1826 adjoins the Duchess Lot 1820 (093L 066) at the head of Howson Creek, 40 kilometres south-southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6037132
EASTING: 600139

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The area is mainly underlain by volcanic rocks of the Lower Jurassic Hazelton Group. Figure 9 of the 1967 Annual Report shows a copper occurrence north of the Duchess showing (093L 066). It is possibly associated with the same shear zone that is the main host for the Duchess mineralization. In 1911, development work on the Duchess consisted of a 33 metre adit and open cuts on the Countess.

BIBLIOGRAPHY

EMPR AR 1907-79; 1911-114; 1967-94
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/12/02 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 068**

NATIONAL MINERAL INVENTORY: 093L6 Cu6

NAME(S): **TOM**, CONTENTION

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 29 00 N
LONGITUDE: 127 29 36 W
ELEVATION: 1372 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located at the head of Evening Creek, a tributary of Howson Creek, approximately 39 kilometres south of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6038344
EASTING: 597610

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Chalcocite Specularite Pyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Azurite Chlorite Epidote
ALTERATION TYPE: Epidote Chloritic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
COMMENTS: Approximate north-south strike with a 40-80 degree east dip.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Tuff
Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The area is underlain mainly by Lower Jurassic Hazelton Group epidotized and chloritized andesite which has been intruded by east dipping andesite dikes. Two zones of mineralization are present. The mineralization occurs in narrow, irregular fissures or in shear zones. Often the mineralization is in quartz veins where it occurs as irregular lenses and pockets. The veins mainly trend north-south with an east dip of 40 to 80 degrees. Mineralization consists of chalcopyrite, bornite, chalcocite, specularite, malachite, azurite, and pyrite.

BIBLIOGRAPHY

EMPR ASS RPT *4812
EMPR GEM 1972-382; 1973-340
EMPR AR 1909-275; 1910-246; 1928-168; 1967-94,Fig.9
GSC SUM RPT 1907, p. 21
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 069**

NATIONAL MINERAL INVENTORY: 093L5 Cu1

NAME(S): **STARR**, SR, PG, SC

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05E
BC MAP:
LATITUDE: 54 27 34 N
LONGITUDE: 127 30 24 W
ELEVATION: 1615 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6035668
EASTING: 596803

COMMODITIES: Copper, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Tetrahedrite, Magnetite, Sphalerite, Galena, Pyrite
ASSOCIATED: Calcite, Quartz, Chlorite
ALTERATION: Calcite, Quartz
ALTERATION TYPE: Quartz-Carb., Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Hydrothermal, Igneous-contact
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
L04 Porphyry Cu ± Mo ± Au
D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite, Dacite, Tuff, Volcanic Breccia, Granite, Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

CAPSULE GEOLOGY

The occurrence is situated at the contact between andesite, dacite, tuff and breccia of the Lower Jurassic Hazelton Group and Late Cretaceous to Eocene intrusive rocks. Rocks along the contact zone contain calcite, potassium feldspar and quartz as alteration products. Mineralization consisting of chalcopyrite, bornite, tetrahedrite, pyrite, magnetite, with minor sphalerite and galena occurs as disseminations in the granitic/dioritic intrusive and as fracture fillings in the contact zone.

BIBLIOGRAPHY

EMPR ASS RPT 1623, *2448, *2449, 3084
EMPR GEM 1969-91; 1970-150
EMPR AR 1906-100; 1916-125
GSC SUM RPT 1906, p. 42
GSC MAP 971A
GSC P 44-23
EMR MP CORPFILE (Telkwa Mountain Mines Ltd.)
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/12/02 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 070**

NATIONAL MINERAL INVENTORY:

NAME(S): **PG**, BL, SR

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05E
BC MAP:
LATITUDE: 54 27 07 N
LONGITUDE: 127 33 26 W
ELEVATION: 1043 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located in the Star Creek Basin, south of Eagle Peak, approximately 40 kilometres southwest of Telkwa.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6034765
EASTING: 593543

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Tuff
Breccia
Granodiorite
Quartz Monzonite

HOSTROCK COMMENTS: Late Cretaceous to Eocene granitic intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of green to purple andesitic flows, tuff and breccia. The volcanics are intruded by a Late Cretaceous to Eocene granodioritic stock.

Copper and silver mineralization occurs in fractures and as disseminations of pyrite and chalcopyrite in the Hazelton volcanics and granitic intrusive rocks.

BIBLIOGRAPHY

EMPR GEM 1969-91; 1970-150
EMPR ASS RPT 1623
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 071**

NATIONAL MINERAL INVENTORY: 093L11 Cu8

NAME(S): **COPPER RIDGE (L.3401)**, COPPER BASIN, COPPER HILL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11W
BC MAP:
LATITUDE: 54 31 30 N
LONGITUDE: 127 27 38 W
ELEVATION: 1645 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Lot 3401 is located at the head of a creek which flows north to the Telkwa River, 4.8 kilometres west of Howson Creek or 33.8 kilometres southwest of Smithers. The claim group consists of Crown Grants (Lots 1859-1863) and (Lots 3398-3404).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6043026
EASTING: 599632

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite Flow
Rhyolite Flow
Tuff
Volcanic Breccia
Quartz Feldspar Porphyry
Felsite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
Plutonic Rocks
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The Crown granted claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of red, maroon, green to grey andesitic to rhyolitic flows, tuffs and breccia. The volcanics are intruded by Late Cretaceous to Eocene granitic stocks comprised of quartz-feldspar porphyry, felsite dikes and associated quartz veining.

The mineralized showings on these Crown granted claims consist of chalcopyrite and malachite disseminated within Hazelton rocks.

BIBLIOGRAPHY

EMPR AR 1909-84,275; 1911-287
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16
GSC BULL 270
GSC OF 351
GSC P 44-23

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 072**

NATIONAL MINERAL INVENTORY: 093L5 Cu2

NAME(S): **TEL**, A, NORAD

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05E
BC MAP:
LATITUDE: 54 28 44 N
LONGITUDE: 127 40 15 W
ELEVATION: 1219 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Telkwa River, 47 kilometres southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6037618
EASTING: 586121

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Chalcocite Bornite Galena Covellite Pyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite
ALTERATION TYPE: Carbonate Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
COMMENTS: Numerous fault zones and dikes trend north to north-northwest.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Lithic Tuff
Andesitic Crystal Lithic Tuff
Dacitic Crystal Lithic Tuff
Quartz Feldspar Porphyry
Lamprophyre Dike

HOSTROCK COMMENTS: Mineralization associated with lamprophyric dikes.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: TRENCHES
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1982
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	8.2000	Grams per tonne
Copper	0.1600	Per cent

COMMENTS: Average from 14 widely spaced trenches.
REFERENCE: Assessment Reports 10444, 10892.

CAPSULE GEOLOGY

The area is underlain by volcanics and volcaniclastics of the Lower Jurassic Hazelton Group, Telkwa Formation. On the property, an andesitic to dacitic crystal-lithic tuff is predominant. In the southwest portion of the property a Jurassic Topley Intrusion of calc-alkaline composition is present. Quartz-feldspar porphyry dikes and later lamprophyric dikes are also present.

Minor copper mineralization is commonly associated with the lamprophyric dikes. Numerous fault zones as well as the dikes generally trend north to north-northwest. The main copper-silver mineralization is restricted to narrow, calcified and silicified shear and fault zones. Mineralization consists of chalcopyrite, chalcocite, bornite, malachite, covellite and pyrite in a quartz and calcite gangue. Sampling of 14 widely spaced trenches over 270 metres gave a weighted average of 0.16 per cent copper and 8.2 grams per tonne silver (Assessment Reports 10444, 10892).

BIBLIOGRAPHY

EMPR ASS RPT 1188, 4191, *10444, *10892
EMPR EXPL 1982-308
EMPR GEM 1972-382
EMPR AR 1965-76; 1966-91; 1967-100
EMPR MAP 69-1
EMR MP CORPFILE (Tyee Lake Resources Ltd.)
GSC P 44-23
GSC OF 351
GSC BULL 270
EMPR PF (Nevin, A.E., (1971): Telkwa River Copper Property (Tel 1-72 claims), Omineca Mining Division, B.C., for Tyee Lake Resources Ltd.; Campbell, D.D., (1972): Telkwa River Copper Property, Telkwa B.C. for Tyee Lake Resources Ltd.; Rae, D.R., (1973): Geological, Geochemical and Geophysical Report on the Tel Group claims for Canadian Superior Exploration, Ltd.; Statement of Material Facts for Tyee Lake Resources Ltd., Jan. 28, 1972; maps - geological, magnetometer and silt sample locations)
Chevron File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 073**
NATIONAL MINERAL INVENTORY: 093L12 W1

NAME(S): **WHITEWATER**, ROB ROY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 31 43 N
LONGITUDE: 127 41 41 W
ELEVATION: 1426 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Plot on Geological Survey of Canada Preliminary Map 44-23.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6043121
EASTING: 584470

COMMODITIES: Tungsten Gold Zinc Lead Silver

MINERALS
SIGNIFICANT: Scheelite Sphalerite Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au I12 W veins
I02 Intrusion-related Au pyrrhotite veins
DIMENSION: Metres STRIKE/DIP: 025/25W TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic			Topley Intrusions

LITHOLOGY: Granite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1943
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	78.8600	Grams per tonne
Gold	17.1400	Grams per tonne
Lead	5.6000	Per cent
Tungsten	20.2800	Per cent
Zinc	20.2000	Per cent

COMMENTS: Best assay results of five samples; assays were reported for tungstic oxide.
REFERENCE: Bulletin 10, page 71.

CAPSULE GEOLOGY

Mineralization is associated with a quartz vein within granitic rocks of a Jurassic Topley Intrusion. The vein has a width of 7.6 centimetres to 0.9 metres and strikes 025 degrees and dips 25 degrees west. It is exposed for about 107 metres. Mineralization occurs in small quantities at widely scattered points along the vein and in quartz lenses branching from the main vein. Scheelite, sphalerite, and galena mineralization have been reported. Five samples were collected in 1943 over widths of 35.5 centimetres or less from a short adit along branch lenses. These assayed trace to 17.14 grams per tonne gold, nil to 78.86 grams per tonne silver, 0.1 to 5.6 per cent lead, 0.9 to 20.2 per cent zinc and 5.85 to 20.28 per cent tungstic oxide (Bulletin 10, page 71).

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EMPR MAP 69-1
EMPR OF 1991-17, 1999-3
GSC EC GEOL 17, p. 58
GSC MAP 971A

BIBLIOGRAPHY

GSC OF 351
GSC P 44-23

DATE CODED: 1985/07/24
DATE REVISED: 1988/12/03

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 074**

NATIONAL MINERAL INVENTORY: 093L12 Pb1

NAME(S): **ZAP (BIG FOUR)**, LOST TREASURE, BIG FOUR

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 33 39 N
LONGITUDE: 127 39 51 W
ELEVATION: 1127 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on a ridge between Telkwa Pass and the Telkwa River, 40 kilometres southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6046744
EASTING: 586380

COMMODITIES: Lead, Silver, Gold, Zinc, Copper

MINERALS
SIGNIFICANT: Galena, Chalcopyrite, Sphalerite, Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Granodiorite
Granite
Andesite
Tuff
Rhyolite
Volcanic Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1926
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	246.9000	Grams per tonne
Gold	0.6900	Grams per tonne
Copper	2.5000	Per cent
Lead	36.3000	Per cent

COMMENTS: Selected sample.
REFERENCE: Minister of Mines Annual Report 1926, page 138.

CAPSULE GEOLOGY

Mineralization is associated with quartz veining in a fine-grained granodioritic stock of the Eocene Nanika Intrusions. The contact with Lower Jurassic Hazelton Group volcanics of the Telkwa Formation occurs a short distance to the east. Several quartz veins, varying in width from 0.9 to 2.4 metres strike northwest in a light coloured, fine-grained granitic rock. The veins are mineralized with pyrite, chalcopyrite, galena, and sphalerite. A sample across 0.5 metres of mineralization at the bottom of a shaft assayed trace gold, 68.6 grams per tonne silver, trace copper, 34 per cent lead and 3.0 per cent zinc. About 1.8 tonnes of material was mined from a quartz vein which was fairly well mineralized over a width of 6.0 metres. A selected sample of the best mineralization assayed 0.69 grams per tonne gold, 246.9 grams per tonne silver, 36.3 per cent lead and 2.5 per cent copper (Minister of Mines Annual Report 1926, page 138).

BIBLIOGRAPHY

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EMPR GEM 1969-80; 1970-160

BIBLIOGRAPHY

EMPR ASS RPT 2687
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
GSC MAP 278A; 971A
GSC P 44-23

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/02/20 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 075**

NATIONAL MINERAL INVENTORY: 093L12 Fe1

NAME(S): **LIMONITE CREEK**, SUMMIT CREEK, IRONSIDES (L.5815), BEAR

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L12W
BC MAP:
LATITUDE: 54 32 26 N
LONGITUDE: 127 48 26 W
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6044321
EASTING: 577168

COMMENTS: Located on the north side of Limonite Creek, a westerly flowing tributary of the Zymoetz River, approximately 48 kilometres east of Terrace.

COMMODITIES: Iron, Manganese, Sulphur, Phosphorus

MINERALS

SIGNIFICANT: Limonite, Pyrite
ASSOCIATED: Quartz, Alunite, Pyrophyllite, Topaz, Anhydrite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive
CLASSIFICATION: Residual, Industrial Min.
TYPE: B01 Laterite Fe; B07 Bog Fe, Mn, U, Cu, Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
			Nanika Intrusions
Eocene			

ISOTOPIC AGE: 52.2+/-.1 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: zircon

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Quartz Monzonite
Porphyritic Granodiorite

HOSTROCK COMMENTS: Fieldwork 1997, 31-1-9.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: LIMONITE CREEK
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1957
QUANTITY: 3175200 Tonnes

COMMODITY	GRADE	
Iron	44.0000	Per cent

COMMENTS: The estimate is based on 27 drillholes, drilled in 1957.
REFERENCE: Minister of Mines Annual Report 1957, page 12.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation, comprised of red, purple, green to grey andesitic to rhyolitic flows, tuffs, and breccia. South of Limonite Creek, a large Eocene Nanika Intrusive comprised of porphyritic granodiorite and quartz monzonite intrudes the volcanic rocks. A host of associated quartz veins containing disseminated pyrite crosscut the volcanics.

The age determination is of Eocene Nanika Intrusion which has a good lower intercept and a less well defined upper intercept of about 300 Ma indicating inherited zircons of this age. The authors suggest this is a post mineralization age.

Alteration zones at the Limonite Creek occurrence have been studied with modern instrumentation and 4 types (in addition to

CAPSULE GEOLOGY

sericitic and propylitic) have been discerned:

1. Acid sulphate alteration is characterized by the presence of alunite and quartz, with or without pyrophyllite.
2. Advanced argillic alteration with quartz and pyrophyllite.
3. Aluminous alteration is characterized by andalusite, quartz and local lazulite.
4. Anhydrite-quartz is distal to most intensely altered rocks.

These types of alteration are characteristic of high sulphidation systems.

The weathering of pyrite has occurred to a depth of at least 135 metres and goethite has been redistributed to make this iron deposit (EM Fieldwork 1997, pages 31-1-9).

On the north side of Limonite Creek, a large gossanous area hosts yellow and brown earthy limonite which occurs in platey layers from 2.5 to 7.6 centimetres in thickness, paralleling the surface of the hill which dips 30 degrees south. Thicknesses of 6.7 metres were encountered with an average thickness of 3.0 metres of clean limonite. In 1915, samples taken by the Mines Branch in Ottawa assayed 52.19 to 55.01 per cent iron, 0.83 to 1.99 per cent silica, 0.39 to 0.85 per cent manganese, 0.016 to 0.616 per cent phosphorous and 1.14 to 1.52 per cent sulphur. These results are the averages from 9 samples collected over 18.2 hectares (Minister of Mines Annual Report 1957, page 12).

Drill indicated reserves based on 27 drillholes are 3,175,200 tonnes grading 44 per cent iron (Minister of Mines Annual Report 1957, page 12).

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GSC MAP 278A; 971A
GSC OF 351
GSC P 18; 44-23
GSC SUM RPT *1915, pp. 67-69, *Map 1605
CANMET IR 217, Vol. 2, p. 21
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 076**

NATIONAL MINERAL INVENTORY: 093L13 Cu3

NAME(S): **HIDDEN VALLEY**, JAN, LINDA, WINDY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L13W
BC MAP:
LATITUDE: 54 53 49 N
LONGITUDE: 127 52 13 W
ELEVATION: 1524 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located at the head of Kitsuns Creek, approximately 49 kilometres west-northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6083908
EASTING: 572450

COMMODITIES: Copper, Molybdenum, Gold, Silver, Lead

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Pyrite, Galena, Sphalerite, Magnetite
ASSOCIATED: Quartz, Calcite, Barite
ALTERATION: Epidote, Sericite, Kaolin, Carbonate, Quartz, Chlorite
ALTERATION TYPE: Propylitic, Sericitic, Argillic, Silicific'n, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Porphyry, Hydrothermal, Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au; I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Undefined Formation	
Cretaceous-Tertiary			Bulkley Intrusions

LITHOLOGY: Monzonite, Feldspar Porphyry, Quartz Monzonite, Tuff, Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

CAPSULE GEOLOGY

The occurrence is located in an area where Jurassic Bowser Lake Group intermediate volcanic rocks have been intruded by Late Cretaceous to Tertiary Bulkley Intrusive rocks. The Bowser Lake rocks are comprised mainly of basaltic or andesitic tuff-breccia and tuff. The volcanics are intruded by pyritiferous monzonite and feldspar porphyry measuring about 2.5 kilometres in length and 1 kilometre in width. Propylitic alteration envelopes an area of about 450 by 600 metres and hosts quartz, calcite and locally, barite veining with chalcopyrite, pyrite and molybdenite.

Alteration around the porphyry intrusion consists of inner sericitic and argillic zones which are marked by an increase of kaolin, sericite, carbonate, and quartz. Molybdenite is more highly concentrated in these zones. The outer propylitic areas are characterized by the presence of epidote, chlorite, and lesser sericite, carbonate, and kaolin.

In 1970, drilling showed pyrite, chalcopyrite, molybdenite, and some magnetite in quartz and carbonate veinlets and along hair-line fractures for the entire length of the 183 metre hole. The overall grade of copper, molybdenum and precious metals are low. In the area of the drill hole the copper-molybdenum ratio was found to be three to one.

Recent work in the area has indicated that a later stage quartz monzonite plug has intruded both the volcanics and the porphyry. Chalcopyrite, molybdenite and pyrite represents early stage mineralization, and galena, sphalerite, arsenopyrite and pyrite accompanied by intense silicification is related to the later stage intrusive activity.

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EMPR EXPL 1988-C172
EMPR ASS RPT 698, 18058, *19799
EMPR BULL 64
EMPR MAP 69-1
GSC BULL 270
GSC P 44-23
GSC OF 351
EMPR PF (Maps and notes)
EMPR OF 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/24 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 077**

NATIONAL MINERAL INVENTORY: 093L13 Ag1

NAME(S): **KIT**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L13W
BC MAP:
LATITUDE: 54 53 59 N
LONGITUDE: 127 46 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: A silver-lead occurrence shown on Map 69-1 (#142).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6084327
EASTING: 578982

COMMODITIES: Silver Lead

MINERALS
SIGNIFICANT: Galena
COMMENTS: Exact mineralogy not reported.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Volcanic Breccia
Tuff
Volcanic Flow
Porphyritic Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges
METAMORPHIC TYPE: Contact Regional
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The area is underlain by Jurassic Bowser Lake Group volcanics comprised of grey to green basaltic to andesitic tuff, breccia and flows. The volcanics are intruded by a Late Cretaceous Bulkley Intrusion comprised of porphyritic granodiorite to quartz diorite.

A silver-lead occurrence is shown on Map 69-1 near the contact between the intrusion and Bowser Lake Group volcanics.

BIBLIOGRAPHY

EMPR MAP *69-1
GSC BULL 270
GSC OF *351
GSC P 44-23

DATE CODED: 1988/08/24 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/08/24 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 078**

NATIONAL MINERAL INVENTORY: 093L13 Cu4

NAME(S): **LEFTY**, L'ORSA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L13W
BC MAP:
LATITUDE: 54 50 19 N
LONGITUDE: 127 51 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: A copper-silver occurrence shown on Map 69-1 (#143).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6077437
EASTING: 573750

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Exact mineralogy not reported.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Tuff
Volcanic Breccia
Volcanic Flow
Felsic Intrusive

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional
Plutonic Rocks
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE:

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group, Telkwa Formation volcanics comprised mainly of varigated red to green breccia, tuff and flows of basaltic to rhyolitic composition. These volcanics are intruded by a Late Cretaceous to Tertiary felsic intrusion.

A copper-silver occurrence is shown on Map 69-1 near the contact between the intrusion and the Telkwa volcanics.

BIBLIOGRAPHY

EMPR MAP *69-1
GSC BULL 270
GSC OF *351
GSC P 44-23

DATE CODED: 1988/08/24 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/08/24 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 079**

NATIONAL MINERAL INVENTORY: 093L13 Cu2

NAME(S): **LOUISE LAKE**, LOU, ROB, TENN, LOUISE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L13E
BC MAP:
LATITUDE: 54 51 08 N
LONGITUDE: 127 41 24 W
ELEVATION: 1006 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6079133
EASTING: 584104

COMMENTS: Trenches, 750 metres west of Louise Lake, about 34 kilometres west-northwest of Smithers (Assessment Report 18971).

COMMODITIES: Copper, Molybdenum, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Pyrite, Tennantite, Bornite
ASSOCIATED: Quartz
ALTERATION: Clay, Sericite, Quartz, Pyrite
ALTERATION TYPE: Argillic, Sericitic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Skeena	Undefined Formation	
Jurassic-Cretaceous	Bowser Lake	Ashman	
Eocene			Unnamed/Unknown Informal

LITHOLOGY: Altered Feldspar Porphyry
Quartz Monzonite
Conglomerate
Shale
Greywacke
Volcaniclastic
Sandstone
Basalt
Andesite Tuff
Andesite Flow

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Bowser Lake, Overlap Assemblage

INVENTORY

ORE ZONE: TOTAL
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1994
QUANTITY: 50000000 Tonnes

COMMODITY	GRADE	
Gold	0.3100	Grams per tonne
Copper	0.3000	Per cent
Molybdenum	0.0200	Per cent

COMMENTS: A possible resource based on previous diamond drilling which partially delineated a tabular zone of copper-gold-molybdenum mineralization.
REFERENCE: T. Schroeter, Monthly Report, June 1994.

CAPSULE GEOLOGY

The area is underlain by Jurassic to Upper Cretaceous clastic sediments and lesser volcanics intruded by Late Cretaceous and Eocene intermediate to felsic intrusions. Abundant normal(?) faults striking predominantly 060 and 335 degrees, cut the area as well as south dipping, 060 degree trending thrust faults south of Zymoetz River.

The Louise Lake property is predominantly underlain by interbedded sediments and volcanic rocks. A major 060 degree trending fault system runs through Coal Creek and along the north shore of Louise Lake. Conglomerates, greywackes, shales and

CAPSULE GEOLOGY

volcaniclastics of the Lower-Upper Cretaceous Skeena Group are present on the north side of the fault; south of the fault are Middle-Upper Jurassic Ashman Formation shale, sandstone and conglomerate, and Upper Jurassic Netalzul Formation basalts, andesite tuffs and flows, both of the Jurassic-Lower Cretaceous Bowser Lake Group.

Locally, an intensely altered Eocene feldspar porphyry plug intrudes Skeena Group sediments adjacent to the major 060 degree trending fault. Petrographic studies of the altered feldspar porphyry indicate that its original composition was quartz monzonite.

Argillization, sericitization and silicification are the main alteration phases evident in the intrusive resulting in three distinct zones. These grade from a highly silicified central stockwork zone through an intermediate zone of moderate clay alteration and silicification, to a peripheral zone with an extremely high degree of kaolinization and moderate silicification.

Pyrite occurs in all alteration zones and varies from 1-10 per cent. The zones also host a stockwork of quartz-pyrite veinlets (2-20 millimetres wide) that contain minor amounts of chalcopyrite and molybdenite, with assays of up to 0.8 grams per tonne gold (Assessment Report 18971). There are 3 preferred orientations of the stockwork development: 340 degrees, 010 degrees and 060 degrees.

Previous diamond drilling has partially delineated a tabular zone of copper-gold-molybdenum porphyry-style mineralization estimated to contain a possible resource of 50 million tonnes grading 0.3 per cent copper, 0.02 per cent molybdenum and 0.31 gram per tonne gold (T. Schroeter, Monthly Report, June 1994). A 1992 drill hole intersected 1.46 per cent copper, 121 grams per tonne silver and 1.9 grams per tonne gold over 2.9 metres.

In 1995, with Explore B.C. Program support, Global Mineral and Chemical Ltd. completed 39 line kilometres of induced polarization surveys and collected 97 soil samples. The IP survey outlined two large zones of high chargeability in the western part of the property that warrant drill testing (Explore B.C. Program 95/96 - M83).

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EMPR PERS COMM Schroeter, T., Monthly Report, June 1994
EMR MP CORPFILE (Leitch Mines Limited)
GSC OF 351
GSC P 44-23
GCNL #214(Nov.6), 1991; #9(Jan.14),#39(Feb.25), #87(May 5), #105(June 1), 1992; #144(July 28), 1998
N MINER Mar.2, June 1, 1992
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1996/11/08 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 080**

NATIONAL MINERAL INVENTORY: 093L11 Ag3

NAME(S): **HANNAH**, GIPSY QUEEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 30 51 N
LONGITUDE: 127 12 50 W
ELEVATION: 1735 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located on the west side of Hunter Basin on the slope to Glacier Creek (see sketch map in Minister of Mines Annual Report 1925, page 140).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6042198
EASTING: 615625

COMMODITIES: Silver Copper

MINERALS
SIGNIFICANT: Tetrahedrite Bornite
ASSOCIATED: Quartz
ALTERATION: Malachite Talc
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Quartz Feldspar Porphyry
Felsite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1914
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	41.1400	Grams per tonne

COMMENTS: 1.2 to 1.8 metre sample from mineralized quartz vein; also shows trace gold.
REFERENCE: Minister of Mines Annual Report 1914, page 222.

CAPSULE GEOLOGY

The showing is underlain by Lower Hazelton Group volcanics of the Telkwa Formation comprised of variegated red, green, maroon to grey andesitic to rhyolitic flows, tuffs, and breccia. The volcanics are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry and associated felsite dikes.

On the Hannah, a shattered zone striking north, hosts numerous veinlets of quartz and quartz infillings. Some of the veinlets show considerable intergrowth of feldspar forming pegmatitic felsite dikes. Some of the veinlets host minor tetrahedrite with malachite staining.

On the Gipsy Queen claim, which adjoins the Hannah, a vein or dike of decomposed talcy material carries considerable quartz with some malachite staining. The vein ranges from 1.2 to 1.8 metres in width. A sample of the best mineralization assayed trace gold, 41.14 grams per tonne silver, copper nil (Minister of Mines Annual Report 1914, page 222). Open cuts in the oxidized vein exposed a few specks of bornite with malachite staining.

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EMPR MAP 69-1
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC BULL 270
GSC P 44-23
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 081**

NATIONAL MINERAL INVENTORY:

NAME(S): **MMX**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L13E
BC MAP:
LATITUDE: 54 45 29 N
LONGITUDE: 127 42 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located approximately 4.5 kilometres south of the junction of Coal Creek and the Zymoetz River, west of the 093L 198 showings.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6068642
EASTING: 583549

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite Flow
Rhyolite Flow
Tuff
Volcanic Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of rhyolitic to andesitic flows, tuff and breccia.

Chalcopyrite, pyrite and bornite occur in quartz veins and veinlets which crosscut volcanic breccia.

BIBLIOGRAPHY

EMPR AR *1968-124
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/11 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 082**

NATIONAL MINERAL INVENTORY: 093L12 Cu1

NAME(S): **NH**, NH 1-82, CARIBOU

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 43 00 N
LONGITUDE: 127 42 56 W
ELEVATION: 1370 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on Caribou Mountain, 8.0 kilometres due south of the junction of Sandstone Creek and the Zymoetz River, 37 kilometres south-southwest of Smithers. Location of "A" Zone mineralization (Howard, D.A., 1987, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6064020
EASTING: 582740

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Bornite Chalcocite Chalcopyrite Galena Digenite
COMMENTS: Possibly digenite.
ASSOCIATED: Calcite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: D03 Volcanic redbed Cu L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Lapilli Tuff
Tuff
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1968
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	205.7000	Grams per tonne
Copper	3.5100	Per cent

COMMENTS: Across 7.6 metres of the A Zone; also showed trace gold.
REFERENCE: Minister of Mines Annual Report 1968, pages 121-124.

ORE ZONE: A REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	268.4500	Grams per tonne
Copper	4.6700	Per cent

COMMENTS: A 3.0 metre chip sample from mineralization parallel to a fault zone.
REFERENCE: Property File - Howard, D.A., 1987.

CAPSULE GEOLOGY

The property is underlain by Lower Jurassic rocks of the Telkwa and Nilkitkwa Formations which form the lower part of the Hazelton Group. The lower most unit on the property is the Telkwa Formation which consists of variegated red, maroon, grey to green breccias, tuffs and flows. The Nilkitkwa rocks form a barren cap over the underlying mineralized Telkwa rocks. The rocks strike northeast and dip between 25 to 30 degrees southeast. Copper-silver mineralization is found within a green to grey, very fine to coarse-grained lapilli tuff in association with northwest trending fault zones. Four zones of mineralization have been identified over a strike length of about

CAPSULE GEOLOGY

300 metres. Zone A contains bornite, chalcocite and possibly digenite in fractures and calcite veinlets in the welded tuff unit. Mineralization is most abundant adjacent to a fault but extends for 30 metres northeast of the fault. Trace chalcopyrite and galena occur in a quartz carbonate veinlet near the fringe of the bornite and chalcocite mineralization. In 1987, a 3.0 metre chip sample taken from mineralization parallel to the fault zone exposed at "A" Zone assayed 4.67 per cent copper and 268.45 grams per tonne silver (Howard, D.A., 1987). The B zone consists of calcite and small amounts of disseminated chalcocite which occur in the matrix of a brecciated portion of the favourable tuff horizon. Small amounts of fine-grained chalcopyrite, bornite and chalcocite are present in the tuff for about 30 metres southwest of the breccia zone. One main vein up to about 20 centimetres wide and a few scattered associated veinlets mineralized with chalcocite, bornite and possibly digenite constitute the C zone. The D zone contains bornite and chalcocite as disseminations and in small fractures and calcite veins in altered lapilli tuff. Another sample in 1968, taken across 7.6 metres of the A zone gave trace gold, 205.7 grams per tonne silver and 3.51 per cent copper (Minister of Mines Annual Report 1968, pages 121-124).

BIBLIOGRAPHY

EMPR AR 1967-90; *1968-121-124
EMPR ASS RPT 1640, 4671
EMPR GEM 1973-346
EMPR MAP 69-1
EMPR PF (*Howard, D.A., (1987): Report on the Exploration Potential of the Caribou Mineral Claim on Caribou Mountain near Smithers, British Columbia (Oct., 1987) in Prospectus for Silver Box Resources Ltd., Jun.20, 1988)
EMR MP CORPFILE (Babine International Resources Ltd.; Grandora Explorations Ltd.)
GSC BULL 270
GSC MAP 971A
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 083**

NATIONAL MINERAL INVENTORY: 093L12 Mo1

NAME(S): **SERB CREEK**, KATIE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L12W
BC MAP:
LATITUDE: 54 38 46 N
LONGITUDE: 127 45 40 W
ELEVATION: 1524 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Serb Creek, approximately 38 kilometres west-southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6056117
EASTING: 579944

COMMODITIES: Molybdenum, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrite, Molybdenite, Chalcopyrite, Galena, Sphalerite
COMMENTS: Sparse chalcopyrite, galena and sphalerite.
ASSOCIATED: Quartz, Calcite
ALTERATION: Sericite, Orthoclase, Epidote, Chlorite, Pyrite
ALTERATION TYPE: Propylitic, Sericitic, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Porphyry, Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type), I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Mesozoic			Unnamed/Unknown Informal

LITHOLOGY: Quartz Monzonite
Granodiorite
Quartz Feldspar Porphyry
Quartz Diorite Porphyry
Mafic Dike
Quartz Monzonite Porphyry
Granodiorite Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Plutonic Rocks, Stikine

INVENTORY

ORE ZONE: SERB CREEK
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1986
QUANTITY: 41150000 Tonnes

COMMODITY	GRADE	
Molybdenum	0.0400	Per cent

COMMENTS: Probable reserves. Grade given was 0.08 per cent MoS2; conversion to Mo using the factor 1.6681.
REFERENCE: National Mineral Inventory card 93L/12 Mo1.

CAPSULE GEOLOGY

The Serb Creek occurrence is situated within a Mesozoic stock composed mainly of medium-grained granodiorite which intrudes Lower-Middle Jurassic Hazelton Group rocks. Molybdenum mineralization is associated with a fine-grained plug of quartz monzonite that exists as a core to the stock. The quartz monzonite is intruded by small irregularly shaped bodies of quartz diorite porphyry and a dike swarm consisting of quartz monzonite porphyry, quartz feldspar porphyry, granodiorite porphyry and mafic dikes. A pyrite halo covers and extends somewhat beyond the quartz monzonite plug. The low grade molybdenum mineralization is contained in quartz veins (up to 2 centimetres in width), quartz stockworks and dry fractures. The veins and veinlets are composed of varying amounts of quartz, pyrite, molybdenite and epidote. Sparse chalcopyrite, galena and sphalerite mineralization are also present. Two types of alteration related to mineralization are sericite-orthoclase-carbonate and epidote- chlorite-orthoclase.

CAPSULE GEOLOGY

The area of the showings is dominated by a 320 to 330 degree striking fracture system that is evident in the dike swarm, main shears and alteration zone. A late vein system comprised of mainly drusy quartz with calcite hosts galena and sphalerite.

Probable reserves for the Serb Creek property are 41.15 million tonnes grading 0.04 per cent molybdenum (National Mineral Inventory card 93L/12 Mo1). Grade given was 0.08 per cent MoS2; conversion to Mo using the factor 1.6681.

BIBLIOGRAPHY

EMPR AR *1965-76-80; 1966-91
EMPR ASS RPT 5762
EMPR BULL 64
EMPR EXPL 1975-142
EMPR GEOLOGY 1975, p. 65
EMPR MAP 58; 65 (1989); 69-1
EMPR OF 1992-1; 1998-8-F, pp. 1-60
EMPR PF (Various geological maps)
EMR MIN BULL MR 198, p. 238; 223 B.C. 232
GSC OF 351
GSC P 44-23

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/14 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 084**
NATIONAL MINERAL INVENTORY: 093L11 Cu6

NAME(S): **TABLE**, TABLE NO.3, COPPER QUEEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11W
BC MAP:
LATITUDE: 54 41 09 N
LONGITUDE: 127 26 23 W
ELEVATION: 1554 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showing located on Table No. 3 claim, about 1.2 kilometres south of old workings on Stock No. 1 claim (see location map in Assessment Report 3880).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6060950
EASTING: 600583

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcocite Bornite Digenite Malachite
COMMENTS: Possibly digenite.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: D03 Volcanic redbed Cu
DIMENSION:
STRIKE/DIP: 130/75S
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Felsite
Lithic Tuff
Crystal Tuff
Amygdaloidal Flow

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1968
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.3300	Per cent

COMMENTS: A 1.5 metre sample of weathered fault zone material also assayed trace silver and gold.
REFERENCE: Minister of Mines Annual Report 1968, page 129.

CAPSULE GEOLOGY

The area is underlain by Hazelton Group volcanic rocks of the Lower Jurassic Nilkitkwa Formation which have been intruded by Late Cretaceous and Eocene intrusions. The occurrence is within a series of volcanic rocks, trending north to northeastwards through the property, which are comprised largely of lithic and crystal tuff. Bornite, chalcocite and possibly digenite occur in veinlets and disseminated in amygdules along a fault zone between light-grey, spherulitic, flow-layered felsite and purple amygdaloidal flows. The fault has an attitude of approximately 130 degrees and dips 75 degrees south. This occurrence is located on the Table No.3 claim, about 1.2 kilometres south of old workings on the Copper Queen Mine (refer to Stock - 093L 085). A chip sample taken across 1.5 metres of weathered material from the fault zone assayed trace silver and gold with 0.33 per cent copper (Minister of Mines Annual Report 1968, page 129).

About 500 metres south, on the Table No.5 claim, minor chalcocite (?) and malachite occur along fractures in siliceous volcanic rocks. This fracture zone strikes about 130 degrees.

BIBLIOGRAPHY

EMPR ASS RPT 1239, 2200, 3545, *3880

BIBLIOGRAPHY

EMPR AR 1917-119; 1919-365; 1961-18; 1967-100; 1968-128
EMPR GEM 1970-160; 1972-418
EMPR MAP 69-1
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC BULL 270
GSC MAP 278A
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/16 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 085**

NATIONAL MINERAL INVENTORY: 093L11 Cu6

NAME(S): **STOCK**, COPPER QUEEN, JANET, STOCK NO.1

STATUS: Past Producer — Underground
MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L11W
UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 41 40 N
NORTHING: 6061886
LONGITUDE: 127 27 18 W
EASTING: 599577
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Old caved shaft located on Stock No.1 claim (see claim map in Assessment Report 3880) overlooking the west branch of Winfield Creek.

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Chalcocite, Bornite, Chalcopyrite
ASSOCIATED: Quartz, Calcite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: D03 Volcanic redbed Cu — L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: — STRIKE/DIP: 120/75S — TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Crystal Tuff
Lithic Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine

INVENTORY

ORE ZONE: SHAFT
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1968
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Copper	3.4000	Per cent

COMMENTS: A 3.65 metre sample taken above the main shaft; also assayed trace gold.
REFERENCE: Minister of Mines Annual Report 1968, page 129.

CAPSULE GEOLOGY

The area is underlain mainly by Hazelton Group volcanic rocks of the Lower Jurassic Nilkitkwa Formation which have been intruded by Late Cretaceous and Eocene intrusions. The occurrence is within a series of volcanic rocks which trend north to northeast and are comprised mainly of lithic and crystal tuff. There is a banded, siliceous volcanic rock that contains weak copper mineralization (mainly malachite) at several locations (refer to Table - 093L 084).

The main showing on the Stock No.1 claim, hosts chalcocite, bornite and chalcopyrite along fractures and in calcite veinlets related to a fault zone which strikes about 120 degrees and dips 75 degrees south within siliceous lithic tuff. Chip samples of weathered outcrops in the vicinity of the old workings assayed 0.33, 0.45 and 0.31 per cent copper, respectively. A sample taken above the shaft assayed 17.14 grams per tonne silver and 3.40 per cent copper (Minister of Mines Annual Report 1968, page 129).

During the period 1917 to 1919 about 11 tonnes of ore were shipped from this property. From this ore 31 grams of gold, 28.30 grams of silver and 2932 kilograms of copper were recovered.

About 800 metres north of the old mine workings regional mappers found specks of chalcopyrite and pyrite in a 0.6 to 1.2 metre chert

CAPSULE GEOLOGY

horizon exposed near a small lake. This area hosts extremely low copper concentrations in fracture controlled mineralization (Kirkham, 1968).

BIBLIOGRAPHY

EMPR ASS RPT 1239, 2200, 3545, *3880
EMPR AR 1917-119; 1919-365; 1961-18; 1967-100; 1968-128
EMPR GEM 1970-160; 1972-418
EMPR MAP 69-1
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC BULL 270
GSC MAP 278A
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/16 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 086**

NATIONAL MINERAL INVENTORY: 093L11 Cu7

NAME(S): **INTERNATIONAL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11W
BC MAP:
LATITUDE: 54 43 50 N
LONGITUDE: 127 27 36 W
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Tentatively located at occurrence #151 on Map 69-1.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6065897
EASTING: 599167

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu
L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Amygdaloidal Basalt
Andesite
Rhyolite
Tuff
Volcanic Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation are comprised of variegated red, maroon, green to grey andesitic flows, tuffs, breccia and amygdaloidal basalt. These are in contact with well bedded tuffs and flows of the Hazelton Group, Nilkitkwa Formation.

The mineral occurrence consists of minor chalcopyrite and pyrite along fracture planes in an amygdaloidal basalt. This occurrence was reported to be located about 3.5 kilometres from the Copper Queen Mine (refer to Stock - 093L 085) and is tentatively placed at occurrence #151, from Map 69-1.

BIBLIOGRAPHY

EMPR AR 1917-120
EMPR MAP 69-1
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC BULL 270
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 087**

NATIONAL MINERAL INVENTORY: 093L14 Ag7

NAME(S): **KING TUT**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 45 47 N
LONGITUDE: 127 21 00 W
ELEVATION: 1067 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069674
EASTING: 606164

COMMODITIES: Silver, Zinc, Lead, Copper

MINERALS

SIGNIFICANT: Sphalerite, Galena, Chalcopyrite, Arsenopyrite, Pyrite
ASSOCIATED: Siderite, Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Pliocene			Unnamed/Unknown Informal

LITHOLOGY: Rhyolite
Andesite
Tuff
Andesitic Flow Breccia
Felsite
Granodiorite
Porphyry

HOSTROCK COMMENTS: Mineralization appears to be genetically related to the Tertiary porphyry intrusions.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1924
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	10.9700	Grams per tonne

COMMENTS: 30 centimetre channel sample also showed trace gold.
REFERENCE: Minister of Mines Annual Report 1924, page 96.

CAPSULE GEOLOGY

The Hudson Bay Mountain area is underlain mainly by volcanic rocks of the Lower Jurassic Hazelton Group. Pyroclastic rocks, particularly lapilli tuff, of intermediate composition are the most abundant. Three main groups of felsic intrusions have been recognized in the district. These include felsites, granodiorites and Tertiary porphyries. Mineralization in the area seems to be genetically related to the Tertiary porphyry intrusions.

Rocks at the King Tut occurrence consist mainly of rhyolite, andesite, tuff and andesite flow breccia. Mineralization is associated with a shear zone from about 0.3 to 1.2 metres in width with a strike of 065 degrees to 070 degrees and dip 70 southeast to 70 degrees northwest. The main sulphides present are sphalerite, galena, chalcopyrite, arsenopyrite and pyrite. A channel sample across about 30 centimetres assayed trace gold and 10.97 grams per tonne silver (Minister of Mines Annual Report 1924, page 96).

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GSC MEM 223, p. 113
GSC SUM RPT *1925A, p. 132

BIBLIOGRAPHY

EMPR AR *1924-96; 1927-136; 1928-161,420
EMPR EXPL 1978-87; 1979-229
GSC MAP 971A
GSC P 44-23
Kirkham, R.V. (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin
EMPR ASS RPT 14300
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/21 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 088** NATIONAL MINERAL INVENTORY: 093L14 Ag2

NAME(S): **DUTHIE**, DUTHIE MINE, HENDERSON, ASHMAN, FAULT PLANE, DOME, MAMIE, CORONADO, SIL-VAN, MCPHERSON, RAVEN, HUMMINGBIRD, CANARY

STATUS: Past Producer Underground
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 46 23 N
LONGITUDE: 127 21 26 W
ELEVATION: 1142 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of the McPherson adit, on the southwest side of Hudson Bay Mountain, 12 kilometres west of Smithers. See also Dome (093L 089).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6070775
EASTING: 605674

COMMODITIES: Silver Lead Zinc Gold Cadmium Copper

MINERALS

SIGNIFICANT: Galena Sphalerite Tetrahedrite Pyrargyrite Arsenopyrite Gold Chalcopyrite Pyrite Marcasite Freibergite Silver Pyrrhotite
ASSOCIATED: Quartz Carbonate Chalcedony
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
MODIFIER: Sheared

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Lapilli Tuff
Porphyritic Granodiorite
Quartz Porphyritic Monzonite
Diabase Dike
Dioritic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: DUTHIE REPORT ON: Y

CATEGORY: Measured YEAR: 1985
QUANTITY: 19700 Tonnes

COMMODITY	GRADE	
Silver	207.0000	Grams per tonne
Gold	2.5500	Grams per tonne
Lead	5.0000	Per cent
Zinc	7.5000	Per cent

REFERENCE: Map 58.

CAPSULE GEOLOGY

The Duthie mine country rock consists of Lower-Middle Jurassic Hazelton Group volcanics comprised mainly of spherulitic flow-banded rhyolite and massive lapilli tuff which is cut by numerous diabasic and dioritic dikes. The flow-banded rhyolite outcrops along the southern part of Hudson Bay Mountain and is overlain to the north, east and west by massive lapilli tuff. The contact dips 20 degrees north at about 1220 metres in elevation on the Henderson vein. In

CAPSULE GEOLOGY

the vicinity of the veins the host rock is highly altered and bleached.

A Middle-Late Cretaceous Bulkley Intrusions stock intrudes the core of Hudson Bay Mountain and is comprised of porphyritic granodiorite and quartz monzonite with associated quartz veining.

The mineral deposits of the Duthie mine occupy four main fault zones, originally known as the Ashman, Henderson, Fault Plane and Dome. The mineralized fault zones or "vein-lodes" strike northeast and dip between 50 degrees southeast to 70 degrees northwest. They range from a few centimetres to 2.4 metres in width and from 213 to in excess of 1067 metres in length. The vein lodes are sliced, sheared and brecciated and host sulphide veins or infillings with vein quartz and carbonate gangue. The main ore minerals are galena, sphalerite, tetrahedrite, pyrargyrite, pyrite, arsenopyrite, gold, chalcopyrite, silver and freibergite. Ore from the Henderson-Ashman lode also contains pyrrhotite and marcasite. All the ore contains gold and rare visible gold is associated with the arsenopyrite. The ore is associated with minor quartz and carbonate gangue and is crosscut by younger chalcedony veins up to 5 centimetres in width.

There is a progressive change in the mineralization in a northeast direction along the Henderson-Ashman vein lode as the deposit approaches the granodioritic stock which forms the core of the mountain. The galena-sphalerite-tetrahedrite ore changes to arsenopyrite-sphalerite ore that contains more gold and zinc but less galena and silver.

The Henderson vein lode is marked by intense faulting and more brecciation than the other veins and has proved to be the most productive. It outcrops between 1082 to 1280 metres elevation for about 610 metres and then joins the Ashman vein lode. The combined veins have been traced to the northeast for 460 metres at 1360 metres elevation. The Henderson vein strikes 065 degrees and dips between 50 degrees southeast to 80 degrees northwest. The Ashman vein is traceable for 520 metres southwest of its junction with the Henderson.

At 1090 metres elevation, the Henderson vein joins the Fault Plane vein lode and the two veins plunge at a low angle southwest. The Henderson vein has a near vertical dip, whereas the Fault Plane striking nearly parallel, dips 55 to 60 degrees southeast.

The fourth vein, the Dome (093L 089), lies 400 metres southeast of the Henderson and strikes 065 degrees and dips 75 to 85 degrees northwest. The Dome vein is well-defined for 215 metres.

Measured geological reserves at Duthie are 19,700 tonnes grading 207 grams per tonne silver, 2.55 grams per tonne gold, 5 per cent lead and 7.5 per cent zinc (Map 58).

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EMPR ASS RPT 14300, 15709
EMPR BC METAL MM00030
EMPR FIELDWORK 1988, pp. 195-208
EMPR INDEX 3-199
EMPR INF CIRC 1984-1, p. 13; 1985-1, p. 17
EMPR IR 1984-5, p. 115
EMPR MAP 58; 69-1; 65 (1989)
EMPR MIN STATS 1985, p. 49; 1990, p. 27
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EMPR OF 1992-1; 1998-8-I, pp. 1-20
EMPR PF (Various Maps and Reports; Consolidated Silver Standard Mines Ltd., Annual Report 1988, p. 5)
EMR MP CORPFILE (Duthie Mines Ltd.; Atlas Exploration Company Ltd.; Dorita Silver Mines Ltd.; Silver Standard Mines Ltd.)
GSC BULL 270
GSC MAP 971A
GSC MEM 223, p. 103
GSC OF 351
GSC P 36-20; 44-23
GSC SUM RPT 1908, p. 45; 1925 Part A, p. 130
CANMET IR 2269; 2948
GCNL Dec.18, 1978; May 18, 1979; #48, 1985; #76, 1987
N MINER Feb.16, 1978
W MINER Apr. 1947, p. 110 (Re-opening of the Duthie Mine)
WWW http://www.infomine.com/index/properties/DUTHIE_PROPERTY.html
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the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/21 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 089** NATIONAL MINERAL INVENTORY: 093L14 Ag2

NAME(S): **DOME**, DOME EXTENSION (L.7261), HENDERSON, DUTHIE MINES, SIL-VAN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 46 21 N NORTHING: 6070724
LONGITUDE: 127 21 00 W EASTING: 606140
ELEVATION: 1265 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southwest side of Hudson Bay Mountain, 12 kilometres west of Smithers. The Dome lies 400 metres southeast of the Henderson (Duthie Mines) (093L 088).

COMMODITIES: Silver, Lead, Zinc, Gold, Copper, Cadmium

MINERALS
SIGNIFICANT: Arsenopyrite, Sphalerite, Galena, Chalcopyrite, Tetrahedrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 213 Metres STRIKE/DIP: 065/80N TREND/PLUNGE:
COMMENTS: Dome vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Dacite Flow Breccia
Dacite
Lapilli Tuff
Rhyolite
Diabase Dike
Dioritic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine

CAPSULE GEOLOGY

The Dome lies 400 metres southeast of the Henderson (Duthie Mines) (093L 088). Host rocks consist of Lower to Middle Jurassic Hazelton Group volcanics which consist of massive lapilli tuff and spherulitic flow-banded rhyolite which are crosscut by numerous diabasic and fine-grained dioritic dikes.

The Dome vein lode, at 1265 metres elevation, strikes 065 degrees and dips between 75 to 85 degrees to the northwest. The vein ranges from 0.9 to 2.0 metres in width, is well-defined for 215 metres, and is hosted in altered dacitic flow breccia. Several parallel fissures host sulphide stringers and infillings. Mineralization consists of arsenopyrite, sphalerite, pyrite, galena, chalcopyrite and tetrahedrite with minor quartz gangue.

The Dome and Dome Extension veins are part of the Duthie mine.

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EMPR BC METAL MM00030
EMPR FIELDWORK 1988, pp. 195-208
EMPR INDEX 3-212; 4-125
EMPR IR 1984-2, p. 101
EMPR MAP 58; 65 (1989)
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EMPR PF (Refer to Duthie (093L 088) for various maps and unpublished

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reports; Consolidated Silver Standard Mines Ltd.; Annual Report 1988, p. 5)
EMR MP CORPFILE (Duthie Mines Ltd.; Atlas Exploration Company Ltd.; Dorita Silver Mines Ltd.; Sil-Van Mines Ltd.; Silver Standard Mines Ltd.)
GSC BULL 270
GSC MAP 971A
GSC MEM *223, p. 111
GSC OF 351
GSC SUM RPT 1908, p. 45; *1925 Part A, p. 130
CANMET IR 2269; 2948
Kirkham, R.V. (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin
W MINER, *April 1947, p. 110
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/04/25 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **093L 090** NATIONAL MINERAL INVENTORY: 093L14 Pb1

NAME(S): **CORONADO (L.1155)**, HOME RUN, CORONADO, SILVER STAR, PAY ROLL

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 46 50 N NORTHING: 6071596
LONGITUDE: 127 21 58 W EASTING: 605082
ELEVATION: 1036 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Slocan Creek on the southwest side of Hudson Bay Mountain, 12 kilometres west of Smithers.

COMMODITIES: Silver Lead Gold Zinc

MINERALS
SIGNIFICANT: Arsenopyrite Galena Sphalerite Tetrahedrite Chalcopyrite
COMMENTS: Argentiferous galena.
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 045/80S TREND/PLUNGE:
COMMENTS: Two parallel shear zones with sulphide mineralization.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Andesitic Flow
Tuff
Rhyolite
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	21.6000	Grams per tonne
Gold	1.2000	Grams per tonne

COMMENTS: Ninety-one centimetre channel sample taken across mineralized shear.
REFERENCE: Geological Survey of Canada Memoir 223, page 92 (Revised Ed. 1954).

CAPSULE GEOLOGY

The host rocks are comprised of Lower Jurassic Hazelton Group volcanics of the Telkwa Formation. They consist mainly of andesite, breccia, andesitic flows, spherulitic flow-banded rhyolite and massive lapilli tuff.

In the Coronado Group, mineralization is associated with two parallel shear zones in the rhyolite, andesitic flows, and flow breccia. The zones are approximately 290 metres apart and strike 045 degrees and dip between 75 to 85 degrees southeast.

The westerly zone was prospected by 3 adits along strike across the Coronado and Home Run claims. The lower adit, No. 1, exposed a single sparsely mineralized fissure. It was followed for 6 metres where it branched into two fissures. The host rock is silicified rhyolite and is cross fractured with crosscutting veinlets of sulphides comprised mainly of arsenopyrite. A 91 centimetre channel sample taken across the face assayed 1.2 grams per tonne gold, and 21.6 grams per tonne silver.

CAPSULE GEOLOGY

No. 2 adit along the shear hosted sulphide mineralization consisting of argentiferous galena, arsenopyrite, sphalerite with minor tetrahedrite and chalcopyrite. A selected sample of this ore assayed 12.3 grams per tonne gold, 708.3 grams per tonne silver, 16.96 per cent lead, and 12.06 per cent zinc (Geological Survey of Canada Memoir 233, page 92 - revised edition).

The No. 3 adit showed sparse mineralization in the shear. However, in an open cut further east, at 1100 metres elevation, cross fractured and silicified flow breccia hosted disseminated arsenopyrite.

Production between 1915 to 1940, from the mineralized shear vein fillings on the Coronado and Home Run claims totalled 128 tonnes mined which produced 1,275 grams gold, 242,541 grams silver, 45,490 kilograms lead, and 7,148 kilograms zinc.

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1938-B37,C49; 1939-35,57,92; 1940-23,43,76; 1950-100; 1963-25
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GSC MAP 278A; 971A
EMPR MAP 69-1
GSC EC GEOL No. 4, p. 42
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GSC OF 351
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EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/19 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 091** NATIONAL MINERAL INVENTORY: 093L14 Au1

NAME(S): **MAMIE (L.7262)**, ALDRIDGE, KIN,
MAMIE VEIN EXTENSION

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 46 51 N NORTHING: 6071652
LONGITUDE: 127 21 00 W EASTING: 606118
ELEVATION: 1356 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south slope of Hudson Bay Mountain, 12 kilometres due west of Smithers.

COMMODITIES: Gold Zinc Copper Lead Silver

MINERALS
SIGNIFICANT: Sphalerite Arsenopyrite Chalcopyrite Galena
COMMENTS: Minor chalcopyrite, rare galena.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Shear
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 100 x 2 Metres STRIKE/DIP: 070/ TREND/PLUNGE:
COMMENTS: Sheared and brecciated zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Telkwa	
Cretaceous			Bulkley Intrusions
Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Andesite Flow Breccia
Volcanic Breccia
Dacite
Porphyritic Granodiorite
Felsic Dike
Rhyolite
Mafic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: MAMIE REPORT ON: Y

CATEGORY: Measured YEAR: 1951
QUANTITY: 55330 Tonnes

COMMODITY	GRADE	
Silver	102.8400	Grams per tonne
Gold	10.9700	Grams per tonne
Copper	0.7000	Per cent
Zinc	7.0000	Per cent

COMMENTS: Proven reserves.
REFERENCE: VSE Offering of Rights Jul.17/85-Consolidated Silver Standard Mining.

CAPSULE GEOLOGY

The Hudson Bay Mountain area is underlain by Lower-Middle Jurassic volcanic rocks of the Hazelton Group. The Mamie occurrence is underlain by massive to flow banded white to grey spherulitic rhyolite and variegated green andesitic to dacitic flows and flow breccia which strike 135 degrees and dip between 30 to 45 degrees northeast. Also, a grey polymictic volcanic breccia of unknown attitude hosts angular to subangular clasts of felsic volcanics.

Three main groups of felsic intrusions have been recognized, a porphyritic granodiorite of the Middle-Late Cretaceous Bulkley Intrusions and Early Tertiary mafic dikes followed by the emplacement of a series of felsic stocks and dikes. Mineralization in the area seems to be genetically related to the Tertiary porphyry intrusions.

CAPSULE GEOLOGY

The mineralization consists of polymetallic, fissure-filling veins which are related to and radiate from a central molybdenum porphyry system that occurs to the northeast of the property. It is associated with a sheared and brecciated zone striking 070 degrees with a steep southeast dip in andesitic flows and breccias and consists of sphalerite and arsenopyrite with a little chalcopyrite and rarely galena. On surface the zone is 0.6 to 2.4 metres wide over an exposed length of about 100 metres. A shipment of 13.04 tonnes of ore in 1941 averaged 33.26 grams per tonne gold, 140.57 grams per tonne silver, 0.90 per cent copper and 11.2 per cent zinc (Minister of Mines Annual Report 1941, page A41).

Drilling around the old mine workings in 1985 intersected a 1.0-metre section grading 16.46 grams per tonne gold, 78.86 grams per tonne silver, 10.7 per cent zinc and 0.73 per cent copper. Another 3.5-metre intersection assayed 2.06 grams per tonne gold, 18.5 grams per tonne silver, 3.9 per cent zinc and 0.13 per cent copper (Property File - Consolidated Silver Standard Mines Ltd., Mamie Property 1988 Mine Plan).

Proven reserves for the Mamie property are 55,330 tonnes grading 10.97 grams per tonne gold, 102.84 grams per tonne silver, 7.0 per cent zinc and 0.7 per cent copper (Vancouver Stock Exchange Offering of Rights July 17, 1985 - Consolidated Silver Standard Mining Ltd.).

Metallurgical testing on bulk samples from the Mamie vein indicate that conventional flotation or cyanidation methods to attain economic concentrate are not possible.

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EMPR AR 1911-118; 1917-113; 1919-103; 1921-107,272; 1922-107; 1923-108; 1924-96; 1927-137; 1934-C7; 1935-C35; 1941-24,41, 43; 1950-100; 1951-112; 1952-93; 1953-93; 1963-25
EMPR ASS RPT 505, 14300, *15546, 17082
EMPR EXPL 1987-C308; 1988-C172
GSC SUM RPT 1925 Part A, p. 132
GSC P 36-20, p. 83; 44-23
GSC EC GEOL 4, p. 40
EMR MP CORPFILE (Dorita Silver Mines Ltd.; Silver Standard Mines Limited)
GCNL #244, 1985; #30, 1986
N MINER Apr.7, 1986
GSC MAP 971A
EMR MIN BULL MR 198, p. 238; 223 B.C. 234
EMPR MAP 65 (1989); 69-1
GSC OF 351
GSC BULL 270
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Kirkham, R.V. (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin
EMPR PF (Unpublished report; *Consolidated Silver Standard Mines Ltd., Annual Report 1988, p. 3; Consolidated Silver Standard Mines Ltd., Mamie Property 1988 Mine Plan: vertical Longitudinal Section)
EMPR OF 1992-1
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/02/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 092**
NATIONAL MINERAL INVENTORY: 093L14 Au3

NAME(S): **TORRENT**, MARGARET, DOMINION, NEWCASTLE, VICTORY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 47 00 N
LONGITUDE: 127 21 15 W
ELEVATION: 1326 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on east bank of Sloan Creek on Hudson Bay Mountain, 11.3 kilometres west of Smithers; Torrent is part of the Victory Group (see 093L 093).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6071924
EASTING: 605843

COMMODITIES: Gold, Zinc, Silver, Copper, Lead

MINERALS
SIGNIFICANT: Sphalerite, Chalcopyrite, Galena, Arsenopyrite, Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Breccia
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 045/90
TREND/PLUNGE:
COMMENTS: Mineralized shear zone strikes northeast with a near vertical dip.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite Breccia
Flow Breccia
Rhyodacite
Lapilli Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization, Post-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1928
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	92.5700	Grams per tonne
Gold	5.8300	Grams per tonne
Zinc	3.8000	Per cent

COMMENTS: 1.2 metre wide sample.
REFERENCE: Property File - L. Batten, (1928): Victory Group, Smithers, B.C.

CAPSULE GEOLOGY

The Hudson Bay Mountain area is underlain mainly by volcanic rocks of the Lower Jurassic Hazelton Group, Telkwa Formation. Pyroclastic rocks, particularly lapilli tuff, of intermediate composition are the most abundant. Three main groups of felsic intrusions have been recognized in the district. These include felsites, granodiorites and Tertiary porphyries. Mineralization in the area seems to be genetically related to the Tertiary porphyry intrusions.

Mineralization on the Torrent claim occurs in a shear zone about 2.0 metres in width. The zone is within brecciated andesite and strikes northeast with a near vertical dip. Mineralization consists mainly of sphalerite, arsenopyrite, pyrite and lesser amounts of galena and chalcopyrite. A sample from a 1.2 metre width of mineralization assayed 5.83 grams per tonne gold, 92.57 grams per tonne silver and 3.8 per cent zinc (Batten, 1928).

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EMPR EXPL 1985-C320; 1988-C173
GSC SUM RPT 1908, p. 45; 1925A, p. 134
GSC EC GEOL 4, p. 45
EMPR MAP 69-1
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EMPR ASS RPT 505, 14300, 17773
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GSC OF 351
GSC BULL 270
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Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 093** NATIONAL MINERAL INVENTORY: 093L14 Pb2

NAME(S): **VICTORY**, TRIUMPH, STANDARD, TORRENT

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 47 10 N NORTHING: 6072226
LONGITUDE: 127 21 31 W EASTING: 605550
ELEVATION: 1158 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on southwest side of Hudson Bay Mountain, 12 kilometres west of Smithers. Victory claims extend into Myrtle and Iron King claims (093L 094).

COMMODITIES: Silver Lead Zinc Gold Arsenic

MINERALS

SIGNIFICANT: Arsenopyrite Tetrahedrite Galena Sphalerite Chalcopyrite Pyrite
ALTERATION: Sericite Clay Quartz Carbonate Fuchsite Chlorite Pyrite
ALTERATION TYPE: Silicific'n Chloritic Pyrite Sericitic Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Bulkley Intrusions

LITHOLOGY: Rhyolite Lapilli Tuff
Andesite Flow
Tuff
Flow Breccia
Rhyolite Flow
Granodiorite

HOSTROCK COMMENTS: Mineralization is located near the sedimentary unconformity between Bowser Lake Group sediments and Hazelton Group volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: ORE SHOOT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1932
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	358.3000	Grams per tonne
Gold	15.1000	Grams per tonne
Lead	6.4000	Per cent
Zinc	1.1000	Per cent

COMMENTS: Selective sample by D. Lay in 1932. Proven quantity; grade unstated in 1953.
REFERENCE: GSC Bulletin 1, page 53; EMR Mineral Bulletin MR #198, page 238.

CAPSULE GEOLOGY

The host rocks consist of Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised mainly of massive andesite, andesitic flows, flow breccia, tuff, and rhyodacite to rhyolite flows. The volcanics are unconformably overlain by Upper Jurassic Bowser Lake Group sediments comprised of a basal pebble conglomerate overlain by a monotonous series of siltstone, mudstone, greywacke, and slate all dipping in a southerly direction. These rocks are intruded by a Late Cretaceous to Tertiary Bulkley Intrusion comprised of granodiorite with associated quartz-feldspar porphyry

CAPSULE GEOLOGY

dikes.

The rhyolitic and andesitic flows, breccia, and tuff show vein fissure infillings along sheared zones and faults which host sulphide mineralization. In order of abundance, the mineralization comprises arsenopyrite, galena, sphalerite, tetrahedrite and chalcopyrite. The sheared wall rock is bleached to light yellow and is silicified. The main mineralized zone is richest in galena, sphalerite and tetrahedrite and is located near the sedimentary unconformity. Depending on the proximity to the main Victory vein, the volcanic rock exhibits varying degrees of silicification, chloritization and pyritization. Pervasive sericitization and silicification is prevalent along the majority of shears. The alteration assemblage is typically sericite, clay, quartz and carbonate with bright fuchsite.

The Victory vein, is prospected by four adits and is known to extend approximately 1200 metres along strike from exposures in trenches, adits and surface outcrops. The main shear trends between 030 to 040 degrees and ranges in width from 0.25 to 2.0 metres. The main zone is hosted within a fractured shear zone and smaller peripheral splays in the rhyolitic rocks. The mineralization consists of fissure infilling containing galena, sphalerite, tetrahedrite, arsenopyrite and chalcopyrite. Silicified and chloritized rhyolite lapilli tuff represents the host lithology. A 13 centimetre channel sample across the main zone assayed 14.4 grams per tonne gold, 501.9 grams per tonne silver, 23.45 per cent lead and 13.36 per cent zinc (Geological Survey of Canada Bulletin 1).

Adit No. 2, at elevation 1209 metres, intersects altered and fractured andesite containing stringers of galena, sphalerite, arsenopyrite, and minor tetrahedrite and chalcopyrite. A 56 centimetre channel sample assayed 1.5 grams per tonne gold, 83.7 grams per tonne silver, 2.78 per cent lead, and 2.11 per cent zinc.

Adit No. 3, at elevation 1245 metres, shows altered and sheared andesite with stringers and pockets of arsenopyrite with minor galena and sphalerite. The No. 4 adit, at elevation 1282 metres, consists of altered and fractured andesite with well mineralized stringers consisting mainly of arsenopyrite. In 1932, D. Lay selectively sampled No. 4 adit ore shoot 18 metres long and 1.0 metres wide. The sample assayed 15.1 grams per tonne gold, 358.3 grams per tonne silver, 6.4 per cent lead and 1.1 per cent zinc (Geological Survey of Canada Bulletin 1, page 53).

In 1987 to 1988, rehabilitation of some of the underground workings was initiated. An old drift was slashed for 61 metres and extended about 38 metres. Underground sampling of a vein in the new drift gave a zone grading 2.4 grams per tonne gold, 301.7 grams per tonne silver, 7.0 per cent zinc and 6.0 per cent lead (Assessment Report 14300).

In 1987, assays from the underground sampling ranged from 3.4 to 34.28 grams per tonne silver and 0.2 to 1.5 per cent lead and zinc. Where the vein hosts massive sulphides, the silver values range from 411.4 to 2000.0 grams per tonne and lead and zinc values run between 10 to 15 per cent. Gold values are associated with the silver at about a 1:100 ration, and gold values of about 3.2 grams per tonne are associated with arsenic values in the order of 1.0 to 5.0 per cent (Assessment Report 17773).

Production between 1913 to 1936 inclusive, totalled 53 tonnes mined and contained 560 grams per tonne gold, 77,166 grams per tonne silver, 17,061 kilograms lead, and 1,778 kilograms zinc. Proven reserves were reported at 4,200 tonnes with no grade stated, in 1953 by Sil-Van Consolidated Mining & Milling Co. Ltd. (Energy, Mines and Resources, Mineral Policy, Corpfile).

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GSC SUM RPT 1925A, p. 134
EMPR AR 1908-64; 1911-116; 1912-115; 1917-113; 1918-118; 1925-136; 1927-136; 1928-161; 1930-140; 1938-B39,C49; 1939-52,92; 1950-100; 1952-93; 1956-62; 1966-86
EMPR PF (Rpt. L. Batten, 1928: Victory Group, Smithers, B.C.; miscellaneous maps)
GSC BULL *1, p. 53; 270
EMPR EXPL 1977-E197; 1985-C320; 1988-C172
GSC MAP 971A
GSC P 44-23
EMR MP CORPFILE (Dorita Silver Mines; Sil-Van Consolidated Mining and Milling Co. Ltd.)
EMPR MAP 69-1
EMPR ASS RPT 13994, *14300, *17773
GSC OF 351
EMR MIN BULL *#198, p. 238
GCNL #62,Mar.29, 1988

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EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/05/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 094**
NATIONAL MINERAL INVENTORY: 093L14 Au2

NAME(S): **IRON KING (L.7266)**, MYRTLE (L.7265)

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 47 40 N
LONGITUDE: 127 20 41 W
ELEVATION: 1585 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Sloan Creek on the southwest side of Hudson Bay Mountain, 12 kilometres west of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6073174
EASTING: 606421

COMMODITIES: Silver, Zinc, Copper, Gold

MINERALS
SIGNIFICANT: Arsenopyrite, Sphalerite, Chalcopyrite, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Bulkley Intrusions

LITHOLOGY: Rhyolite Tuff
Andesite
Tuff
Volcanic Breccia
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1914
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	123.4000	Grams per tonne
Copper	0.8000	Per cent
Zinc	15.8000	Per cent

COMMENTS: Selected grab sample from mineralized vein; trace gold.
REFERENCE: Minister of Mines Annual Report 1914, page 216.

CAPSULE GEOLOGY

The Iron King claim is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised mainly of massive andesite, rhyolite, andesitic flows, intercalated tuff, breccia and massive tuff. The volcanics are intruded by a Late Cretaceous to Early Tertiary granodiorite stock and associated quartz-feldspar porphyry dikes.

An open cut on the claim exposed stringers carrying arsenopyrite, sphalerite, and chalcopyrite across a width of approximately 2.5 metres. The general strike is 054 degrees with a southeast dip. A selected sample assayed trace gold, 123.4 grams per tonne silver, 15.8 per cent zinc and 0.8 per cent copper (Minister of Mines Annual Report 1914, page 216).

On the adjacent Myrtle claim two stringers carry arsenopyrite and a little sphalerite. One selected sample from each vein assayed 10.3 grams per tonne gold, 78.9 grams per tonne silver, and 6.9 grams per tonne gold, 109.7 grams per tonne silver (Minister of Mines Annual Report 1914, page 216).

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EMPR AR 1909-84; 1911-117-118; 1912-45; *1914-216

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GSC P 36-20, p. 90; 44-23
GSC MAP 971A
GSC EC GEOL No. 4, p. 45, 1927
EMPR MAP 69-1
EMPR GEM 1973-347
EMPR ASS RPT *14300, 17773
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 095**

NATIONAL MINERAL INVENTORY:

NAME(S): **HUMMING BIRD (L.7591)**, BULKLEY RIVER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 47 15 N
LONGITUDE: 127 21 06 W
ELEVATION: 1220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southwest slope of Hudson Bay Mountain, adjoins the Henderson (Duthie Mine, 093L 088).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6072391
EASTING: 605993

COMMODITIES: Gold, Silver, Lead, Zinc, Manganese

MINERALS
SIGNIFICANT: Sphalerite, Galena, Arsenopyrite, Pyrite, Pyrolusite
ASSOCIATED: Quartz
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Breccia
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1929

COMMODITY	GRADE	
Silver	733.7000	Grams per tonne
Gold	8.2000	Grams per tonne
Lead	15.0000	Per cent
Zinc	25.6000	Per cent

COMMENTS: A 0.6 metre sample from the northern part of the vein.
REFERENCE: Minister of Mines Annual Report 1929, page 162.

CAPSULE GEOLOGY

The claim (Lot 7591) is underlain by Lower Jurassic Hazelton volcanics comprised of fractured red and green andesitic flows, tuffs and breccia. Quartz veins hosting galena, sphalerite, arsenopyrite and pyrite crosscut the volcanics.

The main vein, striking 065 degrees was explored by several open cuts. There is a considerable amount of black oxidized earthy material on the surface of the vein which extends approximately 152 meters. The black oxidized material was identified in 1908 as pyrolusite. Beneath this decomposed area, the ore is comprised of sphalerite, arsenopyrite, galena and pyrite with quartz gangue and altered dike rock that is shattered and brecciated. In 1908 a sample assayed 1.02 grams per tonne gold and 355.5 grams per tonne silver. In 1929, a 0.6 metre sample of the northern extremity of the vein assayed 8.2 grams per tonne gold, 733.7 grams per tonne silver, 15 per cent lead and 25.6 per cent zinc.

BIBLIOGRAPHY

EMPR AR *1908-64,172; 1912-115; *1914-216; *1929-162
EMPR MAP 69-1
EMPR PF (Claim Map 93L-14W)
EMPR FIELDWORK 1988, pp. 195-208

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GSC SUM RPT *1908, p. 45
GSC EC GEOL *1932, Vol. 12, p. 119
GSC OF 351
GSC BULL 270

DATE CODED: 1988/08/05 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 096**

NATIONAL MINERAL INVENTORY: 093L14 Cu2

NAME(S): **BONANZA**, TRADE DOLLAR, SILVER LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 49 00 N
LONGITUDE: 127 22 06 W
ELEVATION: 1833 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: South side of Silvern Creek on Hudson Bay Mountain, northwest of Smithers. Showing is south of Silver Lake No.1 (Lot 7239).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6075611
EASTING: 604846

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Bornite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Volcanic Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Hazelton Ranges
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The Bonanza claim lies south of the Silver Lake - White Heather claims on Hudson Bay Mountain. The claim is underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of andesite, andesitic flows, intercalated tuffs, and volcanic breccia. The showing consists of a quartz fissure vein in the breccia. Mineralization consists of bornite with minor sulphides mainly chalcopyrite and pyrite. The only development were small open cuts and some stripping.

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EMPR AR *1916-124; *1928-164
EMPR MAP 69-1
EMPR ASS RPT *471
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 097** NATIONAL MINERAL INVENTORY: 093L14 Ag4

NAME(S): **SILVER LAKE (L.7239)**, WHITE HEATHER, SILVER LAKE NO. 1

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 49 50 N NORTHING: 6077160
LONGITUDE: 127 21 56 W EASTING: 604988
ELEVATION: 1950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: South side of the divide at head of Silvern and Toboggan Creeks on Hudson Bay Mountain.

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS
SIGNIFICANT: Galena Bornite Chalcopyrite Sphalerite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Limonite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: STRIKE/DIP: 050/60N TREND/PLUNGE:
COMMENTS: Galena vein on claim Silver Lake No. 1.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite
Tuff
Fossiliferous Limestone
Volcanic Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: Syn-mineralization Post-mineralization GRADE:

INVENTORY

ORE ZONE: NO. 3 REPORT ON: Y

CATEGORY: Inferred YEAR: 1964
QUANTITY: 30000 Tonnes

COMMODITY	GRADE	
Silver	449.1300	Grams per tonne
Gold	1.7100	Grams per tonne
Lead	6.7000	Per cent
Zinc	17.7000	Per cent

COMMENTS: Basis of sampling surface trenches (1964) 2 shoots aggregate 91.4 metres long and over mining widths will produce 90.7 tonnes.
REFERENCE: Energy, Mines & Resources Canada Mineral Bulletin 198, page 238.

CAPSULE GEOLOGY

The property is underlain by Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation. The rocks are comprised of andesite flows with associated red tuffs, red breccias, green tuffs and a band of interbedded fossiliferous limestone which strikes southeast and dips steeply north. At elevation 1950 metres, an adit was driven into the massive andesite and poorly bedded red tuffs along a tight fissured fault which strikes south and dips vertically. No mineralization was found but stringers and veinlets of bornite were exposed in a nearby small, irregular shaped shear. Ore from this cut, sampled by J.D. Galloway in 1916 assayed 14.5 grams gold, 4117.6 grams silver and 47.8 per cent copper (Geological Survey of Canada Memoir 223, page 70). At 1980 metres elevation there is a large flat area littered with disintegrated rock. Several veins were located by test pits and in one open cut a galena vein occurs along a fault fissure striking 130 degrees and dipping 60 degrees

CAPSULE GEOLOGY

northeast. The vein contains up to 5 per cent chalcopyrite associated with solid galena. Open cuts exposed a persistent fault fissure with variable mineral content or areas with very little or no vein filling. In a cut at elevation 2040 metres a vein is exposed for 4.6 metres. The vein ranges between 8 to 30 centimetres wide and consists of solid, coarsely crystalline galena with less than 1 per cent chalcopyrite. In 1934, a selected sample assayed 3.4 grams per tonne gold, 3515.9 grams per tonne silver and 83.58 per cent lead (Minister of Mines Annual Report 1934, page C6).

Along the northern rim of the flat area a shear zone in fine-grained andesite is exposed striking from 90 to 135 degrees east and dipping from nearly vertical to 70 degrees south. There were three sulphide veins associated with this shear at elevation 2010 metres. The vein filling consists of approximately equal portions of solid galena and dark sphalerite with minor chalcopyrite. A representative sample assayed 8.2 grams per tonne gold, 1448.9 grams per tonne silver, 26.21 per cent lead, 28.45 per cent zinc, and 0.74 per cent copper (Minister of Mines Annual Report 1928, page C164). Additionally, two other mineralized veins were exposed, one containing an abundant amount of sphalerite with some carbonate gangue. Other smaller veins were exposed in the andesite and tuffaceous rocks near the centre of the large flat area.

In 1913, two tonnes of ore was mined and produced 5412 grams silver and 834 kilograms copper.

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GSC P 36-20, pp. 77-91
GSC BULL 1, p. 53
EMPR AR 1905-134; 1907-80; 1913-419; 1916-124; 1923-110; 1924-96; 1926-130; 1927-137; *1928-C164; 1929-C165; 1931-73; 1933-98; 1934-C6; 1950-100; 1963-26; 1964-51; 1965-74; 1966-86
EMR MP CORPFILE (Sil-Van Mines Ltd. Report and Balance Sheet Nov. 30, 1964)
EMPR MAP 69-1
GSC P 44-23
EMPR EXPL *1977-E198
EMPR ASS RPT *471
EMR MIN BULL MR *198, p. 238
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin
EMPR PF (Miscellaneous maps; Consolidated Silver Standard Mines Ltd., Annual Report 1988, p. 5)
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 098** NATIONAL MINERAL INVENTORY: 093L14 Ag3

NAME(S): **IRON VAULT (L.5754)**, SILVER CREEK, VAN ANDA (L.5756), SCHUFER

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 50 15 N NORTHING: 6077933
LONGITUDE: 127 21 56 W EASTING: 604970
ELEVATION: 1740 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south side of the divide at the head of Silvern and Toboggan Creeks, on Hudson Bay Mountain, 14.5 kilometres northwest of Smithers.

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS
SIGNIFICANT: Tetrahedrite Arsenopyrite Sphalerite Galena Pyrrhotite Chalcopyrite Pyrite
ASSOCIATED: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Podiform
CLASSIFICATION: Replacement Epigenetic Hydrothermal
TYPE: J01 Polymetallic manto Ag-Pb-Zn I05 Polymetallic veins Ag-Pb-Zn±Au
COMMENTS: Shape of modifier is lenticular or pipe shaped.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Tuff
Andesitic Breccia
Fossiliferous Limestone
Granodiorite

HOSTROCK COMMENTS: Granodiorite Stock; dark red and green bedded tuff.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: Syn-mineralization GRADE:
Post-mineralization

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1926
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	215.7000	Grams per tonne
Gold	0.3400	Grams per tonne
Lead	2.0400	Per cent
Zinc	3.5000	Per cent

COMMENTS: Representative sample containing about 10 per cent sulphides.
REFERENCE: Minister of Mines Annual Report 1926, page 129.

CAPSULE GEOLOGY

On the Iron Vault claim the host rocks consist of dark green and red andesites with some interbedded tuffs separated from a series of greenish tuffs by a band of fossiliferous limestone. These rocks are part of the Lower Jurassic Hazelton Group, Nilkitkwa Formation. The tuffs are mostly fine-grained and massive, but some beds are well laminated with bedding, striking east and dipping from nearly vertical to 50 degrees north. The top of the series is believed to be north so where the beds dip to the north or northeast, the strata are overturned. These rocks are intruded by a 120 to 300 metre by 900 metre granodiorite stock which outcrops on the south end of the Iron Mask claim and extends west across the Copper Queen and Lily Fraction claims, all part of the Silver Creek Group. The limestone

CAPSULE GEOLOGY

band is cut off to the west by the granodiorite stock. The limestone unit is lenticular in outline, attaining a maximum width of 20 metres. Mineralization occurs as lens-shaped pods consisting of pyrrhotite, sphalerite, and pyrite replacements in the limestone. Mineralization appears to be localized to zones where small faults crosscut the limestone. However, recrystallization and flowage have absorbed differential movement within the unit so that fissures do not penetrate the unit very deeply. Therefore, the orebodies occur along the contact and are characteristically short and lenticular in surface outline, but may be pipe-shaped.

Along the south side of the limestone contact with green tuffs, a lenticular sulphide body, approximately 15 metres long and 5 metres wide, consists of about 40 per cent black sphalerite, 40 per cent pyrrhotite, and 10 per cent pyrite. Other sulphide lenses are exposed in open-cuts along the north side of the limestone band and occur along small faults both as fissure fillings and as replacements in the wall rocks.

A calcite vein occurs along a fault with vertical displacement in the andesitic rocks. It consists of sheared and brecciated andesite cemented by calcite with varying amounts of galena, sphalerite, tetrahedrite, arsenopyrite, and pyrite. The fault has a curving strike, changing from 210 to 260 degrees, and dips from 55 to 65 degrees southeast. At elevation 1720 metres, the fault is bordered on the south side by limestone 15 metres in width. The limestone has been heavily replaced along the fault by massive sulphides to form a lenticular orebody 9 metres long and 5 metres wide. The sulphides are present in the following order of abundance: pyrite, sphalerite, galena, arsenopyrite, pyrrhotite, and chalcopyrite.

The best mineralization occurs east of the fault along the east edge of the limestone body. A representative sample of the ore, containing about 10 per cent sulphides, assayed: 0.34 grams gold, 215.7 grams per tonne silver, 2.04 per cent lead, and 3.5 per cent zinc (Minister of Mines Annual Report 1926, page 129).

Production in 1964 consisted of 3,235 grams silver, 663 kilograms lead, and 71 kilograms zinc.

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GSC MEM *223, pp. 65-69
EMPR AR 1908-65; 1909-84; 1912-115; 1913-108; 1914-513; 1916-123; 1917-114; 1918-118; 1919-103; 1925-137; *1926-129; 1927-137; 1930-444; 1931-73; 1935-C39; 1950-100; 1963-26; 1965-51, 74; *1966-86
GSC BULL 1
GSC P 36-20, pp. 77-82; 44-23
GSC SUM RPT 1925A, p. 138
EMPR PF (Map 1965, Silver Creek Deposit, Surf. Geol. & Drilling; miscellaneous maps)
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 099**

NATIONAL MINERAL INVENTORY: 093L14 Au5

NAME(S): **MATUSS**, SILVER KING, LAST CHANCE (L.7255)

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 50 10 N
LONGITUDE: 127 20 06 W
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Toboggan Creek near the foot of the Glacier, approximately 13 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6077825
EASTING: 606936

COMMODITIES: Silver, Lead, Zinc, Gold, Copper

MINERALS

SIGNIFICANT: Arsenopyrite, Galena, Sphalerite, Chalcopyrite, Pyrrhotite
COMMENTS: Black sphalerite.
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I02 Intrusion-related Au pyrrhotite veins; I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 225/60E
TREND/PLUNGE:
COMMENTS: Quartz-arsenopyrite vein strikes southwest, dips 50 to 70 degrees southeast.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Rhyodacite Flow
Dacitic Flow
Greywacke
Shale
Conglomerate
Siltstone
Mudstone
Quartz Feldspar Porphyry Dike

HOSTROCK COMMENTS: Hazelton Group unconformably overlain by Bowser Group sediments.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	1.7000	Grams per tonne
Gold	12.3000	Grams per tonne

COMMENTS: Thirteen centimetre channel sample taken across a quartz-arseno-pyrite vein.
REFERENCE: Geological Survey of Canada Memoir 223, pages 69, 70.

CAPSULE GEOLOGY

Massive andesite of the Lower Jurassic Hazelton Group is unconformably overlain by Upper Jurassic to Lower Cretaceous Bowser Group sediments. The contact strikes west and dips 70 degrees north. The volcanic sequence is hard and resistant whereas the shales, argillites and greywacke are soft and characteristically iron-stained. The upper surface of the andesite is irregular with depressions infilled with argillite and coarse greywacke composed mainly of rounded grains of andesite. Both the volcanic and sedi-

CAPSULE GEOLOGY

mentary rocks are intruded by light colored quartz-feldspar porphyry dikes most of which range from 1 to 3 metres in width and from 150 to 300 metres in length. They contain up to 3 per cent 0.5 to 1.5 centimetre subangular sanadine crystals. One of these dikes intersects a vein at the portal of an adit indicating the dike intrusions were later than the fissuring.

At an elevation of 1400 metres, an adit was driven along a quartz-arsenopyrite vein and a 13 centimetre channel sample across the vein assayed 12.3 grams gold and 1.7 grams silver (Geological Survey of Canada Memoir 223, page 69).

Mineralization in the andesite appears to have a vertical zonation. The quartz-arsenopyrite veins and stringers change to lenses of black sphalerite and pyrrhotite cut by stringers of chalcopyrite along fissured zones.

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 100**

NATIONAL MINERAL INVENTORY: 093L14 Zn1

NAME(S): **MAMMOTH (L.7249)**, IRON MASK (L.5750)

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 50 25 N
LONGITUDE: 127 21 21 W
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Schufer Lake at the head of Toboggan Creek on Hudson Bay Mountain, 13 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6078257
EASTING: 605587

COMMODITIES: Silver, Lead, Zinc, Gold, Copper

MINERALS

SIGNIFICANT: Arsenopyrite, Sphalerite, Galena, Pyrrhotite, Chalcopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
COMMENTS: Vein strikes west and dips steeply south.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Tuff
Granodiorite
Quartz Monzonite

HOSTROCK COMMENTS: Granodiorite stock; flat lying red and green tuffs.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The host rocks are mainly Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation. They are mainly green and red tuffs which exhibit generally flat-lying bedding planes containing pyrite, sphalerite, and other minerals. The bedding tends to converge in the west in an anticlinal structure. Mineralization appears to occur in certain horizons marked by a change in the formation and rusty rock.

On the Mammoth claim a vein striking west and dipping steeply south, can be traced in the volcanic rock for approximately 91 metres. The vein averages about 30 centimetres in width and contains pyrrhotite, arsenopyrite, and sphalerite with a minor amount of galena. To the west, the vein narrows to approximately 10 centimetres and consists mainly of quartz and pyrite with a minor amount of chalcopyrite.

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/04 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 101** NATIONAL MINERAL INVENTORY: 093L14 Au4

NAME(S): **COPPER QUEEN (L.5751)**, SILVER CREEK

STATUS: Developed Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 50 27 N NORTHING: 6078296
LONGITUDE: 127 22 16 W EASTING: 604605
ELEVATION: 1615 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: East side of Silvern Lake on Hudson Bay Mountain, 14.5 kilometres northwest of Smithers.

COMMODITIES: Silver Zinc Copper Gold

MINERALS
SIGNIFICANT: Arsenopyrite Pyrrhotite Pyrite Marcasite
ASSOCIATED: Quartz Carbonate
ALTERATION: Marcasite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I02 Intrusion-related Au pyrrhotite veins I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 080/83N TREND/PLUNGE:
COMMENTS: Mineralized vein strikes north 80 degrees and dips 83 degrees north in shear zone within granodiorite stock.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Tuff
Fossiliferous Limestone
Granodiorite
Quartz Monzonite
Lamprophyre Dike

HOSTROCK COMMENTS: Hudson Bay Mountain Stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	98.0600	Grams per tonne
Gold	5.1400	Grams per tonne

COMMENTS: 30 centimetre channel sample taken across the central portion of the vein at the portal of the adit.
REFERENCE: Geological Survey of Canada Memoir 223, pages 65-69.

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group green and purple andesites with some interbedded tuffs are separated from the green and red tuffs in the Nilkitkwa Formation by a fossiliferous limestone horizon. The tuffs are generally fine-grained and massive, but some beds are well laminated and strike easterly with a dip of near vertical to 50 degrees north. The northern dipping sequence is likely overturned. The Hazelton Group rocks are intruded by a Bulkley Intrusive granodiorite stock of Cretaceous age. The stock is cut by a 9 metre wide lamprophyre dike which dips at a low angle to the south.

A mineralized quartz-carbonate vein exists in a sheared zone in the granodiorite stock. The vein strikes 080 degrees east and dips 83 degrees north. The sheared and altered rock is traversed by

CAPSULE GEOLOGY

sulphide stringers and seams comprised of pyrite, arsenopyrite and pyrrhotite. Some of the pyrrhotite is partly replaced by lamellar marcasite within carbonate veins. A 30 centimetre channel sample taken across the central portion of the vein at the portal adit assayed 5.14 grams gold and 98.06 grams silver (Geological Survey of Canada Memoir 223, pages 65 to 69).

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/04 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 102**
NATIONAL MINERAL INVENTORY: 093L14 Cu1

NAME(S): **LAST CHANCE (L.7255)**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 50 54 N
LONGITUDE: 127 22 00 W
ELEVATION: 1570 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located north of the headwaters of Toboggan Creek on Hudson Bay Mountain, 12.9 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6079137
EASTING: 604871

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Magnetite
ASSOCIATED: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION:
STRIKE/DIP: 305/83N
TREND/PLUNGE:
COMMENTS: Shape of modifier is faulted. Mineralized vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1926
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	68.6000	Grams per tonne
Copper	2.5000	Per cent

COMMENTS: Selected channel of vein material collected by D. Lay. Trace gold was assayed.
REFERENCE: Geological Survey of Canada Memoir 223, page 64.

CAPSULE GEOLOGY

The property is underlain by Middle to Lower Jurassic Hazelton Group volcanics consisting mainly of andesite and tuff.

Several small and irregular sulphide veins within the andesite were prospected by open cuts. Vein mineralization is comprised of magnetite, considerable pyrite, and minor amounts of chalcopyrite. Three sulphide veins occupy fractures that strike from 055 to 070 degrees west and dip steeply north. The three veins terminate against small cross faults and the andesite wallrock is altered but is sparsely mineralized.

Another mineralized vein strikes 305 degrees and dips 83 degrees northeast. It is comprised of massive magnetite and pyrite and is cut by small chalcopyrite stringers. A selected sample collected by D. Lay in 1926 assayed trace gold, 68.6 grams per tonne silver, and 2.5 per cent copper. A representative sample from the dump assayed 0.7 grams per tonne gold, 3.09 grams per tonne silver, 3.75 per cent copper, and 0.16 per cent zinc (Geological Survey of Canada Memoir 223, page 64). An adit driven 20 degrees east from the vein failed to disclose any mineralization.

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 103** NATIONAL MINERAL INVENTORY: 093L14 Au6

NAME(S): **RIO GRANDE (L.7277)**, RICO ASPEN, SPONDULIX, JUMBO, IRON DOLLAR, LAST HOPE, CHAUFFER

STATUS: Developed Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 51 00 N NORTHING: 6079364
LONGITUDE: 127 20 21 W EASTING: 606632
ELEVATION: 1370 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on north side of the head of Toboggan Creek on the south slope of Mount Evelyn, approximately 13 kilometres northwest of Smithers.

COMMODITIES: Gold Silver Copper Lead Zinc

MINERALS

SIGNIFICANT: Arsenopyrite Pyrrhotite Chalcopyrite Pyrite Galena Sphalerite
ASSOCIATED: Quartz Marcasite
ALTERATION TYPE: Quartz-Carb. Sericitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: Metres STRIKE/DIP: 095/40N TREND/PLUNGE:
COMMENTS: Unconformable contact of Hazelton Group and Bowser Group rocks strikes a little south of east and dips 40 degrees north.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Conglomerate
Mudstone
Siltstone
Granodiorite
Quartz Monzonite
Quartz Feldspar Porphyry Dike
Andesite
Tuff
Rhyodacite
Dacite

HOSTROCK COMMENTS: Mineralization occurs along Bowser Lake/Hazelton Group contact.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: Syn-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: UNDERGROUND WORKINGS REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1933
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	274.3000	Grams per tonne
Gold	25.4000	Grams per tonne

COMMENTS: Grab sample of Rio Grande ore taken from a crosscut by A. Garde.
REFERENCE: Property File - A. Garde, 1934.

CAPSULE GEOLOGY

The Rio Grande claims are underlain by Lower to Middle Jurassic Hazelton Group volcanics which are unconformably overlain by Upper Jurassic to Lower Cretaceous Bowser Group sediments. These rocks are intruded by a Cretaceous Bulkley Intrusion, comprised of grano-diorite and quartz-monzonite. This intrusion forms the core of the highest peak of Mount Evelyn. Minor quartz-feldspar porphyry dikes

CAPSULE GEOLOGY

associated with the Bulkley Intrusive crosscut the volcanics and sediments. The Hazelton Group rocks are comprised of a basal intermediate volcanic overlain by massive pale green dacite and rhyodacite flows. This is followed by 10 metres of bleached and shattered tuff overlain by massive andesite, andesitic flows and tuff. The Bowser Group unconformably overlies the Hazelton rocks. The sedimentary sequence consists of a poorly sorted basal conglomerate which exhibits rusty weathering due to disseminated pyrite in the matrix.

The Rio Grande mineral occurrence coincides with shear filling and vein-type mineralization in the conglomerate. This is overlain by a monotonous series of upward fining grits, siltstones, and mudstone which are generally black, carbonaceous and rusty weathered. Shears and fractures are filled with quartz-sulphide veins which range between 5 centimetres to 3 metres thick and contain a variable amount of mineralization.

At an elevation of 1400 metres an adit was driven along the contact of the sediments and volcanics. The contact strikes a little south of east and dips 40 degrees north. Rocks at the dump site for the adit consist of siltstones traversed by fine pyrite seams. In an open cut on the contact there was rusty oxidized rock impregnated with arsenopyrite and pyrite. Similar mineralization occurs eastward along the contact. A piece of the arsenopyrite taken from a crosscut assayed 25.4 grams per tonne gold and 274.3 grams per tonne silver (Property File - Garde, A., 1934).

Mineralization occurs as infillings in shears and zones of brecciation near the granodiorite intrusion at the volcanics. Adits at 1570 and 1675 metres elevation driven along fissures were both barren.

Imperial Metals Corporation optioned the Chauffer property in 1995. A polymetallic massive sulphide showing was trenched and drilled. A 0.52-metre intersection assayed 18.9 grams per tonne gold and 15.77 grams per tonne silver (Assessment Report 24354).

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 104** NATIONAL MINERAL INVENTORY: 093L14 Au7

NAME(S): **RICO ASPEN (L.2648)**, RIO GRANDE SYNDICATE

STATUS: Developed Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 51 30 N NORTHING: 6080297
LONGITUDE: 127 20 06 W EASTING: 606877
ELEVATION: 1675 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Claim located on east side of Mount Evelyn summit on the northeast side of Hudson Bay Mountain, 13.7 kilometres northwest of Smithers.

COMMODITIES: Silver Lead Zinc Copper Gold

MINERALS
SIGNIFICANT: Arsenopyrite Tetrahedrite Sphalerite Galena Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 040/43E TREND/PLUNGE:
COMMENTS: Shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Tuff
Dacite
Rhyodacite
Breccia
Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact Plutonic Rocks RELATIONSHIP: Syn-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1913
SAMPLE TYPE: Bulk Sample

COMMODITY	GRADE	
Silver	2897.0000	Grams per tonne
Gold	4.1100	Grams per tonne
Copper	7.0000	Per cent

COMMENTS: 1913- 1.8 tonnes of ore was shipped and assayed. Sample type is bulk ore.
REFERENCE: Minister of Mines Annual Report 1934, page C8.

CAPSULE GEOLOGY

Rio Aspen claim is underlain by Lower to Middle Jurassic Hazelton Group volcanics intruded by the Cretaceous Bulkley Intrusion which is comprised of medium-grained, equigranular granodiorite stock and quartz-monzonite. These rocks are unconformably overlain by Upper Jurassic to Lower Cretaceous Bowser Group sediments. The Hazelton volcanics consist of a basal intermediate volcanic flow overlain by dacite and rhyodacite, followed by 10 metres of tuff which is overlain by massive andesite, andesitic flows and tuff. The sediments are in contact with the volcanics at elevation 1430 metres and strikes slightly south of east and dips 40 degrees north.

A narrow mineralized zone between 1970 to 2010 metres elevation was prospected. The zone occurs in fine-grained granodiorite along a fault 5 centimetres in width. Jones (Geological Survey of

CAPSULE GEOLOGY

Canada Summary Report, 1925) describes the showing as a sheared zone striking 040 degrees and dipping 43 degrees southeast in andesitic flows and breccia. The shear at the surface shows mineralization in the form of stringers containing galena, sphalerite, arsenopyrite and pyrite. In 1913, 1.8 tonnes of ore were shipped and assayed 44.11 grams per tonne gold, 2897 grams per tonne silver and 7 per cent copper (Minister of Mines Annual Report 1934, page C8).

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 105**
NATIONAL MINERAL INVENTORY: 093L14 Ag9

NAME(S): **EVELYN**, FORT GEORGE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 51 45 N
LONGITUDE: 127 19 31 W
ELEVATION: 1524 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northeast side of Hudson Bay Mountain, 13.7 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6080776
EASTING: 607490

COMMODITIES: Silver, Lead, Zinc, Gold, Copper

MINERALS
SIGNIFICANT: Arsenopyrite, Tetrahedrite, Sphalerite, Galena, Chalcopyrite, Pyrite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 060/40E
TREND/PLUNGE:
COMMENTS: Best assay from parallel shear zones.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Tuff
Dacite
Rhyodacite
Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	31.2000	Grams per tonne
Lead	0.2900	Per cent

COMMENTS: Trace gold. 2.0 metre chip sample taken in sheared and silicified andesite at elevation 1600 metres.
REFERENCE: Geological Survey of Canada Memoir 223, pages 61, 62.

CAPSULE GEOLOGY

The Lower to Middle Jurassic Hazelton Group volcanics are intruded by the Cretaceous Bulkley Intrusion which consists mainly of equigranular granodiorite and quartz monzonite. Minor quartz-feldspar porphyry dikes related to the intrusion crosscut the volcanics. The Hazelton Group consists of a basal intermediate flow overlain by massive dacite and rhyodacite flows, then 10 metres of bleached tuff overlain by massive andesite, andesitic flows and tuff.

On the property, between elevations 1570 to 1690 metres, a mineralized shear zone striking 055 degrees and dipping 45 degrees southeast was traced by open cut for 300 metres. Mineralization consists of arsenopyrite, pyrite, galena, sphalerite, and tetrahedrite. Granodiorite outcrops approximately 180 metres to the southeast.

The most extensive shearing and vein formation occurs at an elevation of 1600 metres. The andesite is sheared, altered, and

CAPSULE GEOLOGY

silicified. The altered rock is replaced by finely disseminated pyrite, and arsenopyrite, and is traversed by fine veinlets of galena and sphalerite. A chip sample taken across 2.0 metres assayed trace of gold, 31.2 grams per tonne silver, and 0.29 per cent lead (Geological Survey of Canada Memoir 223, page 61).

Two parallel shear zones, striking 060 degrees and dipping 40 degrees southeast, show small amounts of galena, sphalerite, tetrahedrite, and up to 10 per cent arsenopyrite in silicified, sheared andesite. A 38 centimetre channel sample assayed 0.26 grams per tonne gold, 366.8 grams per tonne silver, and 42 per cent lead (Geological Survey of Canada Memoir 223, page 61). Further to the east, open cuts expose shear zones mineralized with a minor amount of arsenopyrite, galena, and sphalerite.

At an elevation of 1687 metres sheared and silicified andesite hosts up to 10 per cent arsenopyrite with a little galena and sphalerite. A 30 centimetre channel sample assayed 0.17 grams per tonne gold and 37.0 grams per tonne silver (Geological Survey of Canada Memoir 223, page 61).

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DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1988/06/10	REVISED BY:	LLD	FIELD CHECK:	N

MINFILE NUMBER: **093L 106** NATIONAL MINERAL INVENTORY: 093L14 Ag15

NAME(S): **CARROLL**, MOUNT EVELYN

STATUS: Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 51 15 N NORTHING: 6079855
LONGITUDE: 127 19 16 W EASTING: 607780
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located at north side of Toboggan Creek on the south slope of Mount Evelyn, 13.7 kilometres northwest of Smithers.

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS
SIGNIFICANT: Arsenopyrite Galena Sphalerite Chalcopyrite Pyrite
ALTERATION: Quartz Carbonate
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 050/65E TREND/PLUNGE:
COMMENTS: Parallel shear zones at elevation 1250 metres with mineralized vein infilling.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Tuff
Dacite
Rhyodacite
Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1928
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	43.2000	Grams per tonne

COMMENTS: Selected grab sample from altered dike rock in a shear. (Assayed trace gold.)
REFERENCE: Geological Survey of Canada Memoir 223, page 62.

CAPSULE GEOLOGY

The claims are underlain by andesite, tuff, and dacite to rhyodacite flow rocks of the Lower to Middle Jurassic Hazelton Group and are unconformably overlain by conglomerates, grits, and mud-stones of the Upper Jurassic to Lower Cretaceous Bowser Group. Cretaceous Bulkley Intrusions and younger quartz-feldspar porphyry dikes intrude the stratified rocks.

Two adits along veins in altered andesite, at elevations of 1400 and 1585 metres, exposed argentiferous galena with a low gold content. Both veins were short and discontinuous.

At an elevation of 1250 metres, a sheared and altered vein in silicified andesite strikes 050 degrees and dips 65 degrees southeast maintaining an average width of 46 centimetres. The altered dike rock consists of finely disseminated pyrite. A selected sample assayed trace gold, and 43.2 grams per tonne silver. A sample from an 8 centimetre galena stringer assayed

CAPSULE GEOLOGY

5485 grams per tonne silver and 73 per cent lead (Geological Survey of Canada Memoir 223, page 62).

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GSC SUM RPT 1925A, p. 142
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EMPR EXPL 1983-446
EMPR ASS RPT *471, *11526
EMPR MAP 69-1
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GSC P 44-23
GSC BULL 270
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Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/11 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 107** NATIONAL MINERAL INVENTORY:

NAME(S): **GLACIER GULCH (NORTH SIDE)**

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 49 48 N NORTHING: 6077227
LONGITUDE: 127 16 56 W EASTING: 610342
ELEVATION: 884 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located below Lake Kathlyn Glacier on the north side of Glacier Gulch approximately 8 kilometres northwest of Smithers.

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS
SIGNIFICANT: Arsenopyrite Galena Sphalerite Chalcopyrite Pyrrhotite Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 010/50W TREND/PLUNGE:
COMMENTS: Main vein attitude. Shape of modifier is sheared.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Lower Cretaceous	Skeena	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Quartzite
Greywacke
Slate
Conglomerate
Coal

HOSTROCK COMMENTS: In fault contact with younger sediments containing basal coal seams.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: DRIFT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1937
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	233.0000	Grams per tonne
Gold	6.8600	Grams per tonne
Lead	2.0000	Per cent
Zinc	5.4000	Per cent

COMMENTS: 45.7 centimetre channel sample taken across the face of a drift.
REFERENCE: Minister of Mines Annual Report 1937, pages C20, 33.

CAPSULE GEOLOGY

The mineralization occurs near a fault contact with Lower Jurassic Hazelton Group volcanics of the Telkwa Formation and the Lower Cretaceous Skeena Group sediments. Fractures cut across the volcanic host rocks and mineralization occurs along silicified joints and bedding planes in the tuffs of the Hazelton Group as well as in quartz veins. The veins host occurrences of galena, sphalerite, pyrite and pyrrhotite. The dark green, fine-grained andesites lie in fault contact with the younger sediments comprised of rusty weathering quartzite, greywacke, slate and conglomerate. The basal sedimentary unit is comprised of a number of coal seams striking

CAPSULE GEOLOGY

northwards and dipping 45 to 60 degrees east.

The main quartz vein, at 900 metres elevation, hosts dark sphalerite and minor amounts of arsenopyrite, pyrite, pyrrhotite, galena, and chalcopyrite accompanied by minor quartz gangue. The vein strikes 010 degrees and dips between 50 to 60 degrees west. The fissuring extends to the fault contact of the volcanic and sedimentary rocks. Samples collected by D. Lay in 1937 near the bottom of the shaft assayed 2.05 grams per tonne gold and 20.57 grams per tonne silver. Another sample collected by D. Lay, a 45.7 centimetre channel sample across the face of the drift assayed 6.86 grams per tonne gold, 233 grams per tonne silver, 2 per cent lead, and 5.4 per cent zinc (Minister of Mines Annual Report 1937, page C20).

In an open cut near the shaft a sphalerite vein 5 metres in length and 13 centimetres wide was exposed. Southwest of this vein is another vein consisting of equal parts of quartz and pyrrhotite with a little chalcopyrite. A 20 centimetre channel sample across the vein assayed 12.34 grams per tonne gold, 0.54 per cent copper, and nickel nil (Minister of Mines Annual Report 1938).

In another open cut, further southeast of the shaft, a vein was exposed consisting of solid sphalerite with 5 to 10 per cent quartz gangue, minor galena, pyrrhotite, and chalcopyrite.

Production data between the years 1933 to 1939 totalled 165 tonnes mined with 9,236 grams gold, 36,919 grams silver, 2400 kilograms lead, and 6,053 kilograms zinc.

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EMPR PF (Glacier Gulch Group)
EMPR ASS RPT 5041, 6480, 10370, 18236, 19569, 20797, 21743
EMPR GEM 1973-347; 1974-262
EMPR MAP 69-1
GSC MAP 971A
EMPR EXPL 1975-E143; 1977-E97
GSC OF 351
GSC P 44-23
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin
EMPR OF 1993-21; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/02 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 108** NATIONAL MINERAL INVENTORY:

NAME(S): **GLACIER GULCH (SOUTH SIDE)**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 49 39 N
LONGITUDE: 127 16 36 W
ELEVATION: 870 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located south side of Glacier Gulch on the east slope of Hudson Bay Mountain, approximately 8 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6076957
EASTING: 610706

COMMODITIES: Silver Lead Zinc Gold

MINERALS
SIGNIFICANT: Arsenopyrite Tetrahedrite Sphalerite Galena Pyrrhotite Pyrite
ASSOCIATED: Quartz Calcite Siderite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 330/50W TREND/PLUNGE:
COMMENTS: Vein curves, striking 20 to 40 degrees west and dips 40 to 60 degrees northwest.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	621.9300	Grams per tonne
Gold	0.6700	Grams per tonne
Lead	9.5500	Per cent
Zinc	9.5400	Per cent

COMMENTS: Ten centimetre channel sample from adit at elevation 940 metres.
REFERENCE: Geological Survey of Canada Memoir 223, pages 73-77.

CAPSULE GEOLOGY

Local quartz veining in the Lower Jurassic Hazelton Group volcanics host occurrences of galena, sphalerite and arsenopyrite. Veins cut dark green silicified volcanics and bedded argillites which strike northwest and dip gently west. Veining generally shows good mineralization comprised of sphalerite, galena, pyrite, arsenopyrite, pyrrhotite with quartz and minor siderite and calcite gangue. In some place minor occurrences of tetrahedrite are present.

A 10 centimetre channel sample taken from an adit at elevation 940 metres assayed 0.67 grams per tonne gold, 621.93 grams per tonne silver, 9.55 per cent lead, and 9.54 per cent zinc. A 20 centimetre channel sample taken from another adit at 900 metres elevation assayed 0.51 grams per tonne gold, 255.6 grams per tonne silver, 4.41 per cent lead and 1.66 per cent zinc (Geological Survey of Canada Memoir 223).

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GSC MEM *223, pp. 73-77
GSC P 36-20, pp. 96-97; 44-23
EMPR AR 1926-131; 1927-137; 1928-163; 1929-164; 1930-140; 1933-97; 1934-C5; 1935-C35,G48; 1936-G43; 1937-C20,33; 1938-B36-38; 1939-55,58,70; 1940-41-43; 1941-41; 1950-100; 1958-10; 1959-17; 1961-19; 1962-16; 1963-26; 1964-51
GSC MAP 917A
CIM BULL Sept. 1983
EMPR EXPL 1975-E143; 1976-E149; 1977-E197; 1979-229
EMPR GEM 1973-347; 1974-262
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
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EMPR OF 1993-21; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/02 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 109** NATIONAL MINERAL INVENTORY:

NAME(S): **GLACIER GULCH GOLD (BISMUTH)**

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 49 30 N NORTHING: 6076670
LONGITUDE: 127 16 56 W EASTING: 610356
ELEVATION: 995 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located below Lake Kathlyn Glacier, approximately 8 kilometres north-west of Smithers, on the east slope of Hudson Bay Mountain.

COMMODITIES: Gold Silver Bismuth Tellurium Platinum

MINERALS
SIGNIFICANT: Tetradymite Gold Tetrahedrite Bismuthinite Tellurobismuthite
COMMENTS: Mineralization occurs in shear zones and quartz veins.
ASSOCIATED: Quartz
ALTERATION: Quartz Calcite Erythrite Talc Sericite Garnet
COMMENTS: Minor occurrence of cobalt bloom noted on quarry face.
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I02 Intrusion-related Au pyrrhotite veins I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 075/23S TREND/PLUNGE:
COMMENTS: Mineralized vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Andesitic Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Insular PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: Syn-mineralization Post-mineralization GRADE:

INVENTORY

ORE ZONE: QUARRY REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1934
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	126.9000	Grams per tonne
Gold	232.8000	Grams per tonne
Platinum	9.9000	Grams per tonne

COMMENTS: 1934 chip sample. Channel sample (1934) assayed 14.5 gold; 3.4 silver; and 2.2 bismuth.
REFERENCE: Property File - Glacier Gulch Group.

CAPSULE GEOLOGY

Mineralization occurs along sheared and altered zones in massive, finely crystalline tuffs within the Lower Jurassic Hazelton Group volcanics.

Several small showings carrying auriferous tetradymite in shears and quartz veins were mapped and sampled. The hostrock is comprised of massive silicified andesite and dark grey to black andesitic tuff which is sheared and folded. Quarrying operations have exposed visible gold and crystals of tetradymite within quartz veins. Minor amounts of erythrite (cobalt bloom) were noted on the quarry face. Large garnet crystals were also noted near the quartz veining.

Assay results indicate the presence of high gold, silver, and some platinum associated with the bismuth-telluride deposits. The tetradymite occurs along the planes of shearing and is usually

CAPSULE GEOLOGY

accompanied by native gold. Most of the shears parallel the bedding planes and were produced during folding. These strike southeast dipping between 20 to 40 degrees to the southwest in the lower mineralized zone while the upper and more eastern zones strike south and dip 20 degrees east. The productive zones are mainly confined to the crest of an anticlinal fold with a near vertical axial plane and trends in a southwest direction.

In some instances the mineralization appears to have filled pre-existing fractures due to a well developed "comb-structure" comprised of quartz crystals of appreciable size formed together with tetradymite crystals. In some cases the tetradymite shows a tendency to assume pseudomorphic form after quartz.

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EMPR GEM 1973-347; 1974-262
EMPR MAP 69-1
EMPR OF 1993-21; 1994-14
EMPR PF (Glacier Gulch Group in 093L 110; Report by Jonson, Davidson and Daughty (1968) in 093L 110)
GSC BULL 270
GSC MAP 278A; 971A
GSC MEM *223, pp. 73-77
GSC OF 351
GSC P *36-20, pp. 91-96
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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/02 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 110**
NATIONAL MINERAL INVENTORY: 093L14 Mo1

NAME(S): **YORKE-HARDY**, GLACIER GULCH, UNITY, YORKE HARDY

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 49 12 N
LONGITUDE: 127 18 00 W
ELEVATION: 1066 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east flank of Hudson Bay Mountain, 10 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6076086
EASTING: 609227

COMMODITIES: Molybdenum, Tungsten, Copper, Zinc

MINERALS

SIGNIFICANT: Molybdenite, Scheelite, Wolframite, Chalcopyrite, Sphalerite
ASSOCIATED: Quartz, Magnetite, K-Feldspar, Garnet, Epidote, Carbonate
ALTERATION: K-Feldspar, Sericite, Silica
ALTERATION TYPE: Potassic, Sericitic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein, Disseminated
CLASSIFICATION: Porphyry, Epigenetic, Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type), L07 Porphyry W
DIMENSION: 2500 x 2100 x 1500 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Surface area of molybdenite mineralization.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Cretaceous-Tertiary			Unnamed/Unknown Informal

ISOTOPIC AGE: 67-73 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite
Rhyolite Porphyry
Lamprophyre Dike
Quartz Feldspar Porphyry Dike
Andesite
Tuff

HOSTROCK COMMENTS: Biotite from the Hudson Bay Mountain stock near the contact with a rhyolite plug.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact, Regional
Plutonic Rocks RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: YORKE-HARDY
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1998
QUANTITY: 120000000 Tonnes

COMMODITY	GRADE
Molybdenum	0.1520 Per cent

COMMENTS: Grade reported as 0.254 per cent MoS2. Includes 24,300,000 tonnes of 0.24 per cent molybdenum (0.400 per cent MoS2).
REFERENCE: GCNL #80 (April 27), 1998.

INVENTORY

ORE ZONE: GLACIER GULCH REPORT ON: Y

CATEGORY: Unclassified YEAR: 1996
QUANTITY: 90718500 Tonnes

COMMODITY	GRADE	
Molybdenum	0.1780	Per cent
Tungsten	0.0320	Per cent

COMMENTS: One hundred million tons grading 0.297 per cent MoS2 and 0.04 per cent WO3.

REFERENCE: D. Davidson, Climax Canada Ltd., personal communication, 1996.

CAPSULE GEOLOGY

Lower-Middle Jurassic Hazelton Group andesite and tuffs are overlain by Lower-Upper Cretaceous Skeena Group sediments. A large discordant and differentiated granodiorite sheet is intruded into the volcanic sequence. The Early Tertiary-Late Cretaceous (67-73 Ma) Hudson Bay Mountain stock is concealed and is estimated to be 550 metres thick. It is divided texturally from the upper to lower contacts as aplitic granodiorite, porphyritic granodiorite and granodiorite, respectively. The stock contains blocks of Hazelton volcanics traceable for hundreds of metres. Lamprophyre dikes crosscut both the granodiorite and Hazelton rocks. The metamorphism is due to the intrusion of the Hudson Bay stock and the associated intrusion of a rhyolite porphyry plug and radial quartz-feldspar porphyry dikes. The rhyolite plug is oval shaped and at its upper contact are quartz stockworks and a high silica zone that crosscuts well-defined chill and crenulate quartz band zones.

Veins hosting molybdenite and scheelite occur over 3 kilometres horizontally and are enveloped by radial base metal veins that extend beyond an 8 kilometre radius. High-grade molybdenum zones occur in the lower portion of the differentiated granodiorite sheet and is an important lithologic control on mineralization.

The molybdenite mineralization occurs over a surface area of approximately 2.5 by 1.5 kilometres and a vertical distance of 2.1 kilometres. Strands of 0.2 per cent molybdenite appear over more than 600 metres vertically.

Molybdenite occurs in three modes: 1) early fine-grained, hairline stockwork veins characterized by potassic alteration and relatively low molybdenum values; 2) domal sets of fine-grained, banded quartz-molybdenite veins associated with phyllic alteration and high-grade assays; and 3) spectacular molybdenite crystals up to 5 centimetres in length occur in coarse-grained quartz-molybdenite veins characterized by potassic alteration envelopes with high assays.

Scheelite occurs in quartz-magnetite-potassium feldspar veins formed prior to the coarse-grained quartz-molybdenite veins. Scheelite also occurs as rare disseminations associated with andradite garnet, epidote and quartz assemblages formed prior to the fine-grained hairline stockwork veins. Minor amounts of wolframite are found downdip from the granodiorite sheet.

Late-stage vein mineralization includes pyrite, chalcopyrite, sphalerite and carbonate. The source of the mineralizing fluids is thought to be the Hudson Bay Mountain stock due to its spatial relationship. The tungsten-rich zone generally straddles the upper 0.2 per cent molybdenum boundary.

Unclassified reserves at Yorke-Hardy are 100 million tons (about 90.7 million tonnes) grading 0.297 per cent MoS2 (0.178 per cent Mo) and 0.04 per cent WO3 (0.032 per cent W) (D. Davidson, Climax Canada Ltd., personal communication, 1996).

In 1998, Verdstone Gold Corp. and Molycor Gold Corporation are evaluating the development of a high-grade core of 24,200,000 million tonnes of 0.24 per cent molybdenum (0.4 per cent M0S2).

In 1998, Giroux Consultants Ltd. evaluated the resource to be 120 million tonnes of 0.152 per cent molybdenum (0.254 per cent MoS2), including 24,200,000 tonnes of 0.24 per cent molybdenum (0.400 per cent MoS2). Estimates by Steininger in 1981 were 125,500,000 tonnes of 0.157 per cent molybdenum and 0.0238 per cent tungsten including 20,600,000 tonnes of 0.24 per cent molybdenum and 0.0317 per cent tungsten (GCNL #80 (April 27), 1998 and CMH 1998-99, page 461).

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GSC BULL 64, p. 111, No.1, (1932) p. 54; 270
GSC MAP 971A
GSC MEM 223
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GSC P 36-20, pp. 91-97; 44-23
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CMH 1998-99, p. 461
GCNL #58(Mar.24),#103(May 29), #168(Sept.2), #196(Oct.10), 1997; #80(Apr.27), #141(July 23), #142(July 24), 1998
PR REL Verdstone Gold Corporation and Molycor Gold Corporation, March 19, May 27, Oct.7, 1997
WWW http://www.verdstonegroup.com/molycor/; WWW http://www.infomine.com/index/properties/YORK-HARDY.html
Kirkham, R.V. (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1997/04/15 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 111** NATIONAL MINERAL INVENTORY: 093L14 Au10

NAME(S): **YUKON (L.7280)**, GRAND VIEW

STATUS: Developed Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 48 15 N NORTHING: 6074361
LONGITUDE: 127 16 36 W EASTING: 610770
ELEVATION: 1525 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 0.8 kilometres north of the head of Simpson Creek on Hudson Bay Mountain, 6.4 kilometres northwest of Smithers.

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS
SIGNIFICANT: Arsenopyrite Sphalerite Galena Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Limonite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 135/53E TREND/PLUNGE:
COMMENTS: Strong shear zone between granite and volcanic contact. Strike dip varies from 45 to 60 degrees east.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Tuff
Rhyolite
Greywacke
Granite

HOSTROCK COMMENTS: At elevation 1524 metres, fine to medium-grained granite stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: Syn-mineralization Post-mineralization GRADE:

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1929
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	19.2000	Grams per tonne
Gold	4.1000	Grams per tonne
Copper	0.2100	Per cent
Zinc	1.6000	Per cent

COMMENTS: Seventy-six centimetre channel sample taken across sheared in-filling.
REFERENCE: Geological Survey of Canada Memoir 223 (Revised Ed. 1954).

CAPSULE GEOLOGY

The host rock is comprised of Lower Jurassic Hazelton Group volcanics which consist largely of andesite, rhyolite, intercalated tuff and greywacke beds. These are intruded by the Late Cretaceous Bulkley Intrusions described as a fine to medium-grained granite stock. A strong shear, striking 135 to 150 degrees and dipping 60 to 75 degrees southwest, was traced with open cuts from the granite stock to the volcanics. Near the contact, tuffs are impregnated with sphalerite, arsenopyrite, pyrite and chalcopyrite across a width of 0.6 metres. Further southeast, the zone widens and a 76 centimetre channel sample assayed 4.1 grams per tonne gold, 19.2 grams per tonne silver, 1.6 per cent zinc and 0.21 per cent copper (Geological Survey

CAPSULE GEOLOGY

of Canada Memoir 223, revised edition, 1954, page 130).

A quartz vein, located southeast of the open cut mentioned above, hosts abundant arsenopyrite with minor pyrite and sphalerite. The wall rock is altered and bleached to a yellow hue. A representative sample of the vein quartz and arsenopyrite assayed 6.9 grams per tonne gold.

At 1448 metres elevation, another quartz vein is exposed in two open cuts. The vein ranges from 30 to 45 centimetres in width, and the quartz carries abundant arsenopyrite and a little sphalerite. A typical sample (collected by Kindle 1954) assayed 3.4 grams per tonne gold and 0.6 per cent zinc (Geological Survey of Canada Memoir 223).

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EMPR MAP 69-1
EMPR ASS RPT *471, 16491
EMPR EXPL 1987-C308,309
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin
GSC SUM RPT *1925A, p. 137
GSC MAP 278A; 971A
GSC MEM *223 (Rev) p. 130
GSC P 44-23
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/11 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 112**

NATIONAL MINERAL INVENTORY: 093L14 Zn3

NAME(S): **TRIXIE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 52 40 N
LONGITUDE: 127 18 06 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located at 640 metres elevation on the northeast side of Hudson Bay Mountain, on an unnamed creek that flows into Toboggan Lake, about 1.6 kilometres from Evelyn or 12.9 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6082512
EASTING: 608964

COMMODITIES: Zinc Manganese Copper

MINERALS
SIGNIFICANT: Malachite
COMMENTS: "Unknown zinc-carbonate".
ASSOCIATED: Quartz Carbonate Siderite
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Industrial Min.
TYPE: l05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Andesite Flow
Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The showing lies within Lower Jurassic Hazelton Group volcanics comprised of andesitic flows, tuffs, and breccia. In 1926, Douglas Lay described the showing as "very feeble mineralization" showing malachite staining in a decomposed and sheared andesite exposed on the east bank of the creek for about 61 metres at elevation 640 metres. A sample from the copper stained outcrop yielded no significant values. A piece of siderite taken from a vein nearby was found to contain 10 per cent zinc and 3 per cent manganese. The metals are presumed to be hosted as a zinc carbonate within a quartz-carbonate vein.

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EM EXPL 1999-19-31
EMPR AR 1921-131
EMPR FIELDWORK 1988, pp. 195-208
EMPR MAP 69-1
GSC BULL 270
GSC MEM 223, p. 126
GSC OF 351
GSC P 36-20; 44-23
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/24 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 113** NATIONAL MINERAL INVENTORY: 093L14 Ag13

NAME(S): **VANCOUVER**, LONE STAR, SLOAN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 48 00 N NORTHING: 6073960
LONGITUDE: 127 14 16 W EASTING: 613281
ELEVATION: 732 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Simpson Creek, east side of Hudson Bay Mountain, 4.0 kilometres northwest of Smithers.

COMMODITIES: Silver Lead Zinc Gold

MINERALS
SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 130/65W TREND/PLUNGE:
COMMENTS: Mineralized vein in shear zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Rhyodacite
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

CAPSULE GEOLOGY

The host rock is comprised of Lower Jurassic Hazelton Group volcanics which consist of purplish andesite flows, intercalated red tuffs and flow breccia with green tuff and rhyodacitic flows containing quartz and calcite amygdules.

On the south side of Simpson Creek an adit was driven in a shear zone striking 124 degrees and dipping 65 degrees southwest. The red tuff and andesites are bleached and altered to a greyish color along the shear. This altered rock is crosscut by sulphide stringers and veinlets. The sulphide veins are comprised of sphalerite, galena, pyrite, and chalcopyrite. Parallel fissures also carry similar mineralization.

In 1935, 23 tonnes were mined producing 1275 grams per tonne silver, 370 kilograms lead, and 116 kilograms zinc.

BIBLIOGRAPHY

EMPR AR 1916-122; 1926-132; 1935-A24; 1956-26; 1966-91
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
GSC MAP 278A; 971A
GSC OF 351
GSC P 44-23
GSC BULL 270
GSC ANN RPT 1925A, p. 137
GSC MEM 223 (Rev) p. 126
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/15 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 114**
NATIONAL MINERAL INVENTORY: 093L14 Au13

NAME(S): **RACHEL**, CASCADE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14W 093L14E
BC MAP:
LATITUDE: 54 47 35 N
LONGITUDE: 127 15 16 W
ELEVATION: 1097 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Simpson Creek on east side of Hudson Bay Mountain, 4.8 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6073160
EASTING: 612229

COMMODITIES: Gold Silver Lead Zinc

MINERALS
SIGNIFICANT: Arsenopyrite Sphalerite Galena Pyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 100/10S
TREND/PLUNGE:
COMMENTS: Mineralized quartz-carbonate vein in upper adit.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Breccia
Rhyodacite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE: Hornfels

CAPSULE GEOLOGY

The claim is underlain by Lower Jurassic Hazelton Group volcanics comprised of red andesitic flows and tuffs with breccia, green tuff and rhyodacite flows. The showing is within a shear zone in the volcanics. The zone contains bands of quartz veins with minor occurrences of arsenopyrite, sphalerite and pyrite.

The upper showing consists of a 8 to 15 centimetre quartz vein which strikes 080 degrees and dips 42 degrees south, with abundant pyrite and lesser arsenopyrite, sphalerite, galena, and minor chalcopyrite. The vein is hosted by hornfelsed, fine-grained tuff. Above the upper adit portal a 10 centimetre wide quartz-carbonate vein with arsenopyrite, pyrite, and minor galena strikes 100 degrees and dip 10 degrees south. The continuation of the upper adit vein appears to be a 3 to 5 centimetre shear with gouge striking 100 degrees and dipping 60 degrees south.

In 1986 samples from this adit assayed 3.6 to 6.2 grams per tonne gold, 8.2 to 32.6 grams per tonne silver with up to 8.66 per cent zinc and 0.87 per cent lead (Assessment Report 15140).

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EMPR EXPL 1986-359
EMPR ASS RPT *15140
EMPR FIELDWORK 1988, pp. 195-208
EMPR AR 1912-115; 1923-110; 1924-96; 1925-136
EMPR MAP 69-1
GSC MAP 971A
GSC ANN RPT 1925A, p. 137
GSC MEM 223 (Rev) p. 91
GSC P 44-23
GSC BULL 270
GSC SUM RPT 1925A, pp. 120-143

BIBLIOGRAPHY

Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/15 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 115**

NATIONAL MINERAL INVENTORY: 093L14 Au11

NAME(S): **JESSIE (L.7031)**, LAST CHANCE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 47 25 N
LONGITUDE: 127 15 56 W
ELEVATION: 1220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Simpson Creek on the east side of Hudson Bay Mountain, 5.6 kilometres west-northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6072833
EASTING: 611522

COMMODITIES: Silver Lead Zinc Gold

MINERALS
SIGNIFICANT: Arsenopyrite Galena Sphalerite Pyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Rhyolite
Rhyodacite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1954
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	166.6000	Grams per tonne
Gold	4.8000	Grams per tonne
Lead	5.5500	Per cent
Zinc	13.1000	Per cent

COMMENTS: Mineralized host rock.
REFERENCE: Geological Survey of Canada Memoir 223, (Revised Ed.), page 112.

CAPSULE GEOLOGY

The host rock is Lower Jurassic Hazelton Group volcanics consisting of andesite, intercalated tuff, rhyodacite and rhyolite flows. The rock is altered and bleached when it is fissured due to mineralizing hydrothermal vein formation.

At 1340 metres elevation, an adit was driven west in two mineralized fissures. Both strike northerly and dip west at a low angle and contain vein quartz, with pyrite, arsenopyrite, sphalerite, and galena. Small sulphide veinlets crosscut the altered rock between the fissures.

The two main veins are traceable for 122 metres north to an elevation of 1370 metres. Their strike changes gradually to due west and dipping south 35 degrees. The fracture pattern appears to be curved (saucer-shaped).

The sulphide rich quartz veins range from 16 to 40 centimetres wide. A 25 centimetre channel sample assayed 11.7 grams per tonne gold, 110.05 grams per tonne silver, 0.60 per cent lead, and 12.60 per cent zinc (Assessment Report 471).

A sample of the fractured and mineralized host rock adjoining the veins was collected by Kindle in 1954 and assayed 4.8 grams per

CAPSULE GEOLOGY

tonne gold, 166.6 grams per tonne silver, 5.55 per cent lead, and 13.10 per cent zinc (Geological Survey of Canada Memoir 223, revised edition, page 112).

BIBLIOGRAPHY

GSC MEM *223 (Rev) p. 112
EMPR AR 1917-114; 1927-136; 1928-162; 1933-97
EMR MP CORPFILE (Jessie Gold Mines Ltd.)
EMPR MAP 69-1
GSC MAP 971A
EMPR ASS RPT *471
GSC OF 351
GSC P 44-23
EMPR PF (Norrie-Loewenthal, W.G., (1932): Report on the Property of the Jessie Gold Mines Ltd. includes plan of the Jessie Mine)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/15 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 116** NATIONAL MINERAL INVENTORY: 093L14 Ag12

NAME(S): **EMPIRE**, RACHEL, BV, SUNSET, CASCADE

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W 093L14E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 47 00 N NORTHING: 6072034
LONGITUDE: 127 16 56 W EASTING: 610470
ELEVATION: 1432 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the headwaters of Simpson Creek on the east side of Hudson Bay Mountain, 6.4 kilometres west of Smithers.

COMMODITIES: Silver, Lead, Zinc, Gold, Copper, Cadmium, Antimony

MINERALS
SIGNIFICANT: Sphalerite, Galena, Chalcopyrite, Pyrite, Arsenopyrite, Tetrahedrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 305/60W TREND/PLUNGE:
COMMENTS: Mineralized quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite, Tuff, Flow Breccia, Hornfels

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE: Hornfels

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	1449.9000	Grams per tonne
Gold	1.0200	Grams per tonne
Cadmium	0.0100	Per cent
Copper	0.4400	Per cent
Lead	6.1400	Per cent
Zinc	0.7200	Per cent

COMMENTS: Empire #1-sample #3105(15 centimetre channel sample). Empire #2-Au-1.02; Ag-832.4; Pb-20.9; Zn-34.01; Cu-0.36; Cd-0.23; Sb-0.08.
REFERENCE: Empire #1: Assessment Report 15140, Fig. 4; #2: Ass.Rpt. 15140,Fig. 5.

CAPSULE GEOLOGY

The claim is underlain by Lower to Middle Jurassic Hazelton Group volcanics comprised of andesitic flows, tuffs, and breccia. On the south side of the basin a shear, between 1443 to 1555 metres in elevation, hosts a mineralized quartz vein and is referred to as Empire #1. A selected high grade sample of galena and sphalerite from the 30 centimetre wide quartz vein assayed 2.05 grams per tonne gold, 7096 grams per tonne silver, 25.3 per cent lead, and 18.6 per cent zinc (1914) (Minister of Mines Annual Report 1914, page 225).

At elevation 1443 metres, an adit was driven along the shear which consisted of a 90 to 120 centimetre altered fracture zone with a well mineralized 8 to 30 centimetre quartz-sulphide vein with

CAPSULE GEOLOGY

gouge along the footwall. The fracture eventually pinches out and reappears on the hanging wall to the south. The shear vein continues with little fracturing and consists of galena, sphalerite, arsenopyrite with minor chalcopyrite, and tetrahedrite. In 1986, five chip samples were collected and assayed 0.6 to 3.3 grams per tonne gold, 57.9 to 1450 grams per tonne silver, 0.32 to 9.74 per cent lead, 0.22 to 8.47 per cent zinc with minor copper and cadmium values (Assessment Report 15140).

The Empire #1 shear vein is hosted in hornfelsed, fine-grained maroon to grey tuff. Recessive weathering shows the zone to be 30 metres wide and striking 160 degrees and dipping 80 degrees west. Manganese staining is common.

In 1914, three tonnes of ore was shipped from the Empire #1 workings and produced 20,030 grams silver and 699 kilograms lead.

On the northwest side of the basin, a mineralized vein referred to as Empire #2, strikes 310 degrees and dips 50 degrees west. The vein consists of 8 to 30 centimetres of silicified wall rock with quartz and abundant pyrite-galena-sphalerite and arsenopyrite. In 1986, three chip samples were taken across the vein as well as a high grade sample from the dump and assays ranged between 1.03 to 4.46 grams per tonne gold, 213.9 to 1292 grams per tonne silver, 7.5 to 36.67 per cent lead, 10.49 to 34.01 per cent zinc, 0.26 to 0.36 per cent copper, 0.07 to 0.23 per cent cadmium, and 0.02 to 0.12 per cent antimony (Assessment Report 15140).

BIBLIOGRAPHY

EMPR AR 1909-84; 1912-115; 1914-225; 1920-90; 1921-272; 1924-96
1925-137; 1926-132; 1928-161; 1929-164; 1931-73; 1938-B37,C49;
1952-94; 1968-120,121
EMPR GEM 1969-85; 1971-177
EMPR MAP 69-1
EMPR EXPL *1986-359
EMPR ASS RPT *15140
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
GSC MEM 223 (Rev) p. 93
GSC SUM RPT 1925A, p. 136
GSC MAP 278A; 971A
GSC P 44-23
GSC BULL 270
EMR MP CORPFILE (Buval Exec. Mining Ind. Ltd.; Abaca Resources
Ind. Inc.)
W MINER Dec. 1952, p. 45
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of
the Zonal Distribution of Ores in the Hudson Bay Range, British
Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 117** NATIONAL MINERAL INVENTORY: 093L14 Ag1

NAME(S): **MIDNIGHT**, SNOWSHOE, ROBIN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W 093L14E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 47 07 N NORTHING: 6072293
LONGITUDE: 127 15 21 W EASTING: 612161
ELEVATION: 1372 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS

SIGNIFICANT: Arsenopyrite Sphalerite Galena Tetrahedrite Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION TYPE: Silicific'n Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Andesitic Flow
Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1937
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	2890.0000	Grams per tonne
Gold	3.8000	Grams per tonne
Copper	1.3500	Per cent
Lead	46.3000	Per cent
Zinc	8.2200	Per cent

COMMENTS: Twenty-three centimetre channel sample across sulphide vein.
REFERENCE: Minister of Mines Annual Report 1937, page C19.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of relatively unaltered, massive, purple, red and grey andesite, andesitic flows, and intercalated tuff. The showing is a complex, massive sulphide-sulphosalt shear zone with variable amounts of quartz and carbonate gangue. On the surface the shear strikes south to southeast and dips 60 to 80 degrees southwest, however, drill results indicate the dip is much shallower at depth. The shear is traceable for 215 metres between 1364 to 1372 metres elevation. The andesitic wall rocks have been hydrothermally altered and bleached and in places are silicified and impregnated with minor pyrite. The quartz-sulphide veins, generally less than 15 centimetres wide, occur along the shear zone and host mainly galena, sphalerite, arsenopyrite, pyrite, chalcopyrite, and tetrahedrite.

A massive sulphide vein, ranging from 15 to 30 centimetres wide, was exposed in a trench from the 1938 workings. A sample assayed 7.2 grams per tonne gold, 5235.7 grams per tonne silver, 43.9 per cent lead, 9.71 per cent zinc, and 0.7 per cent copper. A 23 centimetre wide massive sulphide vein, exposed 92 metres north of the old workings, assayed 3.8 grams per tonne gold, 2890 grams per tonne silver, 46.3 per cent lead, 8.22 per cent zinc, and 1.35 per cent

CAPSULE GEOLOGY

copper. The area between these two trenches consists primarily of barren quartz that possibly post-dates the sulphide mineralization (Minister of Mines Annual Report 1937, page C19).

Mining in 1981 to 1982 included a total of 39 tonnes mined and produced 312 grams gold, 197,039 grams silver, 280 kilograms copper, 10.077 kilograms lead, and 5308 kilograms zinc.

BIBLIOGRAPHY

EMPR AR 1928-162; 1929-163; 1931-73; 1936-B36,C6; *1937-C19; 1952-94; 1966-91; 1968-121
EMPR GEM *1971-177; 1975-E142
EMPR FIELDWORK *1977, p. 67; 1988, pp. 195-208; 1991, pp. 93-101
EMPR ASS RPT *471
EMPR MAP 69-1
GSC SUM RPT 1925A, p. 136
GSC MAP 278A; 971A
GSC P 44-23
GSC MEM 226, p. 125
GSC OF 351
GSC BULL 270
EMR MP CORPFILE (Buval Mining Ind. Ltd.; Abaca Resources Ind. Inc.)
W MINER *Vol. 37, June 1964, p. 24
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/16 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 118**

NATIONAL MINERAL INVENTORY: 093L14 Ag8

NAME(S): **HB**, GROUNDHOG, CARIBOO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 47 00 N
LONGITUDE: 127 17 46 W
ELEVATION: 1675 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Millers and Pine Creeks on left side of Pine Creek on southeast shoulder of Hudson Bay Mountain, approximately 6.0 kilometres west of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6072013
EASTING: 609576

COMMODITIES: Gold Silver Lead Copper

MINERALS
SIGNIFICANT: Galena Chalcopyrite Sphalerite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Rhyolite
Volcanic Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1911

COMMODITY	GRADE	
Silver	277.7000	Grams per tonne
Gold	2.7000	Grams per tonne
Lead	2.1000	Per cent

REFERENCE: Minister of Mines Annual Report 1911, page 119.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of andesitic to rhyolitic flows, tuffs and breccia. On the Cariboo, a fissure vein 1.8 metres wide host mineralization and strikes 310 degrees. At 1722 metres elevation, a brecciated fault fissure strikes 345 degrees. The quartz vein filling ranges from 15 to 30 centimetres and hosts sphalerite, chalcopyrite and iron oxides. In 1911, a sample assayed 2.7 grams per tonne gold, 277.7 grams per tonne silver, and 2.1 per cent lead. Another sample taken from this fissure at a higher elevation assayed 2.7 grams per tonne gold, 178.6 grams per tonne silver, 3.2 per cent lead and 0.75 per cent copper (Minister of Mines Annual Report 1911, page 119).

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EMPR MAP 69-1
GSC P 44-23
EMPR EXPL 1980-346
EMPR ASS RPT 8940, *15140
EMPR PF (Sevensma, P.H., (1968): Buval Mines Ltd. Examination Report on the HB Claims)
GSC BULL 270

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EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/17 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 119**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEEPAWA**, ALICE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 47 15 N
LONGITUDE: 127 19 06 W
ELEVATION: 1667 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on Hudson Bay Mountain, west of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6072442
EASTING: 608136

COMMODITIES: Silver, Lead, Zinc, Copper, Gold

MINERALS
SIGNIFICANT: Arsenopyrite, Galena, Sphalerite, Chalcopyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 018/85W
TREND/PLUNGE:
COMMENTS: Mineralized vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Andesitic Flow
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The claim is underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of andesite, andesitic flows and intercalated tuff. A vein traced for approximately 305 metres carries arsenopyrite, minor galena, and sphalerite across a width of 1.0 metres in the Hazelton volcanics. The vein strikes 018 degrees and dips steeply to near vertical to the west.

BIBLIOGRAPHY

EMPR AR 1929-163
EMPR MAP 971A
GSC MEM 223 (Rev) p. 118
GSC MAP 971A
GSC OF 351
GSC P 44-23
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24
CODED BY: GSB
FIELD CHECK: N
DATE REVISED: 1988/06/17
REVISED BY: LLD
FIELD CHECK: N

MINFILE NUMBER: **093L 120** NATIONAL MINERAL INVENTORY: 093L14 Ag5

NAME(S): **MAYFLOWER**, LITTLE HEATHER, FRONT LINE,
MILL 3, UPLAND, GG,
YORKE-HARDY

STATUS: Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 46 50 N NORTHING: 6071650
LONGITUDE: 127 19 51 W EASTING: 607351
ELEVATION: 1615 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southwest side of Hudson Bay Mountain, 9.7 kilometres west of Smithers.

COMMODITIES: Silver, Zinc, Lead, Gold, Copper, Cobalt

MINERALS
SIGNIFICANT: Arsenopyrite, Sphalerite, Galena, Pyrrhotite, Chalcopyrite, Pyrite, Tetrahedrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal, Replacement
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: Metres STRIKE/DIP: 360/15E TREND/PLUNGE:
COMMENTS: Mineralized vein in parallel shear zones.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite, Andesitic Flow, Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1929
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Gold	0.6900	Grams per tonne

COMMENTS: Forty-six centimetre channel sample. Channel sample across 122 centimetres ran gold 1.37 and silver 58.28.
REFERENCE: Minister of Mines Annual Report 1929, page 162.

CAPSULE GEOLOGY

The showings occur as approximately parallel shear zone replacements in the Lower Jurassic Hazelton Group volcanics. The host rocks are comprised mainly of massive andesite, andesitic flows and tuff. The shear zones strike between 360 and 015 degrees and have a near vertical dip or a slight dip to the west. Mineralization consists mainly of pyrrhotite, minor galena, pyrite and arsenopyrite.

The Mayflower showing, at 1615 metres elevation, consists of 46 centimetres width of mineralized vein infilling with the central 30 centimetres comprised almost entirely of pyrrhotite. Associated sulphides include galena, arsenopyrite, pyrite, and minor chalcopyrite. A 46 centimetre channel sample from this vein which is traceable for 91 metres assayed 0.69 grams per tonne gold, 171.4 grams per tonne silver (Minister of Mines Annual Report 1929, page 162).

On the Upland claim, at 1675 metres elevation, is a parallel vein sparsely mineralized with pyrrhotite and pyrite. An adit-drift, at elevation 1768 metres on the Upland claim, exposed a north-south

CAPSULE GEOLOGY

vein with a slight dip to the west and a 122 centimetre width. The 46 centimetre centre is comprised of massive pyrrhotite. A channel sample taken across the width assayed 1.37 grams per tonne gold, 58.28 grams per tonne silver (Minister of Mines Annual Report 1929, page 162).

Verdstone Gold Corp. and Molycor Gold Corp. sampled on the GG claims in 1998. One 1.2-metre sample assayed 1.08 per cent copper, 0.02 per cent lead, 0.03 per cent zinc, 0.14 per cent cobalt, 89.1 grams per tonne silver and 2.48 grams per tonne gold (GCNL #142(July 24), 1998).

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EMPR AR 1909-84; 1911-119; 1912-115; *1929-162; *1930-139
EMPR ASS RPT 14300
EMPR FIELDWORK 1988, pp. 195-208
EMPR MAP 69-1
EMPR PF (Mayflower Group Claim Map 1":1000')
GSC BULL 270
GSC MAP 971A
GSC OF 351
GSC P 44-23
GSC SUM RPT 1925A, p. 90
GCNL #142(July 24), 1998
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 121**
NATIONAL MINERAL INVENTORY: 093L14 Cu4

NAME(S): **SMITHERS COPPER**, PINE RIDGE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14E
BC MAP:
LATITUDE: 54 45 50 N
LONGITUDE: 127 11 16 W
ELEVATION: 640 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on north side of Dahl Creek, 1.6 kilometres southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6070024
EASTING: 616598

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ALTERATION: Malachite Azurite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION:
STRIKE/DIP: 270/70S
TREND/PLUNGE:
COMMENTS: Dominant fracturing.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Andesitic Flow
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1954
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	123.4000	Grams per tonne
Copper	1.8000	Per cent

COMMENTS: Selected samples from 1.8 metre shear zone in andesite which hosts copper mineralization at elevation 660 metres. Assayed trace gold.
REFERENCE: Geological Survey of Canada Memoir 223 (Revised Ed. 1954), page 125.

CAPSULE GEOLOGY

The showings occur in the Lower Jurassic Hazelton Group volcanics of the Telkwa Formation. Mineralization occurs as small veinlets in the fracture zones and joints in the massive dark purple, red and grey andesites, andesitic flows, and tuff. Dominant fracturing is 315 degrees and dipping 70 degrees south.

At 602 metres elevation, mineralization in the purple andesites consists of chalcopyrite, bornite, malachite, and azurite in joint planes and poorly developed lines of cleavage. An open cut failed to find significant mineralization.

At 660 metres elevation, the andesite is sheared across a width of 1.8 metres and hosts copper mineralization. Selected samples from this shear assayed trace gold, 123.4 grams per tonne silver and 1.8 per copper (Geological Survey of Canada Memoir 223, (Rev.), page 125).

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EMPR AR 1926-131; 1929-165; 1930-140; *1963-25-26
EMPR MAP 69-1

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EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
GSC OF 351
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GSC MEM *223 (Rev) p. 125
GSC MAP 971A
GSC BULL 270
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 122** NATIONAL MINERAL INVENTORY: 093L14 Cu3

NAME(S): **CANADIAN CITIZEN (L.7171)**, SEYMOUR

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14E 093L11E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 45 00 N NORTHING: 6068497
LONGITUDE: 127 10 36 W EASTING: 617353
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on west side of the north end of Seymour Lake, 3.2 kilometres from Smithers.

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION: STRIKE/DIP: 310/77W TREND/PLUNGE:
COMMENTS: Mineralized fault zone in volcanics.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Rhyodacite
Dacite
Tuff
Breccia
Rhyolite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: CANADIAN CITIZEN (L.7171) REPORT ON: Y

CATEGORY: Indicated YEAR: 1970
QUANTITY: 72575 Tonnes

COMMODITY	GRADE	
Silver	34.3000	Grams per tonne
Copper	0.9200	Per cent

COMMENTS: Probable ore reserve determined by drilling with a possible average grade shown above.
REFERENCE: Northern Miner - February 26, 1970, page 5.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesite, rhyolite, rhyodacite, dacite, breccia and tuff. They are conformably overlain and interbedded with a sedimentary succession of Lower Cretaceous age. The Hazelton Group rocks strike north-northwest and dip moderately to the southwest.

The property is underlain by relatively unaltered, massive purple and grey volcanics which host mineralization in small veinlets along a fault striking 310 degrees and dipping 77 degrees southwest. The veinlets are comprised of bornite and chalcopyrite.

Drilling in 1968-1969 determined mineralization beneath and to the east of the surface showing. In 1970, the Northern Miner reported 72,575 tonnes of probable ore grading a possible average of 34.3 grams per tonne silver and 0.92 per cent copper in the northwest trending shear zone.

Production in 1962 included 24 tonnes mined and produced 373 grams gold, 11,539 grams silver, and 1,647 kilograms copper.

BIBLIOGRAPHY

EMPR AR 1925-137; 1926-131; 1927-131; 1930-444; 1963-25; 1966-90; 1968-120
EMPR GEM 1969-85; 1971-177
EMPR ASS RPT *514, 902, *906, 12395
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
GSC MAP 971A
GSC MEM *226 (Rev) p. 90
GSC SUM RPT 1925A, p. 138
GSC OF 351
GSC P 44-23
GSC BULL 270
EMR MP CORPFILE (Buval Exec. Mining Ind. Ltd.; Abaca Resources Ind. Inc.)
EMR MIN BULL MR 198, p. 238; 223 B.C. 235
N MINER Feb. 26, 1970 p. 5
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 123**

NATIONAL MINERAL INVENTORY: 093L11 Cu10

NAME(S): **GRIT**, TENAS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E 093L11W
BC MAP:
LATITUDE: 54 34 57 N
LONGITUDE: 127 14 28 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 17.7 kilometres southwest of Telkwa, location of Grit claims from Assessment Report 1931, Figure 2.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6049756
EASTING: 613673

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Felsic Pyroclastic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Malachite occurs in pyroclastic rocks from felsic to intermediate composition of the Lower Jurassic Hazelton Group, Telkwa Formation.

BIBLIOGRAPHY

EMPR AR 1969-86
EMPR ASS RPT *1931
EMPR MAP 69-1
EMPR OF 1989-16
EMPR FIELDWORK 1988, pp. 195-208
GSC BULL 270
GSC P 44-23
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 124**

NATIONAL MINERAL INVENTORY: 093L15 Cu1

NAME(S): **BIG ONION**, CIMBRIA, ASTLAIS, JACK

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 48 35 N
LONGITUDE: 126 53 46 W
ELEVATION: 1219 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south side of Astlais Mountain, 17.7 kilometres east-northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6075647
EASTING: 635209

COMMODITIES: Copper, Molybdenum, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Bornite, Pyrite, Magnetite, Chalcocite, Covellite
ASSOCIATED: Quartz
ALTERATION: Sericite, Kaolinite, Chlorite, Epidote
ALTERATION TYPE: Sericitic, Argillic, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Telkwa	
Jurassic	Hazelton	Nilkitkwa	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Quartz Feldspar Porphyry
Quartz Diorite Porphyry
Quartz Diorite
Quartz Monzonite Dike
Quartz Feldspar Porphyry Dike
Hornblende Andesite Dike
Andesite
Andesitic Flow
Andesitic Tuff
Andesitic Breccia

HOSTROCK COMMENTS: The quartz diorite intrusion is locally called the Big Onion pluton.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: BIG ONION
REPORT ON: Y

CATEGORY: Combined
YEAR: 1977
QUANTITY: 94380000 Tonnes

COMMODITY	GRADE	
Copper	0.4200	Per cent
Molybdenum	0.0120	Per cent

COMMENTS: Calculated by Canadian Superior Exploration Ltd. in 1977.
Resource calculations by other companies are considerably less.
REFERENCE: CIM Special Volume 46, page 414.

ORE ZONE: BIG ONION
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1991
QUANTITY: 32000000 Tonnes

COMMODITY	GRADE	
Copper	0.3400	Per cent
Gold	0.0640	Grams per tonne
Silver	1.0000	Grams per tonne

COMMENTS: Supergene portion estimated by Varitech Resources Ltd. in 1991.
REFERENCE: CIM Special Volume 46, page 14.

CAPSULE GEOLOGY

The Big Onion deposit is located on the south side of Astlais Mountain, 16 kilometres east of Smithers.

Copper showings at the Big Onion deposit were discovered in 1917 by prospectors Axel Almsted, Tommy Haig and Ben Benson. Two short adits were driven in the 1920s but intense exploration of the property did not occur until the prophyry copper boom in the early 1960s. It was staked then by Jack Hemelspeck, Sr. and optioned in 1964 to Noranda Exploration Co. Ltd. who carried out mapping, sampling, geophysical surveying and drilled two short holes. During 1966 and 1967, Texas Gulf Sulfur Co. Inc. completed an I.P. survey, bulldozer stripping and seven diamond drill holes (1217 metres). In 1970-71, Blue Rock Mining Corporation/Cyprus Anvil Mining Corporation completed 22 more diamond drill holes (7358 metres). The most extensive exploration of Big Onion was carried out by Canadian Superior Exploration Ltd. from 1974 to 1977. Geological and geophysical mapping was extended and 67 percussion holes (5003 metres) and 21 core holes (3058 metres) were drilled. Following an estimation of geologic reserves, Canadian Superior Exploration Ltd. judged the Big Onion prospect to be sub-economic and declined to do further work.

The Big Onion deposit is underlain by Lower-Middle Jurassic Hazelton Group volcanics (Telkwa and Nilkitkwa formations) comprised of variegated red, green to maroon andesitic flows, tuffs and breccia. The volcanic division is overlain by the Smithers Formation, also of the Hazelton Group, which is comprised of greywacke, siltstone, sandstone, shale, breccia and minor conglomerate.

Late Cretaceous to Eocene stocks intrude the Hazelton rocks. The Big Onion pluton is comprised of two phases, an early quartz feldspar porphyry and a later quartz diorite porphyry. The earlier intrusion forms a sheath around the quartz diorite and dikes of the quartz feldspar porphyry are common in the andesites near the margin of the pluton. The quartz feldspar porphyry is intensely altered with sericite, kaolinite and chlorite. A sample of intense sericite alteration has given an isotopic age of 117 Ma and a postmineral quartz monzonite porphyry dike was dated at 48.7 Ma.

In addition to the main plutonic rocks, there is a wide post-mineralization quartz monzonite dike and several varieties of small, late hornblende andesite dikes. The quartz monzonite is sericitized and hosts disseminated pyrite and magnetite with chlorite and epidote.

Copper and molybdenum mineralization is widely distributed in minor amounts throughout the pluton, particularly near the contacts of the two phases and near the peripheral volcanics. Ore minerals include chalcopyrite, molybdenite and minor bornite. Pyrite is ubiquitous but most abundant in the volcanic rocks near the contact. Mineralization is contained largely in a stockwork of quartz-filled fractures or as disseminations throughout the pluton.

Copper and molybdenum appears to be intimately associated with the quartz diorite and is best developed along its sheared southeastern contact with the andesite.

Two main elongate mineralized zones with northeasterly trends parallel Astlais Creek. The South zone is approximately 1200 by 300 metres and the North zone is approximately 840 by 120 metres.

Unclassified reserves at Big Onion are 18 million tonnes grading 0.36 per cent copper (CIM Special Volume 15 (1976), Table 1, Showing No.73). Canadian Superior Explorations Ltd., in 1977, calculated a geologic resource (probable and possible) of 94.38 million tonnes grading 0.42 per cent copper and 0.012 per cent molybdenum (0.02 per cent M0S2)(CIM Special Volume 46, page 414). At a cutoff grade of 0.25 per cent copper equivalent, the Big Onion was estimated to contain 69 million tonnes grading 0.397 per cent copper equivalent at a stripping ratio of 2.18.

In 1991, Varitech Resources Ltd. acquired an interest in the property from Mindoro Corp., who had optioned the claims from Jack Hemelspeck, Jr. Varitech Resources drilled eight HQ core holes (1696 metres) and estimated a supergene reserve of 32 million tonnes grading 0.34 per cent copper, 0.064 grams per tonne gold and 1.0 grams per tonne silver (CIM Special Volume 46, page 414).

Teck Exploration planned drilling the property in 1997. Reported reserves range from 2.4 million tonnes of 0.84 per cent copper (Craigmont) to 6.0 million tonnes grading 0.8 percent copper (Canadian Superior). (Pers. Comm. Mike Cathro, February 1997).

Consolidated Magna Ventures Ltd. and Gladiator Minerals Ltd. drilled six holes, totalling 1016 metres in 1998.

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EMPR AR 1927-138; 1932-85; 1964-52; 1965-73; *1966-83-86,Fig. 9; 1967-90
EMPR ASS RPT 830, 2752, 2753, 5576, 5966, 6363, 6364, 6423, 16784,

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22306
EMPR BULL 64, p. 126, Fig. 8
EMPR EXPL 1975-E143; 1976-E152; 1977-E198; 1988-C173; 1998-27; 1999-19-31
EMPR FIELDWORK 1986, p. 217; 1988, pp. 195-208; 1991, pp. 93-101
EMPR GEM 1970-164; 1974-263
EMPR GEOL *1975, p. G66, Fig. G31
EMPR MAP 65 (1989); 69-1
EMPR OF 1992-1; 1992-3; 1994-14
EMPR P 1992-5
EMPR PF (Miscellaneous Underground Geology and Geochemical Plans, various scales)
EMR MIN BULL MR 198, p. 238; 223 B.C. 236
EMR MP CORPFILE (Twin Peak Mines Ltd.; Twin Peak Resources Ltd.)
GSC MAP 278A; 671A; 971A
GSC OF 351 GSC P 40-18A
GSC SUM RPT 1924 Part A, p. 34
CIM Special Volume *15 (1976); *46 (1995), pp. 410-415
GCNL #74(Apr.17),#142(Jul.24),#176(Sept.12), 1991; #126(July 2), #190(Oct.2), #219(Nov.16), 1998
N MINER Apr.22, Sept.23, Oct.28, 1991
PR REL Consolidated Magna Ventures Ltd., Nov.13, 1998
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1999/04/29 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **093L 125** NATIONAL MINERAL INVENTORY: 093L15 Ag8

NAME(S): **SILVER PICK**, LITTLE JOE

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L15W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 52 50 N NORTHING: 6083708
LONGITUDE: 126 48 16 W EASTING: 640852
ELEVATION: 1676 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Little Joe Creek, 26 kilometres northeast of Smithers.

COMMODITIES: Silver Gold Lead Zinc Copper

MINERALS
SIGNIFICANT: Tetrahedrite Galena Sphalerite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 295/18N TREND/PLUNGE:
COMMENTS: Mineralized quartz lenses and stringer zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Undefined Formation	

LITHOLOGY: Tuff
Rhyolite Tuff
Andesitic Dacitic Flow
Volcanic Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1926
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	1440.0000	Grams per tonne
Gold	78.9000	Grams per tonne
Copper	3.0000	Per cent

COMMENTS: Surface sample of vein material taken 61 metres above the main showing.
REFERENCE: Minister of Mines Annual Report 1926, page 134.

CAPSULE GEOLOGY

The claims are underlain by Upper Cretaceous Kasalka Group volcanics comprised of andesitic to dacitic flows, tuffs, rhyolitic tuff and breccia.

The main showing consists of quartz lenses and stringers hosting tetrahedrite, minor galena, sphalerite and chalcopyrite. The zone strikes 295 degrees and dips 15 to 20 degrees north and is exposed for 40 metres. The quartz lenses range between 2.5 to 41 centimetres in width.

A crosscut adit driven 122 metres southwest of the main showing intersected a shear zone 0.3 metres wide, striking 032 degrees and dips 20 degrees west. Quartz veins, up to 5 centimetres wide, host disseminated tetrahedrite.

In 1926, a surface sample of vein material taken 61 metres above the main showing assayed 78.9 grams per tonne gold, 1440 grams per tonne silver and 3 per cent copper.

Approximately 400 metres east of the main showing, a vein 0.3 metres wide strikes 050 degrees and dips 20 degrees northwest. The

CAPSULE GEOLOGY

quartz vein hosts limonite, tetrahedrite, and chalcopyrite with minor galena. In 1940, a picked sample by Lang assayed 34 grams per tonne gold and 1440 grams per tonne silver.

Between 1927 to 1938, 23 tonnes were mined and produced 466 grams gold, 209,230 grams silver, 886 kilograms copper, 420 kilograms lead and 836 kilograms zinc.

BIBLIOGRAPHY

EMPR AR *1922-106; 1923-111; *1924-97; 1925-138; *1926-134; 1927-119; 1929-168; 1931-73; 1938-B36,C49
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
GSC MAP 278A; 671A; 971A
GSC SUM RPT *1924A, p. 33
GSC P *40-18, p. 9
GSC OF 351
GSC BULL 270
EMR MP CORPFILE (Quyta Gold Mines Ltd.)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/30 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **MERT**, CU, BOB, HAIG'S

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 49 00 N
LONGITUDE: 126 50 06 W
ELEVATION: 975 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the southeast slope of Astlais Mountain, 22.5 kilometres east-northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6076539
EASTING: 639112

COMMODITIES: Copper Molybdenum Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Molybdenite Arsenopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Ankerite
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Undefined Formation	
Lower Jurassic	Hazelton	Undefined Formation	
Upper Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Andesitic Tuff
Rhyodacite Tuff
Tuff
Cherty Argillite
Cherty Quartzite
Quartz Diorite

HOSTROCK COMMENTS: Hazelton overlain by Skeena sediments; intruded by quartz diorite stock.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of andesitic to dacitic pyroclastics which trend northeast. The Hazelton rocks are overlain by Lower Cretaceous Skeena Group argillaceous to quartzitic cherty sediments. The host rocks are intruded by a Late Cretaceous to Eocene quartz diorite stock which trends northeast. The intrusive is exposed on the claims and measured approximately 245 by 425 metres.

Disseminated pyrite occurs in all of the rock types. Minor arsenopyrite occurs in the ankeritized sediments and related quartz-carbonate fractures.

The quartz diorite intrusion hosts minor chalcopyrite, pyrite and molybdenite in hairline fractures, quartz veinlets, aplitic veins and along the joints within the stock.

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EMPR GEM *1967-90,288; 1968-119; 1969-369; *1970-164
EMPR ASS RPT 1017, 1122, 1143, 1778, *2527
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
GSC BULL 270
GSC SUM RPT *1924A, p. 33
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/02 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 127**

NATIONAL MINERAL INVENTORY: 093L15 Ag1

NAME(S): **CRONIN**, CRONIN MINE, BABINE

STATUS: Past Producer Underground
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 55 30 N
LONGITUDE: 126 48 56 W
ELEVATION: 1560 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The mine is located on Cronin Creek, on the east side of Mount Cronin, 28 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6088630
EASTING: 639985

COMMODITIES: Silver Lead Zinc Gold Copper Cadmium

MINERALS

SIGNIFICANT: Galena Boulangerite Tetrahedrite Arsenopyrite Sphalerite Freibergite Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Ashman	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Rhyolite Porphyry
Argillite
Sandstone
Intraformational Pebble Conglomerate
Ash Tuff
Grit
Mudstone
Quartz Diorite Dike
Dioritic Lamprophyre Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: CRONIN
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1972
QUANTITY: 117923 Tonnes

COMMODITY	GRADE	
Silver	428.5000	Grams per tonne
Gold	0.3400	Grams per tonne
Cadmium	0.1000	Per cent
Lead	7.1100	Per cent
Zinc	8.1200	Per cent

REFERENCE: Statement of Material Facts May 6, 1974 - Hallmark Resources Ltd.

INVENTORY

ORE ZONE: CRONIN REPORT ON: Y

CATEGORY: Indicated YEAR: 1972
QUANTITY: 42408 Tonnes

COMMODITY	GRADE	
Silver	428.5000	Grams per tonne
Gold	0.3400	Grams per tonne
Cadmium	0.1000	Per cent
Lead	7.1100	Per cent
Zinc	8.1200	Per cent

COMMENTS: Subject to dilution of up to 20 per cent. There is an additional inferred reserve of 117,923 tonnes at the same grade.
REFERENCE: Statement of Material Facts May 6, 1974 - Hallmark Resources Ltd.

CAPSULE GEOLOGY

The geology at the Cronin mine is very complex, however three major rock types host the mineralized structures: the Middle to Upper Jurassic Bowser Lake Group (Ashman Formation), and two Late Cretaceous to Tertiary rhyolitic sub-volcanic intrusives. The Bowser Lake Group is in fault contact with Lower-Upper Cretaceous volcanic rocks of the Kasalka Group immediately west of the showings.

The sedimentary unit is comprised of a bedded clastic sequence of argillite, grits and minor pebble conglomerate. Sericite schist has developed at the contact with rhyolite. Sedimentary structures include graded bedding, crossbedding and slump structures. Tight folds were observed in the argillites and overturned beds indicate intense folding. Locally, the argillite is graphitic and hosts moderate to intense quartz veining, 1 to 4 millimetres in width, with minor galena. Interbedded mudstone, sandstone, intraformational pebble conglomerate and ash tuffs are also part of the sedimentary unit.

A grey, massive, medium to fine-grained rhyolite porphyry is the most prominent part of the intrusive complex. It is comprised of an aphanitic groundmass of quartz, sericite, calcite, zoisite, and chlorite with laths of albite. No appreciable chill margin was mapped at the contact with the sedimentary unit. A quartz stockwork exists within the rhyolite porphyry and this has been intruded by another porphyry which has in turn been cut by a second phase of quartz veining. The quartz veins average 4 to 20 millimetres in width and host sphalerite and galena.

Silicification adjacent to the quartz veining is the only alteration associated with this unit other than low grade regional metamorphism.

An altered, white to pale yellow rhyolitic stock intrudes the porphyry. Pyrite, sphalerite, and galena occur along fractures within the stock rather than in a quartz stockwork. A set of post-mineral, quartz diorite and dioritic lamprophyre dikes crosscut the host rocks.

The main exploration targets at Cronin are massive sulphide and quartz veins that contain argentiferous galena and sphalerite with minor pyrite and chalcopyrite. Boulangerite, freibergite and arsenopyrite have also been identified.

Sulphide mineralization occurs in quartz stockworks, quartz infilling in faults, along fractures or as disseminations in the intrusive. The mineralized veins are results of two sinuous faults which strike northeasterly and dip moderately westward. The quartz veins exposed in the workings range in width from 0.3 to 1.0 metres, striking northeast and dipping 45 to 65 degrees to the northwest. Mineralization occurs as pods up to 40 metres long by 6 metres wide within the main fault system. There is a distinct zoning of minerals within the pods; galena, boulangerite and tetrahedrite are concentrated near the fault plane with the sphalerite spread out into the altered and brecciated wallrock. Pyrite and chalcopyrite occur erratically throughout the vein system.

Indicated reserves at Cronin are 42,408 tonnes grading 428.5 grams per tonne silver, 0.34 gram per tonne gold, 7.11 per cent lead, 8.12 per cent zinc and 0.1 per cent cadmium subject to dilution of up to 20 per cent. There is an additional inferred reserve of 117,923 tonnes at the same grade (Statement of Material Facts May 6, 1974 - Hallmark Resources Ltd.).

Production from 1917 to 1974 totalled 25,838 tonnes yielding 8,169,918 grams of silver, 8,772 grams of gold, 18,012 kilograms of cadmium, 10,394 kilograms of copper, 1,367,178 kilograms of lead and 1,517,881 kilograms of zinc.

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EMPR AR 1910-86; 1911-108,287,288; 1914-229-233; 1916-128-130; 1917-

BIBLIOGRAPHY

108-111; 1918-121; 1919-103; 1920-87-89; 1921-101; 1923-111; 1924-97; 1928-167; 1929-168; 1930-141; 1931-73; 1948-85; *1949-94-98,Fig. 4; 1950-101; 1951-112; 1952-94; 1956-27; 1957-12; 1962-16; 1963-26; 1964-52; 1965-73; 1966-82; 1967-89
EMPR ASS RPT *5526, *5674, *16603, 16721, 17712
EMPR BC METAL MM00471
EMPR EXPL *1978-E221; 1987-C310; 1988-C174
EMPR FIELDWORK 1974, p. 81; *1987, pp. 191,192; 1988, pp. 195-208; 1991, pp. 93-101
EMPR GEM 1969-100; 1970-164; 1971-178; 1972-420; 1973-347; 1974-263; 1975-E144
EMPR GEOL 1975, pp. G67-69; 1977-81, p. 130
EMPR MAP 65 (1989); 69-1
EMPR OF 1992-1
EMPR PF (Geological Report; Hallmark Resources Ltd.; Mellin, R.G. (1928): Report on Babina-Bonanza Mining and Milling Co.; Langley, A.G. (1929): Report on the Babine Bonanza Mine; Livgard, E. (1973): Report on the Cronin Mine; Schroeter, T. (1974): Examination and Sampling of the Upper Showings of the Cronin Mine; Croteau, F.L. (1974): Discussion on Geological Report on the Cronin Mine; Holland, S. (1974): Report on Cronin Mine; *Croteau, F.L. (1974): Geological Report for Hallmark Resources Ltd.; Miscellaneous maps of Cronin Mine - various scales, photos)
EMR MIN BULL MR 198, p. 239; 223 B.C. 237
EMR MP CORPFILE (Babine Bonanza Milling and Mining Co. Ltd.; Sproatt Silver Mines Ltd.; Mid-Continent Goldfields Ltd.; Hallmark Resources Ltd.)
GSC BULL 270
GSC MAP 278A; 671A; 971A
GSC OF 351
GSC P 40-18A
GSC SUM RPT 1910, p. 96; 1924 Part A, pp. 30-32
CANMET IR 2581
GCNL #123,#139, 1976; Jul.21, 1977; #112, 1982; #139, 1983; #43,#55, #80,#89,#118, 1985; #139,#163, 1986; #83,#196,Oct.12, 1988; #121(Jun.22), 1990
INPD Mar/Apr, 1983
N MINER *Dec.29, 1977; May 25, 1976
WWW http://www.infomine.com/
Chevron File
Falconbridge File
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/20 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 128** NATIONAL MINERAL INVENTORY: 093L15 Ag4

NAME(S): **HYLAND BASIN**, HIGHLAND BASIN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L15W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 54 40 N NORTHING: 6087008
LONGITUDE: 126 51 16 W EASTING: 637540
ELEVATION: 1735 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located at the head of Cronin Creek, 24 kilometres northeast of Smithers.

COMMODITIES: Lead Zinc Silver Gold

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite Tetrahedrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Tuff
Argillite
Limestone
Rhyolite
Rhyodacite Flow
Quartz Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

CAPSULE GEOLOGY

The claims are underlain by Middle to Upper Jurassic Bowser Lake Group sediments comprised of deformed argillite, limestone, and tuff which contact Cretaceous Kasalka Group massive rhyolitic to dacitic flows and tuff of the Brian Boru Formation. The argillite is cross cut by several rhyolitic and quartz porphyry dikes which follow shears in the host rock. Quartz veins are associated with the rhyolite dikes which strike east parallel to the shearing or slaty cleavage in the argillites.

The main showing consists of lenticular quartz veins which parallel the wall of the rhyolite dike, striking east and are parallel to the shearing in the argillite. The quartz varies from a thin streak to 1.5 metres in width. The quartz is barren in places while elsewhere is well mineralized with galena, sphalerite, tetrahedrite and chalcopyrite. The sulphide content is erratic and in a second quartz zone mineralization consists of pyrite, galena, sphalerite, chalcopyrite and very minor tetrahedrite.

Between 1935 to 1940, 10 tonnes of ore was mined and produced 342 grams gold, 84,880 grams silver, 3,396 kilograms lead and 397 kilograms zinc.

BIBLIOGRAPHY

EMPR AR 1922-105; 1923-111; 1924-97; 1925-137; *1926-132,133; 1935-A24,C39; 1939-58; 1940-23,55; 1951-112
EMPR MAP 69-1
EMPR FIELDWORK *1987, pp. 190,191; 1988, pp. 195-208; 1991, pp. 93-101
GSC SUM RPT 1924A, p. 32
GSC P 40-18, p. 5
GSC OF 351
GSC BULL 270

BIBLIOGRAPHY

EMR MP CORPFILE (Hyland Basin Gold Mines Ltd.; Rayrock Mines Ltd.)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/20 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 129** NATIONAL MINERAL INVENTORY: 093L15 Ag5

NAME(S): **LORRAINE**, VICTORIA , SILVER QUEEN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L15W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 53 17 N NORTHING: 6084531
LONGITUDE: 126 48 36 W EASTING: 640469
ELEVATION: 1550 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east side of Mount Hyland, at the head of Higgins Creek, 27 kilometres northeast of Smithers.

COMMODITIES: Silver Lead Zinc Copper

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite Tetrahedrite
ASSOCIATED: Quartz Ankerite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 180/70W TREND/PLUNGE:
COMMENTS: West vein showing consists of two parallel mineralized quartz stringers.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Phyllite
Tuff
Rhyolite Tuff
Rhyodacite Flow
Quartz Porphyry Dike

HOSTROCK COMMENTS: Hazelton rocks in fault(?) contact with Kasalka Group.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1946
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	483.4000	Grams per tonne
Lead	7.1000	Per cent

COMMENTS: 130 centimetre channel sample.
REFERENCE: Minister of Mines Annual Report 1946, page 88.

CAPSULE GEOLOGY

The host rocks include Lower Jurassic Hazelton(?) Group sediments and volcanics. The sediments consist mainly of deformed dark grey to orange weathering phyllite with contorted bedding planes dipping southeastwards. They are in contact with massive light colored rhyodacitic flows and tuffs of the Cretaceous Kasalka Group, Brian Boru Formation. The argillite is crosscut by rhyolitic and quartz porphyry dikes which dip steeply westward. Quartz stringers parallel the slaty cleavage and have been folded and dismembered. An orange-weathering massive andesite dike cuts the phyllite and is post tectonic. Orange-weathering siltstone and less foliated massive green fragmental tuff overlie the phyllites. Thick-bedded ash flow tuffs which contain flow banded rhyolite overlie the orange weathering siltstone. The two showings are referred to as the Main and West veins, respectively.

The Main vein is a bedded quartz stringer lode in the argillaceous phyllite. It is irregular and averages 46 centimetres in width.

CAPSULE GEOLOGY

The quartz vein hosts disseminated pyrite, galena, sphalerite, chalcopyrite and minor tetrahedrite. A 130 centimetre channel sample taken in 1946 assayed 483.4 grams per tonne silver and 7.1 per cent lead (Minister of Mines Annual Report 1946, page 88).

The West vein consists of two parallel quartz stringer zones separated by 50 centimetres of sheared argillite and gouge. The vein network strikes south and dips 70 degrees west. The quartz stringers host disseminated pyrite, galena, sphalerite and chalcopyrite. A composite channel sample of the two stringer zones in 1946 assayed 6.9 grams per tonne silver and 1.2 per cent zinc (Minister of Mines Annual Report 1946, page 88).

In 1917, 6.4 tonnes of ore was mined and produced 19,448 grams silver and 3,175 kilograms lead.

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EMPR AR 1909-K84; 1910-K87; 1918-119; 1921-103; 1922-106; 1924-97; 1926-132,134; 1928-167; 1929-166; 1930-141; 1931-73; 1938-C49; 1940-44; *1946-88; *1951-112; 1958-10; 1966-82
EMPR FIELDWORK *1987, p. 191; 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
GSC MAP 278A; 671A; 971A
GSC SUM RPT *1924A, pp. 32,33
GSC P 40-18, p. 7
GSC OF 351
GSC BULL 270
EMR MP CORPFILE (Lorraine Silver Mines Ltd.; Rayrock Mines Ltd.; Native Mines Ltd.)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/20 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 130**

NATIONAL MINERAL INVENTORY: 093L15 Cu3

NAME(S): **JUD**, SUSAN, IRIQUOIS, SOCIAL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 52 00 N
LONGITUDE: 126 53 36 W
ELEVATION: 1890 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located between the head of Ganokwa Creek and the head of the east fork of Driftwood Creek, 21 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6081987
EASTING: 635197

COMMODITIES: Copper, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Chalcocite, Tetrahedrite
ASSOCIATED: Quartz
ALTERATION: Malachite, Azurite, Chlorite, Epidote
ALTERATION TYPE: Epidote, Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), D03 Volcanic redbed Cu
DIMENSION:
STRIKE/DIP: 325/55N
TREND/PLUNGE:
COMMENTS: Mineralized vein in a shear in andesitic volcanics.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite, Tuff, Flow Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1929
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	89.1000	Grams per tonne
Copper	13.5000	Per cent

COMMENTS: 0.9 metre sample from upper adit also had trace gold.
REFERENCE: Minister of Mines Annual Report 1929, page 167.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation comprised mainly of andesite, andesitic flows, tuff and breccia. Bornite, chalcocite and tetrahedrite occur in veins and brecciated zones. The andesitic rocks are bleached and exhibit chlorite and epidote alteration adjacent to the veins.

The main mineral occurrence is a well defined shear zone in the andesitic volcanics varying in width up to 145 centimetres and traceable for a considerable distance. The vein has a strike varying from 320 to 330 degrees and dips between 50 to 57 degrees northeast.

In 1929, a sample across 0.9 metres in the upper adit assayed trace gold, 89.1 grams per tonne silver and 13.5 per cent copper. Another sample from the adit floor assayed 31.2 per cent copper with trace silver only (Minister of Mines Annual Report 1929, page 167).

At 1914 metres elevation, where the vein apexes, the mineralization is not so prevalent.

BIBLIOGRAPHY

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*1929-167
EMPR GEM 1970-165
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
GSC OF 351
GSC SUM RPT *1924A, pp. 33,34
GSC MAP 671A
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/30 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 131** NATIONAL MINERAL INVENTORY: 093L15 Ag6

NAME(S): **DRIFT**, HARVEY , SUMMER, WINTER, PACK-TRAIN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L15W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 52 35 N NORTHING: 6082953
LONGITUDE: 126 57 16 W EASTING: 631244
ELEVATION: 1377 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east side of Driftwood Creek, 17.7 kilometres northeast of Smithers.

COMMODITIES: Copper Silver Lead

MINERALS
SIGNIFICANT: Chalcopyrite Tetrahedrite Bornite Chalcocite Galena Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Covellite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: D03 Volcanic redbed Cu L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: STRIKE/DIP: 270/45N TREND/PLUNGE:
COMMENTS: Mineralized fissures strike northwest and dip northeast.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite
Tuff
Basalt
Lapilli Tuff
Vitric Tuff
Phyllite
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE: Blueschist

INVENTORY

ORE ZONE: DRIFT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	304.7900	Grams per tonne
Copper	2.0100	Per cent
Lead	0.9800	Per cent

COMMENTS: Average non-weighted assays.
REFERENCE: Assessment Report 3277.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation. They are comprised of maroon to green to grey basalt with andesitic to dacitic pyroclastics including dense, fine-grained tuff, vitric tuff, lapilli tuff, phyllite, shale, siltstone and conglomerate.

The mineralization occurs in a number of near parallel fissures with quartz and quartz-carbonate infilling in the andesite. The fracture/fissures strike approximately northwest and dip northeast and appear to conform with the bedding planes of the enclosing tuffs. Ten fissures occur over 460 metres and mineralization is reported to vary from 1.2 to 12 metres in width along the flow top shears. Sulphide mineralization is restricted to quartz-sulphide lenses

CAPSULE GEOLOGY

and veins in the shear zones and includes chalcopyrite, tetrahedrite, and minor galena, bornite, chalcocite, and pyrite.

In 1970, samples collected from seven of the Harvey quartz vein showings assayed: 0.90 per cent copper, 735.76 grams per tonne silver and 0.21 grams per tonne gold (Assessment Report 3277).

Between 1917 to 1927, 14 tonnes of ore was mined and produced 70,573 grams silver, and 1989 kilograms copper.

BIBLIOGRAPHY

EMPR AR 1917-447; 1918-119; 1919-103; 1921-103; 1925-138; 1926-134; *1927-119; *1928-164; 1929-165; 1940-214
EMPR GEM *1971-178; 1972-420
EMPR ASS RPT *1127, *3277, *3768
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
EMPR PF (Galloway, J.D., (1921): Report on the Harvey Group; Kelly, S.F., (1970): Driftwood Mines Ltd., Report on the Drift Claims on Harvey Mountain near Smithers; maps; Driftwood Mines Ltd., Prospectus May 12, 1971; Prospectus September 20, 1972)
EMPR MAP 69-1
GSC SUM RPT 1924A, p. 34
GSC MAP 278A
GSC OF 351
GSC BULL 270
GCNL #172, 1984
N MINER Sept.13, 1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/26 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 132** NATIONAL MINERAL INVENTORY: 093L15 Ag7

NAME(S): **DRIFTWOOD (L.6776)**, RAINBOW, JUDGE, ANNIE D. (L.3674), KEN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L15W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 53 10 N NORTHING: 6084014
LONGITUDE: 126 57 56 W EASTING: 630500
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east and south sides of Driftwood Creek, 17.7 kilometres northeast of Smithers on the southwest facing flank of the Babine Mountains. Location is the centre of Driftwood Creek Lot 6776.

COMMODITIES: Silver, Lead, Zinc, Copper, Gold, Antimony, Barite

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Tetrahedrite, Bornite, Galena, Sphalerite, Barite
ASSOCIATED: Quartz, Siderite
ALTERATION: Covellite, Malachite, Azurite, Silica, Carbonate, Sericite, Chlorite
ALTERATION TYPE: Sericitic, Carbonate, Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 085/75S TREND/PLUNGE:
COMMENTS: Mineralized quartz vein that produced 1937 ore shipment.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite, Tuff, Basaltic Pyroclastic, Dacitic Pyroclastic, Flow Breccia, Lapilli Tuff, Vitric Tuff, Amygdaloidal Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE: Blueschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1977
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	98.7400	Grams per tonne
Gold	0.2700	Grams per tonne
Copper	0.7700	Per cent

COMMENTS: Averaged assays from selected grab samples on the Driftwood claims.
REFERENCE: Assessment Report 6610.

CAPSULE GEOLOGY

The property is underlain by Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation. They are comprised of maroon to green to grey andesite with basaltic to dacitic pyroclastics including dense, fine-grained tuff, vitric tuff, lapilli tuff, lahar and coarse to fine-grained breccia. Mineralization consisting mainly of pyrite, chalcopyrite, and tetrahedrite occurs in quartz veins and quartz-carbonate infillings in faults and fractures within the

CAPSULE GEOLOGY

andesitic tuffs and amygdaloidal basalts.

A lenticular quartz vein, approximately 15 centimetres wide strikes 085 degrees and dips between 50 degrees south to near vertical. The vein consists of quartz, tetrahedrite, chalcopyrite, galena, sphalerite, and pyrite. In 1937, 8.2 tonnes of ore was shipped from this vein and produced 93 grams gold, 21,928 grams silver, 190 kilograms copper, 327 kilograms lead, and 245 kilograms zinc (Minister of Mines Annual Report 1937, page C33).

Approximately 15 metres above these workings are two mineralized quartz veins which strike 005 degrees and dip 40 degrees east and 295 degrees and dips 67 degrees south. The former is terminated by a fault in the altered andesitic tuff which strikes 320 degrees and dips 55 degrees southwest. Mineralization in the quartz stockworks and veinlets occurs as disseminations of tetrahedrite, chalcopyrite, bornite with minor chalcocite, covellite, malachite, and azurite.

Another type of mineralization on the property occurs as lensoid veins along shears and faults which are genetically related to the southeast trending regional direction of shearing and fracturing. Mineralization occurs in quartz, carbonate or sideritic infillings with clots and masses of tetrahedrite and chalcopyrite. In 1977 a selected sample from the Driftwood high grade vein assayed: 9.3 per cent copper, 1080.7 grams per tonne silver, and 2.4 grams per tonne gold (Assessment Report 6610).

Barite veinlets also crosscut the volcanics. In 1977 a barite vein chip sample assayed 0.13 per cent copper, 35.3 grams per tonne silver and 0.14 grams per tonne gold (Assessment Report 6610).

On the Judge No. 1 claim, mineralization is concentrated along silicified zones paralleling beds of tuff. Pyrite, chalcopyrite, bornite, and tetrahedrite occur in two beds confined to a maroon breccia lying between beds of fine-grained reddish tuffs. In 1937 a 647 kilogram sample assayed: 1028 grams per tonne silver, 40.5 grams per tonne gold and 10 per cent copper (Minister of Mines Annual Report 1937, page C33). In 1939 another 0.49 tonne sample assayed 19.5 grams per tonne gold, 1378 grams per tonne silver, 12 per cent copper, 0.9 per cent zinc, and 1.65 per cent antimony (Minister of Mines Annual Report 1939, page A59).

In 1937, about 9 tonnes of ore was shipped from the Driftwood property. From this ore 93 grams of gold, 21,928 grams of silver, 109 kilograms of copper, 327 kilograms of lead and 245 kilograms were recovered.

BIBLIOGRAPHY

EMPR AR 1921-102; 1923-111; 1924-97; 1925-138; 1927-481; 1928-166; 1929-165; 1930-140; 1931-73; *1937-C33; 1938-C49; *1939-A59
EMPR EXPL 1976-E152; *1977-E99
EMPR ASS RPT *1127, *6610
EMPR MAP 69-1
EMPR FIELDWORK *1987, p. 190; 1988, pp. 195-208; 1991, pp. 93-101
EMPR PF (Gaul, A.J., (1928): Report of Examination of Babine Silver King Group; Miscellaneous maps)
GSC SUM RPT 1924A, p. 34
GSC P 40-18, p. 8
GSC MAP 671A; 971A
GSC BULL *270, pp. 9-27
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/26 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 133** NATIONAL MINERAL INVENTORY: 093L14 Ag10

NAME(S): **PATRIOTIC (L.3311)**, RED CROSS (L.3310), BOWL (L.3315)

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14E
BC MAP:
LATITUDE: 54 53 10 N
LONGITUDE: 127 10 56 W
ELEVATION: 530 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east bank of the Bulkley River, 4.8 kilometres east of Evelyn on D.L. 3311, approximately 17 kilometres north-northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6083631
EASTING: 616603

COMMODITIES: Lead Zinc Silver Gold

MINERALS
SIGNIFICANT: Sphalerite Galena Jamesonite Tetrahedrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesitic Tuff
Greywacke
Shale
Schist
Conglomerate
Porphyry
Quartz Porphyry Dike

HOSTROCK COMMENTS: Porphyry intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1918
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	761.1000	Grams per tonne
Lead	2.0000	Per cent
Zinc	34.8000	Per cent

COMMENTS: Sample taken across 0.6 metre assayed only trace gold.
REFERENCE: Minister of Mines Annual Report 1918, page 118.

CAPSULE GEOLOGY

Lot 3311 is underlain Lower Cretaceous Skeena Group sediments (Kitsun Creek Formation) comprised of andesitic tuff, greywacke, shale and conglomerate. The Skeena Group is intruded by a Late Cretaceous to Tertiary porphyry stock and associated dikes.

Locally, the property is underlain by schists which are intruded by a wide, fine-grained quartz porphyry dike. Mineralization occurs in a fracture zone in the schist about 15 metres from the dike and roughly paralleling it. Mineralization occurs as fissure vein in-fillings in the schist, varying from 0.3 to 1.2 metres in width and striking 100 degrees. Sulphide mineralization consists of sphal-erite, galena, jamesonite with minor tetrahedrite and pyrite. The galena and tetrahedrite carry good silver values.

In 1918, a sample across 0.6 metres in an open cut assayed trace gold, 761.1 grams per tonne silver, 2 per cent lead, and 34.8 per cent zinc. A selected sample of the mineralization assayed 0.68 grams per tonne gold, 4278.8 grams per tonne silver, 46 per cent lead, and 20.4 per cent zinc (Minister of Mines Annual Report 1918, page 118).

BIBLIOGRAPHY

EMPR AR 1918-118; 1924-366
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
GSC OF 351
GSC P 44-23
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 134** NATIONAL MINERAL INVENTORY: 093L14 Sb1

NAME(S): **REISETER 4**, REISETER, NUMBER ONE

STATUS: Past Producer Open Pit MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 55 02 N NORTHING: 6087126
LONGITUDE: 127 09 44 W EASTING: 617795
ELEVATION: 778 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south side of Reiseter Creek, 15.3 kilometres north of Smithers; mineralized location on Reiseter 4 claim (Assessment Report 4478, Figure 2), vein number one.

COMMODITIES: Antimony Zinc Silver Copper Molybdenum

MINERALS
SIGNIFICANT: Stibnite Sphalerite Galena Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica Sericite Epidote Chlorite Kaolinite
ALTERATION TYPE: Silicific'n Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 055/50E TREND/PLUNGE:
COMMENTS: Main attitude of mineralized veins.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Sandstone
Greywacke
Tuff
Shale
Granodiorite
Hornfels

HOSTROCK COMMENTS: Granodiorite stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: Syn-mineralization GRADE: Hornfels

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Antimony	2.2000	Per cent

COMMENTS: A 60 centimetre chip sample, includes quartz vein material and host rock, also assayed trace gold.
REFERENCE: Geology, Exploration and Mining in British Columbia 1970, page 163.

CAPSULE GEOLOGY

The claims are underlain by Lower Cretaceous Kitsun Creek Formation sediments of the Skeena Group comprised mainly of greywacke, sandstone and shales. The sediments are intruded by a Late Cretaceous to Eocene granodiorite stock and associated porphyry dikes which exhibits propylitic alteration, mainly sericite, silica, minor epidote, chlorite and kaolinite. The Skeena sediments near the contact with the intrusion are hornfelsed and host disseminated pyrite.

Mineralization is found throughout the sediments as disseminated pyrite with blebs in the fractures and along schistosity planes. Some molybdenite an minor chalcopyrite occur along fractures and in quartz veins in the intrusive and hornfels (refer to 093L 136-

CAPSULE GEOLOGY

Reiseter 5).

On the Reiseter property there are seven known parallel veins structures within shear zones that strike north-northeast and dip moderately to the east. The veins range from 7.6 to 25.5 centimetres in width and host stibnite with some sphalerite, galena and minor chalcopyrite. Approximately 1.5 centimetre rock fragments are cemented by sulphides and quartz. The veins characteristically have sharp contacts with the silicified siltstone.

The number one vein, located between 760 and 790 metres elevation, has been developed by a series of pits and trenches over a strike length of 145 metres and varies in width from 15 to 60 centimetres. In the northern most pit, stibnite occurs mainly as coarse-grained tabular crystals with finer material occurring along the hangingwall. In 1970, a grab sample from this vein assayed 4.0 per cent antimony and trace gold. A chip sample taken across 60 centimetres including the quartz vein material and host rock, assayed 2.2 per cent antimony with trace gold (Geology, Exploration and Mining in British Columbia 1970, page 163).

In 1970, 19 tonnes of high grade vein material from the number one vein was shipped from this property. From this, 6302 kilograms of antimony were recovered.

BIBLIOGRAPHY

EMPR GEM *1970-162,163,481; 1973-347; 1974-262
EMPR ASS RPT *4478, 5011, *5012
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
GSC P 44-23
GSC OF 351
GSC BULL 270, p. 6
EMR MP CORPFILE (Taseko Mines Ltd.; Channel Copper Mines Ltd.)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/29 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 135**
NATIONAL MINERAL INVENTORY: 093L14 Sb1

NAME(S): **REISETER**, REISETER 1, REISETER CREEK

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14E
BC MAP:
LATITUDE: 54 55 24 N
LONGITUDE: 127 09 53 W
ELEVATION: 650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located along the south bank of Reister Creek; old trench location (Personal Comments P. Desardins - Fieldwork 1988).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6087802
EASTING: 617617

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
COMMENTS: Pyrite found in veinlets and in quartz blebs of up to 2.0 centimetres.
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Siliceous Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	218.0000	Grams per tonne
Gold	6.8400	Grams per tonne
Copper	0.0870	Per cent

COMMENTS: Sample APE 88-25-1 taken from a pyritic quartz vein in an old trench.
REFERENCE: Personal Communication - P.A. Desjardins, Fieldwork, 1988.

CAPSULE GEOLOGY

The prospect occurs in siliceous sandstone of the Lower Cretaceous Skeena Group, Kitsun Formation. The sediments are intruded by a swarm of leucocratic quartz feldspar porphyry dikes which range from 4.5 to 6.0 metres in width and have caused selective hornfelsing.

Mineralization is found throughout the sediments as disseminated and blebs of pyrite in fractures and within quartz and quartz-carbonate veinlets. Some molybdenite and minor chalcopyrite occur along fractures in the intrusive dikes and hornfels (refer to 093L 136 - Reiseter 5). Other quartz veins in the area host stibnite, sphalerite, galena and minor chalcopyrite (refer to 093L 134 - Reiseter).

Mapping in 1988 uncovered an old trench which hosts blebs and disseminated pyrite in quartz stockworks within siliceous sandstone. Sample APE 88-25-1, taken from a quartz vein with pyrite assayed 6.84 grams per tonne gold, 218.0 grams per tonne silver and 0.087 per cent copper. Sample APE 88-25, taken across the vein including some country rock, assayed 0.002 grams per tonne gold, 0.007 per cent copper and 0.001 per cent zinc (Personal Comments: P.A. Desjardin, Fieldwork, 1988).

BIBLIOGRAPHY

EMPR GEM *1970-162,163; 1973-347; 1974-262
EMPR ASS RPT *4478, 5011, 5012
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
GSC P 44-23
GSC OF 351
GSC BULL 270

DATE CODED: 1989/05/01 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/08/24 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 136**

NATIONAL MINERAL INVENTORY: 093L14 Sb1

NAME(S): **REISETER 5**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14E
BC MAP:
LATITUDE: 54 55 21 N
LONGITUDE: 127 09 05 W
ELEVATION: 930 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of molybdenum mineralization on the Reiseter 5 claim (Assessment Report 4478).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6087732
EASTING: 618474

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Pyrite Silica Carbonate
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type) L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Granodiorite
Quartz Feldspar Porphyry Dike
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

The area is underlain by Lower Cretaceous Skeena Group sediments (Kitsun Creek Formation). Locally, a Late Cretaceous to Eocene granodioritic stock and associated quartz-feldspar porphyry dikes intrude the Skeena Group rocks. Selective biotite-hornfelsing is widespread as well as abundant disseminated pyrite. The stock exhibits propylitic alteration, mainly sericite, silica, minor epidote, chlorite and kaolinite.

Molybdenite and minor chalcopyrite occur on dry fractures and in quartz veinlets within the intrusive, associated porphyry dikes and in the hornfels.

Surrounding the molybdenum-copper core zone at a lower elevation and northwest of it are a series of quartz veins which host pyrite and chalcopyrite (refer to 093L 135 - Reiseter Creek) and veins which host stibnite with varying amounts of sphalerite, galena and chalcopyrite (refer to 093L 134 - Reiseter).

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EMPR GEM *1970-162,163; 1973-347; 1974-262
EMPR ASS RPT *4478, 5011, 5012
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
EMR MP CORPFILE (Taseko Mines Ltd.; Channel Copper Mines, Ltd.)
GSC P 44-23
GSC OF 351
GSC BULL 270

DATE CODED: 1989/03/26 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 137**

NATIONAL MINERAL INVENTORY:

NAME(S): **BULKLEY**, BR

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14E
BC MAP:
LATITUDE: 54 56 00 N
LONGITUDE: 127 14 36 W
ELEVATION: 450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Claims straddle the Bulkley River, within Lot 3294, 17 kilometres north of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6088785
EASTING: 612552

COMMODITIES: Silver Lead Zinc Copper Gold

MINERALS

SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite Tetrahedrite Jamesonite
ASSOCIATED: Quartz Siderite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: l05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Eocene			Goosly Intrusions

LITHOLOGY: Shale
Greywacke
Conglomerate
Porphyritic Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: WORKINGS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	415.5000	Grams per tonne
Gold	0.1000	Grams per tonne
Copper	0.1200	Per cent
Lead	12.1200	Per cent
Zinc	31.6000	Per cent

COMMENTS: Samples from old workings.
REFERENCE: Assessment Report 13843.

CAPSULE GEOLOGY

The claims are underlain by Lower Cretaceous Skeena Group sediments (Kitsun Creek Formation). They consist mainly of fine-grained greywacke, shales and polymictic conglomerate which strike east and dip moderately north.

The sediments are crosscut by quartz and quartz-siderite veins and veinlets hosting sphalerite, galena, jamesonite, tetrahedrite, chalcopyrite, and pyrite.

Samples from the old workings assayed 0.1 grams per tonne gold, 415.5 grams per tonne silver, 31.6 per cent zinc, 12.12 per cent lead and 0.12 per cent copper (Assessment Report 13843).

Mineralization is related to the Late Eocene Goosly Lake Intrusion which is comprised of quartz-monzonite porphyry.

BIBLIOGRAPHY

EMPR AR 1918-118
EMPR ASS RPT *8940, *13843

BIBLIOGRAPHY

EMPR EXPL 1980-346; 1985-C319
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
GSC OF 351
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/29 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 138**

NATIONAL MINERAL INVENTORY:

NAME(S): **AG**, PB, SIS,
SILVER BOX CAR

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14E 093L15W
BC MAP:
LATITUDE: 54 56 30 N
LONGITUDE: 127 01 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near headwaters of Reiseter Creek on the east side of Two Bridge Creek, 19.3 kilometres north-northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6090097
EASTING: 626940

COMMODITIES: Lead Zinc Silver

MINERALS
SIGNIFICANT: Galena Sphalerite Arsenopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Lower Cretaceous	Skeena	Undefined Formation	
Upper Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Andesitic Flow
Tuff
Breccia
Argillite
Quartz Monzonite

HOSTROCK COMMENTS: Quartz monzonite stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The claims are underlain by a Late Cretaceous quartz monzonite stock which intrudes both Lower Jurassic Hazelton Group volcanics and Lower Cretaceous Skeena Group sediments. The contact aureole is intensely silicified and is weakly mineralized with pyrite.

Mineralization occurs in a small network of quartz veinlets which host pyrite and silver bearing galena. Old workings at the Cabin location show quartz veins with arsenopyrite. The network of quartz veins crosscut banded, slatey argillite and host minor occurrences of pyrite, galena, and possibly sphalerite.

BIBLIOGRAPHY

EMPR EXPL *1975-E143
EMPR ASS RPT *2657, 5504
EMPR MAP 69-1
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
EMPR PF (*Dickson, M.P. (1986): Report on the Silver Box Property, Reiseter Creek in Prospectus for Altec Development Corp., Jun.26, 1987)
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/29 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 139**

NATIONAL MINERAL INVENTORY: 093L15 Cu2

NAME(S): **REISITER CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 56 45 N
LONGITUDE: 126 58 16 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing at the head of Reiseter Creek, 22.5 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6090648
EASTING: 629951

COMMODITIES: Copper Lead Zinc

MINERALS
SIGNIFICANT: Galena Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Cretaceous	Skeena	Undefined Formation	Unnamed/Unknown Informal

LITHOLOGY: Argillite
Quartz Monzonite
Aplite Dike
Granodiorite Dike

HOSTROCK COMMENTS: Quartz monzonite stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The host rock is Lower Cretaceous Skeena Group argillite which is intruded by dikes and sills of aplitic to granodioritic composition and related quartz veins associated with a Cretaceous quartz monzonite stock.

Quartz infilling in fractures exhibits a cockscomb texture with intergrown crystals projecting toward the centre of the vein. In two of these veins crystalline galena and chalcopyrite were interstitial to the quartz. The sulphides are confined to a narrow band of less than 30 centimetres in width.

Disseminated pyrite is found as shear mineralization along the bedding planes in the argillite.

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
GSC P 40-18, p. 8
GSC MAP 671A; 971A
GSC SUM RPT 1924A, p. 35
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/29 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 140**

NATIONAL MINERAL INVENTORY: 093L15 Ag2

NAME(S): **DEBENTURE (L.6310)**, WANDA

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 58 50 N
LONGITUDE: 126 52 36 W
ELEVATION: 1450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south side of Depenture Creek, 29 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6094690
EASTING: 635882

COMMODITIES: Lead Zinc Silver

MINERALS
SIGNIFICANT: Galena Sphalerite
ASSOCIATED: Quartz
ALTERATION: Sericite Chlorite Epidote
ALTERATION TYPE: Sericitic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Rhyodacite
Flow Breccia
Lapilli Tuff
Quartz Diorite Sill

HOSTROCK COMMENTS: Quartz diorite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Debenture (Lot 6310) and 5 other Crown grants (Lots 6311-6315) are located on the south side of Debenture Creek, on the northeast boundary of Babine Mt. Park.

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised mainly of andesite, rhyodacite flows, breccia and tuff. The volcanics are intruded by a Late Cretaceous quartz diorite sill about 6 metres thick which strikes northwest and dips between 40 to 45 degrees to the south-west. The intrusion cuts chlorite-epidote altered lapilli tuffs.

Mineralization consists of fracture fillings in the numerous fault/fracture systems in the volcanics. The No. 2 vein occurs in a fracture which crosscuts the bedding and dips 78 degrees. The volcanics are sericitized and partly silicified and host mineralized seams and fairly massive bands of disseminated galena with minor sphalerite. The vein is mineralized with galena seams and stringers within brecciated vein quartz and wall rock.

The No. 1 vein is exposed in a steep inaccessible bluff and dips 75 degrees south. It was traced intermittently for 61 metres.

BIBLIOGRAPHY

EMPR AR 1913-108; 1915-77; 1916-91,130; 1964-52
EMPR ASS RPT *1643
EMPR FIELDWORK *1987, p. 191; 1988, pp. 195-208; 1991, pp. 93-101
EMPR MAP 69-1
EMR MP CORPFILE (Debenture Creek Mines Ltd.; Native Mines Ltd.; Sproatt Silver Mines Ltd.; Wanda Mines and Explorations Ltd.; New Cronin Babine Mines Ltd.)
GSC BULL 270
GSC MAP 671A; 971A

BIBLIOGRAPHY

GSC OF 351
GSC P 40-18, p. 5
GSC SUM RPT 1924A, p. 32

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/20 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 141**

NATIONAL MINERAL INVENTORY:

NAME(S): **OPHIR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 42 00 N
LONGITUDE: 126 34 06 W
ELEVATION: 1040 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southeast base of Dome Mountain on Guess Creek, 38 kilometres southeast of Smithers (Assessment Report 13638).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6064123
EASTING: 656693

COMMODITIES: Gold, Manganese, Lead, Zinc, Copper, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Galena, Pyrite, Magnetite
ASSOCIATED: Quartz, Calcite
ALTERATION: Chlorite, Hematite
ALTERATION TYPE: Chloritic, Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Felsic Tuff
Volcanic Sandstone
Diabase

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Gold	0.0150	Grams per tonne
Manganese	0.1000	Per cent
Lead	0.0300	Per cent
Zinc	0.0750	Per cent

REFERENCE: Assessment Report 13638.

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group rocks of the Nilkitkwa Formation are exposed along Guess Creek. On the north bank of the creek, light grey medium-grained felsic tuff with quartz eyes hosts 3 per cent pyrite, disseminated and in fracture filling with minor chalcopyrite. Quartz-carbonate and chlorite veinlets crosscut the felsic tuff. In 1985, samples of the volcanic assayed 0.015 grams per tonne gold, trace silver, 0.1 per cent manganese, 0.075 per cent zinc, 0.03 per cent lead and 0.001 grams per tonne gold, 0.045 per cent copper, 0.7 per cent manganese, 0.06 per cent zinc and 0.02 per cent lead (Assessment Report 13638).

The eastern part of the claims host medium-grained, dark grey volcanic sandstone. Exposed in the southwest parts, is diabase which is chloritized with calcite fracture filling. Hematite is disseminated as well as 5 per cent magnetite and pyrite.

BIBLIOGRAPHY

EMPR EXPL *1985-C318
EMPR ASS RPT 7286, *13638
GSC OF 351
GSC BULL 270

BIBLIOGRAPHY

EMPR OF 1987-1
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/16 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 142**

NATIONAL MINERAL INVENTORY: 093L10 Zn3

NAME(S): **BRENDA**, BULKLEY , PARADISE, BW, BURN 2, ARCTIC

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 40 15 N
LONGITUDE: 126 37 23 W
ELEVATION: 1310 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6060758
EASTING: 653277

COMMENTS: Located on a small tributary of Guess Creek, 8.5 kilometres south of Dome Mountain; old copper showing from Assessment Report 17255, Figure 4.

COMMODITIES: Copper, Silver, Zinc, Gold

MINERALS

SIGNIFICANT: Sphalerite, Arsenopyrite, Chalcopyrite, Pyrrhotite, Pyrite, Magnetite
ASSOCIATED: Quartz
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive, Disseminated
CLASSIFICATION: Epigenetic, Mesothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb); D03 Volcanic redbed Cu
I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Andesitic Tuff, Feldspar Crystal Tuff, Lapilli Tuff, Breccia, Diorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact, Regional
RELATIONSHIP: Syn-mineralization, Post-mineralization
GRADE: Greenschist, Hornfels

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	261.0000	Grams per tonne
Copper	1.9600	Per cent

COMMENTS: Sample taken from one of the old trenches exposed on Line 22+00W.
REFERENCE: Assessment Report 17255.

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic flows, tuffs and breccias. Overlying the Telkwa Formation, is the Nilkitkwa Formation which is comprised of a mixture of pyroclastics, flows and sedimentary rocks. The volcanics are intruded by stocks comprised of granodiorite, monzonite, and diorite.

Locally, the volcanic rocks of the Hazelton Group strike 310 degrees and dip 25 degrees southwest. The area of the Brenda showing is underlain mainly by maroon feldspar-crystal tuff and lapilli tuff of the Lower Jurassic Nilkitkwa Formation. To the east, a diorite intrusive is exposed.

A shear zone ranging from 6 to 12 metres in width trends about 065 degrees in the andesitic tuff. Mineralization occurs in part as

CAPSULE GEOLOGY

disseminations and as replacement infillings along bedding planes adjacent to the shearing. On the right side of the creek open cuts expose massive pyrite with magnetite, sphalerite, and malachite staining. A sample across 1.8 metres of solid sulphide assayed trace silver, gold, copper, and 1.2 per cent zinc (Assessment Report 1665).

About 300 metres to the northeast there is a slightly mineralized diorite hosting chalcopyrite and pyrite.

On the Paradise property, the shear zone was described in 1918 as locally hosting quartz veining, ranging from 1.5 to 3.0 metres in width, mineralized with pyrite, magnetite, and minor arsenopyrite and pyrrhotite.

Recently, an old campsite and trenches were found. Abundant malachite staining occurs in the old trenches. In 1988, a grab sample from one of the trenches assayed 1.96 per cent copper and 261 grams per tonne silver (Assessment Report 17255). About 400 metres to the east is a small quartz vein with minor galena and chalcopyrite mineralization.

BIBLIOGRAPHY

EMPR AR 1918-124; 1929-170; *1968-137
EMPR ASS RPT 1665, 2444, 2543, 7286, *17255, 17478, 17874
EMPR EXPL *1988-C170
GSC P 40-18
GSC MAP 671A; 971A
EMPR FIELDWORK *1986, p. 216; *1988, pp. 195-208
EMPR OF *1987-1
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/26 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 143**

NATIONAL MINERAL INVENTORY: 093L10 Ag1

NAME(S): **TONY**, IVANHOE, BW, ARCTIC, DEL SANTO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 40 13 N
LONGITUDE: 126 36 35 W
ELEVATION: 1402 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showing on crest of hill, 8 kilometres south-southeast of Dome Mountain; BW showing from Assessment Report 17255, Figure 4.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6060725
EASTING: 654139

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Tetrahedrite, Chalcopyrite, Sphalerite, Galena
ASSOCIATED: Quartz, Carbonate
ALTERATION: Malachite, Azurite, Pyrite, Kaolinite
ALTERATION TYPE: Propylitic, Silicific'n, Carbonate, Oxidation, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Mesothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 040/60S
TREND/PLUNGE:
COMMENTS: Mineralized shear zone in andesitic volcanics.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Lower Jurassic	Hazelton	Nilkitkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Andesite, Tuff, Breccia, Calcareous Sediment/Sedimentary, Monzonite, Diorite, Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	360.0000	Grams per tonne

COMMENTS: A selected sample over 4.0 metres.
REFERENCE: Assessment Report 17255.

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1968
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	62.0000	Grams per tonne
Copper	0.6000	Per cent

COMMENTS: 1.8 metre sample.
REFERENCE: Minister of Mines Annual Report 1968, page 137.

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation and volcanics and sediments which are part of the Nilkitkwa Formation. The rocks consist of andesitic flows, tuffs and breccias with associated calcareous sediments. These formations

CAPSULE GEOLOGY

are intruded by stocks comprised of granodiorite, monzonite and diorite which form part of the Topley Intrusive Suite.

Locally, the area of mineralization is underlain by a mixture of altered lapilli tuff and fine grained calcareous sediments which are in contact with a diorite intrusive. Mineralization consisting of galena and sphalerite, associated with carbonate veining, is abundant. Local propylitic alteration in the form of bleaching, kaolinization, pyritization with silicification is also associated with the carbonate veining.

A quartz-carbonate alteration zone (Tony or BW showing) with disseminated tetrahedrite mineralization is hosted in fine-grained sediments. The mineralization is traceable over 80 metres and a selected sample assayed up to 360 grams per tonne silver over 4.0 metres (Assessment Report 17255).

The tetrahedrite is disseminated through a quartz-carbonate alteration zone and also in the adjacent sediments. Chalcopyrite, sphalerite and galena are also present in variable amounts.

The main showing is on the crest of a hill where a shear zone up to 2.0 metres wide crosscuts the andesitic tuff and strikes 040 degrees and dips 60 degrees southeast. The shear hosts tetrahedrite, chalcopyrite, and malachite with azurite. Silver assays run up to 70 grams per tonne. A sample across 1.8 metres assayed trace gold, 62 grams per tonne silver, and 0.6 per cent copper. About 150 metres south of the shaft, the andesite shows slight copper mineralization over 3.4 metres and assayed trace gold, 64 grams per tonne silver, and 0.5 per cent copper (Minister of Mines Annual Report 1968, page 137).

About 400 metres east of the shaft, a granodioritic intrusive hosts small chalcopyrite bearing quartz veins. A sample across a 23 centimetre vein assayed trace gold, and copper with 68.5 grams per tonne silver (Minister of Mines Annual Report 1968, page 137).

BIBLIOGRAPHY

EMPR AR 1928-169; 1929-170; *1968-137
EMPR ASS RPT 1665, 2444, 2543, 7286, *17255, 17478, *17874
EMPR EXPL *1988-C170
EMPR FIELDWORK *1986, p. 216; 1988, pp. 195-208
EMPR MAP 69-1
EMPR OF *1987-1
GSC BULL 270
GSC MAP 671A; 971A
GSC OF 351
GSC P 40-18
WWW http://www.infomine.com/index/properties/DEL_SANTO__GROUSE.html
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/26 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 144**

NATIONAL MINERAL INVENTORY: 093L16 Cu4

NAME(S): **TACHI**, TACHEK, MET, GOLD DUST II

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 45 10 N
LONGITUDE: 126 10 51 W
ELEVATION: 884 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6070928
EASTING: 681421

COMMENTS: Located on Tachek Creek on the west side of Babine Lake, 6.4 kilometres south-southwest of Topley Landing.

COMMODITIES: Copper, Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Molybdenite, Magnetite
ALTERATION: Sericite, Chlorite, Epidote, K-Feldspar
ALTERATION TYPE: Sericitic, Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Breccia
CLASSIFICATION: Epigenetic, Hydrothermal, Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au; L05 Porphyry Mo (Low F- type)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Jurassic			Topley Intrusions

LITHOLOGY: Granodiorite
Quartz Monzonite
Biotite Quartz Feldspar Dike
Andesite
Tuff
Flow Breccia

HOSTROCK COMMENTS: Mineralization associated with biotite-quartz-feldspar porphyry dikes.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The claims are underlain by Triassic to Lower Jurassic Hazelton Group schistose volcanics comprised mainly of andesitic flows, tuff and breccia which strike northwards and dip steeply east. These rocks are intruded by a Jurassic Topley Intrusion which underlies the central part of the claims.

The Topley granitic rocks are comprised mainly of granodiorite to quartz monzonite. They are crosscut by biotite-quartz-feldspar porphyry dikes which have irregular, commonly brecciated contacts and strike predominantly east.

Alteration products include sericite on feldspars and incipient chloritization of biotite. More altered varieties of the intrusive exhibit porphyroblasts of potash feldspar plus epidote, chlorite, potash feldspar and magnetite in and marginal to numerous fractures.

Sulphide mineralization, consisting of pyrite, chalcopyrite, and molybdenite appears to be widespread marginal to the biotite-quartz feldspar porphyry dikes. In general, the molybdenum is restricted to potash feldspar rimmed fractures, while chalcopyrite occurs both in fractures and as disseminations in both the granitic rocks and the porphyries. Precious metal values were noted in the contact zones.

BIBLIOGRAPHY

EMPR ASS RPT 4479, 16874
EMPR BULL 110
EMPR GEM 1965-90; 1968-133; 1969-115; 1970-157; 1973-350;
1977-E200; 1988-C174

BIBLIOGRAPHY

EMPR MAP 69-1
EMPR OF 1996-29
GSC BULL 270
GSC MAP 671A
GSC OF 351
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/26 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 145**
NATIONAL MINERAL INVENTORY: 093L16 Pb1

NAME(S): **NEWMAN**, GRANISLE, ROBINHOOD

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 56 15 N
LONGITUDE: 126 10 26 W
ELEVATION: 716 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1.2 kilometres southwest of the Granisle Mine Pit on the southwest end of McDonald Island (Granisle 093L 146).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6091492
EASTING: 681038

COMMODITIES: Lead, Zinc, Silver, Gold, Copper

MINERALS
SIGNIFICANT: Sphalerite, Galena, Chalcopyrite, Pyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Breccia
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 030/60S
TREND/PLUNGE:
COMMENTS: Mineralized quartz-carbonate breccia vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

ISOTOPIC AGE: 51.2 +/- 2 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite
Breccia
Amygdaloidal Andesite
Tuff
Biotite Feldspar Porphyry Dike
Quartz Diorite

HOSTROCK COMMENTS: Age from biotite near ore body (Minister of Mines Annual Report 1971, p. 182).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1971
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	411.4000	Grams per tonne
Gold	3.4000	Grams per tonne
Lead	13.0000	Per cent
Zinc	19.0000	Per cent

COMMENTS: Sample from mineralized quartz-carbonate vein.
REFERENCE: National Mineral Inventory Card 93L16 Pb1.

CAPSULE GEOLOGY

McDonald Island is underlain by Lower Jurassic Hazelton volcanics of the Telkwa Formation comprised of green to purple waterlain andesite tuffs and breccias. These strike northerly and dip at moderate angles to the west and are overlain in the western part of the island by massive and amygdaloidal andesitic flows and thin bedded shales.

Copper mineralization (Granisle Mine 093L 146) is associated with an Eocene Babine Intrusive quartz diorite plug and a biotite-feldspar porphyry dike which strikes northeasterly across the island.

At lake level on the southwest end of the island, 1.2 kilometres

CAPSULE GEOLOGY

south of the pit, a quartz-carbonate breccia vein hosts sphalerite, galena, pyrite, and chalcopyrite. The vein contains some silver and follows a northeast striking fault for a limited distance. The vein strikes 030 degrees and dips approximately 60 degrees southeast. A grab sample is reported to have assayed 3.4 grams per tonne gold, 411.4 grams per tonne silver, 13 per cent lead, and 19 per cent zinc (National Mineral Inventory Card 93L16 Pb1).

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EMPR OF 1996-29
GSC BULL 270
GSC MAP 671A
GSC OF 351
GSC P 40-18, p. 12

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/19 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 146**

NATIONAL MINERAL INVENTORY: 093L16 Cu1

NAME(S): **GRANISLE**, MACDONALD ISLAND, COPPER ISLAND, BELL, RICHMOND

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 56 40 N
LONGITUDE: 126 09 26 W
ELEVATION: 770 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on MacDonald Island in Babine Lake, approximately 64 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6092308
EASTING: 682074

COMMODITIES: Copper Silver Gold Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Pyrite Molybdenite
ASSOCIATED: Quartz Magnetite Specularite
ALTERATION: Biotite Quartz Sericite Carbonate Pyrite Chlorite Epidote Apatite
ALTERATION TYPE: Potassic Sericitic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

ISOTOPIC AGE: 51.2 +/- 2 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Biotite Feldspar Porphyry
Quartz Diorite
Porphyry Dike
Andesite
Andesite Tuff
Andesite Breccia
Chert Pebble Conglomerate
Shale

HOSTROCK COMMENTS: Age date determined from biotite from near the orebody (Minister of Mines Annual Report 1971, page 182).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: GRANISLE REPORT ON: Y

CATEGORY: Unclassified YEAR: 1992
QUANTITY: 119000000 Tonnes

COMMODITY	GRADE	
Copper	0.4100	Per cent
Gold	0.1500	Grams per tonne

COMMENTS: Remaining in situ resources using a 0.30 per cent copper cutoff.
REFERENCE: CIM Special Volume 46, page 254.

CAPSULE GEOLOGY

MacDonald Island is underlain by Lower-Middle Jurassic Telkwa Formation (Hazelton Group) volcanics comprised of green to purple waterlain andesite tuffs and breccias with minor intercalated chert pebble conglomerates in the central and eastern part of the island. These rocks strike northerly and dip at moderate angles to the west and are overlain in the western part of the island by massive and amygdaloidal andesitic flows and thin bedded shales.

Copper mineralization at the Granisle mine is associated with a series of Eocene Babine Intrusions which occur in the central part of

CAPSULE GEOLOGY

the island. The oldest is an elliptical plug of dark grey quartz diorite approximately 300 by 500 metres in plan. The most important intrusions are biotite-feldspar porphyries of several distinct phases which overlap the period of mineralization. The largest and oldest is a wide northeasterly trending dike which is intrusive into the western edge of the quartz diorite pluton. The contact is near vertical and several small porphyry dikes radiate from the main dike. Several of the phases of the porphyry intrusions are recognized within the pit area. Potassium-argon age determinations on four biotite samples collected in and near the Granisle ore body yielded the mean age of 51.2 Ma plus or minus 2 Ma (Minister of Mines Annual Report 1971).

The wide porphyry dike which strikes northeast is bounded by two parallel northwest striking block faults. The westernmost crosses the island south of the mine and the eastern fault extends along the channel separating the island from the east shore of Babine Lake.

An oval zone of potassic alteration is coincident with the ore zone. The main alteration product is secondary biotite. This potassic alteration zone is gradational outward to a quartz-sericite-carbonate-pyrite zone which is roughly coaxial with the ore zone. Within this zone, the intrusive and volcanic rocks are weathered to a uniform buff colour with abundant fine-grained quartz. Mafic minerals are altered to sericite and carbonate with plagioclase clouded by sericite. Pyrite occurs as disseminations or as fracture-fillings. Beyond the pyrite halo, varying degrees of propylitic alteration occurs in the volcanics with chlorite, carbonate and epidote in the matrix and carbonate-pyrite in fractured zones. Clay mineral alteration is confined to narrow gouge in the fault zones.

The principal minerals within the ore zone are chalcopyrite, bornite and pyrite. Coarse-grained chalcopyrite is widespread, occurring principally in quartz-filled fractures with preferred orientations of 035 to 060 degrees and 300 to 330 degrees with near vertical dips. Bornite is widespread in the southern half of the ore zone with veins up to 0.3 metres wide hosting coarse-grained bornite, chalcopyrite, quartz, biotite and apatite.

Gold and silver are recovered from the copper concentrates. Molybdenite occurs within the ore zone, most commonly in drusy quartz veinlets which appear to be later than the main stage of mineralization. Magnetite and specularite are common in the north half of the ore zone where they occur in fractures with chalcopyrite and pyrite. Pyrite occurs in greatest concentrations peripheral to the orebody as blebs, stringers and disseminations.

Mining at Granisle was suspended in mid-1982. Production from 1966 to 1982 totalled 52,273,151 tonnes yielding 69,752,525 grams of silver, 6,832,716 grams of gold, 214,299,455 kilograms of copper and 6,582 kilograms molybdenum.

Unclassified reserves are 14,163,459 tonnes grading 0.442 per cent copper (Noranda Mines Ltd. Annual Report 1984).

Remaining in situ reserves, as modelled in 1992 using a 0.30 per cent copper cutoff, are estimated to be 119 million tonnes grading 0.41 per cent copper and 0.15 grams per tonne gold (CIM Special Volume 46, page 254).

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EMPR BC METAL MM00026
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EMR MIN BULL MR 166; 223 B.C. 238
EMR MP CORPFILE (Pacific Base Metals Ltd.; Granby Mining Corp.; Granisle Copper Ltd.; Noranda Mines Ltd.)
GSC BULL 270
GSC MAP 278A; 671A; 971A
GSC OF 351
GSC P 36-20, p. 155; 40-18A, p. 12

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EMPR OF 1998-10
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/19 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 147** NATIONAL MINERAL INVENTORY:

NAME(S): **COAL CREEK**, TELKWA

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L13E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 49 46 N NORTHING: 6076565
LONGITUDE: 127 43 06 W EASTING: 582331
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Coal Licences extend from 54 degrees 47' to 54 degrees 52' and 127 degrees 39' to 127 degrees 48'. Latitude and longitude indicate the approximate centre of the property.

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal A03 Sub-bituminous coal
SHAPE: Irregular
MODIFIER: Faulted
COMMENTS: The structure is dominated by a number of northeast-southwest to northwest-southeast trending faults.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Mudstone
Siltstone
Sandstone
Conglomerate

HOSTROCK COMMENTS: Minor conglomerate.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Bowser Lake
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: HVol Bituminous
COMMENTS: Rank falls between High Volatile A and B Bituminous coal.

INVENTORY

ORE ZONE: COAL CREEK REPORT ON: Y

CATEGORY: Indicated YEAR: 1986
QUANTITY: 281170 Tonnes

COMMODITY	GRADE	
Coal	0.9000	Per cent

COMMENTS: Probable reserve; grade is based on reflectivity of volatile matter content.
REFERENCE: Coal Assessment Reports 222, 223.

CAPSULE GEOLOGY

Up to six seams occur in Telkwa coal measures within stratified rocks of the Lower Cretaceous Skeena Group. The coal is high volatile bituminous, A to B in rank and contains a number of rock partings and occasionally pyrite spherulites. The No. 1 or Main seam and the No. 2 seam are the economically more important coal seams. The No. 1 seam is 2.6 metres to 5 metres thick and contains significant ash in its lower portion. Volatile matter ranges from 32.2 to 37.2 per cent, fixed carbon from 53.3 per cent to 55.3 per cent, ash from 3.54 to 11.45 per cent, sulphur from 0.38 to 0.53 per cent and BTU from 11941 to 13258 (1913). The No. 2 seam is approximately 1.7 metres thick (0.7 to 2.0 metres) and contains 2 significant claystone partings. The seams are interbedded with mudstone, siltstone and sandstone. The remaining seams are generally less than 1 metre thick.

The structure in the area is dominated by a number of northeast

CAPSULE GEOLOGY

to northwest trending faults. Probable reserves are estimated at 281,170 tonnes of high volatile, both A and B bituminous, high sulphur, low free swelling index coal with a calorific value in the range of 3653 K-cal/kilogram (Air Dried Basis) to 3779 K-cal/kilogram (Air Dried Basis), (Paper 1986-5), (see 093L 154).

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GSC BULL *270
GSC MEM 69
GSC OF 351
GSC P *89-4, pp. 39-41

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 148**

NATIONAL MINERAL INVENTORY:

NAME(S): **EVELYN STATION COAL**, EVELYN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 55 18 N
LONGITUDE: 127 19 06 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Coal seams located along the creek banks between an elevation of 490 to 520 metres.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6087369
EASTING: 607778

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A03 Sub-bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Coal seams up to 23 centimetres in thickness occur interbedded with feldspathic sandstones between 490 and 520 metres in elevation along the banks of the creek. The coal seams occur in one location at closely spaced intervals separated by seams of bone coal. The coal seams are interbedded within the Lower Cretaceous Skeena Group rocks and are part of the Telkwa coal measures.

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EMPR INF CIRC 1989-5
GSC MEM 69
GSC OF 351
EMPR MAP 69-1

DATE CODED: 1985/07/24
DATE REVISED: 1989/04/30

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 149**

NATIONAL MINERAL INVENTORY:

NAME(S): **LAKE KATHLYN**, TELKWA, GLACIER GULCH

STATUS: Past Producer — Underground
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 49 45 N
LONGITUDE: 127 16 18 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Latitude and longitude indicate the approximate centre of the property.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6077151
EASTING: 611023

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A05 Anthracite — A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded — Faulted
COMMENTS: Beds strike northwest-southeast and dip 55-70 degrees northeast. Coal is locally sheared and contains slickensides in places. A number of faults are present in the area.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Shale
Sandstone
Carbonaceous Shale
Carbonaceous Sandstone
Argillite
Greywacke

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane — PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Bowser Lake
METAMORPHIC TYPE: Regional — RELATIONSHIP: Post-mineralization — GRADE:
COMMENTS: Coal rank is Meta Anthracite.

CAPSULE GEOLOGY

Coal seams occur in the Telkwa coal measures interbedded with shale, carbonaceous units and sandstone of the Lower Cretaceous Skeena Group. On the south side of Glacier Gulch approximately 20 coal seams occur throughout a 183 metre thick section. The majority of the seams range from 0.2 metres to 0.3 metres thick, however two seams up to 1.2 metres thick, and two ranging from 0.5 to 0.6 metres thick also occur. On the north side of Glacier Gulch four thin (less than 0.6 metres) coal seams are present. Coal has been mined from a number of adits and analyses of various adit samples yield ash, volatile matter, fixed carbon, sulphur and BTU per pound values ranging from 9.5 to 28.1 per cent, 3.1 to 7.1 per cent, 69.8 to 51.4 per cent, 0.1 per cent and 9,100 to 10,200 respectively (1940). A small tonnage of coal was mined from the Lake Kathlyn Coal Mine from a series of adits.

Beds strike northwest and dip northeast 55 to 70 degrees. The coal is sheared in places and locally contains numerous slickensides. A number of faults are also present in the area.

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 150**

NATIONAL MINERAL INVENTORY:

NAME(S): **DRIFTWOOD CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14E
BC MAP:
LATITUDE: 54 50 00 N
LONGITUDE: 127 00 16 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6078070
EASTING: 628173

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Tertiary

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A02 Lignite

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Tertiary	Undefined Group	Unnamed/Unknown Formation	

LITHOLOGY: Lignite
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Skeena Ranges
RELATIONSHIP: Post-mineralization
GRADE: Lignite

CAPSULE GEOLOGY

Lignite coal occurs on Driftwood Creek in a small patch of Tertiary sediments. The lignite is 55 centimetres thick and contains 8 per cent moisture and 13.4 per cent ash.

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GSC P 89-4
GSC BULL *270
GSC OF 351

DATE CODED: 1985/07/24
DATE REVISED: 1988/04/30
CODED BY: GSB
REVISED BY: LLD
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 151**

NATIONAL MINERAL INVENTORY:

NAME(S): **GUESS CREEK COAL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15E 093L16W
BC MAP:
LATITUDE: 54 50 05 N
LONGITUDE: 126 31 06 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Coal licences located about 6 kilometres east of Fulton Lake, along Guess Creek at Kilometre 76 on the Chapman Lake forest service road.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6079222
EASTING: 659384

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
ASSOCIATED: Quartz Montmorillonite Kaolinite Calcite Plagioclase Illite Gypsum
MINERALIZATION AGE: Upper Jurassic

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A05 Anthracite
A04 Bituminous coal
A03 Sub-bituminous coal
DIMENSION:
STRIKE/DIP: 045/45E
TREND/PLUNGE:
COMMENTS: Seams dip east and strike north-northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Bowser Lake	Undefined Formation	

LITHOLOGY: Coal
Greywacke
Siltstone
Mudstone
Tuffaceous Greywacke
Conglomerate
Rhyodacite Dike

HOSTROCK COMMENTS: Sediments are described as Middle Jurassic or younger as defined by fossils present, ranging from Bathonian to Oxfordian.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization
Post-mineralization
GRADE: Anthracite
MVol Bituminous

CAPSULE GEOLOGY

Sediments hosting the Guess Creek coal seams consist of Middle Jurassic or younger sediments comprised of greywacke, siltstone, mudstone, tuffaceous greywacke and minor conglomerate. These sediments are poorly exposed except along sections of Guess Creek, where 35 metres of rock and overburden are exposed in vertical cliffs.

A prominent rhyodacite dike cuts metamorphosed sandstone, mudstone and coal, and is light grey in colour with a groundmass consisting of alkali feldspar and quartz with phenocrysts of biotite, quartz and plagioclase.

Four separate coal occurrences were identified and sampled in 1985. Individual coal seams are up to 1.8 metre in thickness and aggregate intervals, which include mudstone and fine-grained sandstone partings, measure up to 7 metres. The seams dip east and strike north-northeast. Seam D was traced over a strike length of 30 metres, and the other 3 seams were poorly exposed. Graphite was not detected in any of the coal seams.

Reflectance tests, using the mean maximum of vitrinite in oil techniques, indicated that samples from the seam near Guess Creek were of a high rank. Seam A was ranked as meta-anthracite, Seam B and D ranged from semi-anthracite to anthracite and Seam C ranged between low-volatile bituminous and high-volatile bituminous. The variation in rank between the seams is thought to be redated to the dikes that have locally, metamorphosed the coals. The degree of coalification reflects this thermal alteration.

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GSC MEM 69
EMPR P 1986-5

DATE CODED: 1988/05/13 CODED BY: LLC FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 152**

NATIONAL MINERAL INVENTORY:

NAME(S): **PINE CREEK**, AVELING, TELKOAL, TELKWA NORTH, AVELLING, BETTY

STATUS: Past Producer Underground
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 40 00 N
LONGITUDE: 127 10 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The licenses are located at the confluence of Pine Creek and Telkwa River. See Telkwa (093L 156) and Goathorn (093L 155).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6059240
EASTING: 618132

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A03 Sub-bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Strata dip generally dips less than 20 degrees north. Faulting occurs and is often associated with minor folding.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Mudstone
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

At least 15 coal seams and several zones with minor seams are present in the Telkwa coal measures interbedded with mudstone and sandstone of the Lower Cretaceous Skeena Group. The coal seams vary from 0.31 metres to 3.4 metres thick and with the exception of the upper 3 seams and the bright coal seam, are generally less than 2 metres thick. Analyses of 6 samples show ash ranging from 19.35 to 70.90 per cent, volatile matter from 14.72 to 24.77 per cent, fixed carbon 13.15 to 50.03 per cent, sulphur 0.52 to 0.78 per cent and have a calorific value ranging from 2844 to 9581 BTU's per pound. The coal is generally "good quality hard black coal consisting of predominant durain with thin bands of clarain", generally less than a few millimetres thick. Minor amounts of coaly shale are present in the coal.

The strata dip predominantly north, at angles less than twenty degrees. Faulting occurs and is often associated with minor folding.

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EMPR OF 1989-16
EMPR P 1986-5
GSC BULL *270
GSC MEM 69
GSC OF 351

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GSC P *1989-4, pp. 39-41

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 153**

NATIONAL MINERAL INVENTORY:

NAME(S): **MORICE RIVER**, TELKWA

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 24 55 N
LONGITUDE: 127 14 31 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The property is located near the headwaters of Deny's Creek, with the approximate centre of the property at the latitude and longitude given above.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6031151
EASTING: 614084

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A03 Sub-bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Series of northwest-southeast trending folds and steep dipping to vertical both normal and reverse faults are main structural features. Displacement on faults appears to be limited. Modifier sheared.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Mudstone
Siltstone
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Up to 10 coal seams, of which three; the Lower, Middle and Upper seams are considerably thicker than the others, occur in the Telkwa coal measures interbedded with mudstone and lesser amounts of siltstone and sandstone of the Lower Cretaceous Skeena Group. The lower seam ranges from absent to 2.3 metres in thickness, the middle seam approximately ranges from 0.3 to 1.4 metres in thickness and the upper seam ranges from 0.3 to 1.4 metres absent to 1.8 metres. The coal in general is predominantly dull black, usually well bedded with fine laminae of brittle bright coal. Bands of mudstone are common in the coal giving rise to a high ash content of 10 to 82 per cent. Pyrite is quite common and the coal seams exhibit small scale folding and locally intense shearing. Fixed carbon ranges from 25 to 61.8 per cent (one sample 3.7 per cent), volatile matter 21.9 to 28.3 per cent (one sample 14.3 per cent) sulphur 0.49 to 5.42 per cent (dry basis) and cabrific content 14,460 to 15,067 BTU per pound (one sample 1,137).

The structure consists of a series of parallel folds trending northwest. Folding is locally very tight and overfolding is present in places. Numerous northwest trending normal and reverse faults which are mainly steep dipping to vertical and shear zones are also present. Displacement on the faults appears to be limited.

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EMPR FIELDWORK *1982, pp. 113-122; *1983, pp. 81-90; 1988, pp. 195-208
EMPR INF CIRC 1989-5
EMPR MAP 69-1
EMPR OF 1989-16

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EMPR P 1986-5, p. 17, Fig. 1; 1991-2
GSC BULL *270
GSC MEM 69
GSC OF 351
GSC P *89-4, pp. 39-41

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 154**

NATIONAL MINERAL INVENTORY:

NAME(S): **ZYMOETZ RIVER**, COAL CREEK, TELKWA

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L13E
BC MAP:
LATITUDE: 54 48 59 N
LONGITUDE: 127 44 21 W
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: The latitude and longitude indicate the approximate centre of the property, which straddles Coal Creek upstream from its confluence with the Zymoetz River.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6075088
EASTING: 581019

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Regular
COMMENTS: The strata consistently strike northeast-southwest and dip northwest at an average of 24 degrees (20-30 degree range). No major folds or faults have been encountered in the area.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Mudstone
Siltstone
Sandstone
Conglomerate
Volcanic Flow

HOSTROCK COMMENTS: Strata termed Telkwa coal, Fieldwork 1984 (called Hazelton Group).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Bowser Lake
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous
COMMENTS: Rank is High Volatile Bituminous A.

CAPSULE GEOLOGY

Five coal seams with an aggregate thickness of 4 to 9 metres with the thickest seam being 3.0 metres, occur in a section up to approximately 250 metres in thickness. The coal is high volatile bituminous, A in rank and is interbedded with mudstone, siltstone and sandstone of the Lower Cretaceous Skeena Group. The seams can be correlated over a distance of at least 0.5 kilometres and are part of the Telkwa coal measures. Proximate analysis of drillhole samples cleaned, air dried and washed at specific gravity 1.5 yielded the following results: moisture 1.98 per cent, ash 9.58 per cent, volatile matter 34.35 per cent and fixed carbon 53.92 per cent.

The strata strike northeast and dip northwest at an average of 24 degrees. No major faults or folds have been encountered in the area (see 093L 147).

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EMPR COAL ASS RPT *232, *233
EMPR EXPL *1986, p. C475
EMPR FIELDWORK *1983, pp. 81-90
EMPR INF CIRC 1989-5
EMPR MAP 69-1
EMPR P *1986-5, p. 18, Fig. 1; 1991-2
GSC BULL *270
GSC MEM 69, pp. 167-189
GSC OF 351

BIBLIOGRAPHY

GSC P *89-4, pp. 39-41

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 155** NATIONAL MINERAL INVENTORY:

NAME(S): **GOATHORN CREEK (TELKWA)**, TELKWA, BETTY, NO. 1, NO. 2, NO. 3, NO. 4, NO. 4 EXTENSION, PIT ROAD, LUSCAR, MCNEIL, FORESTBURG, BULKLEY VALLEY , PIT 6, WEST GOATHORN

STATUS: Past Producer Open Pit Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L11E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 37 00 N NORTHING: 6053734
LONGITUDE: 127 08 06 W EASTING: 620429
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The property lies south of Telkwa River and to the east and west of Goathorn Creek. Production included with Telkwa (093L 156).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Strata gently folded; area is intensely faulted. Set of northwest trending faults have dissected area into a number of subparallel, linear northwest trending blocks.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Mudstone
Shale
Sandstone
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Bowser Lake
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: HVol Bituminous
COMMENTS: The Betty Seam lies between Med. and High Volatile A Bituminous.

CAPSULE GEOLOGY

The Lower Cretaceous Skeena Group in the area may be subdivided into a lower mudstone, sandstone, conglomerate unit with minor thin coal seams which are approximately 130 metres thick and an upper "coal member" which is approximately 90 metres thick which contains coal seams, mudstone and gritty mudstone. Up to six coal seams are present in the "coal member". The lowermost of the seams, the "Betty seam" marks the base of the member. The Betty seam is approximately 4 metres thick and contains two thin continuous partings, an upper 10 to 18 centimetre white clay parting and a lower 5 to 8 centimetre mudstone parting. The seam has a low raw ash content of 6.6 to 12.6 per cent, a high BTU value 12,070 BTU per pound, sulphur content of approximately 0.75 per cent (raw dry basis) and is high volatile A bituminous in rank. The Betty seam was mined in the now abandoned underground mines numbers 1, 2, 3 and was being mined in 1978 in the No. 4 Extension Mine. Two closely spaced thin seams 1.0 metres and 1.2 metres thick, separated by 0.5 metres of mudstone occur approximately 9 to 10 metres above the Betty seam. The No. 4 Mine seam occurs approximately 25 metres above the thin seams and averages 2 to 3 metres thick. The seam contains no persistent partings, has a very low raw ash content of 11 per cent, moderately high sulphur 1.67 per cent and a very high heating value of 13,270 BTU per pound, (raw dry basis). The "Pit Road" seam which is 4 metres thick occurs approximately 15 to 20 metres topographically above the No. 4 mine seam. The seam, seen in only one fault bounded outcrop, is highly

CAPSULE GEOLOGY

oxidized containing on a dry basis 13.5 per cent ash, 0.74 per cent sulphur and 10,917 BTU per pound. The stratigraphically highest seam, the Pit seam averaged approximately 3 metres in the pit area.

The structure consists of a series of north-northwest trending gentle folds with dips generally less than 20 degrees. The area is intensely faulted. A set of northwest trending faults have dissected the region into a number of subparallel linear northwest trending blocks. The central block, which contains all the known coal occurrences in the project area, exhibits a strong closely spaced set of east-northeast trending, near vertical faults. The effect of these faults in the old Mines numbers 1, 2, 3 and 4 and the present No. 4 Extension Mine is generally to progressively down drop the coal horizon to the north side of each fault.

Manalta Coal Ltd. drilled the property in 1996 and 1997. See Telkwa (093L 156) for production and additional references.

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EMPR EXPL 1986, p. C475; 1996-A25,B7; 1997-14
EMPR FIELDWORK *1982, pp. 113-122; *1983, pp. 81-90; 1988, pp. 195-208; 1991, pp. 451-460
EMPR INF CIRC 1989-5; 1997-1, p. 23; 1998-1, p. 23
EMPR MAP 69-1
EMPR OF 1989-16
EMPR P *1986-5, pp. 11-17, Fig. 1; 1991-2
GSC BULL *270
GSC MEM 69
GSC OF 351
GSC P *89-4, pp. 39-41

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 156** NATIONAL MINERAL INVENTORY:

NAME(S): **TELKWA COAL**, TELKWA RIVER, GOATHORN, TELKWA SOUTH, BUCKLEY VALLEY , FORESTBURG COLLERIES, MANALTA , CROWSNEST RESOURCES, TENAS CREEK, NO. 1, NO. 2, NO. 3, PIT 3, MCNIEL, LUSCAR SALES

STATUS: Past Producer Open Pit Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L11E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 37 38 N NORTHING: 6054863
LONGITUDE: 127 09 41 W EASTING: 618694
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Telkwa coalfield may be subdivided into Telkwa South, Telkwa North (093L 152) and the Buckley Valley Option. The Telkwa coal mine is located 10 kilometres south of Telkwa, straddling Goathorn Creek. Includes production for Goathorn Creek (093L 155).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted
COMMENTS: Major north trending normal and reverse fault zones have divided the property into several fault blocks.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Skeena	Undefined Formation	

LITHOLOGY: Coal
Claystone
Siltstone
Sandstone
Conglomerate
Tuff
Lava

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Bowser Lake
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: HVol Bituminous
MVol Bituminous
COMMENTS: Coal rank ranges from medium to high volatile A bituminous.

INVENTORY

ORE ZONE: TELKWA REPORT ON: Y

CATEGORY: Inferred YEAR: 1997
QUANTITY: 125000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Geological resource.
REFERENCE: Information Circular 1998-1, page 23.

ORE ZONE: TELKWA REPORT ON: Y

CATEGORY: Measured YEAR: 1997
QUANTITY: 50000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Mineable reserves contained within six pit areas.
REFERENCE: Information Circular 1998-1, page 23.

CAPSULE GEOLOGY

At least 14 coal seams occur in the Telkwa Basin in the Lower-Upper Cretaceous Skeena Group interbedded with claystone, siltstone, sandstone, conglomerate and minor tuff and lava beds. Within the Goathorn Creek area 10 major correlatable seams have been found. Average aggregate thickness of the upper 9 seams varies from 14 metres in the east to 18 metres in the west. East of Goathorn Creek the upper 9 seams range individually from 0.5 to 2.5 metres in thickness. West of Goathorn Creek individual coal seam intersections up to 7.6 metres thick have been observed. Seam 1 averages 3.5 metres in thickness. In the Telkwa North-Avelling Hill area (093L 152) the upper 9 seams have an aggregate thickness of up to 18 metres. At Pine Creek, some of the upper seams are present in addition to seam 1. These seams are thin, less than 2.0-metres thick, and of unknown lateral continuity. Seam 1 is present with an average thickness of 5 metres at Cabinet Creek. The upper seams are thin in this area.

The coal in the Telkwa occurrence area is high volatile A bituminous in rank. Overall coal quality values for the Goathorn East, Goathorn West (093L 155) and Telkwa North areas have the following ranges: volatile matter - 26.70 to 28.10 per cent; ash - 8.70 to 9.60 per cent; moisture - 0.92 to 1.23 per cent; fixed carbon - 60.90 to 62.60 per cent; calorific value 7380 to 7540 and sulphur - 1.06 per cent (air dry basis, 1.6 float).

Proven in-situ coal reserves in the Goathorn Creek area amount to 50 million tonnes. Areas east and west of Goathorn Creek have been designated as potential open pit sites. Possible reserves in the area amount to 25.8 million tonnes in the Telkwa North-Avelling Hill, Pine Creek and Cabinet Creek areas (Coal Assessment Reports 232, 233, 238 and 252).

In the Goathorn Creek area, major north trending normal and reverse faults have divided the property into several fault blocks. The faults are actually fault zones with many imbricates and splays. In the Goathorn East area the beds strike 350 degrees and dip 10 to 35 degrees east. In the Goathorn West area the strata generally strike east with southerly dips between 10 and 30 degrees.

North and east trending normal faults cut the sequence and a synclinal fold has been identified in the westernmost fault block. In the Telkwa North area one fault block with a north strike and 10 to 15 degree easterly dip occurs. In the Pine Creek area a monocline occurs with a strike of 290 degrees and a dip of 5 to 10 degrees. At Cabinet Creek the strata strikes 330 degrees and dips approximately 13 degrees northeast.

Previous mines in the area include No. 1 mine, No. 2 mine, No. 3 mine, No. 4 mine, No. 4 Extension mine, Luscar open pit mine and the McNeil mine.

Geological reserves in the main deposit are estimated to be 38.7 million tonnes contained within four pit areas (Information Circular 1996-1, page 21).

Manalta Coal Ltd. conducted an extensive exploration program in 1996, including the drilling of 100 holes totalling 15,000 metres. Drilling in the Tenas Creek area, south of Telkwa River, has proved significant resources in three shallow dipping coal seams. The property now has four areas with mineable coal reserves.

Mineable reserves on the property are estimated at 46 million tonnes; 20 million tonnes in Tenas, 16 million tonnes in Pit 3 and satellite deposits, and 10 million tonnes north of the Telkwa River in Pit 7 and 8 deposits (Exploration in B.C., 1996, page B7). In 1997, Manalta drilled 128 holes in the Tenas Creek, Pit 3 and West Goathorn areas. The in situ resource of the Telkwa property is estimated at 125 million tonnes. The in situ mineable reserve, contained in 6 separate pits, is estimated at 50 million tonnes (Information Circular 1998-1, page 23). Manalta, now Luscar Ltd., is seeking project approval and proposes to produce 1.5 million tonnes per year over a 23-year mine life.

Luscar Ltd. announced in March 2000 that it will not proceed with development of Telkwa Coal.

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1948-204,232-233; 1949-278,308; 1950-244,273-274; 1951-249,288,
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1955-133,161; 1956-198,224-225; 1957-121,145; 1958-135,154;
1959-253,273; 1960-218,238; 1961-253,273; 1962-258,278;
1963-239,264; 1964-308,326; 1965-390,391,410; 1966-375,376,393;
1969-A49; 1970-A48; 1972-A48; 1973-A48; 1974-A114; 1975-A88;
1976-A98; 1977-110; 1978-122; 1979-122
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EMPR GEOL 1977-1981, p. 129
EMPR INF CIRC 1989-5; 1993-13, p. 15; 1994-1, p. 15; 1994-19, p. 17; 1995-1, p. 17; 1995-9, p. 21; 1996-1, p. 21; 1997-1, p. 23; 1999-1, pp. 12, 13
EMPR MAP 65 (1989); 69-1
EMPR MINING 1975-1980, p. 52; 1981-1985, p. 79; 1986-1987, p. 76; 1988, p. 77
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CMJ August 1997, p. 29
WWW http://www.eao.gov.bc.ca/project/mining/telkwa; http://www.luscar.com

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 157**

NATIONAL MINERAL INVENTORY:

NAME(S): **DENY'S CREEK**, CLARK FORK

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L06W 093L06E
BC MAP:
LATITUDE: 54 24 30 N
LONGITUDE: 127 15 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6030363
EASTING: 613472

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Structure consists of a northwest trending normal fault to the southeast of which are 2 small synclines. Extent of folds to the northwest is unknown, but beds generally dip 15-35 degrees northwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Mudstone
Siltstone
Sandstone
Conglomerate
Volcanic Flow

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Bowser Lake
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous
COMMENTS: Rank is High Volatile A Bituminous.

CAPSULE GEOLOGY

Up to 4 coal seams occur in the Telkwa coal measures interbedded with mudstone, siltstone and sandstone of the Lower Cretaceous Skeena Group. Four seams may be present in the south central part of the property with the aggregate thickness of the seams in the south ranging from 3 metres to greater than 6 metres. In the northern part of the property fewer seams are present. Analyses of three samples from the property indicate the following ash, volatile matter, fixed carbon, sulphur and BTU per pound ranges on a dry basis: 10.19 to 60.75 per cent; 29.61 to 30.95 per cent; 54.33 to 58.86 per cent; 0.45 to 1.69 per cent and 11,923 to 12,646 respectively. The sedimentary section ranges from 0 to 250 metres in thickness and individual beds are lensed and pinch out laterally.

The structure, interpreted from photogeology, consists of a northeast trending normal fault, to the southeast of which are two small synclines. The general dip on the northwest side of the fault ranges from 15 to 35 degrees northwest.

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EMPR MAP 69-1
EMPR P *1986-5, p. 17, Fig. 1; 1991-2
GSC BULL *270
GSC MEM 69
GSC OF 351

BIBLIOGRAPHY

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 158**

NATIONAL MINERAL INVENTORY:

NAME(S): **THAUTIL RIVER**, CLARK FORK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 17 40 N
LONGITUDE: 127 19 56 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The latitude and longitude indicate the approximate centre of the property. The area is located on the Thautil River north of its confluence with the Morice River.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6017565
EASTING: 608544

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded
COMMENTS: Structure consists of north northeast-south southwest trending, north northeast plunging syncline which appears to be relatively undisturbed by faulting. Dips are generally less than approximately 25 degrees.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Conglomerate
Sandstone
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous
PHYSIOGRAPHIC AREA: Nechako Plateau
COMMENTS: Rank is High Volatile A Bituminous.

CAPSULE GEOLOGY

One coal seam, approximately 1.5 metres thick, outcrops at the northern part of the property. The seam is interbedded with sandstone and shale and occurs towards the top of the sedimentary section which is up to 275 metres thick. The remainder of the section consists predominantly of conglomerate which is part of the Lower Cretaceous Skeena Group, Red Rose Formation.

The structure in the area consists of an approximately north-northeast north-northeast plunging syncline. The section appears to be relatively undisturbed by faulting. The coal seam is eroded to the south and a large extent of coal measures is unlikely to the north because the sediments are terminated by intrusives just north of the property boundary. Dips on the property are no greater than 25 degrees.

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EMPR INF CIRC 1989-5
GSC P *89-4, pp. 39-41
GSC MEM 69
GSC OF 351
EMPR MAP 69-1

DATE CODED: 1985/07/24
DATE REVISED: 1989/06/10
CODED BY: GSB
REVISED BY: LLD
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 159**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHISHOLM LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L03E
BC MAP:
LATITUDE: 54 13 25 N
LONGITUDE: 127 12 51 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The property is located immediately north of Chisholm Lake (Shell). No coal was found on the Suncor Chisholm Lake property. The latitude and longitude above indicate the approximate centre of the Shell Licences.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6009873
EASTING: 616426

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded
COMMENTS: Structure consists of series of relatively undisturbed strata dipping 20-50 degrees east. North northeast-south southwest trending reverse fault separates sediments from volcanic basement in southwest of area.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal
Sandstone
Mudstone
Shale

HOSTROCK COMMENTS: Coal bearing sediments in Hazelton Group by D. Handy, S. Cameron.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Bowser Lake
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous
COMMENTS: Rank is High Volatile A Bituminous.

CAPSULE GEOLOGY

The only coal occurrence on the Shell property is a single coal seam approximately 1.5 metres in thickness which outcrops along Chisholm Creek within rocks of the Lower Cretaceous Skeena Group. The seam was not present in a drillhole downdip of the outcrop. No coal was encountered on Suncors property to the east, southeast and south.

The structure in the Chisholm area (swell) consists of a series of relatively undisturbed strata dipping 20 to 50 degrees east. A north-northeast trending reverse fault in the southwest separates the sediments from the volcanic basement in this area.

BIBLIOGRAPHY

EMPR COAL ASS RPT *217, 218
EMPR FIELDWORK *1982, pp. 113-122; *1983, pp. 81-90
GSC BULL *270
EMPR P 1986-5, p. 17, Fig. 1
EMPR INF CIRC 1989-5
GSC P *89-4, pp. 39-41
GSC MEM 69
GSC OF 351
EMPR MAP 69-1

DATE CODED: 1985/07/24
CODED BY: GSB
FIELD CHECK: N
DATE REVISED: 1989/06/10
REVISED BY: LLD
FIELD CHECK: N

MINFILE NUMBER: **093L 160**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLDSTREAM**, SOUTH CHISHOLM LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L03E
BC MAP:
LATITUDE: 54 11 55 N
LONGITUDE: 127 11 56 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6007118
EASTING: 617493

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Telkwa Coal Measures	

LITHOLOGY: Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

A 4.0 by 3.2 kilometre remnant basin in the Lower Cretaceous Skeena Group contains coal seams up to 1.7 metres thick. The seams are part of the Telkwa coal measures which are considered to be contained within strata of a basin referred to as the Skeena Basin.

BIBLIOGRAPHY

EMPR P 1986-5, p. 17, Figure 1
GSC BULL 270
GSC P *89-4, pp. 39-41
EMPR INF CIRC 1989-5
GSC MEM 69
GSC OF 351
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 161**

NATIONAL MINERAL INVENTORY:

NAME(S): **BABINE LAKE**, TUCHI COAL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09W
BC MAP:
LATITUDE: 54 40 00 N
LONGITUDE: 126 25 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Impure coal occurrence was reported on Tuchi River approximately 2.7 kilometres above its mouth at Babine Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6060760
EASTING: 666493

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A03 Sub-bituminous coal
COMMENTS: 0.6 metre wide seam of impure coal.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Skeena	Undefined Formation	

LITHOLOGY: Coal
Sandstone
Mudstone
Conglomerate

HOSTROCK COMMENTS: Skeena Group rocks were previously described as part of the Sustut Group.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

In 1909, a 0.6 metre wide seam of impure coal was reported on Tuchi River situated approximately 2.7 kilometres above its mouth at Babine Lake (see Paper 1986-5, Figure 1). No quality data are available and the occurrence has not been located since.

The area in which the occurrence was reported is underlain by Cretaceous to Tertiary stratified rocks comprised mainly of conglomerate, sandstone, mudstone, and minor coal. These rocks were reported as part of the Sustut Group (Geological Survey of Canada Open File 351 and Map 69-1) but are not referred to as part of the Late Cretaceous Skeena Group (Paper 1986-5).

BIBLIOGRAPHY

EMPR P *86-5, p. 17, Figure 1
EMPR INF CIRC 1989-5
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
GSC MEM 69
Falconbridge File
EMPR BULL 110

DATE CODED: 1989/02/20
DATE REVISED: / /

CODED BY: LLD
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **093L 162**

NATIONAL MINERAL INVENTORY: 093L2 Ag2

NAME(S): **COLE**, DIAMOND BELLE, SHEAR VEIN, BEAR VEIN, BARITE VEIN, SILVER QUEEN, NGV

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L02E
BC MAP:
LATITUDE: 54 05 34 N
LONGITUDE: 126 42 21 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mine symbol on 1:50,000 Topo sheet, property located at Cole Lake, 3.2 kilometres north of the southeast end of Owen Lake, 32 kilometres south of Houston. See Silver Queen (093L 002) and Chisholm (093L 216).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5996278
EASTING: 650035

COMMODITIES: Silver, Gold, Zinc, Lead, Copper, Manganese, Barite, Cadmium

MINERALS
SIGNIFICANT: Sphalerite, Galena, Chalcopyrite, Pyrite
ASSOCIATED: Quartz, Rhodochrosite, Barite
ALTERATION: Kaolin, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Breccia
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Francois Lake	Tip Top Hill	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 75.5 +/- 1.0 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Dacitic Volcanic Breccia
Dacite
Dioritic Sill
Microdiorite

HOSTROCK COMMENTS: Mine Hill microdiorite sill dated by N. Church 1973, Prelim. Map 11.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: DIAMOND BELLE
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1970
QUANTITY: 145152 Tonnes

COMMODITY	GRADE	
Silver	301.7000	Grams per tonne

COMMENTS: Reserves for Diamond Belle vein.
REFERENCE: Property File - unpublished report.

CAPSULE GEOLOGY

The area of the showings is primarily underlain by an Upper Cretaceous series of volcanic rocks and intrusions. The volcanic rocks consist mainly of dacites and dacitic andesites that are likely part of the Francois Lake Group, Tip Top Hill Formation. A sill-like body of microdiorite dated as 75.5, plus or minus 1.0 million years (N. Church, Bulletin 78, Table 2.3), intrudes these volcanic rocks. The showings are mainly hosted by a kaolinized and pyritized dacitic volcanic breccia with the microdiorite lying to the west. Pulaskite, dikes occur in the vicinity of some veins. At least five veins have been discovered that host sulphide minerals consisting mainly of sphalerite, galena and pyrite with some accessory chalcopyrite. The gangue is composed of cherty quartz, carbonate minerals such as rhodochrosite and some barite. Work on the showings has mainly been

CAPSULE GEOLOGY

in conjunction with work on the adjacent Silver Queen (093L 002).

The Diamond Belle vein was the focus of early exploration hosting the Cole Shaft. The vein averages 0.6 to 0.9 metres in width striking 130 degrees and dips steeply over the central part with the southern part striking easterly before pinching out against the pulaskite dike which strikes 150 degrees. Mineralization consists of sphalerite, galena, pyrite, and minor chalcopyrite in a gangue of quartz, carbonate, rhodochrosite and barite.

The Shear vein, near the east end of the Diamond Belle veins, strikes northerly and dips near vertically over an exposed length of 213 metres. The mineralization is patchy and appears to be the result of replacement and cavity infilling in a shear.

Vein mineralization striking southeast and parallel to the Diamond Belle, located 15 metres to the south, assayed over 1.0 metres width, 2.4 grams per tonne gold, 637.7 grams per tonne silver, 1.3 per cent copper, 2.2 per cent lead, and 5.5 per cent zinc.

The Bear vein, located 300 metres southwest of the Cole shaft, strikes south for approximately a 67 metre exposure. A chip sample across the vein yielded almost pure amber sphalerite with minor pyrite hosting modest precious metal values and cadmium.

The Barite vein, located 150 metres west of the Cole vein system, strikes southeast discontinuously for 107 metres in length. A gangue rich sample over 107 centimetre width assayed trace gold, 92.6 grams per tonne silver, 0.04 per cent copper, 0.58 per cent lead, 1.1 per cent zinc, 12.9 per cent iron, 7.8 per cent manganese, 0.36 per cent calcium, trace cadmium, 0.07 per cent arsenic, and 0.03 per cent antimony.

The NGV vein, located in the southern part of the prospect area, strikes 160 degrees dipping 75 degrees northeast and is exposed for 50 metres. In 1970, a 76 centimetre piece of mineralized drill core assayed 1.37 grams per tonne gold, 447.5 grams per tonne silver, 0.17 per cent copper, 12.8 per cent lead, and 10.2 per cent zinc.

BIBLIOGRAPHY

EMPR AR 1916-144,159; 1923-116; 1927-139; 1928-170; 1929-171; 1967-109
EMPR ASS RPT 2272, 11659, 24899, 25370
EMPR BULL *78 (in press)
EMPR EXPL 1983-436
EMPR GEM *1969-139-141,Fig.21; *1970-139-140; 1971-171; *1972-366-370,Fig. 39
EMPR MAP *11; 69-1
EMPR P *1990-2
EMPR PF (See file for 092L 002; *Turnbull, J.M. (1928) Owen Lake Property; *Batten, H.L. (1928), Summary Report on the Owen Lake Properties; *Nesbitt, B.I. (1941), Report on Owen Lake Mining Properties; *Batten, H.L. (1949) Report on Owen Lake Properties; *Ball, C.W. (1955), Crown-Granted Mineral Claims, Owen Lake, Morice River Area, B.C.; *Chisholm, E.O. (1972), Report and Recommendations on the Owen Lake Property of Frontier Explorations Ltd.; 1967 - Geological Map of Cole Vein by Frontier Explorations Co.; Chisholm, E.O. (1967): Qualifying Report on Frontier Explorations Ltd., Owen Lake Area)
EMR MP CORPFILE (Federal Mining and Smelting Co.; Owen Lake Mining and Development Co. Limited; Frontier Exploration Limited)
GSC MAP 671A
GSC OF 351
GSC SUM RPT *1929A, pp. 77-89,Fig. 3
GCNL #86, 1981
WWW http://www.kettleriver.com
Cummings, W.W. (1986): Report on the Owen Lake Property in Houston Metals Corporation Statement of Material Facts (Oct. 29, 1986)
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/26 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 163**

NATIONAL MINERAL INVENTORY: 093L16 Cu6

NAME(S): **O**, HAL, PAS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16W
BC MAP:
LATITUDE: 54 50 50 N
LONGITUDE: 126 18 06 W
ELEVATION: 869 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 4.8 kilometres west of Topley and about 3.5 kilometres north of Fulton Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6081127
EASTING: 673242

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Bornite Chalcocite Chalcopyrite
ASSOCIATED: Epidote
ALTERATION: Malachite
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Undefined Formation	

LITHOLOGY: Porphyritic Augite Flow
Breccia
Tuff
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Pre-mineralization
GRADE:

CAPSULE GEOLOGY

The claims are underlain by Triassic Takla Group volcanics comprised mainly of augite porphyry flows, breccia and tuff with occurrences of dark grey shale and minor conglomerate.

The porphyry flows and tuff host minor occurrences of bornite, chalcocite and malachite. Chalcopyrite occurs in fine epidote filled fractures in the volcanic flows.

BIBLIOGRAPHY

EMPR ASS RPT *1160, *1168, 1250, 1725, *2457
EMPR GEM 1967-102; *1970-168; *1972-421
EMPR MAP 69-1
EMPR OF 1996-29
GSC MAP 671A
GSC OF *351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/07/02 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 164**

NATIONAL MINERAL INVENTORY: 093L16 Cu7

NAME(S): **MINE**, DEL, LOU,
MINE 1-22

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16W
BC MAP:
LATITUDE: 54 55 07 N
LONGITUDE: 126 17 40 W
ELEVATION: 792 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 5.6 kilometres northwest of the Granisle Townsite.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6089086
EASTING: 673399

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Epigenetic Porphyry
TYPE: D03 Volcanic redbed Cu L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Undefined Formation	
Permian			Unnamed/Unknown Informal

LITHOLOGY: Augite Porphyritic Flow
Tuff
Breccia
Shale
Limestone
Quartzite

HOSTROCK COMMENTS: Permian limestone.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The property is underlain by Triassic Takla Group volcanics comprised of augite porphyry flows, breccia and tuff with minor dark grey shale and minor conglomerate. To the east, on part of the Del and Lou claims, Permian limestone is exposed with Permian and/or older shales, quartzites and related metamorphic rocks.

Trenching exposed minor copper mineralization comprised mainly of chalcopyrite with malachite on fractures within the dark green Triassic volcanics.

BIBLIOGRAPHY

EMPR AR 1967-102; 1968-133
EMPR ASS RPT *1160, 1724, *1725
EMPR GEM 1969-369; 1970-168; *1972-424
EMPR MAP 69-1
EMPR OF 1996-29
GSC MAP 671A
GSC OF *351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/02/20 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 165**
NATIONAL MINERAL INVENTORY: 093L15 Ag11

NAME(S): **SHAMROCK**, LAKEVIEW

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 52 00 N
LONGITUDE: 126 52 06 W
ELEVATION: 1829 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The property is located at the head of the east fork of Driftwood Creek, approximately 21 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6082036
EASTING: 636801

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Bornite Covellite Chalcocite Copper
ASSOCIATED: Calcite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION:
STRIKE/DIP: 045/69S
TREND/PLUNGE:
COMMENTS: Mineralized shear on Lakeview showing.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite
Tuff
Flow Breccia
Andesitic Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1922
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	102.9000	Grams per tonne
Copper	0.9000	Per cent

COMMENTS: 0.6 metre sample from mineralized vein.
REFERENCE: Minister of Mines, Annual Report 1922, page 106.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group, Nilkitkwa Formation volcanics comprised mainly of andesite, andesitic flows, tuffs and breccia.

The Shamrock showing is a vein (in maroon andesite) ranging from 0.3 to 0.9 metres in width comprised of brecciated andesite and calcite. Mineralization consists of bornite, covellite and chalcocite with minor native copper. In 1922, a 0.6 metre sample of the vein material assayed 102.9 grams per tonne silver and 0.9 per cent copper (Minister of Mines Annual Report 1922, page 106).

The Lakeview showing is a mineralized shear zone averaging 1.5 metres in width, striking 045 degrees and dipping 69 degrees southeast. The quartz vein hosts bornite.

BIBLIOGRAPHY

EMPR AR *1922-106; 1925-138; *1929-167
EMPR GEM 1970-165
EMPR MAP 69-1
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
GSC SUM RPT 1924A
GSC MAP 671A

BIBLIOGRAPHY

GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/30 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 166**

NATIONAL MINERAL INVENTORY: 093L6 Cu12

NAME(S): **LOLJUH**, JOE 85 - 87, CORN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 23 55 N
LONGITUDE: 127 13 06 W
ELEVATION: 1524 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north side of Loljuh Creek, approximately 61 kilometres south of Smithers or 37 kilometres west of Houston (See 093L 168).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6029335
EASTING: 615663

COMMODITIES: Lead, Zinc, Silver, Copper

MINERALS
SIGNIFICANT: Galena, Sphalerite, Pyrite, Pyrrhotite
ASSOCIATED: Calcite, Siderite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Andesite, Rhyolite, Tuff, Flow Breccia, Syenite

HOSTROCK COMMENTS: Syenite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1970
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	0.0060	Grams per tonne
Copper	0.1000	Per cent
Lead	0.4000	Per cent
Zinc	0.4000	Per cent

REFERENCE: Assessment Report 2292, 2893.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of andesitic to rhyolitic flows, tuff and breccia. In the southwest section of the claim (Joe 1 - 093L 168) a small syenite intrusion outcrops and hosts 1 to 1.5 per cent disseminated magnetite.

Source 1 (Joe 85 claim) hosts a gossanous, light green andesite containing disseminated pyrite and pyrrhotite. The andesite is in contact with carbonate rocks and calcite-siderite veins crosscut the volcanics hosting 2 to 5 per cent galena and sphalerite. In 1970, the vein material assayed: 0.1 per cent copper, 0.4 per cent zinc, 0.4 per cent lead and 0.006 grams per tonne silver.

BIBLIOGRAPHY

EMPR GEM 1969-92; *1970-150; *1972-383
EMPR EXPL *1988-C169
EMR MP CORPFILE (Lobell Mines Ltd.)
GSC P 44-23

BIBLIOGRAPHY

EMPR MAP 69-1
GSC OF 351
EMPR ASS RPT *2292, *2893, 3874, *17407

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/07/02 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 167**

NATIONAL MINERAL INVENTORY: 093L16 Cu8

NAME(S): **ALP**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16W
BC MAP:
LATITUDE: 54 49 00 N
LONGITUDE: 126 22 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located south of Fulton Lake, 16 kilometres west of Topley Landing.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6077565
EASTING: 669091

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Tuff
Flow Breccia
Granodiorite

HOSTROCK COMMENTS: Upper Cretaceous granodiorite stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

An Upper Cretaceous granodioritic stock intrudes Lower Jurassic Hazelton Group volcanics of the Telkwa Formation. The volcanics consist of massive maroon to green andesite, andesitic flows, tuff and breccia. Mineralization consists of minor disseminated chalcopyrite in the Hazelton rocks.

BIBLIOGRAPHY

EM OF 2001-03
EMPR GEM *1970-168
EMPR MAP 69-1
GSC BULL 270
GSC MAP 671A
GSC OF *351
EMPR BULL 110

DATE CODED: 1985/07/24
DATE REVISED: 1987/07/06
CODED BY: GSB
REVISED BY: LLC
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 168**

NATIONAL MINERAL INVENTORY: 093L6 Cu12

NAME(S): **JOE 1-3**, LOLJUH CREEK, CORN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 23 30 N
LONGITUDE: 127 13 06 W
ELEVATION: 1520 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south side of Loljuh Creek, approximately 61 kilometres south of Smithers or 37 kilometres west of Houston (See 093L 166).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6028563
EASTING: 615682

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Pyrrhotite Magnetite
ALTERATION: Malachite Epidote Limonite
ALTERATION TYPE: Epidote Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Rhyolite
Tuff
Flow Breccia
Syenite

HOSTROCK COMMENTS: Syenite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks
METAMORPHIC TYPE: Contact RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.1600	Per cent

REFERENCE: Assessment Report 2893.

CAPSULE GEOLOGY

The claims are underlain by Lower to Middle Jurassic Hazelton Group volcanics comprised mainly of andesitic to rhyolitic flows, tuff and breccia. In the southwest section of the claims a small syenite intrusion outcrops and hosts 1 to 1.5 per cent disseminated magnetite.

Source 2 (Joe 1-3 claims) consists of an epidotized, volcanic flow which hosts pyrite, chalcopyrite and pyrrhotite as fracture fillings. The volcanics host less than 0.5 per cent magnetite. Malachite occurs as blebs and as staining along fractures. In 1970 a sample assayed 0.16 per cent copper.

BIBLIOGRAPHY

EMPR AR 1969-92; 1970-150; 1972-383
EMPR EXPL *1988-C169
EMPR ASS RPT 2292, *2893, 3874, *17407
EMR MP CORPFILE (Lobell Mines Ltd.)
EMPR MAP 69-1
GSC P 44-23

BIBLIOGRAPHY

GSC OF 351

DATE CODED: 1985/07/24
DATE REVISED: 1987/07/07

CODED BY: GSB
REVISED BY: LLC

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 169**

NATIONAL MINERAL INVENTORY: 093L4 Cu2

NAME(S): **LORI**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04E
BC MAP:
LATITUDE: 54 04 35 N
LONGITUDE: 127 40 59 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: 2.4 kilometres north of Mount Loring.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5992823
EASTING: 586165

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Bornite Chalcopyrite Pyrite
ALTERATION: Malachite Epidote
ALTERATION TYPE: Oxidation Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Igneous-contact
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
DATING METHOD: Fossil			
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Volcanic
Quartz Diorite
Quartz Monzonite
Granodiorite

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971) also Telkwa Formation, GSC OF 351.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Tahtsa Range

CAPSULE GEOLOGY

The area is mapped as the Lower Jurassic Nilkitkwa Formation of the Hazelton Group, which is intruded by Late Cretaceous to Eocene plugs and stocks. The showing is hosted in limestone and red vesicular lavas. Strongly epidotized lava contains chalcopyrite and pyrite as occasional shears and weak disseminations. Finely disseminated bornite and chalcopyrite occur in a fault zone adjacent to a volcanic-intrusive contact. Malachite staining is found in the limestone.

BIBLIOGRAPHY

EMPR PF (*GSC Report, H.W. Tipper, 1971)
EMPR GEM 1972-380
GSC OF 351
GSC BULL 270
EMPR MAP *69-1
EMPR *Mineral Claim Map 93L/4E

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 170**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT LORING**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04E
BC MAP:
LATITUDE: 54 03 11 N
LONGITUDE: 127 41 36 W
ELEVATION: 1560 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: 0.8 to 1.2 kilometres west-southwest of Mount Loring.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5990214
EASTING: 585540

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

DATING METHOD: Fossil

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971) also Telkwa Formation GSC OF 351.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Tahtsa Range

CAPSULE GEOLOGY

Malachite staining is noted on volcanic rocks of the Lower Jurassic Nilkitkwa Formation (Hazelton Group), possibly on float.

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 171**

NATIONAL MINERAL INVENTORY:

NAME(S): **MORICE LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04E
BC MAP:
LATITUDE: 54 02 29 N
LONGITUDE: 127 39 30 W
ELEVATION: 1275 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: 1.6 to 2.8 kilometres up Loring Creek from Morice Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5988959
EASTING: 587856

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Bornite Malachite
ASSOCIATED: Epidote Quartz
ALTERATION: Garnet Hematite Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

DATING METHOD: Fossil

LITHOLOGY: Breccia
Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit", red volcanic breccias (Tipper, 1971); mapped as Telkwa (GSC OF 351) but may be basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Tahtsa Range

CAPSULE GEOLOGY

Malachite staining and minor bornite occur with epidote, quartz, garnet and hematite in red volcanic breccias (called the "Red Volcanic Unit") which are either at the base of the Nilkitkwa Formation or the top of the Telkwa Formation (Lower Jurassic Hazelton Group).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 172**

NATIONAL MINERAL INVENTORY:

NAME(S): **CORONA PEAK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04W
BC MAP:
LATITUDE: 54 05 11 N
LONGITUDE: 127 49 06 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: In saddle southeast of Corona Peak.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5993779
EASTING: 577296

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

DATING METHOD: Fossil

LITHOLOGY: Volcanic
Breccia

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971); mapped as Telkwa Formation, may also be basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Tahtsa Range

CAPSULE GEOLOGY

Minor malachite staining is found in red breccias of the Lower Jurassic Hazelton Group (either top of Telkwa Formation or base of Nilkitkwa Formation). Lower Cretaceous to Eocene plugs and stocks intrude the volcanics nearby.

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 173**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOPE PEAK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04W
BC MAP:
LATITUDE: 54 07 04 N
LONGITUDE: 127 54 18 W
ELEVATION: 1230 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Four kilometres south of Hope Peak.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5997180
EASTING: 571573

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Bornite Malachite
ASSOCIATED: Calcite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Breccia
Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit", mapped as Telkwa (GSC OF 351) Tipper, 1971 or could be basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Minor malachite and bornite is found in small calcite lenses in red breccias of the Lower Jurassic Hazelton Group (either basal Nilkitkwa Formation or Upper Telkwa Formation). Lower Cretaceous to Eocene plugs and stocks intrude the volcanics nearby.

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 174**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 6**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04W
BC MAP:
LATITUDE: 54 07 41 N
LONGITUDE: 127 54 59 W
ELEVATION: 1365 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: 3.2 kilometres south/southwest of Hope Peak.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5998312
EASTING: 570811

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcocite Bornite Malachite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu
L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Lower Green Volcanic Unit" (Tipper 1971).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Malachite, bornite and chalcocite are found in shears in green volcanics of the Telkwa Formation (Lower Jurassic Hazelton Group) which is intruded by Lower Cretaceous to Eocene plugs and stocks.

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 175**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 7**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04E
BC MAP:
LATITUDE: 54 12 44 N
LONGITUDE: 127 43 36 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Southwest side of Herd Dome.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6007883
EASTING: 583039

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Copper
ASSOCIATED: Quartz Calcite
ALTERATION: Prehnite Laumontite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971), red vesicular flows (Telkwa or basal Nilkitkwa Formation).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Tahtsa Range

CAPSULE GEOLOGY

Very minor native copper is found in pods with quartz, calcite prehnite (?) and laumonite in red vesicular flows of Lower Jurassic Hazelton Group (either top of Telkwa Formation or base of Nilkitkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 176**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 8**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04E
BC MAP:
LATITUDE: 54 12 53 N
LONGITUDE: 127 43 40 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: West/southwest side of Herd Dome.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6008159
EASTING: 582962

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcocite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper, 1971), red vesicular volcanics, probably float.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Tahtsa Range

CAPSULE GEOLOGY

Minor chalcocite with quartz and calcite is found in red vesicular volcanics (probably float) of the Lower Jurassic Hazelton Group (either Upper Telkwa Formation or basal Nilkitkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 177**

NATIONAL MINERAL INVENTORY:

NAME(S): **HERD DOME**, PIPE, ONUCKI, BRAGG LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04E
BC MAP:
LATITUDE: 54 13 49 N
LONGITUDE: 127 39 55 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Northeast of Herd Dome about 70 kilometres south-southwest of the community of Smithers (Assessment Report 22542).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6009965
EASTING: 587004

COMMODITIES: Copper, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Bornite, Covellite, Chalcocite
ALTERATION: Albite, Quartz, Chlorite, Pyrite, Malachite, Azurite
ALTERATION TYPE: Albitic, Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated, Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Dacite
Dacite Porphyry
Dacite Lapilli Tuff
Dacitic Breccia
Andesite
Andesitic Tuffaceous Rock
Porphyritic Andesite
Fragmental Andesite
Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1991

COMMODITY	GRADE	
Silver	12.0000	Grams per tonne
Copper	0.5500	Per cent

COMMENTS: Over an interval of 6 metres.
REFERENCE: Assessment Report 22542, page 9.

CAPSULE GEOLOGY

The Herd Dome occurrence is underlain by well-layered volcanic rocks of the Lower Jurassic Telkwa Formation (Hazelton Group). Reddish brown coloured basalts are the most abundant rock type and comprise massive flows, breccia, tuffs and fragmentals. Three areas have been identified within the central part of the property which contain copper mineralization. These are the Pipe, Onucki and Bragg Lake zones.

At the Pipe zone, exposures of andesitic or dacitic flow rocks are typically fragmental, brecciated or tuffaceous in appearance. They are stained by malachite and azurite and contain varying amounts of chalcopyrite and pyrite as veinlets and disseminations. Bornite, covellite and chalcocite have also been identified. The hostrock is an albite-quartz-chlorite-pyrite altered dacitic porphyry or a dacitic coarse lapilli tuff or breccia. Chip and panel sampling of one mineralized outcrop yielded 0.55 per cent copper and 12 grams per

CAPSULE GEOLOGY

tonne silver over an interval of 6 metres (Assessment Report 22542, page 9).

The Onucki zone is located about 1000 metres east of the Pipe zone. Chalcopyrite-pyrite mineralization appears to be associated with andesitic tuffaceous rocks.

Chalcopyrite-pyrite-malachite mineralization occurs as fracture fillings and as veinlets in porphyritic and fragmental andesitic outcrops in the vicinity of Bragg Lake.

Copper mineralization was discovered in the late 1970's by Mr. Frank Onucki. Subsequently, Mr. Onucki staked five claim blocks in 1980 and returned to prospect his ground in 1981. Further work was completed by Utah Mines Inc. and Noranda Exploration Ltd. in 1983, however, the claims were allowed to lapse. The property remained dormant and unexplored until 1991, when Mr. Onucki re-staked the claims. In 1991, Placer Dome optioned the properties. After examining assay reports and mineralized rock samples from the Pipe Area, Placer staked additional claims. Exploration activities included 103 chip, panel and grab samples collected from mineralized outcrops mainly from the Pipe area. Abacus Mining & Exploration Corp. holds the property.

BIBLIOGRAPHY

EMPR ASS RPT *22542
EMPR MAP 69-1
EMPR OF 1994-14
EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC BULL 270
GSC OF 351
GCNL #172(Sept.8), 2000
WWW http://www.abacusminerals.com; http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1995/02/22 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 178**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 10**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04E
BC MAP:
LATITUDE: 54 14 28 N
LONGITUDE: 127 39 21 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Northeast of Herd Dome.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6011182
EASTING: 587597

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Bornite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu
L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Intrusive

HOSTROCK COMMENTS: Intrudes "Red Volcanic" Unit Telkwa Formation, Hazelton Group (Lower Jurassic).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks

CAPSULE GEOLOGY

Disseminated malachite and bornite occur in a grey siliceous intrusive (Lower Cretaceous to Eocene) associated with red volcanics of the Lower Jurassic Telkwa Formation (Hazelton Group).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24
CODED BY: GSB
FIELD CHECK: N
DATE REVISED: 1987/03/06
REVISED BY: LLD
FIELD CHECK: N

MINFILE NUMBER: **093L 179**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 11**, THAUTIL RIVER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 18 00 N
LONGITUDE: 127 25 59 W
ELEVATION: 1065 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: West of Thautil River.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6018033
EASTING: 601969

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Chlorite Epidote Orthoclase
COMMENTS: Amygdaloidal fillings.
ALTERATION: Chlorite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971) Telkwa Formation or basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Minor chalcopyrite occurs with chlorite, epidote and orthoclase as amygdaloidal fillings in grey-red flow volcanics of the Lower Jurassic Hazelton Group (Telkwa Formation or basal Nilkitkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971; Miscellaneous Maps and Photos)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 180**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 12**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 18 18 N
LONGITUDE: 127 25 02 W
ELEVATION: 1065 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: To west of Thaulit River.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6018612
EASTING: 602986

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Malachite Epidote
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu
L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971), Telkwa or basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Very minor malachite is found in epidotized red-green volcanics of the Lower Jurassic Hazelton Group (Telkwa Formation or basal Nilkitkwa Formation). On Gabriel Creek directly northeast, pyrite and minor disseminated chalcopyrite are reported, also in Hazelton volcanics, and in a granodiorite plug adjacent to the volcanics.

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR ASS RPT 2428
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 181**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 13**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 15 30 N
LONGITUDE: 127 20 11 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: 2.4 kilometres upstream along second tributary of Thautil River.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6013542
EASTING: 608368

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcocite
ASSOCIATED: Calcite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit", (Tipper, 1971) Upper Telkwa Formation or basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

Malachite and chalcocite are found in calcite veins in red vesicular flows of the Hazelton Group (Lower Jurassic, either Telkwa Formation or basal Nilkitkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 182**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 14**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L03E
BC MAP:
LATITUDE: 54 12 00 N
LONGITUDE: 127 00 51 W
ELEVATION: 750 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On north side of Morice River.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6007595
EASTING: 629538

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
ASSOCIATED: Epidote
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971) Telkwa Formation or basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

Very minor malachite occurs with epidote in vesicles in red volcanic flows of the Lower Jurassic Hazelton Group (Telkwa Formation or basal Nilkitkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 183**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 15**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05W
BC MAP:
LATITUDE: 54 24 14 N
LONGITUDE: 127 52 36 W
ELEVATION: 1065 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximately 2.4 kilometres south of high point on ridge running north-south to west of Howson Peak.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6029041
EASTING: 572918

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Copper
ALTERATION: Prehnite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971) Telkwa Formation or basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Native copper is found with prehnite in red vesicular volcanic flows of the Lower Jurassic Hazelton Group (Telkwa Formation or basal Nilkitkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 184**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 16**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05E
BC MAP:
LATITUDE: 54 29 11 N
LONGITUDE: 127 36 14 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: About 3.2 kilometres north-northwest of Eagle Peak.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6038537
EASTING: 590441

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
ASSOCIATED: Calcite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971) Telkwa Formation or basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Very minor malachite is found with calcite in red volcanics of the Lower Jurassic Hazelton Group (Telkwa Formation or basal Nilkitkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 185**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 17**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11W
BC MAP:
LATITUDE: 54 32 48 N
LONGITUDE: 127 22 13 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: 6.4 kilometres along the mining road from Telkwa River to the west of Howson Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6045568
EASTING: 605418

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu
L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper 1971) Telkwa Formation or basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Minor amounts of chalcopyrite is found in green volcanics of the Lower Jurassic Hazelton Group (Telkwa Formation or basal Nilkitkwa Formation). Late Cretaceous to Eocene biotite-feldspar porphyry plugs and stocks intrude the volcanics nearby.

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 186**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 18**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12W
BC MAP:
LATITUDE: 54 40 22 N
LONGITUDE: 127 48 33 W
ELEVATION: 1365 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Head of north fork of Serb Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6059031
EASTING: 576793

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Chalcocite
ASSOCIATED: Epidote Tremolite Chlorite Manganite Garnet
ALTERATION: Wollastonite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Discordant
CLASSIFICATION: Epigenetic
TYPE: D03 Volcanic redbed Cu K01 Cu skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Volcanic
Quartz Monzonite
Felsite

HOSTROCK COMMENTS: "Lower Green Volcanic Unit" (Tipper 1971).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

Pods of bornite, chalcopyrite and minor chalcocite are found with epidote, tremolite, chlorite, magnetite, minor garnet and wollastonite in green volcanics of the Lower Jurassic Hazelton Group (Telkwa Formation). The volcanics are intruded by the Eocene Nanika Intrusions (quartz monzonite, felsite partly porphyritic).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 187**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 19**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12W
BC MAP:
LATITUDE: 54 39 29 N
LONGITUDE: 127 54 21 W
ELEVATION: 1350 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: 3.2 kilometres east of Zymoetz River.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6057291
EASTING: 570585

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcocite
ASSOCIATED: Quartz Epidote Tremolite Garnet
ALTERATION: Malachite Chrysocolla
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Epigenetic
TYPE: K01 Cu skarn D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Lower Green Volcanic" Unit (Tipper 1971).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Chalcocite, malachite and chrysocolla (?) are found with quartz, epidote, tremolite and garnet in green volcanics of the Lower Jurassic Hazelton Group (Telkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 188**

NATIONAL MINERAL INVENTORY:

NAME(S): **GSC 1971 - 20**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12W
BC MAP:
LATITUDE: 54 41 15 N
LONGITUDE: 127 54 39 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximately 8 kilometres southeast of the mouth of Red Canyon Creek (east of Zymoetz River).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6060562
EASTING: 570211

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Bornite Chalcopyrite
ASSOCIATED: Quartz Epidote
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Volcanic

HOSTROCK COMMENTS: "Red Volcanic Unit" (Tipper, 1971) Telkwa Formation or basal Nilkitkwa Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Bornite, chalcopyrite and malachite are found with quartz and epidote in red volcanics of the Lower Jurassic Hazelton Group (Telkwa Formation or basal Nilkitkwa Formation).

BIBLIOGRAPHY

EMPR PF (GSC Report, H.W. Tipper, 1971)
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 189**

NATIONAL MINERAL INVENTORY: 093L6 Cu11

NAME(S): **WOLVERINE**, LG

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 24 06 N
LONGITUDE: 127 29 46 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: At head of a southwest tributary of Starr Creek, 40 kilometres south-west of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6029255
EASTING: 597624

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Unknown
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Volcanic
Brecciated Vein

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Chalcopyrite occurs in breccia veins of variable width which cut volcanic rocks of the Lower Jurassic Hazelton Group.

BIBLIOGRAPHY

EMPR GEM 1971-173
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/03/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 190**
NATIONAL MINERAL INVENTORY: 093L9 Cu10

NAME(S): **THEZAR 75 (WEST)**, LENNAC LAKE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L09W 093L16W
BC MAP:
LATITUDE: 54 45 00 N
LONGITUDE: 126 20 16 W
ELEVATION: 991 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located just north of Lennac Lake, 14.5 kilometres southwest of Topley Landing on Babine Lake (See 093L 191).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6070224
EASTING: 671335

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Chalcocite Pyrite Magnetite Molybdenite
ASSOCIATED: Quartz
ALTERATION: Malachite Chlorite Epidote Pyrite
ALTERATION TYPE: Propylitic Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Tertiary			Unnamed/Unknown Informal

ISOTOPIC AGE: 77 +/- 2 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite
Tuff
Rhyolite Tuff
Breccia
Argillite
Conglomerate
Porphyry
Quartz Diorite Porphyry
Biotite Quartz Diorite Dike

HOSTROCK COMMENTS: U.B.C. Geochronology Lab, 1972.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1971
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Copper	0.2600	Per cent

COMMENTS: 6.0 metre channel sample across quartz diorite porphyry.
REFERENCE: Assessment Report 3807.

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanics comprised of andesite, andesitic to rhyolitic tuff, breccia, minor argillite and conglomerate dip gently northeast. The volcanics are intruded by an Early Tertiary quartz diorite porphyry stock and related biotite-quartz diorite porphyry dikes which trend northeast. East of the property, Triassic Takla volcanics discordantly overlie the Hazelton Group. The Takla rocks are comprised of chert, volcanic and sedimentary breccia, massive dacite to andesite flows and tuff.

The West Zone porphyry intrusion contains fine-grained, disseminated pyrite and fine-grained pyrite, chalcopyrite, chalcocite, magnetite and traces of molybdenum in quartz veins and along

CAPSULE GEOLOGY

fractures. Chalcocite commonly occurs as coatings on the chalcopyrite grains. Malachite is widespread along fractures and is locally abundant in shears. The highly pyritized volcanics adjacent to the porphyry on the east and northeast property hosts minor chalcopyrite and malachite.

Associated with the porphyry intrusion is a northwest trending pyritic and propylitic zone. Quartz vein stockworks are associated with secondary potassic feldspar and biotite in the porphyry dikes.

In 1971, ten channel samples ranging between 0.6 to 7.6 metres in length across the porphyry intrusion assayed: 0.04 to 0.26 per cent copper, less than 0.004 per cent molybdenum and less than 1.4 grams per tonne silver. The best assay consisted of a 6.0 metre channel sample which hosted 0.26 per cent copper (Assessment Report 3807).

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *3807, 3808, *5031, 9934
EMPR GEM 1971-175; *1972-395, Fig. 48; 1973-344; 1974-260
EMPR MAP 69-1
EMPR OF 1996-29
EMPR PF (Thezar Claim Map 1":2640 ft. by Amax Exploration Inc.)
GSC BULL 270
GSC MAP 671A
GSC OF 351
Chevron File
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 191**

NATIONAL MINERAL INVENTORY: 093L9 Cu10

NAME(S): **THEZAR 81 (EAST)**, LENNAC LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09W 093L16W
BC MAP:
LATITUDE: 54 44 50 N
LONGITUDE: 126 20 06 W
ELEVATION: 991 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located just north of Lennac Lake, 14.5 kilometres southwest of Topley Landing on Babine Lake (See 093L 190).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069922
EASTING: 671526

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Magnetite Sphalerite
ASSOCIATED: Quartz Calcite
ALTERATION: Hematite Malachite Clay
ALTERATION TYPE: Propylitic Silicific'n Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Tertiary			Unnamed/Unknown Informal

ISOTOPIC AGE: 77 +/- 2 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite
Tuff
Breccia
Argillite
Conglomerate
Quartz Diorite Porphyry
Biotite Quartz Porphyry Dike

HOSTROCK COMMENTS: U.B.C. Geochronology Lab, 1972.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanics comprised of andesite, andesitic to rhyolitic tuff, breccia, minor argillite and conglomerate dip gently northeast. The volcanics are intruded by an Early Tertiary quartz diorite porphyry with related biotite-quartz diorite dikes and quartz-hornblende-biotite-feldspar porphyry dikes. East of the property, Triassic Takla volcanics discordantly overlie the Hazelton Group. The Takla rocks are comprised of chert, volcanic and sedimentary breccia, massive dacitic to andesitic flows and tuff.

The East Zone is characterized by a series of copper showings in the Hazelton rocks. The volcanics are typically weakly propylitized, weak to intensely bleached and pyritic (2 to 4 per cent). Bleaching is a combination of argillization and silicification of the rock. Fine to medium-grained pyrite, chalcopyrite and magnetite with minor hematite and sphalerite (?) occur predominantly along fractures or are disseminated in the host rock. A stockwork of mineralized quartz-calcite veins and veinlets crosscut the volcanics and host pyrite and chalcopyrite mineralization. Malachite staining occurs along fractures.

BIBLIOGRAPHY

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EMPR ASS RPT *3807, 3808, *5031, 9934
EMPR GEM *1971-175; *1972-395, Fig. 48; 1973-344; 1974-261
EMPR MAP 69-1

BIBLIOGRAPHY

EMPR OF 1996-29
EMPR PF (Thezar Claim Map, 1970's by Amax Exploration Inc.)
GSC BULL 270
GSC MAP 671A
GSC OF 351
Chevron File
Placer Dome File
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/06 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 192**

NATIONAL MINERAL INVENTORY: 093L16 Cu3

NAME(S): **CORTINA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16W
BC MAP:
LATITUDE: 54 47 00 N
LONGITUDE: 126 16 06 W
ELEVATION: 890 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claims, located 9.7 kilometres west-southwest of Topley Landing and 2.0 kilometres south of Fulton Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6074104
EASTING: 675659

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Porphyry Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cenozoic			Babine Intrusions

LITHOLOGY: Andesite Flow
Rhyolite Flow
Tuff
Flow Breccia
Granodiorite
Biotite Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

Lower to Middle Jurassic Hazelton Group volcanics comprised mainly of andesitic to rhyolitic flows, tuff and breccia are intruded by a Cenozoic Babine Intrusion consisting of granodiorite and associated biotite-feldspar porphyry dikes. Chalcopyrite and pyrite occur as disseminations and as fracture fillings in the porphyry intrusion and marginal to the contact zone.

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EM OF 2001-03
EMPR ASS RPT *2974, 2975, 3542
EMPR GEM *1970-167; *1971-183; *1972-Fig. 48
EMPR MAP 69-1
EMPR OF 1996-29
GSC BULL 270
GSC MAP 671A
GSC OF *351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/07/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 193**

NATIONAL MINERAL INVENTORY: 093L9 Cu8

NAME(S): **COUGAR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09W 093L09E
BC MAP:
LATITUDE: 54 41 00 N
LONGITUDE: 126 15 06 W
ELEVATION: 1006 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claims, located near the junction of Tachek and Strimboldh Creeks, approximately 24 kilometres north of Topley.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6063022
EASTING: 677166

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Andesite
Tuff
Breccia
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group andesite, tuff and breccia of the Telkwa Formation are intruded by a Jurassic Topley Intrusion comprised of quartz monzonite. Pyrite and minor chalcopyrite occur as disseminations throughout both rock types.

BIBLIOGRAPHY

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EMPR ASS RPT 2972, 2973, *3262
EMPR GEM 1970-167; *1971-175; *1972-Fig. 48
EMPR MAP 69-1
GSC BULL 270
GSC MAP 671A
GSC OF *351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/07/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 194**

NATIONAL MINERAL INVENTORY: 093L11 Cu5

NAME(S): **HOS**, JAN HOWSAN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11W
BC MAP:
LATITUDE: 54 35 00 N
LONGITUDE: 127 24 06 W
ELEVATION: 1219 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Howson Creek valley, 25.8 kilometres southwest of Telkwa or 32 kilometres southwest of Smithers; trench location from Assessment Report 3583.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6049601
EASTING: 603295

COMMODITIES: Copper, Silver, Gold

MINERALS
SIGNIFICANT: Chalcocite, Bornite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Epidote, Hematite, Malachite, Pyrite
ALTERATION TYPE: Pyrite, Epidote, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au
L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite Flow
Dacite Flow
Rhyolite
Basalt Flow
Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1972
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	3.2500	Per cent

COMMENTS: Selected sample from pyrite zone also hosts traces of silver and gold.
REFERENCE: Assessment Report 3583.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics in the Telkwa Formation comprised of andesitic to dacitic flows, rhyolite, basalt flow, tuff and breccia. The volcanics have been intruded by tongues and dikes of porphyritic granodiorite and related granitic rocks ranging from Late Cretaceous to Eocene in age.

Mineralization consists of numerous pyritic zones in the volcanics which host low values in gold, silver, and copper. A selected sample in 1972 assayed 3.25 per cent copper (Assessment Report 3583).

Associated with the pyritic zones are felsite dikes which are fractured and mineralized with chalcocite, bornite, and secondary malachite. Also associated with the mineralization in the volcanics are veinlets and blebs of epidote, hematite, and quartz.

BIBLIOGRAPHY

EMPR GEM 1972-418
EMPR ASS RPT *3583
EMPR MAP 69-1

BIBLIOGRAPHY

GSC OF 351
GSC MAP 971A
GSC P 44-23
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/07/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 195**

NATIONAL MINERAL INVENTORY: 093L5 Cu4

NAME(S): **KITNAYAKWA RIVER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05W
BC MAP:
LATITUDE: 54 23 59 N
LONGITUDE: 127 49 06 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location taken from GSC Map 278A.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6028640
EASTING: 576712

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Unspecified.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Rhyolite Tuff
Tuff
Breccia
Granodiorite
Quartz Feldspar Porphyry Dike

HOSTROCK COMMENTS: Granodiorite Intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

The copper-silver occurrence shown on Geological Survey of Canada Map 278A is underlain by Lower Jurassic Hazelton Group volcanics comprised of andesite, andesitic to rhyolitic tuff, flows and breccia. The Hazelton rocks are intruded by a Cretaceous granodiorite stock and associated quartz-feldspar porphyry dikes.

BIBLIOGRAPHY

GSC OF 351
GSC MAP 278A
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/07/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 196**

NATIONAL MINERAL INVENTORY: 093L12 Au1

NAME(S): **PASS**, ZAP, KITCHENER, HELEN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 33 23 N
LONGITUDE: 127 42 03 W
ELEVATION: 1463 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south side of Telkwa Pass, 42 kilometres southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6046205
EASTING: 584018

COMMODITIES: Lead, Zinc, Silver, Gold, Copper

MINERALS

SIGNIFICANT: Pyrite, Galena, Sphalerite, Chalcopyrite
ASSOCIATED: Quartz, Specularite, Magnetite, Tourmaline
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Eocene	Hazelton	Telkwa	Nanika Intrusions

LITHOLOGY: Porphyritic Quartz Monzonite
Porphyritic Monzonite
Monzodiorite
Diorite
Andesitic Dike
Andesitic Rhyolitic Tuff
Andesitic Rhyolitic Flow
Andesitic Rhyolitic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	71.9000	Grams per tonne
Gold	16.7000	Grams per tonne
Copper	0.2200	Per cent
Lead	4.6000	Per cent
Zinc	5.8000	Per cent

COMMENTS: Highest values from a range of average assay grades of material exposed over 1.5 to 2 metres of true thickness from type 1 veins. Low values in the range were 7.8 grams per tonne gold, 32.2 grams per tonne silver, 0.66 per cent lead, 0.51 per cent zinc and 0.04 per cent copper.
REFERENCE: Assessment Report 20520, page 9.

CAPSULE GEOLOGY

At the Pass occurrence, mineralization is associated with quartz veining in a quartz monzonite intrusion of the Eocene Nanika Intrusions. The contact with andesitic to rhyolitic tuff, flows and breccias of the Lower Jurassic Telkwa Formation (Hazelton Group) occurs a short distance to the east. The intrusive rocks can be divided into two suites: 1) mafic rich, quartz-poor monzodiorites to diorites and 2) felsic porphyritic monzonites and quartz monzonites. Numerous andesitic dikes intrude suite 1 rocks. Faults on the property lie along two average trends striking 020 degrees dipping 42 degrees northwest and 175 degrees dipping 69 degrees southwest. The

CAPSULE GEOLOGY

former commonly displays mineralization comprising specularite-magnetite-pyrite and chalcopyrite. Quartz vening occurs along an approximately linear zone trending 035 to 215 degrees and is approximately 1000 metres long.

Detailed mapping revealed five types of quartz veins. Type 1) quartz-sulphide veins hosted by porphyritic monzonite to quartz monzonite. Veins are from 1.5 to 2 metres wide displaying vertically zoned, banded sulphides of 10-15 per cent combined pyrite and galena with 5 per cent sphalerite and minor (1-2 per cent) chalcopyrite. Type 2) quartz-sulphide veins hosted by monzodiorite to diorite. Veins are from 1 to 1.5 metres wide displaying vertically zoned, weakly banded and disseminated sulphides of 5-7 per cent combined pyrite and galena, minor (1-2 per cent) sphalerite and trace (less than 1 per cent) chalcopyrite. Type 3) quartz-pyrite veins hosted by monzodiorite to diorite. Veins are from 1 to 2 metres wide and carry up to 5 per cent coarse, subhedral pyrite and minor (less than 2 per cent) galena and sphalerite as disseminations, pods and stringers. Type 4) barren quartz veins hosted by monzodiorite to diorite in contact with monzonite to quartz monzonite. Veins are 1 to 1.5 metres wide and milkly white. Type 5) quartz-pyrite-tourmaline veins hosted by monzodiorite to diorite in contact with monzonite to quartz monzonite. Veins are 1 to 1.5 metres wide and display vertically zoned mineralization with 1-4 per cent combined pyrite and tourmaline.

Type 1 veins are the most significant as they yield the highest gold, silver, lead and zinc values. Type 2 veins yield moderate gold and silver values. The remaining types yield relatively low values.

Average assay grades of material exposed over 1.5 to 2 metres of true thickness from type 1 veins have the following ranges (Assessment Report 20520, page 9):

Gold	7.8 - 16.7 g/t
Silver	32.2 - 71.9 g/t
Lead	0.66 - 4.6 %
Zinc	0.51 - 5.8 %
Copper	0.04 - 0.22 %

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EMPR AR 1909-85; 1911-115; 1914-228; 1925-138; 1929-171; 1931-74
EMPR GEM 1969-80; 1970-160
EMPR MAP 69-1
GSC MAP 278A
GSC P 44-23
GSC OF 351
GSC BULL 270
EMPR OF 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1995/03/01 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 197**

NATIONAL MINERAL INVENTORY: 093L12 Ag1

NAME(S): **SURPRISE**, GRANDVIEW, HATCH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 36 37 N
LONGITUDE: 127 39 23 W
ELEVATION: 1737 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6052254
EASTING: 586777

COMMODITIES: Silver Lead Gold Copper

MINERALS

SIGNIFICANT: Galena Tetrahedrite Chalcopyrite Arsenopyrite Silver Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Rhyolite
Tuff
Flow
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1920

COMMODITY	GRADE	
Gold	14.4000	Grams per tonne
Copper	12.0000	Per cent
Lead	26.0000	Per cent

COMMENTS: Selected sample of ore from Morning Star claim.
REFERENCE: Minister of Mines Annual Report 1920, page 91.

CAPSULE GEOLOGY

A number of quartz veins occur in the Lower Jurassic Hazelton Group rocks of the Telkwa Formation which is comprised mainly of variegated red, green, maroon to grey andesitic to rhyolitic tuffs, flows, and breccias. The veins have widths of a few centimetres to 1.5 metres with flat dips. The veins are irregularly mineralized with galena, tetrahedrite, chalcopyrite, pyrite, and arsenopyrite. Only small amounts of native silver occur in the high grade areas.

The main vein varies from 0.3 to 0.9 metres in width, striking east-west and dipping northwards at 33 degrees. A sample across 0.6 metres assayed 5.5 grams per tonne gold, 822.8 grams per tonne silver, trace lead, 0.3 per cent copper. A sample across 0.7 metres of the vein which hosted arsenopyrite and galena assayed trace gold, 411.4 grams per tonne silver, and 12 per cent lead. Another sample across 0.9 metres which showed arsenopyrite assayed 7.5 grams per tonne gold and 360 grams per tonne silver (Minister of Mines Annual Report 1920, page 91).

On the Morning Star claim 28 sacks of hand sorted ore was recovered from a 6.5 metre shaft along a mineralized quartz vein. A selected sample of the ore assayed 14.4 grams per tonne gold, 11,063 grams per tonne silver, 26 per cent lead, and 12 per cent copper (Minister of Mines Annual Report 1929, page 91).

BIBLIOGRAPHY

EMPR AR 1911-116; 1914-229; *1920-91; *1929-170; 1931-74
GSC MAP 278A
W MINER, Feb. 1952, p. 46
EMPR MAP 69-1
GSC OF 351
GSC P 44-23
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 198**

NATIONAL MINERAL INVENTORY: 093L13 Cu1

NAME(S): **CARIBOU**, PTARMIGAN, CAR, C.P., AX 1-36

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L13W 093L13E
BC MAP:
LATITUDE: 54 45 09 N
LONGITUDE: 127 45 56 W
ELEVATION: 1067 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located 4.8 kilometres south of the junction of Coal Creek and the Zymoetz River, approximately 37 kilometres west of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6067949
EASTING: 579449

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ALTERATION: Azurite Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite Flow
Rhyolite Flow
Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1968
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	17.1000	Grams per tonne
Copper	0.1400	Per cent

COMMENTS: 4.6 metre chip sample taken across a trench.
REFERENCE: Minister of Mines Annual Report 1968, page 124.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of pink rhyolitic flows, andesite, tuff and breccia. Minor chalcopyrite occurs along fractures in the grey and pink felsic volcanic flows near a contact with a mafic flow. The mineralization has probably been emplaced along a fault. Secondary malachite and azurite occur in the fractures.

In 1968, a chip sample taken across a 4.6 metre trench assayed gold nil, 17.1 grams per tonne silver, 0.14 per cent copper (Minister of Mines Annual Report 1968, page 124).

There are several other minor copper-silver showings reported on this property. Also, to the east of the showing, chalcopyrite, pyrite, and bornite have been reported to occur in quartz veins and breccias (See 093L 081).

BIBLIOGRAPHY

EMPR AR 1968-124
GSC P 44-23
EMPR MAP 69-1
GSC OF 351

BIBLIOGRAPHY

GSC BULL 270

DATE CODED: 1985/07/24
DATE REVISED: 1988/07/11

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 199**

NATIONAL MINERAL INVENTORY: 093L9 Cu7

NAME(S): **TOTEM**, TOPLEY, BABINE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E 093L16E
BC MAP:
LATITUDE: 54 45 00 N
LONGITUDE: 126 05 36 W
ELEVATION: 712 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west shore of Babine Lake, 4.8 kilometres southeast of Topley Landing or 64 kilometres east of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6070849
EASTING: 687063

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrrhotite Pyrite
ASSOCIATED: Quartz
ALTERATION: Epidote Chlorite
ALTERATION TYPE: Epidote Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: STRIKE/DIP: 015/80N TREND/PLUNGE:
COMMENTS: Rhyolitic dike with disseminated pyrite and magnetite.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene	Undefined Group	Buck Creek	
Jurassic			Topley Intrusions

LITHOLOGY: Amygdaloidal Andesite
Porphyritic Andesite
Andesite
Breccia
Granodiorite
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The claims are underlain by a Jurassic Topley Intrusion comprised of granite to granodiorite with associated quartz veining. The intrusive is slightly epidotized and chloritized. The intrusive is crosscut by dikes ranging in composition from basalt to rhyolite. The dikes measure 0.9 to 3.7 metres in width and host disseminated pyrite and minor magnetite. They strike 010 to 020 degrees and dip steeply to the north.

Eocene Buck Creek volcanics overlie the granodioritic stock. The volcanics are comprised of amygdaloidal andesite, porphyritic andesite, andesite, and breccia. The amygdaloidal rocks are black to dark red, very magnetic and host calcite amygdules. They are crosscut by quartz-epidote stringers.

Mineralization in the granodiorite consists of traces of chalcopyrite and pyrrhotite disseminated in fractures with minor chalcopyrite in the quartz veins.

BIBLIOGRAPHY

EM OF 2001-03
EMPR AR 1968-133
EMPR ASS RPT *2094, 2095, *2727
EMPR GEM 1969-117; *1970-156
EMPR MAP 69-1
EMPR OF 1996-29
GSC MAP 671A
GSC OF 351
Falconbridge File

BIBLIOGRAPHY

EMPR BULL 110

DATE CODED: 1985/07/24
DATE REVISED: 1988/07/08

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 200**

NATIONAL MINERAL INVENTORY: 093L15 Ag10

NAME(S): **SILVER SADDLE**, CRONIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 53 40 N
LONGITUDE: 126 49 06 W
ELEVATION: 2027 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the east spur of Mount Hyland, between Higgins and Cronin Creeks, 26 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6085225
EASTING: 639913

COMMODITIES: Copper Lead Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite Galena
ASSOCIATED: Quartz
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 030/10N
TREND/PLUNGE:
COMMENTS: Mineralized quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1929
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	1200.0000	Grams per tonne
Gold	48.0000	Grams per tonne
Copper	0.5000	Per cent
Lead	20.0000	Per cent

COMMENTS: Selected sample of mineralized quartz vein.
REFERENCE: Minister of Mines Annual Report 1929, pages 168-169.

CAPSULE GEOLOGY

The showing is a quartz vein which crosscuts Lower Jurassic Hazelton Group volcanics of the Telkwa Formation which is comprised of andesitic to rhyolitic flows, tuff and breccia.

The mineralized quartz vein strikes 030 degrees and dips gently northeast. At 2,027 metres in elevation, an open cut in the vein exposed quartz with galena, chalcopyrite and malachite staining. A selected sample assayed 48 grams per tonne gold, 1,200 grams per tonne silver, 0.5 per cent copper and 20 per cent lead (Minister of Mines Annual Report 1929, page 167).

A few other mineralized quartz veins outcrop on this property.

BIBLIOGRAPHY

EMPR AR 1925-138; *1926-132,134; *1929-167,168; 1930-141
EMPR MAP 69-1
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
GSC MAP 671A; 2048
GSC OF 351
GSC SUM RPT 1924A

BIBLIOGRAPHY

GSC BULL 270
EMR MP CORPFILE (Sproatt Silver Mines Ltd.)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 201** NATIONAL MINERAL INVENTORY: 093L15 Ag3

NAME(S): **SILVER KING**, SILVER KING MINE, LA MARR, SKOOKUM, ELK

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L15W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 54 50 N NORTHING: 6087262
LONGITUDE: 126 52 56 W EASTING: 635751
ELEVATION: 1524 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Silver King #2 claim at the head of Driftwood Creek, 24 kilometres northeast of Smithers.

COMMODITIES: Silver Lead Zinc Copper Gold

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite Tetrahedrite Copper
ASSOCIATED: Quartz Carbonate
ALTERATION: Limonite Chlorite
ALTERATION TYPE: Chloritic Carbonate Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 120/50N TREND/PLUNGE:
COMMENTS: Adit follows mineralized quartz veins along shears.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Undefined Formation	

LITHOLOGY: Tuff
Rhyolite Tuff
Andesite Flow
Dacitic Flow
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Gold	1.3700	Grams per tonne

REFERENCE: Assessment Report 10637.

CAPSULE GEOLOGY

The claims are underlain by Upper Cretaceous Kasalka Group volcanics comprised of varicolored porphyritic tuffs, flows and breccia which have been subjected to intense thrusting and faulting. The mineralized shears are hosted by green to cream colored, weakly porphyritic to weakly foliated rhyolitic tuff which dips southeast.

A major fault along Driftwood Creek strikes north and dips steeply east. This fault postdates the mineralization as it displaces mineralized shear zones.

The mineralization occurs along quartz veins and associated shear zones which strike east and dip 45 to 70 degrees north. An adit to 130 degrees and dips 45 to 60 degrees northeast. The quartz veins occur as discontinuous stringers and lenticular masses of shattered quartz ranging in width from 2.5 centimetres to 1.8 metres and contain variable amounts of galena, sphalerite, chalcopyrite, pyrite, tetrahedrite and minor native copper.

Another set of parallel quartz and quartz-carbonate veins dip southwest. They host fine-grained pyrite, chalcopyrite and tetrahed-

CAPSULE GEOLOGY

rite. Also found were limonitic pseudomorphs of pyrite, galena and sphalerite. There is abundant disseminated pyrite along foliation shears.

The 1981 drill assays ranged from 0.069 to 1.37 grams per tonne gold and 0.343 to 3.428 grams per tonne silver (Assessment Report 10637).

Between 1917 to 1927, 12 tonnes of ore were mined and produced 62 grams of gold, 41,865 grams of silver, 107 kilograms of copper, 3,490 kilograms of lead and 348 kilograms of zinc.

In 1937 a shipment of 8837 kilograms of sorted ore was shipped to the Dept. of Mines Sampling Plant at Prince Rupert. This ore assayed 10.6 grams per tonne gold, 2417 grams per tonne silver, 1.2 per cent copper, 3.6 per cent lead and 2.7 per cent zinc.

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EMPR MAP 69-1
EMPR EXPL *1982-312
EMPR ASS RPT *10637
EMPR FIELDWORK, *1987, p. 190; 1988, pp. 195-208; 1991, pp. 93-101
GSC BULL 270
GSC SUM RPT *1924A, p. 35
GSC P *40-18, p. 6
GSC OF 351
GSC MAP 671A, 971A, 2048
EMR MP CORPFILE (Babine Silver King Mining Company)
GCNL #164, 1983; #199,#238, 1985; #7, 1986
IPDM Feb/Mar,Nov,Dec, 1985

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/01/20 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 202**

NATIONAL MINERAL INVENTORY: 093L7 Cu3

NAME(S): **SHOLTO**, MOUND, RAVEN, VAN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07W
BC MAP:
LATITUDE: 54 17 00 N
LONGITUDE: 126 48 06 W
ELEVATION: 1069 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west flank of Morice Mountain, 15 kilometres southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6017276
EASTING: 643108

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Calcite
ALTERATION: Epidote, Garnet, Actinolite, Tremolite, Malachite
ALTERATION TYPE: Skarn, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal, Skarn
TYPE: K01 Cu skarn; L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Hornfels Basalt
Basalt
Limestone
Hornfels
Tuff
Rhyolite
Breccia
Quartz Monzonite
Felsite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks RELATIONSHIP: Syn-mineralization
METAMORPHIC TYPE: Contact
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1930
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	61.7100	Grams per tonne
Gold	1.0300	Grams per tonne
Copper	4.9000	Per cent

COMMENTS: Mineralized limestone with chalcopyrite.
REFERENCE: Minister of Mines Annual Report 1930, page 142.

CAPSULE GEOLOGY

The Morice Mountain area is underlain by the Lower Jurassic Hazelton Group volcanics of the Telkwa Formation which have been intruded by plugs of Nanika Intrusions. The Telkwa Formation is composed primarily of breccia, tuff, and flows of basaltic to rhyolitic composition while the Eocene Nanika Intrusions are composed of quartz monzonite and felsite which are in part porphyritic.

The Sholto showing is described as the Upper showing, and is located at elevation 1069 metres. Chalcopyrite, pyrite, and malachite occurs with epidote in black hornfelsed basalt with thin intercalated dark grey limestone striking 027 degrees and dipping steeply southeast. A 25 metre trench exposed irregular clots of

CAPSULE GEOLOGY

chalcopyrite in the hornfelsed volcanics.
Skarn alteration consists of calc-silicates, epidote, garnet, tremolite, and actinolite with minor coarse calcite. The epidote occurs as ovoids or is massive near the mineralization.
In 1930, a selected sample of a mineralized chalcopyrite seam in the limestone assayed 1.03 grams per tonne gold, 61.71 grams per tonne silver, and 4.9 per cent copper (Minister of Mines Annual Report 1930, page 142).

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EMPR ASS RPT 797, 2844, 6311, *10563, *15259
EMPR AR 1930-142,143; 1931-74; 1932-85; 1966-103
EMPR GEM 1970-155; 1977-E193
EMPR EXPL *1982-310; *1986-354
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 203**

NATIONAL MINERAL INVENTORY: 093L7 Cu8

NAME(S): **HARRY DAVIS**, CUP, HD 1-4, HILLTOP 11, LEADER, DELTA, GROUSE, H.D., BASELINE, TOWER, ZONE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 27 30 N
LONGITUDE: 126 39 36 W
ELEVATION: 1080 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showings on HD 1 to 4 are located 7.0 kilometres north of Houston on Mount Harry Davis. See also Ed (093L 204), Hilltop (093L 205) and Bob (093L 214).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6037039
EASTING: 651682

COMMODITIES: Zinc, Lead, Copper, Silver, Gold, Cadmium, Bismuth, Antimony

MINERALS

SIGNIFICANT: Sphalerite, Galena, Chalcocite, Chalcopyrite, Bornite
ASSOCIATED: Quartz, Calcite, Fluorite
ALTERATION: Malachite, Azurite, Sericite
ALTERATION TYPE: Silicific'n, Carbonate, Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
I05 Polymetallic veins Ag-Pb-Zn±Au
G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Vesicular Basalt, Crystal Tuff, Lithic Tuff, Basalt, Breccia, Rhyolite, Limestone, Greywacke, Argillite, Chert

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	59.0000	Grams per tonne
Gold	0.1400	Grams per tonne
Cadmium	0.1800	Per cent
Lead	2.0000	Per cent
Antimony	0.0600	Per cent
Zinc	28.0000	Per cent

COMMENTS: Sample taken across a quartz-carbonate vein. Also contains Bismuth, grading 0.04 per cent.
REFERENCE: Assessment Report 14157.

CAPSULE GEOLOGY

The Harry Davis property, also known as H.D., comprises a series of copper, zinc and cadmium showings on Mount Harry Davis, 5 kilometres north of Houston. The showings span a 4-kilometre strike length from the southern base to the top of the mountain. They are

CAPSULE GEOLOGY

accessed by a dirt road which services four communication towers on the mountain. Prospecting of showings on Mount Harry Davis dates from the 1920s. More recent exploration was conducted by Placer Development Ltd. (1981-1982), Eldor Resources Ltd. (1985), Equity Silver Mines Ltd. (1988) and Teck Corp. (1993). In 1998, property owners Wesley Moll and Dan Merkley drilled one core hole.

The property is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation. The rocks are comprised of a series of subaqueous pyroclastic flows and breccias, reworked tuffs, and volcaniclastic sediments which indicate a subaqueous depositional environment. Locally the rocks are comprised of calc-alkaline basalt to rhyolite flows, tuffs, and breccia with minor interbedded limestone, greywacke, argillite, chert, and shale.

Mineralization consists primarily of fracture controlled copper, silver, and arsenic. On the property, in the Switchback area, zinc occurs in silicified pyroclastics and rhyolite. Sphalerite occurs as disseminated, ragged grains rimmed by sericite in thin carbonate veinlets.

North of the peak of Mount Harry Davis, the Baseline showings consist of 28 per cent zinc occurring as thin fracture coatings or disseminated in large calcite veins. In 1985, a sample across a quartz-carbonate vein from the Baseline showings assayed 0.14 grams per tonne gold, 59 grams per tonne silver, 28 per cent zinc, 2 per cent lead, 0.18 per cent cadmium, 0.06 per cent tin, and 0.04 per cent bismuth (Assessment Report 14157).

The major occurrences consist of epigenetic zinc in quartz-carbonate veins or as disseminated sphalerite, related to the silicification of felsic pyroclastics and tectonic breccia with later stage carbonate alteration. Chalcopyrite, galena, and minor bornite grains are disseminated and fill hairline fractures in a light grey lithic tuff. Also, chalcopyrite, bornite, azurite, malachite, and fluorite occur in hairline fractures with minor sphalerite and galena in a massive, white to buff coloured pumaceous tuff. Minor sphalerite is randomly disseminated throughout a grey-green crystal tuff.

Syngenetic zinc and fluorite occur in the Hilltop showing (093L 205) in chert. This deposit is discordantly crosscut by quartz or quartz-calcite veinlets with or without sphalerite.

See also Ed (093L 204) and Barb (093L 214).

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EMPR ASS RPT *9849, *10796, *14157, 18360, 18864, 18911, 23232
EMPR EXPL *1977-E194; *1979-227; *1981-135; 1982-308; *1985-C311; *1998-C-1-C-13
EMPR FIELDWORK 1977, P1978-1, p. 66
EMPR GEOLOGY 1977-1981, pp. 122-123,Fig. 39
EMPR MAP 69-1
EMPR OF 1994-14
EMR MP CORPFILE (Molymine Explorations Ltd.)
GSC BULL 270
GSC MAP 278A, 671A
GSC OF 351
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 204**

NATIONAL MINERAL INVENTORY: 093L7 Cu7

NAME(S): **ED**, WESTGARDE, SWITCHBACK, WAVE, HARRY DAVIS, HD, H.D.

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 26 00 N
LONGITUDE: 126 38 46 W
ELEVATION: 793 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6034288
EASTING: 652676

COMMENTS: Showing on ED 13, located 168 metres northwest of the northeast corner of Lot 3448, approximately 2.4 kilometres north of Houston. See also Harry Davis (093L 203), Hilltop (093L 205) and Barb (093L 214).

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Calcite
ALTERATION: Malachite Chlorite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia Disseminated
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Rhyolite
Basalt
Dacite Tuffaceous Breccia
Crystal Tuff
Lithic Tuff
Breccia
Felsic Pyroclastic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1970
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	113.0000	Grams per tonne
Copper	0.9600	Per cent

COMMENTS: 44 metre chip sample taken near the Westgarde excavation.
REFERENCE: Geology, Exploration and Mining 1970, pages 151-154.

CAPSULE GEOLOGY

The Harry Davis property is underlain by Lower Jurassic Hazelton Group volcanics (Telkwa Formation). They are comprised of a sequence of amygdaloidal basalt, maroon to green andesite, tuff, rhyolitic tuff, crystal tuff, lithic tuff, and breccia. Bedrock exposures consist of dark brown basalt with minor breccia and maroon dacitic tuff breccias which have undergone low grade regional metamorphism.

The main zone of mineralization is in basalt near the Westgarde excavation. Chip samples over 44 metres in 1970 assayed 0.96 per cent copper and 113 grams per tonne silver (Geology, Exploration and Mining 1970, page 151).

Maroon dacitic tuff breccia is in fault contact with the basalt. The tuff assayed 0.004 per cent copper, and no silver. Malachite stained grab samples from the maroon dacite exposure assayed 1.44 per cent copper and 137 grams per tonne silver (Geology,

CAPSULE GEOLOGY

Exploration and Mining 1970, page 151).
Polished slabs of mineralized basalt showed numerous sub-parallel hairline cracks filled with chalcopyrite and calcite and in other samples, blebs of bornite, chalcopyrite, and chlorite found as filling and replacing small amygdules.
The main fracture system strikes 015 degrees and dips 70 degrees northwest with a weaker system striking 125 degrees and dipping 45 degrees southwest. The north direction is thought to be parallel with faulting in the area.
See also Harry Davis (093L 203), Hilltop (093L 205) and Barb (093L 214).

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EMPR AR 1967-108
EMPR ASS RPT *10796
EMPR EXPL *1982-308; 1998-C1-C13
EMPR GEM *1969-121, *1970-151-154,*Fig. 18
EMPR MAP 69-1
GSC BULL 270
GSC MAP 671A
GSC OF 351
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 205**

NATIONAL MINERAL INVENTORY: 093L7 Cu8

NAME(S): **HILLTOP 11**, HD, CUP,
LEADER, GROUSE, HARRY DAVIS,
H.D.

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 27 00 N
LONGITUDE: 126 39 06 W
ELEVATION: 1243 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing located on Mt. Harry Davis between the CN Radio Tower and the BC Tel Microwave Tower, 6.4 kilometres north of Houston. Hilltop is part of the Harry Davis (093L 203). See also Ed (093L 204) and Barb (093L 214).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6036130
EASTING: 652253

COMMODITIES: Zinc, Lead, Copper, Cadmium

MINERALS

SIGNIFICANT: Sphalerite, Galena, Chalcopyrite, Bornite
ASSOCIATED: Fluorite, Quartz, Carbonate
ALTERATION: Malachite, Greenockite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Syngenetic
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Chert
Basalt
Tuff
Rhyolite
Lithic Tuff
Crystal Tuff
Breccia
Limestone
Greywacke
Argillite

HOSTROCK COMMENTS: Additional lithology includes felsic pyroclastics.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Hilltop 11 claim is underlain by Lower Jurassic Hazelton Group rocks (Telkwa Formation). The rocks are comprised of a series of subaqueous pyroclastic flows and breccias, reworked tuffs and volcaniclastic sediments. Locally, calc-alkaline basalt to rhyolite flows, tuffs, and breccia occur with interbedded limestone, greywacke, argillite, chert, and shale.

The Hilltop showing is described as a syngenetic deposit in a northeast striking, west dipping chert. Honey brown coloured sphalerite occurs in globules with cadmium and fluorite inclusions. Cadmium occurs as stains or coatings where the sphalerite grains are present. Chalcopyrite, galena, and minor bornite grains occur as disseminations or as infillings in hairline cracks with secondary malachite along fractures.

Epigenetic zinc occurs in quartz-carbonate veins or as disseminated sphalerite related to the silicification of felsic pyroclastics and tectonic breccia with later carbonate alteration. These occurrences are described in the Harry Davis prospect (093L 203). See also Ed (093L 204) and Barb (093L 214).

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74; 1967-108
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EMPR EXPL 1977-E194; 1979-227; 1981-135; 1982-308; *1985-C311; 1998-C1-C13
EMPR FIELDWORK 1977, p. 66
EMPR GEOLOGY 1977-1981, pp. 122-123,Fig. 39
EMPR MAP 69-1
EMPR OF 1999-2; 1994-14
EMR MP CORPFILE (Molymine Explorations Ltd.)
GSC BULL 270
GSC MAP 278A, 671A
GSC OF 351
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 206**
NATIONAL MINERAL INVENTORY: 093L10 Ag4

NAME(S): **JOE B**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 32 00 N
LONGITUDE: 126 39 06 W
ELEVATION: 1055 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the southeasterly slopes of Grouse Mountain at 1055 metres elevation, approximately 26 kilometres southeast of Telkwa. Location from Minister of Mines Annual Report 1928, page 169.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6045400
EASTING: 651944

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Tetrahedrite
ASSOCIATED: Quartz
ALTERATION: Malachite Clay Sericite Mica Epidote
ALTERATION TYPE: Argillic Chloritic Sericitic Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 355/20E
TREND/PLUNGE:
COMMENTS: Mineralized quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Andesite Flow
Lapilli Tuff
Dacite Flow
Greywacke
Argillite
Feldspar Porphyry Dike
Lamprophyre Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1928
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	548.5600	Grams per tonne
Copper	0.7000	Per cent

COMMENTS: Sample taken across 22.9 centimetres, also assayed trace gold.
REFERENCE: Minister of Mines Annual Report 1928, page 169.

CAPSULE GEOLOGY

The showing is underlain by Lower Jurassic Hazelton volcanics (Telkwa Formation) comprised mainly of a uniform, fine-grained maroon tuff overlain by a sequence of tuff, lapilli tuff, tuffaceous greywacke and argillite. The tuffs range from dark grey to green to maroon and are fine-grained, thinly bedded, laminated or massive. These are overlain by massive dark green andesitic to dacitic flows.

The volcanics are altered hosting mica, chlorite, and clay minerals with less common, epidote.

The Hazelton rocks are intruded by a series of feldspar porphyry dikes trending north-northwest and west ranging between 30 to 70 metres in width. Basic lamprophyre dikes also crosscut the volcanics.

The Joe B showing consists of a 22.9 centimetre wide quartz vein striking 355 degrees and dipping 20 degrees southeast. The vein is

CAPSULE GEOLOGY

mineralized with tetrahedrite and secondary malachite. In 1928, a sample across 22.9 centimetres assayed trace gold, 548.56 grams per tonne silver and 0.7 per cent copper (Minister of Mines Annual Report 1928, page 169).

BIBLIOGRAPHY

EMPR AR 1926-135; *1928-169,170
EMPR MAP 69-1
GSC MAP 278A, 671A
GSC OF 351
EMPR FIELDWORK 1988, pp. 195-208
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/11 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 207**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAG**, RED, TREK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 59 00 N
LONGITUDE: 126 07 36 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east side of Babine Lake, 2.6 kilometres north of Hawthorne Bay (1.0 kilometres north of 093L 208 - Trek) 19 kilometres north of Topley Landing.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6096714
EASTING: 683853

COMMODITIES: Copper Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION TYPE: Silicific'n Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Massive
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 074/75N TREND/PLUNGE:
COMMENTS: A 0.3 metre wide mineralized quartz-carbonate vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Andesite
Tuff
Breccia
Greywacke
Siltstone
Graphitic Shale
Porphyritic Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group, Telkwa Formation volcanics comprised of andesitic flows, tuffs, and breccia with intercalated greywacke, argillite, and graphitic shale. The volcanics are intruded by an Eocene Babine Intrusion comprised of porphyritic granodiorite. The Hazelton rocks are unconformably overlain by interbedded sandstone, shale and mudstone of the Sustut Group.

The showing consists of a 0.3 metre wide quartz-carbonate vein hosting galena, sphalerite, chalcopyrite and minor pyrite which crosscuts the Hazelton rocks. The vein strikes 074 degrees and dips 75 degrees northeast. The occurrence is in a greywacke exposed 1.0 kilometre northeast of the Trek (093L 208) massive banded pyrrhotite occurrence.

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EMPR BULL 64, Fig. 8, 26
EMPR EXPL *1986-361; 1988-C174
EMPR GEM 1966-95; *1967-107; 1972-426
EMPR MAP 69-1
EMPR OF 1996-29
EMR MP CORPFILE (Bethex Explorations Ltd.)
GSC MAP 671A
GSC OF 351
Placer Dome File

BIBLIOGRAPHY

EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/20 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 208**

NATIONAL MINERAL INVENTORY: 093L16 Pyr1

NAME(S): **TREK**, HAG, RED

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 58 40 N
LONGITUDE: 126 07 36 W
ELEVATION: 732 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east side of Babine Lake, 1.6 kilometres north of Hawthorne Bay, 18.3 kilometres due north of Topley Landing.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6096096
EASTING: 683878

COMMODITIES: Copper Lead Zinc

MINERALS
SIGNIFICANT: Pyrrhotite Chalcopyrite Pyrite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Vein Disseminated Stratiform
CLASSIFICATION: Hydrothermal
TYPE: G04 Besshi massive sulphide Cu-Zn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Andesite
Basalt
Tuff
Greywacke
Breccia
Argillite
Graphitic Shale
Porphyritic Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group, Telkwa Formation volcanics comprised of andesitic to basaltic flows and tuff with intercalated greywacke, argillite and graphitic shale. The volcanics are intruded by an Eocene Babine Intrusion comprised of porphyritic granodiorite. The Hazelton rocks are unconformably overlain by interbedded sandstone, shale and mudstone of the Sustut Group.

Drilling near the central part of the property indicated it is underlain by an interbedded sequence of moderately dipping, fragmental andesites and black argillaceous, locally graphitic sediments. Intersections of up to 1.5 metres of disseminated, stringer and massive banded pyrrhotite, pyrite with minor chalcopyrite were found in the graphitic zones. Banding appears to be conformable with layering in the host rock.

Sulphide mineralization also consists of disseminated pyrite with magnetite in the Hazelton rocks with minor disseminated and fracture filling pyrite and pyrrhotite in graphitic sections.

In 1966, Bethex reported a 0.3 metre quartz-carbonate vein occurring in the Hazelton rocks hosting galena, sphalerite and chalcopyrite. The vein strikes 074 degrees dipping 75 degrees northeast, and occurs in a greywacke exposed 1.0 kilometre northeast of the northwest corner of the Red 2 claim (HAG 093L 207).

A basic dike was seen to cut the stringer and massive banded sulphides in addition to the more common post-mineral shearing and narrow carbonate filled fractures. Also, north of the claims a medium-grained diorite with lesser hornblende porphyry were noted cutting interbedded andesite tuff and argillaceous siltstone with some banded greywacke.

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EM OF 2001-03
EMPR ASS RPT *893, *4189, 14093, *14778, 17190
EMPR BULL 64, Fig. 8, 26
EMPR EXPL *1986-361; 1988-C174
EMPR GEM 1966-95; *1967-102; 1972-426
EMPR MAP 69-1
EMPR OF 1996-29; 1999-2
EMPR PF (Miscellaneous maps; Map of Trek Group Drillhole Locations (1967) by Bethex Exploration Ltd.)
EMR MP CORPFILE (Bethex Explorations Ltd.)
GSC BULL 270
GSC MAP 671A
GSC OF 351
Placer Dome File
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/16 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 209**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAG**, STHUF

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 58 12 N
LONGITUDE: 126 08 01 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The claims lie north of Hawthorne Bay on the east side of Babine Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6095212
EASTING: 683469

COMMODITIES: Copper Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Andesite
Tuff
Breccia
Argillite
Greywacke
Shale
Porphyritic Granodiorite
Biotite Feldspar Porphyry
Biotite Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group, Telkwa Formation rocks comprised of andesitic tuff and breccia with interbedded argillite, greywacke and shale. The volcanics are intruded by an Eocene Babine Intrusive which consists of a northeast extension of a biotite-feldspar porphyry dike. This dike occurs in the southern part of the Granisle Copper Ltd. property. The interbedded argillites and greywackes strike north and dip to the west at moderate angles.

Locally, a 0.3 metre wide calcite vein containing disseminated galena and sphalerite with minor chalcopyrite and pyrite follows a west trending shear zone. Disseminated pyrite, accompanied by iron staining, occurs in the argillites and greywackes adjacent to the shear zone.

BIBLIOGRAPHY

EM OF 2001-03
EMPR AR *1965-103; 1967-105; 1968-134
EMPR BULL 64
EMPR MAP 69-1
EMPR OF 1996-29
GSC BULL 270
GSC MAP 671A
GSC OF 351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/04 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 210**

NATIONAL MINERAL INVENTORY: 093L9 Cu6

NAME(S): **RED**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 44 00 N
LONGITUDE: 126 03 06 W
ELEVATION: 830 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the southwest side of Babine Lake, 10.5 kilometres south-east of Topley Landing.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069107
EASTING: 689821

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Chlorite Epidote
ALTERATION TYPE: Chloritic Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene	Undefined Group	Buck Creek	
Jurassic			Topley Intrusions

LITHOLOGY: Amygdaloidal Andesite
Porphyritic Andesite
Andesite
Breccia
Granodiorite
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The claims are underlain by a Jurassic Topley Intrusion comprised of granite to granodiorite with associated quartz veining. The intrusive is slightly chloritized and epidotized.

Eocene Buck Creek volcanics overlie the granodioritic stock. The volcanics are comprised of amygdaloidal andesite, porphyritic andesite, andesite and breccia. The amygdaloidal rocks host calcite amygdules and are very magnetic.

Mineralization in the intrusive consists of disseminations of chalcopyrite throughout the Topley granitic rock.

BIBLIOGRAPHY

EM OF 2001-03
EMPR GEM *1969-119
EMPR MAP 69-1
GSC OF 351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/07/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 211**

NATIONAL MINERAL INVENTORY: 093L9 Cu3

NAME(S): **SUMMIT**, CRIS, CLEO, LANA , REDTOP, BEAVER DAM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09W
BC MAP:
LATITUDE: 54 37 00 N
LONGITUDE: 126 18 06 W
ELEVATION: 975 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located east of Redtop Creek, 12.9 kilometres north of Topley or 58 kilometres east-north east of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6055482
EASTING: 674229

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
ASSOCIATED: Quartz
ALTERATION: Carbonate Sericite Chlorite
ALTERATION TYPE: Sericitic Chloritic Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au L05 Porphyry Mo (Low F- type)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Oligocene	Endako	Undefined Formation	
Jurassic			Topley Intrusions

LITHOLOGY: Basaltic Breccia
Vesicular Basalt
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

Drilling discovered that the claims are underlain by a Jurassic Topley Intrusion comprised of granodiorite. Younger, highly magnetic, Tertiary Endako Group volcanics are exposed along Redtop Creek. The volcanics consist of Oligocene vesicular basalt and basaltic breccia of the China Nose Breccias (GSC Map 351).

The Topley granitic rocks contain pyrite, chalcopyrite and molybdenite. Where they are relatively unaltered, the rock is fine-grained granodiorite which is light grey in colour and consists of quartz, plagioclase with incipient sericite alteration, potassic feldspar, hornblende altered to green biotite, and primary biotite altered to chlorite. Better grades of mineralization occur in the intensely altered varieties of granodiorite which are buff coloured and consist essentially of quartz, sericite, and carbonate.

The chalcopyrite, molybdenite, and pyrite commonly occur as selvages or disseminations in 0.3 to 0.6 centimetre quartz veinlets which are rimmed by secondary potassic-feldspar.

Approximately 30 metres of glacial drift overlies the mineralized zone.

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EM OF 2001-03
EMPR AR 1926-138-144
EMPR ASS RPT 2293, *2562, 2930, 2958
EMPR GEM *1969-119; 1970-157; *1972-394,*Fig. 48; *1973-343
EMPR MAP 69-1
EMR MP CORPFILE (Whitesail Mines Ltd.; Ducanex Resources Ltd.; Lacanex Mining Co. Ltd.)
GSC OF 351
Placer Dome File

BIBLIOGRAPHY

EMPR BULL 110

DATE CODED: 1985/07/24
DATE REVISED: 1987/07/09

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 212**

NATIONAL MINERAL INVENTORY: 093L16 Cu5

NAME(S): **DONNA**, KAREN, KAREN 14-17

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 48 00 N
LONGITUDE: 126 12 56 W
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 7.3 kilometres west of Topley Landing or 61 kilometres east of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6076091
EASTING: 678978

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite
ALTERATION: Chlorite Epidote Carbonate
ALTERATION TYPE: Propylitic Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Andesite
Andesite Tuff
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

Jurassic Topley granite intrudes Lower Jurassic Hazelton Group volcanics (Telkwa Formation) comprised mainly of dark green to red andesite and andesitic tuff. The granodioritic stock also intrudes older, Permian dark grey limestone and shale zones.

The Topley granodiorite exhibits propylitic alteration and hosts disseminated magnetite. The mafic minerals are chloritized. Chalcopyrite is reported to be disseminated locally within the intrusive.

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EM OF 2001-03
EMPR ASS RPT *2199, 2839
EMPR GEM *1969-118
EMPR MAP 69-1
EMPR OF 1996-29
EMR MP CORPFILE (Whitesail Mines Ltd.)
GSC BULL 270
GSC MAP 671A
GSC OF 351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 213**

NATIONAL MINERAL INVENTORY:

NAME(S): **FG**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 43 00 N
LONGITUDE: 126 14 06 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located east of Tachek Lake, 11.3 kilometres south of Topley Landing.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6066772
EASTING: 678094

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Porphyry Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Flow Breccia
Granodiorite
Quartz Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Nechako Plateau
Plutonic Rocks RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanics (Telkwa Formation) comprised of andesitic to rhyolitic flows, tuff and breccia are intruded by a Jurassic Topley Intrusion. The intrusion is comprised of granodiorite and associated quartz-feldspar porphyry dikes and quartz veins.

Chalcopyrite occurs as disseminations in the intrusive and associated veins as well as in the adjacent andesitic volcanics.

BIBLIOGRAPHY

EM EXPL 1999-1-11
EM OF 2001-03
EMPR ASS RPT *2050
EMPR GEM *1969-118
EMPR MAP 69-1
GSC BULL 270
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 214**

NATIONAL MINERAL INVENTORY: 093L7 Cu9

NAME(S): **BARB**, HARRY DAVIS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 24 50 N
LONGITUDE: 126 39 16 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south slope of Mt. Harry Davis, 1.6 kilometres north of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6032107
EASTING: 652207

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Bornite Malachite Azurite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Azurite Chlorite Epidote
ALTERATION TYPE: Epidote Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Porphyry Andesite
Rhyolite
Basalt
Breccia
Tuff
Crystal Tuff
Lithic Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation. The volcanics are comprised of massive purple to green andesite, andesitic to rhyolitic tuff and flows, crystal tuff and lithic tuff. Massive andesite is commonly porphyritic with plagioclase phenocrysts.

Quartz-calcite and quartz veins occur along shear planes and fractures with associated epidote and chlorite. Malachite, azurite and bornite are reported as occurring in the fractured Hazelton andesite.

See also Harry Davis (093L 203), Ed (093L 204) and Hilltop (093L 205).

BIBLIOGRAPHY

EM EXPL 1998-C-1-C-13
EMPR ASS RPT 2544
EMPR GEM 1970-155
EMPR MAP 69-1
GSC BULL 270
GSC MAP 671A
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 215**
NATIONAL MINERAL INVENTORY: 093L16 Fe1

NAME(S): **BADGE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16W
BC MAP:
LATITUDE: 54 50 00 N
LONGITUDE: 126 20 06 W
ELEVATION: 914 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north side of Fulton Lake, 12 kilometres west of Topley Landing.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6079500
EASTING: 671161

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Industrial Min.
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Mesozoic			Unnamed/Unknown Informal

LITHOLOGY: Diorite
Andesite
Tuff
Graphitic Argillite

HOSTROCK COMMENTS: Intrusive diorite hosts disseminated magnetite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group volcanics comprised of andesite, tuff and minor graphitic argillite are crosscut by diorite which hosts disseminated magnetite.

BIBLIOGRAPHY

EM OF 2001-03
EMPR GEM *1969-115; *1970-168
EMPR MAP 69-1
EMPR OF 1996-29
GSC BULL 270
GSC MAP 671A
GSC OF 351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/09 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 216** NATIONAL MINERAL INVENTORY: 093L2 Ag1

NAME(S): **CHISHOLM**, MIDNIGHT, MCLEAN, MAE, SILVER QUEEN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L02E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 04 22 N NORTHING: 5994032
LONGITUDE: 126 42 57 W EASTING: 649452
ELEVATION: 802 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: See Silver Queen (093L 002) and Cole (093L 162).

COMMODITIES: Zinc Silver Gold Lead Manganese

MINERALS
SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite Tetrahedrite Tennantite Wad
ASSOCIATED: Quartz Barite Rhodochrosite Siderite
COMMENTS: Manganese oxides.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 75.5 +/- 1 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Felsic Tuff
Volcanic Breccia
Tuffaceous Breccia
Sill

HOSTROCK COMMENTS: Sill-like body of microdiorite intrudes the dacitic tuffs and tuff breccias of Skeena? Group. Sill dated by N. Church 1973, Prel.Map 11.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

CAPSULE GEOLOGY

The area is primarily underlain by an Upper Cretaceous series of volcanic rocks and intrusions. The volcanic rocks consist mainly of massive rhyolite with a mixed assemblage of conglomerate, sandstone and felsic volcanics that are likely part of the Lower Cretaceous Skeena(?) Group (Bulletin 78, Figure 1). A sill-like body of microdiorite intrudes these volcanic rocks and has been dated as Late Cretaceous in age.

The showings are mainly hosted by highly altered felsic tuffs and tuff breccias. Four northwest veins have been discovered. Three subparallel veins form a group while a fourth vein occurs to the north of this group. The quartz veins are mainly mineralized with argentiferous sphalerite, galena, pyrite, chalcopyrite, and tennantite-tetrahedrite in rhodochrosite, quartz, and barite gangue. Cherty quartz, carbonate and siderite, with some barite also constitute part of the gangue minerals. Small deposits of manganese oxides (wad) are also present.

BIBLIOGRAPHY

EMPR AR 1916-159; 1923-116; 1928-171
EMPR ASS RPT 294, 421, 1133, 1184, 2272, 11659, *12876, 24568, 24899, 25370
EMPR BULL *78 (in press)
EMPR EXPL 1984-321-322
EMPR GEM 1969-132
EMPR MAP *11; 69-1
EMPR PF (*Batten, H.L. (1928), Summary Report on the Owen Lake

BIBLIOGRAPHY

Properties; *Batten, H.L. (1949), Report on Owen Lake Properties; *Ball, C.W. (1955), Crown-granted mineral claims, Owen Lake, Morice River Area, B.C.)
GSC OF 351
GSC SUM RPT *1929A, pp. 77-84
WWW http://www.kettleriver.com

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/17 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 217**

NATIONAL MINERAL INVENTORY: 093L2 Zn2

NAME(S): **NEW DISCOVERY**, SNOWSTORM, WINN, NOW, WINNINYIK HILL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02E
BC MAP:
LATITUDE: 54 07 38 N
LONGITUDE: 126 43 20 W
ELEVATION: 1082 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6000075
EASTING: 648839

COMMENTS: Showing 5 on Figure 34 - 1972 Geology, Exploration and Mining in B.C., located on the north side of Tip Top Hill, 3.2 kilometres east of the north end of Owen Lake, about 18 kilometres south of Houston.

COMMODITIES: Zinc Silver Gold

MINERALS

SIGNIFICANT: Sphalerite Galena Tetrahedrite Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Francois Lake	Tip Top Hill	

LITHOLOGY: Andesitic Porphyry
Tuff
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: BRECCIA

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1928

COMMODITY	GRADE	
Zinc	1.0000	Per cent

COMMENTS: Selected sample of breccia.
REFERENCE: Minister of Mines, Annual Report 1928, page 171.

CAPSULE GEOLOGY

The area is underlain by Upper Cretaceous Tip Top Hill andesite and dacitic volcanic rocks of the Francois Lake Group which have been intruded by porphyry plugs. Sulphide mineralization occurs in veinlets in fractured, sheared or altered zones striking north-south.

Locally, rocks exposed on the claims consist of tuffs, breccias, and andesitic porphyry. Sparse mineralization comprised of chalcopyrite, pyrite, tetrahedrite, galena, and sphalerite occurs as disseminations in the matrix of volcanic breccias and as stringers in shears and fissures. Two shear zones striking 325 degrees and 290 degrees contain mineralized stringers and sparse disseminations. In 1928, a selected sample of the breccia assayed trace gold, silver, 1.0 per cent zinc and nil lead (Minister of Mines Annual Report 1928, page 171).

BIBLIOGRAPHY

EMPR ASS RPT 8596, 10012, 13161
EMPR EXPL 1980-339; 1984-323
EMPR GEM 1972-372,Fig. 34
EMPR AR 1928-171
EMPR MAP *11; 69-1
GSC OF 351
GSC SUM RPT 1929A, p. 90,Fig. 3
GSC MAP 671A
EMPR BULL *78 (in press)

BIBLIOGRAPHY

EMPR P *1990-2

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 218**

NATIONAL MINERAL INVENTORY: 093L2 Zn3

NAME(S): **WINN**, WINNINYIK HILL, NOW

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02E
BC MAP:
LATITUDE: 54 08 00 N
LONGITUDE: 126 42 15 W
ELEVATION: 1333 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showing 4 on Figure 34 - 1972 Geology, Exploration and Mining in B.C.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6000792
EASTING: 649997

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Francois Lake	Tip Top Hill	

LITHOLOGY: Andesite
Dacite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The area is underlain mainly by Upper Cretaceous Tip Top Hill andesite and dacitic volcanic rocks of the Francois Lake Group which have been intruded by porphyry plugs. Pyrite, sphalerite and galena mineralization occurs in veinlets in fractured, sheared or altered zones striking north-south.

BIBLIOGRAPHY

EMPR ASS RPT 8596, 10012, 13161
EMPR EXPL 1980-339; 1984-323
EMPR GEM *1972-372,Fig. 34
EMPR MAP 11; 69-1
GSC OF 351
EMPR BULL *78 (in press)
EMPR P *1990-2

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 219**

NATIONAL MINERAL INVENTORY:

NAME(S): **KETZA**, JEN, RUM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 57 30 N
LONGITUDE: 126 12 21 W
ELEVATION: 735 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south end of the Newman Peninsula on Babine Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6093728
EASTING: 678900

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Magnetite
ASSOCIATED: Gypsum
ALTERATION: Hematite Sericite Carbonate
ALTERATION TYPE: Sericitic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia Disseminated
CLASSIFICATION: Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Eocene	Hazelton	Undefined Formation	Babine Intrusions

LITHOLOGY: Andesite
Basalt
Lapilli Tuff
Tuff
Rhyolite Flow
Breccia
Dacite
Biotite Hornblende Feldspar Porphyry
Porphyry Flow

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of rhyolitic to dacitic flows, porphyritic flows, tuffs, lapilli tuffs, and breccia which grades to andesitic flows around Ketza Lake. The volcanics are in fault contact with Eocene rocks related to the Babine Intrusions.

The Eocene rocks consist of biotite-hornblende-feldspar porphyry flows overlain by breccias partially derived from the flows. Sericitic and propylitic zonal alteration affects the north and central part of the peninsula.

Pyrite and trace amounts of chalcopyrite occur in fractured andesitic tuffs and breccias. Pyrite and smoky quartz are found in gypsum veinlets on the Rum claims (Rum Island 54 degrees 58 minutes 126 degrees 12 minutes). Minor disseminated magnetite and hematite are found in the porphyry flows.

BIBLIOGRAPHY

EM OF 2001-03
EMPR AR *1965-103; *1967-105
EMPR ASS RPT 678, 810, 811, 844, 1072, 2646, *10333
EMPR BULL 64, Fig. 8,26
EMPR GEM 1970-167; 1971-183
EMPR MAP 12; 69-1
EMPR OF 1996-29
EMPR PF (Beaton, R.H. (1971): Drillhole Location Map and Diamond Drillhole Records for Texacal Resources Ltd.)
GSC BULL 270
GSC MAP 671A

BIBLIOGRAPHY

GSC OF 351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/04 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 220**

NATIONAL MINERAL INVENTORY:

NAME(S): **KARE**, R 186, RR,
BAB, TONJA, BABS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 57 30 N
LONGITUDE: 126 05 06 W
ELEVATION: 913 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east shore of Babine Lake, east of Hawthorne Bay.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6094043
EASTING: 686634

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Carbonate Sericite Biotite
ALTERATION TYPE: Sericitic Propylitic Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Andesite
Basalt
Tuff
Argillite
Breccia
Greywacke
Biotite Hornblende Feldspar Porphyry
Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group rocks (Telkwa Formation), comprised of andesitic flows, tuff, and breccia with intercalated argillite and greywacke. Eocene dikes and sills crosscut the volcanics and are related to the Babine intrusions. They are comprised of granitic to feldspar porphyritic textured diorite with an economically mineralized biotite-hornblende feldspar porphyry member.

Zonal alteration is associated with the mineralized porphyry. Alteration associated with ore grade material is potassic with secondary biotite. A concentric intermediate zone surrounds the secondary biotite and is defined by the presence of fracture controlled pyrite with or without quartz carbonate gangue. The outermost zone is defined by the presence of carbonate fracture fillings with or without minor pyrite.

Chalcopyrite is associated with secondary biotite in a small feldspar porphyry dike trending northwest on R-186 and 188 west of Hawthorne Bay. In 1972, the grade was estimated at 0.1 per cent copper over 3.0 metres (Assessment Report 4250). East and west of this occurrence are weakly altered volcanic host rocks which contain carbonate veinlets.

A narrow northwest trending shear on Bab-131 is mineralized with pyrite, chalcopyrite, sericite, and secondary biotite.

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EMPR ASS RPT 4249, *4250, 4426
EMPR BULL 64, Fig. 8,26

BIBLIOGRAPHY

EMPR GEM *1972-425
EMPR MAP 12; 69-1
EMPR OF 1996-29
EMPR PF (Tro-Buttle Exploration Ltd. (1970): Map of Kare Claims and Summary of Available Survey Data with drillhole locations and Diamond drillhole logs)
GSC BULL 270
GSC MAP 671A
GSC OF 351
Placer Dome File
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/04 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 221**
NATIONAL MINERAL INVENTORY: 093L3 Cu2

NAME(S): **HAGAS**, HAG

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L03E
BC MAP:
LATITUDE: 54 09 33 N
LONGITUDE: 127 02 21 W
ELEVATION: 881 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 6.0 kilometres northwest of Pimpernel Mountain; centred on trenchings examined during field check.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6003007
EASTING: 628033

COMMODITIES: Copper, Gold, Silver, Zinc, Lead, Cadmium

MINERALS
SIGNIFICANT: Pyrite, Tetrahedrite, Chalcopyrite, Argentite, Copper
COMMENTS: Copper occurs as native copper in small quartz stringers.
ALTERATION TYPE: Argillic, Silicific'n, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Epithermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), D03 Volcanic redbed Cu
SHAPE: Irregular
MODIFIER: Fractured
DIMENSION: Metres
STRIKE/DIP: 090/75S
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Lapilli Tuff
Feldspar Hornblende Andesite
Dacite
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Pre-mineralization, Syn-mineralization
GRADE: Zeolite

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	42.8000	Grams per tonne
Cadmium	0.3300	Per cent
Copper	1.2300	Per cent
Lead	0.8500	Per cent
Zinc	0.9800	Per cent

COMMENTS: Best results from two drillholes that intersected significant mineralization in altered volanic rocks.
REFERENCE: Assessment Report 19743, page 1.

CAPSULE GEOLOGY

The property is underlain by Lower Jurassic Telkwa Formation of the Hazelton Group. This unit is comprised of undivided andesite, dacite, rhyolite, basalt, flows and pyroclastics. Locally, the host Telkwa rocks are maroon to red lapilli tuffs which have been pervasively propylitically and argillically altered. Quartz stringers, along fracture surfaces (striking approximately 090 degrees and dipping approximately 75 degrees) contain disseminated chalcopyrite, sphalerite and native copper. A sample yielded 2.03 per cent copper, 4.11 grams per tonne silver, and 0.069 grams per tonne gold (Assessment Report 8447).

An isolated gabbroic body has been silicified and propylitically altered with associated malachite mineralization.

CAPSULE GEOLOGY

Follow-up trenching has exposed an extensive gossanous zone with limited/no mineralization.

In 1989, two drillholes intersected significant mineralization in altered volcanic rocks. The mineralized zone extends from 100.65 to 102.65 metres in DDH 89-3 and comprises pyrite, tetrahedrite, chalcopyrite and argentite; native copper is also evident. Analyses yielded 0.33 per cent cadmium, 0.85 per cent lead, 0.98 per cent zinc, 42.8 grams per tonne silver and 1.23 per cent copper (Assessment Report 19743, page 1.

BIBLIOGRAPHY

EMPR ASS RPT 4194, 6233, 6658, 8447, 12480, 13097, *14060, *15175, 15787, 16872, *19743
EMPR EXPL 1977-192; 1978-217; 1984-325; 1985-C311; 1986-351; 1987-C302; 1988-C168
EMPR GEM 1972-379; 1973-339
EMPR MAP 11; 69-1
GSC OF 351
GSC BULL 270
GSC MAP 971A
EMPR PF (*Sampson, C.J. (1987): Report on Geology, Geophysics and Exploration Potential on the Hagas Claims, Sept. 28, 1987 in Prospectus for Progold Resources Ltd. dated Mar. 21, 1989)
EMPR OF 1991-1; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/12 REVISED BY: RLA FIELD CHECK: Y

MINFILE NUMBER: **093L 222**
NATIONAL MINERAL INVENTORY: 093L4 Cu3

NAME(S): **MO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L04E
BC MAP:
LATITUDE: 54 09 00 N
LONGITUDE: 127 32 06 W
ELEVATION: 1372 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 3.2 kilometres west of the Nanika Mountain Forestry lookout, on a tributary of Gosnell Creek, 64 kilometres southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6001203
EASTING: 595681

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Unnamed/Unknown Informal

LITHOLOGY: Granite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Tahtsa Range
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

The area is mainly underlain by Jurassic Hazelton Group volcanics which have been intruded by Eocene granitic rocks. Narrow shear zones in a granitic intrusion are mineralized with chalcopyrite, pyrite and molybdenite.

BIBLIOGRAPHY

EMPR GEM 1972-380
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/12/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 223**

NATIONAL MINERAL INVENTORY: 093L10 Cu3

NAME(S): **BURBRIDGE LAKE**, SUMMIT, BULKLEY, PARADISE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L10W
BC MAP:
LATITUDE: 54 43 00 N
LONGITUDE: 126 46 06 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Southwest of Burbridge Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6065549
EASTING: 643749

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Sphalerite Pyrite Magnetite Copper Bornite
ASSOCIATED: Quartz
ALTERATION: Chlorite Calcite Sericite Clay
ALTERATION TYPE: Propylitic Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated Breccia
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 175 x 15 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralized shear zone attitude and dimensions (not diorite sill). The mineralized diorite sill is 150 to 200 metres thick and at least 1500 metres long.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Rhyolite Tuff
Andesite
Dacite
Tuff
Diorite Sill
Porphyry Granodiorite
Feldspathic Tuff
Breccia
Epiclastic

HOSTROCK COMMENTS: Diorite sill intrudes rhyolite tuffs.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Regional
GRADE: Greenschist

CAPSULE GEOLOGY

Semi-massive pyrite, magnetite with minor sphalerite and chalcopyrite in quartz gangue occupy a southwest dipping, northwest striking zone in altered rhyolite tuffs of the Lower Jurassic Hazelton Group, Nilkitkwa Formation. The zone is up to 15 metres wide and 175 metres long, and is not known to contain significant gold or silver concentrations.

A foliated diorite sill, which dips moderately to the southwest, intrudes the rhyolitic tuffs. The upper part of the sill is porphyritic and approaches granodiorite to quartz monzonite in composition. Clay, chlorite, carbonate, sericite and quartz alteration is pervasive with disseminations and fracture-fillings of pyrite, chalco- pyrite and molybdenite. Above the contact, a zone of disseminated and banded pyrite extends into altered rhyolitic volcanic rocks. The best molybdenum and copper grades are found at the transition from argillic to propylitic alteration which marks the compositional change from porphyritic quartz monzonite to foliated diorite. The diorite sill is cut off to the west by a fault and south of the sill limy sediments overlie the volcanics.

Diamond drilling in 1991 intersected maroon feldspathic tuffs, breccias, epiclastics and andesitic flows. Native copper and bornite

CAPSULE GEOLOGY

were observed in maroon andesites.

BIBLIOGRAPHY

EMPR FIELDWORK 1974, p. 82; 1977, p. 67; *1986, pp. 201-222; 1988, pp. 195-208
EMPR GEM 1973-349
EMPR EXPL 1975-E141; 1977-E195; 1980-344
EMPR ASS RPT 5422, 6386, *9073, 21446, 21641
EMPR AR 1918-124
EMPR GEOL *1977-1981, p. 127, Fig. 42
EMPR OF *1987-1; 1994-14
EMPR MAP 69-1
GSC OF 351
EMPR PF (Burnbridge Lake Prospect Claim Map and Drillhole locations (1977) by Asarco)
GSC BULL 270

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1988/03/14	REVISED BY:	LLD	FIELD CHECK:	N

MINFILE NUMBER: **093L 224**

NATIONAL MINERAL INVENTORY: 093L16 Cu9

NAME(S): **SAT**, BRO, M

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16W
BC MAP:
LATITUDE: 54 53 00 N
LONGITUDE: 126 25 26 W
ELEVATION: 290 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located between Broughton Creek and Saturday Lake, 12.9 kilometres west-southwest of the Granisle Townsite or 48 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6084849
EASTING: 665249

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite, Chalcocite, Pyrite, Pyrrhotite, Galena, Sphalerite, Molybdenite
ASSOCIATED: Quartz
ALTERATION: Chalcocite, Malachite, Chlorite, Carbonate, Calcite, Epidote, Zeolite, Sericite
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal, Igneous-contact
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic to Eocene	Hazelton	Telkwa	Babine Intrusions

ISOTOPIC AGE: 50-53 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesite
Tuff
Siltstone
Shale
Hornfels
Biotite Feldspar Porphyry
Hornblende Feldspar Porphyry

HOSTROCK COMMENTS: Hornblende-feldsar porphyry with flow texture is extrusive equivalent of intrusive.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP: Syn-mineralization
GRADE: Hornfels

CAPSULE GEOLOGY

The Sat claims are underlain by Lower Jurassic Hazelton Group, Telkwa Formation volcanics consisting of massive, fragmental maroon to green andesite. This basal unit is conformably overlain by siltstones and shales which strike northwest and dip gently west. The Hazelton Group rocks are variably fractured and are hornfelsed marginal to the intrusive rocks.

The volcanics are intruded by an Eocene Babine intrusion. Fine to medium-grained biotite-feldspar porphyries of granodiorite composition occur as dikes in the layered rocks and are dated at 50 to 53 million years. Hornblende-feldspar porphyries, displaying flow or trachytic textures, occur as the extrusive equivalent of the intrusive dikes.

Oligocene amygdaloidal basalt and andesite unconformably overlies the Jurassic layered rocks. These rocks are fresh and host amygdules of calcite and zeolite.

The sediments and volcanics are hornfelsed and bleached near the contact with the intrusive and show quartz with sericite marginal to numerous hairline fractures and quartz veinlets. These host pyrite and pyrrhotite mineralization.

Chalcopyrite and pyrite occurs in hairline fractures in the

CAPSULE GEOLOGY

biotite-feldspar porphyry which shows chlorite-carbonate-epidote alteration. This alteration is transitional to potassic feldspar alteration with secondary biotite to the east of the property.

Malachite and chalcocite occurs in the volcanics as well as minor occurrences of molybdenum, galena and sphalerite in quartz veinlets.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT 5620, *6424, *9471, *10688
EMPR BULL 64, Fig. 8
EMPR EXPL 1975-E145; 1977-E199; 1981-45; 1982-313
EMPR GEM *1972-422, Figure 56; 1973-349
EMPR MAP 12; 69-1
EMPR OF 1996-29
EMPR PF (Miscellaneous Map and notes)
GSC BULL 270
GSC MAP 671A
GSC OF 351
GCNL #130,#140, 1982
EMPR BULL 110

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1988/06/29	REVISED BY:	LLD	FIELD CHECK:	N

MINFILE NUMBER: **093L 225**

NATIONAL MINERAL INVENTORY:

NAME(S): **PRO**, FIT, ANNY ,
GOLD DUST I

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 46 00 N
LONGITUDE: 126 11 36 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 4.8 kilometres southwest of Topley Landing.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6072440
EASTING: 680555

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Jurassic			Topley Intrusions

LITHOLOGY: Quartz Diorite
Diorite
Pyroclastic Andesite
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group rocks consisting of andesitic pyroclastics with associated argillaceous and siliceous sedimentary rocks are intruded by a Jurassic Topley Intrusion. The intrusive is comprised of quartz diorite and associated diorite. Traces of chalcopyrite and molybdenite were found as disseminations and fracture fillings in the intrusive as well as 1.0 to 3.0 per cent pyrite.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT 16874
EMPR EXPL 1988-C174
EMPR GEM 1973-350
EMPR MAP 69-1
EMPR OF 1996-29
GSC BULL 270
GSC OF 351
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/11 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 226**

NATIONAL MINERAL INVENTORY:

NAME(S): **HUBERT**, TEX, BEV

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 36 13 N
LONGITUDE: 127 01 50 W
ELEVATION: 1036 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 6.4 kilometres south of Telkwa on Hubert Creek or 25.7 kilometres southeast of Smithers; location of mineralized outcrop from Assessment Report 4808.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6052466
EASTING: 627213

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Malachite Azurite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu
L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite Flow
Rhyolite Flow
Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	85.7100	Grams per tonne
Copper	1.7850	Per cent

COMMENTS: Selected sample.
REFERENCE: Assessment Report 4808.

CAPSULE GEOLOGY

The showing is underlain Lower Jurassic Hazelton volcanics (Telkwa Formation), comprised of andesitic to rhyolitic flows, tuff, and breccia. Mineralization consisting of chalcopyrite, pyrite, malachite, and azurite with iron oxides, occurs in the volcanics. In 1973, a selected sample from the showing assayed 1.785 per cent copper, and 85.71 grams per tonne silver (Assessment Report 4808).

BIBLIOGRAPHY

EMPR GEM 1973-346; 1974-261
EMPR ASS RPT 4808
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/02/11 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 227**

NATIONAL MINERAL INVENTORY: 093L6 Cu15

NAME(S): **RUDY**, TOMMY , PETE,
RUTZ

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 25 05 N
LONGITUDE: 127 08 44 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: North showing located on the east side of Houston-Tommy Creek, 32 kilometres west of Houston (Assessment Report 4891).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6031620
EASTING: 620330

COMMODITIES: Copper, Silver, Lead, Zinc, Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite, Chalcocite, Bornite, Magnetite, Pyrite, Sphalerite, Galena, Molybdenite
ASSOCIATED: Quartz, Calcite
ALTERATION: Malachite, Azurite, Epidote
ALTERATION TYPE: Silicific'n, Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), L04 Porphyry Cu ± Mo ± Au
DIMENSION:
STRIKE/DIP: 075/45S
TREND/PLUNGE:
COMMENTS: Mineralized quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite, Rhyolite, Tuff, Flow Breccia, Granodiorite, Quartz Monzonite

HOSTROCK COMMENTS: Granodiorite.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1973
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	72.0000	Grams per tonne
Copper	2.4000	Per cent

COMMENTS: Sample across sulphide vein.
REFERENCE: Assessment Report 4890.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised of andesitic to rhyolitic flows, tuff and breccia. The volcanics are intruded by a Late Cretaceous to Tertiary granodioritic to quartz-monzonitic stock with associated dikes and quartz veins.

Mineralization in the dikes consists of pyrite, magnetite, bornite, chalcopyrite, chalcocite with minor galena, sphalerite and molybdenum. The gangue minerals are mainly quartz, calcite and epidote.

A quartz vein, 0.15 metres wide and 10.7 metres long, crosscuts green andesite striking 075 degrees and dipping south. The vein hosts black sphalerite, chalcopyrite and secondary malachite and

CAPSULE GEOLOGY

azurite. In 1973, chip samples across the vein assayed: 0.87 to 2.4 per cent copper, and 26.7 to 72 grams per tonne silver (Assessment Report 4890).

A shear zone, 0.9 metres wide and 2.4 metres long, in the volcanics hosts mineralizing fissure infilling comprised of bornite and malachite. In 1973, chips across the shear assayed: 30.7 to 32.8 per cent copper and 4,780 to 6,460 grams per tonne silver (Assessment

BIBLIOGRAPHY

EMPR GEM 1973-341
EMPR EXPL *1988-C169
EMPR ASS RPT 4891, *17407
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/03/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 228**
NATIONAL MINERAL INVENTORY: 093L6 Cu16

NAME(S): **PETE**, TOMMY , KUKU

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 24 53 N
LONGITUDE: 127 10 17 W
ELEVATION: 1675 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: West showing located on a ridge on the west side of Houston-Tommy Creek, 33.8 kilometres west of Houston (Assessment Report 4891).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6031206
EASTING: 618664

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Pyrite Galena
ALTERATION: Malachite Azurite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) L04 Porphyry Cu ± Mo ± Au
DIMENSION: STRIKE/DIP: 360/70E TREND/PLUNGE:
COMMENTS: Mineralized, parallel quartz-feldspar porphyry veins.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Rhyolite
Tuff
Flow Breccia
Granodiorite
Quartz Feldspar Porphyry Dike
Feldspar Porphyritic Dike

HOSTROCK COMMENTS: Tertiary to Cretaceous granodiorite stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	191.3000	Grams per tonne
Gold	1.4700	Grams per tonne
Copper	5.5000	Per cent

COMMENTS: Sample from mineralized quartz feldspar porphyry dike.
REFERENCE: Assessment Report 4891.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group, Telkwa Formation volcanics comprised mainly of andesitic to rhyolitic flows, tuff and breccia. The volcanics are intruded by Late Cretaceous to Tertiary granodioritic stock with associated quartz feldspar porphyry dikes.

A fracture in the volcanics strikes 230 degrees and dips 80 degrees southeast. Fracture infilling hosts pyrite, chalcopyrite, bornite and malachite. In 1973, a sample assayed: 0.97 per cent copper and 8.2 grams per tonne silver (Assessment Report 4891).

A set of parallel veins, approximately 10.7 metres apart cross-cut maroon andesite and strike north-south dipping 70 degrees east. These quartz feldspar porphyry dikes range between 0.3 to 0.9 metres wide and 161 to 201 metres in length. Mineralization consists of pyrite, chalcopyrite, minor galena and secondary malachite and

CAPSULE GEOLOGY

azurite. In 1973, a sample assayed: 5.5 per cent copper, 191.3 grams per tonne silver and 1.47 grams per tonne gold (Assessment Report 4891).

BIBLIOGRAPHY

EMPR GEM 1973-341
EMPR EXPL *1988-C169
EMPR ASS RPT *4891, *17407
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/03/03 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 229**
NATIONAL MINERAL INVENTORY: 093L14 Zn2

NAME(S): **JOSIE (L.7251)**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 50 10 N
LONGITUDE: 127 21 06 W
ELEVATION: 1615 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located south of Schufer Lake at the head of Toboggan Creek on Hudson Bay Mountain, 12.9 kilometres northwest of Smithers. JOSIE is adjacent to the Van Anda claim in the Silver Creek Group (093L 098).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6077799
EASTING: 605866

COMMODITIES: Zinc Silver

MINERALS
SIGNIFICANT: Sphalerite Pyrrhotite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 070/57E
TREND/PLUNGE:
COMMENTS: Parallel sulphide veins.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite
Tuff
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation comprised of massive andesite, andesitic flows, tuff and breccia. Two parallel sulphide veins crosscut the andesite at 1615 metres elevation. The veins strike 070 degrees and dip 50 degrees southeast, and range between 2.5 to 20 centimetres in width. Sulphide mineralization consists of sphalerite, pyrrhotite and pyrite.

At 1630 metres elevation, another vein striking 040 degrees and dipping 65 degrees southeast outcrops in the andesitic rock. The vein is 15 metres long and 15 centimetres wide and hosts dark, massive sphalerite with minor pyrrhotite and pyrite.

BIBLIOGRAPHY

GSC MEM 226, p. 112
EMPR AR 1914-138; 1928-165
GSC MAP 971A
GSC P 44-23
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24
CODED BY: GSB
FIELD CHECK: N
DATE REVISED: 1988/06/22
REVISED BY: LLD
FIELD CHECK: N

MINFILE NUMBER: **093L 230**

NATIONAL MINERAL INVENTORY: 093L14 Cu2

NAME(S): **TRADE DOLLAR 2**, TRADE DOLLAR 3, CEE (L.7242), SECOND GLACIER (L.7267), SILVER LAKE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 49 30 N
LONGITUDE: 127 21 56 W
ELEVATION: 2027 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located at the head of Silvern Creek on the west side of Hudson Bay Mountain, 14.5 kilometres northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6076542
EASTING: 605003

COMMODITIES: Copper Silver Lead Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Galena Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 045/65E
TREND/PLUNGE:
COMMENTS: Mineralized vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite
Tuff
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Host rocks consist of Lower Jurassic Hazelton Group volcanics (Nilkitkwa Formation) comprised of andesitic flows with associated red and green tuffs and flow breccia. A mineralized vein crosscuts the volcanics striking 045 degrees and dipping 65 degrees southeast and extends across Trade Dollar No. 2 and 3, Cee and Second Glacier claims. According to Lay in 1928, the mineralized band of rock shows good chalcopyrite mineralization with associated galena and sphalerite.

BIBLIOGRAPHY

GSC MEM *226, p. 126
EMPR AR 1905-134; 1916-124; 1926-130; 1927-137; *1928-164; 1929-C165; 1931-73; 1933-98; 1934-C6,66; 1963-26: 1964-51; 1966-86
EMPR EXPL 1977-E198
EMR MP CORPFILE (Sil-Van Mines Ltd.; Hudson Bay Mtn. Silver Mines)
EMPR ASS RPT 471
GSC MAP 971A
GSC P 44-23
GSC SUM RPT 1925A, p. 141
EMPR BULL (1932) 1, p. 53
EMR MR-198, p. 238
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
EMPR MAP 69-1

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 231** NATIONAL MINERAL INVENTORY: 093L14 Ag4

NAME(S): **SILVER LAKE 2 (L.7240)**, TRADE DOLLAR, SILVER LAKE

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 49 47 N NORTHING: 6077076
LONGITUDE: 127 21 36 W EASTING: 605347
ELEVATION: 2030 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: South side of divide at the head of Silvern and Toboggan Creeks on Hudson Bay Mountain, 14.5 kilometres northwest of Smithers. Mineralized vein strikes along the boundary of the Trade Dollar and Silver Lake #2 claims.

COMMODITIES: Silver Lead Zinc Gold

MINERALS
SIGNIFICANT: Galena Sphalerite Bornite Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 275/75N TREND/PLUNGE:
COMMENTS: Mineralized vein strikes along claim boundary of Silver Lake #2 and Trade Dollar.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Andesite
Tuff
Fossiliferous Limestone
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1928
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	1954.0000	Grams per tonne
Gold	11.6000	Grams per tonne
Lead	36.0000	Per cent

COMMENTS: 76 centimetre channel sample from mineralized vein.
REFERENCE: Minister of Mines Annual Report 1928, page 164.

CAPSULE GEOLOGY

The host rock is Lower Jurassic Hazelton Group volcanics (Nilkitkwa Formation). Bedrock is comprised of andesitic flows with associated red tuffs, red breccias, green tuff and a band of interbedded fossiliferous limestone. A mineralized vein hosting mainly galena strikes 275 degrees and dips 75 degrees northeast. The vein parallels the claim boundary of the Trade Dollar and Silver Lake No. 2 claims. In 1928, a channel sample from the 76 centimetre wide vein assayed: 11.6 grams per tonne gold, 1,954 grams per tonne silver and lead 36 per cent (Minister of Mines Annual Report 1928, page 164).

In 1917, 5 tonnes of ore was mined and produced 62 grams gold, 36,079 grams silver, and 1,817 kilograms lead.

BIBLIOGRAPHY

GSC MEM *223, pp. 70-71
GSC P 36-20, pp. 77-91
GSC BULL (1932)1, p. 53; 270

BIBLIOGRAPHY

EMPR AR 1905-134; 1907-80; 1913-419; 1916-124; 1923-110; 1924-96;
1926-130; 1927-137; *1928-164; 1929-165; 1931-72; 1933-98; 1934-C6;
1950-100; 1963-26; 1964-51; 1965-74; 1966-86
EMPR ASS RPT *471
GSC OF 351
EMPR MAP 69-1
EMR MR-198, p. 238
EMPR FIELDWORK 1988, pp 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of
the Zonal Distribution of Ores in the Hudson Bay Range, British
Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/22 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 232** NATIONAL MINERAL INVENTORY: 093L14 Pb1

NAME(S): **SILVER STAR (L.2546)**, CORONADO, HOMERUN, PAY ROLL

STATUS: Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 46 40 N NORTHING: 6071287
LONGITUDE: 127 21 58 W EASTING: 605090
ELEVATION: 1036 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Sloan Creek on the southwest side of Hudson Bay Mtn., 12.0 kilometres west of Smithers. Part of Coronado Group (093L 090).

COMMODITIES: Silver Lead Zinc Gold

MINERALS
SIGNIFICANT: Arsenopyrite Galena Sphalerite Tetrahedrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 045/80E TREND/PLUNGE:
COMMENTS: Two parallel shear zone with sulphide mineralization.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Rhyolite Flow
Flow Breccia
Tuff
Lapilli Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	837.2000	Grams per tonne
Gold	2.0600	Grams per tonne
Lead	11.1300	Per cent
Zinc	7.8300	Per cent

COMMENTS: Grab sample from mineralized shear zone.
REFERENCE: Geological Survey of Canada Memoir 223 (Revised Ed. 1954), page 92.

CAPSULE GEOLOGY

The host rocks are comprised of Lower Jurassic Hazelton Group, Telkwa Formation volcanics. They consist mainly of andesite, flow breccia, spherulitic flow-banded rhyolite and massive lapilli tuff.

The Silver Star claim hosts one of the two parallel shears in the Coronado Group which strike 045 degrees and dip 75 degrees to the southeast. This east zone, at 1036 metres elevation, can be traced along strike for 122 metres. An adit in the sheared and brecciated rhyolite exposed galena, sphalerite and minor tetrahedrite. Further to the northeast the shear hosts veinlets of solid sulphides, mainly galena, sphalerite and some tetrahedrite. A grab sample of this weathered and oxidized ore assayed 2.06 grams per tonne gold, 837.2 grams per tonne silver, 11.13 per cent lead and 7.83 per cent zinc (Geological Survey of Canada Memoir 223, page 92).

BIBLIOGRAPHY

EMPR AR 1908-171; 1909-84; 1911-118; 1912-114,325; 1913-107; *1914-173,213-215; 1915-77,444; 1918-117; 1919-102; 1933-97; 1938-B37, C49; 1939-35,57,92; 1940-23,43,76; 1950-100; 1963-25
GSC MEM *223, p. 92
GSC SUM RPT 1925A, p. 132
GSC P 36-20; 44-23
GSC MAP 278A, 971A
EMPR ASS RPT 471
GSC EC GEOL No. 4, p. 42
EMPR PF (Kirkham, PHD Thesis, 1969, "A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Mountain Range, B.C.")
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/18 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 233**
NATIONAL MINERAL INVENTORY: 093L14 Ag6

NAME(S): **MANITOBA**, NEEPAWA, MOONSHINE, MILL 3

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 46 50 N
LONGITUDE: 127 19 06 W
ELEVATION: 1536 Metres
LOCATION ACCURACY: Within 1 KM
MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6071669
EASTING: 608155
COMMENTS: Located on the west side of Miller Creek, on the south side of Hudson Bay Mountain, 9.7 kilometres west of Smithers. Showing on the Manitoba claim in the Neepawa Group.

COMMODITIES: Gold Silver Zinc Lead

MINERALS
SIGNIFICANT: Sphalerite Arsenopyrite Galena
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1929
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	130.2800	Grams per tonne
Gold	13.0300	Grams per tonne
Zinc	6.2000	Per cent

COMMENTS: Selected sample from a trench.
REFERENCE: Minister of Mines Annual Report 1929, page 163.

CAPSULE GEOLOGY

The showing is underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of andesite, tuff and flow breccia. On the Manitoba claim, at 1536 metres elevation, there is a mineralized vein hosting sphalerite, arsenopyrite and minor galena. A selected sample from the trench in 1929 assayed 13.03 grams per tonne gold, 130.28 grams per tonne silver, and 6.2 per cent zinc (Minister of Mines Annual Report 1929, page 163).

BIBLIOGRAPHY

GSC MEM *223, p. 118
EMPR AR 1911-119; 1912-115; *1929-163
GSC P 44-23
EMPR ASS RPT 14300
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British

BIBLIOGRAPHY

Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/22 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 234**

NATIONAL MINERAL INVENTORY: 093L14 Ag6

NAME(S): **NEE**, NEEPAWA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 45 24 N
LONGITUDE: 127 19 36 W
ELEVATION: 1356 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Miller Creek on the south side of Hudson Bay Mountain, 9.7 kilometres west of Smithers. Showing on the Nee claim in the Neepawa Group.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6068998
EASTING: 607682

COMMODITIES: Lead Silver

MINERALS
SIGNIFICANT: Galena Sphalerite Arsenopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
COMMENTS: Vein strikes 015 degrees east.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Hazelton Ranges
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

Host rock consists of Lower Jurassic Hazelton Group volcanics comprised mainly of andesite, tuff and breccia. On the Nee claim, at 1356 metres elevation, a mineralized vein strikes 015 degrees. An open cut showed minor sulphide mineralization, mainly galena with minor occurrences of sphalerite and arsenopyrite.

BIBLIOGRAPHY

GSC MEM *223, p. 118
EMPR AR *1929-163
GSC P 44-23
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/22 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 235** NATIONAL MINERAL INVENTORY: 093L14 Au12

NAME(S): **DOROTHY**, CASCADE, HEATHER, EMPIRE, RACHEL

STATUS: Showing MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 47 37 N NORTHING: 6073176
LONGITUDE: 127 17 01 W EASTING: 610352
ELEVATION: 1647 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adjacent to the Empire Group at the head of the south fork of Simpson Creek, on the east side of Hudson Bay Mtn., 7.2 kilometres north-north west of Smithers.

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite Tetrahedrite Arsenopyrite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 305/58W TREND/PLUNGE:
COMMENTS: Shear zone with mineralized veinlets.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: SHEAR REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1931
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	8.6000	Grams per tonne
Gold	3.4000	Grams per tonne
Zinc	3.4000	Per cent

COMMENTS: Sample taken from mineralized shear.
REFERENCE: Minister of Mines Annual Report 1931, page 73.

ORE ZONE: DUMP REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	61.4000	Grams per tonne
Gold	7.9000	Grams per tonne
Copper	0.0200	Per cent
Lead	2.0900	Per cent
Zinc	1.4200	Per cent

COMMENTS: Grab sample from mineralized dump site.
REFERENCE: Assessment Report 15140.

CAPSULE GEOLOGY

The Dorothy Group is underlain by Lower Jurassic Hazelton Group volcanics comprised of andesite, tuff and flow breccia. A rusty, manganese stained shear zone in the volcanics, striking 305 degrees and dipping southwest approximately 58 degrees, hosts mineralized veinlets. Mineralization consists of galena, sphalerite, chalco-

CAPSULE GEOLOGY

pyrite and tetrahedrite. Chalcopyrite with tetrahedrite veinlets crosscut the galena-sphalerite veins. Several arsenopyrite-rich, arsenic stained lenses were noted locally with galena-pyrite-sphalerite-chalcopyrite seams and stringers.

A sample across the shear zone, collected by D. Lay in 1931 assayed 3.4 grams per tonne gold, 8.6 grams per tonne silver and 3.4 per cent zinc (Minister of Mines Annual Report 1931, page 73). In 1985, a dump grab sample with galena-pyrite-sphalerite assayed 7.9 grams per tonne gold, 61.4 grams per tonne silver, 2.09 per cent lead, 1.42 per cent zinc, and 0.02 per cent copper. An arsenopyrite-rich sample assayed 9.0 grams per tonne gold and 26.05 grams per tonne silver (Assessment Report 15140).

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EMPR ASS RPT *15140
GSC SUM RPT *1925, p. 137
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR FIELDWORK 1988, pp. 195-208
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/22 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 236**

NATIONAL MINERAL INVENTORY: 093L14 Au12

NAME(S): **HEATHER**, CASCADE, EMPIRE, RACHEL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 47 40 N
LONGITUDE: 127 17 01 W
ELEVATION: 1638 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing on the north side of the ridge between the forks of Simpson Creek on the east side of Hudson Bay Mountain, 7.2 kilometres north-northwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6073268
EASTING: 610350

COMMODITIES: Zinc, Silver, Gold

MINERALS
SIGNIFICANT: Arsenopyrite, Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 320/48S
TREND/PLUNGE:
COMMENTS: Mineralized vein at 1638 metres elevation.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1931

COMMODITY	GRADE	
Silver	17.1400	Grams per tonne
Gold	0.4200	Grams per tonne
Zinc	3.4000	Per cent

COMMENTS: 84 centimetre sample taken across mineralized shear.
REFERENCE: Minister of Mines Annual Report 1931, page 73.

CAPSULE GEOLOGY

The Heather claim is underlain by Lower Jurassic Hazelton Group volcanics comprised of andesite, tuff and flow breccia. At an elevation of 1638 metres, an open cut exposed mineralized veinlets in a shear striking 320 degrees and dipping 48 degrees southwest. The veinlets consist of sphalerite and arsenopyrite.

Mineralization occurs over an 84 centimetre width of the shear, and in 1931, a sample taken across this assayed 0.42 grams per tonne gold, 17.14 grams per tonne silver, and 3.4 per cent zinc (Minister of Mines Annual Report 1931, page 73).

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GSC MEM 223, p. 102
GSC P 44-23
GSC MAP 278A; 971A
EMPR EXPL 1986-359
EMPR ASS RPT *15140
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EMPR MAP 69-1

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Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/22 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 237**
NATIONAL MINERAL INVENTORY: 093L14 Cu5

NAME(S): **ZEOLITIC (L.5447)**, ZEOLITIC 1

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14E
BC MAP:
LATITUDE: 54 45 30 N
LONGITUDE: 127 10 56 W
ELEVATION: 548 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on lower southeast slope of Hudson Bay Mountain, on the southwest edge of the town of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069415
EASTING: 616972

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION:
STRIKE/DIP: 225/75E
TREND/PLUNGE:
COMMENTS: Mineralized shear zone in rhyolite flow.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Amygdaloidal Rhyolite Flow
Flow Breccia
Tuff
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The Zeolitic Group is underlain by Lower Jurassic Hazelton Group volcanics (Nilkitkwa Formation). The host rock is reddish-brown, amygdaloidal rhyolite flows which exhibit a poorly defined flow structure that strikes 040 degrees and dips 25 degrees southeast. A narrow shear zone in the rhyolite, striking 225 degrees and dipping 75 degrees southeast, is sparsely mineralized with pyrite and chalcopyrite.

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EMPR AR 1918-472
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GSC P 44-23
GSC OF 351
GSC BULL 270
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24
CODED BY: GSB
FIELD CHECK: N
DATE REVISED: 1988/06/22
REVISED BY: LLD
FIELD CHECK: N

MINFILE NUMBER: **093L 238** NATIONAL MINERAL INVENTORY: 093L14 Ag14

NAME(S): **ZOBNIC**

STATUS: Showing MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L14E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 47 17 N NORTHING: 6072690
LONGITUDE: 127 12 06 W EASTING: 615636
ELEVATION: 549 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Chicken Lake Creek approximately 1.5 kilometres northwest of Smithers.

COMMODITIES: Silver Copper Gold Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite Pyrite Tetrahedrite
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: STRIKE/DIP: 285/60W TREND/PLUNGE:
COMMENTS: Mineralized shear zone in andesite.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Flow Breccia
Rhyodacite
Rhyolite Flow

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP: Syn-mineralization GRADE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1927
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	3566.0000	Grams per tonne
Copper	1.5000	Per cent

COMMENTS: Selected sample from upper zone.
REFERENCE: Minister of Mines Annual Report 1927, page 137.

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of andesite, tuff, flow breccia and rhyodacite to rhyolitic flows.

At elevation 549 metres, a sparsely mineralized shear zone in the andesite strikes 285 degrees and dips 60 degrees southwest. The shear hosts minor galena, sphalerite and pyrite. Two other parallel mineralized shear zones striking northwest host malachite staining with the upper zone hosting minor tetrahedrite. A selected sample from the upper zone in 1927 assayed trace gold, 3566 grams per tonne silver and 1.5 per cent copper (Minister of Mines Annual Report 1927, page 137).

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EMPR AR 1927-137; *1966-91
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GSC MAP 971A
GSC P 44-23

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GSC BULL 270
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/22 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 239**
NATIONAL MINERAL INVENTORY: 093L2 Cu1

NAME(S): **POPLAR**, TAGETOCHLAIN

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L02W
BC MAP:
LATITUDE: 54 01 00 N
LONGITUDE: 126 59 24 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northeast side of Tagetochlain Lake, 48 kilometres south-southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5987246
EASTING: 631694

COMMODITIES: Copper, Molybdenum, Silver, Zinc

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Molybdenite, Sphalerite
ASSOCIATED: Quartz, Carbonate, Gypsum, Malachite, Azurite
ALTERATION TYPE: Potassic, Sericitic, Argillic, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION:
STRIKE/DIP: 315/90
TREND/PLUNGE:
COMMENTS: Average attitude of a mineralized dike swarm.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Cretaceous			Bulkley Intrusions

LITHOLOGY: Biotite Porphyry
Biotite Monzonite Porphyry
Granodiorite
Hornfels
Andesite
Tuff
Lapilli Tuff
Agglomerate
Flow Breccia
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact
Plutonic Rocks RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: POPLAR
REPORT ON: Y

CATEGORY: Measured
YEAR: 1983
QUANTITY: 75000000 Tonnes

COMMODITY	GRADE	
Copper	0.3500	Per cent
Silver	2.8000	Grams per tonne
Molybdenum	0.0600	Per cent

REFERENCE: CIM Special Volume 37, page 185.

ORE ZONE: POPLAR
REPORT ON: Y

CATEGORY: Unclassified
YEAR: 1991
QUANTITY: 144117000 Tonnes

COMMODITY	GRADE	
Copper	0.3680	Per cent
Molybdenum	0.0110	Per cent

COMMENTS: Ore reserves down to the '624 bench' at a strip ratio between 1:1 and 2:1.
REFERENCE: George Cross News Letter No.162 (August 22), 1991.

CAPSULE GEOLOGY

The Lower-Middle Jurassic Hazelton Group volcanics are intruded

CAPSULE GEOLOGY

by a Middle-Late Cretaceous Bulkley Intrusions. The Hazelton rocks are comprised of massive andesite, tuff, lapilli tuff, agglomerate, flow breccia with narrow bands and interbedded argillite. This group is overlain by Juro-Cretaceous sediments which are estimated to be 400 metres thick. The basal unit is comprised of gritty argillite overlain by sorted to unsorted medium to coarse-grained sandstone and conglomerate. The average bedding strikes 035 degrees and dips 60 degrees to the southeast.

The Bulkley Intrusions are comprised of a granodiorite to biotite monzonite porphyry which is aplitic near the contact margins. The stock is weakly mineralized with chalcopyrite, molybdenite and pyrite in fracture-fillings. As well, the biotite porphyry hosts an estimated 1.5 per cent of disseminated sulphides, mainly pyrite with minor chalcopyrite.

A 200-metre wide dike swarm associated with the biotite porphyry stock crosscuts the volcanics which have undergone considerable fracturing/faulting and hornfelsing throughout. Mineralization in the quartz veins and dike swarms is comprised of pyrite with minor chalcopyrite. A 1.0-metre wide quartz-carbonate vein hosts chalcopyrite and sphalerite with associated malachite and azurite. Minor molybdenum occurs in gypsum and quartz veins.

There is a well-developed hydrothermal alteration facies concentric to the biotite porphyry which includes potassic, phyllic, argillic and propylitic zones. There is weak hornfelsing throughout the volcanics and it is strongest near the contact with the granodiorite stock. Mineralization in the hornfelsed aureole consists mainly of disseminated pyrite with very minor chalcopyrite.

Unclassified ore reserves down to the "624 bench" are 144,117,000 tonnes grading 0.368 per cent copper and 0.011 per cent molybdenum at a strip ratio between 1:1 and 2:1 (George Cross News Letter #162, 1991).

In 1983, reserves were estimated at 75,000,000 tonnes at 0.35 per cent copper, 0.06 per cent molybdenum (0.1 per cent MoS2) and 2.8 grams per tonne silver (CIM Special Volume 37, page 185).

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EMPR FIELDWORK 1977, p. 65
EMPR GEM 1972-373; 1974-256
EMPR GEOL 1977-1981, p. 120
EMPR MAP 58; 65 (1989); 69-1
EMPR OF 1992-1; 1992-3; 1994-14
EMPR PF (Jones, H.M., (1972): Geological and Geochemical Report on the Poplar Mineral Claims; Miscellaneous Unpublished Reports,Maps)
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GSC MEM 299, pp. 35-48
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GSC P 71-1A, pp. 34-36; 72-1A, pp. 39-41
CIM Vol.1 Jan.-Mar. 1986, pp. 38-45
CIM Special Vol. 37, p. 185
GCNL #162(Aug.22),#202(Oct.21), 1991; #9(Jan.14), 1992
N MINER Sept. 16, 30, 1991
Placer Dome File
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/23 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 240**

NATIONAL MINERAL INVENTORY:

NAME(S): **LUNLIK**, TEL, FLAT TOP MOUNTAIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 23 00 N
LONGITUDE: 127 05 06 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: On "Flat Top Mountain" east of Tommy Creek approximately 29 kilometres west of Houston, location of mineralization on Tel claims (Assessment Report 18032).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6027863
EASTING: 624364

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite
ASSOCIATED: Orthoclase Quartz Calcite
ALTERATION: Limonite Epidote Garnet
ALTERATION TYPE: Oxidation Epidote Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Quartz Diorite
Granodiorite
Quartz Monzonite
Fragmental Rhyolite
Andesite
Tuff
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE: Greenschist Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.8570	Grams per tonne
Copper	0.0169	Per cent

COMMENTS: Grab sample with chalcopyrite and pyrite.
REFERENCE: Assessment Report 18032.

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group, Telkwa Formation rocks comprised primarily of andesitic to rhyolitic flows with associated tuffs and breccias. Small masses of Late Cretaceous granodiorite and quartz monzonite (probably related to the Bulkley Intrusions) intrude the volcanics.

Chalcopyrite and pyrite are reported to occur with quartz and orthoclase in fractured fine to medium-grained quartz diorite. In 1974, six diamond drill holes, totalling 813.5 metres, were drilled on the Lunlik claims to test for mineralization in the quartz diorite stock. Minerals noted from drilling reports include chalcopyrite, pyrite, bornite, chalcocite, limonite, epidote and garnet. Disseminated pyrite was also reported to occur in rhyolitic fragmented rocks.

Recently this area has been restaked as the Tel 1-8 claims. In 1988, a grab sample taken from the limonitic granodioritic intrusive

CAPSULE GEOLOGY

with minor chalcopyrite and pyrite assayed 0.857 grams per tonne gold and 0.0169 per cent copper. Another grab sample assayed 0.0881 per cent copper (Assessment Report 18032).

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EMPR ASS RPT 1189, *5094, *18032, 19332
EMPR MAP 69-1
EMPR OF 1990-5; 1994-14
EMPR PF (Report by T. Schroeter, Nov. 1975)
GCS OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/03/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 241**

NATIONAL MINERAL INVENTORY:

NAME(S): **MSJ**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 24 30 N
LONGITUDE: 127 22 12 W
ELEVATION: 1097 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 5.2 kilometres southwest of the south end of Mooseskin Johnny Lake, 43.5 kilometres south-southwest of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6030178
EASTING: 605793

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Molybdenite Chalcocite Tenorite
ALTERATION: Quartz Sericite Pyrite Malachite Tenorite
ALTERATION TYPE: Sericitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Cretaceous	Hazelton	Undefined Formation	Unnamed/Unknown Informal

LITHOLOGY: Quartz Monzonite
Quartz Monzonite Porphyry
Andesite
Andesite Tuff
Flow Andesite Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Hazelton Ranges
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

Lower Jurassic Hazelton Group andesitic flows, tuffs and breccias are intruded by a Cretaceous quartz monzonite porphyry stock which hosts disseminated and fracture controlled mineralization comprised mainly of pyrite with minor chalcopyrite, molybdenite, tenorite, sooty chalcocite and malachite staining. Several outcrops of quartz monzonite porphyry are strongly phyllic altered (quartz, sericite and pyrite).

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EMPR EXPL *1975-E139
EMPR ASS RPT 5208, *19493, 22058
GSC OF 351
EMPR MAP 69-1
GSC BULL 270
EMPR OF 1990-5; 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/06/23 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 242**

NATIONAL MINERAL INVENTORY:

NAME(S): **JILL**, FG

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 44 30 N
LONGITUDE: 126 14 06 W
ELEVATION: 945 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 9.7 kilometres southwest of Topley Landing, immediately north of the Topley Landing road, 60 kilometres east of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069553
EASTING: 677985

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Granodiorite
Biotite Feldspar Porphyry Dike
Tuff
Andesite
Flow Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Nechako Plateau
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group, Telkwa Formation volcanics comprised mainly of andesite, andesitic flows, tuff and breccia. The volcanics are intruded by a Jurassic Topley Intrusion comprised of granodiorite and associated quartz-feldspar porphyry dikes. Pyrite and traces of chalcopyrite occur as disseminations in the volcanics and the intrusion as well as in veins associated with the intrusion.

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EMPR ASS RPT 2050, *4427
EMPR EXPL *1974-260
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EMPR MAP 69-1
GSC BULL 270
GSC OF 351
Placer Dome File
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/06/23 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 243**

NATIONAL MINERAL INVENTORY:

NAME(S): **JACOB**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09W
BC MAP:
LATITUDE: 54 43 00 N
LONGITUDE: 126 17 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 24 kilometres west of Topley Landing and 3.2 kilometres north of Baboon Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6066646
EASTING: 674874

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Molybdenite Bornite Magnetite Sphalerite
ASSOCIATED: Quartz Carbonate
ALTERATION: Chlorite Epidote Pyrite Sericite
ALTERATION TYPE: Propylitic Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Jurassic			Topley Intrusions

LITHOLOGY: Andesite
Tuff
Breccia
Granodiorite
Biotite Feldspar Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Nechako Plateau
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

Host rocks are Lower Jurassic Hazelton Group volcanics comprised of andesite, tuff and breccia. The andesite is chloritized and pyritized and hosts minor magnetite and traces of chalcopyrite in the fractures. Interbedded tuffs are bleached and sericitic hosting disseminated pyrite.

The volcanics are intruded by Jurassic Topley Intrusions comprised of granodiorite and associated biotite-feldspar porphyry. Associated quartz veining and quartz-carbonate stringers host pyrite with minor chalcopyrite, molybdenite and bornite. Traces of magnetite and sphalerite were noted in some quartz-carbonate stringers.

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EM OF 2001-03
EMPR ASS RPT *5596
EMPR EXPL *1976-E149
EMPR GEM *1974-260
EMPR MAP 69-1
GSC BULL 270
GSC OF 351
Placer Dome File
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/06/23 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 244**
NATIONAL MINERAL INVENTORY: 093L11 Cu1

NAME(S): **BILL**, JO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 36 00 N
LONGITUDE: 127 03 06 W
ELEVATION: 1219 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 11.3 kilometres due south of Telkwa at the head of Hubert Creek; location is centre of Jo-Bill claims.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6052026
EASTING: 625861

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Andesite Flow
Tuff
Agglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The claims are underlain by Lower Jurassic Hazelton Group volcanics (Telkwa Formation), comprised of red to purple and dark green andesite and andesitic flows with interbedded tuff and agglomerate. The volcanics appear to be gently folded along a northwest axis which dips moderately southwest.

A weak shear zone about 76 metres wide trends 020 degrees and dips vertical. Mineralization, as exposed in trench, consists of finely disseminated to massive chalcopyrite with quartz infilling along fractures and faults within the sheared area. The host rock is a massive dark green to black andesite. A visual estimate of the average grade across the 76 metre width was 0.15 to 0.20 per cent copper (Assessment Report 5162).

Other mineralization in the volcanics consists of disseminated pyrite, minor chalcopyrite and malachite staining.

BIBLIOGRAPHY

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EMPR ASS RPT 5156, *5162
GSC P 44-23
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
Adamson, R.S. (1974): Report on the Jo-Bill Property in Statement of Material Facts for Anglo-Bomarc Mines Ltd., dated May, 1974
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/06/23 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 245**

NATIONAL MINERAL INVENTORY:

NAME(S): **APEX 9**, ROAD

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L08W
BC MAP:
LATITUDE: 54 25 00 N
LONGITUDE: 126 25 06 W
ELEVATION: 914 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 14.5 kilometres east-northeast of Houston, 3.2 kilometres northeast of Aiken Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6032952
EASTING: 667514

COMMODITIES: Silver, Gold, Copper, Lead, Zinc, Barite, Strontium, Cadmium, Antimony, Mercury

MINERALS

SIGNIFICANT: Chalcopyrite, Chalcocite, Galena, Barite, Hematite
ASSOCIATED: Quartz, Carbonate, Barite
ALTERATION: Malachite, Azurite, Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Industrial Min.
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), D03 Volcanic redbed Cu
DIMENSION:
STRIKE/DIP: 040/70N
TREND/PLUNGE:
COMMENTS: Flow banding in volcanics.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite, Andesite Flow, Rhyolite, Flow Breccia, Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: ROAD
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1974
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	0.0040	Grams per tonne
Copper	0.1310	Per cent
Lead	0.0760	Per cent
Strontium	0.1560	Per cent
Zinc	0.5050	Per cent

COMMENTS: Grab sample from mineralized fractures in maroon andesite (Road showing). Barium assayed 9.58 per cent.
REFERENCE: Assessment Report 5288.

CAPSULE GEOLOGY

The property is in part underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of massive, maroon to green andesite, andesitic flows and breccias with a lesser amount of massive, light-colored rhyolite. Locally there are volcanics comprised mainly of vesicular basalt flows with calcite-quartz epidote amygdules as well as interbedding siliceous argillite and agglomerate. Flow banding in the volcanics strikes 040 degrees and dips 70 degrees northwest.

Light grey to flesh tone rhyolite, with euhedral to subhedral feldspar grains, exhibits extensive limonite and hematitic staining. In 1974, a grab sample of the rhyolite assayed 0.0143 per cent molybdenum, 0.0021 per cent copper, 0.0158 per cent lead, 0.0390 per cent

CAPSULE GEOLOGY

zinc, 0.006 grams per tonne silver, trace of gold and 0.25 per cent mercury (Assessment Report 5288).

The volcanics are crosscut by a dark green, strongly magnetic gabbroic intrusion which hosts disseminated pyrite. As well, associated quartz and quartz-carbonate veins crosscut the volcanics and host both disseminated and blebs of pyrite and chalcopyrite.

The Road showing hosts disseminated chalcopyrite, chalcocite, galena, specular hematite, malachite and azurite in fracture zones within the maroon andesite. Associated with the fractures are near vertical barite veins which range up to 0.3 metres in width.

In 1973, a grab sample assayed trace silver, 0.009 per cent copper, 0.051 per cent zinc, 0.009 per cent lead, 0.002 per cent arsenic, 19 per cent barium and 0.625 per cent strontium. In 1974 a grab sample assayed 0.004 grams per tonne silver, 0.131 per cent copper, 0.076 per cent lead, 0.505 per cent zinc, 0.84 per cent mercury, 9.58 per cent barium and 0.156 per cent strontium (Assessment Report 5288).

In 1986, other outcrops of rhyolite located in the road cut at the eastern property boundary were found to be enriched in silver, cadmium, and mercury. Also, rhyolite rocks in the southwestern corner of the claim group carry values up to 0.05 grams per tonne gold and 10.5 grams per tonne silver as well as high arsenic, barium, cadmium, copper, antimony, zinc, and mercury values (Assessment Report 15489).

BIBLIOGRAPHY

EMPR GEM *1974-259
EMPR ASS RPT *5288, 6427, 11504, 15408, 15489, 17154, 18519
EMPR EXPL 1977-E194; 1983-442; 1987-C303; 1988-C169
GSC OF 351
EMPR MAP *11; 69-1
EMPR BULL *78
GSC BULL 270
EMPR OF 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/06/24 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 246**

NATIONAL MINERAL INVENTORY:

NAME(S): **APEX 8**, POND

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L08W
BC MAP:
LATITUDE: 54 25 01 N
LONGITUDE: 126 25 41 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 14.5 kilometres east-northeast of Houston, 3.2 kilometres northeast of Aiken Creek. Road showing on Apex claims refer to 093L 245.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6032960
EASTING: 666883

COMMODITIES: Copper Iron

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Magnetite
ASSOCIATED: Calcite
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Industrial Min.
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu
DIMENSION: STRIKE/DIP: 005/70W TREND/PLUNGE:
COMMENTS: Mineralization occurs along dominant fractures in basalt.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Andesitic Breccia
Rhyolite
Vesicular Basalt
Amygdaloidal Basalt
Gabbro

HOSTROCK COMMENTS: Gabbro Intrusion.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The property is in part underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of massive maroon to green andesite, andesitic flows and breccias with a lesser amount of massive, light coloured rhyolite. Locally there is a dark green to black, vesicular basalt flow with calcite-quartz amygdules as well as interbedded siliceous argillite and agglomerate. Flow banding in the volcanics strikes 040 degrees and dips 70 degrees northwest. A light grey to flesh tone rhyolite with euhedral to subhedral feldspar grains exhibits extensive limonitic and hematitic staining.

The volcanics are crosscut by a dark green, strongly magnetic gabbro intrusion which hosts disseminated pyrite. Also, associated quartz and quartz-carbonate veins crosscut the volcanics and host both disseminated and blebs of pyrite and chalcopyrite.

The Pond showing, on the Apex 8 claim, hosts mineralization along dominant fractures in the basalt. The fractures strike 005 degrees and dip 70 degrees west. Mineralization consists of magnetite, chalcopyrite, bornite, malachite and calcite infilling.

BIBLIOGRAPHY

EMPR GEM *1974-259
EMPR EXPL 1977-E194; 1983-442; 1987-C303; 1988-C169
EMPR ASS RPT *5288, 6427, 11504, 15408, 15489, 17154, 18519
GSC OF 351
EMPR MAP *11; 69-1
EMPR BULL *78
GSC BULL 270

BIBLIOGRAPHY

EMPR P *1990-2
EMPR OF 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/06/24 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 247**

NATIONAL MINERAL INVENTORY:

NAME(S): **APEX 18**, BEAVER POND CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L08W
BC MAP:
LATITUDE: 54 24 15 N
LONGITUDE: 126 25 09 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Property located 14.5 kilometres east-northeast of Houston, 3.2 kilometres northeast of Aiken Creek. Other showings on Apex claims refer to (093L 245 and 246).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6031560
EASTING: 667511

COMMODITIES: Copper, Silver, Gold, Barite, Strontium

MINERALS

SIGNIFICANT: Chalcopyrite, Chalcocite, Bornite
ASSOCIATED: Quartz, Barite
ALTERATION: Limonite, Hematite, Malachite
ALTERATION TYPE: Oxidation, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Andesitic Breccia
Rhyolite
Vesicular Basalt
Amygdaloidal Basalt

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	6.0000	Grams per tonne
Gold	0.0620	Grams per tonne

COMMENTS: Grab sample taken 200 metres southeast of Beaver Pond.
REFERENCE: Assessment Report 15489.

CAPSULE GEOLOGY

The property is in part underlain by Lower Jurassic Hazelton Group volcanics comprised mainly of massive maroon to green andesite, andesitic flows and breccias with a lesser amount of massive, light coloured rhyolite. Locally, there is a black to green, vesicular basalt flow with calcite-quartz-epidote amygdules as well as interbedded siliceous argillite and agglomerate. Flow banding in the volcanics strikes 040 degrees and dips 70 degrees northwest. A light grey to flesh tone rhyolite with euhedral to subhedral feldspar grains exhibits extensive limonitic and hematitic staining.

The volcanics are crosscut by a dark green, strongly magnetic gabbro intrusion which hosts disseminated pyrite. Also, associated quartz and quartz-carbonate veins crosscut the volcanics and host both disseminated and blebs of pyrite and chalcopyrite.

The Beaver Pond showing, on the Apex 18 claim, consists of mineralized quartz veins and quartz-carbonate veinlets in a 91 metre section in basalt. A 3.0 metre fracture zone in the basalt hosts quartz infilling with associated chalcopyrite, chalcocite, bornite and malachite. The quartz-carbonate veinlets host disseminated

CAPSULE GEOLOGY

chalcopyrite and bornite with malachite staining.
In 1986, a sample taken from a small barite vein from "the Ba showing" at the northern end of Beaver Pond indicated strong enrichment in base metal trace elements like copper and silver, as well as in barium and strontium. Approximately 200 metres southeast of Beaver Pond a sample assayed 6.0 grams per tonne silver and 0.062 grams per tonne gold (Assessment Report 15489).

BIBLIOGRAPHY

EMPR GEM *1974-259
EMPR EXPL 1977-E194; 1983-442; 1987-C303; 1988-C169
EMPR ASS RPT *5288, 6427, 11504, 15408, 15489, 17154, 18519
GSC OF 351
EMPR MAP *11; 69-1
EMPR BULL *78
GSC BULL 270
EMPR P *1990-2
EMPR OF 1994-14

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/06/24 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 248**

NATIONAL MINERAL INVENTORY:

NAME(S): **FENTON**, FENTON 1-14, CODE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02W
BC MAP:
LATITUDE: 54 09 00 N
LONGITUDE: 126 55 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west slope of Tsalit Mountain, near the headwaters of Fenton Creek, about 30 kilometres southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6002213
EASTING: 635952

COMMODITIES: Copper Silver Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Undefined Formation	
Eocene			Nanika Intrusions

LITHOLOGY: Andesite
Basalt
Rhyolite
Volcanic Breccia
Tuff
Quartz Monzonite
Porphyritic Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE:

CAPSULE GEOLOGY

The claims are underlain by the Lower Cretaceous Skeena Group volcanic and sedimentary rocks which consist of basal sandstone and argillites overlain by andesite, tuff-breccia, rhyolite, and basalt with andesite flows. On the west side of Tsalit Mountain, a thick lens-shaped body of tuff breccia is found near the top of a basalt-andesite lava pile. The Mesozoic rocks are intruded by an Eocene Nanika Intrusive comprised of a mass of quartz monzonite and porphyritic monzonite.

On the claims, basalt outcrops and appears to overlie andesite on the lower slopes of the mountain. Pyritic, rhyolite tuff float was found throughout the claims. Pyrite and vein chalcopyrite was found in the volcanics in a trench that was excavated in 1976.

In 1982, a significant copper-silver geochemical anomaly 488 metres long, open at both ends, and 122 metre wide was found to coincide with one of the major northwest-southeast fault zones on the property. The anomaly covers the intersection of at least three major fault zones.

A second anomalous area, a silver-lead-zinc anomaly, was found in a portion of an altered agglomerate unit. Sphalerite mineralization occurs in steeply dipping veinlets and as fine disseminations in the agglomerate unit.

BIBLIOGRAPHY

EMPR GEM *1970-142-149,Fig. 14
EMPR EXPL *1975-138
EMPR ASS RPT 1229, 5684
EMPR PF (*Unpublished report on Fenton Group, Tsalit Mountain Project, Houston, B.C. Nov. 1976; Rights Offering Circular for Consolidated Churchill Enterprises Inc., Sept. 24, 1987; Fenton Claim maps)

BIBLIOGRAPHY

GSC MAP 278A; 671A; 971A
EMPR MAP 69-1
GSC OF *351
GCNL #227, 1982; #17, 1983

DATE CODED: 1987/10/10 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 249**

NATIONAL MINERAL INVENTORY:

NAME(S): **NATIVE**, ARROW B

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 53 00 N
LONGITUDE: 126 48 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located 3 kilometres southeast of Mount Hyland, between Little Joe Creek and Higgins Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6084022
EASTING: 641020

COMMODITIES: Silver Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Undefined Formation	

LITHOLOGY: Andesite
Tuff
Flow Breccia
Argillite
Rhyolite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
PHYSIOGRAPHIC AREA: Skeena Ranges
RELATIONSHIP: Syn-mineralization
GRADE:

CAPSULE GEOLOGY

The claims are underlain by Upper Cretaceous Kasalka Group volcanics comprised mainly of andesite, tuff, flow breccia and argillite.

The showing consists of mineralized veins and stringers which crosscut the argillite near a rhyolite dike contact. Mineralization consists of galena, sphalerite and chalcopyrite.

BIBLIOGRAPHY

EMPR EXPL 1977-E199
EMPR MAP 69-1
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/06/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 250**

NATIONAL MINERAL INVENTORY: 093L10 Zn6

NAME(S): **SOLO**, EAST LODE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 34 11 N
LONGITUDE: 126 41 45 W
ELEVATION: 1325 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6049353
EASTING: 648954

COMMENTS: The claim is located on the northeastern slopes of Grouse Mountain, overlooking Fish Lake (currently McQuarrie Lake), 26 kilometres southeast of Telkwa. Location of mineralized showing from Geology, Exploration and Mining 1972, Figure 49.

COMMODITIES: Gold Silver Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Tuff
Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1926

COMMODITY	GRADE	
Silver	75.4000	Grams per tonne
Gold	10.2000	Grams per tonne
Zinc	26.5000	Per cent

COMMENTS: Sample from mineralized vein, also hosts trace lead.
REFERENCE: Minister of Mines Annual Report 1926, page 38.

CAPSULE GEOLOGY

The claim is underlain by Lower Jurassic Hazelton Group volcanics (Telkwa Formation), comprised mainly of andesitic flows, basaltic tuffs, red tuffs and breccia. The main showing consists of a silicified vein hosting sphalerite, with minor chalcopyrite and pyrite paralleling the bedding planes of the enclosing andesite country rock. In 1926, a sample of the mineralized zone assayed 10.2 grams per tonne gold, 75.4 grams per tonne silver, 26.5 per cent zinc and trace lead (Minister of Mines Annual Report 1926, page 38).

BIBLIOGRAPHY

EMPR AR *1926-38
EMPR MAP 69-1
GSC OF 351
EMPR GEM 1970-158; *1972-Fig. 49
GSC MAP 671A
GSC BULL 270
EMPR FIELDWORK *1988, pp. 195-208

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 251** NATIONAL MINERAL INVENTORY: 093L10 Ag2

NAME(S): **GROUSE MOUNTAIN**, CORNUCOPIA, LAST CHANCE, CHANCE, JULIA, GWENDA

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L10E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 34 42 N NORTHING: 6050213
LONGITUDE: 126 44 33 W EASTING: 645907
ELEVATION: 1372 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Grouse Mountain, 34 kilometres southeast of Smithers or 20 kilometres north-northwest of Houston (Geology, Exploration and Mining in British Columbia 1972).

COMMODITIES: Silver Copper Zinc Gold

MINERALS

SIGNIFICANT: Tetrahedrite Chalcopyrite Sphalerite
ASSOCIATED: Quartz Carbonate Pyrite
ALTERATION: Epidote Chlorite Kaolinite Sericite
ALTERATION TYPE: Propylitic Sericitic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 200 Metres STRIKE/DIP: 020/85E TREND/PLUNGE:
COMMENTS: Julia vein (Last Chance); 300 metres east is the Gwenda vein (Cornucopia) which strikes 025 degrees and dips 40 degrees east.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Lapilli Tuff
Andesite Flow
Argillite
Dacite Flow
Greywacke
Feldspar Porphyry Dike
Granodiorite Dike
Lamprophyre Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: RUBY REPORT ON: Y

CATEGORY: Indicated YEAR: 1990
QUANTITY: 360000 Tonnes

COMMODITY	GRADE	
Silver	30.1000	Grams per tonne
Copper	0.3800	Per cent
Zinc	4.2300	Per cent

COMMENTS: Drill indicated mineralized body.
REFERENCE: Assessment Report 20665, page 1.

CAPSULE GEOLOGY

The Grouse Mountain occurrence is underlain by Lower-Middle Jurassic Hazelton Group rocks (Telkwa Formation), comprised mainly of a uniform fine-grained maroon tuff which is massive, showing weak to moderate cleavage. This is overlain by a variegated sequence of tuff, lapilli tuff, tuffaceous greywacke and argillite. The tuff ranges from dark grey to green to maroon, is fine-grained, thinly bedded, laminated, and massive. The tuffs are overlain by a massive dark green andesitic to dacitic flows.

The volcanics are crosscut by a series of feldspar porphyry dikes trending north-northwest and dipping west ranging between 30 to

CAPSULE GEOLOGY

70 metres in width. The volcanics are also crosscut by silicified granodioritic dikes and dark grey lamprophyre dikes. The lamprophyre dikes in the vicinity of the Julia vein strike 105 degrees and dip 75 to 80 degrees south.

The Hazelton rocks are highly broken and fractured with quartz-carbonate infilling with associated epidote and chlorite. Larger veins show weak sericitization. Stringer and breccia zones are silicified and the volcanics are bleached and partly altered to kaolinite.

Mineralization occurs as high-grade silver veins. The Julia vein (formerly Last Chance) is a series of three parallel veins traceable for 200 metres. The veins occur along shears which trend 010 to 030 degrees and dip 80 to 90 degrees east. Mineralization on the surface consists of tetrahedrite blebs with pyrite and chalcopyrite in quartz-carbonate gangue with honey-coloured sphalerite. In 1984, 25 samples averaged 17.8 to 6360 grams per tonne silver, 3.96 per cent copper and 4.73 grams per tonne gold. Four wallrock samples assayed 32.5 to 141.59 grams per tonne silver. Stringers from the main vein assayed 43.5 grams per tonne silver, 0.51 grams per tonne gold and 0.06 per cent copper over 1.0 metres, and 196 grams per tonne silver, 0.72 grams per tonne gold and 0.17 per cent copper over 1.5 metres. In 1925 a sample assayed 212.6 grams per tonne silver, trace gold, 0.04 per cent zinc, 4.96 per cent iron and 0.06 per cent antimony (Assessment Report 13364).

Approximately 300 metres east of the Julia vein is the Gwenda vein (formerly Cornucopia) which strikes 020 to 030 degrees and dips 40 degrees east. The vein is exposed for 6.0 metres and ranges between 10 to 30 centimetres in width. The showing hosts disseminated tetrahedrite, chalcopyrite and honey-coloured sphalerite in quartz-carbonate gangue. In 1984, two grab samples assayed 48.7 grams per tonne silver, 0.14 grams per tonne gold, 0.11 per cent copper and 8.41 per cent zinc, and 840.6 grams per tonne silver, 0.75 grams per tonne gold, 1.01 per cent copper and 0.25 per cent zinc respectively (Assessment Report 13364). In 1925 a sample from an opencut in this vein assayed 1.7 grams per tonne gold, 2540 grams per tonne silver, 1.44 per cent copper, 0.06 per cent lead, 1.95 per cent zinc and 1.0 per cent antimony (Minister of Mines Annual Report 1925, page 141).

Other showings consist of the Christina showing (093L 295) in the northeast part of the claims. It is a silicified stringer zone hosting tetrahedrite, sphalerite, minor galena and pyrite. The Paola showing (093L 296) in the southeast part of the claims is a shear striking north and dipping 30 to 40 degrees west and hosts extensive malachite staining in an opencut.

Between 1938 and 1940, 2.72 tonnes of ore from the Cornucopia showing produced 12548 grams silver and 85.3 kilograms copper.

A drill indicated mineralized body (Ruby) contains 360,000 tonnes grading 30.1 grams per tonne silver, 0.38 per cent copper and 4.23 per cent zinc (Assessment Report 20665, page 1).

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EMPR GEM 1970-158; *1972-397-417
EMPR EXPL 1981-227; 1983-444; *1984-328; 1985-C314
EMPR ASS RPT *10182, 12374, *13364, *13720, *14256, 20665, 21880
EMPR MAP 65 (1989); 69-1
EMPR OF 1992-1; 1994-14
EMPR FIELDWORK *1988, pp. 195-208
GSC MAP 671A
GSC OF 351
GSC BULL 270
GCNL #227(Nov.27), 1981; #237(Dec.7), 1983; #55(Mar.19), #120(June 21), #133(July 11), #154(Aug.10), #173(Sept.7), #182(Sept.20), #198(Oct.15), 1984; #243(Dec.19), 1989
N MINER Apr.30, 1981; Mar.29, Nov.29, 1984
IPDM May/June 1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 252**

NATIONAL MINERAL INVENTORY: 093L15 Cu4

NAME(S): **FISHER**, SIMPSON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 53 45 N
LONGITUDE: 126 47 06 W
ELEVATION: 1633 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 1.6 kilometres below the Lorraine (093L 126), 300 metres above Higgins Creek, approximately 29 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6085447
EASTING: 642045

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I13 Sn veins and greisens

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Undefined Formation	

LITHOLOGY: Rhyolite
Andesite
Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1929
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.4000	Per cent

COMMENTS: Sample of rhyolite with malachite staining.
REFERENCE: Minister of Mines Annual Report 1929, page 168.

CAPSULE GEOLOGY

The area is underlain by Upper Cretaceous Kasalka Group rocks comprised mainly of andesite, rhyolite, tuffs and breccia.

The showing is located approximately 1.6 kilograms below the past producing Lorraine (Victoria) deposit (093L 129). The showing is an exposed band of rhyolite which is irregularly mineralized with malachite. In 1929, a sample from the best mineralized area over 7.6 metres assayed traces of silver and gold with 0.4 per cent copper (Minister of Mines Annual Report 1929, page 168).

BIBLIOGRAPHY

EMPR AR 1918-121; 1929-168
EMPR MAP 69-1
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
GSC MAP 671A
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/21 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 253**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOME**, PEACHHAVEN, FAIRHAVEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 52 30 N
LONGITUDE: 126 57 06 W
ELEVATION: 1475 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located east of Driftwood Creek (Lot 6449) (093L 132) approximately 20 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6082803
EASTING: 631426

COMMODITIES: Silver Lead Zinc Copper

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 350/63S
TREND/PLUNGE:
COMMENTS: Mineralized shear zone in porphyritic andesite.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	
Upper Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Porphyritic Andesite
Basalt
Breccia
Granodiorite

HOSTROCK COMMENTS: Granodiorite stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1929
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	13.7000	Grams per tonne
Zinc	4.5000	Per cent

COMMENTS: Sample from mineralized shear.
REFERENCE: Minister of Mines Annual Report 1929, page 168.

CAPSULE GEOLOGY

The host rocks are Lower Jurassic Hazelton Group volcanics of the Nilkitkwa Formation, which are altered and deformed by a Late Cretaceous to Eocene granodiorite intrusion.

The showing is within a shear zone in the porphyritic andesite to basalt which strikes 350 degrees and dips 63 degrees southwest. Mineralization includes chalcopyrite, pyrite, galena, sphalerite with malachite staining and quartz gangue. The host rock is highly altered and bleached. In 1929, a sample from this shear zone assayed 13.7 grams per tonne silver, trace gold and 4.5 per cent zinc (Minister of Mines Annual Report 1929, page 168).

On the north side of the shear, up to 1530 metres in elevation, quartz veins crosscut the volcanics and host minor galena, sphalerite and chalcopyrite.

BIBLIOGRAPHY

EMPR AR *1928-166; *1929-168
EMPR MAP 69-1

BIBLIOGRAPHY

EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
GSC BULL 270
GSC MAP 671A, 971A
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/06/30 REVISED BY: LLC FIELD CHECK: N

MINFILE NUMBER: **093L 254** NATIONAL MINERAL INVENTORY: 093L10 Ag3

NAME(S): **HIDDEN TREASURE**, COPPERHILL, GIO - 6

STATUS: Showing MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L10E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 34 22 N NORTHING: 6049660
LONGITUDE: 126 42 42 W EASTING: 647920
ELEVATION: 1372 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northeast slope of Grouse Mountain in a deep gully, 0.3 kilometres northeast of North Lake, 28.5 kilometres southeast of Telkwa. Location of showing from Geology, Exploration and Mining 1972, Figure 49.

COMMODITIES: Silver Copper Zinc Lead Gold

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite
ALTERATION: Chlorite Clay
ALTERATION TYPE: Argillic Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 030/ TREND/PLUNGE:
COMMENTS: Strike of mineralized shear.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Rhyolite Flow
Andesite
Volcanic Breccia
Feldspathic Epiclastic

HOSTROCK COMMENTS: Also includes monzonite-porphyry-dike and felsite-dike.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1928
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Copper	1.5000	Per cent
Lead	24.0000	Per cent
Zinc	11.0000	Per cent

COMMENTS: Sulphide rich sample.
REFERENCE: Minister of Mines Annual Report 1928, page 169.

CAPSULE GEOLOGY

The showing occurs in Lower Jurassic Hazelton Group rocks of the Telkwa Formation comprised of massive maroon to grey breccia and tuff deposits interbedded with green andesite to rhyolite flows. Tuff includes fine-grained crystal tuff, lapilli tuff, coarse-grained breccia and feldspathic epiclastics.

The volcanics are intruded dikes and small stocks of monzonite porphyry. The dikes range between 10 to 60 metres in width and strike north northwest and dip moderately west southwest.

The Hidden Treasure mineral showing consists of pyrite, chalco-pyrite, sphalerite, and galena infilling a steeply dipping shear zone varying from 0.6 to 1.8 metres in width. The zone strikes 030 degrees, cutting a sequence of moderately folded argillite and tuffaceous rocks. Sulphides infill the shear, which diverges and is

CAPSULE GEOLOGY

parallel to the bedding at the base of a thick pyroclastic deposit. Alteration minerals are mainly chlorite with clay products.

The best mineralization occurs in a schist crosscutting a westerly dipping felsite dike. In 1928, two sulphide rich samples assayed 171.4 grams per tonne silver, trace gold, 1.5 per cent copper, 24 per cent lead, 11 per cent zinc, and 54.9 grams per tonne silver, trace gold and 4.3 per cent copper, respectively (Minister of Mines Annual Report 1928, page 169).

BIBLIOGRAPHY

EMPR AR 1924-98; 1925-141; *1928-169; 1929-169; 1965-74
EMPR GEM 1970-158, *1972-397-417,Fig. 49
EMPR EXPL *1980-344, *1983-444; 1987,-C308
EMPR ASS RPT 726, 6429, 9087, *12374, 13720, *15999
EMPR MAP 69-1
EMPR FIELDWORK *1988, pp. 195-208
GSC MAP 671A
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 255**

NATIONAL MINERAL INVENTORY: 093L11 Ag1

NAME(S): **TRIBUNE**, HUNTER BASIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L11E
BC MAP:
LATITUDE: 54 32 02 N
LONGITUDE: 127 11 08 W
ELEVATION: 1798 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the north side of Cabinet Creek near the summit on the northwest side of Hunter Basin approximately 19 kilometres south-southwest of Telkwa Tribune claim adjoins (refer to 1925 sketch map Minister of Mines Annual Report 1925, page 140).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6044439
EASTING: 617403

COMMODITIES: Silver, Copper, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Tetrahedrite
ASSOCIATED: Quartz, Calcite
ALTERATION: Malachite
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), D03 Volcanic redbed Cu
DIMENSION:
STRIKE/DIP: 328/70W
TREND/PLUNGE:
COMMENTS: Mineralized quartz-carbonate vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Rhyolite
Tuff
Breccia
Quartz Feldspar Porphyry
Felsic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine, Plutonic Rocks

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1914
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	994.3000	Grams per tonne
Copper	1.8000	Per cent

COMMENTS: 30 centimetre sample taken across of mineralized quartz vein; also assayed trace gold.
REFERENCE: Minister of Mines Annual Report 1914, page 221.

CAPSULE GEOLOGY

The showing is underlain by Lower Jurassic Hazelton Group volcanics comprised of andesitic to rhyolitic flows, tuffs, and breccia with minor intercalated sediments. The volcanics are intruded by a Late Cretaceous to Eocene quartz-feldspar porphyry stock and associated felsite dikes with quartz or quartz-calcite stringers.

A quartz vein, 20 to 46 centimetres wide, striking north 328 degrees and dipping 70 degrees southwest, hosts chalcopyrite and tetrahedrite mineralization. In 1914, a 30 centimetre sample taken across the vein assayed trace gold, 994.3 grams per tonne silver and 1.8 per cent copper (Minister of Mines Annual Report 1914, page 221). The vein is traceable for 91 metres and was exposed along a 35 metre crosscut tunnel. In 1911, a sample across the vein assayed 0.69 grams per tonne gold, 846.9 grams per tonne silver, and 2.1 per cent

CAPSULE GEOLOGY

copper (Minister of Mines Annual Report 1911, page 112).
Several occurrences of malachite along fracture zones in the volcanic host are reported to occur between the Colorado Tunnel (093L 043) and the Tribune Shaft. The Tribune claim adjoins the Hunter claim (093L 042) to the north and is located northeast of the Colorado workings (093L 043).

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EMPR AR *1911-112; *1914-221; 1925-140
EMPR GEM 1969-86; 1970-160
EMPR EXPL 1982-312
EMPR ASS RPT *10918
GSC SUM RPT 1915, p. 65
GSC OF 351
GSC P 44-23
GSC MAP 278A; 971A
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1989-16

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/02 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 256**
NATIONAL MINERAL INVENTORY: 093L1 Ag2

NAME(S): **GAUL**, SAM

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L01W
BC MAP:
LATITUDE: 54 09 40 N
LONGITUDE: 126 17 00 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 3.2 kilometres southeast of Goosly Lake, along Bessemer Creek, approximately 36 kilometres southeast of Smithers. Drill holes located about 500 metres east of Bessemer Creek (Assessment Report 16968, Figure 2).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6004857
EASTING: 677367

COMMODITIES: Silver, Copper, Zinc

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Tetrahedrite, Sphalerite, Galena
ASSOCIATED: Quartz, Carbonate
COMMENTS: Rare galena.
ALTERATION TYPE: Carbonate, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Breccia
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous Eocene	Skeena	Undefined Formation	Goosly Intrusions

LITHOLOGY: Tuff
Flow Breccia
Argillite
Feldspar Porphyry Dike
Andesitic Dike
Syeno Monzonite

HOSTROCK COMMENTS: Goosly Lake Intrusion in the northeast part of the property is dated as 48 million years.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine, Plutonic Rocks

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	442.2800	Grams per tonne
Copper	0.7100	Per cent

COMMENTS: 65.4 metre intersection from drill hole 87TG20
REFERENCE: Assessment Report 16968.

CAPSULE GEOLOGY

The area is underlain by Lower Cretaceous Skeena(?) Group volcanics comprised of basal tuff and conglomerate overlain by pyroclastics, mainly tuff and flow breccia, which are capped by clastic conglomerate and argillite (Bulletin 78, Figure 1). The Mesozoic conglomerates show graded beds with "tops" to the west.

The northeast claim area is underlain by an isolated appendage of the Eocene Goosly Lake Intrusion, which is comprised of plagioclase porphyry or syenomonzonite and forms the highest local topographic feature. The monzonite was dated at about 48 million years. Much of the western part of the property is underlain by pyroclastics and sedimentary-volcanic rocks of the Eocene Goosly Lake Formation (Francois Group).

Mineralization occurs as sulphide fracture fillings, sulphides in quartz-carbonate veinlets ranging up to 20 centimetres, and

CAPSULE GEOLOGY

sulphide disseminations. Mineralization is comprised of low grade chalcopyrite and tetrahedrite with occasional narrow sections of high grade chalcopyrite. Sphalerite and rarely galena occur locally; pyrite is ubiquitous.

Sulphide mineralized veins usually form angles of 60 to 80 degrees opposite to bedding. Chalcopyrite mineralization increases locally with tetrahedrite and occasionally sphalerite mineralization usually occurring in the thicker quartz-carbonate veining.

The 1985 drill program intersected mineralization in faults and fractures in argillite with interbedded green tuff and lapilli tuff. Mineralization consisted of pyrite, chalcopyrite, tetrahedrite and sphalerite. An average assay over 36.5 to 99.0 metres was reported to be 2.9 grams per tonne silver, 0.09 per cent copper and 0.05 per cent zinc (Assessment Report 13943).

Higher grade copper-silver mineralization is located adjacent to the north-northeast striking dikes in ash tuffs and also near the base of the interbedded argillic horizon near the top of the ash tuffs. In 1987, drill hole 87TG20 intersected mineralization adjacent to the north-northeast striking dikes. A 65.4 metre intersection assayed 12.9 grams per tonne silver with 0.71 per cent copper. Included within this intersection is a 3.8 metre section which assayed 105.4 grams per tonne silver and 7.88 per cent copper (Assessment Report 16968).

The mineralization adjacent to the andesitic and feldspar porphyry dikes is though to be related to and may be a southern projection of mineralization associated with the Equity Silver Mine (refer to 093L 001).

BIBLIOGRAPHY

EMPR GEM *1969-150; 1971-168
EMPR ASS RPT 2124, *13943, *16968
EMPR EXPL *1985-C310; 1988-C167
EMPR FIELDWORK 1992, pp. 475-481
EMPR MAP *11; 69-1
EMPR BULL *78 (in press)
GSC OF 351
EMR MP CORPFILE (Maverick Mtn. Resources Ltd.; Silver Standard Mines Ltd.)
N MINER Nov. 9, 1987
ECON GEOL 1984, Vol. 79, No. 5, pp. 947-986
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/04/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 257**

NATIONAL MINERAL INVENTORY:

NAME(S): **SMITHERS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14E
BC MAP:
LATITUDE: 54 48 00 N
LONGITUDE: 127 10 06 W
ELEVATION: 457 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 1.6 kilometres north of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6074074
EASTING: 617744

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Residual Industrial Min.
TYPE: B06 Fireclay E07 Sedimentary kaolin

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Unnamed/Unknown Informal

LITHOLOGY: Clay

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

About 1.6 kilometres north of Smithers brick was made from a deposit of fine-grained brownish-grey clay located just east of the road. The material had a short firing range and cracked badly during drying.

BIBLIOGRAPHY

EMPR BULL 30, pp. 16,55
EMPR FIELDWORK 1988, pp. 195-208; 1991, pp. 93-101

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/05 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 258**

NATIONAL MINERAL INVENTORY:

NAME(S): **TSALIT MOUNTAIN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02W
BC MAP:
LATITUDE: 54 09 30 N
LONGITUDE: 126 56 46 W
ELEVATION: 1035 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the northwest slope of Tsalit Mountain, along Fenton Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6003087
EASTING: 634111

COMMODITIES: Perlite

MINERALS
SIGNIFICANT: Perlite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Volcanogenic Industrial Min.
TYPE: R12 Volcanic glass - perlite

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Tertiary	Ootsa Lake	Undefined Formation	

LITHOLOGY: Rhyolite Flow
Dacite Flow
Volcanic Breccia
Tuff
Perlite
Porphyritic Feldspar Trachyte
Quartz Porphyritic Rhyolite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The area is underlain by Tertiary Ootsa Lake Group volcanics comprised mainly of rhyolitic to dacitic flows, tuffs, and breccia. The youngest formation in the area, tentatively named "Fenton Creek volcanic rocks", are found mainly in a 2.4 by 4.0 kilometre laterally elongated zone on the northwest slope of Tsalit Mountain. This unit consists of volcanic breccias, lava, tuff, and dikes which are thought to be post-Miocene in age. In places, especially east of Fenton Creek, this unit is comprised mainly of cream coloured glassy rhyolitic lava (perlite) and breccia. Immediately to the northwest this volcanic complex changes to predominantly feldspar porphyry trachyte and to the south to quartz porphyry rhyolite.

BIBLIOGRAPHY

EMPR GEM *1972-373-379,*Fig. 40
EMPR MAP 69-1
GSC OF 351

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 259**

NATIONAL MINERAL INVENTORY: 093L9 Cu5

NAME(S): **TACHEK MOUNTAIN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 38 00 N
LONGITUDE: 126 12 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located in an area of granitic rock north and east of Tachek Mountain, 14 kilometres northeast of Topley.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6057588
EASTING: 680610

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Undefined Formation	
Jurassic			Topley Intrusions

LITHOLOGY: Granodiorite
Andesite
Tuff
Breccia
Diorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1932
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	2.7000	Grams per tonne
Gold	0.6800	Grams per tonne

COMMENTS: Selected sample from mineralized and brecciated dike.
REFERENCE: Minister of Mines Annual Report 1932, page 85.

CAPSULE GEOLOGY

The showing is located with the large Jurassic Topley Intrusion located northeast of Tachek Mountain. The granodioritic stock intrudes Lower Jurassic Hazelton Group andesitic tuffs and flows.

Locally, the granodioritic intrusive shows slight mineralization comprised of chalcopyrite and pyrite. The granodiorite is crosscut by a dioritic dike up to 0.7 metres in width. Both walls of the dike contain a few centimetres of breccia cemented with quartz and mineralized with chalcopyrite. In 1932, a selected sample assayed 0.68 grams per tonne gold and 2.7 grams per tonne silver (Minister of Mines Annual Report 1932, page 85).

BIBLIOGRAPHY

EM OF 2001-03
EMPR AR 1932-85
EMPR MAP 69-1
GSC BULL 270
GSC MAP 671A
GSC OF 351
Placer Dome File

BIBLIOGRAPHY

EMPR BULL 110

DATE CODED: 1985/07/24
DATE REVISED: 1988/08/25

CODED BY: GSB
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 260**

NATIONAL MINERAL INVENTORY:

NAME(S): **SAM**, NWB, DG

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L01W
BC MAP:
LATITUDE: 54 10 35 N
LONGITUDE: 126 19 38 W
ELEVATION: 1006 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northeast side of Goosly Lake about 32 kilometres southeast of Houston; location of 1987 diamond drilling in the East zone (Assessment Report 17307).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6006447
EASTING: 674438

COMMODITIES: Silver Zinc

MINERALS

SIGNIFICANT: Pyrite Sphalerite Chalcopyrite Tetrahedrite Arsenopyrite
COMMENTS: Pyrite is the dominant sulphide.
ASSOCIATED: Quartz Calcite
ALTERATION: Sericite Carbonate Chlorite Quartz Pyrite Clay
ALTERATION TYPE: Sericitic Carbonate Chloritic Silicific'n Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Massive Breccia
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 120/80N TREND/PLUNGE:
COMMENTS: Mineralized zone strikes 120 degrees and dips steeply north.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Francois Lake	Tip Top Hill	
Eocene	Francois Lake	Goosly Lake	

LITHOLOGY: Andesitic Tuff
Volcanic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1987

COMMODITY	GRADE	
Silver	126.0000	Grams per tonne
Zinc	0.7700	Per cent

COMMENTS: 2.3 metre sample from drill hole 22
REFERENCE: Assessment Report 17307.

CAPSULE GEOLOGY

The Sam property is located within the northern part of the Nechako Trough which hosts strata consisting of a sequence of Mesozoic volcanic and sedimentary rocks overlain by an extensive sequence of Tertiary volcanics.

Along the north side of Goosly Lake, the area is underlain by Cretaceous to Tertiary Francois Lake Group rocks, mainly Upper Cretaceous Tip Top Hill Formation volcanics which are overlain by Eocene Goosly Lake Formation. The Tip Top Hill Formation is comprised mainly of andesite, andesitic to dacitic lavas and pyroclastics which are overlain by feldspathic andesite, trachyandesite lavas, breccias, sills and stocks of the Goosly Lake Formation (Bulletin 78, Figure 1).

Most of the rocks have undergone sericite-carbonate-chlorite and quartz alteration. Grey clay is found locally along fracture and pyrite is disseminated throughout. Massive sulphide veins, ranging

CAPSULE GEOLOGY

from 0.1 to 3.0 metres in width, occur along the southeast side of the altered belt of andesitic tuffs and volcanic breccias. The dominant sulphide in these veins is pyrite with minor sphalerite and traces of chalcopyrite, tetrahedrite and arsenopyrite. The alteration zone strikes about 120 degrees, dips steeply north and ranges from 70 to 200 metres in widths.

Majority of the massive to semi-massive sulphides were located within the East zone, at depths of 20 to 230 metres. Four small mineralized intervals were intersected in the West zone, located 500 metres northwest of the East zone. The rocks between these zones (the Central zone) are altered, but no significant mineralization was found.

Drilling in 1986 and 1987 in the East zone within the pyritic calcite-quartz-silicate alteration zone intersected several massive to semi-massive sulphide intervals with silver values ranging from 25.0 to 715.0 grams per tonne values usually less than 1 per cent with high values up to 9.5 per cent zinc (Assessment Report 17307). The sulphide intervals were often brecciated, and locally clay is a matrix.

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EMPR EXPL 1988-C168
EMPR ASS RPT 2311, 3508, 5195, *17307
EMPR FIELDWORK 1984, pp. 175-188; 1992, pp. 475-481
EMPR MAP 71; 69-1
EMPR BULL *78 (in press)
GSC MAP 671A
GSC OF 351
ECON GEOL 1984, Vol. 79, No. 5, pp. 947-986
GCNL #54, 1981

DATE CODED: 1989/04/07 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 261**

NATIONAL MINERAL INVENTORY:

NAME(S): **LEWES RIVER**, GAIL, GMGW

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L01W
BC MAP:
LATITUDE: 54 11 00 N
LONGITUDE: 126 24 36 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located approximately 40 kilometres southeast of Houston, 4.0 kilometres southwest of Goosly Lake on the Lewes River property.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6007018
EASTING: 669008

COMMODITIES: Titanium Nepheline Syenite

MINERALS
SIGNIFICANT: Ilmenite Nepheline
ASSOCIATED: Biotite Apatite Magnetite
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 48.8 +-3 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Biotite

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Magmatic Industrial Min.
TYPE: R13 Nepheline syenite

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Undefined Formation	
Upper Cretaceous	Francois Lake	Tip Top Hill	
Eocene			Goosly Intrusions

ISOTOPIC AGE: 48.8 +/- 3 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Syeno Monzonite
Alkalic Gabbro
Gabbro
Andesite
Andesitic Dacite
Tuff
Sediment/Sedimentary Volcanic

HOSTROCK COMMENTS: Lithology also includes syenodiorite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

Three alkaline stocks, spaced at about 13 kilometre intervals, occur along a northeast trend. The Lewes River intrusion, located 4.8 kilometres southwest of Goosly Lake, is poorly exposed, but, the large stock to the east (093L 263) is described in detail.

The Lewes River Goosly Lake stock intrudes Lower Cretaceous Skeena Group rocks and Upper Cretaceous Francois Lake Group, Tip Top Hill volcanics (Bulletin 78, Figure 1). The Skeena Group rocks are comprised of a mixed assemblage of sediments and felsic volcanic fragmental rocks with intercalated shale, massive rhyolite lava and conglomerate. The Tip Top Hill volcanics consist mainly of andesite, andesitic dacite lavas and pyroclastics.

The alkaline intrusive ranges from gabbro to syenomonzonite, consisting of 65 to 80 per cent plagioclase, 5 to 20 per cent augite, accessory biotite, apatite, and magnetite. Interstitial feldspar and traces of quartz are found in the more acidic varieties. The gabbroic phases are enriched in pyroxene and contain calcite and chlorite pseudomorphs after olivine with accessory feldspathoid minerals.

Several significant mineral occurrences are associated with the alkaline rocks of the Goosly Lake area. Approximately 3.2 kilometres east of Goosly Lake, at the east end of the intrusive belt, the Equity Silver property (093L 001) hosts a replacement sulphide deposit consisting of lenses of pyrite-chalcopyrite-tetrahedrite located adjacent to the stock. Approximately 25 kilometres southwest of Goosly Lake, showings at the Silver Queen Mine (093L 002),

CAPSULE GEOLOGY

thought to be related to alkaline dikes, are fissure veins of pyrite-sphalerite with galena and local concentrations of chalcopyrite with some tennanite.

In 1970, an analysis of the gabbro phase of the alkaline intrusion, located 4.8 kilometres southwest of Goosly Lake, showed 2.1 per cent ilmenite. As well, analysis of the syenogabbroic phase showed 2.8 per cent ilmenite and 1.0 per cent nepheline (Geology, Exploration and Mining in B.C. 1970, p. 124).

BIBLIOGRAPHY

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EMPR FIELDWORK 1992, pp. 475-481
EMPR MAP *11; 69-1
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EMPR OF 1991-10
GSC OF 351
GSC BULL 239, pp. 143-145

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 262**

NATIONAL MINERAL INVENTORY:

NAME(S): **PARROTT LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02E
BC MAP:
LATITUDE: 54 07 10 N
LONGITUDE: 126 36 36 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located approximately 30 kilometres south of Houston, immediately west of the south end of upper Parrott Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 5999452
EASTING: 656200

COMMODITIES: Nepheline Syenite

MINERALS
SIGNIFICANT: Nepheline
ASSOCIATED: Biotite Apatite Magnetite
MINERALIZATION AGE: Unknown
ISOTOPIC AGE: 49.4 +- 1.5 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Biotite

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Magmatic Industrial Min.
TYPE: R13 Nepheline syenite

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene	Francois Lake	Goosly Lake	
Eocene			Goosly Intrusions

ISOTOPIC AGE: 48.8 +/- 3 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Syeno Monzonite
Alkalic Gabbro
Gabbro
Feldspathic Andesite
Trachyandesite
Breccia

HOSTROCK COMMENTS: Lithology also includes syenodiorite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

Three alkaline stocks, spaced at about 13 kilometre intervals, occur along a northeast trend. The Parrott Lake intrusion, located at the west end of the intrusive belt, is poorly exposed, but, the large stock to the east (093L 263) is described in detail. The Parrott Lake intrusive was dated at 49.4, plus or minus, 1.5 million years (Energy, Mines and Petroleum Resources, Preliminary Map 11).

South of Parrott Lake, the Goosly Lake stock intrudes Francois Lake Group, Eocene Goosly Lake Formation volcanics comprised mainly of feldspathic andesite and trachyandesite lavas with breccias and sills (Bulletin 78, Figure 1).

The alkaline intrusive ranges from gabbro to syenomonzonite consisting of 65 to 80 per cent plagioclase, 5 to 20 per cent augite, accessory biotite, apatite and magnetite. Interstitial feldspar and traces of quartz are found in more acidic varieties. The gabbroic phases are enriched in pyroxene and contain calcite and chlorite pseudomorphs after olivine with accessory feldspathoid minerals.

Several significant mineral occurrences are associated with the alkaline rocks of the Goosly Lake area. Approximately 9.0 kilometres to the southwest of the Parrott Lake intrusion, showings at the Silver Queen Mine (093L 002), thought to be related to the alkaline dikes, host fissure veins of pyrite-sphalerite with galena and local concentrations of chalcopyrite with some tennanite.

In 1970, an analysis of the syenomonzonite at the south end of Upper Parrott Lake showed trace ilmenite with 1.4 per cent nepheline (Geology, Exploration and Mining in British Columbia 1970, page 124).

BIBLIOGRAPHY

EMPR GEM *1970-119-125, Fig. 10
GSC BULL 239, pp. 143-145
EMPR MAP *11; 69-1
EMPR BULL *78 (in press)
GSC OF 351
EMPR OF 1991-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 263**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOOSLY LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L01E 093L01W
BC MAP:
LATITUDE: 54 09 00 N
LONGITUDE: 126 14 46 W
ELEVATION: 1520 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 40.2 kilometres southeast of Houston, centre of stock is 4.8 kilometres east of Goosly Lake on the Kennco property.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6003715
EASTING: 679845

COMMODITIES: Titanium

MINERALS
SIGNIFICANT: Ilmenite
ASSOCIATED: Biotite Apatite Magnetite
MINERALIZATION AGE: Eocene
ISOTOPIC AGE: 48.3 +/- 3 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Biotite

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Magmatic Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Undefined Formation	
Eocene			Goosly Intrusions

ISOTOPIC AGE: 48.8 +/- 3 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Syeno Monzonite
Alkalic Gabbro
Felsic Volcanic
Sediment/Sedimentary

HOSTROCK COMMENTS: Lithology also includes syenodiorite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Goosly Lake intrusion, 4.8 kilometres east of Goosly Lake, is a quadrate body, approximately 3.2 kilometres on a side, which cuts Early Mesozoic lavas and pyroclastic rocks with some argillite. The intrusion seems to be the source of the Eocene Goosly Lake volcanics comprised of trachyandesite and trachyte. The hosting volcanics are part of the Lower Cretaceous Skeena Group which are comprised of a mixed assemblage of sediments and felsic volcanic fragmental rocks with intercalated shale, massive rhyolite lava, and conglomerate (Bulletin 78, Figure 1).

The alkaline intrusive ranges from gabbro to syenomonzonite, consisting of 65 to 80 per cent plagioclase, commonly occurring as large bladed phenocrysts, 5 to 20 per cent augite as small rounded grains or long prismatic phenocrysts, and accessory biotite, apatite and magnetite. Interstitial feldspar and traces of quartz are found in the more acidic varieties. The gabbroic phases are enriched with pyroxene and contain calcite and chlorite pseudomorphs after olivine with accessory feldspathoid minerals.

The lavas, believed to be associated with the stocks, contain the same minerals with the addition of occasional hornblende, but in somewhat different proportions. Parts of the volcanic sections are unusually massive suggesting very thick lava flows or possibly sills.

Several significant mineral occurrences are associated with the alkaline rocks of the Goosly Lake area. Approximately 3.2 kilometres east of Goosly Lake, at the east end of the intrusive belt, the Equity Silver property (093L 001) hosts a replacement sulphide deposit consisting of lenses of pyrite-chalcopyrite-tetrahedrite located adjacent to the alkaline stock. A rare iron phosphate mineral, scorzalite is associated with the mineralization on this property.

In 1969, an analysis of the syenomonzonite, located 6.4

CAPSULE GEOLOGY

kilometres east of Goosly Lake, showed 2.6 per cent ilmenite
(Geology, Exploration and Mining in British Columbia 1969, page 148).

BIBLIOGRAPHY

EMPR GEM *1969-122-151; *1970-119-125, Fig. 10
EMPR FIELDWORK 1992, pp. 475-481
EMPR MAP *11; 69-1
EMPR BULL *78 (in press)
GSC BULL *239, pp. 143-145
GSC OF 351

DATE CODED:	1987/08/07	CODED BY:	LLC	FIELD CHECK:	N
DATE REVISED:	1989/08/28	REVISED BY:	LLD	FIELD CHECK:	N

MINFILE NUMBER: **093L 264**

NATIONAL MINERAL INVENTORY:

NAME(S): **TIMBAR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07E
BC MAP:
LATITUDE: 54 27 30 N
LONGITUDE: 126 34 06 W
ELEVATION: 646 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east shoulder of Mount Harry Davis, 8 kilometres north-east of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6037240
EASTING: 657623

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Copper Chalcocite Tetrahedrite Bornite Chalcopyrite
ASSOCIATED: Quartz Calcite
ALTERATION: Malachite Hematite Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: D03 Volcanic redbed Cu L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene	Ootsa Lake	Undefined Formation	
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Trachybasalt
Andesite
Rhyolite
Tuff
Breccia
Rhyolite Flow
Dacitic Flow

HOSTROCK COMMENTS: Ootsa Lake volcanics in fault contact with Hazelton Group.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1982

COMMODITY	GRADE	
Silver	5.4900	Grams per tonne
Copper	0.6600	Per cent

COMMENTS: Mineralized grab sample.
REFERENCE: Assessment Report 9849, 11031.

CAPSULE GEOLOGY

Eocene Ootsa Lake volcanics comprised of rhyolitic to dacitic flows, tuffs, and breccias with minor andesite are in fault contact with older Hazelton Group rocks. The Lower Jurassic Hazelton rocks (Telkwa Formation) are comprised of variegated red to maroon breccias, tuff, andesite with basaltic to rhyolitic flows.

Native copper was found in the trachytic basalt/andesite volcanics. Associated mineralization in these tuffs and flow rocks of Telkwa Formation are malachite, chalcocite, minor tetrahedrite, bornite and traces of chalcopyrite.

Mineralization occurs in four modes as follows:
1) associated with quartz-calcite in large fracture fillings
2) found as small fracture infillings
3) minerals occur as small circular concretions with quartz, calcite, and minor epidote in the amygdaloidal cavities within vesicular basalt
4) minor chalcopyrite occurs with hematite and traces of malachite in small fractures within a hematitic andesite tuff.

CAPSULE GEOLOGY

In 1982, mineralized grab samples assayed 5.49 grams per tonne silver, 0.66 per cent copper and 1.71 grams per tonne silver, 0.3 per cent copper, respectively.

BIBLIOGRAPHY

EMPR EXPL *1982-309
EMPR ASS RPT *9849, *11031
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/07/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 265**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRK**, WL, JAN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02E
BC MAP:
LATITUDE: 54 12 00 N
LONGITUDE: 126 38 06 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located north of Parrott Lake on Parrott Creek, 22 kilometres south of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6008357
EASTING: 654267

COMMODITIES: Silver, Zinc, Lead, Copper, Barite

MINERALS

SIGNIFICANT: Sphalerite, Galena, Tetrahedrite, Chalcopyrite, Pyrite
ASSOCIATED: Quartz, Carbonate, Barite
ALTERATION TYPE: Silicific'n, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal, Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, E05 Sandstone Pb

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Francois Lake	Tip Top Hill	
Eocene			Goosly Intrusions

LITHOLOGY: Andesite
Dacite Flow
Rhyolite
Tuff
Syeno Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau
Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1984

COMMODITY	GRADE	
Silver	39.6000	Grams per tonne
Zinc	0.2770	Per cent

COMMENTS: Mineralized andesite.
REFERENCE: Assessment Report 12753.

CAPSULE GEOLOGY

The claims are underlain by several formations, the oldest being Lower Jurassic Hazelton Group volcanics (Telkwa Formation), comprised of red, green to maroon andesitic tuffs and flows. To the west, the Telkwa rocks are overlain by Upper Cretaceous Francois Lake Group, Tip Top Hill Formation volcanics comprised of biotite- hornblende andesite and andesitic to dacitic flows and breccia. These rocks are intruded by a Late Cretaceous Bulkley Intrusive comprised of quartz monzonite to porphyritic granodiorite and associated feldspar porphyry dikes (Bulletin 78, Figure 1).

To the east, the Telkwa rocks are overlain by Eocene Goosly Lake volcanic sills and trachytic flows of the Francois Lake Group. These are overlain by the Houston Member of the Eocene Buck Creek volcanics comprised of massive, vesicular to aphanitic andesite, dacite flows, breccia and minor basalt. To the south, near Parrott Lake these rocks are intruded by an Eocene Goosly Lake syenomonzonite plug.

Locally, the volcanics were mapped as Late Cretaceous Tip Top Hill andesitic, dacitic and rhyolitic flows and pyroclastics. The most common outcrop is red andesitic tuff which is sheared, bleached as well as carbonate altered and silicified hosting 0.1 per cent barite. Other rocks include rhyolitic to dacitic flows with a white,

CAPSULE GEOLOGY

dense groundmass some hosting quartz eyes. Some of these rocks are brecciated and are crosscut by quartz veinlets hosting pyrite.

A syenomonzonite plug or a northwest trending Tertiary dike is in contact with the rhyolitic rocks.

Mineralization consists of low grade disseminated galena, sphalerite and pyrite in a calcareous arkose(?) on the east side of the claims. Also, weak chalcopyrite and pyrite occurs in quartz veinlets in the rhyolitic and andesitic flows. In 1984, a sample of the mineralized andesite assayed 39.6 grams per tonne silver and 0.277 per cent zinc (Assessment Report 12753).

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EMPR EXPL 1976-E145; 1977-E190; 1978-E216; 1979-225; *1982-530; *1984-322-323
EMPR MAP 11; 69-1
GSC OF 351
EMPR BULL *78 (in press)
EMPR P *1990-2

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1988/08/17 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 266**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT MCKENDRICK**, PIONEER, ST. ANNE, ST. EUGENE, MCKEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15E
BC MAP:
LATITUDE: 54 49 25 N
LONGITUDE: 126 44 13 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On southeast slope of Mount McKendrick.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6077511
EASTING: 645386

COMMODITIES: Lead, Zinc, Copper, Arsenic, Antimony

MINERALS
SIGNIFICANT: Sphalerite, Arsenopyrite, Pyrite, Chalcopyrite, Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
I05 Polymetallic veins Ag-Pb-Zn±Au
G04 Besshi massive sulphide Cu-Zn

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Granitic Sill
Greenstone

HOSTROCK COMMENTS: Granite-greenstone sill complex with overlying phyllitic tuffs.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

A northwest trending steeply dipping quartz vein cuts through a greenstone-granite sill complex and overlying phyllitic tuffs of the Lower Jurassic Hazelton Group, Telkwa Formation. The thick section of greenstone intruded by leucogranitic lenses is atypical of the Hazelton Group and is believed to be older, perhaps Triassic (Fieldwork, 1988).

The vein range up to 0.9 metres wide and extends for 500 metres, and contains pyrite, sphalerite, arsenopyrite, chalcopyrite and galena. Samples collected in 1986 contain pyrite with minor amounts of sphalerite and arsenopyrite. Mercury concentrations are also anomalous.

FIELDWORK 1986, p. 213
TABLE 14 - MOUNT MCKENDRICK VEIN ANALYSES
(all values in p.p.m.)

	Au	Ag	Cu	Zn	Mo	Hg	As	Sb
23-1	3.03	123	470	13100	4	2.15	960	335
23-3	1.09	78	600	30400	<2	2.54	13600	170

note: 23-1, 23-3 are quartz vein samples with pyrite and minor sphalerite from Mt. McKendrick.

BIBLIOGRAPHY

EMPR FIELDWORK 1984, pp. 193-213; *1986, pp. 201-222; *1988, pp. 195-208
EMPR AR 1934-C11
EMPR EXPL 1986-C360
EMPR ASS RPT 14026, 15149, 15391
EMPR MAP 69-1
GSC OF 351
GSC BULL 270, p. 73

DATE CODED: 1987/03/06
DATE REVISED: 1988/03/16
CODED BY: PD
REVISED BY: LLD
FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **093L 267**

NATIONAL MINERAL INVENTORY: 093L2 Ag3

NAME(S): **FAR**, MO, SUMMIT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02W
BC MAP:
LATITUDE: 54 09 04 N
LONGITUDE: 126 51 48 W
ELEVATION: 1280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 700 metres northeast of the Far(Grubstake) showing (093L 003) on Tsalit Mountain, approximately 32 kilometres southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6002444
EASTING: 639540

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite Pyrrhotite Pyrite
ASSOCIATED: Quartz Calcite Amphibole
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Skeena	Undefined Formation	
Eocene			Nanika Intrusions

LITHOLOGY: Amygdaloidal Basalt
Hornfels
Rhyolite
Tuff
Breccia
Chert
Quartz Monzonite
Porphyritic Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

The general area is primarily underlain by Mesozoic Skeena Group rocks consisting of basaltic lava flows, tuff breccia, flow-banded rhyolite lava, chert and argillite. Rhyolite dikes and sills in the area have been dated (potassium-argon: 76.5 +/- 3 Ma) as Upper Cretaceous. The Skeena Group rocks are intruded by an Eocene Nanika Intrusion comprised of quartz monzonite and porphyritic monzonite.

The Summit showing consists of mineralized amygdaloidal basalt which is locally hornfelsed. Fractures and amygdules are filled with quartz, calcite, amphibole and concentrations of pyrrhotite, molybdenite, minor pyrite and chalcopyrite. The Summit showing and the Grubstake showing (093L 003) have been explored as part of the same property.

BIBLIOGRAPHY

EMPR GEM *1970-141-149,Fig. 17; 1971-172; 1972-353
EMPR ASS RPT 3064, 3096
EMR MP CORPFILE (Mexxon Mines Ltd; Maverick Mtn. Resources Ltd.)
EMPR MAP 69-1
EMPR PR (Richards, T.A. (1988): Prospecting-Geochemical Report on the Tsalit 1 Claim, November 25, 1988 (see Grubstake, 093L 003))
GSC BULL 270
GSC OF 351

DATE CODED: 1986/11/03 CODED BY: GRF FIELD CHECK: N
DATE REVISED: 1989/06/07 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 268**

NATIONAL MINERAL INVENTORY: 093L7 Cu3

NAME(S): **CROESUS**, RAVEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07W
BC MAP:
LATITUDE: 54 17 16 N
LONGITUDE: 126 49 01 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the west flank of Morice Mountain, 15 kilometres southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6017739
EASTING: 642099

COMMODITIES: Copper Silver Gold

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Hematite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Granodiorite
Gabbro
Quartz Monzonite
Felsite
Tuff
Basaltic Flow
Rhyolite Flow
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	9.0000	Grams per tonne
Gold	0.0800	Grams per tonne
Copper	0.7800	Per cent

COMMENTS: Sample from gabbro.
REFERENCE: Assessment Report 15259.

CAPSULE GEOLOGY

The Morice Mountain area is underlain by the Lower Jurassic Hazelton Group volcanics (Telkwa Formation) which have been intruded by plugs of Nanika Intrusions. The Telkwa Formation is composed primarily of breccia, tuff, and flows of basaltic to rhyolitic composition while the Eocene Nanika Intrusions are composed mainly of quartz monzonite and felsite which are in part porphyritic.

The Croesus is located south of the Sholto (093L 202) and hosts chalcopyrite in granodiorite. A sample of the best mineralization assayed 0.3 per cent copper (Minister of Mines Annual Report 1930, page 143).

At a higher elevation, an alaskite intrusive is well pyritized and hosts traces of chalcopyrite. In 1986, this showing is described as occurring within gabbro. A sample of the gabbro with disseminated pyrite, chalcopyrite, and hematite assayed 0.08 grams per tonne gold, 9.0 grams per tonne silver, and 0.78 per cent copper (Assessment Report 15259).

BIBLIOGRAPHY

EMPR AR *1930-143; *1931-74; 1932-85
EMPR EXPL 1986-354
EMPR ASS RPT *15259, 19568
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR OF 1994-14
Placer Dome File

DATE CODED: 1986/11/06 CODED BY: GRF FIELD CHECK: N
DATE REVISED: 1988/08/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 269**

NATIONAL MINERAL INVENTORY: 093L7 Cu2

NAME(S): **VAN**, WYK, GERRY, POT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L07W
BC MAP:
LATITUDE: 54 16 53 N
LONGITUDE: 126 48 58 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the west flank of Morice Mountain, 15 kilometres southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6017030
EASTING: 642175

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
ASSOCIATED: Quartz
ALTERATION: Malachite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type) L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Quartz Monzonite
Felsite
Andesite Flow
Rhyolite Flow
Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine Plutonic Rocks

CAPSULE GEOLOGY

The Morice Mountain area is underlain by Lower Jurassic Hazelton Group volcanics (Telkwa Formation) which have been intruded by plugs of Eocene Nanika Intrusions. The Telkwa Formation consists of andesitic to rhyolitic flows, tuffs and breccia. The Eocene Nanika Intrusions are composed of quartz monzonite and felsite stocks which are, in part, porphyritic.

Molybdenite, chalcopyrite and pyrite are reported to occur in quartz veins and as disseminations in the quartz monzonite intrusions.

BIBLIOGRAPHY

EMPR ASS RPT 797, 2844, 19568
EMPR AR *1966-103
EMPR GEM 1970-155
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR OF 1994-14

DATE CODED: 1986/11/06 CODED BY: GRF FIELD CHECK: N
DATE REVISED: 1988/08/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 270**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER KING 1**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 34 55 N
LONGITUDE: 126 14 27 W
ELEVATION: 1113 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6051772
EASTING: 678308

COMMODITIES: Zinc Silver

MINERALS
SIGNIFICANT: Sphalerite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The area is underlain by volcanic rocks of the Jurassic Hazelton Group. The Silver King 1 occurrence consists of three shear zones, within a width of 69 metres, in andesite breccia. It is reported that mineralized quartz seams occur on the footwall of all the shears. In one shear, a width of 23 centimetres of quartz containing sphalerite was exposed.

BIBLIOGRAPHY

EM OF 2001-03
EMPR MAP 69-1
EMPR PF (Lay, D., (1937): Silver King and No. 1 Fraction, EMPR AR Special Report)
GSC BULL 270
GSC OF 351

DATE CODED: 1986/11/20 CODED BY: GRF FIELD CHECK: N
DATE REVISED: 1988/06/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 271**

NATIONAL MINERAL INVENTORY:

NAME(S): **MAPLE LEAF (L.4898)**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 34 38 N
LONGITUDE: 126 13 29 W
ELEVATION: 1265 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6051288
EASTING: 679369

COMMODITIES: Silver Zinc Gold

MINERALS
SIGNIFICANT: Sphalerite Galena Freibergite Pyrite
ASSOCIATED: Quartz Rhodochrosite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 095/55N
TREND/PLUNGE:
COMMENTS: Attitude of mineralized shear zones.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1937
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	829.7000	Grams per tonne
Gold	0.6900	Grams per tonne
Zinc	5.0000	Per cent

COMMENTS: Sample from mineralized quartz vein.
REFERENCE: Property File - Lay, D.,(1937): Maple Leaf Grp., Special Report.

CAPSULE GEOLOGY

The area is underlain by volcanic rocks of the Jurassic Hazelton Group. The Maple Leaf occurrence consists of two parallel shear zones, 87 metres apart, in andesite breccia. Small mineralized quartz stringers are contained within the shear zones which strike 095 degrees and dip 55 degrees northeasterly. Mineralization consisting of some sphalerite, pyrite, galena and freibergite is carried by the quartz stringers with minor associated rhodochrosite. A selected sample gave an assay of 0.69 grams per tonne gold, 829.7 grams per tonne silver and 5.0 per cent zinc (Lay, 1937).

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT 16193
EMPR EXPL 1987-C304
EMPR MAP 69-1
EMPR PF (Lay, D. (1937), Maple Leaf Group, EMPR AR Special Report)
GSC BULL 270
GSC OF 351

DATE CODED: 1986/11/20 CODED BY: GRF FIELD CHECK: N
DATE REVISED: 1988/06/25 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 272**

NATIONAL MINERAL INVENTORY:

NAME(S): **ORIOLE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 35 04 N
LONGITUDE: 126 13 23 W
ELEVATION: 1219 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6052096
EASTING: 679445

COMMODITIES: Silver Zinc Lead Gold

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: Actual minerals not mentioned - assume sphalerite and galena present.
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Porphyritic Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1937

COMMODITY	GRADE	
Silver	1652.5700	Grams per tonne
Gold	1.0300	Grams per tonne
Lead	7.0000	Per cent
Zinc	8.0000	Per cent

COMMENTS: Sample from mineralized quartz vein.
REFERENCE: Property File - Lay, D.,(1937): Oriole, Special Report.

CAPSULE GEOLOGY

The area is underlain by volcanic rocks of the Jurassic age Hazelton Group. The Oriole occurrence consists of a band of quartz in a shear zone in porphyritic andesite. A sample of mineralized quartz assayed 1.03 grams per tonne gold, 1652.57 grams per tonne silver, 7.0 per cent lead and 8.0 per cent zinc (Lay, 1937).

BIBLIOGRAPHY

EM OF 2001-03
EMPR MAP 69-1
EMPR PF (Lay, D., (1937): Oriole, EMPR AR Special Report)
GSC BULL 270
GSC OF 351

DATE CODED: 1986/11/20
DATE REVISED: 1988/06/25

CODED BY: GRF
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 273**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOX**, TUYA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 34 22 N
LONGITUDE: 126 14 37 W
ELEVATION: 1189 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6050746
EASTING: 678168

COMMODITIES: Silver, Lead, Zinc, Gold, Copper

MINERALS

SIGNIFICANT: Galena, Tetrahedrite, Sphalerite, Chalcopyrite, Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Breccia
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite Feldspar Porphyry Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1927

COMMODITY	GRADE	
Silver	2811.4000	Grams per tonne
Gold	2.0600	Grams per tonne
Lead	48.0000	Per cent

COMMENTS: A 10 centimetre wide sample from a seam of galena.
REFERENCE: Minister of Mines Annual Report 1927, page 148.

CAPSULE GEOLOGY

The area is underlain by volcanic rocks of the Jurassic Hazelton Group. The Box occurrence consists of two quartz veins in andesitic feldspar porphyry-breccia. Pyrite, chalcopyrite, sphalerite, galena and tetrahedrite occur in the quartz veins, which range from 0.3 metres to 1.2 metres wide, and strike northwest with a steep dip to the northeast. A sample from a seam of galena, approximately 10 centimetres wide, assayed 2.06 grams per tonne gold, 2811.4 grams per tonne silver and 48 per cent lead (Minister of Mines Annual Report 1927, page 148).

BIBLIOGRAPHY

EM OF 2001-03
EMPR AR 1927-148; 1933-99; 1934-C13
EMPR ASS RPT *15063, 16193
EMPR EXPL 1986, p. C355; 1987, p. C304
EMPR MAP 69-1
GSC BULL 270
GSC OF 351
GSC SUM RPT 1928, Part A, p. 75

DATE CODED: 1986/11/20
DATE REVISED: 1988/10/26

CODED BY: GRF
REVISED BY: LLD

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 274**
NATIONAL MINERAL INVENTORY: 093L12 Cu1

NAME(S): **AB**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 42 34 N
LONGITUDE: 127 45 01 W
ELEVATION: 1829 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6063176
EASTING: 580517

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcocite Bornite Chalcopyrite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal
TYPE: D03 Volcanic redbed Cu
L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Porphyritic Andesite
Amygdaloidal Andesite
Tuff
Lapilli Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1973
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	37.0000	Grams per tonne
Copper	0.8700	Per cent

COMMENTS: Chip sample across 20 centimetres.
REFERENCE: Assessment Report 4671.

CAPSULE GEOLOGY

Flows and tuffs of the Jurassic Hazelton Group underlie the area of the occurrence. The flows are mainly porphyritic, amygdaloidal andesites, while the tuffs occur in both massive and well-bedded forms. Mineralization appears to have been affected by both structural and stratigraphic controls. Copper-silver mineralization occurs over 60 metres along two parallel fault zones. The main zone consists of fracture fillings and veinlets of chalcocite and bornite in chloritized andesite over a zone 0.3 metres wide, which is exposed for about 6 metres. A chip sample across 20 centimetres gave 37 grams per tonne silver and 0.87 per cent copper (Assessment Report 4671). Another zone contains narrow chalcopyrite and chalcocite veins associated with a 0.6 metre wide fault zone.

BIBLIOGRAPHY

EMPR ASS RPT *4671
EMPR GEM 1973-346
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1986/12/05
DATE REVISED: 1987/06/25
CODED BY: GRF
REVISED BY: LLD
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093L 275**

NATIONAL MINERAL INVENTORY:

NAME(S): **CABIN (DOME MOUNTAIN)**, GRIZZLY (L.2900)

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 44 38 N
LONGITUDE: 126 37 53 W
ELEVATION: 1455 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Vein is on strike with and probably the same as the Boulder Vein (093L 276).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6068866
EASTING: 652466

COMMODITIES: Gold, Silver, Copper, Lead, Zinc, Antimony

MINERALS

SIGNIFICANT: Pyrite, Arsenopyrite, Galena, Chalcopyrite
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I02 Intrusion-related Au pyrrhotite veins; I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
DIMENSION:
STRIKE/DIP: 045/55E
TREND/PLUNGE:
COMMENTS: Dimension is 3 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite, Tuff

HOSTROCK COMMENTS: "Phyllitic maroon tuff unit" (1JT4); Fieldwork, 1986.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: CABIN VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Silver	126.0000	Grams per tonne
Gold	5.5000	Grams per tonne
Copper	0.8000	Per cent
Lead	4.8800	Per cent
Antimony	0.1400	Per cent
Zinc	2.4200	Per cent

COMMENTS: Cabin vein analysis.
REFERENCE: Fieldwork 1986, page 201-222.

CAPSULE GEOLOGY

The Cabin Vein is exposed in the banks of Federal Creek, striking northeast and dipping southeast. It averages 3 metres in width and contains abundant pyrite with lesser amounts of arsenopyrite, galena and chalcopyrite. The vein crosscuts the regional foliation in a narrow zone of strongly altered (silicified) and foliated green andesites and tuffs of the Lower Jurassic Hazelton Group (Telkwa Formation). In 1987 assays over 1.2 metres gave 10.9 grams per tonne gold. In 1981 samples assayed 8.3 grams per tonne gold, 2832 grams per tonne silver, 1 per cent copper, 1.73 per cent lead and 1.88 per cent zinc.

The Boulder Vein (MINFILE 093L 276) is likely the same as the Cabin vein, occurring 350 metres along strike to the east. The combined length of the two (?) veins exceed 750 metres.

FIELDWORK 1986, p. 209

CAPSULE GEOLOGY

TABLE 3 - CABIN VEIN ANALYSES
(all values in p.p.m.)

	Au	Ag	Cu	Pb	Zn	Co	Ni	Mo	Cd	Hg	As	Sb	Ba
8	5.5	126	8000	48800	24200	2	14	4	410	7.0	1700	1400	68
8A	8.2	77	4000	28300	22700	2	14	6	380	4.8	887	566	34
8B	4.1	157	6800	4200	4900	14	12	12	78	0.4	154	68	50
8C	7.5	370	34600	3800	13400	8	10	<4	255	1.9	1700	2800	135
8D	<0.3	<10	320	110	540	12	<2	<4	6	0.1	20	26	1920
12	12.3	106	19000	3300	6700	6	11	4	124	8.4	850	1400	139
12A	<0.3	<10	142	40	255	16	3	<4	<1	<.1	52	<5	1102

8 Quartz vein, Cabin vein in creek.; 8A Quartz vein, Cabin vein in creek; 8B Quartz vein, Cabin vein in creek.; 8C Quartz vein, Cabin vein in creek; 8D Altered volcanic, Cabin vein in creek; 12 Quartz vein, Cabin vein adit dump; 12A Altered volcanic, Cabin vein adit dump.

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EMPR AR 1922-103; 1923-112; 1924-96
GSC BULL 270
EMPR EXPL *1987, pp. B54,B55,C306
EMPR MAP 69-1
GCNL #185, 1982; #24,#178, 1985
IPDM Nov. 1985
EMPR ASS RPT 15614, 15659, 16171
EMPR OF 1987-1
GSC OF 351

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/08/24 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 276** NATIONAL MINERAL INVENTORY:

NAME(S): **DOME MOUNTAIN**, BOULDER, ARGILLITE

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093L10E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 54 44 42 N NORTHING: 6069007
LONGITUDE: 126 37 24 W EASTING: 652980
ELEVATION: 1418 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Dome Mountain about 38 kilometres east of Smithers. The Boulder vein is partially on Lot 2900, on strike with, and probably the same as the Cabin occurrence (093L 275).

COMMODITIES: Gold Silver Zinc Lead

MINERALS
SIGNIFICANT: Sphalerite Gold Galena Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Sericite Chlorite Epidote Quartz Carbonate Pyrite
ALTERATION TYPE: Sericitic Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I01 Au-quartz veins I02 Intrusion-related Au pyrrhotite veins
I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
DIMENSION: 150 x 2 Metres STRIKE/DIP: 090/40S TREND/PLUNGE:
COMMENTS: Boulder vein.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Amygdaloidal Flow
Lapilli Tuff
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Combined YEAR: 1994
QUANTITY: 200768 Tonnes

COMMODITY	GRADE	
Gold	14.9000	Grams per tonne

COMMENTS: Current in situ possible, probable and proven reserves of the Boulder and Argillite veins.
REFERENCE: George Cross News Letter No.68 (April 11), 1994.

CAPSULE GEOLOGY

The Dome Mountain vein occurrence is located on the eastern limb of a southeast plunging open anticline and cuts across a thick sequence of amygdaloidal flows and lapilli tuffs of the Lower-Middle Jurassic Hazelton Group, Nilkitkwa Formation. Rocks in the hanging wall are sericitized near the vein and grade outward into strong chlorite alteration with local concentrations of epidote, quartz, carbonate and pyrite. Footwall rocks are generally less altered.

The quartz-carbonate vein averages about 2.7 metres in width and has a sharp footwall contact that appears to be sheared with associated gouge development. The vein is coincident with a narrow, weakly developed zone of bleached volcanic rocks. The hanging wall contact is gradational with a zone of pervasive sericite alteration that extends several metres into the wallrock. Both barren and galena-sphalerite-bearing quartz stringers occur within this altered zone. Quartz stringers, with or without carbonate stringers are common within the chlorite-altered volcanic rocks away from the main

CAPSULE GEOLOGY

vein.

The Boulder vein and an associated splay are well-defined along a 150 metre exploration drift completed in 1987. The vein strikes east and dips between 40 to 60 degrees south. It is a brecciated to massive quartz-carbonate vein cut and offset by several shear zones that have a similar trend to it. The vein pinches and swells from thicknesses of less than 1.0 metre to about 15.0 metres.

Sulphide minerals occur in fractures or form massive banded concentrations within the quartz vein. Higher grade sections host semi-massive to massive concentrations of sulphides with coarse-grained crystal aggregates, fracture-fillings and disseminations. Gold occurs as fine grains along pyrite boundaries or is disseminated in quartz-carbonate microveinlets.

The Boulder Creek vein extends southeastward into the Argillite zone which comprises an irregular network of auriferous quartz veins within argillite of the Nilkitkwa Formation. This zone is at a higher stratigraphic level than Boulder Creek but the zones are mineralogically similar with the best gold grades occurring where the quartz veins contain sphalerite and galena.

Current in situ possible, probable and proven reserves of the Boulder and Argillite veins are 200,768 tonnes grading 14.9 grams per tonne gold. The cutoff grade is 10.2 grams per tonne gold and the minimum mining width is 1.6 metres (horizontal) and 2.0 metres (vertical) (George Cross News Letter No.68 (April 11), 1994).

In 1991, ore mined (5079-tonne bulk sample) from the upper level of the Boulder zone was sent in two lots to the Equity Silver mine (093L 001) and the Premier mine (104B 054) to test for cost effectiveness of milling. Recoveries from the initial 3205 tonnes of ore custom milled at the Premier mine mill were 86,179 grams of gold and 136,982 grams of silver. The operator of the mine (Timmins Nickel) has reported development will allow a production rate of 4535 to 5442 tonnes per month at an anticipated grade of 17.14 grams per tonne gold (George Cross News Letter No.6, 1992).

A second portal has been collared at the 1280-metre level approximately 500 metres to the east of the existing portal at the 1370-metre level.

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EMPR EXPL *1987, pp. B53-B58,C306
EMPR FIELDWORK 1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208
EMPR INF CIRC 1993-13
EMPR MAP 65 (1989); 69-1
EMPR OF 1987-1; 1992-1; 1992-3; 1994-1
EMPR PF (Canadian-United Minerals Inc., Public presentation by President (L. Ostensoe) at Hudson Bay Lodge, Smithers, 1986; Teeshin Resources Ltd., 1987 Annual Report; Geology notes from CIM District 6 meeting, 1986)
EMR MIN BULL MR 223 B.C. 231
GSC BULL 270
GSC OF 351
GCNL #9,#15,#19,#27,#31,#112,#130,#176,#182,#192,#207, 1986; #94, 1987; #17(Jan.25),#100(May 25),#105(June 1),#115(June 15), #143(Jul.26),#179(Sept.18),#233(Dec.5),#241(Dec.15), 1989; #2(Jan.3),#12(Jan.17),#24(Feb.2),#29(Feb.9),#33(Feb.15), #59(Mar.23),#124(Jun.27),#172(Sept.6),#226(Nov.22), 1990; #116(June 17),*#180(Sept.18),#239(Dec.12), 1991; #6(Jan.9), #24(Feb.4),#46(Mar.5),#47(Mar.6),#117(June 17),#133(July 10), 1992; #68(Apr.11), 1994
IPDM Feb. 1986
N MINER Dec.30, 1985; Jan.20,27, Feb.17,24, May 12, 1986; July 20, Aug.22, 1988; Apr.10, June 5, Aug.7, Dec.18, 1989; Sept.10, Oct.8, 1990; July 1, 1991; Feb.10, Mar.30, Aug.3, 1992
MIN REV March/April 1989
N MINER MAG Jan., 1990
NW PROSP Jan./Feb., Sept./Oct. 1989
PERS COMM (C. Stewart, September 10, 1987)
V STOCKWATCH July 21, 1987; June 17, July 26, 1989
WWW http://www.infomine.com/index/properties/DOME_MOUNTAIN.html
Teeshin Resources Ltd., (1988): Stage I Report, Volume 1, Environmental Assessment

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1989/04/04 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 277**

NATIONAL MINERAL INVENTORY:

NAME(S): **9800 (DOME MOUNTAIN)**, NO. 4 (L.2914)

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 44 17 N
LONGITUDE: 126 37 11 W
ELEVATION: 1350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6068243
EASTING: 653239

COMMODITIES: Gold, Silver, Zinc, Lead, Copper, Arsenic

MINERALS
SIGNIFICANT: Sphalerite, Galena, Arsenopyrite, Chalcopyrite, Scorodite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Stockwork, Massive, Disseminated
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, I02 Intrusion-related Au pyrrhotite veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Shale
Tuff
Graphitic Shale

HOSTROCK COMMENTS: "Phyllitic maroon tuff unit" (1JT4); Fieldwork, 1986.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: 9800

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1987

COMMODITY	GRADE	
Silver	1809.0000	Grams per tonne
Arsenic	1.8000	Per cent
Gold	76.6100	Grams per tonne
Copper	0.7000	Per cent
Lead	14.7000	Per cent
Zinc	29.8000	Per cent

COMMENTS: Massive sulphide from 9800 zone, Dome Mountain.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

Mineralization at 9800 zone is a discordant vein which cuts stratigraphy and cleavage. Mineralization occurs as (1) foliated to massive sphalerite-galena-pyrite-chalcopyrite layers and lenses, and (2) white quartz veins and stringers with disseminated pyrite, sphalerite, and galena. Quartz and massive sulphide vein contacts with hosting shale and grey tuff are sharp. Hangingwall alteration is limited to minor quartz veining extending less than 20 centimetres into the overlying black shale. These veins are much lower grades. Structurally below the vein is a zone of white quartz stringers (stockwork). Several veins are folded and contorted. The host grey tuff is bleached and contains disseminated arsenopyrite needles, scorodite and pyrite. Sphalerite, galena and pyrite veins and patches occur locally. The stockwork zone is cut by anastomosing shear planes.

In detail, stratigraphic and structural locations of the vein varies on the north end of the present workings (Aug. 19, 1986). The vein is at a sheared, black graphitic contact of graphitic shale and fine-grained grey tuff. A fault contact is evident because bedding and cleavage are parallel in the black shale but in angular

CAPSULE GEOLOGY

discordance with the tuff cleavage. Layering in the vein is subparallel to the fault contact. The host rock is Lower Jurassic Nilkitkwa Formation (Hazelton Group).

FIELDWORK 1986, p. 213
TABLE 5 - 9800 ZONE ANALYSES
(all values in p.p.m.)

No.	Au	Ag	Cu	Pb	Zn	Mo	Hg	As
254-4	76.61	1809	7000	147000	298000	<5	11.36	18000

254-4 Massive sulphide, Dome Mt. 9800 Zone

In 1986, 50.8 tonnes of ore was shipped from the 9800 Showing and produced 30.17 grams per tonne gold and 771.4 grams per tonne silver.

BIBLIOGRAPHY

EMPR FIELDWORK 1984, pp. 193-213; *1986, pp. 201-222
EMPR PF (Rpt. by A.J. Gaul, 1922; *Canadian-United Minerals Inc. 1987; Teeshin Resources Ltd., 1987 Annual Report)
GCNL #178, 1985; #130,#176, 1986
N MINER Jan 6, 1986
IPDM Nov 1985
EMPR EXPL 1987, p. C306
GSC BULL 270
EMPR MAP 69-1
EMPR ASS RPT 15614, 15659, 16171
EMPR OF 1987-1
GSC OF 351

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/03/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 278**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHANCE (DOME MOUNTAIN)**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 44 55 N
LONGITUDE: 126 36 51 W
ELEVATION: 1350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: 750 metres southwest of Free Gold (093L 023), in bed of Camp Creek, a small southeast flowing tributary of Federal Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069429
EASTING: 653556

COMMODITIES: Gold, Silver, Copper, Zinc, Lead, Barite, Antimony

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrite, Barite
ASSOCIATED: Quartz, Barite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, I02 Intrusion-related Au pyrrhotite veins
SHAPE: Bladed
DIMENSION: 0120 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Dimension of deposit is 120 centimetres wide. Has a steep northeast dip.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff

HOSTROCK COMMENTS: "Fragmental volcanic unit" (1JT3); Fieldwork, 1986.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: CHANCE VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Gold	2.7000	Grams per tonne
Barite	0.0282	Per cent
Copper	0.1500	Per cent
Lead	0.0050	Per cent
Antimony	0.0298	Per cent
Zinc	0.0590	Per cent

COMMENTS: Chance vein.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

A 120 centimetre wide, steeply northeast dipping quartz vein is exposed in a bed of Camp Creek, hosted in the foliated and altered tuffs of the Lower Jurassic Telkwa Formation (Hazelton Group). The surface exposure is oxidized and there is 10 centimetres of gouge bordering the vein walls. Mineralization consists of coarse-grained pyrite in the vein. The wallrocks contain an anomalous concentration of barium. "Fair" gold values are reported (Annual Report 1923).

FIELDWORK 1986, pp. 201-222
TABLE 13 - CHANCE VEIN ANALYSES
(all values in p.p.m.)

	Au	Ag	Cu	Pb	Zn	Co	Ni	Mo	Cd	Hg	As	Sb	Ba
35	2.7	<10	1500	58	590	6	16	<4	10	2.4	96	298	282
35A	<0.3	<10	60	24	110	15	10	<4	<1	0.1	14	<5	1962

CAPSULE GEOLOGY

35 Quartz vein, Chance vein; 35A Altered volcanic, Chance vein.

BIBLIOGRAPHY

EMPR FIELDWORK 1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208
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EMPR EXPL 1987, p. C306
GSC BULL 270
EMPR MAP 69-1
EMPR ASS RPT 15614, 15659, 16171
EMPR OF 1987-1
GSC OF 351

DATE CODED:	1987/03/13	CODED BY:	MM	FIELD CHECK:	N
DATE REVISED:	1988/03/13	REVISED BY:	LLD	FIELD CHECK:	N

MINFILE NUMBER: **093L 279**

NATIONAL MINERAL INVENTORY:

NAME(S): **JANE (DOME MOUNTAIN)**, HIGGINS, CHISHOLM, SNOWDROP (L.2904)

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 44 20 N
LONGITUDE: 126 38 26 W
ELEVATION: 1620 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On southwest slope of Dome Mountain Ridge.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6068290
EASTING: 651894

COMMODITIES: Gold, Silver, Copper, Barite, Zinc, Lead

MINERALS

SIGNIFICANT: Chalcopyrite, Sphalerite, Galena, Pyrite
ASSOCIATED: Quartz, Barite
ALTERATION: Sericite
ALTERATION TYPE: Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: I02 Intrusion-related Au pyrrhotite veins, I05 Polymetallic veins Ag-Pb-Zn±Au
COMMENTS: Lenticular. Dimension ranges from 30-130 centimetres wide by 150 metres. Strike/dip is northwest 50 degrees north.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff

HOSTROCK COMMENTS: "Phyllitic maroon tuff unit" (1JT4); Fieldwork, 1986.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: JANE VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Silver	45.0000	Grams per tonne
Gold	4.8000	Grams per tonne
Barite	1.0600	Per cent
Copper	4.0300	Per cent
Lead	0.0070	Per cent
Zinc	0.0140	Per cent

COMMENTS: Jane vein with trace barite.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

The Jane vein occurs in a zone of strongly foliated tuffs of the Lower Jurassic Telkwa Formation (Hazelton Group). The vein is 30 to 130 centimetres wide and trends northwest dipping north, with a narrow zone of sericite alteration along its margins. Variable amounts of sulphides are present including shattered pyrite and chalcopyrite. In 1922, a test sample of 100 lbs. taken over 0.6 metres assayed 148.8 grams per tonne gold, 358.6 grams silver and 4.6 per cent copper. Assays in 1984, over 1.5 metres give 68.6 grams per tonne gold and 140.6 grams per tonne silver.

Ore was mined from the Chisholm vein, located southeast of the Jane vein. In 1918, 12.7 tonnes of ore produced 82.28 grams per tonne gold.

In 1986, a grab sample from the Dome vein, located on the Dome 4 claim approximately 1.0 kilometres northwest of the Jane vein, assayed 4.11 grams per tonne gold. Trace barite is associated with the quartz veining.

CAPSULE GEOLOGY

FIELDWORK 1986, pp. 201-222
TABLE 7 - JANE VEIN ANALYSES
(all values in p.p.m.)

	Au	Ag	Cu	Pb	Zn	Co	Ni	Mo	Cd	Hg	As	Sb	Ba
65	2.0	<10	6200	70	39	6	20	56	<1	0.4	14	<5	236
63	4.8	45	40300	140	90	8	17	10	<1	0.2	320	<5	10600
68A	<0.3	<10	92	60	980	19	5	<4	<1	0.1	<10	<5	481
65A	<0.3	<10	1100	16	231	23	8	10	<1	0.1	20	<5	2634

65 - surface trench, quartz vein with trace chalcopyrite; 63 - surface trench, quartz vein with chalcopyrite, trace barite; 68A - surface sample, altered phyllitic tuff; 65A - surface trench, altered wallrock

BIBLIOGRAPHY

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EMPR AR *1918-122; 1922-100; 1923-111; 1924-96
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EMPR OF 1987-1
EMPR EXPL 1987, p. C306
GSC BULL 270
EMPR MAP 69-1
EMPR ASS RPT 15614, 15659, 16171
GSC OF 351

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/08/24 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 280** NATIONAL MINERAL INVENTORY:

NAME(S): **HOOPES (DOME MOUNTAIN)**, SNOWDROP (L.2904)

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 44 40 N
LONGITUDE: 126 38 28 W
ELEVATION: 1590 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On southeast side of Dome Mountain.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6068907
EASTING: 651838

COMMODITIES: Gold Silver Lead Zinc Copper

MINERALS
SIGNIFICANT: Chalcopyrite Galena Sphalerite Pyrite
ASSOCIATED: Quartz Barite Albite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epigenetic
TYPE: I02 Intrusion-related Au pyrrhotite veins I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
COMMENTS: Dimension of deposit is a 1 metre wide vein. Strike/dip is northeast/ 60 degrees northwest.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Breccia

HOSTROCK COMMENTS: "Fragmental volcanic unit" (1JT3); Fieldwork, 1986.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: HOOPES VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	44.0000	Grams per tonne
Gold	2.4000	Grams per tonne
Copper	0.0100	Per cent
Lead	0.0170	Per cent
Zinc	0.0240	Per cent

COMMENTS: Hoopes quartz vein.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

A steep dipping quartz vein with abundant pyrite and lesser chalcopyrite is exposed in trenches in one area. In an adjacent trench, a 20 metre zone of pyrite with lesser sphalerite and galena occurs. This zone is in a quartz and albite healed breccia and may be flat lying.

The zones occur in strongly foliated tuff that over- lies massive agglomerate (Lower Jurassic Telkwa Formation of the Hazelton Group). The vein and breccia zone appear to crosscut the foliation.

Assays in 1982 were 14.4 grams per tonne gold, 60.3 grams per tonne silver, 1.25 per cent copper, 0.5 per cent lead and 3.55 per cent zinc. A grab sample in 1987 assayed 34.3 grams per tonne gold. Traces of barite were found in the quartz veining.

From Fieldwork 1986, pp. 201-222:
TABLE 8 - HOOPES VEIN ANALYSES
(all values in ppm)

	Au	Ag	Cu	Pb	Zn	Co	Ni	Mo	Cd	Hg	As	Sb	Ba
48A	2.4	44	102	168	240	25	8	100	<1	1.5	30	<5	<10

CAPSULE GEOLOGY

50	<0.3	<10	172	42	590	24	9	20	<1	0.3	<10	<5	6383
50A	<0.3	<10	34	12	372	17	5	<4	<1	<.1	<10	<5	1793
51	36.0	550	34800	1800	326	19	25	64	4	3.0	220	<5	76

48-A Quartz vein, Hoopes; 50 Quartz vein, Hoopes; 50-A Altered volcanic, Hoopes; 51 Quartz vein, Hoopes.

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GCNL #185, 1982
EMPR EXPL 1987, p. C306
GSC BULL 270
EMPR MAP 69-1
EMPR ASS RPT 15614, 15659, 16171
EMPR OF 1987-1
GSC OF 351

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/03/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 281**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAVEN (DOME MOUNTAIN)**, RAVEN (L.2897)

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 44 55 N
LONGITUDE: 126 39 46 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: On north side of Dome Mountain.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069324
EASTING: 650428

COMMODITIES: Gold, Silver, Copper, Zinc, Lead, Arsenic

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: I02 Intrusion-related Au pyrrhotite veins; I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Irregular
MODIFIER: Folded

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff

HOSTROCK COMMENTS: "Fragmental volcanic unit" (1JT3); Fieldwork, 1986.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: DUMP
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1987

COMMODITY	GRADE	
Silver	235.0000	Grams per tonne
Arsenic	0.0420	Per cent
Gold	69.0000	Grams per tonne
Copper	2.9200	Per cent
Lead	0.0540	Per cent
Zinc	0.0140	Per cent

COMMENTS: Raven quartz vein dump.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

The host rocks are tuffs of the Lower Jurassic Telkwa Formation (Hazelton Group) which have been strongly foliated and subsequently folded. The vein is up to 20 centimetres wide and lies conformable to the foliation (it has also been folded); shattered pyrite and chalcopyrite are abundant. Grab samples in 1987 ran 16.1 grams per tonne gold.

TABLE 12 - RAVEN VEIN ANALYSES
(all values in p.p.m.)

	Au	Ag	Cu	Pb	Zn	Co	Ni	Mo	Cd	Hg	As	Sb	Ba
124	2.0	28	4000	84	265	25	14	22	<1	0.1	88	5	170
124A	69.0	235	29200	540	136	9	10	8	4	0.2	420	5	<10
124B	33.6	72	18300	284	83	12	12	18	1	0.1	148	5	44

124 Quartz vein, Raven vein dump; 124A Quartz vein, Raven vein dump; 124B Quartz vein, Raven vein dump.

BIBLIOGRAPHY

EMPR FIELDWORK *1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208

BIBLIOGRAPHY

EMPR AR 1922-100
EMPR PF (Canadian-United Minerals Inc. 1987; Teeshin Resources Ltd., 1987 Annual Report)
EMPR EXPL 1987, p. C306
GSC BULL 270
EMPR MAP 69-1
EMPR ASS RPT 15614, 15659, 16171
EMPR OF 1987-1
GSC OF 351

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/03/12 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 282**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAWK (DOME MOUNTAIN)**, HAWK (L.2888)

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 44 59 N
LONGITUDE: 126 38 53 W
ELEVATION: 1635 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the east side of Dome Mountain.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069479
EASTING: 651371

COMMODITIES: Gold, Silver, Arsenic, Zinc, Lead, Copper, Barite

MINERALS

SIGNIFICANT: Pyrite, Sphalerite, Galena, Chalcopyrite, Arsenopyrite, Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: I02 Intrusion-related Au pyrrhotite veins; I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
DIMENSION:
STRIKE/DIP: 200/
TREND/PLUNGE:
COMMENTS: Dimension ranges from 20 to 30 centimetres wide. Has a steep north-east dip.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff

HOSTROCK COMMENTS: "Fragmental volcanic unit" (1JT3); Fieldwork, 1986.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: HAWK VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Silver	10.0000	Grams per tonne
Arsenic	0.4900	Per cent
Gold	0.3000	Grams per tonne
Copper	0.2000	Per cent
Zinc	0.0270	Per cent

COMMENTS: Hawk quartz vein.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

The quartz veins are 20 to 30 centimetres wide and dip steeply to the northeast, striking southeast, and contain mainly shattered pyrite with lesser amounts of sphalerite, galena, chalcopyrite and arsenopyrite. The host rocks are tuffs of the Lower Jurassic Telkwa Formation (Hazelton Group) which have a well developed foliation of slatey cleavage which dips moderately to the northeast. Samples in 1922 assayed 44.6 grams gold per tonne and 343 grams per tonne silver. A grab sample in 1987 assayed 32.2 grams per tonne gold.

FIELDWORK 1986, pp. 201-222
TABLE 9 - HAWK VEIN ANALYSES
(all values in p.p.m.)

	Au	Ag	Cu	Pb	Zn	Co	Ni	Mo	Cd	Hg	As	Sb	Ba
2G	<0.3	<10	51	40	18	<2	10	4	<1	<.1	28	4	703
3C	<0.3	<10	54	20	288	16	7	4	1	<.1	25	<3	1702
5	<0.3	<10	2000	30	268	6	10	4	<1	<.1	4900	12	<10
5A	<0.3	<10	580	206	196	20	7	4	2	<.1	5400	3	617

CAPSULE GEOLOGY

2G Quartz vein, Hawk vein; 3C Altered volcanic, Hawk vein; 5 Quartz vein, Hawk vein; 5A Altered volcanic, Hawk vein.

BIBLIOGRAPHY

EMPR FIELDWORK 1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208
EMPR PF (Rpt. by A.J. Gaul, 1922; Canadian-United Minerals Inc. 1987; Teeshin Resources Ltd., 1987 Annual Report)
GCNL #178, 1985
IPDM Nov, 1985
EMPR EXPL 1986-356; 1987-C306
EMPR ASS RPT 14407, 16171
EMPR OF 1987-1
GSC OF 351
GSC BULL 270
EMPR MAP 69-1

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/08/17 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 283**

NATIONAL MINERAL INVENTORY:

NAME(S): **PTARMIGAN (DOME MOUNTAIN)**, PTARMIGAN (L.2893)

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15E
BC MAP:
LATITUDE: 54 45 43 N
LONGITUDE: 126 39 28 W
ELEVATION: 1470 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6070818
EASTING: 650700

COMMODITIES: Gold, Silver, Arsenic, Zinc, Lead, Copper

MINERALS
SIGNIFICANT: Arsenopyrite, Sphalerite, Galena, Pyrite
ASSOCIATED: Quartz, Barite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: I02 Intrusion-related Au pyrrhotite veins; I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
DIMENSION: 0075 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Dimension of deposit is 75 centimetres wide. Dips steeply southwest or northeast.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Schistose Andesite

HOSTROCK COMMENTS: "Fragmental volcanic unit" Telkwa Formation (1JT3); Fieldwork, 1986.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: DUMP
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1987

COMMODITY	GRADE	
Silver	110.0000	Grams per tonne
Arsenic	2.2500	Per cent
Gold	134.7000	Grams per tonne
Copper	0.1600	Per cent
Lead	0.2100	Per cent
Zinc	0.3800	Per cent

COMMENTS: Ptarmigan quartz vein dump.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

Four parallel quartz veins are exposed up to 75 centimetres wide, dipping steeply southwest or northeast. The host rock is strongly schistose (but unaltered) andesite of the Lower Jurassic Telkwa Formation (Hazelton Group). On the surface the veins contain pyrite and arsenopyrite rich bands and underground the No. 2 vein is reported to contain lenses of galena, pyrite and sphalerite.

FIELDWORK 1986, pp. 201-222
TABLE 11 - PTARMIGAN VEIN ANALYSES
(all values in p.p.m.)

	Au	Ag	Cu	Pb	Zn	Co	Ni	Mo	Cd	Hg	As	Sb	Ba
112	1.4	<10	310	126	670	25	13	6	9	0.2	1600	<3	<10
114B	120.7	74	1200	2700	3400	11	15	10	51	2.9	4000	22	<10
116	134.7	110	1600	2100	3800	<2	7	<4	43	0.9	22500	136	1544
116B	37.7	82	1700	3000	16800	2	9	<4	192	2.0	16000	127	68
116A	159.0	257	2700	28200	16500	<2	10	20	201	2.1	55800	71	29

112 Quartz vein, Ptarmigan vein dump; 114B Quartz vein, Ptarmigan

CAPSULE GEOLOGY

vein dump; 116 Quartz vein, Ptarmigan vein dump; 116B Quartz vein, Ptarmigan vein dump; 116A Quartz vein, Ptarmigan vein dump.

BIBLIOGRAPHY

EMPR FIELDWORK 1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208
EMPR AR 1923-111; 1924-97
EMPR PF (Canadian-United Minerals Inc. 1987; Teeshin Resources Ltd., 1987 Annual Report)
EMPR EXPL 1987, p. C306
GSC BULL 270
EMPR MAP 69-1
EMPR ASS RPT 15614, 15659, 16171
EMPR OF 1987-1
GSC OF 351

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/03/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 284**

NATIONAL MINERAL INVENTORY:

NAME(S): **EAGLE (DOME MOUNTAIN)**, EAGLE (L.2889)

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15E
BC MAP:
LATITUDE: 54 45 25 N
LONGITUDE: 126 39 16 W
ELEVATION: 1539 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Eagle Vein occurs 275 metres northeast of the Gem (093L 285).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6070269
EASTING: 650933

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I02 Intrusion-related Au pyrrhotite veins I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
COMMENTS: Steep northeast dip.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: EAGLE VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	34.3000	Grams per tonne

COMMENTS: Grab sample from Eagle vein.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

A poorly exposed, leached and decomposed quartz vein, 20 centimetres wide, dips steeply northeast in weakly altered tuffs of the Lower Jurassic Telkwa Formation (Hazelton Group). A sample across the full width assayed 38.4 grams gold per tonne and 24 grams per tonne silver (Gaul, 1922). Recent grab samples assayed up to 34.3 grams per tonne gold (Fieldwork, 1986).

BIBLIOGRAPHY

EMPR FIELDWORK *1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208
EMPR PF (*Rpt. by A.J. Gaul, 1922; Canadian-United Minerals Inc. 1987; Teeshin Resources Ltd., 1987 Annual Report)
EMPR EXPL 1987, p. C306
GSC BULL 270
EMPR MAP 69-1
EMPR ASS RPT 15614, 15659, 16171
EMPR OF 1987-1
GSC OF 351

DATE CODED: 1987/03/06
DATE REVISED: 1988/03/13

CODED BY: PD
REVISED BY: LLD

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **093L 285**

NATIONAL MINERAL INVENTORY:

NAME(S): **GEM (DOME MOUNTAIN)**, GEM (L.2896)

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15E
BC MAP:
LATITUDE: 54 45 20 N
LONGITUDE: 126 39 28 W
ELEVATION: 1560 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: 750 metres along strike from Hawk Vein (093L 282).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6070107
EASTING: 650724

COMMODITIES: Gold, Silver, Zinc, Lead, Copper, Arsenic

MINERALS
SIGNIFICANT: Chalcopyrite, Arsenopyrite, Sphalerite, Galena, Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: I02 Intrusion-related Au pyrrhotite veins; I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Bladed
COMMENTS: Dip varies moderately northeast to steep southwest. Dimension of deposit is 0.3 to 1.0 metres wide, and strike/dip is 110 northeast and southwest.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff

HOSTROCK COMMENTS: "Fragmental volcanic unit" (1JT3); Fieldwork, 1986.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: GEM VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1987

COMMODITY	GRADE	
Silver	600.0000	Grams per tonne
Arsenic	1.3800	Per cent
Gold	136.0000	Grams per tonne
Copper	3.1300	Per cent
Lead	0.6100	Per cent
Zinc	4.0000	Per cent

COMMENTS: Gem quartz vein.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

Four parallel quartz veins, 0.3 to 1 metre wide, strike southeast and dip moderately northeast to steeply southwest. The host rock is medium to thickly bedded tuffs of the Lower Jurassic Telkwa Formation (Hazelton Group), which are weak to moderately foliated. The veins contain shattered pyrite and lesser amounts of chalcopyrite, arsenopyrite, sphalerite and galena. Assays across the main vein (61 centimetres) run 87.8 grams per tonne gold and 190.7 grams per tonne silver (Gaul, 1922). Recent (1987) grab samples run 94.6 grams gold per tonne.

FIELDWORK 1986, pp. 201-222
TABLE 10 - GEM VEIN ANALYSES
(all values in p.p.m)

	Au	Ag	Cu	Pb	Zn	Co	Ni	Mo	Cd	Hg	As	Sb	Ba
110A	35.0	88	7300	1700	70200	8	9	6	<1	4.3	705	117	38
110B	8.2	<10	770	192	185	8	13	12	28	0.5	100	<3	100
110	136.0	600	31300	6100	40000	7	10	12	580	2.6	13800	345	44

CAPSULE GEOLOGY

110A Quartz vein, Gem vein; 110B Quartz vein, Gem vein; 110 Quartz vein, Gem vein.

BIBLIOGRAPHY

EMPR FIELDWORK *1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208
EMPR PF (Rpt. by A.J. Gaul, 1922; Canadian-United Minerals Inc. 1987; Teeshin Resources Ltd., 1987 Annual Report)
EMPR EXPL 1987, p. C306
EMPR MAP 69-1
GSC BULL 270
EMPR ASS RPT 15614, 15659, 16171
EMPR OF 1987-1
GSC OF 351

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/03/13 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 286**

NATIONAL MINERAL INVENTORY:

NAME(S): **TINA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15E
BC MAP:
LATITUDE: 54 47 45 N
LONGITUDE: 126 38 41 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located in lower Byron Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6074616
EASTING: 651413

COMMODITIES: Copper, Gold, Silver, Zinc, Arsenic, Antimony

MINERALS
SIGNIFICANT: Tetrahedrite, Tennantite
ALTERATION: Malachite, Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated
CLASSIFICATION: Epigenetic, Industrial Min.
TYPE: I02 Intrusion-related Au pyrrhotite veins; I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Irregular
MODIFIER: Sheared
COMMENTS: Dimension of deposit is 1.5 metres wide and strike/dip is steep west.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Rhyolite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	10.0000	Grams per tonne
Arsenic	0.4900	Per cent
Gold	0.0200	Grams per tonne
Copper	0.5500	Per cent
Antimony	0.0740	Per cent
Zinc	0.1200	Per cent

COMMENTS: Baron quartz veins from Tina prospect in Byron Creek.
REFERENCE: Fieldwork 1986, pages 201-222.

CAPSULE GEOLOGY

The showing in Lower Byron Creek consists of a small zone of irregular patches of malachite, azurite, chalcopyrite and tetrahedrite-tennantite (XRD identification) hosted in massive rhyolite of the Lower Jurassic Nilkitkwa Formation (Hazelton Group). Further upstream, several barren, 5 to 10 centimetres thick quartz-carbonate veins occur along shear zones. Several grab samples (1986) revealed no significant gold or silver values.

FIELDWORK 1986, p. 216
TABLE 15 - TINA COPPER PROSPECT ANALYSES
(all values in p.p.m.)

	Au	Ag	Cu	Zn	Mo	Hg	As	Sb
49-1	<0.017	<10	18	200	9	0.06	<20	<10
50-3	<0.017	<10	18	200	9	0.06	<20	<10
50-5	0.020	<10	27	136	3	0.04	<20	<10
55-3	<0.017	<10	6	46	5	0.02	<20	<10
50-6	<0.020	<10	5500	1200	13	18.00	4900	743

note: Samples 50-3, 50-5, and 50-6 represent barren quartz veins in

CAPSULE GEOLOGY

shear zones from the Tina prospect.
49-1 Altered volcanic, Byron Creek; 50-3 Quartz vein, Tina prospect, Byron Creek; 50-5 Quartz vein, Tina prospect, Byron Creek; 55-3 Quartz vein, Tina prospect, Byron Creek; 50-6 Quartz vein, Tina prospect, Byron Creek.

BIBLIOGRAPHY

EMPR FIELDWORK 1984, pp. 193-213; 1986, pp. 201-222; 1988, pp. 195-208
EMPR OF 1987-1
GSC OF 351
EMPR EXPL 1987, p. C306
EMPR MAP 69-1
GSC BULL 270
EMPR ASS RPT 16171
Placer Dome File

DATE CODED: 1987/03/06 CODED BY: PD FIELD CHECK: Y
DATE REVISED: 1988/03/16 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 287**

NATIONAL MINERAL INVENTORY: 093L10 Cu2

NAME(S): **EUREKA (L.6473)**, GM, COPPERHILL, GROUSE MOUNTAIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 33 49 N
LONGITUDE: 126 43 10 W
ELEVATION: 1463 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on Lot 6473, along the north shore of Coppermine Lake on Grouse Mountain, 25.8 kilometres southeast of Telkwa; location of mineralized zone from Assessment Report 14256.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6048624
EASTING: 647450

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite, Limonite, Clay, Mica, Carbonate, Epidote
ALTERATION TYPE: Argillic, Propylitic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION:
STRIKE/DIP: 070/75N
TREND/PLUNGE:
COMMENTS: Mineralized quartz vein system.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Hazelton	Ashman	

LITHOLOGY: Tuffaceous Sediment/Sedimentary
Greywacke
Argillite
Shale
Tuff
Basic Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Silver	21.2560	Grams per tonne
Gold	4.4570	Grams per tonne
Copper	0.1800	Per cent

COMMENTS: 2.0 metre sample from a back hoe trench. Lead assayed 0.01 per cent, and zinc 0.17 per cent.
REFERENCE: Assessment Report 14256.

CAPSULE GEOLOGY

The showing occurs in Middle to Upper Jurassic Hazelton Group, Ashman Formation rocks. The Ashman Formation is mainly a sedimentary sequence comprised of marine black shale, argillite, siltstone and greywacke with intercalated tuffs and breccia (Fieldwork 1988, Figure 1-23-2).

Alteration has affected mainly feldspar and ferromagnesium minerals producing mica and clay minerals, chlorite, limonite, carbonates, and less commonly epidote.

The Hazelton rocks are intruded by dikes and small stocks of monzonite porphyry. The dikes range between 10 to 60 metres in width and strike north-northwest and dip moderately west-southwest.

The Eureka showing is a pyrite-chalcopyrite quartz vein system

CAPSULE GEOLOGY

dipping 75 degrees northwest and striking 070 degrees subparallel to the central part of the north shore of Coppermine Lake. The host rocks are green tuffaceous sedimentary rocks which are crosscut by an aphanitic basic dike near the quartz vein network.

On surface, the vein is traceable for 91 metres following a line of old sloughed trenches. In 1914, a sample across a width of 1.5 metres assayed trace gold, 164.5 grams per tonne silver, and 6.2 per cent copper (Minister of Mines Annual Report 1914, page 228).

In 1985, a 2.0 metre sample from a backhoe trench assayed 4.457 grams per tonne gold, 21.256 grams per tonne silver, 0.18 per cent copper, 0.01 per cent lead, and 0.17 per cent zinc. Another backhoe sample across 1.7 metres width assayed 1.029 grams per tonne gold, 66.855 grams per tonne silver, 1.93 per cent copper, 0.01 per cent lead, and 0.06 per cent zinc (Assessment Report 14256).

BIBLIOGRAPHY

EMPR AR *1914-228; 1916-127; 1920-349; 1937-C11; 1951-115; 1965-74
EMPR GEM 1970-158; *1972-397-417,*Fig. 49
EMPR ASS RPT 726, *6429, *9087, *12374, *14256
EMPR EXPL 1977-E196; *1980-344; *1983-444; *1985-C314
EMPR FIELDWORK *1988, pp. 195-208
GSC SUM RPT *1915, pp. 65-67, Map 1608
EMPR MAP 69-1
GSC MAP 671A
GSC OF 351
GSC BULL 270
Placer Dome File

DATE CODED: 1987/07/14 CODED BY: LLC FIELD CHECK: N
DATE REVISED: 1988/09/30 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 288**
NATIONAL MINERAL INVENTORY: 093L10 Zn4

NAME(S): **SCHORN**, LAKEVIEW (L.6284), GROUSE MOUNTAIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 33 30 N
LONGITUDE: 126 43 13 W
ELEVATION: 1432 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showings on Lot 6284 on Grouse Mountain at the south edge of Coppermine Lake, 25.8 kilometres southeast of Telkwa, location of mineralization from Geology, Exploration and Mining 1972, Figure 49.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6048035
EASTING: 647415

COMMODITIES: Zinc, Silver, Copper, Gold

MINERALS
SIGNIFICANT: Chalcopyrite, Sphalerite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite, Limonite, Mica, Clay, Epidote
ALTERATION TYPE: Argillic, Propylitic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb); G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Hazelton	Ashman	

LITHOLOGY: Greywacke
Argillite
Shale
Tuff
Breccia
Basic Dike
Feldspar Porphyry
Feldspar Biotite Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: OPENCUT
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1985

COMMODITY	GRADE	
Silver	175.5000	Grams per tonne
Gold	0.0300	Grams per tonne
Copper	2.3100	Per cent
Zinc	9.1600	Per cent

COMMENTS: 1.3 metre sample from an open cut. Lead assayed 0.02 per cent.
REFERENCE: Assessment Report 14256.

CAPSULE GEOLOGY

The showings occur in Middle to Upper Jurassic Hazelton Group, Ashman Formation rocks. The Ashman Formation is mainly a sedimentary sequence comprised of marine black shale, argillite, siltstone, greywacke with some intercalated tuffs and breccia (Fieldwork 1988, Figure 1-23-2).

Alteration has affected mainly the feldspar and ferromagnesium minerals producing mica and clay minerals, chlorite, limonite, carbonates, and less commonly epidote.

The Hazelton rocks are intruded by dikes and small stocks which strike north-northwest and dip west-southwest. These include feldspar porphyry, feldspar-biotite porphyry, and aphanitic basic dikes.

The Lakeview showing consists of two quartz veins enriched in chalcopyrite and sphalerite, exposed near the south shore of Copper-mine Lake. These veins strike across gently dipping greywacke and

CAPSULE GEOLOGY

argillaceous beds toward an aphanitic basic dike about 76 metres to the southwest.

The east vein, explored by an open cut 6 metres in length near lake level, contained an estimated 30 per cent sulphides. A 1.0 metre sample assayed trace gold, 178 grams per tonne silver, 2.28 per cent copper, 0.08 per cent lead, 13.6 per cent zinc, and 7.2 per cent iron (Geology, Exploration and Mining 1972, page 410).

In 1985, a 1.3 metre sample from an open cut assayed 0.17 grams per tonne gold, 474.2 grams per tonne silver, 4.97 per cent copper, 0.45 per cent lead, and 12.84 per cent zinc. A 1.0 metre sample from an old adit assayed 0.03 per cent gold, 174.5 grams per tonne silver, 2.31 per cent copper, 0.02 per cent lead, and 9.16 per cent zinc (Assessment Report 14256).

The Schorn zone is comprised of an assortment of veins and veinlets striking northeasterly at approximately 025 degrees from the contact of an aphanitic basic dike over 67 metres to a point near the southwest shore of Coppermine Lake. The mineralized veins crosscut gently dipping beds of dark brown tuff and grey siltstones.

The apparent main vein exposed in the trenches at the northeast end of the zone, is about 25 centimetres wide consisting of quartz and mineralized wall rock with 17 per cent combined pyrite, chalcopyrite, and sphalerite. An assay of this material yielded trace gold, 116.6 grams per tonne silver, 1.0 per cent copper, 0.03 per cent lead, 9.1 per cent zinc, and 3.86 per cent iron (Geology, Exploration and Mining 1972, page 410).

In 1985, a 0.25 metre sample from a hand dug trench assayed 0.34 grams per tonne gold, 134.4 grams per tonne silver, 0.89 per cent copper, 0.03 per cent lead, and 9.96 per cent zinc. Another 0.25 metre sample from an open cut assayed 0.03 grams per tonne gold, 343.2 grams per tonne silver, 1.90 per cent copper, 0.12 per cent lead, and 16.72 per cent zinc (Assessment Report 14256).

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EMPR GEM 1970-158; *1972-397-417,Fig. *49,52,53
EMPR EXPL *1977-E196; *1980-344; *1983-444; 1985-C314
EMPR ASS RPT 726, *6429, *9087, *12374, *14256
GSC MAP 671A
EMPR MAP 69-1
GSC OF 351
GSC BULL 270
EMPR FIELDWORK *1988, pp. 195-208
EMPR P *1990-2

DATE CODED: 1987/07/14 CODED BY: LLC FIELD CHECK: N
DATE REVISED: 1988/09/30 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 289**
NATIONAL MINERAL INVENTORY: 093L10 Zn5

NAME(S): **RAINSTORM**, BLACK FOX, GROUSE MOUNTAIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 33 44 N
LONGITUDE: 126 43 52 W
ELEVATION: 1380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located just north Crown Grant Lots 6472 and 6476 on Grouse Mountain, 25.7 kilometres southeast of Telkwa. Showing is located 61 metres east of the turnoff to the road to North Lake (see Geology, Exploration and Mining 1972, Figure 49).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6048445
EASTING: 646701

COMMODITIES: Zinc, Silver, Gold, Copper, Lead, Iron

MINERALS
SIGNIFICANT: Sphalerite, Chalcopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite, Limonite, Clay, Mica, Epidote
ALTERATION TYPE: Argillic, Propylitic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal, Industrial Min.
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Hazelton	Ashman	

LITHOLOGY: Siltstone
Greywacke
Andesitic Pyroclastic
Argillite
Basic Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine

INVENTORY

ORE ZONE: OPENCUT
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	57.6000	Grams per tonne
Gold	0.0020	Grams per tonne
Copper	0.1900	Per cent
Lead	0.6700	Per cent
Zinc	9.6400	Per cent

COMMENTS: 4.0 metre sample from an open cut.
REFERENCE: Assessment Report 14256.

CAPSULE GEOLOGY

The showings occur in Middle to Upper Jurassic Hazelton Group, Ashman Formation rocks. The Ashman Formation is mainly a sedimentary sequence comprised of marine black shale, argillite, siltstone and greywacke with intercalated tuffs and breccia Fieldwork 1988, Figure 1-23-2).

Alteration has affected mainly the feldspar and ferromagnesium minerals producing mica and clay minerals, chlorite, limonite, carbonates, and less commonly epidote.

The Hazelton rocks are intruded by dikes and small stocks which strike north-northwest and dip west-southwest. These include feldspar porphyry, biotite feldspar porphyry, and aphanitic basic dikes.

The Rainstorm zone consists of shallow-dipping sulphide rich lenses near the base of an andesitic pyroclastic unit above a thick

CAPSULE GEOLOGY

sequence of grey siltstones and greywacke. A sample taken across 0.9 metres containing three narrow seams comprised essentially of pyrite, sphalerite, and quartz assayed trace gold, 6.9 grams per tonne silver, 0.09 per cent copper, 0.04 per cent lead, 5.9 per cent zinc, and 7.07 per iron (Geology, Exploration and Mining 1972, page 412).

Immediately to the east, erosion has removed the andesitic pyroclastics and exposed two additional mineralized veinlets in the sedimentary sequence. The veinlets consist of pyrite, chalcopyrite, and sphalerite cutting sharply across gently dipping beds. A well mineralized sample assayed 0.34 grams per tonne gold, 116.6 grams per tonne silver, 1.15 per cent copper, 10.10 per cent zinc, 0.23 per cent lead, and 12.0 per cent iron (Geology, Exploration and Mining 1972, page 412).

A fourth showing further to the east consists of small veins leading away from the contact to an aphanitic basic dike which intrudes the sedimentary sequence and an outlier of andesite.

In 1985, a 4.0 metre sample from an open cut assayed 0.002 grams per tonne gold, 57.6 grams per tonne silver, 0.19 per cent copper, 0.67 per cent lead, and 9.64 per cent zinc. Another sample from a bulldozer trench, taken over 0.3 metre assayed 0.03 grams per tonne gold, 143.65 grams per tonne silver, 0.39 per cent copper, 2.93 per cent lead, and 23.2 per cent zinc (Assessment Report 14256).

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EMPR AR 1925-141; *1926-135; 1927-138; 1928-169; 1937-C11; 1965-74
EMPR GEM 1970-158; *1972-397-417,Fig. *49,*54
EMPR EXPL 1977-E196; *1980-344; *1983-444; *1985-C314
EMPR ASS RPT 726, *6429, *9087, *12374, *14256
EMPR MAP 69-1
EMPR FIELDWORK *1988, pp. 195-208
GSC MAP 671A
GSC OF 351
GSC BULL 270

DATE CODED: 1987/07/14 CODED BY: LLC FIELD CHECK: N
DATE REVISED: 1989/06/10 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 290**

NATIONAL MINERAL INVENTORY:

NAME(S): **KIN 3**, MAMIE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L14W
BC MAP:
LATITUDE: 54 46 59 N
LONGITUDE: 127 18 41 W
ELEVATION: 1740 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 125 metres south of Crater Lake on Miller Creek on the east flank of Hudson Bay Mtn., approximately 7 kilometres west of Smithers. Location of 10 metre adit on the Kin 3 claim (Assessment Report 15546).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6071958
EASTING: 608595

COMMODITIES: Gold, Silver, Zinc, Lead, Copper

MINERALS
SIGNIFICANT: Sphalerite, Galena, Chalcopyrite, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Tuff
Breccia
Rhyolite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1987

COMMODITY	GRADE	
Silver	14.0000	Grams per tonne
Gold	3.2200	Grams per tonne
Copper	0.0900	Per cent
Lead	0.0200	Per cent
Zinc	4.6000	Per cent

COMMENTS: Sample #19983, width is 0.15 metres.
REFERENCE: Assessment Report 15546.

CAPSULE GEOLOGY

The area south of Crater Lake is underlain by Lower Jurassic Hazelton Group volcanics of the Telkwa Formation comprised of andesitic to rhyolitic tuffs, flows, and breccias.

In 1986 sampling on the Kin 3 claim indicated high gold values from an occurrence located 125 metres south of the southeast area of Crater Lake along Miller Creek. The 0.15 metre sample assayed 3.22 grams per tonne gold, 14.0 grams per tonne silver, 4.6 per cent zinc, 0.02 per cent lead, and 0.09 per cent copper (Assessment Report 15546).

Further south, along the west side of Miller Creek a 10 metre adit was discovered. Just south of the adit, a 0.5 metre sample taken in 1986 assayed 7.9 grams per tonne gold, 26.0 grams per tonne silver, 0.015 per cent copper, 0.055 per cent zinc and 0.012 per cent lead (Assessment Report 15546). The property is part of the Mamie Group (refer to Mamie 093L 091).

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EMPR EXPL *1987, p. C308
EMPR ASS RPT , 14300*15546

BIBLIOGRAPHY

EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
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GSC MEM 223
GSC MAP 971A
GSC OF 351
Kirkham, R.V., (1969): A Mineralogical and Geochemical Study of the Zonal Distribution of Ores in the Hudson Bay Range, British Columbia, Ph.D. Thesis, University of Wisconsin

DATE CODED:	1987/08/24	CODED BY:	LLC	FIELD CHECK:	N
DATE REVISED:	1988/08/24	REVISED BY:	LLD	FIELD CHECK:	N

MINFILE NUMBER: **093L 291**

NATIONAL MINERAL INVENTORY: 093L2 Ag3

NAME(S): **GRECO**, FAR, GRUBSTAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L02W
BC MAP:
LATITUDE: 54 09 40 N
LONGITUDE: 126 52 26 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located 2.4 kilometres north of the Grubstake (Far) showing (093L 003) on the north slope of Tsalit Mountain, 30 kilometres southwest of Houston.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6003536
EASTING: 638817

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite Specularite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Nanika Intrusions

LITHOLOGY: Quartz Monzonite
Porphyritic Monzonite
Felsite Dike
Biotite Granite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The showing lies within an Eocene Nanika Intrusive comprised of quartz monzonite and porphyritic monzonite with associated felsite dikes.

The showing is described as within a biotite granite outcrop on the north slope of Tsalit Mountain. The medium-grained granite hosts minor disseminated flakes of molybdenum, specularite, and pyrite. The showing is located about 2.4 kilometres north of the Grubstake-Far showing (093L 003).

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EMPR ASS RPT 3064, 3096
EMR MP CORPFILE (Mexxon Mines Ltd.; Maverick Mtn. Resources Ltd.)
EMPR MAP 69-1
GSC OF 351
EMPR BULL 78 (in press)

DATE CODED: 1987/08/26 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/09/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 292**

NATIONAL MINERAL INVENTORY: 093L15 Au3

NAME(S): **VIKING**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 53 36 N
LONGITUDE: 126 57 55 W
ELEVATION: 1130 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Located north of Driftwood Creek, 19.3 kilometres northeast of Smithers.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6084818
EASTING: 630494

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Pyrite stringers host low values of gold and silver.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Cretaceous-Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Conglomerate
Argillite
Quartzite
Dioritic Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The area is underlain by Lower Cretaceous Skeena Group sediments (Kitsum Creek Formation) comprised of conglomerate, greywacke, shale, and tuff. The sediments are intruded by a Cretaceous to Tertiary dioritic porphyry with associated dikes.

Locally, the rocks consist of flat lying sandstones and conglomerates and a series of argillites and quartzites intruded by a mass of diorite. On the Viking, the flat lying conglomerate and sandstone are crosscut by stringers of pyrite carrying low values of gold and silver. Mineralization appears to infill fractures in the conglomerate. Test pits along the hillside show the mineralization is widespread in an area of about 215 metres in length.

BIBLIOGRAPHY

EMPR MAP 69-1
EMPR FIELDWORK 1987, pp. 181-193; 1988, pp. 195-208; 1991, pp. 93-101
GSC BULL 270, p. 6
GSC P 36-20, p. 110
GSC MAP 671A
GSC OF 351

DATE CODED: 1988/08/24 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/09/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 293**

NATIONAL MINERAL INVENTORY:

NAME(S): **ALLIN**, DEV, GO

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L01E
BC MAP:
LATITUDE: 54 11 02 N
LONGITUDE: 126 11 39 W
ELEVATION: 1370 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west side of Allin Creek, about 9.0 kilometres due east of Goosly Lake and 38 kilometres south-southeast of the community of Houston (Assessment Report 17680).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6007618
EASTING: 683087

COMMODITIES: Copper, Silver, Zinc, Lead, Molybdenum

MINERALS
SIGNIFICANT: Pyrite, Pyrrhotite, Sphalerite, Chalcopyrite, Arsenopyrite, Galena, Molybdenite, Tetrahedrite
ALTERATION: Quartz, Sericite, Pyrite, Chlorite, Calcite
ALTERATION TYPE: Sericitic, Propylitic
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated, Vein
CLASSIFICATION: Epigenetic, Hydrothermal, Replacement
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene	Francois Lake	Goosly Lake	
Eocene			Goosly Intrusions

LITHOLOGY:
Andesite
Dacite
Latite
Dacite Latite Flow
Dacite Latite Tuff
Dacite Latite Lapilli Tuff
Dacite Dike
Andesite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Allin occurrence area is underlain by the Eocene Goosly Lake Formation (Francois Lake Group).

The property lies on the eastern boundary of the Equity Silver Mine property (093L 001). Drilling in 1987, within an area of coincident geochemical and geophysical anomalies, intersected moderately to strongly altered (quartz-sericite-pyrite and chlorite-calcite-pyrite) volcanic rocks with up to 15 per cent disseminated and fracture-controlled sulphides. The volcanic rocks consist of interlayered andesite, dacite and latite flows, tuffs and lapilli tuffs cut by narrow unaltered dacite and andesite dikes. The sulphides comprise pyrite and pyrrhotite with minor to trace sphalerite, chalcopyrite, arsenopyrite, galena, molybdenite and tetrahedrite.

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EMPR FIELDWORK 1992, pp. 475-481, *1997, pp. 23-1-23-10
EMPR GEM 1969-149; 1970-125
EMPR MAP *11; 69-1
EMPR OF 1994-14
EMPR PF (*Amir Mines Ltd., Normine Resources Ltd., Bema International Resources Inc.: Notice of General meeting and Joint Management Information Circular, Oct.7, 1988, pp. 59,60; *Westview Resources Inc., Statement of Material Facts #84/88,

BIBLIOGRAPHY

Dec.9, 1988, pp. 3-6)
GSC MAP 5302G
GSC OF 351
Placer Dome File

DATE CODED: 1989/04/04 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1995/02/21 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 294** NATIONAL MINERAL INVENTORY:

NAME(S): **NORTH LAKE**, GROUSE MOUNTAIN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 34 01 N
LONGITUDE: 126 43 03 W
ELEVATION: 1440 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west shore of North Lake on Grouse Mountain, location of mineralization from Geology, Mining and Exploration 1972, Figure 49.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6048999
EASTING: 647564

COMMODITIES: Silver, Copper, Gold, Zinc, Lead

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Chlorite, Mica, Clay, Limonite, Epidote
ALTERATION TYPE: Argillic, Propylitic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Hazelton	Ashman	

LITHOLOGY: Argillite, Greywacke, Tuff

HOSTROCK COMMENTS: Middle to Upper Jurassic argillite sequence of the Hazelton Group, Ashman Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Greenschist

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	40.1100	Grams per tonne
Gold	1.7100	Grams per tonne
Copper	1.5900	Per cent

COMMENTS: Sample #R21034, 1.0 metre wide chip sample from trench.
REFERENCE: Assessment Report 14256.

CAPSULE GEOLOGY

The North Lake showing is underlain by Middle to Upper Jurassic Hazelton Group, Ashman Formation rocks. The Ashman Formation is mainly a sedimentary sequence comprised of marine black shale, argillite, greywacke and siltstone with some intercalated tuff and breccia (Fieldwork 1988, Figure 1-23-2).

Alteration has affected mainly the feldspar and ferromagnesium minerals producing mica, clay minerals, chlorite, limonite, carbonates and less commonly, epidote.

The Hazelton rocks are intruded by dikes and small stocks which strike north-northwesterly and dip west-southwest. These include feldspar porphyry dikes and aphanitic basic dikes.

Mineralization at the North Lake showing consists of lenticular quartz-chalcopyrite-pyrite veinlets which occur within a brecciated shear zone along the west shore of North Lake. Open cuts expose a 0.45 metre wide shear zone which strikes about 060 degrees and dips 70 degrees to the northwest.

In 1985, a 1.0 metre wide chip sample from a trench assayed 1.71

CAPSULE GEOLOGY

grams per tonne gold, 40.11 grams per tonne silver, 1.59 per cent copper, 0.32 per cent zinc and 0.01 per cent lead. Another 0.45 metre wide sample assayed trace gold, 122.74 grams per tonne silver, 4.3 per cent copper, 2.7 per cent zinc and 0.1 per cent lead (Assessment Report 14256).

BIBLIOGRAPHY

EMPR AR 1295-141; *1926-135; 1927-138; 1928-169; 1937-C11; 1965-74
EMPR GEM 1970-158; *1972-397-417,*Fig.49, 54
EMPR EXPL 1977-E196; *1980-344; *1983-444; *1985-C314
EMPR ASS RPT 726, 6429, 9087, *12374, *14256
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
GSC MAP 671A
GSC OF 351
GSC BULL 270

DATE CODED: 1989/07/07 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 295**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHRISTINA**, CHANCE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 34 58 N
LONGITUDE: 126 44 22 W
ELEVATION: 1310 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Christina showing from Assessment Report 13364, Figure 3; located on the northwest slopes of Grouse Mountain just north of the Cornucopia deposit (093L 251).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6050714
EASTING: 646089

COMMODITIES: Silver, Gold, Zinc, Copper, Lead

MINERALS

SIGNIFICANT: Sphalerite, Tetrahedrite, Galena, Pyrite
ASSOCIATED: Quartz
ALTERATION: Mica, Chlorite, Clay, Epidote
ALTERATION TYPE: Argillic, Propylitic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Lapilli Tuff
Tuffaceous Greywacke
Andesite
Dacite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Greenschist

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1984
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	155.6500	Grams per tonne
Gold	0.2400	Grams per tonne
Copper	0.1100	Per cent
Lead	0.0800	Per cent
Zinc	3.4500	Per cent

COMMENTS: Grab sample #808 from cat trench on Christina showing.
REFERENCE: Assessment Report 13364.

CAPSULE GEOLOGY

The Christina occurrence is part of the Grouse Mountain (Cornucopia - 093L 251) property. The area is underlain by Lower Jurassic Hazelton Group rocks (Telkwa Formation), comprised mainly of a uniform, fine-grained maroon tuff overlain by a sequence of tuff, lapilli tuff and tuffaceous greywacke. The tuffs range from dark grey to green to maroon and are fine-grained, thinly bedded, laminated or massive. These are underlain by massive green andesitic to dacitic flows.

Locally the volcanics are altered hosting abundant mica, chlorite and clay with less common epidote.

The Christina showing occurs in the northeastern part of the claims around the edge of a small swamp. It is comprised of a silicified stringer zone within altered tuff. Mineralization exposed in the trenches consists of sphalerite, tetrahedrite with minor pyrite and galena. Three grab samples from the mineralized exposure averaged

CAPSULE GEOLOGY

0.17 grams per tonne gold, 165.6 grams per tonne silver, 0.14 per cent copper, 1.9 per cent zinc and 0.04 per cent lead. A fourth sample assayed 1.58 grams per tonne gold, 1165.0 grams per tonne silver, 0.87 per cent copper, 1.91 per cent zinc and 0.09 per cent lead (Assessment Report 13364, page 16).

BIBLIOGRAPHY

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EMPR EXPL 1981-227; 1983-444; *1984-328; 1985-C314
EMPR FIELDWORK 1988, pp.195-208
EMPR GEM *1972-397-417,Fig. 49
EMPR MAP 69-1
GSC BULL 270
GSC MAP 671A
GSC OF 351
WWW http://www.infomine.com/

DATE CODED: 1989/07/07 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 296**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAOLA**, L'ORSA, CHANCE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 34 25 N
LONGITUDE: 126 44 05 W
ELEVATION: 1430 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Paola showing from Assessment Report 13364, Figure 3; located on Grouse Mountain just southeast of the Cornucopia deposit (093L 251).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6049704
EASTING: 646427

COMMODITIES: Silver Copper

MINERALS

SIGNIFICANT: Tetrahedrite Malachite
ASSOCIATED: Quartz
ALTERATION: Malachite Mica Chlorite Clay Epidote
ALTERATION TYPE: Oxidation Argillic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) G06 Noranda/Kuroko massive sulphide Cu-Pb-Zn
DIMENSION: STRIKE/DIP: 360/35W TREND/PLUNGE:
COMMENTS: Mineralized vein strikes north and dips between 30 to 40 degrees west.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Tuff
Lapilli Tuff
Tuffaceous Greywacke
Argillite
Andesite
Dacite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Greenschist

INVENTORY

ORE ZONE: OPENCUT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1984
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	89.4800	Grams per tonne
Copper	0.5400	Per cent

COMMENTS: A 1.2 metre sample taken from the north end of an open cut.
REFERENCE: Assessment Report 13364.

CAPSULE GEOLOGY

The Paola occurrence is part of the Grouse Mountain (Cornucopia - 093L 251) property. The area is underlain by Lower Jurassic Hazelton Group volcanics (Telkwa Formation), comprised mainly of a uniform, fine-grained maroon tuff overlain by a sequence of tuff, lapilli tuff, tuffaceous greywacke and argillite. The tuffs range from dark grey to green to maroon and are fine-grained, thinly bedded, laminated or massive. These are underlain by massive green andesitic to dacitic flows.

The volcanic rocks are altered hosting mica, chlorite, and clay minerals with less common, epidote.

The Hazelton rocks are intruded by a series of feldspar porphyry dikes trending north-northwest and west dipping ranging between 30 to 70 metres in width. Basic lamprophyre dikes also crosscut the volcanics.

The Paola quartz vein infills a shear in altered and bleached

CAPSULE GEOLOGY

maroon tuff with an alteration zone of approximately 8.0 metres in width. The vein strikes north and dips 30 to 40 degrees west hosting a 2.0 metre wide section of disseminated malachite staining in a open cut. In 1984, four samples taken over 1.0 to 1.2 metres assayed 67.5 grams per tonne silver and 0.36 per cent copper (Assessment Report 13364).

Just north of the Paola mineralization, tetrahedrite is exposed in the Ag showing. The mineralization is contained within a quartz-carbonate infilled shear zone (see Assessment Report 13364, Figure 3). No assay data is available.

BIBLIOGRAPHY

EMPR GEM *1972-397-417,Fig. 49
EMPR EXPL 1981-227; 1983-444; *1984-328; 1985-C314
EMPR ASS RPT 10182, 12374, *13364, 13720, 14256, 21880
EMPR FIELDWORK 1988, pp.195-208
EMPR MAP 69-1
EMPR OF 1994-14
GSC OF 351
GSC BULL 270
GSC MAP 671A

DATE CODED: 1989/07/07 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 297**

NATIONAL MINERAL INVENTORY:

NAME(S): **SNOW**, ISLAND, PENINSULA, DISCOVERY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 40 00 N
LONGITUDE: 127 41 28 W
ELEVATION: 1175 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The property is located along Snow Creek, just south of Serb Creek about 30 kilometres southwest of Smithers. Location of Island zone (Assessment Report 18014).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6058486
EASTING: 584418

COMMODITIES: Gold, Silver, Zinc, Copper, Lead

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Sphalerite, Galena
ASSOCIATED: Quartz, Carbonate
ALTERATION TYPE: Silicific'n, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, I02 Intrusion-related Au pyrrhotite veins
DIMENSION:
STRIKE/DIP:
TREND/PLUNGE: 360/
COMMENTS: Regional fault structure trends north.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Nanika Intrusions

LITHOLOGY: Andesitic Tuff
Andesite Breccia
Tuff
Pyritic Fine Grained Breccia
Quartz Diorite
Porphyritic Granodiorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Regional
RELATIONSHIP: Syn-mineralization
GRADE:

INVENTORY

ORE ZONE: VEINS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	84.5000	Grams per tonne
Gold	4.5300	Grams per tonne
Copper	0.3900	Per cent
Lead	0.2900	Per cent
Zinc	0.7200	Per cent

COMMENTS: Quartz-carbonate veins.
REFERENCE: Assessment Report 18014.

CAPSULE GEOLOGY

The Snow property is predominantly underlain by intermediate to acid volcaniclastic rocks of the Lower Jurassic Hazelton Group, Telkwa Formation. The Telkwa rocks consist mainly of red to maroon andesite breccia and tuff with intercalated green tuffs and breccia.

A coarse-grained quartz diorite stock intrudes the volcaniclastic rocks in the southwest corner of the claims. The stock is part of the Eocene Nanika Intrusions. Associated porphyritic granodiorite dikes ranging from tens of centimetres to several metres in width intrude both the volcaniclastics and the quartz diorite stock.

Pyritic envelopes of weak to moderate silicification are associated with the granodiorite dikes. Sparse quartz and

CAPSULE GEOLOGY

quartz-carbonate veins are present within the silicified envelopes.

Snow Creek follows the trace of a north trending regional fault. Numerous splay faults and shear zones associated with the regional structure trend northeast to southeast. The dikes intrude along these splay faults.

Mineralization on the property consists of sulphide fracture fillings and sulphide-rich quartz-carbonate veins proximal to porphyritic granodiorite dikes. Pyrite is the dominant sulphide with minor chalcopyrite, sphalerite and galena. The mineralized veins and fractures trend northeast to southeast and dip steeply to the north and south. Three mineralized zones, the Island, Discovery and Peninsula zones, respectively, occur along the north-south trending regional fault and are exposed along a 600 metre section in Snow Creek.

Grab samples of sheared, pyritic fine breccia assayed up to 6.17 grams per tonne gold, 56.57 grams per tonne silver and 0.19 per cent zinc. Grab samples from mineralized quartz-carbonate veins assayed up to 4.53 grams per tonne gold, 84.5 grams per tonne silver, 0.72 per cent zinc, 0.39 per cent copper, and 0.29 per cent lead. A 1.0 metre wide chip sample taken from the Island showing assayed 0.625 grams per tonne gold, 12.3 grams per tonne silver, 0.021 per cent copper, 0.021 per cent lead and 0.086 per cent zinc (Assessment Report 18014).

BIBLIOGRAPHY

EMPR AR 1965-76-80; 1966-91
EMPR EXPL 1988-C171
EMPR ASS RPT 4671, 5762, *18014, 22056, 22648
EMPR MAP 69-1
EMPR OF 1994-14
GSC OF 351
GSC BULL 270
Placer Dome File

DATE CODED: 1989/06/13 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1995/02/22 REVISED BY: GSB FIELD CHECK: N

MINFILE NUMBER: **093L 298**

NATIONAL MINERAL INVENTORY:

NAME(S): **ERIN**, ERIN 4, B

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 22 11 N
LONGITUDE: 127 06 46 W
ELEVATION: 1706 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6026300
EASTING: 622601

COMMENTS: Erin property is located on the east side of Houston Tommy Creek, 45 kilometres south of Smithers. Location is mineralized trench on the Erin 4 claim (Assessment Report 17994, Figure 3).

COMMODITIES: Copper, Silver, Gold, Iron, Antimony, Gemstones

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Chalcocite, Tetrahedrite, Rhodochrosite
ASSOCIATED: Rhodochrosite, Quartz, Carbonate
ALTERATION: Malachite, Azurite, Epidote, Carbonate
ALTERATION TYPE: Oxidation, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Igneous-contact, Epigenetic, Hydrothermal, Industrial Min.
TYPE: D03 Volcanic redbed Cu; L01 Subvolcanic Cu-Ag-Au (As-Sb); K01 Cu skarn
COMMENTS: Bedding strikes south and dips 25 to 45 degrees southwest.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite, Andesitic Tuff, Rhyolite, Dacite, Quartz Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
METAMORPHIC TYPE: Contact, Regional
RELATIONSHIP: Plutonic Rocks; Syn-mineralization, Post-mineralization
GRADE: Greenschist, Hornfels

CAPSULE GEOLOGY

The property is predominantly underlain by Lower Jurassic Hazelton Group rocks (Telkwa Formation). These rocks are comprised mainly of maroon and lesser green andesitic tuffs with minor associated dacite and rhyolitic volcanics. The felsic volcanics are fine-grained to aphanitic and are buff to pale green in colour. Locally, glassy maroon and grey crystal tuffs are present. Bedding strikes south and dips 25 to 45 degrees southwest.

A quartz feldspar porphyry intrusive, probably related to the Late Cretaceous Bulkley Intrusions, was mapped in the southeast part of the property. The contact strikes 088 degrees and dips about 74 degrees north.

Alteration consists of patchy epidote in andesite, with or without irregular quartz and carbonate veinlets.

In the area of the old trenches, dug between 1965 and 1969 on the 'B' group claims (B - 093L 048), rhodochrosite is widespread and may be related to the copper mineralization. The rhodochrosite occurs as small patches (less than 1.0 centimetre wide) and as disseminations in the andesite.

Mineralization occurs in the central property area exposed in bulldozer trenches. Bornite, chalcopyrite, tetrahedrite, chalcocite, malachite and azurite occur as massive to locally disseminated patches in andesite and locally in quartz veins and stringers (refer to B-093L 048). Assays from trenches with mineralization reported high copper and silver with local gold values.

A sample (JR88-33) taken from a trench containing about 20 per

CAPSULE GEOLOGY

cent rhodochrosite assayed 1.36 per cent manganese, 0.002 per cent antimony and 0.009 per cent arsenic. A sample of gossanous rock taken just north of a trench which cuts the contact between andesite tuff and quartz feldspar porphyry, assayed 0.287 per cent zinc, 0.008 per cent lead, 0.521 per cent manganese, 7.89 per cent iron and 18.07 per cent calcite (Assessment Report 17994).

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EMPR AR 1965-80; 1966-103
EMPR EXPL 1988-C168
EMPR ASS RPT 1189; *17994, 19360
EMPR MAP 69-1
EMPR OF 1990-5; 1994-14
GSC OF 351
GSC BULL 270

DATE CODED: 1989/06/12 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 299**

NATIONAL MINERAL INVENTORY:

NAME(S): **DEL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 22 42 N
LONGITUDE: 127 07 29 W
ELEVATION: 1722 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located along the east side of Houston-Tommy Creek; location of mineralization on the Del 1 claim (Assessment Report 18032, Figure 9).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6027237
EASTING: 621799

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Bornite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Azurite Epidote Carbonate
ALTERATION TYPE: Oxidation Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Epigenetic Hydrothermal
TYPE: D03 Volcanic redbed Cu L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Andesite
Andesitic Tuff
Flow
Breccia
Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE: Greenschist Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	25.3000	Grams per tonne
Copper	6.1400	Per cent

COMMENTS: Sample 36323.
REFERENCE: Assessment Report 18032.

CAPSULE GEOLOGY

The Del claims are underlain by Lower Jurassic Hazelton Group rocks (Telkwa Formation). The Telkwa Formation is comprised primarily of andesitic to rhyolitic flows with associated tuffs and breccias. Small masses of Late Cretaceous granodiorite and quartz monzonite (probably related to the Bulkley Intrusions) intrude the volcanics. Associated aplite dikes, up to 2.0 metres in width and striking 070 to 075 degrees with steep to near vertical dips, cut the volcanics.

Regional alteration is locally present as patchy epidote in andesite, with or without quartz and carbonate veinlets.

Mineralization on the Del property consists of disseminations and concentrations of chalcopyrite, pyrite, bornite, malachite and azurite in andesitic volcanics. The mineralization is similar to the 'B' occurrence (refer to 093L 048).

In 1988, a grab sample (#36323) assayed 6.14 per cent

CAPSULE GEOLOGY

copper, and 25.3 grams per tonne silver. Another sample (#32502) assayed 0.21 per cent copper (Assessment Report 18032).

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EMPR AR 1965-80; 1966-102
EMPR GEM 1974-258
EMPR EXPL 1988-C168
EMPR ASS RPT 1189, 5094, 17994, *18032
EMPR MAP 69-1
EMPR OF 1361
GCS OF 351
GSC BULL 270

DATE CODED: 1989/07/13 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 300**

NATIONAL MINERAL INVENTORY:

NAME(S): **CAMP LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 43 07 N
LONGITUDE: 126 42 28 W
ELEVATION: 1095 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located to the southeast of Guess Lake on the north side of Camp Lake, refer to occurrence #15 (Open File Map 1987-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6065891
EASTING: 647641

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Exact mineralogy not reported.
ASSOCIATED: Quartz
ALTERATION: Chlorite Epidote Carbonate
ALTERATION TYPE: Chloritic Epidote Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Amygdaloidal Basalt

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Hazelton Ranges
RELATIONSHIP:
GRADE: Greenschist

CAPSULE GEOLOGY

The area is underlain by amygdaloidal basalt of the Lower Jurassic Hazelton Group, Nilkitkwa Formation. This formation hosts several small copper-silver vein occurrences.

Locally, the Camp Lake showing consists of small, discontinuous copper-silver bearing quartz veins. The veins occur within zones of pervasive chlorite-epidote-carbonate alteration. In 1982, D. Groot Logging Limited of Smithers, completed one drill hole on the property but failed to intersect mineralization at depth.

BIBLIOGRAPHY

EMPR FIELDWORK *1986 pp. 201-222; 1988 pp. 195-208
EMPR OF *1987-1
EMPR MAP 69-1
GSC OF 351
GSC BULL 270

DATE CODED: 1988/09/20
DATE REVISED: / /
CODED BY: LLD
REVISED BY:
FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **093L 301**

NATIONAL MINERAL INVENTORY:

NAME(S): **BURN 7**, DEL SANTO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 38 44 N
LONGITUDE: 126 42 29 W
ELEVATION: 1066 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Fieldwork 1988, page 196, Figure 1-23-2.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6057763
EASTING: 647889

COMMODITIES: Copper Silver Lead Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite Galena
ASSOCIATED: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Podiform
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au G04 Besshi massive sulphide Cu-Zn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Amygdaloidal Andesite
Basalt
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The area is underlain by amygdaloidal andesite and basalt of the Lower Jurassic Hazelton Group, Nikitkwa Formation. Locally, small discontinuous copper-silver bearing quartz veins cut the volcanics in areas of pervasive chlorite-epidote-carbonate alteration. Pods of chalcopyrite, sphalerite and galena are reported in the quartz veining.

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EMPR ASS RPT 1665, 2238, 2543, 7286, *17255, 17478, *17874
EMPR EXPL 1979-228; *1988-C170
EMPR FIELDWORK 1984, pp.193-213; 1986, pp. 210-222; *1988, pp. 195-208
EMPR GEM 1969-120; 1970-158
EMPR MAP 69-1
EMPR OF 1987-1
GSC BULL 270
GSC MAP 671A, 971A
GSC OF 351
WWW http://www.infomine.com/index/properties/DEL_SANTO__GROUSE.html
Falconbridge File

DATE CODED: 1988/09/20 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/09/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 302**

NATIONAL MINERAL INVENTORY: 093L10 Cu1

NAME(S): **JAVA**, PERROW, LUCKY, LADY, PEHU

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L10E
BC MAP:
LATITUDE: 54 36 43 N
LONGITUDE: 126 31 28 W
ELEVATION: 1128 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located southeast of Angela Lake, Figure 3 (Assessment Report 17553).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6054427
EASTING: 659866

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Sphalerite Galena Bornite
ASSOCIATED: Calcite Quartz Epidote
ALTERATION: Malachite Specularite Barite Epidote
ALTERATION TYPE: Carbonate Oxidation Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Andesite
Andesitic Volcanic
Tuff
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1988

COMMODITY	GRADE	
Copper	0.4200	Per cent

COMMENTS: 2.0 metre chip sample.
REFERENCE: Singhai, 1988.

CAPSULE GEOLOGY

The area is underlain by Lower Jurassic Hazelton Group, Telkwa Formation volcanics comprised of andesitic flows and tuffs. The volcanics are intruded by granodioritic stocks of the Topley Intrusive Suite.

Mineralization occurs as fine fracture fillings and blebs of chalcopyrite within numerous fine veinlets of calcite. The general mineral assemblage of pyrite, chalcopyrite, minor sphalerite, galena, tetrahedrite, and occasional very minor bornite is found within fine-grained, greenish andesitic volcanics. Malachite, specularite, barite, and epidote also occur. Quartz, calcite and epidote are found as gangue minerals in the veins. Some free gold was reported but has not been confirmed.

A two metre chip sample assayed 0.42 per cent copper, 0.02 per cent zinc, 0.34 grams per tonne silver and 0.69 grams per tonne gold. A grab sample from the same area assayed 0.42 per cent copper and 0.27 grams per tonne gold (Singhai, 1988).

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EMPR AR 1928-177; 1967-107; 1968-136

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EMPR ASS RPT 1559, 1667, *17553, 17668, 18948
EMPR PF (Singhai, G.C. (1988): Report on Perrow 300, Peeler and Java
300 Mineral claims in Prospectus for Crisan Resources Ltd.,
Jan. 5, 1989).
EMPR FIELDWORK 1988, pp. 195-208
EMPR MAP 69-1
EMR MP CORPFILE (Mexxon Mines Ltd., Key Point Mines Co. Ltd.)
GSC OF 351
GSC MAP 671A
GSC BULL 270

DATE CODED: 1989/09/05 CODED BY: LLD FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 303**

NATIONAL MINERAL INVENTORY:

NAME(S): **SU**, SU 2-3

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15E
BC MAP:
LATITUDE: 54 52 22 N
LONGITUDE: 126 37 58 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claims.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6083201
EASTING: 651892

COMMODITIES: Zinc Silver Lead

MINERALS
SIGNIFICANT: Galena Sphalerite Pyrite
ASSOCIATED: Calcite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Breccia Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Breccia
Amygdaloidal Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: BRECCIA

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Lead	0.9000	Per cent
Zinc	2.9000	Per cent

COMMENTS: Grab samples from coarse breccia with sphalerite and galena.
REFERENCE: Assessment Report 18177.

CAPSULE GEOLOGY

The Su property is underlain by Jurassic Hazelton Group volcanics and sediments. A maroon, amygdaloidal andesite unit occurs in the northwest part of the property. A grey, andesite and rhyolite clast, calcite cemented breccia occurs to the southeast of the andesite unit. It appears to strike north-northeast to northeast and dips 25 to 60 degrees west with tops to the east.

Near the contact of these two units, in a fine grained bed of the breccia, a showing of pyrite is exposed. It consists of a matrix with 20 to 30 per cent, very fine grained, probably syngenetic, pyrite. Samples from this showing have assayed up to 0.6 per cent zinc and 0.044 grams per tonne silver (Assessment Report 18177).

About 350 metres to the northeast, an outcrop of coarse breccia contains minor sphalerite and galena associated with the calcite matrix and veinlets. Grab samples assayed up to 2.9 per cent zinc and 0.9 per cent lead (Assessment Report 18177).

BIBLIOGRAPHY

EMPR EXPL *1988-C173
EMPR ASS RPT *18177
EMPR MAP 69-1
EMPR FIELDWORK 1988, pp. 195-208
EMPR OF 1987-1
GSC OF 351

BIBLIOGRAPHY

GSC BULL 270

DATE CODED: 1989/09/04 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/09/11 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 304**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUNSET**, SUN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 28 03 N
LONGITUDE: 127 12 12 W
ELEVATION: 1615 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Sun claim, near an old adit along the south side of Sunsets Creek.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6037024
EASTING: 616441

COMMODITIES: Copper Silver Gold

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Pyrite Copper Tetrahedrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Azurite
ALTERATION TYPE: Silicific'n Carbonate Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite Breccia
Andesite
Rhyolite Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Greenschist

INVENTORY

ORE ZONE: ADIT
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	41.4850	Grams per tonne
Copper	0.5700	Per cent

COMMENTS: Sample from a stringer in an old adit.
REFERENCE: Assessment Report 17977.

CAPSULE GEOLOGY

The property is underlain by Lower Jurassic Hazelton group rocks comprised mainly of well bedded red and green andesite tuffs and minor flows. Bedding strikes north to northwest and dips 25 to 40 degrees west. Minor rhyolitic tuff occurs in a small cirque east of the property and a large granitic stock lies to the northeast of the headwaters of Sunsets Creek.

Alteration occurs as moderately strong, patchy epidote and prehnite in the bedded tuffs. This alteration appears to be regional and unrelated to the mineralization.

Mineralization occurs in outcrop south of Sunsets Creek. Andesite hosts quartz and minor carbonate in stringers and veins containing varying amounts of malachite, azurite, tetrahedrite, bornite, chalcopyrite, pyrite and native copper. The veining is often vuggy and contains subangular to angular andesite breccia with drusy quartz in open spaces. Veins and stringers are discontinuous and generally randomly oriented. The largest vein found was 0.35 metres wide and approximately 12 metres in length. Veining dominantly occurs as stringers, 1 to 4 centimetres in width, which anastomose and rapidly pinch out.

An old adit is located on the south side of Sunsets Creek at approximately 1,615 metres elevation. An irregular mineralized

CAPSULE GEOLOGY

quartz stringer, 10 to 15 centimetres in width, striking 017 degrees and dipping 53 degrees southeast, extends for 3 to 4 mteres above the tunnel entrance. A sample from this stringer (JR88-29) assayed 0.57 per cent copper and 41.485 grams per tonne silver. Near the adit , a grab sample (JR88-30) from a small pile of ore assayed 16.53 per cent copper, 2163 grams per tonne silver and 4.25 grams per tonne gold. Directly above the adit a 0.35 metre wide vein, striking 028 degrees and dipping 58 degrees southeast, outcrops at 1737 metres elevation. A sample fron this vein (JR88-24) assayed 0.92 per cent copper and 33.256 grams per tonne silver (Assessment Report 17977).

BIBLIOGRAPHY

EMPR AR 1967-97-100; 1968-128
EMPR GEM 1970-151
EMPR EXPL 1980-341,324; 1983-440; *1988-C169
EMPR ASS RPT 1605, 1922, *8444, 8264, 11903, *17977
EMPR MAP 69-1
GSC OF 351

DATE CODED: 1989/09/04 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1989/09/08 REVISED BY: LLD FIELD CHECK: N

MINFILE NUMBER: **093L 305**

NATIONAL MINERAL INVENTORY:

NAME(S): **TATSI**, ALEC

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05E
BC MAP:
LATITUDE: 54 20 51 N
LONGITUDE: 127 43 57 W
ELEVATION: 1859 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of mineralization (Assessment Report 17971, Figure 5).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6022926
EASTING: 582388

COMMODITIES: Gold, Silver, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Gold, Silver, Bornite, Tetrahedrite, Galena, Chalcopyrite, Sphalerite, Pyrite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Quartz, Carbonate, Hematite, Malachite, Azurite
ALTERATION TYPE: Quartz-Carb., Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Epigenetic, Igneous-contact
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic			Topley Intrusions

LITHOLOGY: Tuff
Pyroclastic
Hornblende Granodiorite
Volcanic Rock
Diorite Sill

GEOLOGICAL SETTING

TECTONIC BELT:
TERRANE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	9.1900	Grams per tonne

COMMENTS: Composite chip sample from the discovery zone.
REFERENCE: Assessment Report 17971.

CAPSULE GEOLOGY

The Tatsi property is located about 65 kilometres west of Smithers near Tatsi Creek. There are several areas of mineralization on the property. The Snowflake showing (093L 056) may occur on the property.

The property was originally staked in 1949 but there is no record of any work. The property was re-staked in 1987 and an exploration program was completed. In 1991, sampling was completed during a 1 day visit to the property.

The property is underlain by maroon, red and purple massive bedded volcanics of the Lower Jurassic Hazelton Group, Telkwa Formation. Immediately to the northwest, a large stock of Jurassic Topley Intrusions cut the volcanic rocks. Dioritic dikes or sills intrude the volcanics in the area of the main showing, with sharp migmatitic contacts.

The Main Zone contains bornite, native silver, native gold, chalcopyrite, tetrahedrite, galena and trace pyrite in a relatively falt (15 degrees) easterly-dipping bedding plane vein. The vein is up to 1 metre thick and is hosted by a bleached fine-grained tuff (with carbonate-filled fractures) on the footwall and coarse-grained waterlain tuff to agglomerate in the hangingwall. The Main vein has

CAPSULE GEOLOGY

been traced intermittently for about 100 metres. Channel samples taken by the operator yielded high-grade values (for example, 16.5 grams per tonne gold and 1,158 grams per tone silver) (Property File - Visit Report by Tom Schroeter July, 1995).

The Discovery Zone is located in the west-central part of the claim, about 1 kilometre west of the Main Zone. Galena, chalcopyrite, sphalerite, pyrite, specular hematite, malachite and azurite are hosted by intermediate to acidic pyroclastic volcanic rocks in close contact with a coarse-grained hornblende granodiorite. It is represented by an intermittent alignment in a shear zone of quartz and quartz-carbonate veins and stringers, in areas of quartz and carbonate altered rock. The zone has been traced over a strike length in excess of 200 metres and over widths up to 4 metres. Northward the exposures terminate in steep cliffs, and southward, the zone pinches-out in diorite. A composite chip sample across a 2 metre section of the structure, comprised of quartz veins in bleached, ankeritic altered rock, assayed up to 9.19 grams per tonne gold. Silver from grab samples assayed up to 356.2 grams per tonne (Assessment Report 17971).

To the immediate east of the Discovery Zone, a quartz vein-stockwork system is exposed for 200 metres. Of seven grab samples, one sample assayed 0.37 grams per tonne gold, 12 grams per tonne silver associated with minor sphalerite and galena (Assessment Report 17971).

To the east, near the central part of the claims, two flat-lying quartz veins up to 40 centimetres wide are exposed. Values to 2365.6 grams per tonne silver and 0.885 grams per tonne gold are associated with chalcopyrite and a sulphosalt. For both the stockwork system and the flat-lying vein system, their extension to the north is not known (Assessment Report 17971).

In 1995, with Explore B.C. Program support, Golden Hemlock Explorations Ltd. carried out a substantial program of geological and geophysical surveys, prospecting, trenching and 1820 metres of diamond drilling in 15 holes, mostly on the Main and Discovery zones. This work showed the Main zone mineralization is mostly part of a simple vein system which strikes easterly and dips 15-20 degrees to the south. The Discovery zone consists of several parallel veins and a 500 by 200 metre breccia zone believed to be of hydrothermal origin which may have potential for bulk mining (Explore B.C. Program 95/96 - M77).

BIBLIOGRAPHY

EMPR EXPL *1988-C168
EMPR ASS RPT *17971, 21721
EMPR PF (*Visit Report by Tom Schroeter, July, 1995)
EMPR MAP 69-1
EMPR Explore B.C. Program 95/96 - M77
GSC BULL 270
GSC OF 351
GSC P 44-23

DATE CODED: 1989/09/05 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1996/11/08 REVISED BY: GSB FIELD CHECK: N

MINFILE NUMBER: **093L 306**

NATIONAL MINERAL INVENTORY:

NAME(S): **CART**, LIME

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16W
BC MAP:
LATITUDE: 54 51 31 N
LONGITUDE: 126 18 26 W
ELEVATION: 1103 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Sample Site 4261 (Industrial Mineral File (Equity Silver Mines, Map)).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6082380
EASTING: 672837

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Permian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: R09 Limestone
DIMENSION: 4000 Metres STRIKE/DIP: 153/45N TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Undefined Group	Undefined Formation	

LITHOLOGY: Limestone
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	52.5700	Per cent

COMMENTS: Average of 7 chip samples. Grade given for CaO.
REFERENCE: Industrial Mineral File - Equity Silver Mines, 1989.

CAPSULE GEOLOGY

Permian limestone outcrops over 4 kilometres along a ridge trending north-northwest, 6 kilometres west of Granisle.

The limestone is faulted to the east, bringing it in contact with volcanics of the Upper Triassic Takla Group. Bedding strikes 153 degrees and dips 45 degrees northwest.

Seven chip samples taken across widths of 5 to 7. 5 metres over a strike length of 500 metres averaged 52.57 per cent CaO, 0.25 per cent MgO, 0.024 per cent Fe2O3 and 3.05 per cent insolubles (Industrial Mineral File - Equity Silver Mines Ltd., 1989).

The deposit was sampled in 1988 by Equity Silver Mines Ltd. during a search for limestone for acid neutralization in their nearby mine.

BIBLIOGRAPHY

EM OF 2001-03
EMPR MAP 69-1
EMPR OF 1996-29
EMPR PF (Equity Silver Mines Ltd., 1989, Map and Letter)
GSC MAP 671A
GSC OF 351
EMPR BULL 110

DATE CODED: 1989/10/20 CODED BY: PSF FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 307**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHRIS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L09E
BC MAP:
LATITUDE: 54 44 42 N
LONGITUDE: 126 13 00 W
ELEVATION: 1021 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Chris claim (Industrial Mineral File - Equity Silver Mines Map).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6069970
EASTING: 679150

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Lower Jurassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: R09 Limestone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Undefined Group	Telkwa	

LITHOLOGY: Limestone
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1989

COMMODITY	GRADE	
Limestone	77.8700	Per cent

COMMENTS: Average of 5 grab samples. Grade given for CaCo3.
REFERENCE: Industrial Mineral File - Equity Silver Mines Ltd., 1989.

CAPSULE GEOLOGY

Limestone outcrops 8.5 kilometres southwest of Topley Landing. The deposit is hosted by Lower Jurassic Telkwa Formation volcanic rocks. Five grab samples of limestone from the deposit averaged 77.87 per cent CaCO3, 0.74 per cent MgCO3, 0.244 per cent iron and 16.72 per cent insolubles (Industrial Mineral File - Equity Silver Mines Ltd., 1989).

The property was sampled in 1988 by Equity Silver Mines Ltd. during a search for limestone for acid neutralization in their nearby mine.

BIBLIOGRAPHY

EM OF 2001-03
EMPR MAP 69-1
EMPR PF (Equity Silver Mines Ltd, 1989, Assay Certificates)
GSC MAP 671A
GSC OF 351
EMPR BULL 110

DATE CODED: 1989/10/18
DATE REVISED: / /

CODED BY: PSF
REVISED BY:

FIELD CHECK: N
FIELD CHECK:

MINFILE NUMBER: **093L 308**

NATIONAL MINERAL INVENTORY:

NAME(S): **CALCITE**, FULTON LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16W
BC MAP:
LATITUDE: 54 49 00 N
LONGITUDE: 126 17 24 W
ELEVATION: 853 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Centre of Calcite claim group (claim map 092L16E).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6077757
EASTING: 674122

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Celestite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: R09 Limestone
DIMENSION: 1000 x 0500 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Undefined Formation	

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	52.7400	Per cent

COMMENTS: Grade given for CaO.
REFERENCE: Industrial Mineral File - Westgarde, Ed, 1988.

CAPSULE GEOLOGY

Limestone of the Upper Triassic Takla Group outcrops over a 500 by 1000 metre area on the north side of Fulton Lake, 10 kilometres east of Topley Landing.

A grab sample contained 52.74 per cent CaO, 0.46 per cent MgO, 2.43 per cent SiO_2, 0.50 per cent Al_2O_3, 0.42 per cent Fe_2O_3, 0.08 per cent MnO_2, 0.04 per cent P_2O_5, 0.12 per cent K_2O, 0.01 per cent Na_2O and 0.04 per cent TiO_2 (Industrial Mineral File - Report by E. Westgarde, 1988).

The property was sampled in 1988 by Equity Silver Mines Ltd. during a search for limestone for acid neutralization in their nearby mine.

BIBLIOGRAPHY

EM OF 2001-03
EMPR MAP 69-1
EMPR OF 1996-29
EMPR PF (*Westgarde, Ed (1988): Report; Equity Silver Mines Ltd. (1989): Assays)
GSC MAP 671A
GSC OF 351
EMPR BULL 110

DATE CODED: 1989/10/18 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1995/03/07 REVISED BY: GSB FIELD CHECK: N

MINFILE NUMBER: **093L 309**

NATIONAL MINERAL INVENTORY:

NAME(S): **FIRE LOOKOUT**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L03W
BC MAP:
LATITUDE: 54 09 04 N
LONGITUDE: 127 29 50 W
ELEVATION: 1630 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 6.0 kilometres north of Morice Lake.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6001378
EASTING: 598146

COMMODITIES: Copper Silver Gold Molybdenum

MINERALS
SIGNIFICANT: Malachite
ALTERATION: Carbonate Limonite Hematite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)
SHAPE: Regular
MODIFIER: Faulted
DIMENSION: 0005 x 0002 Metres STRIKE/DIP: 269/82N TREND/PLUNGE:
COMMENTS: General bedding orientation with which body is conformable.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Lapilli Tuff
Fine Grained Basalt
Gossan

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP: Pre-mineralization
Syn-mineralization
GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	46.3000	Grams per tonne
Gold	0.5100	Grams per tonne
Copper	0.6770	Per cent
Molybdenum	0.0026	Per cent

COMMENTS: Assay from Energy, Mines and Petroleum Resources Laboratory.
REFERENCE: Open File 1991-1.

CAPSULE GEOLOGY

Surface and pervasive malachite staining persists in a small gossanous zone which appears to be bedding conformable within the Lower Jurassic Telkwa Formation of the Hazelton Group.

The maroon to red lapilli tuffs (lJTc) are well bedded (2 to 10 centimetre scale; oriented at 081 degrees by 61 degrees southeast) and a prominent joint pattern (272 degrees by 60 degrees north) exists.

The gossanous zone appears to be sub-parallel to conformable with bedding. Minor fine-grained, augite-bearing basalt of unit lJTb is also present and has been variably carbonatized and limonite stained. Contact relations between the lapilli tuffs and basalts were not exposed but are believed to be faulted. No significant veining was noted during field examination.

BIBLIOGRAPHY

EMPR FIELDWORK 1990; 1991 (Desjardins et al)

BIBLIOGRAPHY

EMPR OF 1991-1; 1994-14
EMPR ASS RPT 22133

DATE CODED: 1990/09/12 CODED BY: RLA FIELD CHECK: Y
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093L 310**

NATIONAL MINERAL INVENTORY:

NAME(S): **ZAP SOUTH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 34 04 N
LONGITUDE: 127 41 47 W
ELEVATION: 885 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6047477
EASTING: 584282

COMMODITIES: Copper Iron

MINERALS
SIGNIFICANT: Chalcopyrite Specularite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Shear
CLASSIFICATION: Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Hazelton	Unnamed/Unknown Formation	

LITHOLOGY: Tuff
Flow
Breccia
Rhyolite
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Pods and shears contain chalcopyrite and specularite (Richards, T., 1991)

BIBLIOGRAPHY

EMPR ASS RPT 2129
EMPR MAP 69-1
GSC MAP 278A
GSC P 44-23
GSC OF 351
GSC BULL 270
Richards, T. (1991) *in press

DATE CODED: 1993/12/06 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1993/12/06 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093L 311**

NATIONAL MINERAL INVENTORY:

NAME(S): **ZAP NORTH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 34 34 N
LONGITUDE: 127 42 47 W
ELEVATION: 1410 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located north of Top Lake, 345 metres west of camp on the road.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6048385
EASTING: 583187

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Pyrite Marcasite
ALTERATION: Chlorite Epidote
ALTERATION TYPE: Chloritic Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I02 Intrusion-related Au pyrrhotite veins I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Hazelton	Unnamed/Unknown Formation	

LITHOLOGY: Tuff
Flow
Breccia
Rhyolite
Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1969

COMMODITY	GRADE	
Silver	34.6200	Grams per tonne
Gold	2.4000	Grams per tonne

REFERENCE: Assessment Report 2129.

CAPSULE GEOLOGY

Gold and silver values occur in samples from a 60 centimetre quartz vein containing 5 per cent marcasite and pyrite. Chlorite and epidote alteration is associated with the vein (Richards, T., 1991).

BIBLIOGRAPHY

EMPR ASS RPT 2129
EMPR MAP 69-1
GSC MAP 278A
GSC P 44-23
GSC OF 351
GSC BULL 270
Richards, T. (1991) *in press

DATE CODED: 1993/12/06 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1993/12/06 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093L 312**

NATIONAL MINERAL INVENTORY:

NAME(S): **ZAP WEST**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12E
BC MAP:
LATITUDE: 54 34 18 N
LONGITUDE: 127 43 21 W
ELEVATION: 1380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located about 930 metres west of camp, on the road.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6047879
EASTING: 582586

COMMODITIES: Lead

MINERALS

SIGNIFICANT: Pyrite Specularite Galena
ALTERATION: Chlorite Epidote
ALTERATION TYPE: Chloritic Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Hazelton	Unnamed/Unknown Formation	

LITHOLOGY: Tuff
Flow
Breccia
Rhyolite
Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

Pyrite, specularite and galena occur in a northwest trending 60 centimetre wide vein with chlorite and epidote alteration (Richards, T., 1991)

BIBLIOGRAPHY

EMPR ASS RPT 2129
EMPR MAP 69-1
GSC MAP 278A
GSC P 44-23
GSC OF 351
GSC BULL 270
Richards, T. (1991) *in press

DATE CODED: 1993/12/06 CODED BY: DEJ FIELD CHECK: N
DATE REVISED: 1993/12/06 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093L 313**

NATIONAL MINERAL INVENTORY:

NAME(S): **DINA**, DINA 1-3, GOOSLY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L01W
BC MAP:
LATITUDE: 54 09 00 N
LONGITUDE: 126 15 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location #511 (Richards, 1991).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6003701
EASTING: 679482

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Pyrite Tetrahedrite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Breccia Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Goosly Lake	
Lower Cretaceous	Skeena	Unnamed/Unknown Formation	

LITHOLOGY: Lapilli Tuff
Breccia
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Dina showing is located about 33 kilometres southeast of Houston.

The area of the claims was originally staked in 1969 by Dorita Silver Mines Ltd. and were subsequently optioned to Silver Standard Mines Ltd. In 1970, Silver Standard carried out geochemical and geophysical surveys and diamond drilling. The Dina 1-3 claims were staked in 1980 by Silver Standard and then were optioned to Mutual Resources Ltd. Mutual Resources drilled 6 holes that year.

The property is underlain by steeply dipping volcanics and sediments of the Upper Cretaceous Goosly Lake Formation (Kasalka Group) and the Lower Cretaceous Skeena Group.

Mineralization consists of pyrite, tetrahedrite and chalcopyrite disseminated in lapilli tuff and breccia and also concentrated along bedding planes in argillite.

BIBLIOGRAPHY

EMPR AR *9075
EMPR MAP 11
EMPR FIELDWORK 1992, pp. 475-481
GSC P 71-1A, 72-1A, 79-1A
GSC BULL 270
Richards, T. (1991) *in press
Placer Dome File

DATE CODED: 1993/06/25 CODED BY: DEJ FIELD CHECK: Y
DATE REVISED: 1993/07/02 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093L 314**

NATIONAL MINERAL INVENTORY:

NAME(S): **SIMON**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05E
BC MAP:
LATITUDE: 54 20 29 N
LONGITUDE: 127 34 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location #542, (Richards, 1991).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6022451
EASTING: 593072

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn K03 Fe skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Hazelton	Telkwa	

LITHOLOGY: Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

At the Simon showing chalcopyrite and magnetite pods are associated with a limestone lens of the Upper Triassic to Lower Jurassic Telkwa Formation (Hazelton Group).

BIBLIOGRAPHY

Richards, T. (1991) *in press

DATE CODED: 1993/06/25
DATE REVISED: 1993/07/02
CODED BY: DEJ
REVISED BY: DEJ
FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **093L 315**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLD DUST**, GOLDDUST, GOLD DUST I-II

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L16E
BC MAP:
LATITUDE: 54 45 40 N
LONGITUDE: 126 11 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location #588 (Richards, 1991).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6071844
EASTING: 681115

COMMODITIES: Copper Molybdenum Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: I02 Intrusion-related Au pyrrhotite veins L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Stuhini	Unnamed/Unknown Formation	
Triassic-Jurassic			Topley Intrusions

LITHOLOGY: Granite
Porphyry Dike
Phyllitic Schist
Chloritic Schist
Sericite Schist
Andesite
Greenstone
Argillaceous Siltstone
Granodiorite
Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	2.2000	Grams per tonne
Gold	0.0100	Grams per tonne
Copper	0.4730	Per cent

COMMENTS: Highest values from samples of veins in schist.
REFERENCE: Assessment Report 16874.

CAPSULE GEOLOGY

The Gold Dust showing is located about 65 kilometres east of Smithers.

Copper and molybdenum mineralization was discovered by prospectors in Tachek Creek in the late 1960's. In 1973, Amoco Canada Petroleum Co. Ltd. carried out geochemistry, geophysics and 500 metres of diamond drilling in 3 holes on the northeast part of the claims. In 1982, Dancer Energy and Resources Ltd. completed a geochemical survey over part of the Gold Dust I claim. Gerard Auger (owner) and Nick Carter conducted prospecting, geological mapping and rock sampling in 1987.

The area is underlain by granitic rocks of the Late Triassic to Early Jurassic Topley Intrusions and Upper Triassic volcanic and sedimentary rocks of the Stuhini Group. These comprise chlorite and sericite schists, massive andesite (greenstone) and argillaceous siltstones. Granitic rocks comprise granodiorite and quartz monzonite. Porphyry dikes intrude granitic rocks.

CAPSULE GEOLOGY

Pyrite, chalcopyrite and molybdenite mineralization occurs as disseminations and in west-northwest trending fractures in granitic rocks in Tachek Creek. Mineralization appears more widespread marginal to the younger porphyry dikes.

Samples from granitic rocks contained low copper values (0.126-0.124 per cent), molybdenum values up to 0.17 per cent and a single value of 1.2 grams per tonne gold (Assessment report 16874).

Schists north of the highway contain numerous quartz veins up to 2 metres in width. The veins generally occupy planes of schistosity. Samples contained up to 2.2 grams per tonne silver, 0.005 to 0.01 grams per tonne gold and up to 0.473 per cent copper (Assessment Report 16874).

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *16874
EMPR BULL 64
EMPR GEM 1969 pp. 115-117
EMPR MAP 12
EMPR OF 1996-29
Placer Dome File
Richards, T. (1991) *in press
EMPR BULL 110

DATE CODED: 1993/06/25 CODED BY: DEJ FIELD CHECK: Y
DATE REVISED: 1993/07/02 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093L 316**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER KING LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 55 01 N
LONGITUDE: 126 55 03 W
ELEVATION: 1965 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: At the head of Silver Lake basin, 2 kilometres northwest of the Silver King mine (093L 201) (Fieldwork 1991 p. 96).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6087535
EASTING: 633480

COMMODITIES: Lead, Copper, Silver, Gold, Zinc

MINERALS

SIGNIFICANT: Galena, Chalcopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Limonite, Pyrite
ALTERATION TYPE: Oxidation, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: l05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Unnamed/Unknown Formation	

LITHOLOGY: Feldspar Porphyritic Andesite
Mylonite
Schist

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY	GRADE	
Silver	16.0000	Grams per tonne
Gold	0.0110	Grams per tonne
Copper	0.0564	Per cent
Lead	1.5900	Per cent
Zinc	0.0370	Per cent

COMMENTS: Sample from the vein. Also 0.0013 per cent cadmium.
REFERENCE: Fieldwork 1991, page 98.

CAPSULE GEOLOGY

The Silver King Lake showing is located at the head of Silver King Lake basin about 2 kilometres northwest of the Silver King mine (093L 201). The showing was discovered in 1991 during mineral potential studies by the B.C. Geological Survey Branch.

The area is underlain by volcanic rocks of the Upper Cretaceous Kasalka Group. Hostrocks are mylonitic to schistose and form lenticular zones within otherwise massive volcanic rocks. Foliated rocks strike east and dip south, generally parallel to the regionally extensive pyritic and limonite stained rocks.

The showing consists of a quartz vein, 3 centimetres wide, exposed for 2 metres along strike in feldspar porphyritic andesite. The vein consists of vuggy crystalline quartz and contains irregular blebs of galena, chalcopyrite and pyrite, 1 millimetre to several centimetres in size.

A sample of the vein assayed 0.011 grams per tonne gold, 16 grams per tonne silver, 0.0564 per cent copper, 1.59 per cent lead, 0.037 per cent zinc and 0.0013 per cent cadmium (Fieldwork 1991 p. 98).

BIBLIOGRAPHY

EMPR FIELDWORK 1986, pp.201-222; *1991, pp. 93-101
EMPR OF 1988-20
EMPR MAP 69-1
GSC MAP 278A; 671A; 971A
GSC OF 351
GSC BULL 270
GSC P 40-18

DATE CODED: 1993/06/25 CODED BY: DEJ FIELD CHECK: Y
DATE REVISED: 1993/06/25 REVISED BY: DEJ FIELD CHECK: Y

MINFILE NUMBER: **093L 317**

NATIONAL MINERAL INVENTORY:

NAME(S): **RHYOLITE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 54 20 N
LONGITUDE: 126 49 15 W
ELEVATION: 1423 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located near the headwaters of Cronin Creek, about 2 kilometres south of the Cronin mine (093l 127) and 1.5 ilometres northwest of the Lorraine prospect (093L 129).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6086456
EASTING: 639714

COMMODITIES: Gold, Silver, Copper, Zinc

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Arsenopyrite, Chalcopyrite, Specularite, Sphalerite, Gold
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork, Massive, Disseminated
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: J04 Sulphide manto Au; I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 25 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Veins are up to 15 cenitmetres wide and are exposed over a 25 square metre area.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Ashman	

LITHOLOGY: Rhyolite
Rhyolite Dike
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY	GRADE	
Silver	86.0000	Grams per tonne
Gold	13.2000	Grams per tonne

COMMENTS: Highest assays from samples of veins.
REFERENCE: Fieldwork 1991, page 98.

CAPSULE GEOLOGY

The Rhyolite showing is located near the headwaters of Cronin Creek, about 2 kilometres south of the Cronin mine (093l 127) and 1.5 kilometres northwest of the Lorraine prospect (093L 129).

The showing was discovered in 1987 during regional mapping by the B.C. Geological Survey Branch. In 1991, the showing was re-examined during mineral potential studies in the area by the B.C. Geological Survey Branch.

The area is underlain by sediments of the Middle to Upper Jurassic Ashman Formation (Bowser Lake Group) intruded by rhyolite dikes.

The showing consists of sulphide veins and stockworks within and adjacent to rhyolite dikes that cut black argillite. The sulphides consist mainly of pyrrhotite and pyrite, with lesser arsenopyrite, chalcopyrite and specularite, minor sphalerite and microscopic native gold. Sulphides form massive banded veins up to 15 centimetres wide that are spatially associated with rhyolite. Disseminations and stockworks of sulphides occur within rhyolite. The mineralization is exposed over an area of approximately 25 square metres.

Samples of sulphide veins assayed up to 13.2 grams per tonne

CAPSULE GEOLOGY

gold and 86 grams per tonne silver with appreciable zinc and copper values (Fieldwork 1991, p. 98).

The mineralization at the Lorraine prospect and the Cronin mine is closely associated with rhyolite intrusions. The Rhyolite veins are different mineralogically and texturally and are possibly manto-style veins.

BIBLIOGRAPHY

EMPR FIELDWORK 1986, pp. 201-222; *1991, pp. 93-101
EMPR OF 1988-20
EMPR MAP 69-1
GSC MAP 278A; 671A; 971A
GSC OF 351
GSC BULL 270
GSC P 40-18

DATE CODED: 1993/06/25 CODED BY: DEJ FIELD CHECK: Y
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093L 318**

NATIONAL MINERAL INVENTORY:

NAME(S): **LITTLE JOE LAKE SOUTH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L15W
BC MAP:
LATITUDE: 54 52 02 N
LONGITUDE: 126 48 39 W
ELEVATION: 1707 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of sampled area located on a prominent north-facing cliff, 1.2 kilometres south of the Silver Pick prospect (093L 125).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6082212
EASTING: 640488

COMMODITIES: Lead, Zinc, Copper, Silver

MINERALS

SIGNIFICANT: Galena, Sphalerite, Tetrahedrite, Boulangerite, Chalcopyrite, Specularite, Pyrite
ASSOCIATED: Quartz, Ankerite
ALTERATION: Limonite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 250 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Veins occur along the ridge for more than 250 metres.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Undefined Formation	

LITHOLOGY: Phyllite
Porphyritic Andesite
Tuff
Schist

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Little Joe Lake South showing is located on a prominent north-facing cliff, 1.2 kilometres south of the Silver Pick prospect (093L 125).

The area is underlain by volcanic rocks of the Upper Cretaceous Kasalka Group.

Sulphide bearing quartz-ankerite veins are exposed along the ridge escarpment for more than 250 metres within massive to foliated porphyritic andesite and tuff of the Upper Cretaceous Kasalka Group. The foliated rocks strike northwest and dip steeply to moderately southwest or northeast. Within the area of extensive quartz veining, the host rocks are schists and phyllites speckled with fine-grained ankerite (or limonite after ankerite). In contrast to similar vein deposits nearby, rhyolite and other intrusions are not in evidence.

The quartz veins are generally 2 to 10 centimetres wide and are exposed along strike for an average of 3 to 5 metres along the face of the escarpment. The thickest and most sulphide-rich vein is 25 centimetres wide and is exposed intermittently for 20 metres. Vein quartz is massive and milky white to slightly banded or blotchy with respect to the distribution of sulphides and ankerite (or pockets of limonite after ankerite). Cockscomb quartz and vuggy textures are present but not common. Ankerite (and limonite) veinlets and slices of ankeritized wallrock subparallel to the vein walls give an impression of poorly development ribbon texture.

Metallic minerals within the veins include: galena, sphalerite, tetrahedrite, boulangerite, chalcopyrite, specularite and pyrite, and occur as irregular concentrations several millimetres to 2 centimetres in size. The vein assemblages are similar to those at the Cronin mine (093L 127), but the abundance of metallic minerals within the veins is much less than at Cronin.

Aside from a generally pervasive ankeritic component to the host phyllite, alteration adjacent o the veins is negligible; small

CAPSULE GEOLOGY

amounts of chlorite (+/- sericite) are present along or close to the vein margins, but seem to be part of the vein rather than a product of wallrock alteration.

The quartz veins have variable morphology, and their relationships with the host phyllites indicate that there are several generations of veins, each related to intervals of progressive structural deformation. Veins that comprise the west part of the Little Joe Lake South showing are almost all concordant with host phyllite and are variably deformed. The thickest and most sulphide-rich vein is also approximately concordant within the phyllite, but is internally drag folded and probably thickened. Fold structures within the vein, defined by the alignment of acicular boulangerite, probably formed during shearing and dilation along foliation.

Other veins that closely follow the foliation of the host rocks are planar to slightly warped. They contain irregular clots of sphalerite and galena, and have irregular margins, but are generally not internally deformed. These veins were probably emplaced during the latest stages of shearing and dilation along the foliation.

Veins that comprise the east part of the prospect are largely discordant to foliation. Many are flat to gently north-dipping and occur in regularly spaced vein sets within the phyllites. The veins, which are generally undeformed and have sharp contacts, occupy planar dilations perpendicular to the foliation of the host rocks. Blebs of galena and sphalerite, one to two centimetres in diametre, are common within veins. Many of which are less than 5 centimetres wide. Veins in similar structural settings are slightly warped or folded and the host phyllites deformed. Drag-folding in the phyllites suggests down-dip, or normal movement along fractures (now occupied by quartz veins); movement was probably synchronous with vein emplacement.

Quartz veins also occupy crescent-shaped fractures where slip along foliation has induced shear folding and accompanying dilation perpendicular to the foliation direction. Veins that occupy these dilation zones are irregular in width and continuity, but are commonly widest in the fold crests. Quartz concentrations of this type, which reach widths of up to 50 centimetres, are riddled with irregular blebs and veinlets of sphalerite, galena and chalcopyrite.

The largest vein contains up to 104 grams per tonne silver and 8.25 per cent lead, whereas other veins contain up to 26 grams per tonne silver (Fieldwork 1991, page 99).

BIBLIOGRAPHY

EMPR FIELDWORK 1986, pp. 201-222; *1991, pp. 93-101
EMPR OF 1988-20
EMPR MAP 69-1
GSC MAP 278A; 671A; 971A
GSC OF 351
GSC BULL 270
GSC P 40-18

DATE CODED: 1993/06/25 CODED BY: DEJ FIELD CHECK: Y
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093L 319**

NATIONAL MINERAL INVENTORY:

NAME(S): **URN 4**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L05E
BC MAP:
LATITUDE: 54 23 57 N
LONGITUDE: 127 33 20 W
ELEVATION: 1768 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location area located 4 kilometres east of Burnie Lake, about 50 kilometres south-southwest of the community of Smithers (Assessment Report 19487).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6028896
EASTING: 593771

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Malachite Azurite Chalcopyrite Pyrite
ALTERATION: Malachite Azurite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Siliceous Volcanic Rock
Volcanic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1989

COMMODITY	GRADE	
Silver	26.7000	Grams per tonne
Copper	0.3500	Per cent

COMMENTS: Weighted average of 10 bedrock chip samples from a semi-continuous outcrop approximately 32 metres long.
REFERENCE: Assessment Report 19487, page 4.

CAPSULE GEOLOGY

The Urn 4 showing is hosted by a pink coloured, very fine grained siliceous volcanic rock of the Lower Jurassic Telkwa Formation (Hazelton Group). Fracture surfaces contain malachite and azurite with occasional chalcopyrite and pyrite. A weighted average of 10 samples collected from a semi-continuous outcrop approximately 32 metres long was 0.35 per cent copper and 26.7 grams per tonne silver (Assessment Report 19487, page 4).

BIBLIOGRAPHY

GSC OF 351
GSC BULL 270
EMPR MAP 69-1
EMPR OF 1994-14
EMPR ASS RPT *19487
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1995/02/22 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 320**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANT 1**, LEFTY 1, LEFTY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L06W
BC MAP:
LATITUDE: 54 23 25 N
LONGITUDE: 127 28 30 W
ELEVATION: 1432 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drillhole collar location about 2 kilometres west of Starr Creek, 48 kilometres south-southwest of the community of Smithers (Assessment Report 21925).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6028017
EASTING: 599022

COMMODITIES: Copper, Silver, Zinc, Gold

MINERALS

SIGNIFICANT: Tetrahedrite, Chalcopyrite, Sphalerite, Bornite
ASSOCIATED: Quartz
ALTERATION: Quartz, Sericite, Malachite, Azurite
ALTERATION TYPE: Sericitic, Silicific'n, Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein, Breccia, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Andesitic Ash Tuff
Andesitic Lithic Crystal Tuff
Rhyolite
K-Feldspar Quartz Porphyritic Rhyolite
Ash Lapilli Rhyolite
Plagioclase Feldspar Porphyry Sill

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1990

COMMODITY	GRADE	
Silver	44.0000	Grams per tonne
Gold	0.3200	Grams per tonne
Copper	0.6500	Per cent
Zinc	1.0500	Per cent

COMMENTS: An average of a drill intersection of a strongly brecciated zone (shear?) between 20.1 and 23.6 metres.
REFERENCE: Assessment Report 21925, page 12.

CAPSULE GEOLOGY

The Lefty property is dominantly underlain by a northeasterly striking sequence of andesitic to rhyolitic volcanic rocks of the Lower Jurassic Telkwa Formation (Hazelton Group). The Telkwa Formation has been locally subdivided into andesitic ash tuff and lithic-crystal tuff, and rhyolite flow units comprising k-spar and quartz porphyritic rhyolite with minor ash-lapilli tuff. The rocks are generally weakly fractured and propylitized. Quartz veinlets and patches occur locally.

The volcanic strata are intruded by a fine to medium grained, grey-pink plagioclase-feldspar porphyry sill approximately 1400 metres long by 400 metres wide.

In the eastern half of the Ant 1 claim, a northeasterly trending zone of weak to strong quartz-sericite alteration crosscuts andesitic ash tuff and rhyolite flow units. The zone is exposed in scattered

CAPSULE GEOLOGY

outcrops over an area approximately 1000 by 200 metres. Outcrops are strongly fractured to locally weakly brecciated and contain numerous gouge zones. Malachite, azurite, tetrahedrite, chalcopyrite, sphalerite and bornite occur as fracture fillings, in quartz veins, disseminations and in quartz breccia over an undetermined width within the alteration zone.

A 1990 drill intersection of a strongly brecciated zone (shear?) with quartz-chalcopyrite-tetrahedrite-sphalerite, between 20.1 and 23.6 metres, averaged 0.65 per cent copper, 44 grams per tonne silver, 0.32 gram per tonne gold and 1.05 per cent zinc (Assessment Report 21925, page 12).

BIBLIOGRAPHY

GSC OF 351
GSC BULL 270
EMPR MAP 69-1
EMPR OF 1990-5; 1994-14
EMPR ASS RPT 17868, 20741, *21925
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1995/02/22 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 321**

NATIONAL MINERAL INVENTORY:

NAME(S): **JEWELRY BOX**, EMERSON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 22 44 N
LONGITUDE: 127 03 27 W
ELEVATION: 1615 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing located east of a small unnamed lake about 5 kilometres south of Emerson Creek, 50 kilometres south of the community of Smithers (Assessment Report 22638).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6027417
EASTING: 626163

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Quartz Carbonate Epidote
ALTERATION TYPE: Carbonate Propylitic Silicific'n
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated Stockwork
CLASSIFICATION: Porphyry
TYPE: L02 Porphyry-related Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Andesite Breccia
Andesite Flow
Felsite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact Regional
Plutonic Rocks
RELATIONSHIP: Syn-mineralization
GRADE: Greenschist
Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1992
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	2.3000	Grams per tonne
Copper	1.9000	Per cent

REFERENCE: Assessment Report 22638, page 5.

CAPSULE GEOLOGY

The occurrence area is underlain by moderately southwest dipping andesitic to rhyolitic flows and pyroclastics of the Lower Jurassic Telkwa Formation (Hazelton Group). These rocks have been intruded by a large granitic to porphyritic body; the adjacent and overlying volcanics are silicified and pyritic. Three major north-northeast trending fault structures cut across the property.

At the Jewelry Box showing, massive andesitic flows exhibit epidote-quartz alteration with local disseminated and fracture contolled pyrite. Light coloured northeast trending, steeply northwest dipping felsite dikes cut the andesite. The dikes are up to 3 metres wide and generally contain minor disseminated pyrite and may locally exhibit silicification and iron carbonate alteration.

Zones of quartz-iron carbonate alteration are generally along or within major fault zones or associated splays. A sample from a quartz-iron carbonate altered andesite breccia mineralized with pyrite and locally chalcopyrite analysed 1.9 per cent copper and 2.3 grams per tonne gold (Assessment Report 22638, page 5).

BIBLIOGRAPHY

EMPR ASS RPT 18002, 19293, 20391, 21888, *22638
EMPR MAP 69-1
EMPR OF 1990-5; 1994-14
GCS OF 351
GSC BULL 270
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1995/02/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 322**

NATIONAL MINERAL INVENTORY:

NAME(S): **RIDGE**, EMERSON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L06E
BC MAP:
LATITUDE: 54 23 21 N
LONGITUDE: 127 02 56 W
ELEVATION: 1798 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing located south of a small unnamed lake about 5 kilometres south of Emerson Creek, 50 kilometres south of the community of Smithers (Assessment Report 22638).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6028576
EASTING: 626691

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
ALTERATION: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Porphyry
TYPE: L02 Porphyry-related Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Contact Regional
RELATIONSHIP: Syn-mineralization
GRADE: Greenschist Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	25.5000	Grams per tonne
Gold	7.6000	Grams per tonne

REFERENCE: Assessment Report 22638, page 5.

CAPSULE GEOLOGY

The occurrence area is underlain by moderately southwest dipping andesitic to rhyolitic flows and pyroclastics of the Lower Jurassic Telkwa Formation (Hazelton Group). These rocks have been intruded by a large granitic to porphyritic body; the adjacent and overlying volcanics are silicified and pyritic. Three major north-northeast trending fault structures cut across the property.

The Ridge showing is exposed on the side of a fault depression and is characterized by quartz-pyrite vein mineralization and silicification of andesitic wallrock. The exposed portion of the vein is approximately 1 metre wide. Grab samples from the vein analysed up to 7.6 grams per tonne gold and 25.5 grams per tonne silver (Assessment Report 20391, page 4).

BIBLIOGRAPHY

EMPR ASS RPT 18002, 19293, *20391, 21888, 22638
EMPR MAP 69-1
EMPR OF 1990-5; 1994-14
GCS OF 351
GSC BULL 270

BIBLIOGRAPHY

Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1995/02/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 323**

NATIONAL MINERAL INVENTORY:

NAME(S): **LIMONITE**, BEAR, LIMONITE CREEK, MANY BEAR, RIDGE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L12W
BC MAP:
LATITUDE: 54 33 21 N
LONGITUDE: 127 48 27 W
ELEVATION: 1265 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drillhole collar located on the divide between Many Bear and Limonite creeks in Telkwa Pass, about 48 kilometres southwest of the community of Smithers (Assessment Report 23016).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6046021
EASTING: 577121

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite, Limonite, Chalcopyrite
ASSOCIATED: Sericite, Quartz, Andalusite, Pyrite, Lazulite, Specularite, Corundum, Rutile
ALTERATION: Sericite, Quartz, Andalusite, Pyrite, Lazulite, Specularite, Corundum, Rutile
ALTERATION TYPE: Argillic, Alunitic, Leaching, Oxidation, Chloritic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Altered Rock
Andesite
Rhyolite
Dacite
Biotite Granodiorite
Andesite Diorite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks

CAPSULE GEOLOGY

The Bear occurrence area is underlain by green andesite with lesser amounts of rhyolite and dacite of the Lower Jurassic Telkwa Formation (Hazelton Group). The volcanic assemblage is intruded locally by andesite and diorite dikes and by a biotite granodiorite stock. Hydrothermal alteration is widespread and in addition to ubiquitous chloritization of the volcanic rocks, two large parallel zones of advanced argillic alteration and aluminous alteration occur.

The zones of advanced argillic alteration and aluminous alteration crop out near the divide between Limonite and Many Bear creeks, in Telkwa Pass. The alteration zones are flanked downslope by large exotic limonite deposits believed to have their origins from oxidizing, blind sulphide deposits.

The pyritic aluminous alteration zone (Many Bear zone) occurs on the slopes above Many Bear Creek and is exposed in the walls of small drainages in two localities. The zone was intersected in drilling in 1992. It strikes about 050 degrees and is in excess of 1000 metres in length and 150 metres in width. The hostrock is completely replaced by sericite, quartz, andalusite, pyrite (5-40 per cent) and lazulite with lesser specularite, corundum, rutile and trace chalcopyrite.

Zones of advanced argillic alteration occur along the south slope of the ridge which forms the divide between Limonite Creek and Many Bear Creek. The zones strike easterly to northeasterly and are only intermittently exposed. The exposures occur over a length of more than 500 metres. The rocks are strongly foliated and composed mostly of sericite with some clay and contain quartz veining. Pyrite content is low.

CAPSULE GEOLOGY

In 1994, Limonite Creek Limited Partnership re-mapped the prospect area, conducted an induced polarization survey and drilled 9 diamond drill holes for a total of 1163 metres.

In 1996, Telkwa Gold Corp. drilled 3 diamond drill holes, for a total of 863 metres, on the Ridge zone.

BIBLIOGRAPHY

EMPR ASS RPT 20370, 21739, *23016
EMPR MAP 69-1
EMPR OF 1994-14
EMPR PF (*Thompson, W.D. (1997): Exploration of the High Sulfidation Epithermal Prospects, Limonite Creek Area; Telkwa Gold Corp.)
GSC BULL 270
GSC MAP 971A
GSC OF 351
Placer Dome File
WWW http://www.infomine.com/index/properties/BEAR.html

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1995/02/24 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 324**

NATIONAL MINERAL INVENTORY:

NAME(S): **ZYMO**, RED, RED 1-2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093L13W
BC MAP:
LATITUDE: 54 50 07 N
LONGITUDE: 127 56 37 W
ELEVATION: 823 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample location on the north bank of Mulwain Creek to Zymoetz River, about 48 kilometres west of the community of Smithers (Assessment Report 21723).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6076973
EASTING: 567851

COMMODITIES: Lead, Zinc, Silver, Gold, Copper

MINERALS

SIGNIFICANT: Chalcopyrite, Galena, Pyrite, Sphalerite
COMMENTS: Exact mineralogy not reported.
ASSOCIATED: Quartz, Calcite, Anhydrite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein, Stockwork, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal, Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au; I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Meta Sediment/Sedimentary
Granodiorite

HOSTROCK COMMENTS: Intrusive stock is Bulkley Diorite or Nemika intrusion.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
Plutonic Rocks
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: VEINLETS
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	270.0000	Grams per tonne
Gold	2.7000	Grams per tonne
Copper	0.2600	Per cent
Lead	13.3000	Per cent
Zinc	5.3000	Per cent

COMMENTS: Highest values.
REFERENCE: Assessment Report 21723, page 6.

CAPSULE GEOLOGY

The Zymo, formerly the Red property is located on the contact between Lower Cretaceous Kitsuns Creek Formation metasedimentary rocks of the Skeena Group and a Cretaceous granodiorite stock. Grab samples, taken in 1991, of narrow (1-5 centimetres) quartz-calcite veinlets mineralized with massive galena and minor pyrite yielded up to 2.7 grams per tonne gold, 270 grams per tonne silver, 0.26 per cent copper, 13.3 per cent lead and 5.3 per cent zinc (Assessment Report 21723, page 6). Skeena Resources Ltd. held the property at that time.

A quartz rich stock intrudes the Kitsuns Creek sedimentary rocks. It is tentatively identified as a Bulkley diorite,or more recently,as a Nanika Intrusion. In drill sections it is seen to altered to sericite albite clay and sericite chlorite alteration. Two types of breccia are seen in core,; a heterolithic 'collapse' breccia, 75 m. thick, which overlies the diorite, and some breccia pipes 20 metres or so occur within massive diorite. Veining of quartz, and quartz carbonate are throughout; and less common, milky white to purple anhydrite veins occur with shallow dips.

CAPSULE GEOLOGY

Mineralization in the quartz diorite is mainly pyrite, disseminated, in fractures and veins, and in some zones with an excess of 10 per cent pyrite up to 75 metres across. Local extensive gossans are developed at surface. Chalcopyrite +/- bornite+/- galena+/- sphalerite are found in quartz, quartz carbonate and anhydrite veins (EMPR Exploration 1999, pp. 59-63).

Between 1996 and 1999, L. Hewitt and R. Day conducted geochemical sampling and geological mapping. Freeport McMoran Gold Co. drilled 6 holes totalling 1600 metres in 1999.

BIBLIOGRAPHY

EM EXPL 1999-1-11, 19-31, 59-63
EM INF CIRC 2000-1, pp. 16, 17
EMPR ASS RPT *21723, 24924, 25421, 25820
EMPR OF 1994-14
GSC BULL 270
GSC OF 351

DATE CODED: 1988/08/24 CODED BY: LLD FIELD CHECK: N
DATE REVISED: 1995/02/28 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 325**

NATIONAL MINERAL INVENTORY:

NAME(S): **BABS**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L16E 093K13W
BC MAP:
LATITUDE: 54 51 13 N
LONGITUDE: 126 00 08 W
ELEVATION: 945 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drillhole NB94-10, located on the northeast of Babine Lake between Wilkinson and Wright bays, about 76 kilometres east of the community of Smithers (Assessment Report 23536).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6082619
EASTING: 692431

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
ALTERATION: Sericite Clay Malachite
ALTERATION TYPE: Sericitic Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Lower Jurassic			Topley Intrusions
Eocene			Babine Intrusions

LITHOLOGY: Quartz Phyric Tuff
Felsic Pyroclastic
Biotite Feldspar Porphyry Dike
Biotite Feldspar Porphyry
Monzonite
Fine Grained Intrusive Rock

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1994

COMMODITY	GRADE	
Copper	0.1900	Per cent

COMMENTS: Over 77.3 metres.
REFERENCE: Property File - Property description by D. MacIntyre, 1995.

CAPSULE GEOLOGY

The Babs property is located on the northeast side of Babine Lake, between Wilkinson and Wright bays, about 76 kilometres east of the community of Smithers. It straddles the border between NTS maps 93L16 and 93K13. The property, which has very little outcrop, was staked to cover a southeast-trending train of well mineralized, subangular biotite feldspar porphyry boulders. The boulders are typical of the Eocene Babine intrusions which are the hostrocks at the Bell (093M 001) and Granisle (093L 146) mines. Over 80 boulders ranging from 10 to 150 centimetres in diameter have been located within an area of 150 metres by 300 metres. Limited diamond drilling was done by Equity Exploration in 1992 and by Noranda in 1993 and 1994.

A large angular block of biotite feldspar porphyry with a chalcopyrite-pyrite stockwork was located by prospector and property owner Ralph Keefe in a new clearcut at the southeast limit of the boulder train. A sample from this block assayed 10,491 parts per million copper and 411 parts per billion gold (Property File -

CAPSULE GEOLOGY

Property description by MacIntyre, 1995). Many of the boulders are strongly magnetic, have intense stockwork veining or crackle breccia textures and appear to contain secondary biotite. The boulders are very similar to ore grade material from the Granisle mine which is 14 kilometres to the northwest and up ice from the Babs boulder train. This prompted earlier workers to believe the boulders were transported by ice from Granisle. However, subsequent drilling has shown that low grade copper mineralization occurs in sericite-clay altered quartz phyric tuffs that underlie the boulder train and this suggests the boulders may be locally derived. Although the source of the boulders has not yet been located, a small northeast-trending dikelet of dark grey biotite feldspar porphyry was found cutting pink, pyritic, Early Jurassic Topley intrusions monzonite in a small drainage ditch near the junction of the Nose Bay and Pats haulage roads.

The Babs boulder train occurs within a northwest-trending belt of altered quartz phyric pyroclastic rocks that is completely surrounded by pink, fine to medium grained Topley intrusive rock. Although the contact with the Topley intrusions is not exposed, it is most likely a fault. The felsic pyroclastics are probably Eocene in age and part of the Babine igneous suite based on lithologic similarity to quartz phyric rocks on the Newman Peninsula.

The only outcrop near the Babs boulder train is in a stripped area that parallels the main access road. Here, over 100 metres of pervasive, sericite-clay altered quartz phyric tuffs containing minor disseminated pyrite, chalcopyrite and malachite are exposed. Similar rocks occur as large angular blocks or subcrop within the area of the boulder train. Similar rocks were also intersected in drilling done by Equity in 1992 and Noranda in 1994. The best intersection was Noranda hole NB94-10 which was drilled just north of the stripped area and intersected 0.19 per cent copper over 77.3 metres (MacIntyre, 1995).

BIBLIOGRAPHY

EMPR ASS RPT 22788, 23261, 23536
EMPR FIELDWORK *1995, pp. 11-35; 1998, pp. 33-68
EMPR OF 1996-29; 1999-11
EMPR PF (*Property description by D. MacIntyre, 1995)
GSC BULL 270
GSC MAP 631A; 671A; 907A; 1424A
GSC MEM 252
GSC OF 351; 2593
GSC P 90-1F, pp. 115-120; 91-1A, pp. 7-13
Placer Dome File
EMPR BULL 110

DATE CODED: 1995/11/08 CODED BY: DM FIELD CHECK: Y
DATE REVISED: 1995/11/08 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093L 326**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER STAR**, CHISHOLM LAKE, STAR, CL

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L03W
BC MAP:
LATITUDE: 54 13 45 N
LONGITUDE: 127 16 04 W
ELEVATION: 860 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 45 kilometres southwest of Houston and 60 kilometres south of Smithers. Location is for centre of Imperial Metals 1998 drill holes on Star claim.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6010404
EASTING: 612916

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Chalcocite Pyrite
ALTERATION: Clay
ALTERATION TYPE: Argillic
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Regular

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Lower Cretaceous	Skeena	Unnamed/Unknown Formation	

LITHOLOGY: Granodiorite
Quartz Monzonite
Volcanic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Nechako Plateau
RELATIONSHIP:
GRADE: Zeolite

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1998
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.4900	Per cent

COMMENTS: Best intercept - from a 1.8 metre interval.
REFERENCE: Assessment Report 25922.

CAPSULE GEOLOGY

The Copper Star property occurs in an area with very little outcrop, and therefore, details of the geology are still largely unknown. Government mapping indicates that the property is underlain by lower Cretaceous Skeena Group volcanic and sedimentary rocks, in faulted contact with volcanics of the Lower Jurassic Telkwa Formation (Hazelton Group). To the north, plugs of the Early Jurassic Topley suite are noted.

In 1998, Imperial Metals optioned the Star claims near Chisholm Lake 45 kilometres southwest of Houston from prospectors Ed and Gerry Westgarde and then staked a block of 200 units as the CL claims. Disseminated and stockwork chalcopyrite, with very little pyrite, occurs in relatively fresh, angular granodiorite boulders on a new logging road. Texturally and mineralogically the boulders appear similar to rocks of the Late Cretaceous Bulkley intrusive suite.

Work on the property in 1998 identified a previously unmapped quartz monzonite stock of unknown dimension and similar in nature to the mineralized boulders. The eastern edge of the stock is observed in a recent road cut, but it can not be followed to the north, south or east due to overburden cover. Subsequent shallow drilling has

CAPSULE GEOLOGY

identified at least a one-kilometer dimension to the intrusive stock.

Alteration observed in the volcanics east of the intrusive includes moderately strong hornfelsing, with patches of sericite-clay alteration. Float boulders of this rock-type are commonly found with up to 5 per cent disseminated pyrite content. Intrusive rocks, both mineralized and unmineralized, appear relatively fresh with only minor degradation of feldspar minerals to clay. Copper and copper/molybdenum mineralization is observed as both disseminated and fracture related sulfides, hosted in quartz monzonite. Molybdenite is only observed to date, as fracture related mineralization.

Imperial Metals drilled a 2-kilometre fence of percussion holes in an area of subdued relief with mineralized boulders and sparse outcrop. Highest grade copper intersections were obtained 900 metres west of the original discovery, suggesting the mineralized boulders may have been glacially transported from a nearby source (P. McAndless, pers. comm.).

The 1998 drilling results were considered encouraging at the time. Sulphide mineralization, albeit sparse (best intercept returned 0.49% copper over 1.8 Metres), was encountered in at least three holes (Assessment Report 25922). Given the grade (in excess of 0.5% copper) and extent of mineralized boulders, the question remained as to the whereabouts and extent of the source of that mineralization. Imperial elected to drop their option in 1999.

Ed and Gerry Westgard later found another bedrock copper occurrence 1.5 kilometres from the area targeted by Imperial Metals that prompted Hunter Dickinson Group to acquire the claims and expand the search area (D. Johnson, pers. comm.).

Misty Mountain Gold (a Hunter Dickenson group company) advanced the prospect during 2000 by the establishment of 67 line kilometres of survey grid and subsequent induced polarization geophysics together with the collection of 817 soil samples. Five large induced polarization anomalies (one kilometre or more in length) have been defined which demonstrate chargeability values that are typical of porphyry mineralized systems and indicate widespread sulphide mineralization outward from extremely limited bedrock exposures, all of which are copper bearing. Results of soil sampling also indicate a broad distribution of copper mineralization. The limited outcrops of bedrock that occur on the property all contain copper mineralization with a wide range of values. Chalcopyrite is the dominant copper sulphide with minor bornite and chalcocite noted.

In August 2001, it was announced that Doublestar Resources and Gold-Ore Resources were entering into an earn-in agreement with Misty Mountain Gold on the Copper Star porphyry copper discovery. Under the agreement, Doublestar and Gold-Ore would conduct 3000 metres of diamond drilling to earn 25 per cent each in the prospect. Misty is acquiring an underlying option to purchase 100 per cent of the property from the initial discoverers, Edward Westgarde, Gerald Westgarde and Douglas Stumpf as part of its reorganization involving Taseko Mines.

BIBLIOGRAPHY

EM EXPL *1998, p.26; *2000-6; 2001-1-9
EMPR ASS RPT *25922
EMPR OF 1991-1; 1994-14
PR REL Misty Mountain Gold, *August 22, 2001
WWW http://www.hdgold.com/mglfl.htm; http://www.infomine.com/

DATE CODED: 2001/08/31 CODED BY: GJP FIELD CHECK: Y
DATE REVISED: 2001/08/31 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093L 327**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER STREAK**, SILVER SLEEPER, ERIC, MAKO, AIVEN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093L02E
BC MAP:
LATITUDE: 54 11 40 N
LONGITUDE: 126 45 29 W
ELEVATION: 840 Metres
LOCATION ACCURACY: Within 500M
COMMENTS:

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6007483
EASTING: 646258

COMMODITIES: Silver, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Tetrahedrite, Galena, Sphalerite, Chalcopyrite, Pyrite
ASSOCIATED: Pyrite
ALTERATION: Calcite, Quartz
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal, Volcanogenic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Kasalka	Unnamed/Unknown Formation	

LITHOLOGY: Ash Tuff
Lapilli Tuff
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: TRENCH

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 2002

COMMODITY	GRADE	
Silver	191.0000	Grams per tonne
Copper	0.2600	Per cent
Lead	0.3000	Per cent
Zinc	0.1500	Per cent

COMMENTS: 16.7 metre chip sample from a trench.
REFERENCE: Press Release, Tenajon Resource Corp., November 25, 2003.

CAPSULE GEOLOGY

The Silver Streak prospect is located 24 kilometres south-southwest of Houston and can be accessed by traveling 30 kilometres southward from Houston on the Morice Lake road and then travelling eastward 5 kilometres on the Carrier Forest Service Road. The prospect is on the north side of the road.

In 1989, sampling across a trench averaged 1.99 per cent copper and 338 grams per tonne silver over 33 metres. Subsequent drilling, concentrated along a northwest trend, encountered anomalous silver values over a 150-metre strike length. Results included an 8.78-metre section assaying 258 grams per tonne silver, 0.49 per cent copper, followed by a 12.36-metre section averaging 38.3 grams per tonne silver with 0.27 per cent copper. Equity Silver contracted an induced polarization survey over 20.4 kilometres of cut line in August 1990 (ASS RPT 20651). Tenajon Resources Corp. excavated a trench in 2002 and took a continuous 16.7 metre chip sample, which returned an assay of 191 grams per tonne silver, 0.26 per cent copper, 0.30 per cent lead and 0.15 per cent zinc (PR REL Tenajon Resources Corp., November 25, 2002).

Cretaceous Kasalka Group andesitic to rhyolitic volcanic rocks, Lower Jurassic Hazelton Group calc-alkaline volcanic rocks and Lower Cretaceous Skeena Group, Kitsuns Creek Formation coarse clastic sedimentary rocks underlie the claims. Disseminated pyrite, possible

CAPSULE GEOLOGY

tetrahedrite, galena, sphalerite and trace chalcopyrite occur in a porous lapilli tuff unit that is approximately 9 metres thick and is overlain by argillite. The tuff contains extensive carbonate alteration and lesser silicification and is cut by northwest trending quartz-carbonate veins.

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EMPR ASS RPT 20651
EMPR PF Placer Dome: Miscellaneous File, Box 57
GSC OF 351
PR REL Tenajon Resources Corp., Nov.25, 2002; Jan.28, 2003
WWW http://www.northair.com/tenajon/projects.html

DATE CODED: 2003/03/03 CODED BY: ICLW FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093M 001** NATIONAL MINERAL INVENTORY: 093M1 Cu9

NAME(S): **BELL**, BELL COPPER, NEWMAN, BABINE, KRAFT

STATUS: Past Producer Open Pit MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M01E 093L16E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 00 10 N NORTHING: 6098605
LONGITUDE: 126 13 55 W EASTING: 677033
ELEVATION: 777 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of the open pit on Newman Peninsula at the north end of Babine Lake.

COMMODITIES: Copper, Silver, Gold, Zinc, Lead, Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite, Chalcocite, Bornite, Electrum, Galena, Sphalerite, Molybdenite
COMMENTS: Rare molybdenite.
ASSOCIATED: Quartz, Pyrite
ALTERATION: Biotite, Chlorite, Sericite, Carbonate, Gypsum, Anhydrite, Azurite, Malachite
ALTERATION TYPE: Potassic, Silicific'n, Sericitic, Propylitic, Oxidation, Argillic
MINERALIZATION AGE: Eocene
ISOTOPIC AGE: 51.0 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Biotite

DEPOSIT

CHARACTER: Stockwork, Vein, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 90 x 60 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The age of mineralization is from the age of intrusion (Bulletin 64). Supergene enrichment adds younger mineralization. Better grades are contained in a 90 by 60-metre flat-lying, blanket-like deposit.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Undefined Formation	
Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

ISOTOPIC AGE: 51.0 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Biotite Feldspar Porphyry
Fine Grained Greywacke
Siltstone
Andesite
Tuff

HOSTROCK COMMENTS: The orebody is primarily (75 per cent) hosted within the intrusion. The age date is from Bulletin 64.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
COMMENTS: Intrusions associated with the Skeena Arch.

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Unclassified YEAR: 1990
QUANTITY: 71752960 Tonnes

COMMODITY	GRADE	
Silver	0.4800	Grams per tonne
Gold	0.2300	Grams per tonne
Copper	0.4600	Per cent

COMMENTS: Reserves in the present open pit and in the Extension zone.
REFERENCE: Noranda Inc. Annual Report 1990.

CAPSULE GEOLOGY

The Bell copper deposit is located on Newman Peninsula on the north end of Babine Lake. Two other large porphyry-type deposits, the Granisle (093L 146) and Morrison (093M 007), also occur in the area.

The area was initially explored in 1913 for veins with lead and zinc mineralization. Reconnaissance geophysics and anomalous copper, in a soil geochemical survey in 1962, led Noranda Exploration Company to an area 800 metres northeast of the old adits. By 1967, mineable reserves of 42 million tonnes of ore had been defined grading 0.50 per cent copper, 0.35 gram per tonne gold and 1.0 gram per tonne silver, within an overall geological ore reserve of 116 million tonnes grading 0.48 per cent copper, 0.35 gram per tonne gold, 1.0 gram per tonne silver and less than 0.005 per cent molybdenum (Canadian Institute of Mining and Metallurgy Special Volume 15). Production began in 1972, and by December 31, 1990 approximately 71 million tonnes of ore had been processed.

The Bell mine is a porphyry copper deposit hosted primarily in a biotite-feldspar porphyry stock of the Eocene Babine Intrusions. The stock is crosscut by the northwest trending Newman fault which juxtaposes the two groups that host the intrusion. These groups are the Lower Jurassic Telkwa Formation (Hazelton Group) and the Lower Cretaceous Skeena Group. Telkwa Formation rocks are primarily fine-grained tuffs and andesites and the younger Skeena Group rocks are mostly fine-grained greywackes. The deposit overlaps onto both of these assemblages. The mineralization has been dated at 51.0 million years (Bulletin 64).

Chalcopyrite and lesser bornite occur as disseminations in the rock matrix, in irregular quartz lenses and in a stockwork of 3 to 6-millimetre quartz veinlets which cut the feldspar porphyries and the siltstones. Molybdenite is rare, and occurs in the feldspar porphyry in the northern part of the mineralized zone. Gold occurs as electrum associated with the copper mineralization. Specular hematite and magnetite are common in quartz veinlets and hairline fractures. There is also significant supergene enrichment with chalcocite coating chalcopyrite. A supergene chalcocite zone capped the deposit and extended to depths of 50 to 70 metres. Some gypsum together with copper-iron sulphate minerals and iron oxides were also present (Open File 1991-15).

The ore zone has pervasive potassic (mainly biotitization) alteration with a surrounding concentric halo of chlorite and sericite-carbonate alteration (propylitic and argillic) which corresponds to the two kilometre pyrite halo which surrounds the deposit. A late quartz-sericite-pyrite-chalcopyrite alteration has been superimposed on part of the earlier biotite-chalcopyrite ore at the western part of the orebody. A number of late-stage breccia pipes cut the central part of the ore zone near the Newman fault and alteration associated with their intrusion has apparently depleted the copper grades in the area of the pipes. Veinlets of gypsum are present in the upper part of the orebody. Anhydrite is a significant component in the biotite-chalcopyrite zone but is not present in other alteration facies. Monominerallic veinlets of anhydrite are rare (Open File 1991-15).

The copper mineralization occurs in a crescent-shaped zone along the western contact of the porphyry plug. Better grades of copper mineralization are contained in a 60 by 90-metre thick flat-lying, blanket-like deposit which is connected to a central pipe-like zone, centred on the western contact of the intrusive. The pipe-like zone of copper mineralization is 150 metres in diameter and extends to a depth of at least 750 metres.

Reserves in the present open pit and in the Extension zone are 71,752,960 tonnes grading 0.23 gram per tonne gold, 0.46 per cent copper and 0.48 gram per tonne silver (Noranda Inc. Annual Report 1990).

Noranda reports that the mine will be closed in June 1992 due to depleted ore reserves (Northern Miner - March 16, 1992). Total production from 1972 to 1992 was 77,146,088 tonnes yielding 38,319,730 grams of silver, 12,885,964 grams of gold and 304,795,539 kilograms copper.

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EMPR BC METAL MM00003
EMPR BULL *64
EMPR ENG INSP Annual Report 1989, 1990
EMPR EXPL 1986-A49; 1987-B58-B65
EMPR GEM 1969-114; 1970-170; 1971-185; 1972-426; 1973-352; 1974-266
EMPR IR 1984-2, pp. 99, 101; 1984-3, pp. 105, 1984-4, p. 121

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EMPR MIN STATS 1985 1985, pp. 47, 49; 1987, pp. 36, 38, 65, 66; 1990, pp. 27, 30, 33, 68, 69, 70; 1980-1992, pp. 4,7,11; 1980-1993, pp. 16, 21
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EMPR OF 1992-1; 1992-3; 1997-10; 1998-8-F, pp. 1-60; 1998-8-K, pp. 1-22
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EMR CANMET IR #17, 1974
EMR CORPFILE (Noranda Mines Ltd.)
EMR RES FILE (Newman Mine)
GSC MAP 40-18A; 671A; 971A
GSC OF 2322
GSC P 40-18-12
CIM BULL January, 1986, pp. 89-92
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CMH 1972-1986
CMJ September, 1986
GCNL #56, 1979; #89, 1985
N MINER Oct., 1972; Mar., 1977; Feb. 16, Oct., 1978; Apr., 1982; July 18, 1985; Jan. 6, 1986; March, 1989; July 8, Sept. 9, 1991; March 16, 1992
W MINER Nov. 1970; March 1977; April, May 1979; Jan. 1980; Oct. 1982; Nov. 1983
Cuddy, A.S. (1980): *M.Sc. Thesis
EMPR OF 1998-10
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/31 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 002**

NATIONAL MINERAL INVENTORY: 093M1 Pb1

NAME(S): **MAG**, STHUF

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01E 093L16E
BC MAP:
LATITUDE: 55 00 10 N
LONGITUDE: 126 08 06 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location from National Mineral Inventory card 093M01 PB1.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6098855
EASTING: 683231

COMMODITIES: Lead Zinc Copper

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite
ASSOCIATED: Calcite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Nilkitkwa	
Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Argillite
Greywacke
Andesitic Tuff
Andesitic Breccia
Biotite Feldspar Porphyry Dike

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.
Mineralized veins are hosted in pyritic sedimentary rocks.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Mag occurrence is located 4 kilometres north of Hawthorne Bay on the east side of Babine Lake.

The area is underlain by andesitic tuffs and breccias of the Lower to Middle Jurassic Telkwa Formation (Hazelton Group). These have been intruded by the northeast extension of the biotite-feldspar porphyry dike of the Eocene Babine Intrusions which occurs at the Granisle mine (092L 145) immediately to the south. Interbedded argillites and greywackes of the Lower to Middle Jurassic Nilkitkwa Formation (Hazelton Group) are exposed in a creek in the area. These sediments strike north and dip to the west at moderate angles.

Calcite veins, up to 30 centimetres in width, occur in a west-trending fracture zone cutting pyritic sedimentary rocks. The veins are mineralized with sphalerite, galena, pyrite and chalcopyrite.

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EMPR AR *1965-103; 1968-134
EMPR MAP 69-1 (#213)
EMPR OF 1997-10
GSC OF 2322
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 003**

NATIONAL MINERAL INVENTORY: 093M1 Cu6

NAME(S): **SNOOPY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01E
BC MAP:
LATITUDE: 55 03 26 N
LONGITUDE: 126 10 04 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is from Minister of Mines Annual Report 1968, page 130.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6104825
EASTING: 680890

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic			Topley Intrusions

LITHOLOGY: Quartz Diorite
Diorite

HOSTROCK COMMENTS: Topley Intrusions are Triassic to Early Jurassic in age.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Snoopy showing is located 1.6 kilometres northwest of Nizik Lake, 7.5 kilometres northeast of the Bell mine (093M 001).
The documented location of this copper showing appears to be near an outcrop of the Triassic to Early Jurassic Topley Intrusions which are dioritic to quartz dioritic in composition. There is no other information available.

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EM OF 2001-03
EMPR AR *1968-130
EMPR MAP 69-1 (#214)
EMPR OF 1997-10
GSC OF 2322
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/07 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 004**

NATIONAL MINERAL INVENTORY: 093M1 Cu4

NAME(S): **OLD FORT**, OFF, DDT, RAID, BAD NEWS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01W
BC MAP:
LATITUDE: 55 04 24 N
LONGITUDE: 126 20 04 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is from Bulletin 64, page 144.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6106199
EASTING: 670179

COMMODITIES: Copper, Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Bornite
ASSOCIATED: Magnetite, Pyrite, Pyrrhotite
ALTERATION: K-Feldspar, Biotite
ALTERATION TYPE: Argillic, Potassic
MINERALIZATION AGE: Eocene
ISOTOPIC AGE: 49 +/- 2 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Biotite

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
COMMENTS: The isotopic age date is from a mineralized sample of biotite-feldspar porphyry (Bulletin 64, specimen NC 67-1).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Eocene			Babine Intrusions

ISOTOPIC AGE: 49 +/- 2 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Diorite
Porphyry Dike
Hornblende Biotite Feldspar Porphyry
Quartz Monzonite
Argillaceous Siltstone
Andesitic Tuff
Andesitic Breccia

HOSTROCK COMMENTS: Isotopic age date is from Bulletin 46, page 89, specimen NC 67-1.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.2100	Per cent
Molybdenum	0.0240	Per cent

COMMENTS: The samples were taken over a width of 61 metres from trench #3 in quartz diorite.
REFERENCE: Assessment Report 8312.

CAPSULE GEOLOGY

The Old Fort showing is located on the southeast slope of Old Fort Mountain at the north end of the main part of Babine Lake.

An elliptical stock of quartz diorite has been intruded by a small plug of quartz monzonite and dikes of hornblende-biotite-feldspar porphyry all of which belong to the Eocene Babine intrusions. The stock is approximately 600 by 1000 metres in size and intrudes hornfelsed argillaceous siltstones of the Jurassic Hazelton Group. Andesitic tuffs and breccias, also of the Jurassic Hazelton Group, outcrop nearby.

CAPSULE GEOLOGY

Chalcopyrite and minor bornite and molybdenite are found in fractures and disseminated in both quartz diorite and porphyry dikes adjacent to the western margin of the inner quartz monzonite body. Samples taken over a length of 61 metres from trench #3 in quartz diorite, west of the small quartz monzonite plug, averaged 0.21 per cent copper and 0.024 per cent molybdenum (Assessment Report 8312, page 4). Magnetite is associated with some of the copper mineralization. Pyrite and pyrrhotite are widely disseminated in all of the intrusive rocks as well as in the hornfelsed sedimentary rocks. Potassium/Argon dating of a mineralized sample of biotite feldspar porphyry yielded an age of 49 million years. The Newman fault, an important ore control at several of the mines in the area, traverses the property to the northeast.

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EMPR ASS RPT 3260, 4486, 5058, *8312, 10696, 12647
EMPR BULL *64, p. 144
EMPR GEM 1971-186; 1972-428; 1973-353; 1974-267
EMPR MAP 69-1 (#215)
EMPR OF 1997-10
GSC OF 2322
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/07 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 005**
NATIONAL MINERAL INVENTORY: 093M1 Cu7

NAME(S): **JAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01E
BC MAP:
LATITUDE: 55 10 00 N
LONGITUDE: 126 11 36 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location from Minister of Mines Annual Report 1968, page 131.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6116933
EASTING: 678769

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Andesite
Rhyolite
Flow
Tuff
Tuffaceous Mudstone

HOSTROCK COMMENTS: Host rocks belong to the informally named Saddle Hill volcanics of the Hazelton Group.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Jake showing is located 5 kilometres northeast of the north end of Hatchery Arm, Babine Lake.

The area is underlain by reddish andesitic to rhyolitic flows and tuffs interbedded with subaerial tuffaceous mudstones. These belong to the Jurassic Saddle Hill volcanics, an informal subdivision of the Hazelton Group (Geological Survey of Canada Open File Map 2322).

Minor pyrite, chalcopyrite and malachite occur in fractures in stratified volcanic rocks (Minister of Mines Annual Report 1968, page 131).

BIBLIOGRAPHY

EM OF 2001-03
EMPR AR *1968-131
EMPR MAP 69-1 (#216)
EMPR OF 1997-10
GSC OF 2322
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/08 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 006**

NATIONAL MINERAL INVENTORY: 093M1 Cu5

NAME(S): **HEARNE HILL**, KOFIT, BLAND, CHAPMAN, PETER BLAND

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093M01W
BC MAP:
LATITUDE: 55 10 59 N
LONGITUDE: 126 17 10 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Anomaly #1 (Assessment Report 1102).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6118523
EASTING: 672790

COMMODITIES: Copper, Molybdenum, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Molybdenite, Pyrite
ASSOCIATED: Pyrite, Calcite
ALTERATION: Silica, Biotite, Sericite, Pyrite
ALTERATION TYPE: Silicific'n, Biotite, Sericitic, Pyrite
MINERALIZATION AGE: Eocene

DEPOSIT

CHARACTER: Stockwork, Breccia, Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Telkwa	
Jurassic-Cretaceous	Bowser Lake	Ashman	
Eocene			Babine Intrusions
Jurassic			Topley Intrusions

LITHOLOGY: Biotite Feldspar Porphyry
Brecciated Pipe
Hybrid Diorite
Andesite
Tuff
Dolomite
Epiclastic Rock
Greywacke
Argillite
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Stikine
Plutonic Rocks

INVENTORY

ORE ZONE: HEARNE HILL
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1998
QUANTITY: 947000 Tonnes

COMMODITY	GRADE	
Copper	0.4080	Per cent
Gold	0.1830	Grams per tonne

COMMENTS: Bland and Chapman zones; 0.3 per cent copper cutoff.
REFERENCE: Booker Gold Explorations Limited, Press Release, July 7, 1998.

ORE ZONE: HEARNE HILL
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1998
QUANTITY: 4230000 Tonnes

COMMODITY	GRADE	
Copper	0.6000	Per cent
Gold	0.1860	Grams per tonne

COMMENTS: Bland and Chapman zones; 0.3 per cent copper cutoff.
REFERENCE: Booker Gold Explorations Limited, Press Release, July 7, 1998.

INVENTORY

ORE ZONE: CHAPMAN REPORT ON: Y

CATEGORY: Indicated YEAR: 1992
QUANTITY: 143000 Tonnes

COMMODITY	GRADE	
Copper	1.7300	Per cent
Gold	0.8000	Grams per tonne

COMMENTS: Cutoff of 0.75 per cent copper.
REFERENCE: CIM Special Volume 46, page 300.

ORE ZONE: MAIN REPORT ON: Y

CATEGORY: Inferred YEAR: 1993
QUANTITY: 60000000 Tonnes

COMMODITY	GRADE	
Copper	0.1600	Per cent
Gold	0.1000	Grams per tonne

COMMENTS: Using a cutoff grade of 0.1 per cent copper. The breccia pipe is estimated to contain an indicated resource of 143,000 tonnes grading 1.73 per cent copper and 0.8 grams per tonne gold using a cutoff grade of 0.75 per cent copper.
REFERENCE: CIM Special Volume 46, page 300.

CAPSULE GEOLOGY

The Kofit showing is located 1 kilometre south of Hearne Hill, east of the south end of Morrison Lake, approximately 70 kilometres northeast of Smithers.

The property is underlain by northwest-trending massive andesite flows, tuffs and epiclastic sedimentary rocks of the Lower to Middle Jurassic Telkwa Formation (Hazelton Group). These are in fault contact with greywacke, argillite and conglomerate of the Jurassic to Cretaceous Ashman Formation (Bowser Lake Group). A small dioritic to quartz dioritic stock of the Triassic to Early Jurassic Topley Intrusions has intruded the layered rocks and is in turn intruded by a small biotite feldspar porphyry plug and associated northeast-trending dike swarm of the Eocene Babine Intrusions.

The volcanic rocks are locally strongly silicified and termed "hybrid diorite". Biotitization is associated with the best copper mineralization, and sericite-pyrite alteration is found peripheral to the copper mineralization. Porphyry copper-style, fracture-controlled and disseminated chalcopyrite, bornite and minor molybdenite mineralization, estimated to average 0.2 per cent copper (Assessment Report 20084), is found in highly fractured "hybrid diorite" and in the porphyry plug. A breccia pipe, approximately 50 by 60 metres in size, cuts the porphyry copper mineralization and is mineralized with chalcopyrite. One drill hole in the breccia pipe assayed 2.75 per cent copper across 22.9 metres (Assessment Report 20084).

Previous drill indicated and inferred reserves in the main breccia body (Chapman breccia zone) located within a large, low-grade porphyry system are 180,000 tonnes grading 1.7 per cent copper (Information Circular 1994-1, page 18).

The level of sampling information at Hearne Hill as of December 31, 1992 was much lower than for the Morrison deposit and rigorous resource calculations were not appropriate. The resource estimates for stockwork mineralization at Hearne Hill were performed by first calculating 12.5 metre bench composites from the diamond drill area. The diamond drill composites were then kriged and contoured, and volumes calculated within each contour to a depth of approximately 100 metres. Resource estimates for breccia mineralization were calculated by constructing polygons on-section to the confines of the breccia pipe.

As of December 31, 1992, the inferred resource for the Hearne Hill porphyry deposit was estimated to be 60 million tonnes at an average grade of 0.16 per cent copper and 0.1 gram per tonne gold using a cutoff grade of 0.10 per cent copper. The breccia pipe (Chapman) within the Hearne Hill porphyry deposit, to a depth of 100 metres, was estimated to contain an indicated resource of 143 000 tonnes at an average grade of 1.73 per cent copper and 0.8 gram per tonne gold using a cutoff grade of 0.75 per cent copper (CIM Special Volume 46, page 300).

Booker Gold Exploration Ltd. 1996 program was reported to prove that the porphyry system on the Hearne Hill property is of larger dimensions than previously inferred and contains at least three copper-gold volcanic breccia zones with grades of 0.4 to 5 per cent copper and 0.1 to 3 grams per tonne gold (1997 Cordilleran Roundup Abstracts, page 35). Drilling approximately 200 metres to the

CAPSULE GEOLOGY

northwest of the Chapman zone located a new zone called the Peter Bland zone. This zone is estimated to be 500 metres in length, 200 metres in width and at least 460 metres in depth. This new zone is reported to be lithologically identical to the Chapman zone and the two may connect at depth.

The Bland and Chapman zones contain an indicated resource of 4,230,000 tonnes grading 0.6 per cent copper and 0.186 grams per tonne gold, at a 0.3 per cent copper cutoff; and an inferred resource of 947,000 tonnes grading 0.408 per cent copper and 0.183 grams per tonne gold, at a 0.3 per cent copper cutoff (Booker Gold Explorations Limited, Press Release, July 7, 1998).

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GSC OF 2322
CIM Spec. Vol. 46, pp. 247-255, 290-303
GCNL #205(Oct.24), #212(Nov.4), #237(Dec.9), 1992; #48(Mar.10), #80(Apr.25),#102(May 28), #131(July 9), #145(Jul.29), #156 (Aug.14), #162(Aug.22), #166(Aug.28), #175(Sept.11), #191(Oct.3), #249(Dec.30), 1997
N MINER May 4, 1998
PR REL Booker Gold Explorations Limited, July 7, 1998; Pacific Booker Minerals Inc., June 14, Aug.7, 2002
WWW http://www.pacificbooker.com
Placer Dome File
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1997/05/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093M 007**

NATIONAL MINERAL INVENTORY: 093M1 Cu2

NAME(S): **MORRISON**, ELLEN

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093M01W
BC MAP:
LATITUDE: 55 11 40 N
LONGITUDE: 126 18 55 W
ELEVATION: 823 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of deposit, 1.25 kilometres east of Morrison Lake near the south end, 2 kilometres west of the summit of Hearne Hill and 90 kilometres north of Houston (Canadian Institute of Mining and Metallurgy Special Volume 15, 1976).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6119718
EASTING: 670884

COMMODITIES: Copper, Silver, Gold, Molybdenum, Lead, Zinc

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Bornite, Molybdenite, Galena, Sphalerite, Geocronite, Boulangerite
ASSOCIATED: Quartz, Biotite, Pyrite, Pyrrhotite, Marcasite, Arsenopyrite, Carbonate, Apatite
COMMENTS: Also tourmaline.
ALTERATION: Biotite, Chlorite, Carbonate, Clay, Sericite, Epidote, Gypsum, Malachite
COMMENTS: Also brochantite.
ALTERATION TYPE: Biotite, Chloritic, Carbonate, Argillic
MINERALIZATION AGE: Eocene
ISOTOPIC AGE: 52.1 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Biotite

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry, Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Cylindrical
MODIFIER: Faulted
DIMENSION: 900 x 300 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions of the Morrison deposit. Age date from Bulletin 64.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Ashman	
Eocene			Babine Intrusions

ISOTOPIC AGE: 52 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Biotite Hornblende Plagioclase Porphyry
Siltstone
Silty Argillite
Conglomerate
Greywacke
Porphyry Dike
Rhyodacite Dike
Andesitic Dike

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Open File 720. The Bowser Lake Group is Middle Jurassic to Lower Cretaceous in age.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Bowser Lake
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: MORRISON REPORT ON: Y

CATEGORY: Combined YEAR: 1993
QUANTITY: 190000000 Tonnes

COMMODITY	GRADE	
Gold	0.2100	Grams per tonne
Copper	0.4000	Per cent

COMMENTS: Indicated and inferred resources to a depth of 300 metres using a cutoff grade of 0.30 per cent copper.
REFERENCE: CIM Special Volume 46, page 300.

ORE ZONE: MORRISON REPORT ON: Y

CATEGORY: Inferred YEAR: 1976
QUANTITY: 86000000 Tonnes

COMMODITY	GRADE	
Silver	3.4000	Grams per tonne
Gold	0.3400	Grams per tonne
Copper	0.4200	Per cent

COMMENTS: Geological resource; cutoff grade of 0.3 per cent copper.
REFERENCE: CIM Special Volume 15 (1976), page 264.

ORE ZONE: MORRISON REPORT ON: Y

CATEGORY: Indicated YEAR: 1998
QUANTITY: 123200000 Tonnes

COMMODITY	GRADE	
Gold	0.2030	Grams per tonne
Copper	0.3800	Per cent

COMMENTS: Copper cutoff of 0.3 per cent.
REFERENCE: Booker Gold Explorations Limited, Press Release, July 7, 1998.

CAPSULE GEOLOGY

The Morrison deposit is located 21 kilometres north of the Bell mine (093M 001), north Babine Lake, 86 kilometres east of Hazelton.

Siltstone, silty argillite, and minor conglomerate of the Middle to Upper Jurassic Ashman Formation (Bowser Lake Group) are host to small Eocene Babine Intrusions, including biotite-hornblende-plagioclase porphyry plugs, sills and dikes.

In this area, the Ashman Formation sedimentary rocks are intruded by a multiphase Eocene biotite-hornblende-plagioclase porphyry plug. The sediments are massive and strongly altered so bedding is not visible. Where observed, bedding generally strikes north to northwest and dips steeply. The siltstones and argillites are very fine to medium-grained and their overall appearance and mineralogy depend largely on their location in the alteration zones. Fawn or medium grey colours and clastic textures are characteristic of rocks which have considerable introduced carbonate at the outer portions of the property. The rocks become darker greyish green and fawn, indurated, chlorite-carbonate-rich greywackes and argillites as the copper zone is approached and in the copper zone these are dark grey and jet-black biotitized. Conglomerates are evident at a few localities distant from the porphyry plug. Throughout the entire property, the sediments are cut by abundant biotite-hornblende-plagioclase porphyry dikes and sills. Light tan coloured, medium to fine-grained rhyodacite dikes with aplitic textures occur locally. Post-mineral andesitic dikes have been encountered in drill holes.

The Morrison is a strongly zoned, annular porphyry copper deposit that is largely within the multiphase porphyry plug. The main porphyry pluton is a faulted plug, with nearly vertical contacts, which occupies a northwest oriented elliptical area of 900 by 150 to 300 metres. Before faulting, the plug was roughly circular in section, with a diameter of approximately 500 metres. Numerous offshoots of the plug, many of which are north trending dikes or sills, occur throughout the host sedimentary rocks. The offshoots, most with sharp contacts, vary in width from less than 1 metre to greater than 500 metres. The plug contains a large number of phases whose presence is indicated by the abundance of phenocrysts and of groundmass grain sizes. Some of these variations occur over distances of only a few metres. Part of this variation in appearance is due to superimposed hydrothermal alteration.

The Morrison deposit occupies the central part of a major graben that is a component of the regional northwest trending block-fault system of this area. The western bounding fault is believed to be along Morrison Lake, and the eastern fault is about 800 metres east of the property. The most prominent structure at Morrison is the north-northwest trending Morrison fault, which bisects the porphyry plug and copper zone. The fault is apparently vertical and has a right-hand throw of approximately 300 metres. The vertical

CAPSULE GEOLOGY

displacement, although unknown, is believed to be considerable. Rather than a single break, the fault is a linear zone of parallel shears and fractures. The zone averages about 25 metres in width, but ranges from 50 metres in the central portion to only a few metres at the extremities.

Along its entire length, the Morrison fault is marked by intense clay-carbonate alteration and well-defined zones of carbonate-cemented gouge and breccia. North-northwest trending streaks and patches of clay-carbonate alteration found elsewhere in the intrusive plug and surrounding rocks are believed to have developed along minor shears and fractures that formed along contacts and bedding planes during movements on the fault.

The Morrison copper zone is a vertical annular cylinder that conforms to the shape of the porphyry plug and is disrupted by the Morrison fault which bisects the zone along its low-grade core. The copper zone is defined by external and internal boundaries that mark the limits of rock which consistently grades greater than 0.3 per cent copper. In most places, the external boundary is relatively sharp and copper grades decline outward to less than 0.1 per cent within about 40 metres. The low grade core averages between 0.15 and 0.2 per cent copper. Between the internal and external 0.3 per cent isopleths, copper increases fairly regularly to form a higher grade annulus. In the annulus, which is 15 to 150 metres wide, copper exceeds 0.5 per cent. Maximum grades over appreciable widths are about 0.7 per cent copper. Along the Morrison fault is a linear zone, 5 to 20 metres wide, in which downgrading to about 0.2 to 0.25 per cent copper has occurred. This is due to mixing and dilution of sheared rock during fault movements and to leaching by late hydrothermal solutions and possibly by groundwater. In the high grade annulus, molybdenum averages approximately 0.01 per cent and gold and silver 0.3 gram per tonne and 3 grams per tonne respectively. Spotty occurrences of galena and sphalerite, in carbonate-cemented brecciated veins within and near the fault and in smaller parallel shears, contribute to relatively high, but uncommercial values of lead and zinc.

Chalcopyrite and pyrite are the main sulphides. Locally, minor to moderate amounts of bornite contribute significantly to copper grades. However, most of the high-grade sections owe their copper content solely to chalcopyrite. All rocks contain anomalous quantities of pyrite (greater than 1 per cent) but the most pronounced concentrations (5-15 per cent by volume) occur in three segments that surround the copper zone. Most of the chalcopyrite occurs along thin seams and veinlets with or without quartz, and is distributed chiefly in fracture stockworks, but about 20 to 30 per cent of the mineral is disseminated in the porphyry plug matrix and in peripheral sedimentary rocks. Very minor molybdenite occurs in some chalcopyrite-pyrite seams and as minute disseminated flakes. Pyrrhotite and marcasite occur only in minor amounts. Pyrrhotite occurs almost exclusively in the pyrite halo. Marcasite is most commonly associated with pyrite, arsenopyrite, galena, sphalerite, geocronite, and boulangerite. These minerals occur with quartz and carbonate in small vuggy veinlets and pockets in minor faults and in the clay-carbonate altered rocks of the Morrison fault zone. Locally, exposed copper minerals are altered to malachite, brochantite, and small amounts of an unidentified pale blue copper silicate. Some iron-bearing sulphides are altered to iron oxides and minor jarosite.

Detailed polished section studies indicate that pyrite and chalcopyrite have a well-defined zonal relationship. Although pyrite predominates in the pyrite halo, the 0.3 per cent copper isopleth precisely marks a change in pyrite:chalcopyrite ratios; chalcopyrite consistently exceeds pyrite inside this boundary. Although the absolute abundance of pyrite decreases toward the centre of the deposit, disseminated grains persist throughout the copper zone and in the low grade core. These studies have also shown that magnetite and minor bornite are present in the low grade core and the copper zone (that is, the area enclosed by the 0.3 per cent copper isopleth).

Hydrothermal alteration is characterized by biotite-chlorite zoning. Biotitization is directly related to copper grades; chloritization is strongest in peripheral, pyritized rocks. The deposit is within a centrally located biotite zone; the intensity decreases outward. Surrounding the biotite zone is a chlorite-carbonate zone. Intense clay-carbonate alteration is associated predominantly with the Morrison fault and related shears and is superimposed on the earlier biotitic and chloritic alteration. Minor epidote is found in all parts of the property, but is most common in the outer chlorite-carbonate zone. A potassium-argon age date from hydrothermal biotite from the mineralized zone returned 52.1 Ma

CAPSULE GEOLOGY

(Bulletin 64, page 142).

Minor amounts of well-crystallized chlorite occur in the biotite zone, mainly as veinlets and crystal clusters. Finer, less strongly crystallized chlorite is common in the weak outer part of the zone. Abundant chlorite, occurring mainly as pseudomorphs after hornblende, and sericite characterizes the chlorite-carbonate zone. The biotite:chlorite ratio increases as the copper zone is approached, and the crystallinity of both minerals also increases. Potassium feldspar is evident in very minor amounts in the inner, greater than 0.3 per cent copper, portion of the copper zone; gypsum also occurs locally. Disseminated fine-grained apatite is anomalously abundant in the porphyry plug and in some large dikes. Very minor amounts of tourmaline were observed in thin sections of the intrusive and sedimentary rocks near the western edge of the mineralized zone.

The Morrison deposit, and its concentric sulphide-silicate alteration zones, was formed during a single hydrothermal episode that followed the emplacement and crystallization of most of the phases of the biotite-hornblende-plagioclase porphyry plug (Canadian Institute of Mining and Metallurgy Special Volume 15).

Geological resources, published in 1976, reserves are 86 million tonnes grading 0.42 per cent copper (cutoff at 0.3 per cent copper), 0.34 grams per tonne gold and 3.4 grams per tonne silver (CIM Special Volume 15 (1976), page 264).

Indicated and inferred resources for the Morrison deposit as of December 31, 1993 total 190 million tonnes grading 0.40 per cent copper and 0.21 grams per tonne gold to a depth of 300 metres using a cutoff grade of 0.30 percent copper. An open pit resource developed on the basis of a 0.75:1 waste to ore strip ratio and the same cutoff grade is estimated at 58 million tonnes grading 0.41 per cent copper and 0.21 grams per tonne gold (CIM Special Volume 46, page 300).

The Morrison deposit is owned by Noranda Mining and Exploration Inc. and Booker Gold Explorations Ltd. See also Hearne Hill (093M 006).

A drill indicated resource for the Morrison was reported in July 1998 as 123,200,000 tonnes grading 0.38 per cent copper and 0.203 grams per tonne gold, at a 0.3 per cent copper cutoff (Booker Gold Explorations Limited, Press Release, July 7, 1998).

A 1999 diamond drill-hole ended at 307 metres in depth (the drills maximum capability) still in rock mineralized with chalcopyrite and bornite. The hole was deepened in 2000 to 466.56 metres. The grade, consistent throughout the hole, averages 0.7 per cent copper and 0.4 gram per tonne gold (George Cross Newsletter #100, May 3, 2000). Mineralization is open to depth. In 2001, Pacific Booker Minerals Inc. continued diamond drilling to drill off the Morrison deposit.

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N MINER May 4, 1998; Dec.2, 2002
PR REL Booker Gold Explorations Limited, Oct.21, 1997; Jul.7, 1998; Nov.2, Dec.7, 1999; Apr.5, May 2,23, Jun.6,14,27, 2000; Pacific Booker Minerals Inc., Sept.16, 2002
STOCKWATCH Oct.2, 2001
WWW http://www.pacificbooker.com

MINFILE NUMBER: **093M 008**

NATIONAL MINERAL INVENTORY: 093M1 Cu3

NAME(S): **WOLF**, BEE, WOLF 1-3,
SADDLE HILL, MORRISON LAKE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M01W
BC MAP:
LATITUDE: 55 12 55 N
LONGITUDE: 126 22 02 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill hole (Assessment Report 8779).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6121909
EASTING: 667491

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Molybdenite
MINERALIZATION AGE: Eocene

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Smithers	
Jurassic	Bowser Lake	Ashman	
Eocene			Babine Intrusions

LITHOLOGY: Hornblende Biotite Feldspar Porphyry
Quartz Monzonite
Granodiorite
Siltstone
Graphitic Siltstone
Tuff

HOSTROCK COMMENTS: The Bowser Lake Group is Middle Jurassic to Lower Cretaceous in age.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Plutonic Rocks Stikine

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	4.2000	Per cent

COMMENTS: A 1.2-metre sample from a drill hole in biotite feldspar porphyry.
REFERENCE: Assessment Report 8779.

CAPSULE GEOLOGY

The Wolf prospect is located on the west side of Morrison Lake, 20 kilometres north-northeast of Smithers Landing (Babine Lake). The property has been explored since 1965 when it was staked as the Bee claims. The Morrison deposit (093M 007) occurs to the southeast.

A granodiorite stock containing phases of quartz monzonite and hornblende biotite feldspar porphyry of the Eocene Babine Intrusions cuts grey, locally graphitic siltstones of the Middle to Upper Jurassic Ashman Formation (Bowser Lake Group). A north-northwest trending block fault separates Ashman Formation rocks from volcaniclastic sandstones and tuffs of the Jurassic Smithers Formation (Hazelton Group) on the east side of the property. The Newman fault, associated with mineralization in the area, occurs just to the northeast of the claims parallel to the baseline.

At least nine copper occurrences, hosted in quartz monzonite, have been documented. Chalcopyrite occurs as disseminations and as grains and films on fracture surfaces and is occasionally accompanied by molybdenite. Minor malachite and iron-oxides have been noted.

A drill hole in biotite feldspar porphyry intersected 1.2 metres grading 4.2 per cent copper (Assessment Report 8779).

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EMPR GEM 1969-113, 1976-E153
EMPR MAP 69-1 (#219)
EMPR OF 1997-10
EMR MP CORPFILE (The Buttle Lake Mining Company Ltd.)
GSC OF 2322
MINING IN CANADA October 1967, p. 44
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/13 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 009**
NATIONAL MINERAL INVENTORY: 093M1 Cu1

NAME(S): **DOROTHY**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093M01E 093M08E
BC MAP:
LATITUDE: 55 14 52 N
LONGITUDE: 126 10 05 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Mineralized porphyry (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6126021
EASTING: 680012

COMMODITIES: Copper Molybdenum Zinc Lead

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Molybdenite Galena Sphalerite Covellite
COMMENTS: If covellite and sphalerite are present, it occurs in minor amounts.
ASSOCIATED: Quartz Pyrite Pyrrhotite K-Feldspar
ALTERATION: Pyrite
ALTERATION TYPE: Pyrite
MINERALIZATION AGE: Eocene

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Cylindrical
MODIFIER: Fractured
DIMENSION: 540 x 300 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Deposit is elliptical in shape.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Unnamed/Unknown Formation	
Eocene			Babine Intrusions

LITHOLOGY: Biotite Feldspar Porphyry
Andesitic Tuff
Diorite

GEOLOGICAL SETTING
TECTONIC BELT:
TERRANE:

INVENTORY

ORE ZONE: DOROTHY
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1971
QUANTITY: 40819500 Tonnes

COMMODITY	GRADE	
Copper	0.2500	Per cent
Molybdenum	0.0100	Per cent

COMMENTS: Inferred to 160 metres.
REFERENCE: CIM Special Volume 15 (1976), Table 1, No.93.

CAPSULE GEOLOGY

The Dorothy prospect is located 5 kilometres east of the south end of Nakinilerak Lake, approximately 20 kilometres northeast of the Bell mine (093M 001). The property was staked originally in 1965 and has been confused with Amoco's Haut and BI claim groups to the southeast. Reserves were outlined in 1976 and no work has been done on the property since then.

A biotite feldspar porphyry circular plug or dike, 1300 metres in diameter, of the Eocene Babine Intrusions is cut by north and east striking fractures. The porphyry occurs at the contact between dioritic rocks and volcanic rocks. The main rock types in the area are andesitic tuff, possibly of the Jurassic Hazelton Group, and dioritic intrusive rocks.

The fractures contain quartz and disseminations and stringers of pyrite, some chalcopyrite and minor bornite, covellite, pyrrhotite, molybdenite, sphalerite and galena. Potash feldspar rims some of the veins. The deposit is elliptical in shape and is 540 by 300 metres

CAPSULE GEOLOGY

in size.
Drilling outlined a large area with copper grades slightly greater than 0.2 per cent with no significant higher grade core as in the Morrison deposit (093M 007). The copper zone is surrounded by an annular pyrite halo.
Inferred reserves to 160 metres are 40,819,500 tonnes grading 0.25 per cent copper and 0.01 per cent molybdenum (Canadian Institute of Mining Special Volume 15 (1976), Table 1, No.93).

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GSC OF 2322
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CIM SPECIAL VOLUME 15, 1976
Chevron File
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/14 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 010**

NATIONAL MINERAL INVENTORY: 093M8 Cu1

NAME(S): **NAK**, NAKINILERAK LAKE, DA, SNO, WENDY, BEAR, AX

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M08E
BC MAP:
LATITUDE: 55 17 10 N
LONGITUDE: 126 14 17 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6130106
EASTING: 675394

COMMENTS: Location is from Figure 13, Minister of Mines Annual Report 1966. The property is located approximately 3 kilometres east of Nakinilerak Lake and is accessible via helicopter or on an overgrown foot trail connecting to the end of the Nakinilevak hauling road.

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Pyrite Quartz Tourmaline Magnetite
ALTERATION: Silica Pyrite Sericite Kaolinite
ALTERATION TYPE: Silicific'n Pyrite Sericitic Argillic
MINERALIZATION AGE: Eocene

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION: 60 x 60 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralized stockwork exposed over 60 metre square area.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Hornblende Biotite Feldspar Porphyry
Quartz Diorite
Andesitic Tuff
Andesitic Breccia
Argillite
Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1997
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	2.6140	Per cent
Gold	0.1430	Grams per tonne

COMMENTS: 12.5-metre intersection. Drillhole DDH N96-58.
REFERENCE: Fieldwork 1997, p. 2-14.

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1966
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.3500	Per cent

REFERENCE: Minister of Mines Annual Report 1966, page 97.

INVENTORY

ORE ZONE: SOUTH REPORT ON: Y

CATEGORY: Inferred YEAR: 1997
QUANTITY: 54000000 Tonnes

COMMODITY	GRADE	
Copper	0.1700	Per cent
Gold	0.2540	Grams per tonne

REFERENCE: Fieldwork 1997, p. 2-14.

ORE ZONE: NORTH REPORT ON: Y

CATEGORY: Inferred YEAR: 1997
QUANTITY: 217000000 Tonnes

COMMODITY	GRADE	
Copper	0.1870	Per cent
Gold	0.0398	Grams per tonne

REFERENCE: Fieldwork 1997, p. 2-14.

CAPSULE GEOLOGY

The Nakinilerak showing is located three kilometres east of Nakinilerak Lake, approximately 85 kilometres northeast of Smithers.

North to northwest striking, east dipping, andesitic tuffs, breccias and grey to black argillites of the Jurassic Telkwa Formation (Hazelton Group) are intruded by granodioritic biotite-feldspar-porphyry stocks, sills, and dikes of the Eocene Babine Intrusions. Conglomerates, possibly correlative with the Cretaceous Sustut Group are exposed on the west side of the property near Nakinilerak Lake.

Propylitized andesite is intruded by a hornblende-biotite-feldspar porphyry and quartz diorite stock, approximately 600 metres in diameter, and a 100-metre wide hornblende-biotite-feldspar porphyry sill.

The western side of the quartz diorite stock is cut by a north trending, high angle fault that is coincident with a prominent lineament. Drill holes intersected this, and other parallel faults which are mineralized.

Alteration at Nak is comprised of an early prograde potassic alteration, overprinted by a late stage retrograde phyllic to argillic alteration.

The potassic alteration is characterized by the presence of veinlets of biotite and k-feldspar, accompanied by magnetite, quartz, chalcopyrite, pyrite, bornite and rare molybdenite in hornfelsed sedimentary rocks along southern quartz diorite stock.

Advanced argillic alteration is peripheral to, and superposed upon, the potassic zone. This zone includes pervasive feldspar, destructive clay, quartz, tourmaline alteration and veins with quartz and tourmaline with or without chalcopyrite, pyrite, magnetite and sericite.

Carbonate pyrite chalcopyrite bornite veins with phyllic alteration cut nearby hornfelsed volcanic and sedimentary rocks.

Chalcopyrite, pyrite and minor bornite mineralization occurs as disseminations and in 3 to 4 millimetre wide quartz veinlets. The mineralization occurs in the sill and stock over an exposed area approximately 60 metres square (Minister of Mines Annual Report 1966, page 95). Alteration consists of silicification, pyritization, sericitization and kaolinization.

In 1995, with Explore B.C. Program support, Hera Resources Inc. completed 8007.3 metres of surface diamond drilling in 43 holes. Drilling to date has identified a large Babine-type intrusive system with two zones of copper-gold mineralization in biotite feldspar porphyry and hosting volcanic rocks. Grades are approximately 0.19 per cent copper and 1.3 to 6.8 grams per tonne gold (Explore B.C. Program 95/96 - M120).

In 1996, Hera completed about 5200 metres of drilling in 27 holes. Encouraging results included the discovery of high-grade copper mineralization associated with a strongly tourmalinized structure.

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EMPR ASS RPT 1198, 3311, 23358, 23848, 24273
EMPR BULL 64, 110
EMPR Explore B.C. Program 95/96 - M120
EMPR FIELDWORK 1997, p. 2-12-2-15
EMPR GEM 1969-112; 1970-176; 1971-192
EMPR INF CIRC 1997-1, p. 25

BIBLIOGRAPHY

EMPR MAP 69-1 (#221)
EMPR PF (Drillhole location map, Noranda Exploration, date unknown)
GSC OF 2322
CIM BULL *Feb. 1974, pp. 126-127
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 2003/02/24 REVISED BY: MPS FIELD CHECK: N

MINFILE NUMBER: **093M 011**
NATIONAL MINERAL INVENTORY: 093M8 Cu3

NAME(S): **TRAIL PEAK**, CAVZ, TRAIL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M08W
BC MAP:
LATITUDE: 55 24 44 N
LONGITUDE: 126 19 44 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Eastern copper showing (Assessment Report 19557).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6143910
EASTING: 669089

COMMODITIES: Silver, Zinc, Copper, Lead

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrite, Sphalerite, Galena, Tetrahedrite
ASSOCIATED: Quartz, Tourmaline, Magnetite
ALTERATION: K-Feldspar
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Vein, Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au; I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Ashman	
Eocene			Babine Intrusions
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 49 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Biotite Feldspar Porphyry
Hornblende Feldspar Porphyry
Granodiorite
Quartz Diorite
Andesitic Crystal Lithic Tuff
Pyritic Siltstone
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Plutonic Rocks, Bowser Lake

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	547.3000	Grams per tonne
Zinc	3.1000	Per cent

COMMENTS: Sample from a 10-centimetre wide vein containing sphalerite, galena and tetrahedrite.
REFERENCE: Assessment Report 19557.

CAPSULE GEOLOGY

The Trail Peak showing is located on the southeast slope of Trail Peak, 90 kilometres northeast of Smithers.

The area is underlain by pyritic siltstone, sandstone and andesitic crystal lithic tuff of the Middle to Upper Jurassic Ashman Formation (Bowser Lake Group). The bedded rocks are intruded by granodiorite and diorite plugs and dikes of the Late Cretaceous Bulkley Intrusions, and northwest-striking dikes of biotite feldspar and biotite hornblende feldspar porphyry of the Eocene Babine Intrusions dated at 49 million years (Bulletin 64). The sedimentary rocks have been folded into a syncline in the vicinity of Trail Peak and all rock types have been displaced by northwest and northeast trending block faults.

Two copper showings occur near a prominent east-northeast

CAPSULE GEOLOGY

trending block fault. In the eastern showing, chalcopyrite occurs in quartz veins approximately 1 centimetre in width and spaced at 5 to 15 centimetres in fractured hornblende feldspar porphyry. Tourmaline and pyrite also occur in the veins which have an alteration envelope where plagioclase is altered to K-feldspar.

The second showing, in biotite feldspar porphyry, is located 600 metres to the west and contains chalcopyrite and pyrite disseminated on fracture planes and in 5-millimetre wide quartz veins which also contain magnetite. Malachite staining and tourmaline are common. Drilling obtained copper values of approximately 0.15 per cent copper (Assessment Report 5706). A 10-centimetre wide, northwest striking, quartz vein in the southern part of the property contains sphalerite, galena and tetrahedrite. A sample from this vein, hosted in shaly siltstone, assayed 3.1 per cent zinc and 547.3 grams per tonne silver (Assessment Report 19557).

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EM OF 2001-03
EMPR AR 1966-135, 286, 1968-135
EMPR ASS RPT 1672, 5706, *19557
EMPR BULL 64
EMPR GEM 1969-110, 1973-359, 1975-E148
EMPR MAP 69-1 (#222)
EMPR PF (Whole rock analyses, Trail Peak area, 1984)
GSC OF 2322
WWW http://www.infomine.com/
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/22 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 012**

NATIONAL MINERAL INVENTORY: 093M7 Cu1

NAME(S): **FRENCH**, RO, RO 25

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M07W
BC MAP:
LATITUDE: 55 25 42 N
LONGITUDE: 126 52 52 W
ELEVATION: 1250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Ro 25 claim (Assessment Report 3871).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6144500
EASTING: 634084

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Feldspar Porphyry
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The French showing is located, on the Ro 25 claim, on the north side of the French Peak Mountain Range, approximately 50 kilometres east of Hazelton.

Lower Cretaceous clastic sedimentary rocks of the Kitsuns Creek Formation (Skeena Group) are intruded by an altered feldspar porphyry plug, approximately 1.5 kilometres in diameter. The plug, of the Late Cretaceous Bulkley Intrusions, has hornfelsed the sedimentary rocks.

An extensive pyrite halo is developed and minor chalcopyrite has been recognized (Geology, Exploration and Mining 1973, page 358).

BIBLIOGRAPHY

EMPR ASS RPT *3871
EMPR GEM 1973-358
EMPR MAP 69-1 (#223)
EMPR PF (French Claim Group map, date and source unknown)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/21 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **RED**, FOSS, SUE,
AG, ZAK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M07W
BC MAP:
LATITUDE: 55 24 13 N
LONGITUDE: 126 53 42 W
ELEVATION: 1160 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main showing (Assessment Report 11700).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6141722
EASTING: 633288

COMMODITIES: Silver Gold Copper Zinc Lead

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite Galena Pyrite Stibnite Arsenopyrite
ASSOCIATED: Quartz Siderite Tourmaline
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Epigenetic
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb) I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Argillite
Quartzite
Feldspar Porphyry
Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1980

COMMODITY	GRADE	
Silver	282.5000	Grams per tonne
Gold	4.9000	Grams per tonne
Copper	0.1300	Per cent
Lead	0.3200	Per cent
Zinc	0.8800	Per cent

COMMENTS: Sample across 0.6 metre.
REFERENCE: Property File - Canadian Superior Exploration, 1980.

CAPSULE GEOLOGY

The Red showing is located in the bed of Hepworth Creek, which drains the north side of French Peak mountain range, 50 kilometres east of Hazelton.

The area is underlain by argillites and quartzites of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group). These are intruded by feldspar porphyry dikes and a plug of the Late Cretaceous Bulkley Intrusions. Bedding attitudes are variable, however in the area of the main showing, strikes are northwest with dips approximately 55 degrees southwest.

A semi-concordant vein, up to 1 metre in width, carrying pyrite, sphalerite, chalcopyrite, galena, stibnite and arsenopyrite outcrops in the bed of Hepworth Creek. Gangue minerals include quartz, siderite and tourmaline. Some disseminated mineralization is also evident. A channel sample across 0.6 centimetre of the vein assayed 0.13 per cent copper, 0.32 per cent lead, 0.88 per cent zinc, 282.5 grams per tonne silver and 4.9 grams per tonne gold (Property File - Canadian Superior Exploration Ltd., 1980).

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EMPR ASS RPT 5188, *11700, *19776, 22896
EMPR GEM 1973-359
EMPR MAP 69-1 (#224)
EMPR PF (Report on Assay results and sample plan, Canadian Superior Exploration Ltd., 1980; Claim map 93M/7W)
EMPR OF 1994-14
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/21 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 014**

NATIONAL MINERAL INVENTORY: 093M7 Cu2

NAME(S): **SNOW**, SUSKWA, FOG, RCM-1

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M07W
BC MAP:
LATITUDE: 55 21 47 N
LONGITUDE: 126 54 07 W
ELEVATION: 1580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main trench (Assessment Report 14583).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6137197
EASTING: 632984

COMMODITIES: Copper, Molybdenum, Lead, Zinc, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Sphalerite, Tetrahedrite, Galena
ASSOCIATED: Pyrite, Quartz
ALTERATION: K-Feldspar, Quartz, Sericite, Pyrite
ALTERATION TYPE: Argillic, Sericitic, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 71 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite Feldspar Porphyry
Shale
Mudstone
Conglomerate

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1971
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.2000	Per cent

COMMENTS: Best intersection, across 36.5 metres.
REFERENCE: Geology, Exploration and Mining 1971, page 191.

CAPSULE GEOLOGY

The Snow showing is located 50 kilometres east of Hazelton, on the southwest flank of the French Peak mountain range, north of the Suskwa Pass.

A Late Cretaceous multiphase granodioritic feldspar porphyry intrusion of the Bulkley Intrusions has intruded shales, mudstones and conglomerates of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group). Potassium/argon dating of biotite from the intrusion gave a date of 71 million years (Geological Survey of Canada Open File 2322).

Pyritization and fracturing is widespread in all rock types. Argillic alteration is well developed, with secondary sericite, quartz and K-feldspar. Chalcopyrite, molybdenite, sphalerite, tetrahedrite and galena occur disseminated and in fractures. The best intersection obtained in a diamond drill program was 36.5 metres grading 0.2 per cent copper (Geology, Exploration and Mining 1971, page 191).

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EMPR AR 1968-113
EMPR GEM *1971-191
EMPR MAP 69-1, (#225)
EMPR ASS RPT *14583, 15252, 13923
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/21 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 015**
NATIONAL MINERAL INVENTORY: 093M7 Ag2

NAME(S): **FRENCH PEAK**, UTE, RIO, HEMATITE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093M07W
BC MAP:
LATITUDE: 55 19 58 N
LONGITUDE: 126 47 12 W
ELEVATION: 1378 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Open cuts on the Ute vein system, 10 kilometres west of Nilkitkwa and Babine lakes, 1.5 kilometres north of Tsezakwa Creek and 100 kilometres north of Houston (Assessment Report 19142).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6134054
EASTING: 640397

COMMODITIES: Silver, Copper, Gold, Lead, Zinc

MINERALS

SIGNIFICANT: Tetrahedrite, Galena, Chalcopyrite, Sphalerite, Pyrite
ASSOCIATED: Quartz, Carbonate, Siderite, Hematite, Chalcedony
ALTERATION: Silica, Clay, Sericite, Hematite, Carbonate
COMMENTS: Manganese staining.
ALTERATION TYPE: Silicific'n, Argillic, Sericitic, Oxidation, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear, Vein, Concordant
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: L01 Subvolcanic Cu-Ag-Au (As-Sb), I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 457 x 1 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Ute vein system.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Undefined Formation	

LITHOLOGY: Andesitic Tuff
Dacitic Tuff
Rhyolite Tuff
Andesite
Rhyolite
Dacite
Rhyolitic Flow
Andesite Flow
Rhyodacite

HOSTROCK COMMENTS: Host rocks belong to the informal subdivision of the Kasalka Group known as the French Peak volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: FRENCH PEAK
REPORT ON: Y

CATEGORY: Unclassified
YEAR: 1983
QUANTITY: 2630 Tonnes

COMMODITY	GRADE	
Silver	411.0000	Grams per tonne
Gold	2.4000	Grams per tonne
Copper	5.0000	Per cent
Lead	14.0000	Per cent

REFERENCE: CIM Special Volume 37, page 185.

CAPSULE GEOLOGY

The French Peak deposits are located on the southeast side of French Peak Mountain, north of the Suskwa Pass, 57 kilometres east of Hazelton.

Regionally, dacite, andesite and rhyolite subaerial to subaqueous tuffs and flows of the French Peak volcanics (Geological Survey of Canada Open File 2322), an informal subdivision of the

CAPSULE GEOLOGY

Upper Cretaceous Kasalka Group have been subjected to complex block faulting and some low angle faulting.

The French Peak occurrence area is predominantly underlain by bedded purple andesitic to dacitic lapilli, lithic and crystal tuffs. The southern portions of the property are underlain by andesite and rhyolite flows and tuffs, and rhyodacite. Generally, bedding strikes east-northeast with moderate (10-30 degree) northwest dips. The property covers an area of intersecting north-northwest and east striking faults.

Mineralization consists of steep and low angle quartz-carbonate (siderite) veins and shear zones hosting tetrahedrite, argentiferous galena, chalcopyrite, sphalerite and pyrite. The Ute vein system, containing coarse-grained galena and tetrahedrite, is located in shear zones in the bedded volcanic rocks. The main vein strikes east and dips steeply north to vertical. The vein system, apparently related to a major fault, has been exposed over a strike length of 457 metres and is of variable width. The system varies from a simple unmineralized break to broadly sheared areas, 1.5 to 4.5-metres wide, containing several veins and sulphide stringers with disseminated mineralization between them. Massive tetrahedrite, galena and chalcopyrite with disseminated pyrite was confirmed at depth along the vein structure which lies in a subaerial to subaqueous sequence of rhyolitic and andesitic flows and tuffs. Mineralized vein sections vary in width from less than 2 centimetres up to 1 metre. Rhyolitic rocks, in general, display considerable carbonate and sericite alteration and the matrix is highly clouded with hematitic(?) particles.

The Rio vein system, located 122 metres south of the Ute vein system, consists of massive, banded chalcopyrite, tetrahedrite and pyrite within a bedded rhyolite tuff unit. The vein system is essentially conformable with the tuff beds but appears to be controlled by bedding plane shearing. The vein strikes northeast and dips moderately northwest towards the Ute vein system.

The mineralized vein systems are surrounded by an alteration zone, from 1 to more than 30 metres in width, which consist of bleaching, manganese staining, silicification and clay alteration.

The Hematite zone, located 1100 metres southeast of the Rio and Ute vein systems, comprises a strong hematite-pyrite-clay-altered zone containing several banded siderite-pyrite-quartz-chalcedony stringer veins within an andesitic tuff. Minor chalcopyrite-pyrite-tetrahedrite occurs. Drill core assayed 1.38 grams per tonne gold and 12.7 grams per tonne silver (Assessment Report 13834).

Small amounts of selected ore from opencuts was shipped from the property in 1964-65 and 1974. An adit was collared in the fall of 1976.

Unclassified reserves are 2630 tonnes grading 411.0 grams per tonne silver, 14 per cent lead, 5 per cent copper, and 2.4 grams per tonne gold (CIM Special Volume 37, page 185).

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EMPR AR 1956-29; 1964-50,51
EMPR ASS RPT 6014, 7239, 8165, 9488, 13266, 13834, 15243, *16824, *18215, *19142, 21619, 21698
EMPR EXPL 1976-E156,E157; 1979-232; 1981-49; 1985-C326,C327
EMPR FIELDWORK 1974, p. 82; 2000, pp. 253-268
EMPR GEM 1974-272
EMPR GEOLOGY *1976, p. 106
EMPR MAP 1; 65, 1989; 69-1 (#226)
EMPR PF (Memorandum on Production at the French Peak property, 1976; Schroeter, T. (1976): Monthly Report; Statement of Material Facts, Silverado Mines Ltd. July 8, 1987)
EMR MIN BULL MR 223 B.C. 246
EMR MP CORPFILE (Renniks Resources Ltd.)
GSC BULL 270
GSC MAP 971A
GSC OF 215; 720; 2322
GCNL #84,#98,#103,#110,#115,#119,#122,#123,#127, 1976; Mar. 22, 1977

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/08/31 REVISED BY: GO FIELD CHECK: Y

MINFILE NUMBER: **093M 016**

NATIONAL MINERAL INVENTORY: 093M7 Mo1

NAME(S): **DAISY**, GYPSY, NETALZUL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 17 54 N
LONGITUDE: 127 00 22 W
ELEVATION: 1633 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample #1 (Assessment Report 3969).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6129802
EASTING: 626589

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Silica Biotite
ALTERATION TYPE: Silicific'n Biotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous	Kasalka	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Quartz Monzonite
Granodiorite
Dacite
Sandstone
Siltstone
Shale

HOSTROCK COMMENTS: Volcanics are informally named the Suskwa volcanics.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Daisy molybdenum occurrence is located on the northwest portion of Netalzul Mountain, 43 kilometres east of Hazelton.

The mineralization is hosted in the contact area of a granodioritic to quartz monzonitic plug of the Late Cretaceous Bulkley Intrusions. The plug intrudes dacitic volcanic rocks of the Upper Cretaceous Suskwa volcanics, an informal subdivision of the Kasalka Group, and clastic sediments of the Middle Jurassic to Lower Cretaceous Bowser Lake Group.

Sparse molybdenite and chalcopyrite are associated with a northeast trending set of fractures which dip 60 degrees north. The zone is 200 to 250 metres wide and is confined to the quartz monzonite. Molybdenite is disseminated in the granitic host rocks and also occurs as coatings and fracture fillings associated with quartz stringers (Assessment Report 3969). Local silicification and biotitization are evident, but not well developed.

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EMPR ASS RPT 2663, 2962, 3047, *3969, 13924, 15186
EMPR GEM 1970-174, 1971-187, 1972-431
EMPR MAP 69-1
EMPR PF (Twin Peaks Mines Ltd., Prospectus, January 18, 1971)
EMR MP CORPFILE (Twin Peaks Mines Ltd.)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/14 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 017** NATIONAL MINERAL INVENTORY: 093M7 Ag1

NAME(S): **HIGGINS**, GOAT ROCK, NAT

STATUS: Showing MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M07W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 18 26 N NORTHING: 6130814
LONGITUDE: 126 59 35 W EASTING: 627389
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of showings (Geological Survey of Canada Memoir 223).

COMMODITIES: Silver Gold Lead Zinc Copper

MINERALS
SIGNIFICANT: Sphalerite Galena Tetrahedrite Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 060/60E TREND/PLUNGE:
COMMENTS: Attitude of sulphide vein.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Hornfels
Granodiorite
Argillite
Shale
Siltstone
Sandstone
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	1924.0000	Grams per tonne
Gold	3.4000	Grams per tonne

COMMENTS: Grab sample containing 26 per cent sulphides.
REFERENCE: Geological Survey of Canada Memoir 223, page 46.

CAPSULE GEOLOGY

The Higgins showings are located on the north side of Netalzul Mountain, 42 kilometres east of Hazelton.

The host rocks are hornfelsed clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. These consist of sandstone, shale, conglomerate, siltstone, argillite and minor coal and carbonaceous sediments. A granodiorite plug of the Late Cretaceous Bulkley Intrusions occurs a short distance south of the showing.

The showings consist of a sulphide vein, 10 centimetres in width, and several quartz veins, 60 centimetres to 2 metres wide. The sulphide vein is hosted by hornfelsed sediments 150 metres from the granodiorite stock. This vein, which strikes 060 degrees and dips 60 degrees southeast, contains pyrite, sphalerite, galena and tetrahedrite.

Within the granodiorite, one of the more significant quartz

CAPSULE GEOLOGY

veins is exposed in a 3 metre pit. This vein, 1.2 metres wide, strikes 075 degrees and dips 60 degrees southeast. Mineralization consists of sphalerite, galena, pyrite and chalcopyrite. A sample assayed 3.4 grams per tonne gold and 1924 grams per tonne silver (Geological Survey of Canada Memoir 223, page 46). Several other quartz veins occur within the granodiorite on the property.

BIBLIOGRAPHY

EM EXPL 1999-80-84
EMPR AR 1917-106
EMPR BULL 10-71
EMPR GEOLOGY 1975-P72
EMPR MAP 69-1 (#228)
GSC MAP 971A
GSC MEM *223-46
GSC OF 2322
GSC P 44-24

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/14 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **NETALZUL**, GYPSY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M07W
BC MAP:
LATITUDE: 55 17 48 N
LONGITUDE: 126 55 42 W
ELEVATION: 2000 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: No information, other than the location, is available (Map 69-1, #229). This occurrence was previously called the Gypsy but there is no documentation to support this.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6129760
EASTING: 631532

COMMODITIES: Silver

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Bowser Lake	Trout Creek	

LITHOLOGY: Sediment/Sedimentary
Conglomerate
Sandstone
Siltstone
Shale
Coal

HOSTROCK COMMENTS: The host rock is not known.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Netalzul showing is shown on Map 69-1 as an unnamed silver occurrence (#229) located on the northeast side of Netalzul Mountain, 48 kilometres east of Hazelton. This occurrence was previously called the Gypsy, but there is no documentation to support this.

The area is underlain by the Upper Jurassic Trout Creek Formation (Bowser Lake Group) which comprises conglomerate, sandstone, siltstone, shale and coal.

No other information is available.

BIBLIOGRAPHY

EM EXPL 1999-80-84
EMPR MAP 69-1 (#229)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/26

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M07W
BC MAP:
LATITUDE: 55 17 12 N
LONGITUDE: 126 47 50 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Occurrence #230, located south of the Tsezakwa River (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6128903
EASTING: 639890

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Undefined Formation	
Jurassic	Hazelton	Unnamed/Unknown Formation	
Eocene			Babine Intrusions

LITHOLOGY: Volcanic
Sediment/Sedimentary
Intrusive

HOSTROCK COMMENTS: The specific host rock of the mineralization is not known.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

A copper showing is reported (Map 69-1, #230) on the eastern slope of Netalzul Mountain, 54 kilometres east of Hazelton.

The area is underlain by Upper Cretaceous volcanic rocks of the Kasalka Group, informally called the French Peak volcanics (Geological Survey of Canada Open File 2322), in fault contact with sedimentary strata of the Jurassic Hazelton Group and the Middle Jurassic to Lower Cretaceous Bowser Lake Group. Eocene Babine Intrusions also occur in the area.

No information is available on the copper showing.

BIBLIOGRAPHY

EMPR MAP *69-1 (#230)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/11/15

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 020**

NATIONAL MINERAL INVENTORY: 093M2 Cu2

NAME(S): **WASP**, KATE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M02E
BC MAP:
LATITUDE: 55 03 18 N
LONGITUDE: 126 39 46 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is from Assessment Report 3647.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6103408
EASTING: 649290

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Biotite Feldspar Porphyry
Volcanic

HOSTROCK COMMENTS: Volcanic rocks belong to the informally named Saddle Hill volcanics.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Wasp showing is located 49 kilometres northeast of Smithers and 10 kilometres west of Smithers Landing on Babine Lake.

The area is underlain by the Jurassic Saddle Hill volcanics, an informal subdivision of the Hazelton Group. The volcanic rocks are intruded by biotite feldspar porphyry of the Eocene Babine Intrusions.

Pyrite and traces of chalcopyrite are reported from diamond drill holes in porphyry and hornfelsic fragmental volcanic rock (Minister of Mines Annual Report 1968, page 132).

BIBLIOGRAPHY

EM OF 2001-03
EMPR AR 1968-132
EMPR ASS RPT *3647, 3869
EMPR GEM 1971-187, 1972-428
EMPR GEOL 69-1 (#231)
GSC OF *2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/13 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 021** NATIONAL MINERAL INVENTORY: 093M3 Ag1

NAME(S): **VIRGINIA SILVER**, TETRA, MORICETOWN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M03W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 01 56 N NORTHING: 6099742
LONGITUDE: 127 16 19 W EASTING: 610447
ELEVATION: 549 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Southern adit located in a canyon of Causqua Creek, 2 kilometres east of Bulkley River, 4.25 kilometres east of Moricetown and 22 kilometres north of Smithers (Minister of Mines Annual Report 1968).

COMMODITIES: Silver Lead Zinc Gold

MINERALS
SIGNIFICANT: Sphalerite Galena Tetrahedrite Bournonite Polybasite Pyrargyrite
COMMENTS: Trace bournonite, polybasite and pyrargyrite.
ASSOCIATED: Quartz Ankerite Pyrite Arsenopyrite
ALTERATION: Ferrodolomite Clay
ALTERATION TYPE: Carbonate Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 030/15E TREND/PLUNGE:
COMMENTS: Shear-like vein zone strikes 020 to 040 degrees and dips 15 degrees east.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Volcanic Sandstone
Shale
Pebble Conglomerate
Latite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Overlap Assemblage

INVENTORY

ORE ZONE: VIRGINIA SILVER REPORT ON: Y

CATEGORY: Unclassified YEAR: 1983
QUANTITY: 20000 Tonnes

COMMODITY	GRADE	
Silver	2948.4000	Grams per tonne
Gold	1.1900	Grams per tonne
Lead	4.4000	Per cent
Zinc	2.2000	Per cent

REFERENCE: CIM Special Volume 37, page 185.

CAPSULE GEOLOGY

The Virginia Silver deposit is located east of the Bulkley River, 5 kilometres east of Moricetown.

The Kitsuns Creek Formation of the Lower Cretaceous Skeena Group, in this vicinity, is dominated by dense, dark greenish grey volcanic sandstones intercalated with lesser black shale and a pebble conglomerate member. The sedimentary rocks are compressed into an anticline-syncline pair striking 020 degrees and overturned to the east. The eastern limb of the syncline is cut by a fault that strikes 020 degrees and dips 65 degrees west, in effect parallel to the fold axial planes. The fault has a small displacement of 12 to 15 metres. Two latite dikes cut the sediments and follow the bedding in the parts of the folds where the orientations are similar.

The main mineralization is contained in a shear-like vein zone that, although quite irregular locally, maintains a fairly regular

CAPSULE GEOLOGY

attitude overall. It strikes 020 to 040 degrees and dips approximately 15 degrees east. The main vein/shear varies locally from a small series of thin veinlets that horsetail into the bedding, to a discrete mass 1.2 metres wide or more with minor mineralization extending into the walls as veinlets or as disseminations. The vein consists of partially replaced wallrock with variable amounts of quartz, ankerite and sulphide minerals in bands, blebs and disseminated grains. The sulphides in decreasing abundance are sphalerite, galena, pyrite, tetrahedrite, arsenopyrite and traces of bournonite, polybasite and pyrargyrite. In general, sphalerite occurs with galena, in part veining the sphalerite, in discrete bands. Pyrite and arsenopyrite occur as discrete crystals but commonly in separate bands of concentration. Tetrahedrite occurs with galena, in some quartz-rich areas as a minor matrix to separate quartz crystals, and as transecting late veinlets. The silver minerals are associated with the tetrahedrite, in part with exsolution textures. Minor thin parallel carbonate veinlets cut all other mineralization. Minor mineralization is also contained in a steep fault (mentioned previously) and in a small steep shear that strikes north on the western limb of the anticline.

Alteration in the vicinity of the veins consists of porphyroblastic ferrodolomite and a variable amount of kaolinization of feldspars. It is most intense in the immediate vicinity of the vein/shear zone and most noticeable in a latite dike which locally occurs in the zone.

Past development consisted of two adits, drifting and a raise. Some ore was shipped in 1975-76. A 50 ton-per-day mill was installed in 1980; approximately 90 tonnes of ore was reportedly processed before the mill froze in December 1981, and was not reopened.

Unclassified reserves are 20,000 tonnes grading 2948.4 grams per tonne silver, 1.19 grams per tonne gold, 4.4 per cent lead and 2.2 per cent zinc (CIM Special Volume 37, page 185).

BIBLIOGRAPHY

EMPR MAP 1; 65, 1989
EMPR MINING 1975-1980 Volume I, p. 26
EMPR PF (Consolidated Silver Standard Mines Limited Annual Report, 1988; Geological maps, sketches, sections, plans, and geochemistry maps, profiles, 1968)
EMPR OF 1992-1
EMPR AR *1968-124-126
EMPR GEM 1969-99,100; 1970-172,173
EMPR EXPL 1976-E154,E155
GSC MAP 971A; 44-24
GSC OF 720; 2322
GSC BULL 270
EMR MP CORPFILE (Silver Standard Mines Limited; Antrim Resources Ltd.)
CANMET IR 69-78
EMR MIN BULL MR 223 B.C. 242
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/07 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093M 022**

NATIONAL MINERAL INVENTORY: 093M3 Mo3

NAME(S): **LUNO CREEK MO #2**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 08 42 N
LONGITUDE: 127 18 18 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Occurrence #233 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6112239
EASTING: 608030

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Luno Creek Mo #2 occurrence is located from Map 69-1 (#233) which shows a molybdenite occurrence in quartz monzonite of the Late Cretaceous Bulkley Intrusions.

BIBLIOGRAPHY

EMPR MAP 69-1 (#233)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/26 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 023**

NATIONAL MINERAL INVENTORY: 093M3 Mo2

NAME(S): **LUNO CREEK MO #1**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 09 36 N
LONGITUDE: 127 20 18 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Occurrence #234 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6113856
EASTING: 605866

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Luno Creek Mo #1 showing is located from Map 69-1 (#234) which shows a molybdenite occurrence in quartz monzonite of the Late Cretaceous Bulkley Intrusions.
No other information is available.

BIBLIOGRAPHY

EMPR MAP 69-1 (#234)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/26
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 024**

NATIONAL MINERAL INVENTORY:

NAME(S): **MO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05W
BC MAP:
LATITUDE: 55 18 27 N
LONGITUDE: 127 45 54 W
ELEVATION: 1220 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of the "Discovery Show" (Assessment Report 13184).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6129705
EASTING: 578394

COMMODITIES: Gold, Silver, Zinc, Lead, Copper, Arsenic

MINERALS
SIGNIFICANT: Arsenopyrite, Sphalerite, Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic, Igneous-contact
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite, Sandstone, Siltstone, Shale

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nass Depression
TERRANE: Overlap Assemblage, Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1984
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	126.7000	Grams per tonne
Gold	9.9000	Grams per tonne
Lead	1.2000	Per cent
Zinc	1.4000	Per cent

COMMENTS: Sample from 2.5-centimetre wide quartz vein.
REFERENCE: Assessment Report 13184.

CAPSULE GEOLOGY

The Mo showings are located 8 kilometres northwest of Hazelton on the west slope of Hazelton Mountain.

The area is underlain by a small intrusive granodiorite body, of the Late Cretaceous Bulkley Intrusions, which cuts sandstone, siltstone and shale of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group).

Several small quartz veins carrying disseminated chalcopyrite, sphalerite and arsenopyrite have been found on the Mo claim. The mineralized veins occur at the sheared contact zone of the granodiorite with sedimentary rocks. The host rocks also carry disseminated mineralization.

A sample from a 2.5 centimetre wide quartz vein carrying arsenopyrite and sphalerite assayed 9.9 grams per tonne gold, 126.7 grams per tonne silver, 1.4 per cent zinc, 1.2 per cent lead and 2.4 per cent arsenic (Assessment Report 13184).

BIBLIOGRAPHY

EMPR EXPL 1984-334
EMPR ASS RPT *13184

BIBLIOGRAPHY

GSC OF 2322 (#222)

DATE CODED: 1985/08/30
DATE REVISED: 1991/09/16

CODED BY: AFW
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT SEATON**, LUNO CREEK, WOLF

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03E
BC MAP:
LATITUDE: 55 10 22 N
LONGITUDE: 127 13 39 W
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Showing (Assessment Report 9755).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6115452
EASTING: 612890

COMMODITIES: Molybdenum

MINERALS

SIGNIFICANT: Molybdenite
ASSOCIATED: Pyrite, K-Feldspar, Sericite, Quartz, Biotite
ALTERATION: K-Feldspar, Pyrite, Sericite, Clay
ALTERATION TYPE: Potassic, Argillic, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Hydrothermal, Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Feldspar Porphyry Dike
Hornfels
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

The Mount Seaton showing is located on the northeastern portion of Mount Seaton, 30 kilometres east-southeast of Hazelton.

The mineralization is hosted within the Blunt Mountain Stock, a Late Cretaceous granodiorite stock of the Bulkley Intrusions. A pyrite halo is present in the Middle Jurassic to Lower Cretaceous Bowser Lake Group rocks, which are locally hornfelsed and are mainly clastic sedimentary rocks.

The molybdenite mineralization occurs in granodioritic rocks and is associated with an early K-feldspar alteration and a later sericite-clay alteration. Molybdenite occurs as traces on fractures, in quartz-K-feldspar veinlets and in quartz veins along prominent east-trending fractures with K-feldspar alteration.

The mineralization shows a spatial relationship to a swarm of feldspar porphyry dikes at the southeast edge of the stock.

BIBLIOGRAPHY

EMPR EXPL 1975-E146, 1976-E154
EMPR GEM 1970-172; 1971-188; 1973-355
EMPR ASS RPT 2529, 3360, 4429, 5994, 8716, *9755
EMPR MAP 69-1
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/16
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 026**

NATIONAL MINERAL INVENTORY: 093M3 Cu1

NAME(S): **BLUNT**, MARY , GYPSY

STATUS: Showing Open Pit
REGIONS: British Columbia
NTS MAP: 093M03E
BC MAP:
LATITUDE: 55 11 18 N
LONGITUDE: 127 12 12 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized areas (Assessment Report 3360).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6117222
EASTING: 614385

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Pyrite
ALTERATION: Biotite Pyrite K-Feldspar
ALTERATION TYPE: Potassic Pyrite Biotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Unnamed/Unknown Formation	Bulkley Intrusions

LITHOLOGY: Granodiorite
Hornfels
Sediment/Sedimentary
Greywacke
Shale

HOSTROCK COMMENTS: The host rock is the Blunt Mountain stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
Overlap Assemblage RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

The Blunt Mountain copper-molybdenum showings are located north of the saddle between Blunt Mountain and Mount Seaton at the headwaters of Luno and Blunt creeks.

The showings are hosted within the Blunt Mountain stock of the Late Cretaceous Bulkley Intrusions. A pyrite halo is strongly developed within the Middle Jurassic to Lower Cretaceous Bowser Lake Group hornfelsed sedimentary rocks. The mineralization occurs in a northeast-trending zone, approximately 2 kilometres in length, which probably extends as far as the Mount Seaton occurrence (093M 025). The chalcopyrite mineralization is associated with potassic alteration, with hornblende altered to biotite. Molybdenite is commonly associated with the copper mineralization.

BIBLIOGRAPHY

EMPR ASS RPT 2529, *3360, 4429, 5994
EMPR MAP 69-1 (#235)
EMPR GEM 1970-172, 1971-188, 1973-355
EMPR EXPL 1975-E146, 1976-E154
EMPR PF (Twin Peak Mines Ltd., Prospectus, January, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/26 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 027**

NATIONAL MINERAL INVENTORY: 093M3 Ag2

NAME(S): **MAX**, MARTIN, MG,
BON 1-3, MARTIN 1-6, MG 1-14

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M06E 093M03E
BC MAP:
LATITUDE: 55 16 20 N
LONGITUDE: 127 10 33 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Figure 2, Assessment Report 18572.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6126601
EASTING: 615891

COMMODITIES: Silver, Gold, Lead, Zinc, Antimony

MINERALS

SIGNIFICANT: Galena, Sphalerite, Jamesonite, Arsenopyrite
ASSOCIATED: Pyrite, Quartz, Siderite
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Discordant, Massive, Breccia
CLASSIFICATION: Epigenetic, Replacement
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
DIMENSION:
STRIKE/DIP: 025/80W
TREND/PLUNGE:

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Hornfels
Diorite
Biotite Feldspar Porphyry Dike
Sandstone
Siltstone
Conglomerate
Black Shale
Tonalite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1988

COMMODITY	GRADE	
Silver	1248.0000	Grams per tonne
Gold	1.1300	Grams per tonne

COMMENTS: Sample from a 0.5 metre drill intersection.
REFERENCE: Assessment Report 18572.

CAPSULE GEOLOGY

The Max property is located on the northeast slope of Blunt Mountain, 32 kilometres east of Hazelton.

The property is underlain by sandstone, siltstone and conglomerate of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. These have been intruded by a circular stock of the Upper Cretaceous Bulkley Intrusions. A contact metamorphic hornfels has developed for 300 metres or more around the intrusive. The sedimentary rocks are highly fractured and, locally, hydrothermally altered.

The intrusive is 1 kilometre in diameter and dioritic to tonalitic in composition. It has sharp vertical contacts and is composed of fine grained plagioclase, hornblende, biotite and minor quartz.

The Bowser Lake Group sediments generally strike northwest and

CAPSULE GEOLOGY

dip west. A distinctive black shale-siltstone forms part of the assemblage, with conglomerate at higher elevations.

Dikes of greenish hornblende biotite quartz feldspar porphyry are commonly found as highly altered material associated with the mineralization.

Six main areas of silver-gold mineralization have been outlined in trenches and in drill holes. Mineralization consists of galena, sphalerite, jamesonite and pyrite in a gangue of quartz and manganiferous siderite, found mainly in altered Bowser Lake Group sediments adjacent to the diorite intrusions. The mineralization is generally fracture-controlled although some is "massive" and bedding controlled.

The Upper Showings (Spine, Arseno, Broken Bit and Bell) strike north to northeast, dipping steeply southwest. The Spine Zone contains some of the higher gold values with one sample assaying 22.7 grams per tonne gold across 15 centimetres in a chip sample (Assessment Report 18572).

Four zones (Creek, Main Trench, Knoll View and Holden) comprise the Creek Area where the mineralization trends northeast, dipping 25 to 30 degrees southeast.

A third area of mineralization is represented by the Bjorn and Dud Cap showings where mineralization is hosted in fractures and breccia.

Three other mineralized areas are called the Lower Creek Zone, East Zone and the Junction Show. One of the higher drill intersections was in hole 88-17, where 0.5 metre assayed 1.13 grams per tonne gold and 1248.0 grams per tonne silver (Assessment Report 18572).

BIBLIOGRAPHY

EM EXPL 1999-80-84
EMPR AR 1968-113
EMPR ASS RPT 2495, 6431, 6998, 14072, 18064, *18572
EMPR EXPL 1977-E201; 1978-224
EMPR FIELDWORK 1978, p.102
EMPR GEM 1970-174
EMPR MAP 69-1 (#238)
EMPR PF (Report by United Pacific Gold Ltd., c. 1987; Accura Resources Inc., Prospectus, 1988)
GSC OF 2322 (#27)
GCNL #242, 1977; #4,#9,#25,#138, 1978

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/01/03 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 028**

NATIONAL MINERAL INVENTORY: 093M6 Cu3

NAME(S): **KING**, SASKWA 1, SASKWA 1-2,
TEE, DENN, DENISON,
DENISON CREEK, SUSKWA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 22 47 N
LONGITUDE: 127 08 22 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of grab sample, on Saskwa 1 claim, which assayed 0.68 per cent copper (Assessment Report 9118, Geological Map).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6138623
EASTING: 617883

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Molybdenite
ASSOCIATED: Quartz Pyrite
ALTERATION: K-Feldspar Kaolinite
ALTERATION TYPE: Potassic Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 61 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Quartz Diorite
Clastic Sediment/Sedimentary
Diorite
Granodiorite
Granite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1980

COMMODITY	GRADE	
Copper	0.6800	Per cent
Molybdenum	0.0050	Per cent

COMMENTS: Sample of granodiorite from the southwest portion of the Saskwa 1 claim.
REFERENCE: Assessment Report 9118.

CAPSULE GEOLOGY

The King showing is located on the Saskwa 1 claim, 38 kilometres east-northeast of Hazelton on the west side of Mount Thoen.

The property is underlain by a stock of the Late Cretaceous Bulkley Intrusions which intrude Middle Jurassic to Lower Cretaceous Bowser Lake clastic sedimentary rocks. The intrusive rocks are coarse-grained and range from diorite through granodiorite to granite in composition. Aplite dikes are common in the stock.

Fracture-controlled chalcopyrite mineralization is very extensive on the property, occurring over an area 1500 metres east-west and 800 metres north-south. Molybdenite mineralization is more localized and is found in fractures, with or without quartz, cutting the chalcopyrite mineralization. Pyrite is associated with the chalcopyrite, but is not abundant.

CAPSULE GEOLOGY

Weak K-feldspar alteration is associated with the mineralization, and kaolinization is associated with some of the molybdenite mineralization. Magnetite is found in the intrusive rocks away from the mineralized areas.

A sample of granodiorite assayed 0.68 per cent copper and 0.005 per cent molybdenum (Assessment Report 9118).

BIBLIOGRAPHY

EMPR AR 1968-112
EMPR GEM 1974-271, 1975-E148
EMPR ASS RPT 793, 1590, 5278, *5626, *9118
EMPR MAP 69-1 (#239)
GSC MAP 971A
GSC P 44-24
GSC OF 2322 (#213)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/20 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 029**

NATIONAL MINERAL INVENTORY: 093M6,7 Cu2

NAME(S): **BERGSTEN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M07W
BC MAP:
LATITUDE: 55 23 37 N
LONGITUDE: 126 59 48 W
ELEVATION: 1550 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is from Minister of Mines Annual Report 1929, page C160.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6140420
EASTING: 626884

COMMODITIES: Lead, Zinc, Silver

MINERALS
SIGNIFICANT: Galena, Sphalerite, Arsenopyrite, Pyrite, Chalcopyrite
ASSOCIATED: Rhodonite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Shear
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Quartzite, Granodiorite, Sandstone, Siltstone, Shale, Argillite, Conglomerate, Coal, Carbonaceous Rock

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake
Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Contact
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1929
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	288.0000	Grams per tonne
Lead	4.8000	Per cent
Zinc	5.5000	Per cent

COMMENTS: Selected samples. Also, 0.7 gram per tonne gold.
REFERENCE: Minister of Mines Annual Report, 1929, page C161.

CAPSULE GEOLOGY

Three different mineral occurrences occur in the Bergsten basin on the east side of Thoen Mountain, 46 kilometres east-northeast of Hazelton.

The host rocks in the area are clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The Bowser Lake Group includes sandstone, siltstone, shale, argillite, conglomerate and minor coal and carbonaceous units. Granodioritic dikes, stocks and plugs of the Upper Cretaceous Bulkley Intrusions cut the sedimentary rocks.

One occurrence is described as a shear-zone 2 metres in width, mineralized with galena, sphalerite, arsenopyrite and pyrite across a width of 30 centimetres. The vein strikes 050 degrees and dips northwest.

A second occurrence is located on the west side of the basin, where, across a width of six metres, three "seams" of galena and sphalerite in a gangue of rhodonite cut quartzite. Selected samples

CAPSULE GEOLOGY

assayed 0.7 gram per tonne gold, 288.0 grams per tonne silver, 4.8 per cent lead and 5.5 per cent zinc (Minister of Mines Annual Report 1929). The mineralization strikes 040 degrees and dips southeast.

The third area is located on the east wall of the basin where minor chalcopyrite mineralization is present in several spots in granodiorite cutting quartzite.

BIBLIOGRAPHY

EMPR AR 1929-C160
GSC OF 2322

DATE CODED: 1991/08/22 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/08/23 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **O.K. COPPER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 23 06 N
LONGITUDE: 127 01 06 W
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Minister of Mines Annual Report 1929, page C160.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6139422
EASTING: 625539

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1929
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	377.2000	Grams per tonne
Gold	10.3000	Grams per tonne
Copper	2.1000	Per cent

COMMENTS: A 60-centimetre sample from the "best" showing.
REFERENCE: Minister of Mines Annual Report, 1929, page C160.

CAPSULE GEOLOGY

The O.K. copper showings are located near the summit of Mount Thoen, 44 kilometres east-northeast of Hazelton.

The showings occur in a small "tongue" of granodiorite of the Late Cretaceous Bulkley Intrusions which has intruded sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. "Copper pyrites" and "copper-stain" are reported.

A 60-centimetre sample from the "best" showing assayed 377.20 grams per tonne silver, 10.3 grams per tonne gold and 2.1 per cent copper (Minister of Mines Annual Report 1929, page C160).

No other information is available.

BIBLIOGRAPHY

EMPR AR *1929-C160
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/22 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 031**
NATIONAL MINERAL INVENTORY: 093M6,7 Ag5

NAME(S): **O.K.**, O.K. SILVER

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 23 02 N
LONGITUDE: 127 01 07 W
ELEVATION: 1850 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of adit (Assessment Report 8711).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6139298
EASTING: 625525

COMMODITIES: Silver, Lead, Zinc, Gold

MINERALS
SIGNIFICANT: Galena, Sphalerite, Tetrahedrite
ASSOCIATED: Pyrite, Quartz, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 040/25W
TREND/PLUNGE:
COMMENTS: Attitude of bedding-parallel vein.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 63 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Tuffaceous Sandstone
Argillite
Granodiorite
Clastic Sediment/Sedimentary
Granodiorite Dike
Granodiorite Sill

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1921
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	2743.2000	Grams per tonne
Gold	0.7000	Grams per tonne
Lead	36.0000	Per cent

COMMENTS: A 25-centimetre wide sample of vein above the adit.
REFERENCE: Minister of Mines Annual Report, 1921, page 100.

CAPSULE GEOLOGY

The O.K. prospect is located on the south flank of Thoen Mountain and has been tested by several trenches and a 13-metre long adit.

The host rocks are Middle Jurassic to Lower Cretaceous Bowser Lake Group tuffaceous sandstones and other clastic sedimentary rocks. These are intruded by dikes and sills of granodiorite related to the Mount Thoen stock which is located to the northwest. The Mount Thoen stock is one of the Late Cretaceous Bulkley Intrusions.

Mineralization consists of narrow veins containing galena, sphalerite, tetrahedrite and pyrite in a gangue of quartz and carbonate. A 25-centimetre wide sample from a vein above the adit assayed 2743.2 grams per tonne silver, 36 per cent lead and 0.7 gram per tonne gold (Minister of Mines Annual Report 1921, page 100). The vein ranges up to 60 centimetres in width. Other veins in the area

CAPSULE GEOLOGY

are 5 to 15 centimetres in width. The mineralization exposed in the adit is highly oxidized and no fresh sulphides remain. The veins are parallel to bedding which strikes 040 degrees and dips 25 degrees northwest into the mountain.

BIBLIOGRAPHY

EMPR AR *1921-99, 1929-160
EMPR ASS RPT 8711, 13502
GSC MEM 223-21
GSC MAP 971A
GSC P 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/20 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 032**

NATIONAL MINERAL INVENTORY: 093M6 Ag4

NAME(S): **TRUE FISSURE**, THOEN, THOEN 2, THOEN 1-8

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 22 15 N
LONGITUDE: 127 02 02 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit (Assessment Report 11558).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6137818
EASTING: 624598

COMMODITIES: Silver Lead Zinc Gold

MINERALS

SIGNIFICANT: Sphalerite Galena Tetrahedrite Chalcopyrite
ASSOCIATED: Pyrite Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
DIMENSION: 130 x 70 Metres
STRIKE/DIP: 060/60S
TREND/PLUNGE:
COMMENTS: Vein exposed on Thoen 4 claim.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	

LITHOLOGY: Argillaceous Siltstone
Sandstone
Tuff
Greywacke
Chert
Limestone
Volcanic Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	1155.6000	Grams per tonne
Gold	0.6856	Grams per tonne
Lead	2.6600	Per cent
Zinc	7.5000	Per cent

COMMENTS: Weighted average of samples from the western part of the vein over an average width of 0.5 metres.
REFERENCE: Assessment Report 13091.

CAPSULE GEOLOGY

The True Fissure property is located 38 kilometres east-northeast of Hazelton, on the south side of Mount Thoen. The property is developed by two short adits and several shallow trenches.

The area is underlain by Middle Jurassic to Lower Cretaceous Bowser Lake Group sandstones and siltstones which strike 170 degrees and dip 40 degrees west. Northwest of the vein, the sedimentary strata are intruded by granodioritic rocks of the Mount Thoen stock, an apophysis of the Late Cretaceous Bulkley Intrusions. A contact metamorphic hornfels is developed around the intrusive.

The True Fissure vein strikes at 060 to 080 degrees azimuth and dips 60 degrees southeast. It is intermittently exposed over a length of 600 metres and a vertical distance of 300 metres. It ranges in thickness from 0.33 to 0.88 metres and forms a lens 100 to

CAPSULE GEOLOGY

200 metres in length within the shear zone. Mineralization consists of galena, sphalerite, pyrite, chalcopyrite, arsenopyrite and tetrahedrite in a gangue of quartz and carbonate. The vein has been exposed on the Thoen 4 claim over a 130 metre strike length and a 60 metre vertical extent in a cliff, with an average width of 0.50 metres.

The weighted average of samples taken from the western part of the vein over an average width of 0.50 metres is 1155.6 grams per tonne silver, 0.6856 gram per tonne gold, 7.5 per cent zinc and 2.66 per cent lead (Assessment Report 13091).

BIBLIOGRAPHY

EMPR AR *1921-98, 1922-98, 1927-133, 1929-159
EMPR MAP 69-1 (#243)
EMPR ASS RPT 8338, 11558, *13091
GSC MEM 223-21,83
GSC MAP 971A, 44-24
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/20 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 033**

NATIONAL MINERAL INVENTORY:

NAME(S): **NATLAN**, NATLAN 11

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 25 20 N
LONGITUDE: 127 17 26 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Natlan 11 claim.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6143107
EASTING: 608194

COMMODITIES: Molybdenum, Copper

MINERALS
SIGNIFICANT: Molybdenite, Pyrite, Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: K-Feldspar, Pyrite
ALTERATION TYPE: Potassic, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 64 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Monzonite
Quartz Monzonite
Siltstone
Greywacke
Argillite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks
Overlap Assemblage
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1974
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.0700	Per cent
Molybdenum	0.1650	Per cent

COMMENTS: Highest assay from 281 chip samples.
REFERENCE: Assessment Report 5465.

CAPSULE GEOLOGY

The Natlan showing is located 27 kilometres northeast of Hazelton on the northern portion of Natlan Peak mountain range.

The area is underlain by a monzonite to quartz monzonite stock of the Late Cretaceous Bulkley Intrusions. The stock intrudes Middle Jurassic to Lower Cretaceous Bowser Lake greywackes, siltstones and argillites. The sedimentary rocks have been hornfelsed and pyritized near the margins of the intrusive.

Molybdenite and minor chalcopyrite are developed in the intrusive, particularly near the eastern contact area. Quartz veining is common and K-feldspar alteration is developed in some of the mineralized areas. Of 281 rock chip samples, the highest molybdenum and copper analyses were 0.1650 per cent and 0.07 per cent, respectively (Assessment Report 5465).

BIBLIOGRAPHY

EMPR GEM 1974-271
EMPR ASS RPT *5465
EMPR MAP 69-1 (#244)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/29 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 034**
NATIONAL MINERAL INVENTORY: 093M6 Zn1

NAME(S): **JACK OF HEARTS**, JACK OF SPADES, ACE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 24 10 N
LONGITUDE: 127 16 21 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence reported to occur on Twenty Mile Mountain, which is not on modern maps, but is thought to be northeast of Eighteen Mile Creek. Occurrence #242 from Geological Survey of Canada Open File 2322 is located in the same area.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6140971
EASTING: 609390

COMMODITIES: Zinc Lead

MINERALS
SIGNIFICANT: Sphalerite Galena
ASSOCIATED: Quartz Ankerite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Concordant
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 030/50W
TREND/PLUNGE:
COMMENTS: Attitude of bedding.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Altered Sediment/Sedimentary
Sandstone
Argillite
Greywacke

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage

CAPSULE GEOLOGY

The Jack of Hearts occurrence is described as being located on Twenty Mile Mountain, which does not occur on modern maps but should be northeast of Eighteen Mile Creek, 25 kilometres east of Hazelton. Geological Survey of Canada Open File 2322 shows an occurrence (#242) in this same area, on the southeast side of Natlan Peak. These are likely the same showing.

Lithologies in the area comprise argillites and greywackes of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. A diorite to granodiorite plug of the Late Cretaceous Bulkley Intrusions outcrops west of the reported location of the occurrence.

The occurrence is described as a 45-centimetre seam of sphalerite, with thin bands of greyish white magnesian ankerite and minor galena. The seam occurs in a quartz gangue and appears to follow a bedding plane in altered sedimentary rocks. The sedimentary rocks strike 030 degrees, dipping 50 degrees northwest. The footwall consists of rusty argillite and the hangingwall of hard silicified sandstone.

BIBLIOGRAPHY

GSC OF 2322 (#242)
GSC ANN RPT *1909, p. 65.

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/29
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 035**
NATIONAL MINERAL INVENTORY: 093M6 Cu4

NAME(S): **ACE 9**, ACE, NAT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 24 02 N
LONGITUDE: 127 17 12 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Ace 9 claim (Assessment Report 1066).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6140702
EASTING: 608499

COMMODITIES: Copper Molybdenum Antimony

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Stibnite
COMMENTS: Stibnite occurrence is in the same area.
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

ISOTOPIC AGE: 64 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Diorite
Quartz Porphyry Sill
Granodiorite
Argillite
Greywacke

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks
Overlap Assemblage
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

CAPSULE GEOLOGY

The Ace 9 showing is centred on a mountain peak, 1 kilometre south of Natlan Peak and 27 kilometres northeast of Hazelton.

Widespread, low-grade, chalcopyrite and less abundant molybdenite mineralization occurs in the contact area between a diorite stock of the Late Cretaceous Bulkley Intrusions and Middle Jurassic to Lower Cretaceous Bowser Lake Group argillites and greywackes. The diorite also intrudes the sedimentary rocks as sills up to 30 metres wide. Quartz porphyry and granodiorite also occur in the area. Pyritization is prominent in several rock types.

Two occurrences are reported on the Ace claims a galena-sphalerite (Ace 5 showing, 093M 037) showing to the southwest and a stibnite showing located in the Ace 9 vicinity.

BIBLIOGRAPHY

EMPR GEM 1971-189
EMPR ASS RPT *1066
EMPR MAP 69-1 (#246)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/28
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 036**

NATIONAL MINERAL INVENTORY:

NAME(S): **BABINE RANGE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 23 12 N
LONGITUDE: 127 19 18 W
ELEVATION: 2000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Occurrence #247, located in the Babine Range (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6139102
EASTING: 606320

COMMODITIES: Silver Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Sediment/Sedimentary
Granodiorite

HOSTROCK COMMENTS: The host rocks of the mineralization are not known.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Babine Range showing, is located on the southern peak of the Natlan Peak mountain range, 26 kilometres northeast of Hazelton.

The area is underlain by Middle Jurassic to Lower Cretaceous Bowser Lake Group sedimentary rocks intruded by granodiorite of the Late Cretaceous Bulkley Intrusions. Pyrite is common near the margin of the intrusion.

Although details of the mineralization and setting are not known, silver-lead-zinc mineralization is reported.

BIBLIOGRAPHY

EMPR MAP *69-1 (#247)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/28 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 037**

NATIONAL MINERAL INVENTORY: 093M6 Zn1

NAME(S): **ACE 5**, ACE, JACK OF HEARTS, JACK OF SPADES

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 23 56 N
LONGITUDE: 127 17 47 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Galena-sphalerite mineralization on the Ace 5 claim (Assessment Report 1066).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6140501
EASTING: 607888

COMMODITIES: Silver, Lead, Zinc

MINERALS

SIGNIFICANT: Galena, Sphalerite
COMMENTS: No description is available.
ASSOCIATED: Quartz, Ankerite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Concordant
CLASSIFICATION: Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Argillite
Greywacke

HOSTROCK COMMENTS: Specific host rock is not known.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage, Plutonic Rocks

CAPSULE GEOLOGY

The Ace 5 showing is located on the southern peak of the Natlan Peak mountain range, 27 kilometres northeast of Hazelton.

Although details of the occurrence are not known, silver-lead-zinc mineralization is reportedly present at this location (#248 on Map 69-1). Galena-sphalerite mineralization is also reported in this area from earlier assessment work (Assessment Report 1066).

This occurrence is possibly the Jack of Hearts showing (093M 034) which is reported to occur on Twenty Mile Mountain. Although there is no Twenty Mile Mountain on modern maps, the location is thought to be east of Eighteen Mile Creek, 25 kilometres east of Hazelton.

The area is underlain by Middle Jurassic to Lower Cretaceous Bowser Lake Group greywackes and argillites intruded by granodiorite of the Late Cretaceous Bulkley Intrusions. The area is locally highly pyritic, with widespread but low-grade chalcopyrite and uncommon molybdenite.

According to the Minister of Mines Annual Report for 1909, 45 centimetres of sphalerite, seamed with thin bands of greyish white magnesian ankerite and minor galena, occur in quartz gangue which appears to follow a bedding plane in altered sedimentary rocks. The sedimentary rocks strike 030 degrees, dipping 50 degrees northwest. The footwall consists of rusty argillite and the hangingwall of hard silicified sandstone.

BIBLIOGRAPHY

EMPR MAP 69-1 (#248)
EMPR ASS RPT *1066
GSC SUM RPT *1909, p. 65

BIBLIOGRAPHY

GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/28

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 038**
NATIONAL MINERAL INVENTORY: 093M5 Au1

NAME(S): **SILVERTON**, PINENUT, RAVEN

STATUS: Past Producer — Underground
MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M05E
UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 25 24 N
NORTHING: 6142902
LONGITUDE: 127 30 59 W
EASTING: 593899
ELEVATION: 1525 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showings (Assessment Report 17290).

COMMODITIES: Gold, Silver, Zinc, Lead, Arsenic, Molybdenum

MINERALS
SIGNIFICANT: Arsenopyrite, Sphalerite, Tetrahedrite, Galena, Molybdenite
ASSOCIATED: Quartz, Pyrite, Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au; L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Granodiorite, Granite, Argillite, Siltstone, Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks
Overlap Assemblage
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	78.2000	Grams per tonne
Arsenic	21.2000	Per cent
Gold	30.2000	Grams per tonne

COMMENTS: Highest assay was from a vein, 10 centimetres wide.
REFERENCE: Assessment Report 17290.

CAPSULE GEOLOGY

The Silverton past producer is located on the south side of Sidina Mountain, 21 kilometres north-northeast of Hazelton.

A series of narrow, gold-silver bearing quartz veins are hosted by a small granodiorite plug and adjacent hornfelsed clastic sedimentary rocks. Minor molybdenite mineralization is present in molybdenite-pyrite pink feldspar veinlets in the intrusive. A rusty hornfels, with well-developed pyrite-pyrrhotite pods, is developed in the sediments adjacent to the intrusive.

The host rock is primarily a small (500 metres long), medium grained intrusive stock of granite to granodiorite composition of the Late Cretaceous Bulkley Intrusions. The granitic rocks intrude variably hornfelsed clastic sediments of the Middle Jurassic to Lower Cretaceous Bowser Lake Group, which include argillite, siltstone and sandstone. The layered rocks are folded into a north-south trending syncline in the area of the showings.

The gold-silver mineralization is found in several quartz-arsenopyrite-pyrite-sphalerite-galena-tetrahedrite veins up to 0.30 metre in width.

The highest assay was from a 10 centimetre wide sample which

CAPSULE GEOLOGY

assayed 30.2 grams per tonne gold, 78.2 grams per tonne silver and 21.2 per cent arsenic; grab samples assayed as high as 8.36 per cent zinc (Assessment Report 17290).

In 1981, 143 tonnes produced 250,655 grams of silver, 415 grams of gold, 9,168 kilograms of lead and 13,066 kilograms of zinc.

BIBLIOGRAPHY

EMPR AR 1911-98
EMPR MAP 69-1 (#249)
EMPR ASS RPT *16601, *17290
GSC MEM 223, p. 7
GSC P 44-24
GSC MAP 971A, 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/09 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 039**

NATIONAL MINERAL INVENTORY: 093M5,6 Ag3

NAME(S): **BARBER BILL**, BILL, BILL 1-2, BILL 13-15, SILVER I, TUNNEL, ADIT, CABLE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M06W 093M05E
BC MAP:
LATITUDE: 55 21 32 N
LONGITUDE: 127 30 03 W
ELEVATION: 1260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 10477.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6135752
EASTING: 595038

COMMODITIES: Silver, Gold, Lead, Zinc, Antimony, Arsenic

MINERALS
SIGNIFICANT: Jamesonite, Sphalerite, Arsenopyrite, Galena
ASSOCIATED: Pyrite, Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 182 x 1 Metres
STRIKE/DIP: 030/25E
TREND/PLUNGE:
COMMENTS: Tunnel vein.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Greywacke, Argillite, Tuff, Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	510.6000	Grams per tonne
Arsenic	8.1500	Per cent
Gold	1.5000	Grams per tonne
Lead	5.6700	Per cent
Antimony	2.2200	Per cent
Zinc	12.5000	Per cent

COMMENTS: Channel sample across 60 centimetres.
REFERENCE: Geological Survey of Canada Memoir 223, page 8.

CAPSULE GEOLOGY

The Barber Bill property is located on Nine Mile Mountain between the Sunrise (093M 043) and Silver Cup (093M 040) properties, 14 kilometres northeast of Hazelton. The Barber Bill veins were discovered in 1910.

The property is underlain by clastic sedimentary rocks, mainly greywacke, of the Middle Jurassic to Lower Cretaceous Bowser Lake Group, which is intruded by a stock of coarse-grained granodiorite of the Late Cretaceous Bulkley Intrusions.

There are 3 main veins which comprise this prospect: the Tunnel, Adit and Cable veins. The showings are explored by several trenches and a 14-metre long adit.

The Tunnel vein is located at 1241 metres elevation on the Bill 14-15 claims. The vein strikes 030 degrees and dips 18 to 30 degrees east, parallel to the bedding in the tuffaceous host rocks. It

CAPSULE GEOLOGY

ranges from 10 to 120 centimetres in thickness and carries fine grained jamesonite, sphalerite, galena and arsenopyrite along with, sparse vein-quartz and pyrite. The vein has been exposed for 182 metres. A 60-centimetre wide channel sample taken by Kindle assayed 1.5 grams per tonne gold, 510.6 grams per tonne silver, 5.67 per cent lead, 12.5 per cent zinc, 2.22 per cent antimony and 8.15 per cent arsenic (Geological Survey of Canada Memoir 223, page 8). A chip sample across 1 metre, taken 106 metres north of the portal, assayed 437.07 grams per tonne silver, 3.75 per cent lead and 3.10 per cent zinc (Property File - Newman, W.R. (1968): Geology of the Barber Bill Property).

The Adit vein is located at 939 metres elevation on Mineral Lease 57. The vein strikes slightly east of north and dips flatly to the east. A sample taken 15 metres north of the adit over a 57 centimetre wide vein in grey slaty greywacke and argillite assayed 164.5 grams per tonne silver and 2.97 per cent lead and 0.15 per cent

The Cable vein is located at 1453 metres elevation on the Bill 4 claim. The vein has been traced for about 85 metres. Cross faulting has displaced the vein less than a metre (several feet). The vein strikes roughly east-west and dips 16 to 45 degrees southeast. The lowest assay was from a sample across 1.2 metres width and 3 metres length which assayed 106.27 grams per tonne silver, 1.8 per cent lead and 4.5 per cent zinc (Property File - Newman, W.R. (1968): Geology of the Barber Bill Property).

BIBLIOGRAPHY

EMPR AR 1910-87, 1917-107, 1928-155, 1951-109, 1966-81, 1968-11
EMPR GEM 1970-175, 1974-270
EMPR ASS RPT 5134; 8706; *10477
EMPR MAP 69-1 (#250)
EMPR PF (*Newman, W.R. (1968): Geology of the Barber Bill Property; Report on the Hazelton Property, source and date unknown)
GSC MEM 110; *223-8
GSC MAP 44-24, 971A
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/12 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 040** NATIONAL MINERAL INVENTORY: 093M5 Ag1

NAME(S): **SILVER CUP**, SILVER DOLLAR, DUKE, DUCHESS

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M05E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 21 04 N NORTHING: 6134866
LONGITUDE: 127 30 58 W EASTING: 594088
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main adit (Geological Survey of Canada Memoir 223).

COMMODITIES: Silver Lead Zinc Gold Antimony

MINERALS
SIGNIFICANT: Sphalerite Galena Jamesonite
ASSOCIATED: Quartz Pyrite Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 030/75E TREND/PLUNGE:
COMMENTS: Vein.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Tuffaceous Sandstone
Argillite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage

CAPSULE GEOLOGY

The Silver Cup vein is located on the rim of Silver Cup Basin, 14 kilometres northeast of Hazelton. The property was staked by 1909 and had been developed by 4 adits when it shut down in 1929. The Barber Bill property (093M 039) is adjacent to the Silver Cup.

The property is underlain by locally tuffaceous sandstones with interbedded argillites of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The sedimentary strata are intruded by a stock of granodiorite of the Late Cretaceous Bulkley Intrusions which outcrops approximately 300 metres east of the property. Dikes and apophyses of granodiorite related to the stock are common in the mine workings.

The vein has been developed by several adits and consists of a fault-controlled structure located in the axis of an anticline. It has been followed more than 150 metres in the main adit. The vein strikes 030 degrees, dipping 75 degrees southeast. It branches in places, and pinches and swells, ranging from 10 to 60 centimetres in thickness. The main sulphide minerals are galena, sphalerite, jamesonite and pyrite in a gangue of quartz and minor carbonate.

From 1914 to 1979, 5870 tonnes produced 3,547,176 grams of silver, 560 grams of gold, 230,419, kilograms of lead and 126,961 kilograms zinc.

BIBLIOGRAPHY

EMPR AR 1909-84, 1910-86, 1911-79,105, 1914-201, 1918-117, 1925-134, 1927-130, 1928-152, 1929-156, 1937-A35, 1950-96
EMPR MAP 69-1 (#251)
EMPR PF (See 093M 039 - Barber Bill Report, 1968; Report by the Resident Engineer, 1937; 2 x Plans of Tunnels at Silver Cup Mine, 1927; Notes on Silver Cup for Douglas Lay, 1928; Longitudinal Projection, 1929; Silver Cup mine workings, 1929; Silver Cup Mine Camp, 1928)
GSC SUM RPT 1909-65, 1910-97
GSC MEM 110-34, *223-64

BIBLIOGRAPHY

GSC MAP 971A, 1731, 44-24
GSC OF 2322
EMR MP CORPFILE (Silver Cup (Hazelton) Mining Company Ltd., Omineca Mining and Milling Company Ltd.)
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/13 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 041**

NATIONAL MINERAL INVENTORY: 093M5 Ag2

NAME(S): **POLE STAR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 20 49 N
LONGITUDE: 127 30 58 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 10477.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6134403
EASTING: 594098

COMMODITIES: Lead, Zinc, Silver

MINERALS
SIGNIFICANT: Galena, Sphalerite, Arsenopyrite, Tetrahedrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 30 Metres
STRIKE/DIP: 330/15W
TREND/PLUNGE:
COMMENTS: Main vein has been exposed for about 30 metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Greywacke
Sandstone
Argillite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Pole Star showing is located between the Silver Cup mine (093M 040) and Nine Mile Mountain peak, 14 kilometres northeast of Hazelton.

The main vein is exposed for about 30 metres along the face of the bluff. It ranges from 15 to 60 centimetres in thickness and strikes 330 degrees, dipping 15 degrees southwest. It has been prospected by a short adit and a trench. Galena and sphalerite and lesser tetrahedrite and arsenopyrite have been identified.

The host rocks are interbedded greywacke, sandstone and argillites, of the Middle Jurassic to Lower Cretaceous Bowser Lake Group, which strike 210 degrees and dip 15 degrees east.

BIBLIOGRAPHY

EMPR MAP 69-1 (#252)
EMPR ASS RPT 10477
GSC MEM 110; *223-11
GSC P 44-24
GSC MAP 971A, 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/13 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 042**

NATIONAL MINERAL INVENTORY: 093M6 Ag2

NAME(S): **SLOCAN**, ALPHA , VAN, KOOTENAY, LEAD KING (EMPIRE)

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 20 29 N
LONGITUDE: 127 29 11 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Middle Slocan showings (Assessment Report 10477).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6133825
EASTING: 595996

COMMODITIES: Silver, Lead, Zinc, Antimony

MINERALS
SIGNIFICANT: Galena, Sphalerite, Jamesonite
ASSOCIATED: Pyrite, Quartz, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Sandstone
Tuff
Siltstone
Shale
Argillite
Coal
Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	204.4000	Grams per tonne
Lead	12.3200	Per cent
Antimony	4.9500	Per cent

COMMENTS: Across 10 centimetres of the Slocan West showing.
REFERENCE: Geological Survey of Canada Memoir 233, page 19.

CAPSULE GEOLOGY

The Slocan veins are located on the east side of Nine Mile Mountain Peak, 15 kilometres northeast of Hazelton.

The property is underlain by sandstone, siltstone, shale, tuff and minor coal of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. A 3 by 1 kilometre stock of coarse-grained granodiorite, of the Late Cretaceous Bulkley Intrusions, outcrops north of the showings.

There are four mineral showings on the Slocan property: West Slocan, East Slocan, Middle Slocan and Kootenay. They are all narrow sulphide-rich veins with a quartz and in some cases a quartz-carbonate gangue. Jamesonite, sphalerite, galena and pyrite are the main sulphide minerals. The veins are generally shallow-dipping and average approximately 10 centimetres in thickness, rarely reaching 50

CAPSULE GEOLOGY

centimetres in thickness. A representative grab sample, taken by Kindle in 1940, from the Kootenay vein assayed 337.8 grams per tonne silver, trace gold, 22.98 per cent lead and 14.57 per cent zinc (Geological Survey of Canada Memoir 223). Another sample taken from the 7 to 15 centimetre wide West Slocan occurrence assayed 204.4 grams per tonne silver, trace gold, 12.32 per cent lead and 4.95 per cent antimony across 10 centimetres (Geological Survey of Canada Memoir 223).

BIBLIOGRAPHY

EMPR AR 1909-84, 1910-86, 1911-79,104, 1912-113, 1914-205, 1918-117, 1923-106, 1950-82,96, 1951-109
EMPR MAP 69-1 (#253)
EMPR MIN 1975
EMPR ASS RPT *10477, 10766
GSC MEM *223
GSC SUM RPT 1909-66
GSC P 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/11 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 043** NATIONAL MINERAL INVENTORY: 093M6 Ag1

NAME(S): **SUNRISE (L. 595)**, SUNRISE SILVER, ETHEL (L. 593), SUNSET (L. 594), NOONDAY (L. 596), HIDDEN TREASURE (L. 597), ETHEL FR (L. 599)

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M06W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 21 04 N NORTHING: 6134901
LONGITUDE: 127 29 27 W EASTING: 595690
ELEVATION: 1463 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main crosscut adit on Lot 595, 750 metres north of the summit of Nine Mile Mountain, 8 kilometres north of Hazelton (Geological Survey of Canada Memoir 223).

COMMODITIES: Silver Lead Zinc Gold Copper Antimony

MINERALS
SIGNIFICANT: Jamesonite Sphalerite Galena Cosalite Argentite Tetrahedrite
ASSOCIATED: Quartz Pyrite Arsenopyrite
ALTERATION: Quartz Sericite Pyrite Chlorite
ALTERATION TYPE: Argillic Silicific'n Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 304 x 213 x 3 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Sunrise main structure.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Granodiorite
Sandstone
Siltstone
Shale

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Open File 720.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Bowser Lake
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

CAPSULE GEOLOGY

The Sunrise deposit is located on Nine Mile Mountain, 16 kilometres northeast of Hazelton.

The Nine Mile Mountain area is underlain by interbedded sandstone, siltstone and shale of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The sediments form broad moderately dipping synclines and anticlines whose limbs usually dip at angles of less than 45 degrees. A 3 by 1 kilometre westerly elongated stock of coarse-grained granodiorite, of the Late Cretaceous Bulkley Intrusions, intrudes the sequence along the north side of the mountain. A potassium-argon age date from hornblende from the stock returned an age of 72 Ma (Geological Survey of Canada Open File 2322). Sedimentary rocks are often hornfelsed adjacent to the intrusive contacts. Numerous quartz veins occur in both the granodiorite and the surrounding sediments and are related to fracture systems.

Mineralized quartz veins at the Sunrise occurrence occur in coarsely crystalline granodiorite and generally are hosted in moderately dipping structures (10 to 50 degrees). The veins are locally exposed for long distances, and pinch and swell greatly. Branching vein structures are common. The Sunrise main structure is

CAPSULE GEOLOGY

a zone 213 metres wide and 304 metres long. This zone lies between elevations of 1432 and 1584 metres with its north boundary approximately 152 metres south of the sedimentary contact. A system of network mineralized veins and veinlets occur in zones adjacent to the main structure and measures from 10 centimetres to 3 metres wide.

There are two main intersecting sets of veins on the Sunrise property. One set strikes northeast and dips from 30 to 50 degrees southeast. The other set strikes east and dips from 10 to 40 degrees south. The veins range from 30 to 152 metres in length and from 7 centimetres to 1.76 metres in width. Many of the veins contain irregularly distributed sulphides which in order of abundance are: jamesonite, sphalerite, galena, cosalite, pyrite, arsenopyrite, argentite and tetrahedrite. Twelve veins have been partially exposed.

Local shearing and faulting, evidenced by numerous chloritic slips and slickensides, is common in the areas of mineralized vein concentrations. The veins in the granodiorite are generally enveloped by zones of phyllic (sericitic) alteration characterized by the abundance of quartz, sericite and disseminated pyrite. Silicified zones around veins are common.

Past development included opencuts, drifting, crosscutting and numerous adits. Crude ore from surface and underground workings were shipped. A portable mill also processed small amounts in 1979 and 1980.

BIBLIOGRAPHY

EMPR AR 1909-K84; 1910-K86,K87; 1911-K79,K104,K105; 1914-K204; 1915-K76,K448; 1918-K117; 1919-N102; 1920-N86; 1922-N98; 1923-A106; 1924-B94; 1925-A134; 1926-A126; 1927-C131; 1950-A83,A97,A98; 1968-111
EMPR ASS RPT *10477, 10766
EMPR GEM 1969-99; 1970-175; 1971-189,190; 1972-430; 1973-357; 1974-270,271
EMPR MAP 1; 65, 1989; 69-1 (#254)
EMPR MINING Vol. 1 1975-1980
EMPR OF 1992-1
EMPR PF (Location map of Sunrise group; Preliminary assay plan of main vein, 1966; Prospectus, Sunrise Silver Mines Ltd., May 1966; Read, W.S. (1967): Progress Report on Sunrise Silver Mines Ltd.; Wilson, H.S. (1966): Report on the Hazelton Sunrise Mines property)
EMR MP CORPFILE (Trans Pacific Ventures Ltd.; Sunrise Metals Corporation)
GSC BULL 270
GSC MAP 971A; 44-24
GSC MEM 110, pp. 34,35; *223, pp. 11-16
GSC OF 720; 2322
GSC P 44-24
GSC SUM RPT 1909, p. 66; 1910, p. 98
GCNL #188, 1977; #19,#22, 1978; #19, 1982
N MINER Feb. 4, 1982
NW PROSP Mar/Apr 1982
Falconbridge File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/11 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093M 044**

NATIONAL MINERAL INVENTORY: 093M6 Ag2

NAME(S): **LEAD KING**, EMPIRE, LEADSIL, SLOCAN, ALPHA, VAN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 20 53 N
LONGITUDE: 127 29 00 W
ELEVATION: 1410 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Decline (Assessment Report 10477).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6134571
EASTING: 596173

COMMODITIES: Silver, Lead, Zinc, Antimony, Arsenic

MINERALS

SIGNIFICANT: Sphalerite, Galena, Jamesonite, Cosalite, Argentite, Tetrahedrite, Arsenopyrite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Sericite, Silica
ALTERATION TYPE: Sericitic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 400 x 150 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Veins occur over a length of 400 metres and a width of 150 metres.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Coarse Grained Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks, Overlap Assemblage

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	313.8000	Grams per tonne
Arsenic	2.4300	Per cent
Lead	6.4700	Per cent
Antimony	2.6300	Per cent
Zinc	17.1100	Per cent

COMMENTS: A 0.45-metre wide channel sample from the shaft.
REFERENCE: Geological Survey of Canada Memoir 223, page 17.

CAPSULE GEOLOGY

The Lead King group of claims is located on Nine Mile Mountain, 15 kilometres northeast of Hazelton. It is east of and along strike from the Sunrise property (093M 043). Previous work on the property consists of a shaft and an adit with stripping along veins and open cuts. In the period between 1909 to 1914, 7.2 tonnes produced 22,076 grams per tonne silver and 698.5 kilograms of lead (National Mineral Inventory Card 93M/6 Ag2).

The property is underlain by coarse grained granodiorite of the Late Cretaceous Bulkley Intrusions, which intrude hornfelsed clastic sediments of the Middle Jurassic to Lower Cretaceous Bowser Lake Group.

The veins are hosted in fracture zones in the granodiorite, which is effected by phyllic alteration and silicification in the

CAPSULE GEOLOGY

vicinity of the veins. There are two sets of veins, one set strikes north, dipping between 25 and 45 degrees east and the second set strikes east, dipping between 10 and 35 degrees south. The veins average 30 centimetres in thickness, and range from 10 centimetres to 1 metre in thickness. Commonly there are several subparallel veins arranged in an en echelon or sheeted arrangement. The veins commonly pinch and swell and are often faulted.

The veins occur over a length of 400 metres and a width of 150 metres and are mineralized with galena, sphalerite, jamesonite, arsenopyrite, cosalite and pyrite in a quartz gangue. A representative sample, taken by Kindle, assayed trace gold, 313.8 grams per tonne silver, 6.47 per cent lead, 17.11 per cent zinc, 2.63 per cent antimony and 2.43 per cent arsenic (Geological Survey of Canada Memoir 223, page 17).

BIBLIOGRAPHY

EMPR AR 1910-86, 1911-79,104, 1912-113, 1914-205, 1918-117, 1923-106
*1950-83,97, 1951-109
EMPR GEM 1972-430, 1973-357, 1974-270
EMPR MINING 1975
EMPR ASS RPT 10477
EMPR MAP 69-1 (#255)
EMPR PF (*Wilson, H.S. (1966): Report on Property of Sunrise Silver Mines Ltd.)
GSC P 44-24
GSC SUM RPT 1909-66
GSC MAP 971A, 44-24
GSC MEM *223-16,51
GSC OF 2322
EMR MP CORPFILE (Sunrise Silver Mines Ltd.)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/12 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 045**

NATIONAL MINERAL INVENTORY:

NAME(S): **CUP**, SECOND VEIN, BARBER BILL (SOUTH)

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M05E 093M06W
BC MAP:
LATITUDE: 55 21 00 N
LONGITUDE: 127 30 18 W
ELEVATION: 1420 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Locations from Assessment Reports 8706 and 10477.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6134758
EASTING: 594795

COMMODITIES: Silver, Lead, Zinc, Antimony

MINERALS

SIGNIFICANT: Galena, Sphalerite, Jamesonite
ASSOCIATED: Quartz, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 80 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Vein is exposed over 80 metres and ranges from 25 to 60 centimetres in width.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY: Tuffaceous Sandstone
Argillite
Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage, Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	602.8000	Grams per tonne
Lead	7.0800	Per cent
Zinc	15.3000	Per cent

REFERENCE: Assessment Report 8706.

CAPSULE GEOLOGY

The Cup or Second Vein is located on the east rim of Silver Cup Basin, 14 kilometres northeast of Hazelton.

The vein is located at the contact between hornfelsed tuffaceous sandstones and argillites of the Middle Jurassic to Lower Cretaceous Bowser Lake Group and granodiorite of the Late Cretaceous Bulkley Intrusions. The vein strikes east, dipping shallowly south. It is exposed over a length of 80 metres and ranges in thickness from 25 to 60 centimetres. The vein branches, pinches and swells, and is displaced by faults.

The vein is mineralized with galena, sphalerite, jamesonite and pyrite in a gangue of quartz. A grab sample assayed 602.8 grams per tonne silver, 7.08 per cent lead, 15.3 per cent zinc (Assessment Report 8706).

BIBLIOGRAPHY

EMPR ASS RPT *8706, 10477
GSC MEM 110; 223

BIBLIOGRAPHY

GSC OF 2322

DATE CODED: 1991/09/13 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/09/13 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 046**

NATIONAL MINERAL INVENTORY: 093M6 Ag3

NAME(S): **SILVER PICK**, VAN, SILVER LEAF, SILVER TRUST

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 20 47 N
LONGITUDE: 127 28 08 W
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Inclined shaft (Assessment Report 10477).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6134406
EASTING: 597093

COMMODITIES: Lead Zinc Antimony

MINERALS
SIGNIFICANT: Galena Sphalerite Stibnite Jamesonite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Sandstone
Argillite
Shale
Tuff
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Lead	5.0700	Per cent

COMMENTS: A 25-centimetre channel sample from vein exposed in 15 metre deep inclined shaft.
REFERENCE: Geological Survey of Canada Memoir 223.

CAPSULE GEOLOGY

The Silver Pick veins are located 16 kilometres northeast of Hazelton, on the east side of Nine Mile Mountain. The property is underlain by sandstone, shale, tuff and argillite of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. A 3 by 1 kilometre stock of coarse-grained granodiorite, of the Late Cretaceous Bulkley Intrusions, outcrops on part of the property.

Several narrow fissure veins, ranging up to 50 centimetres in width, outcrop on the property. Most have a quartz gangue, with varying amounts of galena, sphalerite, stibnite and jamesonite. A sample, taken by Kindle, from a vein exposed in a 15 metre deep inclined shaft, assayed 5.07 per cent lead across 25 centimetres (Geological Survey of Canada Memoir 223, page 20).

BIBLIOGRAPHY

EMPR AR 1909-84, 1914-205, 1950-97
EMPR GEM 1972-430, 1973-357, 1974-270
EMPR MAP 69-1 (#257)
EMPR EXPL 1978-224
EMPR ASS RPT *10477
GSC SUM RPT 1910-98

BIBLIOGRAPHY

GSC MEM 110; *223, p. 19
GSC P 44-24
GSC MAP 971A, 44-24, 1731
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/12 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 047**

NATIONAL MINERAL INVENTORY: 093M5 Ag5

NAME(S): **AMERICAN BOY**, AMERICAN STANDARD, CINDY LOU, JANELLE

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 18 55 N
LONGITUDE: 127 34 18 W
ELEVATION: 870 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main shaft (Geological Survey of Canada Memoir 223, page 2).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6130805
EASTING: 590647

COMMODITIES: Silver Lead Zinc Gold Copper

MINERALS
SIGNIFICANT: Galena Sphalerite Arsenopyrite Pyrite Chalcopyrite Tetrahedrite
ASSOCIATED: Quartz Carbonate Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Calcareous Tuff
Argillite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The American Boy property is located 10 kilometres northeast of Hazelton, on the west flank of Nine Mile Mountain.

The property is underlain by clastic sedimentary rocks (mainly calcareous tuff and argillite) of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The strata strike north, dipping approximately 15 degrees west. Granodiorite, of the Eocene Babine Intrusions, intrudes the sedimentary rocks in the area.

Six quartz veins, comprising high grade lenses totalling more than 212 metres long, crosscut the tuffs and argillites on the property. Veins 1 to 4 strike north, dipping 40 to 70 degrees east. Veins 5 and 6 strike northeast, dipping 80 degrees southeast. The veins range in thickness from 10 to 120 centimetres and consist of quartz with stringers of carbonate and irregular patches and banded seams of sulphide minerals. The sulphide minerals in order of abundance are: galena, sphalerite, arsenopyrite, pyrite, chalcopyrite and tetrahedrite (Geological Survey of Canada Memoir 223, Assessment Report 8847).

The weighted average of 18 samples from the number 1 vein was 1069.54 grams per tonne silver across 0.48 metre (George Cross Newsletter #3, 1984). The weighted average of samples from a section of the number 4 vein, exposed on surface, was 946.13 grams per tonne silver and 5.38 grams per tonne gold (George Cross Newsletter #41, 1984). Samples from the number 6 vein assayed between 6.856 and 14,671.8 grams per tonne silver (George Cross Newsletter #41, 1984).

In the period between 1913 and 1955, 348 tonnes produced 495,097 grams of silver, 528 grams of gold, 38,232 kilograms of lead and 10,543 kilograms of zinc.

BIBLIOGRAPHY

EMPR ASS RPT 6789, 8847, 9121, 10457, 11165, *12665, 15124, 15393
EMPR AR 1911-79,107, 1912-111, 1913-106, *1914-171,197, 1915-76, 1916-89, 1917-104, 1918-117, 1923-107, 1927-131, *1950-83,95, 1951-109, 1952-86, 1967-84, 1968-112

BIBLIOGRAPHY

EMPR GEM 1970-173
EMPR EXPL 1977-E200, 1978-E223
EMPR MAP 69-1 (#258)
EMPR PF (Lay, D. (1937): Report on American Boy, includes black and white photo; Kintana Resources Ltd., Statement of Material Facts, Dec. 1990)
GSC SUM RPT 1912-102
GSC MEM 110-32, *223-23
GSC MAP 971A, 1731, 44-24
GSC OF 2232
EMR MP CORPFILE (Viking Gold Mines Ltd., American Standard Mines Ltd.)
GCNL #121,#186, 1983; #3,#13,#41, 1984
V STOCKWATCH October 6, 1989

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/26 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 048**

NATIONAL MINERAL INVENTORY: 093M5 Ag9

NAME(S): **SURPRISE**, SILVER STANDARD

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 19 07 N
LONGITUDE: 127 37 17 W
ELEVATION: 460 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main adit portal (Minister of Mines Annual Report 1950, page A87).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6131113
EASTING: 587485

COMMODITIES: Silver, Lead, Zinc, Gold

MINERALS

SIGNIFICANT: Sphalerite, Galena
ASSOCIATED: Quartz, Carbonate, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Tuffaceous Sandstone
Greywacke
Argillite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel

YEAR: 1950

COMMODITY	GRADE	
Silver	98.8000	Grams per tonne
Gold	0.3000	Grams per tonne
Lead	1.5000	Per cent
Zinc	1.8000	Per cent

COMMENTS: Sample from a 10-centimetre wide vein from the northern adit.
REFERENCE: Minister of Mines Annual Report 1950, page A95.

CAPSULE GEOLOGY

The Surprise property adjoins the Silver Standard mine (093M 049) property to the north and is located 8 kilometres north-northeast of Hazelton.

The property is underlain by massive grey tuffaceous sandstone and greywacke interbedded with dark, thinly bedded argillite of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The strata generally dip gently eastward, and are located on the east limb of a north-trending anticline. Granodioritic rocks of the Eocene Babine Intrusions locally intrude the sedimentary rocks.

Three northeasterly striking veins are exposed in the main crosscut. They are up to 15 centimetres in width and composed of quartz, white carbonate and pyrite with minor galena and sphalerite. Although there are some steeply-dipping veins, most are subparallel to the bedding in the host rocks. A sample from a 10-centimetre wide vein from the northern adit assayed 0.3 gram per tonne gold, 98.8 grams per tonne silver, 1.5 per cent lead and 1.8 per cent zinc (Minister of Mines Annual Report 1950, page A95).

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EMPR AR 1903-52, 1912-112, 1913-106, 1915-76, 1916-89, 1917-107, 1918-472, *1950-95

BIBLIOGRAPHY

EMPR MAP 69-1 (#259)
EMPR EXPL 1978-223, 1979-231
EMPR PF (Claim Map 93M/5E)
GSC MEM *223-83
GSC MAP 971A, 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/24 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 049** NATIONAL MINERAL INVENTORY: 093M5 Ag6

NAME(S): **SILVER STANDARD (L. 2262)**, SILVER STANDARD MINE, STANDARD (L. 2261)

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M05E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 19 01 N NORTHING: 6130917
LONGITUDE: 127 37 47 W EASTING: 586959
ELEVATION: 396 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit (1300 Level) near the boundary of Lots 2261 and 2262, on the northern slopes of Mount Glen, 7.5 kilometres north of Hazelton (Geological Survey of Canada Memoir 223).

COMMODITIES: Silver Gold Lead Zinc Copper Cadmium

MINERALS

SIGNIFICANT: Sphalerite Pyrite Arsenopyrite Galena Pyrrhotite Tetrahedrite Chalcopyrite Cosalite Pyrargyrite Scheelite Jamesonite Freibergite
COMMENTS: Very minor cosalite, pyrargyrite, scheelite, jamesonite and freibergite.
ASSOCIATED: Quartz Calcite Siderite
ALTERATION: Carbonate Silica Calcite Chlorite
ALTERATION TYPE: Carbonate Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
MODIFIER: Faulted Folded
DIMENSION: 304 x 182 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions of the largest vein, the number 6. The veins generally strike between 60 and 70 degrees.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Tuffaceous Sandstone
Greywacke
Argillite
Quartz Porphyry
Quartz Porphyry Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake

CAPSULE GEOLOGY

The Silver Standard mine is located on the north side of Mount Glen, 8 kilometres northeast of Hazelton.

The Mount Glen area is underlain by a series of sediments, chiefly sandy, argillaceous and tuffaceous, belonging to the Middle Jurassic to Lower Cretaceous Bowser Lake Group. Cutting the sediments are small granitic bodies of the Eocene Babine Intrusions. Folding appears to have two main trends, which may be of different ages. The more conspicuous is a series of northeast trending folds whose axes are often only a hundred metres apart. There is also a broad, open, northwest trending anticline, 9 to 11 kilometres across, with its axis on Mount Glen, 1.6 kilometres northeast of the Silver Standard mine. The domal outline of the sediments on Mount Glen may be due to an intersection of these folds, or to an underlying intrusive. The known intrusive bodies show alignments parallel to the two trends.

The ore deposits of the Silver Standard mine are in a 243-metre thick stratigraphic section of the Bowser Lake Group. The section is composed predominantly of medium to fine-grained tuffaceous sandstones with minor beds of coarse-grained greywacke, and finer grained dark argillite. The tuffaceous sandstones are generally in

CAPSULE GEOLOGY

beds from 0.3 to 2 metres thick and the argillite beds are 1 to 10 centimetres thick. The overlying rocks contain more greywacke and argillite and lesser tuff, with some evidence of plant remains. In the underlying strata the rocks are mainly argillite and greywacke. Parallel to the folding on the southwest, outcrops of quartz porphyry indicate an elongated intrusive body approximately 487 by 91 metres. The mine drifts and drill holes have only intersected northeast trending dikes of this porphyry.

The largest fold in the vicinity of the mine is the northwest striking dome or anticline. Since its axis lies to the northeast, the general dip of the beds in the mine area is southwest at low to moderate angles. A smaller, sharper anticline trending 005 degrees cuts through the mine above the number 7 vein. Cutting across the productive sections of the numbers 4 to 8 veins is a gentle anticline or monocline striking 300 degrees; this is parallel to the major dome and to the quartz porphyry body.

A fault zone striking north and dipping 40 degrees west has been traced for 609 metres in the mine area. The fault zone is up to 15 metres wide and consists of a series of fault planes. It is a post-vein structure and has a normal dip movement of approximately 76 metres. A complimentary set of small normal faults, striking north and dipping steeply east, offset number 7 and 8 veins. They are post-vein structure but pre-ore.

Quartz veins occupy northeast trending faults or fissures. A series of parallel veins, striking northeast and dipping southeast, are numbered from 0 to 12, starting in the northwest. They lie within a zone trending 110 degrees. The distance between the number 0 and 12 veins is approximately 1600 metres. Their dips range from 35 to 80 degrees but are generally 60 to 70 degrees. The vein walls are commonly free, with gouge or ribboned rock on their margins. There has been minor movement before, during and after mineralization; slickensides and offsets of bedding indicate both horizontal and downdip displacements. In the central part of the mine area there is very little offset of the ore shoots by cross faulting, though number 1, 7 and 8 veins are displaced up to 6 metres by an east dipping normal fault. Several cross-veins, dipping northeast, have been found between the number 8 and 12 veins. The productive veins are near the centre of a domed area on the west limb of the anticline and are nearly normal to the attitude of the beds. No major veins have been found on the east limb of the anticline.

The veins consist mainly of milky white quartz that is generally massive and fractured, massive white calcite and buff siderite. Vein widths vary from a centimetre to as much as 3.6 metres, but average 0.3 to 0.9 metres wide. Splits in the veins are common. The average width of the ore shoots range from 0.3 to 0.6 metres. Sulphide minerals present in the veins in approximate order of abundance are: sphalerite, pyrite, arsenopyrite, galena, pyrrhotite, tetrahedrite and chalcopyrite. A minor amount of a lead bismuth mineral, probably cosalite, occurs in vein 8, and a small particle of pyrargyrite was reported in vein 7; scheelite is present in the number 1 vein. Some jamesonite and freibergite have also been reported in the veins. The sulphides are as a rule, massive and occur in pockets and irregular veinlets which tend to be parallel to the vein walls, and are either near one wall of the vein or where the quartz is fractured. The veins contain many wallrock inclusions, some of which are irregular and angular and others, thin slabs oriented parallel to the vein walls. Generally, the inclusions are within 0.6 metre of the veins and are partly replaced by pyrite and arsenopyrite.

In all the veins, except number 6 vein, the known ore shoots extend within 60 to 152 metres of the surface. The larger number 6 vein is mineralized to 304 metres below the surface.

Each vein is enclosed in an alteration zone in which the tuffaceous sandstone is bleached from an original grey colour to a light cream or tan due to the introduction of ankeritic carbonate, silica and possibly feldspar. Beyond these zones the rock becomes greenish and calcareous, forming an outer halo impregnated with calcite and chlorite.

Past work included extensive underground development. Historic production from number 1, 4, 6, and 7 veins provided most of the ore. More than sixty per cent of the production was from the number 6 vein which had an ore shoot 182 metres long and extended 304 metres downdip.

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EMPR MAP 1; 65, 1989
EMPR PF (Correspondence and Report by Resident Engineer, 1935; Reports on geology and mineralization, 1935; *Canadian Institute of Mining 1957, Structural Geology of Canadian Ore Deposits, Vol. II, pp. 20-27; Monthly Report, T. Schroeter, 1975)

BIBLIOGRAPHY

EMPR AR 1911-K81,K99,K100; 1912-K112,K116,K117; 1913-K105; 1914-K171, K194-K197; 1915-K76; 1916-K119-K121,K437,K438; 1917-F106,F107; 1918-K115-K117; 1919-N101; 1920-N84; 1921-G97; 1922-N98; 1938-C3, C49; 1947-A97,A98; 1948-A77-A80; 1949-A82; *1950-A82-A95; 1951-A109; 1952-A85-A87; 1953-A92,A93; 1954-A85,A86; 1955-22; 1956-23-25; 1957-9,10; 1958-9,10; 1960-13; 1962-15,16; 1967-84; 1968-111
EMPR GEM 1969-98,99; 1970-481; 1971-28; 1973-357
EMPR OF 1992-1
EMPR ASS RPT 107
EMPR MINING Vol. 1 1975-1980; 1981-1985
GSC SUM RPT 1912, pp. 103,105,106
GSC MAP 971A; 44-24
GSC OF 720; 2322
GSC BULL 270
GSC MEM *110, pp. 27-32; *223, pp. 28-35
EMR MP CORPFILE (Silver Standard Mining Company Limited; Canadian Cadillac Gold Mines Limited; Omineca Base Metals, Limited; Silver Standard Mines Limited)
CANMET IR 2740; 785, p. 151
CIM VOLUME II, 1957, pp. 20-27
W MINER Aug. 1978
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/14 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093M 050**

NATIONAL MINERAL INVENTORY: 093M5 Ag8

NAME(S): **BABINE (L. 1538)**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 16 39 N
LONGITUDE: 127 33 12 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Lot 1538 (Geological Survey of Canada Memoir 223).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6126626
EASTING: 591898

COMMODITIES: Silver Lead Zinc Copper

MINERALS
SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrrhotite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 050/65S
TREND/PLUNGE:
COMMENTS: Main vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene			Babine Intrusions

ISOTOPIC AGE: 55 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	77.8000	Grams per tonne
Lead	2.6500	Per cent

COMMENTS: A 38-centimetre wide channel sample.
REFERENCE: Geological Survey of Canada Memoir 223, page 35.

CAPSULE GEOLOGY

The Babine property is located on the north side of Four Mile Mountain, 8 kilometres east of Hazelton. The property has been prospected by two adits, approximately 150 metres apart, and several trenches.

The property is underlain by a small (1500 metres in diameter) stock of coarse grained grey granodiorite of the Eocene Babine Intrusions. Potassium/argon dating of biotite in the stock indicates an age of 55 million years (Geological Survey of Canada Open File 2322).

The main occurrence is a 38-centimetre wide vein which strikes 050 degrees and dips 65 degrees southwest. The vein carries banded sphalerite, galena and minor chalcopyrite in a gangue of quartz. A 38-centimetre wide channel sample assayed trace gold, 77.8 grams per tonne silver, 2.65 per cent lead and nil zinc (Geological Survey of Canada Memoir 223). The second occurrence, located 150 metres to the east, contains pyrrhotite and base metal sulphides in a quartz gangue.

BIBLIOGRAPHY

EMPR AR 1909-84, 1911-101,102, 1950-98
EMPR MAP 69-1 (#261)

BIBLIOGRAPHY

GSC MEM *223, p. 35
GSC MAP 1731, 44-24, 971A
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/19 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 051** NATIONAL MINERAL INVENTORY: 093M5 Ag7

NAME(S): **MOHAWK (L. 5048)**, MOHAWK FR. (L. 5053), ERIE, OMINECA, MAID OF ERIN

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M05E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 16 32 N NORTHING: 6126401
LONGITUDE: 127 33 35 W EASTING: 591497
ELEVATION: 610 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit portal (Assessment Report 7955).

COMMODITIES: Silver Lead Zinc Gold Antimony

MINERALS
SIGNIFICANT: Jamesonite Sphalerite Galena Tetrahedrite Pyrite
COMMENTS: Tungsten has also been reported.
ASSOCIATED: Quartz Siderite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 135 x 1 Metres STRIKE/DIP: 065/45S TREND/PLUNGE:
COMMENTS: Veins.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

ISOTOPIC AGE: 55 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Sandstone
Tuff
Granodiorite
Biotite Aplite Dike

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1928
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	9999.9999	Grams per tonne
Gold	23.3100	Grams per tonne
Lead	14.1000	Per cent
Antimony	4.8000	Per cent
Zinc	8.8000	Per cent

COMMENTS: High grade sample contained 11,387.82 grams per tonne silver.
REFERENCE: Property File - Hagen, E.A., 1928.

CAPSULE GEOLOGY

The Mohawk property straddles the summit of Four Mile Mountain, 8 kilometres east of Hazelton. The property has been developed by an adit at the 610 metre level and a small tonnage of ore was hand sorted and shipped between 1913 and 1929. The property has also been explored by numerous trenches and two short shafts. The property was first staked in 1911 and was shut down in 1929.

The property is underlain by intensely altered tuff and sandstone of the Middle Jurassic to Lower Cretaceous Bowser Lake Group which is intruded by a small (1500 metres in diameter) stock of coarse grained grey granodiorite of the Eocene Babine Intrusions. Potassium/argon dating of biotite in the stock indicates an age of 55 million years (Geological Survey of Canada Open File 2322). A few

CAPSULE GEOLOGY

small dikes of biotite aplite are exposed in the main adit.

The veins are fault-controlled, commonly at the contact between the granodiorite and the sediments or within the sediments. They generally narrow significantly in the granodiorite within a few metres of the contact with the sediments. The main workings occur within a tongue-like body, of the altered sedimentary rocks, which extends eastward into the granodiorite. Three veins exposed in the main workings strike approximately 065 degrees, dipping between 30 and 65 degrees southeast. A fourth vein, located 250 metres northwest of the main vein exposure, also strikes approximately 065 degrees, dipping 60 degrees southeast. The veins range from 10 to 120 centimetres in width and are up to 135 metres in length. The gangue minerals are banded quartz and siderite with sparse sulphides. The ore shoots are small, rich and contain the following sulphide minerals in order of decreasing abundance: jamesonite, sphalerite, pyrite, galena and tetrahedrite. Tungsten is also reported to have been found in the mine.

One rich sample assayed 11,387.82 grams per tonne silver, 23.31 grams per tonne gold, 14.1 per cent lead, 8.8 per cent zinc, 8 per cent copper and 4.8 per cent antimony (Property File - Hagen, E.A., 1928).

BIBLIOGRAPHY

EMPR AR 1910-87, 1911-102, 1914-200, 1920-86, 1925-133, 1927-132, 1928-156, 1929-158, 1930-363, 1950-98, 1956-26,
EMPR BULL 10, 1943, p. 71
EMPR MAP 69-1 (#262)
EMPR ASS RPT *7955
EMPR PF (Vertical Plan of Mohawk Mine, 1928; Claim Map of Mohawk Mine, 1928; Hagen, E.A. (1928): Report on the Mohawk Mine; Plan of Main Workings, 1929; Report by Resident Engineer, 1937)
GSC SUM RPT 1909-66, 1912-103
GSC MEM *223-35, 110-35
GSC MAP 971A, 44-24
GSC OF *2322
EMR MP CORPFILE (Mohawk Mining Company Ltd.)
EMR MRD COMM FILE P 171

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/19 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 052**
NATIONAL MINERAL INVENTORY: 093M5 Pb1

NAME(S): **COMET (L. 3578)**, CENTRE STAR, IRON MASK (L. 3577)

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 16 03 N
LONGITUDE: 127 32 57 W
ELEVATION: 370 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of main adit portal on Lot 3578 (Geological Survey of Canada Memoir 223, page 39).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6125518
EASTING: 592186

COMMODITIES: Silver Lead Zinc Antimony

MINERALS
SIGNIFICANT: Jamesonite Sphalerite Galena
ASSOCIATED: Quartz Pyrite Siderite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

ISOTOPIC AGE: 55 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Coarse Grained Granodiorite
Tuff
Sandstone

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	297.6000	Grams per tonne
Lead	1.2200	Per cent
Antimony	0.4700	Per cent
Zinc	2.2900	Per cent

COMMENTS: A 25-centimetre channel sample. Also, 0.3 grams per tonne gold.
REFERENCE: Geological Survey of Canada Memoir 223, page 40.

CAPSULE GEOLOGY

The Comet showing is located on the south side of Four Mile Mountain, 8 kilometres east of Hazelton. The property has been explored by a 45-metre long adit at the 370 metre level, as well as two shorter adits and several small trenches.

The property is underlain by intensely altered tuff and sandstone of the Middle Jurassic to Lower Cretaceous Bowser Lake Group, which is intruded by a small (1500 metres in diameter) stock of coarse grained grey granodiorite of the Eocene Babine Intrusions. Potassium/argon dating of biotite in the stock indicates an age of 55 million years (Geological Survey of Canada Open File 2322).

The grey granodiorite and, to a lesser extent, the sedimentary rocks, are host to a number of narrow sulphide-bearing quartz veins on the property. The veins occupy fracture zones and contain variable amounts of jamesonite, sphalerite, galena and pyrite. Some veins are rich in siderite. The veins strike between 345 degrees and 080 degrees, dip 15 to 60 degrees east or southeast and range up to 25 centimetres in thickness. One 25-centimetre sample assayed 0.3

CAPSULE GEOLOGY

gram per tonne gold, 297.6 grams per tonne silver, 1.22 per cent lead, 2.29 per cent zinc and 0.47 per cent antimony (Geological Survey of Canada Memoir 223, page 40).

BIBLIOGRAPHY

EMPR AR 1916-119, 1920-87, *1928-158, 1929-159, 1950-83,99
EMPR MAP 69-1 (#263)
EMPR PF (Sketch of claims, date and source unknown)
GSC MAP 971A, 44-24, 1731
GSC MEM *223-39
GSC OF 2322
EMR MRD COMM FILE p. 173
EMR MP CORPFILE (Mohawk Mining Co. Ltd.)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/20 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 053**
NATIONAL MINERAL INVENTORY: 093M4 Cu3

NAME(S): **DALEY WEST**, INGENICA

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 13 22 N
LONGITUDE: 127 33 48 W
ELEVATION: 610 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit (Bulletin 43, figure 2).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6120524
EASTING: 591388

COMMODITIES: Copper, Gold, Silver, Molybdenum, Lead, Zinc, Tungsten

MINERALS
SIGNIFICANT: Chalcopyrite, Arsenopyrite, Pyrite, Pyrrhotite, Galena, Sphalerite, Scheelite, Molybdenite
ASSOCIATED: Quartz, Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, L04 Porphyry Cu ± Mo ± Au
SHAPE: Tabular
DIMENSION: 100 x 1 Metres
STRIKE/DIP: 020/65N
TREND/PLUNGE:
COMMENTS: Vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Porphyritic Monzonite
Quartz Monzonite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.
Hosted in the Rocher Deboule stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1940

COMMODITY	GRADE	
Silver	47.0000	Grams per tonne
Gold	1.4000	Grams per tonne
Copper	1.9200	Per cent

COMMENTS: A 38-centimetre channel sample at the face in the main (upper) adit.
REFERENCE: Geological Survey of Canada Memoir 223.

CAPSULE GEOLOGY

The Daley West property is located 3 kilometres southeast of New Hazelton, on the east side of Mission Creek.

The showings are within the fine-grained to porphyritic quartz monzonite phase of the Rocher Deboule stock which is part of the Late Cretaceous Bulkley Intrusions. Biotite, from the stock, has been dated at 72 million years by potassium/argon dating (Geological Survey of Canada Open File 2322).

Two adits have been driven on a quartz vein that strikes 020 degrees, dipping 65 degrees northwest. The vein is exposed in several trenches over a vertical distance of more than 100 metres and averages 15 centimetres in thickness, reaching close to 1 metre in places. The vein carries pyrite, arsenopyrite, pyrrhotite and chalcopyrite with minor scheelite, sphalerite, galena and calcite. A 38-centimetre wide channel sample, taken from the face of the main adit, assayed 1.4 grams per tonne gold, 47.0 grams per tonne silver

CAPSULE GEOLOGY

and 1.92 per cent copper (Geological Survey of Canada Memoir 223).
Recently, chalcopyrite and molybdenite have been found in porphyritic quartz monzonite in widely scattered narrow quartz veins north, east and west of the old workings.

BIBLIOGRAPHY

EMPR AR 1912-114, 1916-116
EMPR BULL *43-27,52
EMPR MAP 69-1 (#264)
EMPR ASS RPT 8937
GSC MEM 110-25, *223-39
GSC MAP 971A, 1731, 44-24
GSC OF 2322

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1991/09/27	REVISED BY:	RHM	FIELD CHECK:	N

MINFILE NUMBER: **093M 054**

NATIONAL MINERAL INVENTORY:

NAME(S): **LONE STAR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 10 09 N
LONGITUDE: 127 31 34 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from figure 2, Bulletin 43.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6114608
EASTING: 593882

COMMODITIES: Iron

MINERALS
SIGNIFICANT: Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: * Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Greywacke
Slate
Argillite
Porphyritic Diorite
Porphyritic Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The Lone Star showing is located on the west bank of Pangea Creek, a tributary of Mudflat Creek on the northeast side of the Rocher Deboule Mountain Range, 10 kilometres south-southeast of South Hazelton.

A pyrrhotite vein, up to 10 centimetres wide and less than 8 metres long, cuts greywacke, slate and argillite of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The vein has previously been explored by an adit which is now caved.

Dikes of porphyritic diorite intrude the sedimentary rocks in the area. Late Cretaceous porphyritic granodiorite of the Rocher Deboule stock intrude the Bowser Lake Group, 1.5 kilometres to the west. A north-trending block fault, the Pangea Fault, separates the sedimentary rocks from andesitic flows, breccias, tuffs and volcaniclastic sediments of the Upper Cretaceous Brian Boru Formation, Kasalka Group.

BIBLIOGRAPHY

EMPR BULL *43-54
EMPR MAP 69-1 (#265)
EMPR ASS RPT 7903
GSC MEM 223-52
GSC P 44-24
GSC MAP 971A, 44-24

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/25 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 055**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVERTIP GLACIER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 10 08 N
LONGITUDE: 127 34 57 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #266, near the northeast end of the Silvertip Glacier (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6114502
EASTING: 590291

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

A molybdenum-copper occurrence is shown on Map 69-1 at the headwaters of Mudflat Creek on the east side of the Rocher Deboule Mountain Range, 9 kilometres south of South Hazelton.

The area is within the Rocher Deboule stock an Late Cretaceous porphyritic granodiorite body which is one of the Bulkley Intrusions. The Rocher Deboule stock has been dated at 72 million years through potassium/argon dating of biotite (Geological Survey of Canada Open File 2322).

BIBLIOGRAPHY

EMPR BULL 43
EMPR MAP *69-1 (#266)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/25

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 056**
NATIONAL MINERAL INVENTORY: 093M4 W2

NAME(S): **BLUE LAKE**, CRO, WOLFRAM, MOLY B

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 09 58 N
LONGITUDE: 127 34 17 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from figure 2, Bulletin 43.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6114208
EASTING: 591005

COMMODITIES: Tungsten, Gold, Molybdenum, Uranium, Silver, Copper

MINERALS
SIGNIFICANT: Scheelite, Chalcopyrite, Molybdenite, Pyrite, Tetrahedrite, Uraninite, Ferberite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I12 W veins
DIMENSION:
STRIKE/DIP: 105/65E
TREND/PLUNGE:
COMMENTS: No. 1 vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite
Hornfels Argillite

HOSTROCK COMMENTS: Host rocks are from the Rocher Deboule stock, age date from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Plutonic Rocks
Bowser Lake RELATIONSHIP:
METAMORPHIC TYPE: Contact
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1954
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	2.7400	Grams per tonne
Molybdenum	0.0600	Per cent
Uranium	0.0030	Per cent
Tungsten	11.3100	Per cent

REFERENCE: Geological Survey of Canada Memoir 223 (Rev).

CAPSULE GEOLOGY

The Blue Lake property is located near the head of Mudflat Creek on the northeast side of the Rocher Deboule Mountain Range, 9 kilometres south of South Hazelton.

Several mineralized quartz veins occur in porphyritic granodiorite of the Late Cretaceous Rocher Deboule stock of the Bulkley Intrusions. The intrusion contains a few rafts of hornfelsic argillites from the Middle Jurassic to Lower Cretaceous Bowser Lake Group rocks, the main body of which outcrops to the east.

The more easterly, or No. 1 vein, strikes 105 degrees and dips 65 degrees northeast. It is a quartz vein carrying up to 10 per cent tetrahedrite and minor chalcopyrite, ranging up to 25 centimetres in width.

Less than 30 metres distant, the No. 2 vein strikes 155 degrees,

CAPSULE GEOLOGY

dipping 70 degrees southwest. It contains chalcopyrite, pyrite, molybdenite, tetrahedrite, scheelite, and likely uraninite. A grab sample assayed 0.85 per cent molybdenum, 1.0 per cent WO3 and 0.004 per cent equivalent uranium (Geological Survey of Canada Memoir 223 Rev.).

The No. 3 vein is located six hundred metres to the northwest. It strikes 165 degrees and dips 75 degrees west. It is a quartz vein with scheelite, molybdenite, chalcopyrite, and ferberite. A grab sample assayed 2.74 grams per tonne gold, 11.31 per cent WO3, 0.06 per cent molybdenum, and 0.003 per cent equivalent uranium (Geological Survey of Canada Memoir 223 Rev.).

Another vein, 90 metres below the No. 3 vein, is exposed for 23 metres. It is up to 3 metres wide, strikes northwest and dips 60 degrees northeast. It contains milky white quartz and tetrahedrite and a sample assayed 0.7 gram per tonne gold and 1900 grams per tonne silver ((Geological Survey of Canada Memoir 223 Rev.).

BIBLIOGRAPHY

EMPR BULL *43, pp. 49-50
EMPR MAP 22-54; 69-1
EMPR ASS RPT 7903
EMPR EXPL 1980-348
EMPR OF 1990-32
GSC OF 551; 720; 2322
GSC MEM *223 (Rev.), pp. 32-34
GSC EC GEOL *No. 17, pp. 56-58; No. 20, pp. 236-237
GSC MAP 44-24
W MINER July, 1948

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/24 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 057**

NATIONAL MINERAL INVENTORY: 093M4 W3

NAME(S): **BLACK PRINCE (L. 2411)**, CRO, CARIBOO, BLACK BEAR, ERIKSEN, ERIKSEN 1-7

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 10 19 N
LONGITUDE: 127 33 40 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Lower adit (Bulletin 43).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6114870
EASTING: 591646

COMMODITIES: Gold, Silver, Lead, Tungsten, Uranium, Copper, Molybdenum, Tin

MINERALS

SIGNIFICANT: Pyrite, Ferberite, Chalcopyrite, Molybdenite, Scheelite, Cassiterite, Uraninite, Wolframite, Bornite
ASSOCIATED: Quartz
ALTERATION: Erythrite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Massive
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I12 W veins
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: 300 x 200 x 2 Metres
STRIKE/DIP: 150/65W
TREND/PLUNGE:
COMMENTS: Main vein shear.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite
Siltstone
Argillite

HOSTROCK COMMENTS: The Rocher Deboule stock age date is from Geological Survey of Canada Open File 720.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Plutonic Rocks, Bowser Lake

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1953
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Gold	1.0000	Grams per tonne
Tin	0.8000	Per cent
Uranium	0.0330	Per cent
Tungsten	1.8800	Per cent

COMMENTS: A 7.6-centimetre wide channel sample.
REFERENCE: Geological Survey of Canada Memoir 223 (1953), page 31.

CAPSULE GEOLOGY

The Black Prince veins are located on the northeast side of the Rocher Deboule Mountain Range at the headwaters of Mudflat creek, 8 kilometres south of South Hazelton.

Siltstone and argillite of the Middle Jurassic to Upper Cretaceous Bowser Lake Group are intruded by the Late Cretaceous Rocher Deboule stock of the Bulkley Intrusions. Several parallel quartz veins occur in the stock which consists of intensely jointed porphyritic granodiorite.

CAPSULE GEOLOGY

The Main Fracture Zone strikes 150 degrees and dips 65 degrees southwest and measures 300 metres in length, is up to 2.4 metres wide, and extends over 200 metres in vertical extent. The fracture zone contains quartz veins with various amounts of scheelite, pyrite, chalcopyrite, molybdenite, wolframite, ferberite, and erythrite. A sample from the lower adit over 0.6 metre assayed 0.82 per cent WO3, 0.36 per cent copper, 0.10 per cent molybdenum, and 6.9 grams per tonne silver (Bulletin 43).

A parallel quartz vein, 250 metres east of the main vein, strikes 150 degrees and dips 65 degrees southwest. The vein contains areas of massive chalcopyrite and scheelite and lesser pyrite, bornite, cassiterite and uraninite. A 7.6-centimetre sample assayed 2.37 per cent WO3, 0.8 per cent tin, 1.0 gram per tonne gold, and 0.033 per cent equivalent uranium (Geological Survey of Canada Memoir 223 Rev.).

Assessment Report 7903 mentions an intermediate vein, 150 metres east of the main vein which strikes 160 degrees and dips 70 degrees southwest. A 59-centimetre sample assayed 0.02 per cent WO3, 0.34 per cent molybdenite, 1.15 per cent copper, and 3.4 grams per tonne silver (Assessment Report 7903).

In 1915, 19 tonnes reportedly produced 120,338 grams of silver and 619 kilograms of lead.

BIBLIOGRAPHY

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EMPR BULL 9, p. 81; 10, pp. 47-51; 10 (Rev.), pp. 67-71; *43, pp. 48-49
EMPR MAP 22-54; 69-1
EMR MP CORPFILE (New Privateer Mine Limited)
EMPR PF (Sketch Map of the Black Prince Group of Claims and Assays, 1951)
EMPR ASS RPT *7903
EMPR EXPL 1980-348
EMPR OF 1990-32
GSC MEM 110, pp. 25-26; 223, pp. 47-48; *223 (Rev.), pp. 30-32
GSC SUM RPT 1925A, pp. 45-46
GSC EC GEOL No. 17, pp. 54-56; No. 20, pp. 235-236
GSC OF 551; 720; 2322
GSC MAP 44-24; 971A; 1731

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/24 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 058**

NATIONAL MINERAL INVENTORY:

NAME(S): **PORPHYRY CREEK NORTH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 09 25 N
LONGITUDE: 127 33 42 W
ELEVATION: 1675 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Occurrence #269, located north of Porphyry Creek near the Silvertip Glacier (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6113200
EASTING: 591645

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

A molybdenum occurrence is reported on Map 69-1 at this location, 10 kilometres south of New Hazelton, on the east side of the Rocher Deboule Mountain Range.

The area of the occurrence is within the Rocher Deboule stock, a porphyritic granodiorite plug of Late Cretaceous age, which is one of the Bulkley Intrusions.

No other information is available.

BIBLIOGRAPHY

EMPR BULL 43
EMPR MAP *69-1 (#269)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/24

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 059**

NATIONAL MINERAL INVENTORY:

NAME(S): **BALSAM**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 09 03 N
LONGITUDE: 127 34 45 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Occurrence #270 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6112498
EASTING: 590544

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite
Clastic Sediment/Sedimentary

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake Plutonic Rocks

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The Balsam showing is located in the Rocher Deboule Mountain Range approximately 11 kilometres south of South Hazelton.

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group and the Rocher Deboule stock, a porphyritic granodiorite intrusive body which is one of the Late Cretaceous Bulkley Intrusions. A potassium/argon date on biotite from the stock yielded a date of 72 million years (Geological Survey of Canada Open File 2322).

The occurrence is shown on Map 69-1 as a copper occurrence, however no other information is available.

BIBLIOGRAPHY

EMPR BULL 43
EMPR MAP *69-1 (#270)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/24 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 060**

NATIONAL MINERAL INVENTORY:

NAME(S): **TINA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 08 04 N
LONGITUDE: 127 33 31 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #271 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6110701
EASTING: 591892

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The Tina molybdenum occurrence, shown on Map 69-1, is located near the headwaters of Boulder Creek, 13 kilometres south of New Hazelton.

The area is underlain by porphyritic granodiorite of the Brian Boru stock. The stock has been dated at 72 million years (Geological Survey of Canada Open file 2322) and is one of the Late Cretaceous Bulkley Intrusions.

No other information is available.

BIBLIOGRAPHY

EMPR BULL 43
EMPR MAP *69-1 (#271)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/11 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 061**

NATIONAL MINERAL INVENTORY: 093M4 Ag4

NAME(S): **SULTANA**, SNOWSHOE, LAST CHANCE, LITTLE WONDER, SILVER TIP, MUGWUMP, DELORES, ELGIN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 06 00 N
LONGITUDE: 127 31 12 W
ELEVATION: 1580 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Assessment Report 2855.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6106920
EASTING: 594434

COMMODITIES: Silver, Copper, Molybdenum, Gold

MINERALS
SIGNIFICANT: Chalcopyrite, Molybdenite, Tetrahedrite
COMMENTS: Low gold, lead and zinc values from assays of samples.
ASSOCIATED: Quartz, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 20 x 7 Metres
STRIKE/DIP: 070/45E
TREND/PLUNGE:
L04 Porphyry Cu ± Mo ± Au
Porphyry
COMMENTS: Dimensions of mineralized outcrop. Attitude of zone.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite
Pegmatite Dike
Aplite Dike
Andesite Dike
Granite Dike

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1988

COMMODITY	GRADE	
Silver	698.6300	Grams per tonne
Gold	0.5500	Grams per tonne
Copper	2.2800	Per cent

COMMENTS: Sample from trench F across 12 metres. Also 0.21 per cent zinc and 0.06 per cent lead.
REFERENCE: George Cross Newsletter #187, September 28, 1989.

CAPSULE GEOLOGY

The Sultana prospect is located on the southeast side of the Rocher Deboule Range near the headwaters of Boulder Creek, 16 kilometres south of New Hazelton.

The host rocks are porphyritic granodiorite of the Late Cretaceous Rocher Deboule stock which has been dated at 72 million years (Geological Survey of Canada Open File 2322) and which is part of the Bulkley Intrusions. Dikes of pegmatite, aplite, andesite and granite intrude the porphyritic granodiorite.

The mineralized outcrop is 20 metres long and up to 7 metres wide. The outcrop consists of fractured granodiorite hosting pyrite, tetrahedrite, molybdenite and chalcopyrite with some quartz gangue. The zone strikes 070 degrees, dipping 45 degrees southeast.

CAPSULE GEOLOGY

A 12-metre sample from trench F assayed 698.62 grams per tonne silver, 0.55 grams per tonne gold and 2.28 per cent copper (George Cross Newsletter #187, September 28, 1989).

An area of chalcopyrite-molybdenite mineralization occurs peripheral to the silver showing, and is associated with a north-south trending fracture system with steep dips both east and west.

BIBLIOGRAPHY

EMPR MAP 69-1 (#272)
EMPR BULL *43-68
EMPR ASS RPT 92, 2855
EMPR GEM 1969-85, 1970-173, 1971-188, 1973-356
EMPR AR 1921-100, 1922-99, 1923-107, 1967-85
EMPR PF (Key Largo Resources Ltd. Prospectus, 1989; Sketch plan of main mineralized zone and Plan of Silver Tip Group, Sultana Silver Mines Ltd., 1967; Tidsbury, A.D. (1967): Progress Report and Preliminary Report for the Silver Tip Mineral Claims)
GSC MAP 971A, 44-24
GSC MEM 223-77
GSC SUM RPT 1910-97
GSC OF 2322
V STOCKWATCH December 14, 1989
GCNL #187,#213, 1989

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/10 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 062**

NATIONAL MINERAL INVENTORY:

NAME(S): **BIG THING**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 05 28 N
LONGITUDE: 127 33 03 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Occurrence #273 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6105890
EASTING: 592487

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite
COMMENTS: Assumed significant minerals.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open file 2322. Mineralization is hosted in the Rocher Deboule stock.

GEOLOGICAL SETTING
TECTONIC BELT:
TERRANE:

CAPSULE GEOLOGY

The Big Thing showing is located at the headwaters of Corya Creek, 17 kilometres south of New Hazelton.

The area of the showing is within porphyritic granodiorite of the Late Cretaceous Rocher Deboule stock which is part of the Bulkley Intrusions.

A molybdenum-copper occurrence is reported on Map 69-1. No other information is available.

BIBLIOGRAPHY

EMPR BULL 43
EMPR MAP *69-1 (#273)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/10

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 063**
NATIONAL MINERAL INVENTORY: 093M4 Cu7

NAME(S): **MT**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 04 55 N
LONGITUDE: 127 32 25 W
ELEVATION: 2000 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Assessment Report 1134 and Bulletin 43.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6104884
EASTING: 593182

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
COMMENTS: Possibly weathered sphalerite or tetrahedrite.
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Andesitic Flow
Dacitic Flow
Breccia
Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.
The intrusive is the Rocher Deboule stock.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Plutonic Rocks Overlap Assemblage

CAPSULE GEOLOGY

The MT showings are located at the headwaters of Corya Creek, 19 kilometres south of New Hazelton.

Widespread disseminated pyrite mineralization is associated with the southern contact of the Rocher Deboule granodiorite stock which intrudes andesitic and dacitic flows and breccias of the Upper Cretaceous Brian Boru Formation (Kasalka Group). Minor molybdenite and chalcopyrite and possibly weathered sphalerite (or tetrahedrite) are associated with the pyrite.

BIBLIOGRAPHY

EMPR ASS RPT *1134, *6894
EMPR AR 1967-85
EMPR MAP 69-1 (#274)
EMPR EXPL 1978-E222
EMPR BULL 43
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/10 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 064**

NATIONAL MINERAL INVENTORY: 093M4 Zn2

NAME(S): **BRIAN BORU (L. 607, 608)**, JONES, SOUTH OXIDATION, KILLARNEY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 05 20 N
LONGITUDE: 127 36 04 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Lot 608.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6105577
EASTING: 589284

COMMODITIES: Silver, Zinc, Lead

MINERALS

SIGNIFICANT: Sphalerite, Galena, Chalcopyrite
ASSOCIATED: Quartz, Pyrite, Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	
ISOTOPIC AGE:	72 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Lower Cretaceous	Skeena	Red Rose	

LITHOLOGY: Sandstone, Argillite, Volcanic

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1954

COMMODITY	GRADE	
Silver	220.5000	Grams per tonne
Lead	1.8400	Per cent
Zinc	11.2700	Per cent

COMMENTS: A 15-centimetre channel sample.
REFERENCE: Geological Survey of Canada Memoir 223 (1954), page 35.

CAPSULE GEOLOGY

The Brian Boru showing is located on the west side of the Rocher Deboule Range, 18 kilometres south of New Hazelton.

The property is underlain by clastic sedimentary rocks (interbedded sandstones and argillites) of the Lower Cretaceous Red Rose Formation (Skeena Group) which are overlain by volcanic rocks of the Upper Cretaceous Brian Boru Formation of the Kasalka Group. The sedimentary rocks strike north and dip 35 degrees east.

The property consists of several showings comprising veins, up to 30 centimetres in width, containing black sphalerite, galena, pyrite pyrrhotite and chalcopyrite in a gangue of quartz. The veins are all near the contact between the Red Rose Formation and the Brian Boru Formation. They generally strike northeast, dipping to the northwest. A 15-centimetre channel sample taken from one vein assayed trace gold, 220.5 grams per tonne silver, 1.84 per cent lead, 11.27 per cent zinc (Geological Survey of Canada Memoir 223).

In addition to the showings on the main Brian Boru property, Assessment Report 14632 refers to two other mineralized areas. These are the Jones and South Oxidation showings between the Brian Boru

CAPSULE GEOLOGY

area and the Killarney area (093M 114). The precise location of the Jones and South Oxidation showings is not known.

BIBLIOGRAPHY

EMPR AR 1914-191, 1917-451, 1926-127
EMPR BULL 43-50
EMPR MAP 69-1 (#275)
EMPR PF (Schroeter, T., Monthly Report, May, 1979)
EMPR ASS RPT 14632
GSC MEM *223-34, 110-19
GSC MAP 971A, 1731, 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/11 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 065**

NATIONAL MINERAL INVENTORY:

NAME(S): **JUPITER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 06 41 N
LONGITUDE: 127 34 47 W
ELEVATION: 1830 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Occurrence #276 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6108108
EASTING: 590598

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The Jupiter molybdenum-copper occurrence is located 15 kilometres south of New Hazelton in the Rocher Deboule Range.

The area is underlain by porphyritic granodiorite of the Late Cretaceous Rocher Deboule stock which is one of the Bulkley Intrusions. The stock has been dated at 72 million years from potassium/argon dating of biotite (Geological Survey of Canada Open File 2322).

A molybdenum-copper occurrence is shown on Map 69-1 but no other information is available.

BIBLIOGRAPHY

EMPR MAP *69-1 (#276)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/09

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 066**

NATIONAL MINERAL INVENTORY: 093M4 Ag3

NAME(S): **BRUNSWICK**, BILL, KASLO, BALSAM, BETTY, NO. 4, BILL 1-14

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 07 47 N
LONGITUDE: 127 36 07 W
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit (Bulletin 43, figure 2).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6110119
EASTING: 589140

COMMODITIES: Silver, Zinc, Lead, Gold, Copper

MINERALS

SIGNIFICANT: Galena, Sphalerite, Tetrahedrite, Chalcopyrite
ASSOCIATED: Quartz, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 060/55N
TREND/PLUNGE:
COMMENTS: Vein.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Greywacke
Argillite
Feldspar Porphyry Dike
Diorite
Porphyritic Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1954
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	3802.4000	Grams per tonne
Gold	1.0000	Grams per tonne
Copper	1.9100	Per cent
Lead	17.2700	Per cent
Zinc	28.4000	Per cent

COMMENTS: Composite sample from bags of "selected ore".
REFERENCE: Geological Survey of Canada Memoir 223 (1954), page 35.

CAPSULE GEOLOGY

The Brunswick prospect is located on Rocher Deboule Mountain near the head of Red Rose Creek, 13 kilometres south of New Hazelton. The Red Rose occurrence (093M 067) is located about 1200 metres to the northwest. The property was originally located in 1912 and there were two adits developed.

The claims are underlain by hornfelsed argillites and greywackes of the Middle Jurassic to Lower Cretaceous Bowser Lake Group which are intruded by dikes of feldspar porphyry, a small diorite plug and the Rocher Deboule porphyritic granodiorite stock, one kilometre to the east. The Rocher Deboule stock is part of the Late Cretaceous Bulkley Intrusions and has been dated at 72 million years (Geological Survey of Canada Open file 2322).

The vein mineralization is mainly quartz carrying sphalerite, galena, chalcopyrite, tetrahedrite and pyrite. It is believed that

CAPSULE GEOLOGY

there are 2 vein systems present, as illustrated by the lower adit vein and the lower adit fault vein. The adits follow a complex post-ore faulted vein-silicified shear system which contains significant silver, lead, zinc and copper.

The vein in the lower adit is up to 1.8 metres wide, strikes 060 degrees and dips 55 to 80 degrees northwest. It is mineralized with arsenopyrite and pyrite and carries low silver values.

The upper adit vein is faulted and 0.45 metre wide. A sample (#9476) from the upper adit assayed 3.65 per cent lead, 4.05 per cent zinc, 1 288.93 grams per tonne silver and 0.446 gram per tonne gold (Property File - Cochrane, D.R. , 1973). A composite sample taken from thirty bags of selected ore from the upper adit assayed 1.0 gram per tonne gold, 3802.4 grams per tonne silver, 1.91 per cent copper, 17.27 per cent lead and 28.4 per cent zinc (Geological Survey of Canada Memoir 223).

BIBLIOGRAPHY

EMPR AR 1914-191, 1925-134, 1926-126, 1951-112, 1952-93
EMPR GEM 1972-429, 1973-356
EMPR BULL 43-50
EMPR MAP 69-1 (#277)
EMPR ASS RPT 4839, 16012
EMPR PF (Location Map of Claims held by Skeena Silver Mines Ltd., 1953; Cochrane, D.R. (1972): Report on Bill 1-14 claims; *Cochrane, D.R. (1973): Geological and Geophysical Report on the Bill claims)
GSC MAP 971A, 44-24
GSC MEM *223-35
GSC OF 2322
EMR MP CORPFILE (Consolidated Skeena Mines Ltd.)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/07 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 067** NATIONAL MINERAL INVENTORY: 093M4 W1

NAME(S): **RED ROSE**, WOLFRAMITE (L. 3045), TUNGSTEN (L. 3044), TUNGSTEN (L. 3041-3043)

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M04E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 08 20 N NORTHING: 6111140
LONGITUDE: 127 36 06 W EASTING: 589137
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Level 600 shaft, on the northwest slope of the Rocher Deboule Range, 11 kilometres south of Hazelton.

COMMODITIES: Tungsten, Copper, Gold, Silver, Molybdenum, Uranium

MINERALS

SIGNIFICANT: Scheelite, Ferberite, Chalcopyrite, Molybdenite, Uraninite, Pyrrhotite
ASSOCIATED: Quartz, Feldspar, Biotite, Hornblende, Ankerite, Tourmaline, Apatite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I12 W veins
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: 335 x 120 x 3 Metres STRIKE/DIP: 145/65W TREND/PLUNGE:
COMMENTS: Red Rose shear.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Diorite Dike, Granodiorite, Diorite, Siltstone, Argillite

HOSTROCK COMMENTS: The Rocher Deboule stock age date is from Geological Survey of Canada Open File 720.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Stikine
METAMORPHIC TYPE: Contact Plutonic Rocks RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: RED ROSE REPORT ON: Y

CATEGORY: Indicated YEAR: 1960
QUANTITY: 13606 Tonnes

COMMODITY	GRADE	
Copper	0.3000	Per cent
Tungsten	1.1800	Per cent

COMMENTS: Probable reserves above the 335 metre level.
REFERENCE: Bulletin 43, page 59.

CAPSULE GEOLOGY

The Red Rose mine is located on the northwest slope of the Rocher Deboule Range, 11 kilometres south of Hazelton.

Siltstone and argillite of the Middle Jurassic to Lower Cretaceous Bowser Lake Group are intruded by the Late Cretaceous Rocher Deboule granodiorite stock of the Bulkley Intrusions. The sediments are hornfelsed by emplacement of the stock and are intruded by northeast trending diorite dikes which are older than the stock.

CAPSULE GEOLOGY

Bedding in the sediments strikes 015 degrees and dips 30 to 50 degrees west. The Chicago Creek fault, striking 010 degrees and dipping 70 degrees west, cuts all rocks and is a normal fault with a dip-slip of 600 to 900 metres.

The Red Rose vein-occupied shear is a small 145 degree striking, 65 degree west dipping fault, mainly hosted in a diorite dike. The vein is 1.2 to 2.8 metres wide, 60 to 120 metres along strike, and at least 335 metres down dip. It is pegmatitic and contains largely quartz with lesser amounts of feldspar, biotite, hornblende, ankerite, tourmaline, apatite, scheelite, ferberite, chalcopyrite, pyrrhotite, molybdenite and uraninite. Extensive lenses of chalcopyrite occur in the hanging wall shear. The biggest concentrations of radioactive material are erratically distributed with molybdenite in the wallrocks.

The vein has been developed and mined above the 1100 level and little is known below this level. Between 1942 and 1954, 103,424 tonnes produced 1,002,839 kilograms of tungsten. It is estimated that there are 13,600 tonnes of ore at a grade of approximately 1.9 per cent WO3 above the 1100 level (Bulletin 43). A 75-centimetre sample taken in 1914 assayed 28.8 grams per tonne gold, 110 grams per tonne silver and 3.9 per cent copper (Minister of Mines Annual Report 1914). A radioactive sample from the mine assayed 0.35 per cent equivalent uranium (Geological Survey of Canada Economic Geology 16).

Probable reserves above the 335 metre level are 13,606 tonnes grading 1.18 per cent tungsten (1.5 per cent WO3). Conversion to tungsten using the factor 1.2611.

BIBLIOGRAPHY

EMPR AR 1914-190,191; 1915-76; 1916-89,106,113,114; 1923-106; 1926-126; 1941-80; 1942-78; 1943-78; 1951-111,112; 1952-92,93; *1954-86-95
EMPR ASS RPT 16012
EMPR BULL 10, pp. 39-47; *10 (Rev.), pp. 60-67; *43, pp. 54-59
EMPR MAP 22; 53; 58; 65, 1989; 69-1 (#278)
EMPR OF 1990-32; 1992-1
EMPR PF (Davis, A.W. (1939, 1941): Report on the Red Rose Group; Sketch Long Section of Red Rose vein shear, date and source unknown; Stevenson, J.S. (1946): Geology of the Red Rose Tungsten Mine, includes photos; Dolmage, V. (1952): The Red Rose Tungsten Mine; Sutherland Brown, A. (1955): Red Rose Tungsten Mine; Miscellaneous Correspondence, 1939-1941; Drill hole logs by R.G. McEachern, date unknown; Photos, 1952; Projection in plane of vein with assays, Western Uranium Cobalt Mines Ltd., date unknown; Red Rose Ore Reserves in Plane of Vein, 1954; Map of Geology of the Red Rose Mine, A. Sutherland-Brown, 1954; Map of Geology of the area adjacent to the Red Rose Mine; Plan of Red Rose Mine, J.S. Stevenson; Level Sketches by A. Sutherland-Brown; Plan of Red Rose Mine, source and date unknown; Surface Geology Map and Sketches of the Red Rose Mine, Stevenson, 1943; MEIP proposal by J. Ball, May 23, 1987)
EMR MIN BULL MR 223 B.C. 243
EMR MP CORPFILE (Western Tungsten Copper Mines Limited)
GSC EC GEOL 4, p. 69; 16, p. 42; 16 (2nd Ed.), p. 236; 17, pp. 51-54
GSC MAP 971A; 44-24; 1731
GSC MEM 110, pp. 18-19; *223, pp. 56-58; *223 (Rev.), pp. 55-57
GSC OF 551; 720; 2322
GSC SUM RPT 1924 Part A, pp. 44-45
CIM Jubilee Vol. 1948 (Red Rose Mine); Transactions Vol. LIII (1950), p. 285
N MINER Aug.18, 1997
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/04 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **093M 068**

NATIONAL MINERAL INVENTORY: 093M4 Cu6

NAME(S): **ARMAGOSA**, SPAULDING, KO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 08 56 N
LONGITUDE: 127 38 29 W
ELEVATION: 1350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from surface plan in Assessment Report 11513.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6112202
EASTING: 586583

COMMODITIES: Copper Tungsten

MINERALS
SIGNIFICANT: Chalcopyrite Magnetite Scheelite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M01 Flood Basalt-Associated Ni-Cu I12 W veins

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Greywacke
Argillite
Porphyritic Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Hazelton Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

The Armagosa property is located on the western flank of Rocher Deboule Mountain, south of the Great Ohio property (093M 069). It is 10 kilometres south of the town of South Hazelton.

The host rocks are hornfelsed greywacke and argillite of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. These are intruded by the Rocher Deboule stock, a Late Cretaceous porphyritic granodiorite body which is one of the Bulkley Intrusions. Bedding in the sedimentary rocks strikes 330 degrees, dipping 30 degrees northeast.

The property hosts several narrow, northeast-striking, steeply southeast dipping fracture zones, some of which are vein-filled, containing chalcopyrite and magnetite. The showings have been explored by two adits and a short shaft. Northwest of the main showings, towards the Great Ohio property, are several small veins carrying scheelite. These veins strike 030 degrees, dipping 60 degrees west and are generally less than 30 centimetres thick.

BIBLIOGRAPHY

EMPR AR 1916-90
EMPR BULL 43-47
EMPR MAP 69-1 (#279)
EMPR ASS RPT *11513
GSC MEM *223-77
GSC MAP 971A, 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/07 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 069**
NATIONAL MINERAL INVENTORY: 093M4 Pb1

NAME(S): **GREAT OHIO (L. 702)**, PILOT (L.704)

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 09 09 N
LONGITUDE: 127 38 11 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Lot 702.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6112610
EASTING: 586894

COMMODITIES: Copper Gold Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite Arsenopyrite Pyrrhotite Pyrite
ASSOCIATED: Quartz Hornblende
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 050/70N
TREND/PLUNGE:
COMMENTS: Main vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite
Hornfels
Argillite
Sandstone

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Plutonic Rocks Bowser Lake

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1954
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Gold	0.2000	Grams per tonne
Copper	0.6200	Per cent

COMMENTS: A 13-centimetre channel sample.
REFERENCE: Geological Survey of Canada Memoir 223 (1954) page 45.

CAPSULE GEOLOGY

The Great Ohio property is located on the west side of the Rocher Deboule Range, 10 kilometres south of South Hazelton. It is located south of the Rocher Deboule mine (093M 071).

The property is underlain by porphyritic granodiorite of the Rocher Deboule stock which is one of the Late Cretaceous Bulkley Intrusions. The stock has been dated at 72 million years (Geological Survey of Canada Open File 2322). The stock intrudes hornfelsed sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group.

The main vein strikes 050 degrees, dipping 70 degrees northwest, parallel to the granodiorite-sediment contact. The quartz vein is up to 120 centimetres in width and is mineralized with scattered minor chalcopyrite, galena, sphalerite, pyrrhotite, arsenopyrite and pyrite. Two parallel subsidiary structures contain quartz, hornblende and chalcopyrite. A 13-centimetre wide sample of typical material from one of these assayed 0.2 gram per tonne gold and 0.62

CAPSULE GEOLOGY

per cent copper (Geological Survey of Canada Memoir 223).

BIBLIOGRAPHY

EMPR AR 1914-189, 1916-109, 1917-102, 1918-113, 1920-87, 1921-97
EMPR BULL 43-53
EMPR MAP 69-1 (#281)
EMR MP CORPFILE (Delta Copper Co. Ltd.)
GSC MAP 971A, 44-24, 1731
GSC MEM 223-55; *223 (1954)-45; 110-14
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/04 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 070** NATIONAL MINERAL INVENTORY: 093M4 Cu2

NAME(S): **HIGHLAND BOY (L.1000)**, DELTA COPPER, GOLDEN FLEECE (L.1001), BALMORAL (L.1002), HAPPY JACK (L.1003), SILVER TIP (L.1004), ZIG ZAG FR. (L.1005)

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M04E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 09 50 N NORTHING: 6113904
LONGITUDE: 127 36 56 W EASTING: 588197
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit.

COMMODITIES: Copper Silver Gold Uranium Tungsten Tin

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Scheelite Cassiterite Uraninite
ASSOCIATED: Quartz Hornblende Specularite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: M01 Flood Basalt-Associated Ni-Cu I13 Sn veins and greisens
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: STRIKE/DIP: 090/70N TREND/PLUNGE:
COMMENTS: Veins strike east-west and dip steeply north.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite

HOSTROCK COMMENTS: Mineralization is hosted in the Rocher Deboule stock, the age date is from Geological Survey of Canada Open File 720.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Plutonic Rocks

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1954
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	15.1000	Grams per tonne
Gold	0.7000	Grams per tonne
Copper	4.9700	Per cent
Tin	0.9000	Per cent
Uranium	0.0150	Per cent
Tungsten	0.7200	Per cent

COMMENTS: A 15-centimetre sample.
REFERENCE: Geological Survey of Canada Memoir 223 (Rev).

CAPSULE GEOLOGY

The Highland Boy property is located on the west side of the Rocher Deboule Range, 9 kilometres south of South Hazelton.

Two continuous subparallel veins occur in porphyritic granodiorite of the Rocher Deboule stock of the Late Cretaceous Bulkley Intrusions. These are likely continuations of the vein shears at the Rocher Deboule mine (093M 071) to the west. The Chicago Creek fault cuts the granodiorite and terminates the veins on the east.

The veins strike east-west and dip steeply north. The upper or Highland Boy vein shear is up to 2 metres wide and is mineralized with chalcopyrite, pyrite, specular hematite, magnetite, scheelite, cassiterite, and uraninite. A 15-centimetre sample assayed 0.7 gram

CAPSULE GEOLOGY

per tonne gold, 15.1 grams per tonne silver, 4.97 per cent copper, 0.90 per cent tin, 0.72 per cent WO3 and 0.015 per cent equivalent uranium (Geological Survey of Canada Memoir 223 (Rev.)).
In 1917, 68 tonnes produced 1,089 grams of silver, 124 grams of gold and 4,760 kilograms of copper.

BIBLIOGRAPHY

EMPR AR 1912-114; 1913-107; 1914-189-190; 1916-109-113; 1917-102-103; 1918-113; 1920-87; 1921-97; 1923-106
EMPR ASS RPT 16565, 16714
EMPR BULL *43, pp. 53-54
EMPR MAP 22-53; 69-1 (#281)
EMPR OF 1990-32
EMR MP CORPFILE (Delta Copper Co. Ltd.)
GSC EC GEOL No. 16, p. 41; No. 16 (2nd Edit.), p. 231
GSC MAP 44-24; 971A; 1731; 1732
GSC MEM *110, pp. 14-18; *223, pp. 48-50; *223 (Rev.), pp. 47-49
GSC OF 551; 720; 2322
CIM TRANS Vol. LIII, 1950, p. 285

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/05 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **093M 071** NATIONAL MINERAL INVENTORY: 093M4 Cu1

NAME(S): **ROCHER DEBOULE**, JUNIPER (L.2400)

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M04E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 09 35 N NORTHING: 6113405
LONGITUDE: 127 38 36 W EASTING: 586436
ELEVATION: 1450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The No. 2 vein, on the northeastern portion of Rocher Deboule Mountain, 11 kilometres south of Hazelton.

COMMODITIES: Copper, Silver, Gold, Tungsten, Zinc, Lead, Uranium, Molybdenum, Cobalt

MINERALS

SIGNIFICANT: Chalcopyrite, Tetrahedrite, Scheelite, Sphalerite, Galena, Cobaltite, Safflorite, Glaucodot, Molybdenite, Uraninite
COMMENTS: Possibly chalcocite.
ASSOCIATED: Quartz, Hornblende, Feldspar, Apatite, Magnetite, Arsenopyrite, Pyrrhotite, Calcite
COMMENTS: Also pyrite.
ALTERATION: Limonite, Malachite, Erythrite, Siderite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au; I12 W veins
L01 Subvolcanic Cu-Ag-Au (As-Sb)
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: 700 x 2 Metres STRIKE/DIP: 075/50N TREND/PLUNGE:
COMMENTS: Veins.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite
Quartz Monzonite Dike
Diorite Dike
Porphyritic Andesite Dike
Siltstone
Greywacke

HOSTROCK COMMENTS: Mineralization is hosted in the Rocher Deboule stock, the age date is from Geological Survey of Canada Open File 720.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Plutonic Rocks Bowser Lake
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: ROCHER DEBOULE REPORT ON: Y

CATEGORY: Combined YEAR: 1990
QUANTITY: 54000 Tonnes

COMMODITY	GRADE	
Silver	207.4000	Grams per tonne
Gold	3.5000	Grams per tonne
Copper	2.7000	Per cent

COMMENTS: Probable/possible reserves.
REFERENCE: George Cross Newsletter No.228, November 26, 1990.

CAPSULE GEOLOGY

The Rocher Deboule mine is located on the northeastern portion

CAPSULE GEOLOGY

of Rocher Deboule Mountain, 11 kilometres south of Hazelton. The Rocher Deboule and Victoria mines (093M 072) were discovered before World War 1. From 1915 to 1954, 123,395 tonnes produced 2,653,086 grams of silver, 157,226 grams of gold, 2,840,966 kilograms of copper, 341 kilograms of lead, 34,692 kilograms of tungsten and 3,274 kilograms of zinc.

Hornfelsic greywackes and siltstones of the Jurassic to Lower Cretaceous Bowser Lake Group are intruded by the Rocher Deboule porphyritic granodiorite stock of the Late Cretaceous Bulkley Intrusions. Dikes are not abundant but consist of fine-grained quartz monzonite, fine-grained diorite and porphyritic andesite. There are five main vein structures which are numbered from 1 to 5, the No. 2 vein being the most important. The veins occur over a 750 metre width, within parallel structures which generally strike 075 degrees and dip 35 to 65 degrees north. The veins are 0.5 to 2.4-metres wide and up to 700 metres long.

Three distinct stages of mineralization are apparent. The first stage is pegmatitic and includes hornblende, quartz, feldspar, apatite, magnetite, scheelite, molybdenite and uraninite. The second and main stages includes chalcopyrite, glassy quartz, arsenopyrite, cobaltite, safflorite, glaucodot and pyrrhotite. The third stage includes milky quartz, siderite, calcite, tetrahedrite, sphalerite, galena, pyrite and possibly chalcocite. Secondary minerals include malachite, erythrite and limonite.

In 1991, the indicated ore reserve of the No. 2 vein was estimated at 37,000 tonnes grading 11.66 grams per tonne gold equivalent; the No. 4 vein has indicated reserves of 17,000 tonnes of the same grade respectively (Open File 1992-1). A radioactive sample over 38 centimetres from the No. 2 vein assayed 0.019 per cent equivalent uranium (Geological Survey of Canada Memoir 223 (Rev.)). A sample taken in 1949, assayed 0.21 per cent equivalent uranium (Geological Survey of Canada Economic Geology 16, 1952).

The No. 2 Porphyry zone is a bulk tonnage target estimated to be 757 metres long, 605 metres deep and an average of 12 metres wide. Samples from a trench on the quartz stockwork in this zone assayed up to 30.5 grams per tonne gold and 0.35 per cent cobalt over 2.4 metres (George Cross Newsletter #228, November 26, 1990).

Total indicated (probable/possible) reserves at Rocher Deboule are 54,000 tonnes grading 2.70 per cent copper, 207.4 grams per tonne silver and 3.5 grams per tonne gold or 11.66 grams per tonne gold equivalent (George Cross Newsletter #228, November 26, 1990).

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EMPR ASS RPT 16575, *16714
EMPR BULL 10 (Rev.), p. 71; *43, pp. 59-67; 64, p. 117
EMPR MAP 22; 53; 58; 65, 1989; 69-1
EMPR OF 1990-32; 1992-1; 1992-3
EMPR PF (Kohanowski, N.N. (1951): Report on the Geological Status of the Rocher Deboule Property; Assay Plan 1952; 2 Department of Mines Inspection, Plan of Assays taken, 1952; Plan with rough notes, date and author unknown; Plan and projection of MoS2 Vein; Stope elevations projected on plane of No. 4 vein, 1917; 2 Sketch maps of workings, unknown date and author; Plan of Underground Workings, 1918; Profile along 1201 crosscut, 1952; Plan of Workings, 1951,1952; 2 Assay Plan No. 2 vein, 1952; Geological Plan of the 1200 level, 1951; Plan of the No. 4 vein; Plan of workings on the No. 2 vein, 1951; Black and white photos, 1952, 1954; Geological Sketches and stereonets, date and author unknown; Sections across Rocher Deboule Mountains; Plan, date and author unknown; Hill, Legg and Helmsworth, (c. 1952): Report on Western Uranium Cobalt Mines Ltd.; Comments on Report on Western Uranium Cobalt Mines Ltd. by S. Holland, 1952; Miscellaneous correspondence, 1952)
EMR MIN BULL MR 223 B.C. 244
EMR MP CORPFILE (Aurimont Mines Limited; Western Tungsten Copper Mines Ltd.; War Eagle Resources Ltd.; Hazelton Copper Mines, Limited)
GSC EC GEOL 16, p. 42; 16 (2nd Ed.), p. 236; *17, pp. 46-51; 20, p. 237
GSC MAP 44-24; 971A; 1731; 1732
GSC MEM *110, pp. 7-14; *223, pp. 50-55; *223 (Rev.), pp. 57-63
GSC OF 551; 720; *2322
CANMET IR 2871; 2946
CIM Transactions (1950), Vol.LIII, p. 285
GCNL #176, 1988; *#228, 1990; #77,#96,#112,#143, 1991

BIBLIOGRAPHY

Placer Dome File
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/05 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **093M 072** NATIONAL MINERAL INVENTORY: 093M4 Co1

NAME(S): **VICTORIA (L. 3303)**, HAZELTON VIEW (L.3299), NEW HAZELTON GOLD, AURIMONT

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M04E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 10 20 N NORTHING: 6114786
LONGITUDE: 127 39 06 W EASTING: 585878
ELEVATION: 1680 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The No. 1 adit, on the northwest side of Rocher Deboule Mountain, 10 kilometres south of Hazelton.

COMMODITIES: Gold, Cobalt, Silver, Molybdenum, Nickel, Uranium, Arsenic, Copper, Zinc

MINERALS

SIGNIFICANT: Cobaltite, Arsenopyrite, Molybdenite, Uraninite, Autunite, Pyrite, Sphalerite, Allanite, Galena, Tetrahedrite, Safflorite
ASSOCIATED: Actinolite, Quartz, Feldspar, Apatite, Sphene, Erythrite
ALTERATION TYPE: Quartz-Carb., Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: 450 x 300 x 1 Metres STRIKE/DIP: 085/60N TREND/PLUNGE:
COMMENTS: No. 1 vein; 0.5 metre wide.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite
Diorite Dike
Feldspar Porphyry Dike
Greywacke
Siltstone
Hornfels

HOSTROCK COMMENTS: Mineralization is hosted in the Rocher Deboule stock, age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Plutonic Rocks Bowser Lake
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: VICTORIA REPORT ON: Y

CATEGORY: Unclassified YEAR: 1983
QUANTITY: 1000 Tonnes

COMMODITY	GRADE	
Silver	2.8400	Grams per tonne
Gold	42.5500	Grams per tonne
Cobalt	2.0000	Per cent

REFERENCE: CIM Special Volume 37, page 186.

CAPSULE GEOLOGY

The Victoria property is located on the northwest side of Rocher Deboule Mountain, 8 kilometres south of South Hazelton. Between 1926 and 1940, 51 tonnes produced 7 710 kilograms of arsenic, 7 341 grams of gold and 785 kilograms of cobalt.

CAPSULE GEOLOGY

Hornfelsic greywackes and siltstones of the Middle Jurassic to Lower Cretaceous Bowser Lake Group are intruded by the Rocher Deboule porphyritic granodiorite stock of the Late Cretaceous Bulkley Intrusions. The stock is cut by vein/dike systems which follow east trending fractures.

The Victoria deposit consists of three parallel vein structures, 200 to 300 metres apart, which strike 085 degrees and dip 60 degrees north, and a small cross-vein which strikes northward and dips 50 degrees east.

The No. 1 vein follows a dark grey, fine-grained diorite dike and averages 0.5 metre wide, is up to 450 metres along strike, and is 300 metres in vertical extent. It is open to the east and at depth. The No. 2 vein follows a feldspar porphyry dike and is 10 metres wide and up to 800 metres long. The No. 3 vein is up to 723 metres long and is intersected by a cross-vein containing galena, sphalerite, tetrahedrite, arsenopyrite, safflorite and pyrite.

The vein material consists of an assemblage of gold-bearing cobalt-nickel sulpharsenides with minor molybdenite in a gangue of actinolite with glassy quartz and feldspar. Additional minerals include uraninite, apatite, sphene, allanite, erythrite, cobaltite and possibly autunite.

A 10-centimetre sample taken in 1940 assayed 270 grams per tonne gold, 37.7 grams per tonne silver, 5.9 per cent cobalt, 0.81 per cent molybdenum, 2.8 per cent nickel and 0.64 per cent equivalent uranium (Bulletin 43). Samples taken in 1950 on the No. 1 and No. 2 veins assayed 47.3 grams per tonne gold, 0.90 per cent cobalt, and 0.16 per cent equivalent uranium across 0.85 metre, and 143.3 grams per tonne gold, 2.05 per cent cobalt and 0.59 per cent equivalent uranium from a veinlet sample, respectively (Geological Survey of Canada Economic Geology 16). A 1983 sample on the No. 2 vein assayed 23.32 grams per tonne gold and 0.0063 per cent arsenic over 0.5 metre (Assessment Report 11019).

Unclassified reserves at Victoria are 1000 tonnes grading 2.84 grams per tonne silver, 42.55 grams per tonne gold and 2 per cent cobalt (CIM Special Volume 37, page 186).

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EMPR AR 1916-114,115; 1917-103,104,372; 1918-112,113; 1925-134; 1926-126; 1927-132; 1928-159; 1948-80-82; *1949-82-93; 1950-99; 1952-89,92
EMPR ASS RPT 7779, *8336, 10368, *11019, 11513, 16565, 16714
EMPR BULL 9, p. 82; *43, pp. 69-73
EMPR EXPL 1975-146-147; 1976-155; 1978-223; 1979-230; 1980-348,349; 1981-273; 1982-314,315; 1983-447
EMPR FIELDWORK 1978, pp. 102,103
EMPR MAP 22; 53; 58; 65, 1989
EMPR OF 1990-32; 1992-1
EMPR PF (Lay, D. (1937): Report on Aurimont Mines Ltd.; Geology and Assay Plan of accessible workings on No. 1 vein, source and date unknown; Sketches of adits, source and date unknown)
EMR CANMET IR 493, pp. 71-73; 509, pp. 121-126; 542, pp. 56-58; 592, pp. 40-43
EMR MIN BULL MR 223 B.C. 245
EMR MP CORPFILE (Rocher Deboule Mountain Mines Ltd.; New Hazelton Gold Cobalt Mines Ltd.; Western Tungsten Copper Mines Ltd.)
GSC EC GEOL 4, pp. 48-49; 16, pp. 42-43; 16 (2nd Ed.), p. 236; 20, p. 238
GSC MAP 44-24; 971A; 1731
GSC MEM *110, pp. 20-23; 223, pp. 44-46; *223 (Rev.), pp. 84-89
GSC OF 551; 720; *2322
GSC P 44-24; 51-10, p. 43
CIM Transactions 1950 Vol. LIII, pp. 282,285
ECON GEOL *Vol.46 (1951), pp. 353-366
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1987/08/04 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **093M 073** NATIONAL MINERAL INVENTORY: 093M4 Cu5

NAME(S): **CAP**, COMEAU, LOUDEL,
GOLDEN WONDER, HUCKLEBERRY , MANDON

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M04E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 10 22 N NORTHING: 6114802
LONGITUDE: 127 41 21 W EASTING: 583489
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 8323.

COMMODITIES: Copper Silver Gold Zinc

MINERALS
SIGNIFICANT: Chalcopyrite Arsenopyrite Sphalerite
ASSOCIATED: Quartz Calcite Pyrite Siderite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: M01 Flood Basalt-Associated Ni-Cu I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 100 x 1 Metres STRIKE/DIP: 070/75N TREND/PLUNGE:
COMMENTS: Altered and fractured zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Tuff
Porphyritic Flow
Breccia

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Hazelton Ranges
TERRANE: Overlap Assemblage

CAPSULE GEOLOGY

The Cap showing is located 8 kilometres south of South Hazelton, on the west slope of Rocher Deboule.

The host rocks are porphyritic flows, breccias and fine grained tuffs of the Upper Cretaceous Brian Boru Formation (Kasalka Group) which has been dated at 72 million years in the area (Geological Survey of Canada Open File 2322). The strata strike northeast in the area, dipping 20 to 30 degrees southeast.

The showing is an altered and fractured zone which strikes 070 degrees, dipping 70 to 80 degrees northwest. The zone ranges in width from 15 to 120 centimetres, containing pyrite, quartz, siderite, calcite, chalcopyrite and arsenopyrite. The zone has been traced for 100 metres on surface by several trenches and has been explored by two short adits and shafts. A 26 tonne shipment, to the Ladysmith smelter in 1917, produced 7,838 grams of silver, 93 grams of gold and 1,531 kilograms of copper. A subsidiary vein is located some distance east of the main vein. It strikes parallel to the main vein, is up to 1 metre in width and contains pyrite, sphalerite and chalcopyrite.

BIBLIOGRAPHY

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EMPR AR 1914-200, 1916-115, 1918-113, 1923-106, 1929-155
EMPR GEM 1970-173, 1971-189, 1972-430
EMPR BULL 43-51
EMPR MAP 69-1 (#284)
EMPR EXPL 1979-230
GSC MEM 110-22, 223-36
GSC MAP 971A, 44-24, 1731

BIBLIOGRAPHY

GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/10/03

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 074** NATIONAL MINERAL INVENTORY: 093M4 Ag2

NAME(S): **GOLDEN WONDER (L. 3322)**, LOUDEL, SHAMROCK

STATUS: Showing MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M04E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 10 30 N NORTHING: 6115017
LONGITUDE: 127 43 01 W EASTING: 581715
ELEVATION: 340 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Shaft.

COMMODITIES: Gold, Copper, Silver, Uranium, Cobalt, Tungsten

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrrhotite, Pyrite, Arsenopyrite, Scheelite, Uraninite
ASSOCIATED: Quartz, Calcite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Massive
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: M01 Flood Basalt-Associated Ni-Cu, I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Regular
MODIFIER: Sheared
DIMENSION: 150 x 1 Metres STRIKE/DIP: 095/80N TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Skeena	Undefined Formation	

LITHOLOGY: Pyritic Argillite
Siltstone
Hornfels
Feldspar Porphyry Dike

HOSTROCK COMMENTS: Hosted by the informally named Kitsumkalum shale (Geological Survey of Canada Open File 2322).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nass Depression
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1980
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	21.6000	Grams per tonne
Gold	5.5500	Grams per tonne
Cobalt	0.1300	Per cent
Copper	1.2100	Per cent

COMMENTS: A 60-centimetre sample.
REFERENCE: Assessment Report 8521.

CAPSULE GEOLOGY

The Golden Wonder property is located 8 kilometres southwest of South Hazelton, west of the Rocher Deboule Mountain Range.

Mineralized fractures occur in pyritic argillite and siltstone of the Lower Cretaceous Kitsumkalum shale, an informal subdivision of the Skeena Group (Geological Survey of Canada Open File 2322). The rocks strike 020 degrees and dip 75 degrees west and are hornfelsed due to the Rocher Deboule stock, of the Late Cretaceous Bulkley Intrusions, to the east.

The main vein strikes 095 degrees, dipping 80 degrees north. It is associated with a feldspar porphyry dike, within black argillite. The vein is up to 1.2 metres wide and 150 metres long, consisting of quartz, calcite, chalcopyrite, pyrrhotite, pyrite, arsenopyrite, scheelite, and probably uraninite.

A sample of ore from near the shaft assayed 3.4 grams per tonne

CAPSULE GEOLOGY

gold, 188 grams per tonne silver, 2.97 per cent copper, and 0.15 per cent tin (Geological Survey of Canada, Memoir 223 (Rev.)). A 60-centimetre sample of the vein, taken in 1980, assayed 21.6 grams per tonne silver, 5.55 grams per tonne gold, 1.21 per cent copper, and 0.13 per cent cobalt (Assessment Report 8521). A radioactive sample assayed 0.07 per cent equivalent uranium (Geological Survey of Canada, Economic Geology #16, 1952). A second mineralized shear zone is located 300 metres to the northeast.

BIBLIOGRAPHY

EMPR AR 1917-107; 1918-113,472
EMPR BULL 43, p. 52
EMPR MAP 22-#54; 69-1 (#285)
EMPR EXPL 1980-349
EMPR GEM 1970-173; 1971-189
EMPR ASS RPT 324, 3463, *8521
EMPR OF 1990-32
GSC OF 551; 720; 2322
GSC MAP 44-24; 971A; 1731
GSC EC GEOL No. 16, p. 41; No. 16 (2nd Edit.) p. 232
GSC MEM 110, p. 24; 223, pp. 42-43; *223 (Rev.) pp. 44-45
EMR MP CORPFILE (Chapparal Mines Ltd.)

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1987/08/05	REVISED BY:	LDJ	FIELD CHECK:	N

MINFILE NUMBER: **093M 075**

NATIONAL MINERAL INVENTORY: 093M4 Cu4

NAME(S): **THREE HILLS**, STRIKE, RIDGE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 10 14 N
LONGITUDE: 127 43 59 W
ELEVATION: 335 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Figure 2, Bulletin 43.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6114503
EASTING: 580698

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
DIMENSION:
STRIKE/DIP: 082/60N
TREND/PLUNGE:
COMMENTS: Joints, containing stringers of quartz and chalcopyrite.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous Unknown	Skeena	Undefined Formation	Unnamed/Unknown Informal

LITHOLOGY: Argillite
Feldspar Porphyry

HOSTROCK COMMENTS: The host rock is the informally named Kitsumkalum shale.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Nass Depression

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1960
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.6100	Per cent

COMMENTS: A 3-metre chip sample.
REFERENCE: Bulletin 43, page 69.

CAPSULE GEOLOGY

The Three Hills property is located 8 kilometres south of South Hazelton, on the west side of Rocher Deboule Mountain, about 600 metres east of Highway 16.

The property is underlain by hornfelsed argillite of the Lower Cretaceous Kitsumkalum shale, an informal subdivision of the Skeena Group, and feldspar porphyry. The rocks strike 035 degrees and dip 40 degrees northwest. Joints, which strike between 075 and 090 degrees and dip 60 degrees north, contain stringers of quartz and chalcopyrite.

A 3-metre chip sample from one of the better-looking trenches assayed 0.61 per cent copper, trace silver and trace gold (Bulletin 43, page 69).

BIBLIOGRAPHY

EMPR MAP 69-1 (#286)
EMPR ASS RPT 324
EMPR BULL *43-69
EMPR AR 1955-24, 1956-25
GSC MAP 971A
GSC OF 2322

DATE CODED: 1985/07/24
CODED BY: GSB
FIELD CHECK: N
DATE REVISED: 1991/10/03
REVISED BY: RHM
FIELD CHECK: N

MINFILE NUMBER: **093M 076** NATIONAL MINERAL INVENTORY: 093M5 Zn1

NAME(S): **SILVER BELL**

STATUS: Prospect Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M05E UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 20 08 N NORTHING: 6132912
LONGITUDE: 127 41 31 W EASTING: 582972
ELEVATION: 275 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Geological Survey of Canada Memoir 223, page 7.

COMMODITIES: Gold Silver Zinc Lead

MINERALS
SIGNIFICANT: Sphalerite Galena Pyrite Arsenopyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
DIMENSION: STRIKE/DIP: 090/75S TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Granodiorite Dike
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nass Depression
TERRANE: Overlap Assemblage

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	98.8000	Grams per tonne
Gold	3.3000	Grams per tonne
Lead	3.8800	Per cent
Zinc	3.9500	Per cent

COMMENTS: A 10-centimetre wide channel sample from face of open-cut.
REFERENCE: Geological Survey of Canada Memoir 223, page 7.

CAPSULE GEOLOGY

The Silver Bell prospect is located on the west side of the road, approximately 700 metres south of the mouth of the Kispiox River, 9 kilometres north of Hazelton.

The host rock is a rusty weathering granodiorite dike which intrudes argillaceous sediments of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group). The granodiorite dike is 15 metres wide, striking 030 degrees. A quartz vein, ranging from 7 to 15 centimetres in width, carries up to 25 per cent sulphides, mainly pyrite, sphalerite and galena, with minor arsenopyrite and chalcopyrite. The vein strikes west, dipping 75 degrees south.

A 10-centimetre wide channel sample assayed 3.3 grams per tonne gold, 98.8 grams per tonne silver 3.88 per cent lead and 3.95 per cent zinc (Geological Survey of Memoir 223, page 7). In 1915, 9 tonnes produced 34,213 grams of silver and 6,350 kilograms of lead.

Other quartz veins in the area do not contain appreciable sulphides.

BIBLIOGRAPHY

EMPR MAP 69-1 (#287)
EMPR AR 1909-84, 1911-79, 1914-172,204, 1916-515, 1933-97
GSC MAP 971A
GSC P 44-24, 36-20

BIBLIOGRAPHY

GSC MEM *223-7
GSC OF 2232

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/29

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 077**

NATIONAL MINERAL INVENTORY: 093M5 Ag4

NAME(S): **FORTUNE HILL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 25 25 N
LONGITUDE: 127 36 35 W
ELEVATION: 325 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The location is deduced from the description in Geological Survey of Canada Memoir 223.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6142811
EASTING: 587992

COMMODITIES: Copper Zinc Silver

MINERALS
SIGNIFICANT: Chalcopyrite Sphalerite Pyrite Pyrrhotite Arsenopyrite
ASSOCIATED: Siderite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Replacement
TYPE: J01 Polymetallic manto Ag-Pb-Zn
SHAPE: Tabular
DIMENSION: 90 x 1 Metres STRIKE/DIP: 360/30W TREND/PLUNGE:
COMMENTS: Attitude of bedding. Dimensions of mineralized zone.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Calcareous Sandstone
Argillite
Chert

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Nass Depression

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1940
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	11.0000	Grams per tonne
Copper	0.1500	Per cent
Zinc	0.9000	Per cent

COMMENTS: A 0.6-metre wide chip sample from a pit. Also, 0.17 gram per tonne gold.
REFERENCE: Geological Survey of Canada Memoir 223, page 7.

CAPSULE GEOLOGY

The Fortune Hill prospect is located on the west bank of the Skeena River, on the east side of a 150 metre high hill, approximately 10 kilometres north of the mouth of the Kispiox River.

The host rocks are sandstones, argillites and cherts of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group) which strike north, dipping 30 degrees west.

The mineralization of interest is a 0.6 to 1.5 metre wide "replacement zone" of sulphide minerals which occurs in a bed of carbonate-rich sandstone. The carbonate, which is believed to be siderite, increases in abundance near the sulphide mineralization. The sulphide minerals include pyrrhotite, arsenopyrite, chalcopyrite, pyrite and sphalerite. It was exposed in four open cuts over a length of 90 metres along the side of the hill.

A 0.6-metre wide chip sample assayed 0.17 grams per tonne gold, 11.0 grams per tonne silver, nil lead, 0.9 per cent zinc and 0.15 per cent copper (Geological Survey of Canada Memoir 223).

BIBLIOGRAPHY

EMPR MAP 69-1 (#288)

BIBLIOGRAPHY

EMPR AR 1933-97
GSC MAP 971A, 44-24
GSC P 36-20-75, 44-24
GSC MEM *223-6
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/30 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 078**

NATIONAL MINERAL INVENTORY:

NAME(S): **TENAS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 26 16 N
LONGITUDE: 127 37 59 W
ELEVATION: 680 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #289 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6144358
EASTING: 586484

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Unnamed/Unknown Formation	Bulkley Intrusions

LITHOLOGY: Clastic Sediment/Sedimentary
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage Plutonic Rocks

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Tenas molybdenite occurrence is shown on Map 69-1 and Geological Survey of Canada Open File 2322.
The area of the occurrence is underlain by Middle Jurassic to Lower Cretaceous Bowser Lake Group clastic sedimentary rocks near the contact with a small plug of the Late Cretaceous granodioritic Bulkley Intrusions.
No other information is available.

BIBLIOGRAPHY

EMPR MAP *69-1 (#289)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/09 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 079**

NATIONAL MINERAL INVENTORY: 093M12 Mo1

NAME(S): **LAURA**, BEAR, MIKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M12E
BC MAP:
LATITUDE: 55 32 45 N
LONGITUDE: 127 37 46 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Laura stock (Assessment Report 7071).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6156387
EASTING: 586475

COMMODITIES: Molybdenum, Copper, Zinc, Antimony, Tungsten

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Sphalerite, Stibnite, Jamesonite, Arsenopyrite
ASSOCIATED: Quartz, Pyrite, Pyrrhotite, Carbonate, Feldspar, Amphibole
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Vein
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

ISOTOPIC AGE: 82 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite
Hornfels
Sandstone
Siltstone
Dike

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
GRADE: Hornfels

CAPSULE GEOLOGY

The Laura property is located near the head of Sterritt Creek 32 kilometres north of Hazelton.

The Laura stock, a two-phase subcircular granodioritic plug of the Late Cretaceous Bulkley Intrusions, cuts sandstones and siltstones of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. Peripheral inward-dipping dikes, related to the earlier phase of the stock, suggest a ring dike or funnel shape for the intrusive complex as a whole (Assessment Report 7071) which has hornfelsed the Bowser Lake Group sedimentary rocks. A potassium/argon date on biotite yielded a date of 82 million years (Geological Survey of Canada Open File 2322).

Low-grade molybdenum, copper and tungsten mineralization is widespread in the granodiorite and locally in the hornfelsed sedimentary rocks adjacent to the stock. The best grades are in the margins of the stock.

Four stages of mineralization are evident. An early disseminated and fracture-controlled pyrite mineralization with minor chalcopyrite and amphibole was succeeded by a quartz vein stockwork carrying pyrite, chalcopyrite and molybdenite. The third phase consists of hairline quartz veins with pyrite, pyrrhotite, molybdenite and chalcopyrite and finally, widely-spaced late vuggy flat-lying quartz-carbonate-feldspar veins carrying pyrite, arsenopyrite, sphalerite, chalcopyrite and locally jamesonite and stibnite.

BIBLIOGRAPHY

EMPR MAP 69-1 (#290)
EMPR AR *1968-113,116
EMPR GEM 1970-177
EMPR EXPL 1978-E225, 1979-233
EMPR ASS RPT *7071, 7462, 7894
EMPR PF (Sutherland-Brown, A. (1968): Report on Laura Mines Ltd.;
Geology Map, MacDonald Consultants Ltd., 1968; Drill hole
locations, c. 1968)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/11 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 080** NATIONAL MINERAL INVENTORY: 093M11 Mo1

NAME(S): **MOUNT THOMLINSON**, MT THOMLINSON, MOLLY, RED CANYON

STATUS: Developed Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093M11W UTM ZONE: 09 (NAD 83)
BC MAP:
LATITUDE: 55 35 14 N NORTHING: 6161174
LONGITUDE: 127 29 25 W EASTING: 595155
ELEVATION: 1920 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches in the centre of the mineralized zone, 4.75 kilometres north of the summit of Mount Thomlinson and 7 kilometres south of Babine River, 36 kilometres north of Hazelton (Assessment Report 10188).

COMMODITIES: Molybdenum Copper Tungsten

MINERALS

SIGNIFICANT: Molybdenite Chalcopyrite Pyrite Scheelite
ASSOCIATED: Quartz Magnetite Pyrrhotite
ALTERATION: Silica Clay Chlorite Sericite Limonite Malachite Azurite Ferrimolybdite
ALTERATION TYPE: Silicific'n Argillic Propylitic Sericitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type)
SHAPE: Tabular
MODIFIER: Fractured Sheared
DIMENSION: 900 x 100 Metres STRIKE/DIP: 030/60W TREND/PLUNGE:
COMMENTS: Mineralized zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

ISOTOPIC AGE: 54 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Monzonite Porphyry
Argillaceous Siltstone
Argillite
Hornfels
Schist
Aplite Dike

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Bowser Lake
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Hornfels

INVENTORY

ORE ZONE: MOUNT THOMLINSON REPORT ON: Y

CATEGORY: Combined YEAR: 1965
QUANTITY: 40820000 Tonnes

COMMODITY	GRADE	
Molybdenum	0.0710	Per cent

COMMENTS: Measured, indicated and inferred reserves. Grade given was 0.12 per cent MoS2; conversion to Mo using the factor 1.6681.
REFERENCE: CIM Special Volume 15 (1976), Table 3, page 422.

CAPSULE GEOLOGY

The Mount Thomlinson property is located on the north side of Mount Thomlinson Mountain Range, 5 kilometres north of Thomlinson Peak, 40 kilometres north of Hazelton.

Massive black argillaceous siltstones and argillites of the Middle Jurassic to Lower Cretaceous Bowser Lake Group have been intruded by a roughly circular stock (1400 metres diameter) of

CAPSULE GEOLOGY

leucocratic quartz monzonite porphyry of the Eocene Babine Intrusions. Near the contact, the sedimentary rocks have been deformed and metamorphosed to medium or dark grey schists in a zone 91 to 152 metres wide. Stock contacts are sharp and biotite, muscovite, cordierite and andalusite have been formed in the contact aureole. The margins of the stock are foliated parallel to the contact and to the schistosity in the intruded rocks up to 100 metres from the contact. Much of the stock is a coarse-grained porphyry with potassium feldspar phenocrysts up to 5 centimetres long. In many areas, the stock is cut by narrow (2-10 centimetres) aplite dikes. These dikes occur in swarms and occupy well-defined fractures. A potassium-argon age date from biotite from the stock resulted in an age of 54 Ma (Geological Survey of Canada Open File 2322).

Molybdenite, chalcopyrite and pyrite are associated with a system of quartz vein stockworks within the intrusive, along the contact hornfelsed zone with the argillaceous rocks. The quartz stockwork is best developed along this stock contact and post-dates the aplite dikes. The mineralized zone trends north-northeast (030 degrees) along the margin of the stock, and dips 58-65 degrees west. It is tabular and up to 100 metres wide. Molybdenite is most common as fine flakes in quartz veinlets and as smears along fracture planes. Locally it occurs as coarse flakes in quartz veins. Weathering of mineralization has been considerable, and in many areas extends from 60 to 91 metres below the surface. Limonite, ferrimolybdite, malachite and to a lesser extent, azurite, are the principal secondary minerals. Chalcopyrite, malachite and azurite also occur along fractures and veins. Although chalcopyrite is found in the same general areas as molybdenite, the two sulphides occur independently of each other. Pyrite (1-5 per cent) is found as disseminations, fracture-fillings and patchy crystalline concentrations in the intrusive and adjacent argillites. Minor amounts of magnetite, scheelite and pyrrhotite are also evident. The better grade rock lies several metres from the contact within the intrusive rock. In general the mineralization extends farther into the intrusive than into sediments, and in many places the amount of mineralization drops off sharply at the contact.

Although mineralization has been found over a strike length of 900 metres, the width and grades vary considerably. The zone becomes more complex and less well-defined to the northeast with narrow sections of mineralized rock separated by relatively barren rock. Deposition of sulphides appears to have been largely controlled by this northwest dipping zone of fracturing and shearing.

Alteration within and close to the mineralized zone comprises substantial silicification with argillic and chloritic assemblages and sericitic overprinting.

Measured, indicated and inferred reserves are 40.82 million tonnes grading 0.071 per cent molybdenum (0.12 per cent MoS2)(CIM Special Volume 15 (1976), Table 3, page 422). Conversion to Mo using the factor 1.6681.

BIBLIOGRAPHY

EMPR MAP 1; 65, 1989
EMPR ASS RPT *7916, 9002, *9787, 10188
EMPR BULL *64, pp. 123,124,126
EMPR AR 1928-C159; 1929-C161; 1963-24,25; *1964-48-50; 1965-73
EMPR EXPL 1975-E150; 1979-232,233
EMPR OF 1992-1
GSC MAP 971A; 44-24
GSC OF 720; *2322
GSC BULL 270
EMR MP CORPFILE (The Buttle Lake Mining Company Limited)
CIM Special Volume 15 (1976), Table 3, p. 422
EMR MIN BULL MR 223 B.C. 247

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1990/09/04 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093M 081**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOLDEN GIRL**, VERL, JANZE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M12E
BC MAP:
LATITUDE: 55 40 17 N
LONGITUDE: 127 34 59 W
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Vein 10 (Assessment Report 17291, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6170417
EASTING: 589117

COMMODITIES: Silver, Gold, Molybdenum, Zinc, Lead

MINERALS

SIGNIFICANT: Molybdenite, Sphalerite, Galena, Arsenopyrite, Tetrahedrite
ASSOCIATED: Quartz, Pyrite, Sericite, Feldspar
ALTERATION: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au; L05 Porphyry Mo (Low F- type)
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Argillite
Siltstone
Sandstone
Hornfels

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks
Bowser Lake RELATIONSHIP:
METAMORPHIC TYPE: Contact
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	3182.1000	Grams per tonne
Gold	1.0000	Grams per tonne

COMMENTS: A 20-centimetre sample width.
REFERENCE: Assessment Report 17291.

CAPSULE GEOLOGY

The Golden Girl prospect is located 3 kilometres south of the abandoned village of Kisgegas, 46 kilometres north of Hazelton.

An east-northeast trending granodioritic plug of the Late Cretaceous Bulkley Intrusions, approximately 300 by 1000 metres in size, cuts argillites, siltstones and sandstones of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. Hornfelsing is evident in the sedimentary rocks next to the intrusive.

Two types of mineralization are present on the property. Molybdenite and molybdenite-pyrite-pink feldspar fracture coatings are found in the granitic rocks (Assessment Report 17291). The second type of metallic mineralization consists of quartz-galena-pyrite-sphalerite-arsenopyrite-tetrahedrite veins with sporadic sericite and molybdenite. The veins range up to 1 metre in width and generally trend northwest, dipping moderately to the northeast. The mineralization is mainly confined to the intrusive rocks, but extends into the Bowser Lake Group rocks as well. More than 17 veins have been mapped.

Two of the higher grade samples assayed 1.0 gram per tonne gold and 3182.1 grams per tonne silver across 20 centimetres and 6.0 grams

CAPSULE GEOLOGY

per tonne gold and 104.6 grams per tonne silver across 37 centimetres (Assessment Report 17291).

BIBLIOGRAPHY

EMPR MAP 69-1 (#292)
EMPR ASS RPT *17291, 17525
GSC OF 2322 (#81,#239)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/13 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 082**
NATIONAL MINERAL INVENTORY: 093M14 Mo1

NAME(S): **GOATHEAD**, FOG, FROST, OLE, MOLLY BLUE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 45 24 N
LONGITUDE: 127 25 45 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralization (Assessment Report 10290, figure 5).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6180115
EASTING: 598580

COMMODITIES: Molybdenum, Copper, Tungsten

MINERALS
SIGNIFICANT: Molybdenite, Chalcopyrite, Scheelite
ASSOCIATED: Pyrite, Pyrrhotite, Quartz
ALTERATION: Quartz, K-Feldspar, Sericite, Garnet, Epidote
ALTERATION TYPE: Silicific'n, Potassic, Skarn, Argillic, Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry, Skarn
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 51 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Porphyritic Granodiorite
Hornfels
Argillite
Siltstone
Carbonate
Aplite
Granodiorite Dike
Dike

HOSTROCK COMMENTS: Age date from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1981
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Molybdenum	0.1930	Per cent

COMMENTS: Sample across 33-metre width in drill hole K-1-81.
REFERENCE: Assessment Report 10290.

CAPSULE GEOLOGY

The Goathead molybdenum prospect is located at the toe of the small glacier on the south side of the cirque at the headwaters of Goathead Creek, 57 kilometres north of Hazelton. The mineralization was discovered in 1969.

The area is underlain by Middle Jurassic to Lower Cretaceous Bowser Lake Group clastic sedimentary rocks which consist of argillites and siltstones with minor carbonate layers. The molybdenum mineralization occurs within and peripheral to an elongate east-west trending stock, 1500 metres long by 600 metres wide. The stock, of the Late Cretaceous Bulkley Intrusions, is porphyritic in texture and granodioritic in composition. Biotite in the intrusion has been dated by potassium/argon techniques at 51 million years

CAPSULE GEOLOGY

(Geological Survey of Canada Open File 2322). Dikes of granodiorite, aplite and diorite cut the stock and sedimentary rocks.

Molybdenite, chalcopyrite and pyrite occur in a weakly developed quartz vein stockwork and disseminated in altered areas within the granodiorite (Assessment Report 10290). Pyrite, pyrrhotite, and minor scheelite, chalcopyrite and molybdenite occur in hornfels near the eastern contact. Scheelite also occurs in sparse veins and along fractures in fresh argillite, and in garnet-epidote skarn in calcareous beds near the granodiorite contacts. Locally, an intense quartz vein stockwork is developed with K-feldspar alteration, silicification and a late argillic alteration.

The best drill intersection was 33 metres grading 0.193 per cent molybdenite in drill hole K-1-81 (Assessment Report 10290).

BIBLIOGRAPHY

EMPR ASS RPT 6723, 9382, *10290
EMPR AR 1966-81
EMPR EXPL 1978-226, 1979-233
EMPR MAP 69-1 (#293)
EMPR FIELDWORK 1977-P68
EMPR PF (Sicinitine Mines Ltd., Report on the Fog Group of Claims, 1969)
GSC OF 2322
THE FINANCIAL EXAMINER Jan. 6, 1968 p. 9

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/05 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 083**

NATIONAL MINERAL INVENTORY:

NAME(S): **ICEFIELDS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 49 13 N
LONGITUDE: 127 24 21 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #294, located near the icefields north of Kisgegas Peak (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6187227
EASTING: 599881

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Clastic Sediment/Sedimentary
Hornfels

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake Plutonic Rocks

CAPSULE GEOLOGY

A molybdenum showing, shown on Map 69-1, is located 4.5 kilometres northeast of Kisgegas Peak, 65 kilometres north of Hazelton.

The area of the showing is underlain by the Middle Jurassic to Lower Cretaceous Bowser Lake Group which consists mainly of clastic sedimentary rocks. A small plug of the Late Cretaceous Bulkley Intrusions is shown adjacent to the occurrence.

No other information is available.

BIBLIOGRAPHY

EMPR MAP *69-1 (#294)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/05 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 084**

NATIONAL MINERAL INVENTORY: 093M14 Mo3

NAME(S): **ICE**, ICE 1-10, ICE 34-55

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 50 34 N
LONGITUDE: 127 20 57 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 2070.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6189814
EASTING: 603371

COMMODITIES: Molybdenum, Copper, Lead, Silver

MINERALS
SIGNIFICANT: Molybdenite, Chalcopyrite, Galena
ASSOCIATED: Pyrite, Pyrrhotite, Quartz
ALTERATION: Sericite
ALTERATION TYPE: Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Quartz Diorite
Argillite
Hornfels
Pebble Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

The Ice property is located 70 kilometres northeast of Hazelton in the Atna Range.

The area is underlain by argillite, hornfels and pebble conglomerate of the Middle Jurassic to Lower Cretaceous Bowser Lake Group intruded by quartz diorite of the Late Cretaceous Bulkley Intrusions.

Pyrrhotite and less commonly chalcopyrite are found disseminated through much of the intrusion. Chalcopyrite and molybdenite are also found in hair-line fractures in the quartz diorite, commonly associated with sericitic alteration (Assessment Report 2070). Quartz veins, up to 10 centimetres wide, contain galena. The best surface exposures are on the Ice 38 and 39 claims. On the southeast corner of the Ice 38 claim, several quartz veins occur along a shear zone and contain small amounts of lead and silver.

BIBLIOGRAPHY

EMPR MAP 69-1 (#295)
EMPR ASS RPT *2070
EMPR GEM 1969-101
EMPR AR 1968-116
EMPR PF (Sicinitine Mines Ltd., Report on the Ice Claims, 1970)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/12/04

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 085**

NATIONAL MINERAL INVENTORY: 093M14 Cu1

NAME(S): **CUMO**, IKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 52 14 N
LONGITUDE: 127 29 02 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Minister of Mines Annual Report 1967.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6192712
EASTING: 594868

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Pyrite Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Granite Dike
Aplite Dike
Pegmatite Dike
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Bowser Lake

CAPSULE GEOLOGY

The Cumo showing is located in the Atna Range, 7 kilometres south of Shedin Peak, 70 kilometres north of Hazelton.

Middle Jurassic to Lower Cretaceous Bowser Lake Group clastic sedimentary rocks are intruded by a stock of granodiorite of the Late Cretaceous Bulkley Intrusions, which in turn is cut by dikes of fine-grained granite, pale aplite and pegmatite.

The mineralization, which occurs near the contact of the granodiorite, consists of pyrite, chalcopyrite and molybdenite in widely scattered quartz veinlets and veins ranging from less than a centimetre to more than 60 centimetres wide. The largest veins strike northeast and dip 15 to 20 degrees southeast. The mineralization extends over an area of approximately 100 by a few hundred metres. Alteration is not intense and grades of mineralization are low.

BIBLIOGRAPHY

EMPR MAP 69-1 (#296)
EMPR AR *1967-86, 1968-117
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 086**

NATIONAL MINERAL INVENTORY: 093M14 Mo4

NAME(S): **PEAK**, PEAK 1-22

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 56 00 N
LONGITUDE: 127 26 01 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Map 69-1 (#297).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6199768
EASTING: 597856

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Bowser Lake

CAPSULE GEOLOGY

The Peak molybdenum showings are located on the southeast side of Shedin Peak, in the Atna Range, 75 kilometres north of Hazelton.

The area is underlain by a plug of the, mainly granodioritic, Late Cretaceous Bulkley Intrusions which intrude clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group.

Little information is available on the property, other than that molybdenite occurs in fractures, quartz veins and disseminated in granodiorite (Minister of Mines Annual Report 1968).

BIBLIOGRAPHY

EMPR AR *1968-117
EMPR MAP 69-1 (#297)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 087**

NATIONAL MINERAL INVENTORY:

NAME(S): **ATNA SILVER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 56 45 N
LONGITUDE: 127 24 20 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #298 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6201199
EASTING: 599576

COMMODITIES: Silver Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Clastic Sediment/Sedimentary
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

A silver-lead-zinc showing (#298, on Map 69-1) is located approximately 4 kilometres east of Shedin Peak, 80 kilometres north of Hazelton.

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group intruded by the Late Cretaceous Bulkley Intrusions which are mainly granodioritic in composition.

No other information is available.

BIBLIOGRAPHY

EMPR MAP *69-1 (#298)
GSC OF 2322
GCNL #86, 1988
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 088**

NATIONAL MINERAL INVENTORY: 093M14 Mo2

NAME(S): **COB**, ATNA , JAN, PAT, MAD

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 57 47 N
LONGITUDE: 127 24 06 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #299 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6203121
EASTING: 599775

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake Plutonic Rocks
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

A molybdenum-copper showing (#299 on Map 69-1) is located approximately 6 kilometres northeast of Shedin Peak, 80 kilometres north of Hazelton.

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group intruded by the Late Cretaceous Bulkley Intrusions which are mainly granodioritic in composition.

No other information is available.

BIBLIOGRAPHY

EMPR AR 1967-85, 1968-116
EMPR GEM 1969-101
EMPR MAP *69-1 (#299)
EMR MP CORPFILE (Canadian Superior Exploration Ltd.)
GSC OF 2322
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 089**

NATIONAL MINERAL INVENTORY: 093M14 Mo2

NAME(S): **ATNA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 57 32 N
LONGITUDE: 127 26 25 W
ELEVATION: 1667 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #300 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6202602
EASTING: 597375

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Bowser Lake

CAPSULE GEOLOGY

A molybdenum-copper showing (#300 on Map 69-1) is located approximately 3 kilometres northeast of Shedin Peak, 67 kilometres north of Hazelton.

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group intruded by the Late Cretaceous Bulkley Intrusions which are mainly granodioritic in composition.

No other information is available.

BIBLIOGRAPHY

EMPR AR 1967-85, 1968-116
EMPR MAP *69-1 (#300)
EMR MP CORPFILE (Canadian Superior Exploration Ltd.)
GSC OF 2322
GCNL #86, 1988
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 090**

NATIONAL MINERAL INVENTORY:

NAME(S): **JAN 1**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 57 24 N
LONGITUDE: 127 28 49 W
ELEVATION: 2200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #301 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6202300
EASTING: 594884

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Clastic Sediment/Sedimentary
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

A copper-molybdenum showing (#301 on Map 69-1) is located approximately 2 kilometres north of Shedin Peak, 78 kilometres north of Hazelton.

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group intruded by the Late Cretaceous Bulkley Intrusions which are mainly granodioritic in composition.

No other information is available.

BIBLIOGRAPHY

EMPR MAP *69-1 (#301)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/12/09
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 091**

NATIONAL MINERAL INVENTORY:

NAME(S): **JAN 2**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 58 39 N
LONGITUDE: 127 29 27 W
ELEVATION: 2000 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #302 (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6204603
EASTING: 594174

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Clastic Sediment/Sedimentary
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE: Hornfels

CAPSULE GEOLOGY

A copper-molybdenum showing (#302 on Map 69-1) is located approximately 4.5 kilometres north of Shedin Peak, 82 kilometres north of Hazelton.

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group intruded by the Late Cretaceous Bulkley Intrusions which are mainly granodioritic in composition.

No other information is available.

BIBLIOGRAPHY

EMPR MAP *69-1 (#302)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/12/09
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 092**

NATIONAL MINERAL INVENTORY: 093M14 Cu2

NAME(S): **SHEL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14E
BC MAP:
LATITUDE: 55 57 12 N
LONGITUDE: 127 04 37 W
ELEVATION: 1667 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 2084.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6202556
EASTING: 620073

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Quartz Pyrrhotite Pyrite Magnetite
ALTERATION: Sericite Kaolinite Carbonate Chlorite Leucoxene
ALTERATION TYPE: Sericitic Argillic Carbonate Chloritic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granite Porphyry
Granite Porphyry Dike
Aplite Dike
Hornfels
Fine Grained Tuff
Argillite
Greywacke

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1969
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.0200	Per cent
Molybdenum	0.0240	Per cent

COMMENTS: A 15.2-metre chip sample from the granite porphyry intrusion.
REFERENCE: Assessment Report 2084.

CAPSULE GEOLOGY

The Shel property is located in the Sicintine Range, 88 kilometres northeast of Hazelton, 3 kilometres south-southeast of Onerka Lake.

The property is underlain by northwest-striking, steeply-dipping, fine grained tuffs, argillites, greywackes and hornfels of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group) cut by numerous granite porphyry and aplite dikes and a larger granite porphyry intrusion, all of which are probably related to the Late Cretaceous Bulkley Intrusions. A granodiorite batholith of the Bulkley Intrusions underlies much of the Sicintine Range, northwest of the property.

Pyrrhotite, pyrite, magnetite, molybdenite and chalcopyrite are associated with the granite porphyry intrusion. Chalcopyrite occurs in fractures in hornfels near the granite porphyry dikes and is also found with molybdenite and quartz in the granite porphyry intrusion. A 15.2 metre chip sample from the granite porphyry intrusion assayed 0.02 per cent copper and 0.024 per cent molybdenum (Assessment Report

CAPSULE GEOLOGY

2084). Plagioclase is partially altered to sericite, kaolinite and carbonate. Biotite and hornblende are usually altered to chlorite and leucoxene.

BIBLIOGRAPHY

EMPR MAP 69-1 (#303)
EMPR ASS RPT *2084, 5348, 6849, 8075, 8452
EMPR GEM 1969-101, 1974-273
EMPR EXPL 1978-226, 1979-234
GSC OF 2322
V STOCKWATCH August 17, 1989

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/04 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 093**

NATIONAL MINERAL INVENTORY: 093M10 Cu1

NAME(S): **MOUNT HORETZKY**, BRIAN, ADD

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M10W
BC MAP:
LATITUDE: 55 38 39 N
LONGITUDE: 126 50 04 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showings (Assessment Report 3870, Geology Map).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6168604
EASTING: 636288

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Pyrite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

ISOTOPIC AGE: 50 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Diorite
Plagioclase Porphyry Dike
Hornfels
Shale
Mudstone
Sandstone
Andesite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
Bowser Lake RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Hornfels

CAPSULE GEOLOGY

Mount Horetzky is located 68 kilometres northeast of Hazelton. The copper-molybdenum showings are located on the southwest side of the mountain at approximately the 1460-metre elevation.

The area is underlain by Middle Jurassic to Lower Cretaceous Bowser Lake Group shales, mudstones, sandstones and andesites which have been hornfelsed by a heterogeneous diorite stock, approximately 2000 by 1000 metres in size, and related plagioclase biotite porphyry dikes ranging in width from 30 centimetres to 15 metres. The dikes are steeply-dipping and most strike 135 degrees, some 050 degrees. The intrusive bodies are part of the Eocene Babine Intrusions and have been dated by potassium/argon methods on hornblende (Geological Survey of Canada Open File 2322) at 50 Ma on biotite and 57 Ma.

A major zone of mineralization exists adjacent to the hornfels-diorite contact and in associated dikes. Minor hydrothermal alteration is present, with local chloritization of hornblende evident. Pyrite is the most common sulphide and is present in quantities of up to 5 per cent in hornfels, diorite and porphyry dikes (Assessment Report 3870). Chalcopyrite is also found in the intrusive rocks and hornfels, as disseminated grains or in fractures. Molybdenite is rare, occurring in quartz stockworked hornfels with pyrite and chalcopyrite or by itself in dry fractures or in quartz veinlets. The mineralization is best developed in the upper part of the intrusion, within 1 to 60 metres of the roof.

BIBLIOGRAPHY

EMPR PF (Richards, T. (1967): Report on Mt. Horetsky; Richards, T. (1968): UBC Report and map; MacDonald Consultants, Geology Map, 1968)
EMPR AR 1967-101
EMPR GEM 1971-194, 1972-433, 1973-360
EMPR MAP 69-1 (#304)
EMPR ASS RPT 1576, 1841, 2465, 3840, *3870, 3967, 4621, 4925
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/28 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 094**

NATIONAL MINERAL INVENTORY:

NAME(S): **DODKO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 15 59 N
LONGITUDE: 127 32 40 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 8198.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6125401
EASTING: 592488

COMMODITIES: Molybdenum, Copper, Zinc, Antimony

MINERALS

SIGNIFICANT: Molybdenite, Chalcopyrite, Jamesonite, Sphalerite
ASSOCIATED: Quartz
ALTERATION: Silica, Sericite
ALTERATION TYPE: Silicific'n, Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Granodiorite Dike
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage, Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Molybdenum	0.0400	Per cent

COMMENTS: A 15-metre chip sample from adit.
REFERENCE: Assessment Report 8198.

CAPSULE GEOLOGY

The Dodko claims are located on the north bank of the Bulkley River, 9 kilometres east of Hazelton.

Middle Jurassic to Lower Cretaceous clastic sedimentary rocks of the Bowser Lake Group are intruded by a granodiorite dike of unknown age which contains molybdenite in quartz veins. Some bleaching and quartz-sericite alteration is associated with the mineralization. A grab sample from a 2-metre wide mineralized area assayed 1.17 per cent molybdenite (Assessment Report 8198). A 15-metre wide chip sample from the adit assayed 0.04 per cent molybdenite (Assessment Report 8198). Chalcopyrite, jamesonite and sphalerite are also reported to be present in the sedimentary rocks in the area.

BIBLIOGRAPHY

EMPR ASS RPT *8198
GSC OF 2322 (#219)

DATE CODED: 1991/09/20
CODED BY: RHM
FIELD CHECK: N
DATE REVISED: 1991/12/30
REVISED BY: RHM
FIELD CHECK: N

MINFILE NUMBER: **093M 095**

NATIONAL MINERAL INVENTORY:

NAME(S): **SEATON**, BOULDER CREEK

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 06 18 N
LONGITUDE: 127 20 59 W
ELEVATION: 365 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of the main (#1) seam (Geological Survey of Canada Memoir 223).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6107720
EASTING: 605285

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Eocene

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded
COMMENTS: Beds strike northwest-southeast and dip up to 30 degrees northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene	Undefined Group	Undefined Formation	

LITHOLOGY: Shale
Sandstone
Coal

HOSTROCK COMMENTS: The host rocks are informally designated as Eocene Moricetown sediments (Geological Survey of Canada Open File 2322).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Seaton coal prospect is located on the west bank of the Bulkley River, 400 metres south of Seaton, approximately 27 kilometres southeast of Hazelton.

The area is underlain by the informally named Eocene Moricetown sediments (Geological Survey of Canada Open File 2322), which strike northwest and dip up to approximately 30 degrees northeast.

Ten or eleven coal seams (0.3 to 1.1 metres thick) occur in a 152 metre section interbedded with shale and sandstone. The main seam (No. 1) is 1.37 metres thick and is split by bands of bone coal. A sample of clean coal from this seam contains 1.8 per cent moisture, 17.7 per cent volatile matter, 36.7 per cent fixed carbon, and 43.8 per cent ash. The No. 2 seam is 0.43 metre thick and contains 3 per cent moisture, 21.2 per cent volatile matter, 59 per cent fixed carbon, and 16.8 per cent ash. The No. 3 seam is 0.9 metre thick, of this 0.71 metre is coal. A sample from this seam contains 1.4 per cent moisture, 19.5 per cent volatile matter, 43.4 per cent fixed carbon, and 35.7 per cent ash.

BIBLIOGRAPHY

EMPR P *1986-5, p. 18
EMPR AR 1916-121-122; 1927-161-162
GSC BULL *270
GSC P *73-31
GSC MEM 223
GSC OF 2322 (Occurrence M)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/16 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 096**

NATIONAL MINERAL INVENTORY:

NAME(S): **PINK CADILLAC**, RED CADILLAC

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 16 06 N
LONGITUDE: 127 32 20 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 11900.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6125625
EASTING: 592837

COMMODITIES: Silver Gold Antimony

MINERALS
SIGNIFICANT: Miargyrite Berthierite Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Sandstone
Siltstone
Shale
Tuff
Hornfels
Granodiorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	9999.9999	Grams per tonne
Gold	2.5000	Grams per tonne
Antimony	3.1000	Per cent

COMMENTS: Sample from a quartz vein assayed 30 000 grams per tonne silver.
REFERENCE: Assessment Report 11900.

CAPSULE GEOLOGY

The Pink Cadillac claims are located on the north bank of the Bulkley River, 9 kilometres east of Hazelton.

Middle Jurassic to Lower Cretaceous clastic sedimentary rocks of the Bowser Lake Group are intruded by granodiorite dikes of unknown age. A quartz vein, carrying the rare silver antimony sulphide mineral miargyrite, yielded a grab sample which assayed 30 000 grams per tonne silver, 3.1 per cent antimony and 2.5 grams per tonne gold (Assessment Report 11900). Berthierite, an iron antimony sulphide, was found in a nearby vein. Arsenopyrite is commonly found disseminated in granodiorite dikes in the area.

BIBLIOGRAPHY

EMPR ASS RPT *11900
GSC OF *2322 (#214)

DATE CODED: 1991/09/20 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/09/20 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 097**

NATIONAL MINERAL INVENTORY:

NAME(S): **KISPIOX**, KISPIOX RIVER F

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 22 18 N
LONGITUDE: 127 41 43 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location F (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6136926
EASTING: 582685

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Shale
Greywacke
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Kispiox coal occurrence (F) is located on the Kispiox River, approximately 2 kilometres north of the village of Kispiox (Geological Survey of Canada Memoir 223, figure 1 and Open File 2322).

The host rocks are folded and deformed shales, greywackes and conglomerates of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group).

BIBLIOGRAPHY

EMPR P 1986-5, p. 18
GSC MEM *69, pp. 163-167; *223, pp. 93-95
GSC SUM RPT *1909, p. 67; *1911, p. 90
GSC BULL *270
GSC P 73-31
GSC OF 2322 (Occurrence F)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/19 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 098**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHINA CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 10 42 N
LONGITUDE: 127 23 15 W
ELEVATION: 370 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 13812.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6115823
EASTING: 602687

COMMODITIES: Copper, Lead, Zinc, Gold, Silver

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Galena, Sphalerite
COMMENTS: Assays of samples were low in gold and silver.
ASSOCIATED: Graphite
COMMENTS: Carbon is possibly graphite.
ALTERATION: Chlorite, Calcite, Sericite, Clay, Limonite
ALTERATION TYPE: Propylitic, Argillic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic, Epithermal
TYPE: H04 Epithermal Au-Ag-Cu: high sulphidation
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	

LITHOLOGY: Rhyolite
Rhyolitic Tuff
Porphyritic Dacite
Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The China Creek alteration zone is located on the west bank of the Bulkley River, 20 kilometres southeast of Hazelton.

The area is underlain by rhyolite, rhyolitic tuff, porphyritic dacite and andesite of the Upper Cretaceous Brian Boru Formation (Kasalka Group)

A strongly clay-altered, limonitic fracture zone cutting volcanic rocks contains carbon (possibly graphite) with minor chalcopyrite, galena and sphalerite. The zone is 39 metres wide and could reflect an epithermal system. Assays of samples from the alteration zone were very low in gold and silver.

BIBLIOGRAPHY

EMPR ASS RPT *13812
GSC OF 2322

DATE CODED: 1991/08/16
DATE REVISED: 1992/01/09

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 099**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKILOKIS**, BLUNT MOUNTAIN, BETA,
LOKIS, BETA 3, LOKIS 1-3,
LOKI, LOKI 1-10

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M03E 093M03W
BC MAP:
LATITUDE: 55 14 21 N
LONGITUDE: 127 15 05 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Diamond drill hole 86-1 (Assessment Report 16273).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6122800
EASTING: 611184

COMMODITIES: Silver, Gold, Lead, Zinc, Copper, Antimony

MINERALS

SIGNIFICANT: Arsenopyrite, Pyrrhotite, Pyrite, Galena, Sphalerite, Stibnite, Chalcopyrite
COMMENTS: Fibrous sulphosalt and possibly tetrahedrite was also observed.
ASSOCIATED: Quartz, Chlorite, Grunerite, Calcite, Ankerite, Tourmaline, Magnetite, Apatite
ALTERATION: Clay, Silica
ALTERATION TYPE: Argillic, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
DIMENSION:
STRIKE/DIP: 020/70W
TREND/PLUNGE:
COMMENTS: Six showings have been discovered over a 3 kilometre strike length.
Attitude of veins.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Quartz Diorite
Feldspar Porphyry Dike
Siltstone
Sandstone
Hornfels

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks, Bowser Lake

INVENTORY

ORE ZONE: BETA
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	829.0000	Grams per tonne
Gold	2.4000	Grams per tonne

COMMENTS: A 30-centimetre core sample
REFERENCE: Assessment Report 16273.

CAPSULE GEOLOGY

The Skilokis veins are located on the northwest portion of Blunt Mountain, 27 kilometres east of Hazelton.

The area is underlain by clastic sediments of the Middle Jurassic to Lower Cretaceous Bowser Lake Group which are intruded by a monzonitic to dioritic pluton of the Late Cretaceous Bulkley Intrusions, which is in turn cut by intermediate feldspar porphyry dikes.

The pluton and hornfelsed sedimentary rocks are cut by well developed northeast-trending sheeted joints which are mineralized by amphibole-quartz-magnetite-apatite-sulphide veins which may be zoned

CAPSULE GEOLOGY

such that they change laterally to predominantly quartz-arsenopyrite veins. Sulphides observed are pyrite, galena, sphalerite, pyrrhotite, stibnite, chalcopyrite and possibly tetrahedrite. The veins strike 020 degrees, dipping 70 degrees west.

Over a strike length of 3 kilometres, at least six showings have been discovered, although several of the showings could be exposures of the same vein system, some are probably parallel or en echelon structures. From the southwest, the showings and veins have been named: Clay Creek, Old Post, PS, New Mound, Mound, Ferri Creek, Ridge and Lost. Chip samples yielded results as high as 3.3 grams per tonne gold and 268 grams per tonne silver across 1.2 metres (Assessment Report 16273). Six diamond drill holes have been completed on the showings and although core recovery was very poor, one hole yielded 2.4 grams per tonne gold and 829 grams per tonne silver across 30 centimetres (Hole 86-1, Assessment Report 16273).

BIBLIOGRAPHY

EM EXPL 1999-80-84
EMPR ASS RPT 13832, 14543, 15246, *16273, *17135, 20566, 21748
EMPR PF (Atna Resources Ltd., Statement of Material Facts, 1987)
GSC OF *2322 (#232)
GCNL #194,#197, 1986
N MINER Oct. 26, 1986
V STOCKWATCH Sept. 8, Nov. 13, 1987

DATE CODED: 1988/01/06 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1991/08/15 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 100**

NATIONAL MINERAL INVENTORY:

NAME(S): **KNOLL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 15 26 N
LONGITUDE: 127 07 57 W
ELEVATION: 730 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claim block (Assessment Report 13960).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6125005
EASTING: 618688

COMMODITIES: Silver Zinc Lead

MINERALS

SIGNIFICANT: Sphalerite Galena Pyrite
ALTERATION: Pyrite
ALTERATION TYPE: Pyrite
MINERALIZATION AGE: Middle Cretaceous

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au H EPITHERMAL

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	

LITHOLOGY: Rhyolite
Andesite
Felsite
Porphyry
Flow

HOSTROCK COMMENTS: New correlation suggests part of Skeena Group (Rocky Ridge volcanics) (BC EMPR GEXP 1999, pages 79-84).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1985
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	80.0000	Grams per tonne

COMMENTS: Sample not described.
REFERENCE: Assessment Report 13960.

CAPSULE GEOLOGY

The Knoll claims are located 34 kilometres east of Hazelton on the east side of Harold Price Creek.

The claims are underlain by a knob of Upper Cretaceous Brian Boru Formation (Kasalka Group) volcanic rocks ranging from rhyolite to andesite in composition. Rhyolitic rocks consist of fine grained, massive but highly fractured felsite, porphyry and flow banded units. Local flow banding suggests the knob may be a volcanic dome complex. The volcanic rocks occur east of a prominent block fault which underlies Harold Price Creek. The volcanic rocks are altered and pyritized with local disseminated and fracture-controlled sphalerite and galena. One grab(?) sample assayed 80.0 grams per tonne silver (Assessment Report 13960).

Mineralization at the Knoll claims is mainly disseminations and veinlets of pyrite, sphalerite, and galena set in rhyolite breccia and lapilli tuff. Hand specimens of pyritic rhyolite from Harald Price Creek and not tested by drilling return high levels of lead, zinc and arsenic, and locally in silver and cadmium. Gold and silver values are anomalous, but modest. Seven drill holes tested an IP anomaly. They passed through fracture controlled veins filled with pyrite, pyrrhotite, and arsenopyrite with quartz and calcite. Several of the holes drilled in the south east part of the property

CAPSULE GEOLOGY

went through the Rhyolite dome into black argillies. (The regional geologist suggests the rocks are of mid Cretaceous Age and correlative with the Rocky Ridge Formation (of the Skeena Group) and thus have Eskay deposit styles potential).
Mineralization was discovered by Ethier in 1983, and in 1988 Goldpac Investments optioned the property and performed geological, magnetic and induced polarization surveys followed by diamond drilling. In 1999 Ethier completed a soil survey supported by PAP (BC EMPR Exploration 1999, pages 79-84).

BIBLIOGRAPHY

EM EXPL 1999-80-84
EMPR ASS RPT *13960
EMPR FIELDWORK 2000, pp. 253-268
GSC OF 2322 (#234)

DATE CODED: 1991/08/19 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/30 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 101**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEW**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03E
BC MAP:
LATITUDE: 55 03 29 N
LONGITUDE: 127 13 12 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claim block (Assessment Report 14605).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6102700
EASTING: 613693

COMMODITIES: Zinc Antimony

MINERALS
SIGNIFICANT: Sphalerite Sulphantimonide
COMMENTS: Sphalerite and antimony sulphides only observed in float.
ASSOCIATED: Quartz Calcite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Polymictic Conglomerate
Grit
Syenite Dike

HOSTROCK COMMENTS: Syenite dikes of unknown age.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The New showing is located 8 kilometres east of Moricetown. The property is underlain by polymictic conglomerate and grit of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group) which is cut by syenite dikes of unknown age. In the centre of the claim block the conglomerate is intensely altered to limonite and cut by an intense honeycomb-like network of quartz-calcite veins. Sphalerite and antimony sulphides have been identified in float.

BIBLIOGRAPHY

EMPR ASS RPT *14605
GSC OF 2232 (#231)

DATE CODED: 1991/08/15
DATE REVISED: 1991/12/30

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 102**

NATIONAL MINERAL INVENTORY:

NAME(S): **SIDINA CREEK**, SARGENT, SILVER PRINCE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 26 33 N
LONGITUDE: 127 33 53 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing (Assessment Report 12507).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6144971
EASTING: 590796

COMMODITIES: Silver, Gold, Zinc, Lead, Copper, Arsenic, Mercury

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	

LITHOLOGY: Clastic Sediment/Sedimentary
Sandstone
Siltstone
Shale
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	1628.8000	Grams per tonne
Arsenic	2.5000	Per cent
Gold	2.5000	Grams per tonne
Copper	0.3150	Per cent
Lead	6.1200	Per cent
Zinc	6.6500	Per cent

COMMENTS: Grab sample taken from narrow vein mineralization. Also, 0.026 per cent mercury.
REFERENCE: Assessment Report 12507, sample 12842.

CAPSULE GEOLOGY

The Sidina Creek showing is located on the south tributary of Sidina Creek, two kilometres east of the old Salmon River road, approximately 19 kilometres north of Hazelton.

Bedrock in the area is mapped as Middle Jurassic to Lower Cretaceous Bowser Lake Group clastic sedimentary rocks, which are composed of sandstone, siltstone, shale and epiclastic feldspathic and volcanic conglomerate.

A narrow, shallowly dipping, lead-zinc-silver vein (the Sargent vein) occurs in the steep rock-walled canyon of the creek. There are several old trench-like depressions on the Silver Prince #4 claim about 1 kilometre to the south.

A grab sample from the Sargent vein assayed 1628.8 grams per tonne silver, 2.5 grams per tonne gold, 6.12 per cent lead, 6.65 per cent zinc, 0.315 per cent copper, 2.5 per cent arsenic and 0.026 per cent mercury (Sample 12842, Assessment Report 12507).

BIBLIOGRAPHY

EMPR ASS RPT *12507

BIBLIOGRAPHY

GSC OF 2322 (#217)

DATE CODED: 1991/09/10 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/09/10 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 103**

NATIONAL MINERAL INVENTORY: 093M5 Mrl1

NAME(S): **ROBINSON LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 19 15 N
LONGITUDE: 127 35 12 W
ELEVATION: 472 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The south end of Robinson Lake (National Topographic System Map 093M/05E - First edition).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6131404
EASTING: 589683

COMMODITIES: Marl

MINERALS
SIGNIFICANT: Carbonate
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Stratiform Unconsolidated
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: B07 Bog Fe, Mn, U, Cu, Au
DIMENSION: 580 x 274 x 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The deposit, 580 by 274 by 1.8 metres, occurs as a flat lying layer on the lake bottom.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent	Undefined Group	Undefined Formation	

LITHOLOGY: Marl

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

A marl deposit occurs in Robinson Lake, 9 kilometres northeast of Hazelton. The lake is 580 metres long and up to 274 metres wide with depths rarely exceeding 1.5 metres.

The deposit is comprised of a layer of soft, white to grey marl at least 1.8 metres thick. The purest marl, free of contamination by organic detritus, is found at the south end of the lake near its outlet. The deposit here is at least 3.7 metres thick.

American Standard Mines Ltd. applied for a lease over this deposit in 1950.

BIBLIOGRAPHY

EMPR ASS RPT 12665
GSC MEM *223, p. 139

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/12/18 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093M 104**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKEENA RIVER WEST PLACER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04W
BC MAP:
LATITUDE: 55 05 17 N
LONGITUDE: 127 59 24 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6105056
EASTING: 564465

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. No other information is available.

BIBLIOGRAPHY

EMPR PF (*Mineral Deposit Inventory, original card, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 105**

NATIONAL MINERAL INVENTORY:

NAME(S): **ANDIMAUL EAST PLACER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04W
BC MAP:
LATITUDE: 55 06 12 N
LONGITUDE: 127 54 00 W
ELEVATION: 333 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6106843
EASTING: 570183

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. No other information is available.

BIBLIOGRAPHY

EMPR PF (*Mineral Deposit Inventory, original card, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 106**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKEENA RIVER PLACER**, SKEENA CROSSING, NASH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04W
BC MAP:
LATITUDE: 55 04 48 N
LONGITUDE: 127 50 06 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6104314
EASTING: 574373

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. Production is reported to have been 137.12 grams (4 ounces) of gold in the period 1921 to 1925.
No other information is available.

BIBLIOGRAPHY

EMPR PF (Mineral Deposit Inventory, original card, 1971)
EMPR BULL *28 (#71)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/27

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 107**

NATIONAL MINERAL INVENTORY:

NAME(S): **NORTH SKEENA CROSSING PLACER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04W
BC MAP:
LATITUDE: 55 08 06 N
LONGITUDE: 127 47 24 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6110483
EASTING: 577140

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. No other information is available.

BIBLIOGRAPHY

EMPR PF (*Mineral Deposit Inventory, original card, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 108**

NATIONAL MINERAL INVENTORY:

NAME(S): **CARNABY PLACER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 10 24 N
LONGITUDE: 127 44 36 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6114801
EASTING: 580038

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. No other information is available.

BIBLIOGRAPHY

EMPR PF (*Mineral Deposit Inventory, original card, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 109**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKEENA NORTH PLACER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 12 54 N
LONGITUDE: 127 42 54 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6119470
EASTING: 581757

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. No other information is available.

BIBLIOGRAPHY

EMPR PF (*Mineral Deposit Inventory, original card, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 110**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAZELTON PLACER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 14 18 N
LONGITUDE: 127 40 00 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6122124
EASTING: 584782

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. No other information is available.

BIBLIOGRAPHY

EMPR PF (*Mineral Deposit Inventory, original card, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 111**

NATIONAL MINERAL INVENTORY: 093M16 Cu1

NAME(S): **KAZA COPPER**, FIRE, FLAME, BLUE, LOG, BURN, BRADO

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M16W
BC MAP:
LATITUDE: 55 58 43 N
LONGITUDE: 126 20 06 W
ELEVATION: 1180 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main showing area (Assessment Report 4477, Figure 3).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6206905
EASTING: 666280

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Sphalerite, Pyrite
ASSOCIATED: Pyrite, Magnetite, Quartz, Orthoclase
ALTERATION: Hornblende, Epidote, Garnet, Calcite
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Podiform, Massive, Disseminated
CLASSIFICATION: Skarn
TYPE: K01 Cu skarn
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Kastberg Intrusions

LITHOLOGY: Basalt, Andesite, Flow, Tuff, Breccia, Limestone, Felsic Dike, Siltstone, Sandstone, Chert Pebble Conglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1969
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	120.0000	Grams per tonne
Gold	14.4000	Grams per tonne
Copper	1.1700	Per cent

COMMENTS: A 1.2-metre intersection.
REFERENCE: Energy, Mines and Resources CORPFILE - Kaza Copper Limited.

CAPSULE GEOLOGY

The Kaza Copper prospect is located 115 kilometres northeast of Hazelton, on a small hill on the east side of Lion Creek, 6 kilometres south of Kaza Lake. There is some confusion between these showings and the Fred deposit (094D 032) to the north.

The property is underlain by the Lower Jurassic Telkwa Formation of the Hazelton Group, which consists of basalt and andesite flows, breccias and tuffs and an overlying sedimentary unit consisting of siltstones, sandstones and chert pebble conglomerates. Limestone lenses and pods occur between some of the flows. Steeply-dipping, north-trending felsic dikes of the Eocene Kastberg Intrusions are common in the area of the showings.

CAPSULE GEOLOGY

The main mineralized showings are north-trending, steeply-dipping linear zones of hornblende-rich skarn, which contain pyrite, chalcopyrite, bornite, sphalerite and magnetite. Sulphide content ranges from 5 per cent to nearly massive sulphides. The two main zones range up to a few metres in width and a hundred metres or more in length. Patchy exposures of an epidote-calcite skarn containing pyrite and chalcopyrite and minor pink garnet are also found. Minor amounts of chalcopyrite and bornite are present in quartz-orthoclase-epidote veinlets and also disseminated in a limestone lens near the main showing.

A chip sample across one of the best exposed parts of the main skarn showing assayed 0.88 per cent copper, 15.43 grams per tonne gold and 12.7 grams per tonne silver across 4.0 metres (Assessment Report 4477, page 7). Drill hole number 9 intersected 1.2 metres assaying 1.17 per cent copper, 14.4 grams per tonne gold and 120.0 grams per tonne silver (Energy, Mines and Resources CORPFILE - Kaza Copper Limited).

BIBLIOGRAPHY

EMPR AR 1967-88, 1968-118
EMPR ASS RPT 1191, *4477, 8869, 12533, 15247
EMPR GEM 1969-108, 1970-177, 1973-361
EMPR PF (Sinclair, A.J. (1967): Report on the Fire Group of claims; Miscellaneous sketches)
EMR MP CORPFILE (Kaza Copper Ltd., Dynasty Explorations Ltd.)
GSC OF 2322
GCNL #204(Oct.23), 1997
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/02 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 112**

NATIONAL MINERAL INVENTORY: 093M11 Au1

NAME(S): **BABINE RIVER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M11W
BC MAP:
LATITUDE: 55 39 59 N
LONGITUDE: 127 28 21 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Minister of Mines Annual Report 1925, page 121.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6170008
EASTING: 596082

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Alluvium
Unconsolidated Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

Placer gold was discovered on the Babine River 8 kilometres east of the abandoned village of Kisgegas, 50 kilometres north of Hazelton (Minister of Mines Annual Report 1925, page 121).

Some coarse flakes of gold were recovered, but there was not enough gold to cover wages using a rocker.

BIBLIOGRAPHY

EMPR AR *1925-121
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/12/13

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 113**
NATIONAL MINERAL INVENTORY: 093M4 Ag1

NAME(S): **HECLA (BLUEBIRD)**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 11 55 N
LONGITUDE: 127 34 48 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Geological Survey of Canada Memoir 223 (1953), page 46.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6117813
EASTING: 590383

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Aplite Dike
Pegmatite Dike
Porphyritic Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1953
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	18.2000	Grams per tonne
Copper	0.3900	Per cent

COMMENTS: Grab sample from drift on mineralized pegmatite dike.
REFERENCE: Geological Survey of Canada Memoir 223 (1953), page 46.

CAPSULE GEOLOGY

The Hecla (Bluebird) showing is located on the north slope of the Rocher Deboule Mountain Range, at the headwaters of Mission Creek, 5.5 kilometres south of New Hazelton.

A 2.7-metre wide aplite dike and a 1.8-metre wide pegmatite dike cutting porphyritic granodiorite of the Rocher Deboule stock are silicified and cut by narrow quartz veinlets carrying pyrite and chalcopyrite. A grab sample from a drift which was driven to explore the mineralized pegmatite dike assayed 0.39 per cent copper, trace gold and 18.2 grams per tonne silver (Geological Survey of Canada Memoir 223). A grab sample taken to sample the 1.2 metre wide mineralized zone in the aplite dike assayed 0.22 per cent copper, 34.3 grams per tonne silver and trace gold (Geological Survey of Canada Memoir 223).

The Rocher Deboule stock is one of the Late Cretaceous Bulkley Intrusions and potassium/argon dating of biotite has yielded a date of 72 million years (Geological Survey of Canada Open File 2322).

BIBLIOGRAPHY

EMPR AR 1918-115
EMPR BULL 43

BIBLIOGRAPHY

GSC MEM *223-46
GSC MAP 971A, 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/25 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 114**

NATIONAL MINERAL INVENTORY: 093M4 Zn1

NAME(S): **KILLARNEY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 04 24 N
LONGITUDE: 127 37 58 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Adit (Assessment Report 13340).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6103806
EASTING: 587297

COMMODITIES: Silver, Zinc, Lead, Tin

MINERALS

SIGNIFICANT: Sphalerite, Galena
ASSOCIATED: Quartz, Pyrite, Pyrrhotite
ALTERATION: Pyrite, Silica
ALTERATION TYPE: Pyrite, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	
ISOTOPIC AGE:	70 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Lower Cretaceous	Skeena	Red Rose	

LITHOLOGY: Tuff, Aplite Dike, Agglomerate, Pyroclastic, Volcanic, Sandstone, Argillite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Hazelton Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1984

COMMODITY	GRADE	
Silver	19.9000	Grams per tonne
Lead	0.1900	Per cent
Tin	0.1100	Per cent
Zinc	1.0400	Per cent

COMMENTS: Average of several samples of mineralization in the area. Also, 0.01 per cent copper and trace gold.
REFERENCE: Assessment Report 13340.

CAPSULE GEOLOGY

The Killarney showing is located on the west side of the south branch of Brian Boru Creek, on the west side of the Rocher Deboule Range, 19 kilometres south of South Hazelton.

The showings are hosted in fractured and bleached acid pyroclastics of the Upper Cretaceous Brian Boru Formation (Kasalka Group). Potassium/argon dating of biotite yielded a date of 70 million years (Geological Survey of Canada Open File 2322). An important north-striking block fault, the Cap Fault, separates the volcanic rocks from clastic sedimentary rocks (sandstones and argillites) of the Lower Cretaceous Red Rose Formation (Skeena Group).

CAPSULE GEOLOGY

At the showings, the bed of Brian Boru Creek is formed of fragments of altered rock heavily impregnated with pyrite and a little pyrrhotite, sphalerite and galena. A heavily pyritized zone, approximately 3 metres in width, outcrops in an open cut some tens of metres west of the creek. Some tens of metres south of a clearing an adit has been driven along a zone containing pyrite, sphalerite and galena. This zone occurs along the margins of an aplite dike which has intruded tuffaceous host rocks. The average of several samples taken from mineralization in the area was 19.9 grams per tonne silver, 1.04 per cent zinc, 0.19 per cent lead, 0.01 per cent copper, 0.11 per cent tin, and trace gold (Assessment Report 13340).

BIBLIOGRAPHY

EMPR AR 1926-128
EMPR BULL 43
EMPR ASS RPT 8332, 9587, 12712, *13340, 14632, 16455
GSC MEM *223(1954)-50
GSC MAP 971A, 44-24
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/11 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 115**

NATIONAL MINERAL INVENTORY: 093M4 Zn3

NAME(S): **BLACK PILOT**, MACDONALD, LEROI, TRUE BLUE, SUMMIT, KATHERINE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 09 10 N
LONGITUDE: 127 32 56 W
ELEVATION: 1190 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Geological Survey of Canada Memoir 223 (1954), page 53.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6112754
EASTING: 592469

COMMODITIES: Zinc

MINERALS
SIGNIFICANT: Sphalerite
ASSOCIATED: Pyrite Barite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stratiform
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	
ISOTOPIC AGE:	72 Ma		
DATING METHOD:	Potassium/Argon		
MATERIAL DATED:	Biotite		
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Andesite
Argillite
Greywacke

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake Overlap Assemblage
PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The Black Pilot property is located on the east side of the Rocher Deboule Range, 10 kilometres south of New Hazelton.

Middle Jurassic to Lower Cretaceous Bowser Lake Group clastic sedimentary rocks are overlain by andesitic flows of the Upper Cretaceous Brian Boru Formation (Kasalka Group). The Rocher Deboule granodiorite stock, of the Late Cretaceous Bulkley Intrusions, is located 400 metres west of the showings.

The Katherine showing is located on the south side of Porphyry Creek at 1190 metres elevation, and consists of a 2-metre wide vein containing barite and minor sphalerite cutting andesite. On the north side of Porphyry Creek, at 1550 metres elevation, pyritic beds of greywacke and argillite have been prospected by several open cuts and an inclined shaft. On the divide between Mudflat Creek and Porphyry Creek, a pyrite vein at the contact between a lamprophyre dike and argillites has been explored in an 8-metre long adit.

BIBLIOGRAPHY

EMPR AR 1918-114; 1926-126; 1930-139
EMPR BULL 43
GSC MEM *223(1954)-53
GSC OF 2322

DATE CODED: 1991/10/17
DATE REVISED: 1992/01/20

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 116**
NATIONAL MINERAL INVENTORY: 093M6 Au1

NAME(S): **BABINE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 22 14 N
LONGITUDE: 127 04 25 W
ELEVATION: 1760 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Minister of Mines Annual Report 1921, page 100.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6137717
EASTING: 622082

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: STRIKE/DIP: 065/65W TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	

LITHOLOGY: Quartzite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1921
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	34.2800	Grams per tonne
Gold	8.3600	Grams per tonne

COMMENTS: Samples averaged up to 20.05 grams per tonne gold and 102.84 grams per tonne silver.
REFERENCE: Minister of Mines Annual Report 1921, page 100.

CAPSULE GEOLOGY

The Babine showing is located 42 kilometres east-northeast of Hazelton, on the south side of Thoen Mountain.

The showing consists of a small vein, 15 to 20 centimetres wide, carrying arsenopyrite and quartz (Minister of Mines Annual Report 1920). The vein strikes 065 degrees, dipping 65 degrees northwest. The host rocks are Middle Jurassic to Lower Cretaceous Bowser Lake Group quartzites.

Average samples reportedly contained from 8.36 to 20.05 grams per tonne gold ($5 to $12 per ton) and 34.28 to 102.84 grams per tonne silver (Minister of Mines Annual Report 1921, page 100).

BIBLIOGRAPHY

EMPR AR *1921-100
EMPR MAP 69-1
GSC MAP 971A
GSC P 44-24

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/22 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 117**

NATIONAL MINERAL INVENTORY: 093M15 Cu1

NAME(S): **DRIFTWOOD**, SKUTSIL KNOB

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093M15E
BC MAP:
LATITUDE: 55 50 22 N
LONGITUDE: 126 36 24 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Diamond drill hole DR-9 (Assessment Report 5478, Drill Plan).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6190801
EASTING: 649869

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Bornite Chalcopyrite Chalcocite Tetrahedrite
ASSOCIATED: Calcite Zeolite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stratabound
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Flow
Tuff
Breccia
Limestone
Mudstone
Sandstone
Agglomerate

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: MAIN

REPORT ON: Y

CATEGORY: Inferred
QUANTITY: 900000 Tonnes

YEAR: 1990

COMMODITY	GRADE	
Silver	48.0000	Grams per tonne
Copper	2.0000	Per cent

REFERENCE: Assessment Report 19978.

CAPSULE GEOLOGY

The Driftwood property is located 94 kilometres northeast of Hazelton, approximately 1 kilometre northeast of Skutsil Knob.

The property is underlain by gently-dipping, subaerial, calc-alkaline volcanic flows, tuffs and breccias, with interbedded agglomerates, sandstones, mudstones and limestones of the Lower Jurassic Telkwa and the Lower to Middle Jurassic Nilkitkwa formations, both of the Hazelton Group. A system of fracturing which strikes approximately 330 degrees, dipping steeply southwest, crosscuts the volcanic host rocks and is one of the controls on the copper mineralization. Bornite is the chief ore mineral which occurs associated with calcite and zeolites filling amygdules and fractures in the volcanic rocks. Chalcocite, chalcopyrite and tetrahedrite are less common ore minerals.

The best drill intersection was 25.0 metres grading 2.54 per cent copper and 50.4 grams per tonne silver (Assessment Report 19978, figure 7). The deposit has been estimated to contain approximately 900 000 tonnes grading 2 per cent copper and 48 grams per tonne silver (Assessment Report 19978, page 1).

BIBLIOGRAPHY

EMPR AR 1930-148

BIBLIOGRAPHY

EMPR GEM 1973-361, 1974-274
EMPR ASS RPT 4967, 5478, *19978
GSC OF 2322
EMR MP CORPFILE (Cominco Ltd. Annual Report 1929, p. 185; 1930, p. 30)
EMPR OF 1998-10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/03 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 118**
NATIONAL MINERAL INVENTORY: 093M9,10 Cu1

NAME(S): **RAINBOW**, DRONE, ANKHNX

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M09W
BC MAP:
LATITUDE: 55 38 34 N
LONGITUDE: 126 28 31 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Minister of Mines Annual Report, 1930, page 148.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6169214
EASTING: 658892

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Bornite Chalcopyrite Chalcocite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound Disseminated
CLASSIFICATION: Epigenetic
TYPE: D03 Volcanic redbed Cu
DIMENSION: 11 x 9 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Mineralized zone.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Amygdaloidal Lava Flow
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1930
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	34.3000	Grams per tonne
Copper	2.1000	Per cent

COMMENTS: A 9.4-metre chip sample.
REFERENCE: Minister of Mines Annual Report, 1930, page 148.

CAPSULE GEOLOGY

The Rainbow showings are located 4 kilometres southwest of Centre Peak, 100 kilometres east of Hazelton.

The property is underlain by amygdaloidal lava flows and interbedded tuffs of the Ankwell Member of the Lower to Middle Nilkitkwa Formation (Hazelton Group). The rocks strike northwest, dipping 50 to 60 degrees southwest. Stratabound bornite, chalcocite and chalcopyrite occur in and disseminated in amygdules in the volcanic rocks. Copper mineralization is also found in fractures and joint planes. In the floor of the basin, minor chalcopyrite has been found in some interbedded tuffs. The mineralized zone is 9.4 to 10.6 metres in width, and a chip sample across 9.4 metres assayed 2.1 per cent copper, 34.3 grams per tonne silver and trace gold (Minister of Mines Annual Report 1930, page 148).

BIBLIOGRAPHY

EMPR GEM 1971-193, 1973-360
EMPR AR 1929-185, *1930-148
GSC OF 2322
GCNL #74, 1973

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 119**

NATIONAL MINERAL INVENTORY: 093M5 Pb2

NAME(S): **NATIONAL EX**, BONNIE GROUP, GROUP D, JOE, HAZELTON, ACE, STAR, SUN, RIB

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 18 23 N
LONGITUDE: 127 38 55 W
ELEVATION: 380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Northern Ex trench (Assessment Report 8906).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6129719
EASTING: 585784

COMMODITIES: Silver, Copper, Lead, Zinc

MINERALS
SIGNIFICANT: Galena, Chalcopyrite, Sphalerite
ASSOCIATED: Quartz, Pyrite, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Tuffaceous Sandstone
Greywacke
Argillite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Channel
YEAR: 1981

COMMODITY	GRADE	
Silver	223.2000	Grams per tonne
Copper	0.6600	Per cent
Lead	1.7500	Per cent
Zinc	1.0600	Per cent

COMMENTS: Channel sample, 25-centimetres wide.
REFERENCE: Assessment Report 8906.

CAPSULE GEOLOGY

The National Ex property is located 6 kilometres north of Hazelton on the west side of Mount Glen. It adjoins the Silver Standard mine (093M 049) which is located to the east.

The property is underlain by clastic sedimentary rocks (tuffaceous sandstone, greywacke and argillite) of the Middle Jurassic to Lower Cretaceous Bowser Lake Group, which is intruded by granodiorite of the Eocene Babine Intrusions.

Three northwest striking veins which dip 60 to 70 degrees southwest have been reported on the property. The veins are spaced 20 to 30 metres apart and carry quartz, carbonate, pyrite and sparse galena, sphalerite and chalcopyrite. A 25-centimetre wide sample assayed 223.2 grams per tonne silver, 1.75 per cent lead, 1.06 per cent zinc and 0.66 per cent copper (Assessment Report 8906).

BIBLIOGRAPHY

EMPR ASS RPT 58, *8906
GSC MEM *223(1954)-53

BIBLIOGRAPHY

GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/09/24

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 120**

NATIONAL MINERAL INVENTORY:

NAME(S): **KITSEGUECLA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04W
BC MAP:
LATITUDE: 55 06 20 N
LONGITUDE: 127 47 41 W
ELEVATION: 275 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Geological Survey of Canada Open File 2322.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6107201
EASTING: 576895

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Feldspathic Sandstone
Volcanic Sandstone
Siltstone
Shale
Polymictic Volcaniclastic Conglomerate
Carbonaceous Sediment/Sedimentary
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Kitseguecla coal occurrence is located 18 kilometres southwest of Hazelton, south of Highway 16.
The area is underlain by Lower Cretaceous Kitsuns Creek Formation (Skeena Group) feldspathic and volcanic sandstone, siltstone, shale, polymictic volcaniclastic conglomerate and carbonaceous sediments (Geological Survey of Canada Open File 2322).
Narrow carbonaceous seams occur in sandstone which contain impure ashy coal (Geological Survey of Canada Memoir 69, page 159).

BIBLIOGRAPHY

GSC OF *2322
GSC MEM 69

DATE CODED: 1991/12/17
DATE REVISED: / /

CODED BY: RHM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 121**

NATIONAL MINERAL INVENTORY: 093M1 Cu8

NAME(S): **MAST**, TAK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01E
BC MAP:
LATITUDE: 55 13 39 N
LONGITUDE: 126 09 15 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location from Geological Survey of Canada Open File 2322.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6123801
EASTING: 680986

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Diorite
Andesitic Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Plutonic Rocks
Stikine

CAPSULE GEOLOGY

The Mast showing is located 4.5 kilometres southeast of Nakinilerak Lake, northeast of Babine Lake.

The area is underlain by andesitic volcanic rocks of the Lower Jurassic Telkwa Formation (Hazelton Group), cut by small diorite bodies of the Eocene Babine Intrusions.

Disseminated pyrite with minor chalcopyrite is reported to occur in silicified andesitic volcanic rocks and small diorite intrusions (Geology, Exploration and Mining 1971, page 185).

BIBLIOGRAPHY

EM OF 2001-03
EMPR GEM *1971-185
EMPR OF 1997-10
GSC OF 2322
EMPR BULL 110

DATE CODED: 1985/07/24
DATE REVISED: 1991/11/14
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 122**
NATIONAL MINERAL INVENTORY: 093M11 Cu1

NAME(S): **THOMLINSON CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M11W
BC MAP:
LATITUDE: 55 34 02 N
LONGITUDE: 127 18 12 W
ELEVATION: 790 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Diamond drill hole DDH TC-81-6 (Assessment Report 9787).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6159221
EASTING: 606991

COMMODITIES: Copper, Molybdenum, Tungsten

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Scheelite
ASSOCIATED: Pyrite, Pyrrhotite
ALTERATION: Kaolinite, Sericite, Chlorite, Silica
ALTERATION TYPE: Silicific'n, Chloritic, Argillic, Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	
Eocene			Babine Intrusions

LITHOLOGY: Carbonaceous Sandstone
Siltstone
Shale
Conglomerate
Granodiorite
Quartz Monzonite
Biotite Hornblende Quartz Diorite
Hornfels
Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake
Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Contact
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1981
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.1000	Per cent
Molybdenum	0.0300	Per cent

COMMENTS: A 72-metre core length from diamond drill hole DDH TC-81-6.
REFERENCE: Assessment Report 9787.

CAPSULE GEOLOGY

The Thomlinson Creek copper-molybdenum property is located 11 kilometres east of Mount Thomlinson, 42 kilometres north-northeast of Hazelton.

The claims are underlain by carbonaceous sandstone, siltstone, shale and conglomerate of the Middle Jurassic to Lower Cretaceous Bowser Lake Group intruded by a small multi-phase intrusive body of the Eocene Babine Intrusions which include granodiorite, quartz monzonite and biotite hornblende quartz diorite.

The intrusive body is 600 metres wide and at least 4 kilometres long. It is extensively fractured and mineralized with pyrrhotite, pyrite and chalcopyrite as well as less common molybdenite and scheelite. Mineralization also extends into the hornfels which is up to 300 metres in width adjacent to the intrusive. Biotite feldspar porphyry and quartz porphyry dike rocks intrude the hornfels and quartz diorite. Silicification, together with later kaolinitic,

CAPSULE GEOLOGY

chloritic and sericitic alteration, are characteristic of the property.

Drill Hole DDH TC-81-6 returned an assay of 0.10 per cent copper and 0.03 per cent molybdenum over 72 metres.

BIBLIOGRAPHY

EMPR GEM 1971-195, 1972-433, 1973-361
EMPR ASS RPT 3012, 3662, 3968, 4698, 4715, 8541, *9787
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/10 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 123**

NATIONAL MINERAL INVENTORY:

NAME(S): **ELLEN**, NETALZUL, BANA, LETT

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 18 00 N
LONGITUDE: 127 01 13 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of the Ellen claim (Assessment Report 15186).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6129961
EASTING: 625684

COMMODITIES: Silver, Gold, Copper, Molybdenum, Lead

MINERALS

SIGNIFICANT: Pyrite, Tetrahedrite, Chalcopyrite, Galena, Molybdenite, Arsenopyrite
ASSOCIATED: Quartz
ALTERATION: Sericite, Chlorite, Carbonate, Biotite, Hornblende
ALTERATION TYPE: Argillic, Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au, L05 Porphyry Mo (Low F- type)
DIMENSION:
STRIKE/DIP: 025/70E
TREND/PLUNGE:
COMMENTS: One metre wide quartz vein in granodiorite.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite, Hornfels, Siltstone, Sandstone, Greywacke, Aplite Dike

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	340.5000	Grams per tonne
Gold	1.0000	Grams per tonne

COMMENTS: A 81-centimetre wide sample of a 1.0 metre wide quartz vein.
REFERENCE: Assessment Report 15186.

CAPSULE GEOLOGY

The Ellen property is located 42 kilometres east of Hazelton, on the northwest portion of Netalzul Mountain.

The property is underlain by hornfelsed Middle Jurassic to Lower Cretaceous Bowser Lake Group siltstones, sandstones and greywackes intruded by granodiorite of the Late Cretaceous Bulkley Intrusions which have hornfelsed the Bowser Lake rocks near the contacts. Aplite dikes cut all rock types.

Numerous veins, sheeted veins and stockworks containing quartz, pyrite, tetrahedrite, chalcopyrite and galena cut the granitic rocks. Quartz veins carrying galena and arsenopyrite are common in the metasedimentary rocks. The veins are generally lenticular and discontinuous. Argillic and propylitic alteration is evident in granitic rocks adjacent to some of the veins. Sericite and chlorite are developed after biotite and hornblende and iron carbonate is

CAPSULE GEOLOGY

commonly associated with some veins.
A 1-metre wide quartz vein cutting granodiorite strikes 025 degrees and dips 70 degrees southeast. This vein assayed 1.0 gram per tonne gold and 340.5 grams per tonne silver across 81 centimetres (Assessment Report 15186). Grab samples assay up to 2614.7 grams per tonne silver and 3.150 grams per tonne gold (Assessment Report 15186). Quartz veins carrying pyrite and molybdenite are common throughout the intrusive.

BIBLIOGRAPHY

EM EXPL 1999-80-84
EMPR ASS RPT 13924, *15186
EMPR EXPL 1985-C325
GSC OF 1000, 2322 (#241)

DATE CODED: 1991/08/15 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/01/03 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 124**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUSKWA**, HOT, HOT 6

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 24 25 N
LONGITUDE: 127 02 36 W
ELEVATION: 1677 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 3970.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6141819
EASTING: 623887

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite Bornite
ASSOCIATED: Pyrite Pyrrhotite
ALTERATION: Biotite Sericite Chlorite Epidote
ALTERATION TYPE: Potassic Sericitic Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Unnamed/Unknown Formation	Bulkley Intrusions

LITHOLOGY: Hornfels
Quartz Biotite Feldspar Porphyry
Quartz Diorite
Argillite
Quartzite
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Suskwa property is located on the north side of Mount Thoen on a steep ridge.

The area is underlain by hornfelsed clastic sediments of the Middle Jurassic to Lower Cretaceous Bowser Lake Group which are intruded by dikes of quartz biotite feldspar porphyry immediately east of the Mount Thoen stock. The quartz dioritic stock is an apophysis of the Late Cretaceous Bulkley Intrusions.

The copper and molybdenum mineralization is related genetically to an intrusive porphyry which occurs as dikes in hornfelsed Bowser Lake Group sediments and as a small intrusive unit. This small unit measures 300 by 3 to 50 metres in width next to the Mount Thoen stock. Bowser Lake sediments are heavily pyritized and hornfelsed to argillites and quartzites in the contact aureole next to the Mount Thoen stock.

Mineralization is in the form of chalcopyrite and molybdenite and rare bornite associated with pyrite and pyrrhotite associated with a east to northeast trending fracture system. The mineralization is associated with a potassic alteration zone marked by the presence of biotite. Sericitic and propylitic alteration zones have also been mapped as zones around the mineralization.

BIBLIOGRAPHY

EMPR GEM 1972-431, 1973-358, 1974-272
EMPR ASS RPT *3970, 4699, 5149
EMPR PF (Notes, unknown source and date; Geology maps, copies from Assessment Report 3970, 1972)
Chevron File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/22 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 125**
NATIONAL MINERAL INVENTORY: 093M13 Mo1

NAME(S): **FOG**, PEAK

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M14W 093M13E
BC MAP:
LATITUDE: 55 54 56 N
LONGITUDE: 127 28 44 W
ELEVATION: 2000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Vein on the Peak claim, probably not the same as the Peak showing to the north (093M 086) (Assessment Report 7116).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6197727
EASTING: 595071

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Quartz Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)
DIMENSION: 130 x 4 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Mineralization occurs over a 3.9 metre width and 130 metre length.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Felsite
Hornfels
Calc-silicate Skarn
Siltstone
Felsite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks
Bowser Lake RELATIONSHIP:
METAMORPHIC TYPE: Contact
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1978
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	0.1100	Per cent
Molybdenum	0.2700	Per cent

COMMENTS: Average of 5 chip samples across a width of 3.9 metres and a length of 130 metres taken from the northwest corner of the Peak claim.
REFERENCE: Assessment Report 7116.

CAPSULE GEOLOGY

The Fog prospect is located 2.5 kilometres south of Shedin Peak in the Atna Range, 71 kilometres north of Hazelton.

A granodiorite plug of the Late Cretaceous Bulkley Intrusions, measuring approximately 2.5 by 4.5 kilometres in size, intrudes siltstones of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. Hornfels and calc-silicate skarn is developed in the contact area of the intrusion.

Low-grade porphyry-type copper-molybdenum mineralization is present in the stock in east-west trending narrow quartz veins over an area of 500 by 100 metres. Grades are about 0.05 per cent copper and 0.008 per cent molybdenum (Assessment Report 7116).

Five hundred metres east of the stock, on the Peak claim, a complex quartz vein system in a felsite dike contains copper and molybdenum mineralization over a width of 3.9 metres and a length of 130 metres. The average of five chip samples taken from the vein was 0.27 per cent molybdenum and 0.11 per cent copper (Assessment Report

CAPSULE GEOLOGY

7116). Pyrite, chalcopyrite and molybdenite are also present in the hornfelsed area adjacent to the stock.

BIBLIOGRAPHY

EMPR ASS RPT *7116
EMPR GEM 1969-100, 1971-191
EMPR EXPL *1978-E225
EMPR MAP 69-1
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/12/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **KISGEGAS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 48 19 N
LONGITUDE: 127 26 41 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sample 51517 (Assessment Report 17542, Sample Location Map).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6185502
EASTING: 597482

COMMODITIES: Silver, Gold, Copper, Lead, Zinc, Molybdenum

MINERALS
SIGNIFICANT: Galena, Sphalerite, Chalcopyrite, Molybdenite
ASSOCIATED: Quartz, Pyrite, Calcite, Siderite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Granodiorite Dike
Granodiorite Sill
Granodiorite
Siltstone
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT:
TERRANE:

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1987

COMMODITY	GRADE	
Silver	1840.0000	Grams per tonne
Gold	0.4000	Grams per tonne
Copper	0.3400	Per cent
Lead	1.9000	Per cent
Zinc	0.0680	Per cent

COMMENTS: Sample from one quartz vein.
REFERENCE: Assessment Report 17542.

CAPSULE GEOLOGY

The Kisgegas showing is located 60 kilometres north of Hazelton, 1.6 kilometres northeast of Kisgegas Peak.

The area is underlain by siltstones and sandstones of the Middle Jurassic to Lower Cretaceous Bowser Lake Group intruded by granodiorite dikes and sills of the Late Cretaceous Bulkley Intrusions. Several granodiorite plugs, also of the Bulkley Intrusions, outcrop within a few hundred metres of the showings.

The showings consist of quartz vein stockworks and veins ranging up to 1.3 metres in width hosted within, or close to, the granodiorite dikes. They carry variable amounts of calcite and siderite, as well as pyrite, galena, sphalerite, chalcopyrite and rarely molybdenite.

A grab sample from one quartz vein assayed 0.3400 per cent copper, 1.9000 per cent lead, 0.0680 per cent zinc, 1840.0 grams per tonne silver and 0.40 gram per tonne gold (Assessment Report 17542).

BIBLIOGRAPHY

EMPR ASS RPT *17542
GSC OF 2322

DATE CODED: 1991/12/05 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 127**

NATIONAL MINERAL INVENTORY:

NAME(S): **BAB**, BAB 131

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01E
BC MAP:
LATITUDE: 55 08 13 N
LONGITUDE: 126 14 32 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Bab 131 claim (Assessment Report 4250).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6113503
EASTING: 675786

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
ALTERATION: Sericite Biotite
ALTERATION TYPE: Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Eocene	Hazelton	Telkwa	Babine Intrusions

LITHOLOGY: Tuff
Volcanic Breccia
Hornblende Biotite Feldspar Porphyry

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Bab showing is located approximately 2 kilometres east of the north end of Babine Lake, on the Bab 131 claim.

Lithologies in the area comprise green, maroon and purple tuff and volcanic breccia of the Lower Jurassic Telkwa Formation (Hazelton Group). Hornblende biotite feldspar porphyries of the Eocene Babine Intrusions are present in the area.

Pyrite, chalcopyrite, sericite and secondary biotite are reported to occur in a narrow northwest-trending shear in fresh rock.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *4250, 4249, 4426
EMPR BULL 64, 110
EMPR FIELDWORK 2000, pp. 253-268
EMPR GEM 1972-425, 1973-352
EMPR OF 1997-10
EMPR PF (Geophysical and Geochemical surveys on the Dot and Lorry claims, 1967)
GSC OF 2322 (#127, #229)
WWW http://www.infomine.com/index/properties/CUB_100,_200_&_300.html

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/13 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 128**

NATIONAL MINERAL INVENTORY:

NAME(S): **BULKLEY RIVER PLACER**, IEL, IEL NORTH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 13 00 N
LONGITUDE: 127 26 00 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6120022
EASTING: 599672

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. No other information is available.

BIBLIOGRAPHY

EMPR PF (*Mineral Deposit Inventory, original card, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 129**

NATIONAL MINERAL INVENTORY:

NAME(S): **IEL**, IEL SOUTH, BULKLEY RIVER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 12 30 N
LONGITUDE: 127 24 36 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer gold location from the original Mineral Deposit Inventory card (1971) in the Property File.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6119128
EASTING: 601178

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary	Undefined Group	Undefined Formation	

LITHOLOGY: Unconsolidated Sediment/Sedimentary
Alluvium

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

A placer gold occurrence has been reported at this location. No other information is available.

BIBLIOGRAPHY

EMPR PF (*Mineral Deposit Inventory, original card, 1971)
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/08/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 130**

NATIONAL MINERAL INVENTORY: 093M3 Pb1

NAME(S): **ORBI**, HEAD, YELLOW

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 10 51 N
LONGITUDE: 127 22 24 W
ELEVATION: 500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Zinc anomaly on the north portion of the Head claim (Assessment Report 14525).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6116122
EASTING: 603582

COMMODITIES: Zinc Lead

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: "Insignificant" silver, gold and copper from assays.
ALTERATION: Silica
ALTERATION TYPE: Argillic Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Rhyolite
Breccia
Tuff
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Skeena Ranges
GRADE:

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1985
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Lead	0.1200	Per cent
Zinc	0.7800	Per cent

COMMENTS: Best intersection, across 1.5 metres.
REFERENCE: Assessment Report 14525.

CAPSULE GEOLOGY

The Orbi showing is located on the east side of the Bulkley River, 22 kilometres southeast of Hazelton.

The property is underlain by altered Upper Cretaceous Brian Boru Formation (Kasalka Group) felsic volcanic rocks intruded by granodiorite of the Late Cretaceous Bulkley Intrusions. Argillically and siliceously altered rhyolite is cut by zones of breccia.

Drilling by Utah Mining and Construction tested an induced polarization anomaly caused by pyrite in altered rhyolite. The best intersection was 1.5 metres grading 0.78 percent zinc and 0.12 percent lead, with insignificant silver, gold and copper (Assessment Report 14525). Soil geochemical surveys by Colossal Energy Corporation obtained zinc values up to 1676 parts per million (Assessment Report 14525).

BIBLIOGRAPHY

EMPR MAP 69-1
EMPR ASS RPT 2463, 12646, *14525
EMPR GEM 1970-172
EMPR AR 1967-85, 1968-112

BIBLIOGRAPHY

GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/14

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 131**

NATIONAL MINERAL INVENTORY: O93M5 Col2

NAME(S): **CEDAR CREEK**, HAZELTON CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05W
BC MAP:
LATITUDE: 55 15 48 N
LONGITUDE: 127 45 31 W
ELEVATION: 460 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Coal occurrence H (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6124798
EASTING: 578887

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Sandstone
Shale
Carbonaceous Shale
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Cedar (Hazelton) Creek coal property is located on the south side of Hazelton Creek, a small creek which flows into the Skeena River from the west, just above Hazelton.

Sandstones, shales and carbonaceous shales of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group) are exposed in a ridge of low hills along the south bank of Cedar Creek. The strata strike north, dipping gently west. Most of the several coal seams are narrow, however, one seam reaches 120 centimetres in width. This seam is in a crumpled area and is faulted on both sides. The coal is soft and crumbly and locally altered to graphite. An analysis yielded 79.8 per cent fixed carbon, 10.0 per cent V.C.M., 1.2 per cent moisture and 9.0 per cent ash (Minister of Mines Annual Report 1922).

BIBLIOGRAPHY

EMPR AR *1922-N114
EMPR P 1985-5, p.18
GSC MEM *223(1954)-18,131
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/10/28 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 132**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHARP CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 08 12 N
LONGITUDE: 127 22 13 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Geological Survey of Canada Open File 2322.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6111212
EASTING: 603891

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Eocene

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleocene	Undefined Group	Undefined Formation	

LITHOLOGY: Sandstone
Conglomerate
Siltstone
Shale
Epiclastic Volcanic Sediment/Sedimentary
Coal

HOSTROCK COMMENTS: The host rocks are informally designated as Paleocene Moricetown sediments (Geological Survey of Canada Open File 2322).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Sharp Creek coal showing (occurrence K on Geological Survey of Canada Open File 2322) is located 20 kilometres southeast of Hazelton in the Seaton coal basin (Minister of Mines Annual Report 1927, page 161).

The area is underlain by the Paleocene Moricetown sediments which consist of sandstone, conglomerate, siltstone, shale, coal and epiclastic volcanic sediments.

No other information is available.

BIBLIOGRAPHY

EMPR AR 1916-121-122; *1927-161-162
GSC MEM 223
GSC OF *2322

DATE CODED: 1991/12/17
DATE REVISED: / /

CODED BY: RHM
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 133**

NATIONAL MINERAL INVENTORY:

NAME(S): **BULKLEY RIVER COAL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 07 40 N
LONGITUDE: 127 22 09 W
ELEVATION: 360 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Geological Survey of Canada Open File 2322.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6110225
EASTING: 603985

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Eocene

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleocene	Undefined Group	Undefined Formation	

LITHOLOGY: Sandstone
Conglomerate
Siltstone
Shale
Epiclastic Volcanic Sediment/Sedimentary
Coal

HOSTROCK COMMENTS: The host rocks are informally designated the Paleocene Moricetown sediments (Geological Survey of Canada Open File 2322).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Bulkley River coal occurrence (occurrence L on Geological Survey of Canada Open File 2322) is located 21 kilometres southeast of Hazelton in the Seaton coal basin (Minister of Mines Annual Report 1927, page 161).

The area is underlain by Eocene Moricetown sediments which consist of sandstone, conglomerate, siltstone, shale, coal and epiclastic volcanic sediments.

No other information is available on the occurrence.

BIBLIOGRAPHY

EMPR AR 1916-121-122; *1927-161-162
EMPR PF (Atna Resources Ltd., Statement of Material Facts, Oct. 19, 1987)
GSC MEM 223
GSC OF *2322

DATE CODED: 1991/12/17 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/17 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 134**

NATIONAL MINERAL INVENTORY: 093M10 Cu2

NAME(S): **PHI**, AMIE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M10E
BC MAP:
LATITUDE: 55 37 32 N
LONGITUDE: 126 41 56 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Centre of Amie claim block (Assessment Report 5078).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6166808
EASTING: 644886

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ALTERATION: Chlorite Carbonate
ALTERATION TYPE: Chloritic Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Eocene			Babine Intrusions

LITHOLOGY: Biotite Feldspar Porphyry
Dike
Sill
Shale
Sandstone
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Plutonic Rocks Overlap Assemblage

CAPSULE GEOLOGY

The Phi showing is located on the east side of the Nilkitwa River, 76 kilometres east of Hazelton.

The property is underlain by locally graphitic shales and sandstones with thin coal seams of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group). These are intruded by dikes or sills of pyritized biotite feldspar porphyry, probably of the Eocene Babine Intrusions.

"Occasional" chalcopyrite is present in the porphyries, which also show local chloritization and carbonatization of biotite phenocrysts.

BIBLIOGRAPHY

EMPR GEM 1970-176, 1971-193, 1974-273, 1975-E149
EMPR ASS RPT 2493, 2494, 2723, *5078
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/27 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 135**

NATIONAL MINERAL INVENTORY: 093M2 Cu1

NAME(S): **BIG JOE**, J-C

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M02E
BC MAP:
LATITUDE: 55 01 51 N
LONGITUDE: 126 34 19 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of J-C claim block (Assessment Report 4098).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6100918
EASTING: 655184

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Pyrite Carbonate
ALTERATION: Sericite
ALTERATION TYPE: Sericitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Discordant
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	

LITHOLOGY: Porphyritic Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Big Joe claims were located 4.5 kilometres southwest of Smithers Landing (Babine Lake), 74 kilometres east-southeast of Hazelton.

The area is underlain by porphyritic volcanic rocks of the Saddle Hill volcanics, an informal subdivision of the Lower to Middle Jurassic Hazelton Group (Geological Survey of Canada Open File 2322).

One showing contains bornite and chalcopyrite in carbonate filled fractures cutting pyritized volcanic rocks. A second showing, located 1100 metres to the northwest, contains chalcopyrite in sericitized porphyritic rock which could be subvolcanic (Assessment Report 4098).

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *4098
EMPR GEM 1970-171, 1973-354
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/13 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 136**

NATIONAL MINERAL INVENTORY: 093M5 Cu1

NAME(S): **SAL**, AARON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 29 32 N
LONGITUDE: 127 35 19 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of claim block (Assessment Report 2828).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6150473
EASTING: 589173

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Porphyritic Granodiorite
Hornfels
Pyritic Siltstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage Plutonic Rocks

CAPSULE GEOLOGY

The Sal showing is located 26 kilometres north of Hazelton, and four kilometres east of the mouth of Sediesh Creek.

Minor molybdenite and chalcopyrite mineralization has been found in a small porphyritic granodiorite plug of the Late Cretaceous Bulkley Intrusions. The granodiorite intrudes hornfelsed pyritic siltstones of the Middle Jurassic to Lower Cretaceous Bowser Lake Group.

BIBLIOGRAPHY

EMPR ASS RPT *2828, 8162
EMPR GEM 1970-174
GSC OF 2322

DATE CODED: 1991/09/23 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/01/21 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 137**

NATIONAL MINERAL INVENTORY:

NAME(S): **BEAR HILL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M08E
BC MAP:
LATITUDE: 55 21 37 N
LONGITUDE: 126 01 46 W
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Main showing (Assessment Report 9892, Figure 2).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6138901
EASTING: 688286

COMMODITIES: Copper, Silver, Barite, Zinc, Lead

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite, Galena, Sphalerite, Tetrahedrite, Cuprite, Chalcocite
ASSOCIATED: Barite
ALTERATION: Silica, Pyrolusite, Malachite
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Disseminated, Stratabound
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Eocene	Ootsa Lake	Unnamed/Unknown Formation	
Cretaceous	Sustut	Tango Creek	

LITHOLOGY: Dacitic Flow, Basaltic Flow, Volcaniclastic, Conglomerate, Sandstone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1982

COMMODITY	GRADE	
Silver	117.0000	Grams per tonne
Barite	5.4000	Per cent
Copper	0.7300	Per cent

COMMENTS: A 5-metre chip sample. Grade is for barium.
REFERENCE: Assessment Report 10791.

CAPSULE GEOLOGY

The Bear Hill property is located 5 kilometres north of the northwest arm of Takla Lake, 104 kilometres east of Hazelton.

Lithologies on the property include conglomerate and sandstone of the Cretaceous Tango Creek Formation (Sustut Group) and downfaulted blocks of Eocene Ootsa Lake Group subaerial dacitic to basaltic porphyritic flow rocks and coarse to fine fragmental volcaniclastic rocks.

Copper, lead and zinc mineralization with appreciable silver is contained in chalcopyrite, bornite, galena and sphalerite, which are commonly associated with barite. Tetrahedrite, cuprite and chalcocite have been identified in thin and polished sections. Malachite and pyrolusite are common on weathered outcrops. The mineralization occurs in the volcanic rocks as irregular clots, lenses and gash and tension crack fillings over a width of 1 to 5 metres.

One of the higher-grade samples assayed 0.73 per cent copper, 117 grams per tonne silver and 5.4 per cent barium across 5 metres (Assessment Report 10791). Pyrite is conspicuously absent from the

CAPSULE GEOLOGY

showing.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *9892, 10790, *10791
GSC OF 2322 (#206)
EMPR BULL 110

DATE CODED: 1991/11/22 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 138**

NATIONAL MINERAL INVENTORY: 093M6 Cu1

NAME(S): **COPPER BASIN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 23 36 N
LONGITUDE: 127 02 44 W
ELEVATION: 1725 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is from Minister of Mines Annual Report 1929, page C161.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6140301
EASTING: 623788

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Unnamed/Unknown Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks
Overlap Assemblage

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1929
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	48.0000	Grams per tonne
Gold	1.7000	Grams per tonne
Copper	7.1000	Per cent

COMMENTS: Sample, 60-centimetres wide, from a granodiorite dike.
REFERENCE: Minister of Mines Annual Report 1929, page C161.

CAPSULE GEOLOGY

The Copper Basin showings are located in a cirque 2 kilometres northwest of Thoen Peak.

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group, intruded by granodioritic rocks of the Late Cretaceous Bulkley Intrusions (Geological Survey of Canada Open File 2322).

The showings are described as disseminated chalcopyrite mineralization in fracture zones in a granodiorite dike cutting sedimentary rocks. The fracturing trends 045 degrees. Although there are several showings, continuity of mineralization is reported as poor.

One 60-centimetre sample, taken from a 1.5 metre wide mineralized zone, assayed 7.1 per cent copper, 1.7 grams per tonne gold and 48.0 grams per tonne silver (Minister of Mines Annual Report 1929, page C161).

BIBLIOGRAPHY

EMPR AR *1929-C160
GSC MAP 971A, 44-24
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/23
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 139**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKEENA CROSSING**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04W
BC MAP:
LATITUDE: 55 04 56 N
LONGITUDE: 127 52 14 W
ELEVATION: 275 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Geological Survey of Canada Open File 2322.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6104524
EASTING: 572099

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Feldspathic Sandstone
Volcanic Sandstone
Siltstone
Shale
Polymictic Volcaniclastic Conglomerate
Carbonaceous Sediment/Sedimentary
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Skeena Crossing coal occurrence is located 22 kilometres southwest of Hazelton, south of Highway 16.

The area is underlain by Lower Cretaceous Kitsuns Creek Formation (Skeena Group) feldspathic and volcanic sandstone, siltstone, shale, polymictic volcaniclastic conglomerate and carbonaceous sediments.

Geological Survey of Canada Memoir 69 (page 158) refers to a 30-centimetre layer of impure coal in crushed, deformed rocks.

BIBLIOGRAPHY

GSC OF 2322
GSC MEM *69, p.158

DATE CODED: 1991/12/17
DATE REVISED: 1991/12/17

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 140**

NATIONAL MINERAL INVENTORY:

NAME(S): **CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03E
BC MAP:
LATITUDE: 55 14 07 N
LONGITUDE: 127 13 29 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Occurrence #140, near an unnamed creek below the western slopes of Blunt Mountain (Map 69-1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6122410
EASTING: 612890

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

A molybdenite occurrence is reported near an unnamed creek below the western slopes of Blunt Mountain. The showing is hosted in quartz monzonite of the Late Cretaceous Bulkley Intrusions (Map 69-1).

BIBLIOGRAPHY

EM EXPL 1999-80-84
EMPR MAP *69-1 (#140)
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/26

CODED BY: GSB
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 141**

NATIONAL MINERAL INVENTORY:

NAME(S): **KOT**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M15W
BC MAP:
LATITUDE: 55 48 58 N
LONGITUDE: 126 50 51 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Figure 4, Assessment Report 17794.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6187710
EASTING: 634872

COMMODITIES: Zinc Lead

MINERALS
SIGNIFICANT: Sphalerite Galena
ASSOCIATED: Pyrite Calcite Chlorite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
DIMENSION: 25 Metres STRIKE/DIP: 130/90 TREND/PLUNGE:
COMMENTS: Zone of stockwork veining.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Nilkitkwa	
Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Greywacke
Sandstone
Siltstone
Felsic Lapilli Tuff
Fine Grained Tuff
Gabbro

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Lead	0.4200	Per cent
Zinc	7.6000	Per cent

COMMENTS: Mineralized sample.
REFERENCE: Assessment Report 14943.

CAPSULE GEOLOGY

The Kot property is located 4 kilometres west-northwest of Kotsine Mountain, 82 kilometres northwest of Hazelton.

A package of thin-bedded fine clastic and locally tuffaceous sedimentary rocks (greywacke, sandstone and siltstone) and intercalated felsic lapilli and ash fall tuff of the Lower to Middle Jurassic Nilkitwa Formation (Hazelton Group) underlie the property. A thick sill of coarse-grained diabasic gabbro of Jurassic age intrudes the sedimentary rocks.

A vertically-dipping, 25-metre wide weakly-mineralized zone of stockwork veining strikes 130 degrees. It contains lenses and veins of calcite, chlorite, pyrite, sphalerite and galena. The thickest lens was 25 centimetres wide.

One mineralized grab sample assayed 7.6 per cent zinc and 0.42 per cent lead (Assessment Report 14943).

BIBLIOGRAPHY

EMPR ASS RPT *14943, 17794

BIBLIOGRAPHY

GSC OF 2322

DATE CODED: 1991/12/04 CODED BY: RHM FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093M 142**

NATIONAL MINERAL INVENTORY: 093M8 Cu2

NAME(S): **LYNN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M08E
BC MAP:
LATITUDE: 55 18 10 N
LONGITUDE: 126 12 48 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is from Map 1A, Assessment Report 3531.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6132023
EASTING: 676890

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Eocene

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Biotite Feldspar Porphyry
Volcanic
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

Plutonic Rocks

CAPSULE GEOLOGY

The Lynn showing is located 6.5 kilometres north of the south end of Nakinilerak Lake or 85 kilometres northeast of Smithers.

A hydrothermally altered biotite feldspar porphyry stock, or dike swarm, of the Eocene Babine Intrusions cuts mafic volcanic rocks of the Lower Jurassic Telkwa Formation (Hazelton Group).

The stock is mineralized with chalcopyrite near the contact with an intrusive breccia zone. A pyrite halo is developed in the volcanic rocks around the stock.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT 3531
EMPR BULL 64
EMPR GEM 1971-192, 1972-432, *1973-359
GSC OF 2322
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/15 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 143**

NATIONAL MINERAL INVENTORY:

NAME(S): **CARR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M16E
BC MAP:
LATITUDE: 55 52 10 N
LONGITUDE: 126 04 54 W
ELEVATION: 1525 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Assessment Report 3769.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6195400
EASTING: 682594

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Upper Jurassic			Francois Lake Intrusive Suite

ISOTOPIC AGE: 145 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Hornblende Diorite
Volcanic

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Carr showing is located in a saddle between two mountain peaks five kilometres west of Iklaki Peak, 120 kilometres east-northeast of Hazelton.

A Late Jurassic hornblende diorite plug of the Francois Lake Intrusive Suite intrudes volcanic rocks of the Lower Jurassic Telkwa Formation (Hazelton Group). Biotite from the intrusive has been dated by potassium/argon methods at 145 million years (Geological Survey of Canada Open File 2322).

Chalcopyrite and molybdenite mineralization has been reported (Assessment Report 3769).

BIBLIOGRAPHY

EMPR GEM 1972-434
EMPR ASS RPT *3769
EMPR BULL 64
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/29 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 144**

NATIONAL MINERAL INVENTORY: 093M1 Cu2

NAME(S): **FORT**, ELDEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01W
BC MAP:
LATITUDE: 55 05 20 N
LONGITUDE: 126 25 50 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is from Plate 1, Assessment Report 4591.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6107699
EASTING: 663981

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic	Hazelton	Smithers	
Jurassic-Cretaceous	Bowser Lake	Ashman	
Eocene			Babine Intrusions

ISOTOPIC AGE: 52 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Biotite Feldspar Porphyry
Hornfels
Conglomerate
Greywacke
Shale
Siltstone
Andesite

HOSTROCK COMMENTS: Isotopic age date is from Bulletin 64. Rocks of the informally named Kitsumkalum shale (Skeena Group) also occur in the area.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Hornfels

CAPSULE GEOLOGY

The Fort showing is located on the west side of Old Fort Mountain, 4 kilometres north of Babine Lake, 82 kilometres east-southeast of Hazelton.

The area is underlain by rocks of the Kitsumkalum shale, an informal subdivision of the Lower Cretaceous Skeena Group, the Middle Jurassic to Lower Cretaceous Ashman Formation (Bowser Lake Group) and the Middle Jurassic Smithers Formation (Hazelton Group). These have been intruded by the Eocene Babine Intrusions which comprise monzonite, biotite feldspar porphyry, hornblende feldspar porphyry, feldspar porphyry and diorite. The main sedimentary lithologies are conglomerate, greywacke, shale and siltstone which are hornfelsed adjacent to the Babine Intrusions. Andesitic volcanic rocks are intercalated with some of the sedimentary strata. Numerous northwest-trending block faults traverse the area.

Sulphide mineralization, consisting of pyrite and minor chalcopyrite, occurs adjacent to and within the small plugs of biotite feldspar porphyry.

BIBLIOGRAPHY

EM OF 2001-03
EMPR AR 1966-92; 1968-130
EMPR ASS RPT 2608, *4591
EMPR GEM 1973-353
EMPR MAP 12

BIBLIOGRAPHY

EMPR OF 1997-10
EMPR PF (Eastfield Resources Ltd. Corporate Summary, February 1998)
GSC OF 2322
Placer Dome File
WWW http://www.infomine.com/index/properties/FORT_PROJECT.html
Placer Dome File
EMPR BULL 110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/11 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 145**

NATIONAL MINERAL INVENTORY:

NAME(S): **HOL**, HOL 3, HOL 5

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M02E 093M02W
BC MAP:
LATITUDE: 55 03 21 N
LONGITUDE: 126 44 50 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Claim boundary between Hol 3 and Hol 5 (Assessment Report 4488).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6103324
EASTING: 643894

COMMODITIES: Copper Molybdenum

MINERALS

SIGNIFICANT: Chalcopyrite Molybdenite
ASSOCIATED: Pyrrhotite Magnetite Quartz Pyrite
ALTERATION: K-Feldspar Epidote Hematite
ALTERATION TYPE: Propylitic Oxidation Potassic
MINERALIZATION AGE: Eocene

DEPOSIT

CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Undefined Formation	
Cretaceous	Skeena	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Quartz Monzonite
Biotite Feldspar Porphyry Dike
Granodiorite
Rhyolite Tuff
Rhyolite Breccia
Rhyolite Flow
Siltstone
Hornfels Shale

HOSTROCK COMMENTS: The Hazelton Group unit is the informally named Saddle Hill volcanics and the Skeena Group unit is the Kitsumkalum shale.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau
GRADE: Hornfels

CAPSULE GEOLOGY

The Hol showing is located 14 kilometres west of Smithers Landing, or 2 kilometres southwest of the south end of Holland Lake.

Quartz monzonite, or granodiorite, and dikes of biotite feldspar porphyry, both of the Eocene Babine Intrusions, cut hornfelsed rhyolite tuffs, fragmental rocks and flows of the Saddle Hill volcanics, an informal division of the Lower to Middle Jurassic Hazelton Group (Geological Survey of Canada Open File 2322). Hornfelsed shales of the Kitsumkalum shale, an informal division of Lower Cretaceous Skeena Group, also outcrop in the area.

Chalcopyrite and pyrrhotite occur in, and disseminated within, fractures with quartz, K-feldspar and epidote cutting the intrusive rocks and to a lesser extent the Hazelton Group rocks. Trace amounts of molybdenite occur with the chalcopyrite mineralization, magnetite and specular hematite also fill fractures and pyrite is rare.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *4488
EMPR GEM 1973-355, 1974-268
GSC OF 2322
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/14 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 146**

NATIONAL MINERAL INVENTORY:

NAME(S): **LION**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M16E
BC MAP:
LATITUDE: 55 54 17 N
LONGITUDE: 126 05 19 W
ELEVATION: 1190 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing number 1 (Assessment Report 4725).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6199306
EASTING: 681994

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite Carbonate
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au L01 Subvolcanic Cu-Ag-Au (As-Sb)
DIMENSION: 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Fractured, siliceous zone, 1.2 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Unknown			Unnamed/Unknown Informal
Upper Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Tuff
Volcanic Breccia
Agglomerate
Mudstone
Argillite
Black Pyritic Limestone
Quartz Porphyry
Hornblende Feldspar Porphyry
Biotite Hornblende Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	18.9000	Grams per tonne
Copper	3.2100	Per cent

REFERENCE: Assessment Report 4725.

CAPSULE GEOLOGY

The Lion showing is located on a tributary to Ominicetla Creek, 6 kilometres northeast of Iklaki Peak, 120 kilometres east-northeast of Hazelton.

The property is underlain by andesite, tuff, breccia and agglomerate interbedded with silty mudstone, argillite and minor black pyritic limestone of the Lower Jurassic Telkwa Formation (Hazelton Group). The Telkwa Formation is stratigraphically overlain by red and grey conglomerate, agglomerate and minor siltstone of the Cretaceous Sustut Group. The Telkwa Formation rocks are intruded by small plugs of quartz and hornblende feldspar porphyry of unknown age and a large plug of biotite hornblende diorite of Late Jurassic age.

The number 1 showing is a fractured, siliceous zone, approximately 1.2 metres wide containing chalcopyrite. An area of

CAPSULE GEOLOGY

fracturing, containing pyrite and iron carbonate, is present around the showing area (Assessment Report 4725).

A selected sample assayed 3.21 per cent copper, 18.9 grams per tonne silver and trace gold (Assessment Report 4725). Two other showings containing fracture-controlled pyrite and chalcopyrite are present on the property.

BIBLIOGRAPHY

EMPR GEM 1973-362
EMPR ASS RPT *4725
EMPR BULL 64
GSC OF 2322
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/11/29 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 147**

NATIONAL MINERAL INVENTORY:

NAME(S): **BURN**, BURN 14, KISPIOX, WAG, WET

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05W
BC MAP:
LATITUDE: 55 22 48 N
LONGITUDE: 127 45 46 W
ELEVATION: 970 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of Burn 14 claim (Assessment Report 5891).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6137775
EASTING: 578391

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite Pyrite Pyrrhotite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous Upper Cretaceous	Skeena	Kitsuns Creek	Bulkley Intrusions

LITHOLOGY: Granodiorite
Biotite Feldspar Porphyry Dike
Argillite
Shale
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Contact
RELATIONSHIP: Overlap Assemblage
PHYSIOGRAPHIC AREA: Nass Depression
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Molybdenum	0.0530	Per cent

COMMENTS: Drill hole BBC-80-6 between 27 and 144 metres depth (Assessment Report 8562).
REFERENCE: Assessment Report 8562.

CAPSULE GEOLOGY

The Burn showing is located on the south side of Date Creek, approximately 14 kilometres north-northwest of Hazelton.

The property is underlain by a 300 by 600 metre granodiorite plug of the Late Cretaceous Bulkley Intrusions which intrudes clastic sediments of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group). The sedimentary rocks strike north and are mainly argillites, sandstones and shales. The sediments are cut by a series of north-trending biotite feldspar porphyry dikes, mainly south of the granodiorite plug.

The sedimentary rocks are hornfelsed near the granodiorite and mineralized with pyrite, pyrrhotite, minor chalcopyrite and molybdenite. The biotite feldspar porphyry dikes are also mineralized with pyrite and minor chalcopyrite and molybdenite. The most interesting mineralization is molybdenite which has been found in all of the outcrops of the granodiorite plug, in veins and stockworks.

In drill hole BBC-80-6, two mineralized zones were intersected: from 27 to 144 metres a section assayed 0.088 per cent molybdenite and a second zone from 207 to 231 metres averaged 0.082 per cent molybdenite (Assessment Report 8562).

BIBLIOGRAPHY

EMPR GEM 1975-E147, 1976-E155
EMPR ASS RPT 4433, 5891, 6892, 7864, *8562, 8935
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/17 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 148**

NATIONAL MINERAL INVENTORY:

NAME(S): **NAT**, ACE, NAT A

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E 093M07W
BC MAP:
LATITUDE: 55 16 48 N
LONGITUDE: 127 00 00 W
ELEVATION: 967 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of showings (Geology, Exploration and Mining 1976, page E156).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6127773
EASTING: 627036

COMMODITIES: Copper, Tungsten, Lead, Zinc

MINERALS
SIGNIFICANT: Galena, Sphalerite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated, Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au; I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Greenstone

HOSTROCK COMMENTS: The Kasalka Group unit is the informally named Cronin volcanics.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Nat showings are located on the west side of Netalzul Mountain, 45 kilometres east of Hazelton.

Copper and tungsten are found disseminated in granodiorite of the Late Cretaceous Bulkley Intrusions (Geology, Exploration and Mining 1976, page E156).

On Nat A, there is a 10-centimetre wide galena and sphalerite vein in "greenstone" of the Cronin volcanics, an informal subdivision of the Upper Cretaceous Kasalka Group (Geological Survey of Canada Open File 2322).

BIBLIOGRAPHY

EM EXPL 1999-80-84
EMPR GEM *1976-E156
GSC OF 2322

DATE CODED: 1985/07/24
DATE REVISED: 1991/08/14
CODED BY: GSB
REVISED BY: RHM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 149**

NATIONAL MINERAL INVENTORY:

NAME(S): **DATE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05W
BC MAP:
LATITUDE: 55 22 17 N
LONGITUDE: 127 53 16 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of the Date claim group (Assessment Report 9684, 11560).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6136683
EASTING: 570487

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous Upper Cretaceous	Bowser Lake	Undefined Formation	Bulkley Intrusions

LITHOLOGY: Granodiorite
Granodiorite Dike
Clastic Sediment/Sedimentary
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks
COMMENTS: Kispiox Mountain is part of the Kispiox Range.

PHYSIOGRAPHIC AREA: Nass Depression
GRADE: Hornfels

CAPSULE GEOLOGY

The Date showing is located on the southeast flank of Kispiox Mountain, 19 kilometres northwest of Hazelton.

Minor molybdenite and chalcopyrite mineralization is associated with dikes and apophyses of granodiorite of the Late Cretaceous Bulkley Intrusions. These intrude hornfelsed clastic sedimentary and volcanic rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group.

BIBLIOGRAPHY

EMPR ASS RPT *9684, *11560
GSC OF 2322

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/17 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 150**

NATIONAL MINERAL INVENTORY:

NAME(S): **SEELEY LAKE**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 11 26 N
LONGITUDE: 127 42 04 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located approximately 5 kilometres southwest of South Hazelton.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6116766
EASTING: 582691

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A05 Anthracite
SHAPE: Irregular
MODIFIER: Folded
COMMENTS: The structure consists of a number of northeast-southwest trending folds with strata dipping up to approximately 65 degrees southeast and northwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Red Rose	

LITHOLOGY: Mudstone
Sandstone
Conglomerate
Coal
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Contact
RELATIONSHIP:
COMMENTS: Coal is of anthracite to meta-anthracite rank.

PHYSIOGRAPHIC AREA: Nass Depression
GRADE: Anthracite

CAPSULE GEOLOGY

The Seeley Lake coal occurrence is located approximately 5 kilometres southwest of South Hazelton.

Up to 6 coal seams have been identified in the Lower Cretaceous Red Rose Formation (Skeena Group) interbedded with mudstone and sandstone. The coal is anthracite to meta-anthracite and occurs in seams up to 1.5 metres thick. Aggregate intervals, including mudstone partings, can be up to 12 metres thick. The coal is thought to be limnic in origin, having formed in freshwater swamps and channels. The seams are therefore likely to vary considerably in thickness and lateral extent. The high rank is due to thermal metamorphism by a granitic intrusion in close proximity to the area.

The structure in the area consists of a number of northeast trending folds with strata dipping up to approximately 65 degrees. Southeast and northwest a number of major north northwest trending faults occur to the southeast and east of the licence area.

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EMPR BULL *43, p. 78; *270
EMPR P 1986-5, p. 19
GSC P 73-31

DATE CODED: 1986/04/30 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1991/10/25 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 151**

NATIONAL MINERAL INVENTORY:

NAME(S): **FIREWEED**, MN SHOWING, SPHALERITE SHOWING,
EAST ZONE, WEST ZONE, SOUTH ZONE,
JAN ZONE, 1600 ZONE, 3200 ZONE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093M01W
BC MAP:
LATITUDE: 55 00 43 N
LONGITUDE: 126 26 02 W
ELEVATION: 884 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: West zone, 2.5 kilometres south of the south shore of Babine Lake (McKendrick Island), 54 kilometres northeast of the town of Smithers (Exploration in British Columbia 1988, page B128).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6099132
EASTING: 664083

COMMODITIES: Silver, Lead, Zinc, Copper, Gold

MINERALS

SIGNIFICANT: Pyrite, Pyrrhotite, Sphalerite, Galena, Chalcopyrite, Tetrahedrite
ASSOCIATED: Pyrite, Pyrrhotite, Marcasite, Quartz, Carbonate, Sericite
ALTERATION: Quartz, Ankerite, Sericite, Chlorite, Kaolinite
COMMENTS: Locally heavy manganese coating; some iron staining.
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia, Stratiform, Disseminated, Vein
CLASSIFICATION: Hydrothermal, Syngenetic
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag; G07 Subaqueous hot spring Ag-Au
SHAPE: Cylindrical
DIMENSION: 300 x 30 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: West zone.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Jurassic	Hazelton	Undefined Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Sandstone
Mudstone
Siltstone
Latite Dike
Quartz Latite Dike
Feldspar Porphyritic Latite Sill
Andesite Tuff
Dacite Tuff
Lapilli Tuff

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Overlap Assemblage, Stikine

INVENTORY

ORE ZONE: WEST
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1989
QUANTITY: 580544 Tonnes

COMMODITY	GRADE	
Silver	341.7700	Grams per tonne
Lead	1.3400	Per cent
Zinc	2.2200	Per cent

COMMENTS: Cutoff grade is 171.4 grams per tonne silver at an average width of 4.75 metres.
REFERENCE: George Cross News Letter No.66, 1989.

CAPSULE GEOLOGY

The Fireweed occurrence is located on the south side of Babine Lake, approximately 5 kilometres southeast of Smithers Landing, 54 kilometres northeast of Smithers.

CAPSULE GEOLOGY

In the occurrence area, Upper Triassic to Lower Jurassic Takla Group volcanic rocks, predominantly augite-feldspar flows, outcrop along the west shore of Babine Lake south of the west arm. Maroon to green tuffs, sandstones, siltstones and shales of the Lower to Middle Jurassic Hazelton Group are exposed north, east and west of Babine Lake. Middle Jurassic to Upper Cretaceous marine to nonmarine clastic sediments, the Bowser Lake and Skeena groups (Kitsuns Creek Formation), are found adjacent to the Hazelton Group on the north shore and east and west of Babine Lake. Eocene Babine Intrusive plugs outcrop northwest and southeast of the property (Geological Survey of Canada Open File 2322).

An extensive blanket of glaciolacustrine-lacustrine clay, as thick as 40 metres, covers 95 per cent of the Fireweed property area. The oldest rocks known on the property are Hazelton Group volcanics. The volcanics are commonly fine-grained, maroon to green andesitic to dacitic tuffs and lapilli tuffs. Interbedded mudstones, siltstones and sandstones of a thick deltaic sequence, appears to underlie much of the area and are thought to belong to the Kitsuns Creek Formation of the Lower Cretaceous Skeena Group. The sediments commonly strike 070 to 080 degrees and dip subvertically. Locally the strike varies to 020-030 degrees at the discovery outcrop, the MN showing. Several diamond-drill holes have intersected sills of strongly altered feldspar porphyritic latite.

Skeena Group sediments are dominantly encountered in diamond drilling. The sediments are dark and medium to light grey and vary from mudstone and siltstone to fine and coarse-grained sandstone. Bedding can be massive, of variable thickness, changing gradually or abruptly to finely laminated. Bedding features such as rip-up clasts, load casts and crossbedding are common. The beds are cut by numerous faults, many of them strongly graphitic. Drilling indicates Skeena Group sediments are in fault contact with Hazelton Group volcanic rocks. Strongly sericitized and carbonatized latite dikes cut the sediments.

Mineralization generally occurs in one of three forms: 1) breccia zones are fractured or brecciated sediments infilled with fine to coarse-grained massive pyrite-pyrrhotite and lesser amounts of sphalerite, chalcopyrite and galena 2) disseminated sulphides occur as fine to very fine grains which are lithologically controlled within coarser grained sandstones, pyrite, marcasite, sphalerite, galena and minor tetrahedrite are usually found interstitial to the sand grains and 3) massive sulphides, which are fine-grained, commonly banded, containing rounded quartz-eyes and fine sedimentary fragments, occur as distinct bands within fine-grained sediments. The massive sulphides generally contain alternating bands of pyrite/ pyrrhotite and sphalerite/galena. They are associated with the breccia zones and are commonly sandwiched between altered quartz latite dikes.

Alteration in the sediments occurs in the groundmass and appears associated with the porous, coarse sandstones. Common secondary minerals are quartz, ankerite, sericite, chlorite and kaolinite.

Three main zones have been identified by geophysics (magnetics, induced polarization) and are named the West, East and South zones. Three other zones identified are the 1600, 3200 and Jan zones.

The West zone is defined by an east trending horseshoe-shaped induced polarization conductor. The original outcrop discoveries, the MN and the Sphalerite showings, lie at the westerly end of each of the prongs of the horseshoe. Drilling has defined a mineralized area 300 metres long which is open along strike and depth. Mineralization has been found in Skeena Group sediments to 200 metres depth. The bulk of the mineralization is hosted by a coarse sandstone, in two parallel southwest plunging shoots, which are 30 to 60 metres wide combined.

Indicated reserves for the West zone are 584,500 tonnes grading 341.77 grams per tonne silver, 2.22 per cent zinc and 1.34 per cent lead or, at a higher cutoff, 399,124 tonnes grading 456.2 grams per tonne silver, 1.62 per cent lead and 2.7 per cent zinc (George Cross News Letter No.66, 1989).

A flat lying, funnel-shaped feeder zone near the eastern limits of the West zone covers an area 90 by 90 metres and extends to a depth of 75 metres, but does not outcrop. Sandstone and mudstone interfinger throughout this area. Pyrrhotite, pyrite, sphalerite and chalcopyrite occur as massive sulphide mineralization associated with breccia and veins which cement mudstone and sandstone fragments that are millimetres to several metres in size. These zones of mineralization grade into unbrecciated or weakly veined areas. The sulphide content is variable and there are two distinct generations of veining. One contains massive sphalerite, the other massive pyrite and pyrrhotite. The breccia veins cut sericitized latite dikes. The feeder zone also contains minor gold and copper values.

CAPSULE GEOLOGY

A selected assay grades 124.1 grams per tonne silver, 7.25 per cent zinc, 3.32 per cent lead, 0.13 per cent copper and 0.8 grams per tonne gold across 6.2 metres (Exploration in British Columbia 1988, page B130).

The MN showing is hosted in fine to medium-grained sandstone with heavy manganese coating lying in the massive beds which dip subvertically with a local strike of 030 degrees. The sandstone is quartz-carbonate-sericite cemented. Minor pyrite, sphalerite and galena are associated with increased manganese content. Diamond-drill hole intersections returned assays of up to 68.6 grams per tonne silver, 3.5 per cent zinc, 0.6 per cent copper, 2 per cent lead and anomalous gold (George Cross Newsletter #37, 1988).

The Sphalerite showing is 300 metres to the north of the MN showing. Outcrop is characterized by a strong, rusty yellow stain with sphalerite stringers crosscutting mudstone and sandstone.

The East zone has a strike length of at least 500 metres and a 40 metre thickness containing sulphide-cemented breccia and veining. This zone is 2.4 kilometres east along strike from the West zone. Mineralization is in the form of pyrite and pyrrhotite with lesser sphalerite and chalcopyrite. A diamond drill hole intersection across 2.98 metres assayed 22.62 grams per tonne silver, 2.97 per cent zinc, 0.27 per cent copper and 0.47 grams per tonne gold (George Cross Newsletter #85, 1989).

The 1600 zone is 500 metres west of the MN showing (south prong of the horseshoe-shaped West zone) and consists of a number of parallel sulphide horizons up to 2 metres wide with a strike length of 600 metres.

The Jan zone is 1 kilometre west-northwest of the MN showing (north prong of the horseshoe-shaped West zone). The 3200 zone is 1 kilometre east of the West zone and the South zone is 500 metres south-southeast of the 3200 zone.

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EMPR BULL 110
EMPR EXPL *1988-A34,B127-B131,C175;; 1999-1-11
EMPR FIELDWORK 2000, pp. 253-268
EMPR MAP 1; 65, 1989
EMPR OF 1992-1; 1992-3; 1997-10; 1998-10
EMR MIN BULL MR 223 B.C. 240
GSC MAP 971A
GSC OF 720; 351; 215; *2322 (#230)
GCNL #37,#153,#155,#163,#167,#222,#243, 1988; #4,#9,#19,#26,#56, *#66,#75,#85, 1989; #32, #181, 1991
N MINER Aug. 22, 1988; Feb. 6, Mar. 6, 27, 1989; Oct. 21, 1991
NW PROSP Jan/Feb, 1989; May/June, 1989
PR REL Canadian United Minerals, Jan. 19, 1988
V STOCKWATCH Jan. 19, 1988; April 19, 1989
WWW http://www.infomine.com/
Placer Dome File

DATE CODED: 1989/04/11 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1992/01/10 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 152**

NATIONAL MINERAL INVENTORY:

NAME(S): **IRON MASK (L. 3577)**, TOPSEY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 16 19 N
LONGITUDE: 127 33 07 W
ELEVATION: 610 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of Iron Mask Crown Grant (Lot 3577).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6126009
EASTING: 591999

COMMODITIES: Silver Zinc Lead Copper

MINERALS
SIGNIFICANT: Galena Sphalerite Pyrite Chalcopyrite Tetrahedrite
ASSOCIATED: Quartz Siderite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 015/42E
TREND/PLUNGE:
COMMENTS: Two semi-parallel fissure veins.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

ISOTOPIC AGE: 55 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Overlap Assemblage

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	336.7000	Grams per tonne
Lead	0.9400	Per cent
Zinc	5.4000	Per cent

COMMENTS: A 5 to 8-centimetre wide vein.
REFERENCE: Assessment Report 8672.

CAPSULE GEOLOGY

The Iron Mask showing is located on the south side of Four Mile Mountain, 8 kilometres east of Hazelton. It lies between the Comet (093M 052) and the Mohawk (093M 051) Crown granted claims.

The property is underlain by a small (1500 metres diameter) stock of coarse grained grey granodiorite of the Eocene Babine Intrusions. The stock intrudes clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. Potassium/argon dating of the stock indicates an age of 55 million years (Geological Survey of Canada Open File 2322).

The main showing area consists of two semi-parallel fissure-veins which strike 015 degrees, dipping 42 degrees east. The veins carry galena, sphalerite, pyrite and minor chalcopyrite and tetrahedrite in a gangue of quartz and siderite. A grab sample from a 5 to 8 centimetre wide vein assayed 336.7 grams per tonne silver, 0.94 per cent lead and 5.4 per cent zinc (Assessment Report 8672). A second showing area is located 200 metres to the east.

BIBLIOGRAPHY

EMPR ASS RPT *8672

BIBLIOGRAPHY

GSC MEM 223
GSC OF 2322

DATE CODED: 1991/09/20
DATE REVISED: 1992/02/11

CODED BY: RHM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 153**

NATIONAL MINERAL INVENTORY:

NAME(S): **KISPIOX VALLEY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05W
BC MAP:
LATITUDE: 55 28 42 N
LONGITUDE: 127 47 57 W
ELEVATION: 340 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence Q (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6148677
EASTING: 575897

COMMODITIES: Marl

MINERALS
SIGNIFICANT: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated Stratiform
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: B07 Bog Fe, Mn, U, Cu, Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent	Undefined Group	Undefined Formation	

LITHOLOGY: Marl

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Kispiox Valley marl occurrence is located on McCully Creek, 2.5 kilometres upstream from the Kispiox River, 27 kilometres north of Hazelton (occurrence Q on Geological Survey of Canada Open File 2322).
The is no other information available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322

DATE CODED: 1991/12/20 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/20 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 154**

NATIONAL MINERAL INVENTORY:

NAME(S): **JONES**, GAM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 03 50 N
LONGITUDE: 127 36 24 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 9587.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6102788
EASTING: 588985

COMMODITIES: Copper Zinc

MINERALS
SIGNIFICANT: Sphalerite Chalcopyrite
ASSOCIATED: Arsenopyrite Pyrite Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Kasalka	Brian Boru	

ISOTOPIC AGE: 72 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Brecciated Andesite

HOSTROCK COMMENTS: Isotopic age date is from Geological Survey of Canada Open File 2322.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Hazelton Ranges

CAPSULE GEOLOGY

The Jones showing is located 1.5 kilometres east of the Killarney showing (093M 114) on the west side of the Rocher Deboule Range, 19 kilometres south of New Hazelton.

The showings are hosted in brecciated andesitic volcanic rocks of the Upper Cretaceous Brian Boru Formation (Kasalka Group). Potassium/argon dating of biotite gave a date of 70 million years (Geological Survey of Canada Open File 2322).

Mineralization consists of irregular veinlets of pyrite-magnetite, sphalerite, chalcopyrite and arsenopyrite. The veinlets are hosted in brecciated andesite just east of the contact with the underlying conglomerate member of the older, Lower Cretaceous Red Rose Formation, Skeena Group (Assessment Report 9587).

BIBLIOGRAPHY

EMPR ASS RPT *9587
EMPR BULL 43
GSC OF 2322

DATE CODED: 1991/09/16 CODED BY: RHM FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093M 155**

NATIONAL MINERAL INVENTORY:

NAME(S): **CANADIAN QUEEN**, BLACK PRINCE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 18 54 N
LONGITUDE: 127 36 54 W
ELEVATION: 580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 17657.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6130719
EASTING: 587898

COMMODITIES: Silver Gold Lead Zinc

MINERALS
SIGNIFICANT: Pyrite Galena Sphalerite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 055/60S
TREND/PLUNGE:
COMMENTS: Black Prince vein.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Tuffaceous Sandstone
Greywacke
Argillite
Granodiorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Overlap Assemblage

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1940
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	255.7000	Grams per tonne
Gold	1.3700	Grams per tonne
Lead	1.0700	Per cent
Zinc	1.1200	Per cent

COMMENTS: Channel sample across 0.46 metre, taken 15 metres south of the shaft.
REFERENCE: Geological Survey of Canada Memoir 223, page 34.

CAPSULE GEOLOGY

The Canadian Queen claim and fraction are located 8 kilometres northeast of Hazelton on the northeast flank of Mount Glen. They adjoin the Silver Standard mine (093M 049) which is located to the west. The Black Prince vein, which was partially mined from the Silver Standard mine strikes onto the Canadian Queen property.

The property is underlain by clastic sedimentary rocks (tuffaceous sandstone, greywacke and argillite) of the Middle Jurassic to Lower Cretaceous Bowser Lake Group, which is intruded in the area by granodiorite of the Eocene Babine Intrusions.

The Black Prince vein is approximately 0.5 metre wide, strikes 055 degrees and dips 60 degrees southeast. It is composed of quartz with approximately 3 per cent sulphides, mainly pyrite, sphalerite and galena. A 46-centimetre channel sample taken 15 metres south of the shaft, assayed 255.7 grams per tonne silver, 1.37 grams per tonne gold, 1.07 per cent lead and 1.12 per cent zinc (Geological Survey of Canada Memoir 223, page 34). Recent work (Assessment Report 17657) suggests that there are three more veins present on the claims.

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EMPR AR 1915-K76, 1950-A87, 1955-22
EMPR ASS RPT 9121, 10488, 12240, 13769, 15121, *17657
GSC MEM *223, p.34
GSC OF 2322

DATE CODED: 1991/09/23 CODED BY: RHM FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093M 156**

NATIONAL MINERAL INVENTORY:

NAME(S): **BONNIE**, MARWILL, BON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 18 52 N
LONGITUDE: 127 38 20 W
ELEVATION: 380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 14135.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6130627
EASTING: 586383

COMMODITIES: Silver Gold Lead Zinc

MINERALS

SIGNIFICANT: Galena Sphalerite Tetrahedrite Arsenopyrite
ASSOCIATED: Quartz Siderite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Tuffaceous Sandstone
Greywacke
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1985

COMMODITY	GRADE	
Silver	347.0000	Grams per tonne
Gold	10.3000	Grams per tonne
Lead	8.0700	Per cent
Zinc	4.0800	Per cent

COMMENTS: A 11.7-centimetre section of drill core from hole BON-85-2. Also, 0.05 per cent copper.
REFERENCE: Assessment Report 14135.

CAPSULE GEOLOGY

The Bonnie occurrence is located 8 kilometres north-northeast of Hazelton immediately west of the Silver Standard mine (093M 049).

The property is underlain by clastic sedimentary rocks (tuffaceous sandstone, greywacke and argillite) of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. These are intruded by granodiorite of the Eocene Babine Intrusions.

Diamond drill hole BON-85-2 intersected a 32-centimetre wide quartz vein within which a 11.7-centimetre section assayed 347.0 grams per tonne silver, 10.3 grams per tonne gold, 8.07 per cent lead, 4.08 per cent zinc and 0.05 per cent copper (Assessment Report 14135). Galena, sphalerite, tetrahedrite, arsenopyrite, siderite and pyrite are present.

BIBLIOGRAPHY

EMPR ASS RPT *14135, 18725, 19861, 21261
EMPR OF 1994-14
GSC MEM 223
GSC OF 2322

DATE CODED: 1991/09/24 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/09/24 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 157**

NATIONAL MINERAL INVENTORY:

NAME(S): **TWO MILE CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 19 06 N
LONGITUDE: 127 35 18 W
ELEVATION: 480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from figure 2, Assessment Report 10457.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6131124
EASTING: 589583

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Sphalerite Galena Arsenopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Arkose
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Two Mile Creek occurrence is located 9 kilometres northeast of Hazelton, approximately 400 metres south of Robinson Lake.

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group.

A quartz vein cutting arkose and carrying sphalerite, galena and arsenopyrite has been reported (Assessment Report 10457).

BIBLIOGRAPHY

EMPR ASS RPT 10457
GSC OF 2322

DATE CODED: 1991/09/25 CODED BY: RHM FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093M 158**

NATIONAL MINERAL INVENTORY:

NAME(S): **BARDON**, ANDIMAUL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04W
BC MAP:
LATITUDE: 55 06 19 N
LONGITUDE: 127 58 02 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment report 15260.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6106994
EASTING: 565891

COMMODITIES: Silver Gold Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite Arsenopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION:
STRIKE/DIP: 072/60N
TREND/PLUNGE:
COMMENTS: Quartz veins.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Meta Siltstone
Meta Greywacke
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Nass Depression

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	352.5000	Grams per tonne
Gold	0.7000	Grams per tonne

COMMENTS: Highest values from grab samples. Also, 1 per cent or more lead, zinc, arsenic and antimony.
REFERENCE: Assessment Report 15260.

CAPSULE GEOLOGY

The Bardon group of claims is located on the north side of the Skeena River, 30 kilometres southwest of Hazelton.

The host rocks are metamorphosed Middle Jurassic to Lower Cretaceous Bowser Lake Group clastic sediments (meta-siltstones and meta-greywackes), intruded by medium grained grey granite probably related to the Eocene Babine Intrusions.

Two 1-metre wide quartz veins carrying pyrite, arsenopyrite, sphalerite and galena are exposed in old trenches probably dating to the 1920s or 1930s. The veins strike 072 degrees and dip 60 degrees north.

Grab samples assayed up to 352.5 grams per tonne silver, 0.7 gram per tonne gold and 1.0 per cent or more lead, zinc, arsenic and antimony (Assessment Report 15260).

BIBLIOGRAPHY

EMPR ASS RPT *15260
GSC OF 2322 (#223)

DATE CODED: 1991/09/26
DATE REVISED: 1991/12/30

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 159**

NATIONAL MINERAL INVENTORY:

NAME(S): **NEWMAN NORTH**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01W
BC MAP:
LATITUDE: 55 02 00 N
LONGITUDE: 126 15 54 W
ELEVATION: 715 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Assessment Report 16754.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6101920
EASTING: 674786

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite assumed.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Cretaceous	Skeena	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Unknown

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Newman North showing is located on a point at the west side of Newman Peninsula, 4 kilometres northwest of the Bell mine (093M 001).

The area is underlain by rocks of the Lower Jurassic Telkwa Formation (Hazelton Group) and the Lower Cretaceous Skeena Group. The mineralization is probably genetically related to the Eocene Babine Intrusions.

The showing was discovered and drilled at the same time as the Bell deposit, and although no mineable reserves were developed, one drill hole did encounter grades of between 0.3 and 0.5 per cent copper (Assessment Report 16754). The showing occurs on or near the Newman fault, an important ore control of the deposits in the area.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *16754
EMPR BULL *64
EMPR OF 1997-10
GSC OF 2322
CIM BULL (1974), Vol. 67, no. 742, pp. 110-133.
EMPR BULL 110

DATE CODED: 1991/10/31
DATE REVISED: 1992/02/10

CODED BY: RHM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 160**

NATIONAL MINERAL INVENTORY:

NAME(S): **SPARROWHAWK**, BEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01E
BC MAP:
LATITUDE: 55 04 03 N
LONGITUDE: 126 11 37 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is from Assessment Report 20415.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6105902
EASTING: 679194

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz Magnetite
ALTERATION: Chlorite Carbonate
ALTERATION TYPE: Chloritic Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au D03 Volcanic redbed Cu

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions
Jurassic			Topley Intrusions

LITHOLOGY: Vesicular Basalt
Rhyolite
Greywacke
Argillite
Siltstone
Quartz Monzonite
Biotite Feldspar Porphyry

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Sparrowhawk property is located 7 kilometres north of the Bell mine (093M 001) on the east side of Babine Lake.

West of the north-trending Morrison fault, the volcanic rocks of the Lower Jurassic Telkwa Formation are succeeded by greywackes of the Middle Jurassic Smithers Formation (both of the Hazelton Group) and siltstones of the Middle Jurassic to Lower Cretaceous Bowser Lake Group (Geological Survey of Canada Open File 2322). Pink quartz monzonite of the Jurassic Topley Intrusions and biotite feldspar porphyry of the Eocene Babine Intrusions outcrop on the property. Widespread chlorite and carbonate alteration is evident on the property.

Minor chalcopyrite has been found associated with magnetite veins in altered vesicular basalt and chalcopyrite and bornite occur in a 10-centimetre wide quartz vein cutting rhyolite.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT 2524, 3261, 4250, *20415
EMPR BULL 64
EMPR OF 1997-10
GSC OF 2322
EMPR BULL 110

DATE CODED: 1991/11/07 CODED BY: RHM FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093M 161**

NATIONAL MINERAL INVENTORY:

NAME(S): **KISPIOX RIVER CLAY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 27 45 N
LONGITUDE: 127 44 34 W
ELEVATION: 280 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence R (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6146978
EASTING: 579493

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: B06 Fireclay E07 Sedimentary kaolin

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent	Undefined Group	Undefined Formation	

LITHOLOGY: Clay

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Kispiox River clay occurrence is located on the west bank of the Kispiox River, 24 kilometres north of Hazelton (occurrence R on Geological Survey of Canada Open File 2322).
No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322

DATE CODED: 1991/12/20 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 162**

NATIONAL MINERAL INVENTORY:

NAME(S): **COPPER 1-4**, COPPER, DANNY BOY, DANNY BOY 1-3, PAP

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M01E
BC MAP:
LATITUDE: 55 05 07 N
LONGITUDE: 126 04 02 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is from Assessment Report 16785.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6108211
EASTING: 687179

COMMODITIES: Silver, Lead, Zinc, Copper

MINERALS
SIGNIFICANT: Galena, Sphalerite
ASSOCIATED: Graphite
ALTERATION: Clay
ALTERATION TYPE: Oxidation, Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
DIMENSION: 13 Metres
STRIKE/DIP:
TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Unnamed/Unknown Formation	

LITHOLOGY: Pelitic Sediment/Sedimentary
Arenaceous Sediment/Sedimentary
Limestone
Shale
Quartzite
Andesitic Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	713.7000	Grams per tonne
Lead	23.0000	Per cent
Zinc	13.5000	Per cent

COMMENTS: Highest assay from samples. Sample taken across 10 centimetres of vein and 5 centimetres of wallrock. Less than 0.1 grams per tonne Au.
REFERENCE: Property File - Gold Canyon Resources Inc., Prospectus, 1987.

CAPSULE GEOLOGY

The Copper 1-4 claims are is located 14 kilometres northeast of the Bell Copper mine (093M 001), approximately 2.5 kilometres west of Natowite Lake. The showing was discovered in 1986.

The area is underlain by sedimentary and volcanic rocks comprising limestone, shale, quartzite and andesitic tuff of the Jurassic Hazelton Group (possibly of the Smithers Formation).

An east-northeast striking silver-lead-zinc fissure vein has been exposed for 13 metres along strike in a gravel pit hosted in pelitic and arenaceous sediments. Mineralization consists of galena and sphalerite in pods, veinlets and stringers within a crush and gouge zone. The gouge zone, 10 to 20 centimetres wide, and the host rocks contain some graphite. The wallrock exhibits oxidation and clay development.

The best assay from sampling, taken across 10 centimetres of vein and 5 centimetres of wallrock, assayed 713.7 grams per tonne silver, 23 per cent lead and 13.5 per cent zinc (Property File - Gold

CAPSULE GEOLOGY

Canyon Resources Inc., Prospectus, 1987).

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *16785, 16292
EMPR BULL 64
EMPR OF 1997-10
EMPR PF (Gold Canyon Resources Inc., Prospectus, June, 1987)
GSC OF 2322 (#228)
EMPR BULL 110

DATE CODED:	1991/11/07	CODED BY:	RHM	FIELD CHECK:	N
DATE REVISED:	1992/03/06	REVISED BY:	DEJ	FIELD CHECK:	N

MINFILE NUMBER: **093M 163**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRIDAY GREEN**, FRIDAY 11 FR., FRIDAY, GREEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M08E
BC MAP:
LATITUDE: 55 19 47 N
LONGITUDE: 126 12 41 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Friday 11 claim fraction which is the approximate center of the Friday claims (Assessment Report 3878, Map 1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6135025
EASTING: 676893

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Bowser Lake	Ashman	
Eocene			Babine Intrusions

LITHOLOGY: Biotite Feldspar Porphyry
Mudstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Plutonic Rocks
Bowser Lake RELATIONSHIP:
METAMORPHIC TYPE: Contact
GRADE: Hornfels

CAPSULE GEOLOGY

The Friday Green showing is located on the Friday 11 claim fraction, 90 kilometres east of Hazelton, approximately 6 kilometres northeast of Nakinilerak lake.

Gently dipping mudstones of the Middle to Upper Jurassic Ashman Formation (Bowser Lake Group) are intruded by biotite feldspar porphyry of the Eocene Babine Intrusions.

Minor disseminated chalcopyrite has been found in the biotite feldspar porphyry which has locally hornfelsed the mudstones (Assessment Report 3683). Local fracture-controlled pyrite is found in the hornfelsed mudstones.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT *3683, 3878
GSC OF 2322
EMPR BULL 110

DATE CODED: 1991/11/25
CODED BY: RHM
FIELD CHECK: N
DATE REVISED: 1992/02/11
REVISED BY: DEJ
FIELD CHECK: N

MINFILE NUMBER: **093M 164**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRIDAY RED**, FRIDAY 29, FRIDAY, RED

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M08E
BC MAP:
LATITUDE: 55 20 55 N
LONGITUDE: 126 10 54 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Friday 29 claim (Assessment Report 3878, Map 1).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6137202
EASTING: 678693

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: D03 Volcanic redbed Cu

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Eocene			Babine Intrusions

LITHOLOGY: Amygdaloidal Volcanic
Volcanic Flow
Tuff
Tuff Breccia
Mudstone
Feldspar Porphyry Dike

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

Plutonic Rocks

CAPSULE GEOLOGY

The Friday Red showing is located on the Friday 29 claim, 90 kilometres east of Hazelton and 8 kilometres northeast of Nakinilerak Lake.

Gently dipping green volcanic flows, tuffs, tuff-breccia and minor intercalated mudstones of the Lower Jurassic Telkwa Formation (Hazelton Group) are intruded by a highly magnetic feldspar porphyry dike, possibly related to the Eocene Babine Intrusions.

Very minor amounts of chalcopyrite are disseminated in the matrix of an amygdaloidal unit of the volcanic rocks.

BIBLIOGRAPHY

EM OF 2001-03
EMPR ASS RPT 3683, *3878
EMPR BULL 110
GSC OF 2322

DATE CODED: 1991/11/25 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/01/08 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 165**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOUCHER CREEK A**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M09W
BC MAP:
LATITUDE: 55 34 16 N
LONGITUDE: 126 29 11 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Coal Assessment Report 721, Figure 5.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6161215
EASTING: 658482

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Jurassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Bowser Lake	Trout Creek	

LITHOLOGY: Shale
Carbonaceous Shale
Sandstone
Siltstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Boucher Creek coal occurrences are located on the west side of the Bait Range (Skeena Mountains), 84 kilometres east-northeast of Hazelton.

The coal is hosted in the Upper Jurassic Trout Creek Formation, Bowser Lake Group. The strata are folded into an open, southeast plunging syncline. The Trout Creek Formation (Coal Assessment Report 721) consists of a lower shoreline marine unit, approximately 70 metres thick, overlain by a carbonaceous shale unit approximately 30 metres thick, a coquinal siltstone unit, approximately 5 metres thick, and a sandstone-conglomerate unit, approximately 100 metres thick.

The coal occurs in the upper two units. A 1-metre thick sample contained 2.77 per cent moisture, 68.65 per cent ash, 8.86 per cent volatile matter, 19.72 per cent fixed carbon and 0.25 per cent sulphur (Sample B, Coal Assessment Report 721).

BIBLIOGRAPHY

EMPR COAL ASS RPT *721
GSC OF 2322 (Occurrence A)

DATE CODED: 1991/12/16 CODED BY: RHM FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093M 166**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOUCHER CREEK CENTRAL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M09W
BC MAP:
LATITUDE: 55 32 38 N
LONGITUDE: 126 28 20 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Coal Assessment Report 721, Figure 5.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6158219
EASTING: 659485

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Jurassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Bowser Lake	Trout Creek	

LITHOLOGY: Shale
Carbonaceous Shale
Sandstone
Siltstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Boucher Creek coal occurrences are located on the west side of the Bait Range (Skeena Mountains), 84 kilometres east-northeast of Hazelton.

The coal is hosted in the Upper Jurassic Trout Creek Formation, Bowser Lake Group. The strata are folded into an open, southeast plunging syncline. The Trout Creek Formation (Coal Assessment Report 721) consists of a lower shoreline marine unit, approximately 70 metres thick, overlain by a carbonaceous shale unit approximately 30 metres thick, a coquinal siltstone unit, approximately 5 metres thick, and a sandstone-conglomerate unit, approximately 100 metres thick.

The coal occurs in the upper two units. Two samples representing in excess of one metre of oxidized coal contained 3.74 and 2.86 per cent moisture, 61.16 and 51.07 per cent ash, 14.51 and 19.39 per cent volatile matter, 20.59 and 26.68 per cent fixed carbon and 0.30 and 0.23 per cent sulphur, respectively (Samples BC 1 and 2, Coal Assessment Report 721).

BIBLIOGRAPHY

EMPR COAL ASS RPT *721
GSC OF 2322 (Occurrences A and B)

DATE CODED: 1991/12/16 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/17 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 167**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOUCHER CREEK B**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M09W
BC MAP:
LATITUDE: 55 31 01 N
LONGITUDE: 126 28 26 W
ELEVATION: 1340 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location from Coal Assessment Report 721, Figure 5.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6155218
EASTING: 659489

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Jurassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Jurassic	Bowser Lake	Trout Creek	

LITHOLOGY: Shale
Carbonaceous Shale
Sandstone
Siltstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Boucher Creek coal occurrences are located on the west side of the Bait Range (Skeena Mountains), 84 kilometres northeast of Hazelton.

The coal is hosted in the Upper Jurassic Trout Creek Formation, Bowser Lake Group. The strata are folded into an open, southeast plunging syncline. The Trout Creek Formation consists of a lower shoreline marine unit, approximately 70 metres thick, overlain by a carbonaceous shale unit approximately 30 metres thick, a coquinal siltstone unit, approximately 5 metres thick, and a sandstone-conglomerate unit, approximately 100 metres thick (Coal Assessment Report 721).

The coal is contained in the upper two units. A 8 to 30-centimetre thick seam contained 70.37 per cent ash, 4.32 per cent volatile matter, 23.91 per cent fixed carbon and 0.10 per cent sulphur (Sample H, Coal Assessment Report 721).

BIBLIOGRAPHY

EMPR COAL ASS RPT *721
GSC OF 2322 (Occurrence B)

DATE CODED: 1991/12/16 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/17 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 168**

NATIONAL MINERAL INVENTORY:

NAME(S): **KISPIOX C**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 25 09 N
LONGITUDE: 127 42 11 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location C (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6142203
EASTING: 582094

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Shale
Greywacke
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Kispiox C coal occurrence is located on the west bank of the Kispiox River, approximately 8 kilometres above the junction with the Skeena River.

Host rocks are folded and deformed shales, greywackes and conglomerates of the Lower Cretaceous Kitsuns Creek Formation, Skeena Group.

A 90-centimetre coal seam was observed on the north limb of a faulted anticline, and a second, 60-centimetre thick occurrence was observed on the east bank, slightly higher up. The strata are described as being badly disturbed from the occurrence area to the junction with the Skeena River.

BIBLIOGRAPHY

EMPR P 1986-5, p. 18
GSC MEM *69, pp. 163-167; *223, pp. 93-95
GSC SUM RPT 1909, p. 67; *1911, p. 89-90; 1912, p. 101
GSC BULL *270
GSC P 73-31
GSC OF 2322

DATE CODED: 1991/12/19 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/20 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 169**

NATIONAL MINERAL INVENTORY:

NAME(S): **BIG SLIDE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 26 10 N
LONGITUDE: 127 36 16 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is from Geological Survey of Canada Memoir 223 (1954).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6144209
EASTING: 588298

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Shale
Greywacke
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Big Slide coal occurrence is located on the west bank of the Skeena River approximately 11 kilometres north of the village of Kispiox. A 100-metre slide scarp has exposed several coal seams.

Host rocks are folded and deformed shales, greywackes and conglomerates of the Lower Cretaceous Kitsuns Creek Formation, Skeena Group.

Three analyses were completed on three seams representing 60 to 90-centimetres of bituminous coal. Ash ranges from 18.24 to 27.24 per cent, fixed carbon from 51.26 to 68.34 per cent, volatile matter from 10.33 to 20.43 per cent and moisture from 1.07 to 2.10 per cent (Geological Survey of Canada Summary Report 1911, page 90).

BIBLIOGRAPHY

EMPR P 1986-5, p. 18
GSC MEM *69, pp. 163-167; *223, pp. 93-95
GSC SUM RPT 1909, p. 67; *1911, p. 89-90; *1912, p. 101
GSC BULL *270
GSC P 73-31

DATE CODED: 1991/12/19 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/19 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 170**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKEENA D**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 24 11 N
LONGITUDE: 127 36 43 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location D (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6140521
EASTING: 587897

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Shale
Greywacke
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Skeena D coal occurrence is located on the west bank of the Skeena River, 8 kilometres above the junction with Kispiox Village.

The host rocks are folded and deformed shales, greywackes and conglomerates of the Lower Cretaceous Kitsuns Creek Formation, Skeena Group.

Two seams, generally 0.2 metres to 0.3 metres thick but structurally thickened locally, are present. A representative sample contains 7.6 per cent moisture, 30.9 per cent ash, 19.0 per cent volatile matter and 42.5 per cent fixed carbon (Geological Survey of Canada Memoir 223 (1954), page 133).

BIBLIOGRAPHY

EMPR P 1986-5, p. 18
GSC MEM 69, pp. 163-167; *223, pp. 93-95
GSC BULL *270
GSC P 73-31
GSC OF 2322

DATE CODED: 1991/12/19 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/19 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 171**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKEENA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 21 41 N
LONGITUDE: 127 40 24 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Geological Survey of Canada Summary Report 1911, page 90.

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6135809
EASTING: 584098

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Shale
Greywacke
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Skeena coal occurrence is reported to occur on the west side of the Skeena River, 2.4 kilometres above the junction with the Kispiox River.

The host rocks are folded and deformed shales, greywackes and conglomerates of the Lower Cretaceous Kitsuns Creek Formation, Skeena Group.

Analysis of a specimen yielded 1.65 per cent moisture, 22.86 per cent volatile matter, 50.2 per cent fixed carbon and 25.47 per cent ash (Geological Survey of Canada Summary Report 1911).

BIBLIOGRAPHY

EMPR P 1986-5, p. 18
GSC MEM *69, pp. 163-167; *223, pp. 93-95
GSC SUM RPT 1909, p. 67; *1911, p. 89-90; 1912, p. 101
GSC BULL *270
GSC P 73-31
GSC OF 2322

DATE CODED: 1991/12/19
DATE REVISED: 1991/12/19

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 172**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHEGUNIA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 22 32 N
LONGITUDE: 127 38 57 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location E (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6137415
EASTING: 585599

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Shale
Greywacke
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Shegunia coal occurrence is located on the east bank of the Skeena River, 3 to 5 kilometres above the junction with the Shegunia River (Geological Survey of Canada Memoir 223 and Summary Report 1909).

The host rocks are folded and deformed shales, greywackes and conglomerates of the Lower Cretaceous Kitsuns Creek Formation, Skeena Group.

Three coal seams are exposed which range from 0.6 to 1.6 metres in thickness. Analysis of the two thickest seams are as follows: 20.92 to 21.62 per cent ash, 57.29 to 58.20 per cent fixed carbon, 18.76 to 20.63 per cent volatile matter and 1.18 to 1.42 per cent moisture (Geological Survey of Canada Summary Report 1909).

BIBLIOGRAPHY

EMPR P 1986-5, p. 18
GSC MEM *69, pp. 163-167; *223, pp. 93-95
GSC SUM RPT *1909, p. 67; 1911, p. 89; 1912, p. 101
GSC BULL *270
GSC P 73-31
GSC OF 2322

DATE CODED: 1991/12/19
DATE REVISED: 1991/12/19

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 173**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHEGUNIA G**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 20 49 N
LONGITUDE: 127 39 41 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location G (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6134216
EASTING: 584886

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Shale
Greywacke
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

The Shegunia G occurrence is located on the Shegunia River 1 kilometre east of the junction with the Skeena River.

The host rocks are folded and deformed shales, greywackes and conglomerates of the Lower Cretaceous Kitsuns Creek Formation, Skeena Group.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC MEM *223, pp. 93-95
GSC OF 2322

DATE CODED: 1991/12/19 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1991/12/19 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 174**

NATIONAL MINERAL INVENTORY:

NAME(S): **SEDIESH CREEK SLATE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M12E
BC MAP:
LATITUDE: 55 30 30 N
LONGITUDE: 127 37 39 W
ELEVATION: 460 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Industrial mineral occurrence S (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6152216
EASTING: 586680

COMMODITIES: Slate Shale

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Metamorphic Industrial Min.
TYPE: R01 Cement shale R02 Expanding shale

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Slate
Sandstone
Siltstone
Shale
Polymictic Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Sediesh Creek Slate occurrence is located at approximately the 460 metre elevation on the south side of Sediesh Creek, 29 kilometres north of Hazelton.

The area is underlain by the Lower Cretaceous Kitsuns Creek Formation (Skeena Group) which consists of sandstone, siltstone, shale, polymictic conglomerate, coal and carbonaceous sediments.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322

DATE CODED: 1991/12/23 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/01/21 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 175**

NATIONAL MINERAL INVENTORY:

NAME(S): **BAIT RANGE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M09W
BC MAP:
LATITUDE: 55 33 13 N
LONGITUDE: 126 25 15 W
ELEVATION: 1460 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #201, located in the Bait Range (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6159420
EASTING: 662686

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic	Hazelton	Nilkitkwa	

LITHOLOGY: Tuffaceous Argillite
Shale
Siltstone
Greywacke
Tuff
Breccia
Limestone
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

An unnamed Pb-Zn occurrence (#201) is located in the Bait Range, 86 kilometres east of Hazelton (Geological Survey of Canada Open File 2322).

The area is underlain by the Lower to Middle Jurassic Nilkitkwa Formation, Hazelton Group. The Nilkitkwa Formation consists of marine tuffaceous argillite, shale, siltstone, greywacke, ash and lapilli tuff, ash-flow rhyodacite tuff, basaltic tuff and breccia, minor limestone, conglomerate and sharpstone conglomerate.

The showing is shown as being a vein or a fracture-controlled occurrence. No other information is available.

BIBLIOGRAPHY

GSC OF *2322 (#201)

DATE CODED: 1991/12/23 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 176**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT TEEGEE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M09W
BC MAP:
LATITUDE: 55 32 10 N
LONGITUDE: 126 16 40 W
ELEVATION: 1880 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #203, located on Mount Teegee (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6157818
EASTING: 671784

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Andesite
Basalt
Dacite
Rhyolite
Tuff
Flow
Breccia
Volcaniclastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

An unnamed copper occurrence (#203) is located on Mount Teegee, 94 kilometres east of Hazelton (Geological Survey of Canada Open File 2322).

The showing is hosted in volcanic rocks of the Lower Jurassic Telkwa Formation, Hazelton Group. Lithologies are submarine andesitic calc-alkaline volcanics, including basalt, andesite, dacite and rhyolite flows, breccia, lapilli and ash tuff, and intercalated volcaniclastic sediments.

No other information is available.

BIBLIOGRAPHY

GSC OF *2322 (#203)

DATE CODED: 1991/12/23
DATE REVISED: 1992/02/11

CODED BY: RHM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 177**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILLO**, WILLO 1, SHEGUNIA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 20 51 N
LONGITUDE: 127 37 47 W
ELEVATION: 300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Willo 1 claim (Assessment Report 8199).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6134317
EASTING: 586893

COMMODITIES: Silver, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Galena, Sphalerite, Chalcopyrite, Arsenopyrite
ASSOCIATED: Pyrite, Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	
Eocene			Babine Intrusions

LITHOLOGY: Granite Porphyry
Siltstone
Sandstone
Carbonaceous Shale

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks, Overlap Assemblage
PHYSIOGRAPHIC AREA: Nass Depression

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1980
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	11.0000	Grams per tonne
Copper	0.2200	Per cent
Lead	0.5200	Per cent
Zinc	0.1600	Per cent

COMMENTS: A 5-centimetre wide chip sample from a 7.5 centimetre wide vein with pyrite, pyrrhotite and minor chalcopyrite, galena and sphalerite.
REFERENCE: Assessment Report 8199.

CAPSULE GEOLOGY

The Willo occurrence is located on Shegunia Creek, 10.5 kilometres north of Hazelton.

The host rock is a north-trending sill-like body of granite porphyry which appears to be one of the Eocene Babine Intrusions (Geological Survey of Canada Open File 2322). The intrusive body cuts siltstone, sandstone and carbonaceous shale of the Lower Cretaceous Kitsuns Creek formation (Skeena Group).

Narrow fracture zones, up to 15 centimetres in width, contain pyrrhotite, pyrite and very minor chalcopyrite, galena, sphalerite and arsenopyrite.

A 5-centimetre wide sample of one vein assayed less than 1 gram per tonne gold, 11 grams per tonne silver, 0.22 per cent copper, 0.52 per cent lead and 0.16 per cent zinc (Assessment Report 8199).

BIBLIOGRAPHY

EMPR ASS RPT *8199
GSC OF 2322 (#215)

DATE CODED: 1991/12/23
DATE REVISED: 1991/12/30

CODED BY: RHM
REVISED BY: RHM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 178**

NATIONAL MINERAL INVENTORY:

NAME(S): **COLLINS LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 21 18 N
LONGITUDE: 127 35 07 W
ELEVATION: 400 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #218, located south of Collins Lake (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6135208
EASTING: 589694

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Conglomerate
Sandstone
Siltstone
Shale
Argillite
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

An unnamed lead-zinc occurrence (#218) is located south of Collins Lake, 13 kilometres northeast of Hazelton (Geological Survey of Canada Open File 2322).

The area is underlain by the Middle Jurassic to Lower Cretaceous Bowser Lake Group which consists of interbedded, epiclastic feldspathic and volcanic conglomerate, sandstone, siltstone, shale and argillite with minor coal and carbonaceous units.

No other information is available.

BIBLIOGRAPHY

GSC OF *2322 (#218)

DATE CODED: 1991/12/30
DATE REVISED: 1992/02/11

CODED BY: RHM
REVISED BY: DEJ

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 179**

NATIONAL MINERAL INVENTORY:

NAME(S): **SIX MILE CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M05E
BC MAP:
LATITUDE: 55 16 15 N
LONGITUDE: 127 32 00 W
ELEVATION: 250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #221, located near Six Mile Creek (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6125910
EASTING: 593184

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Sandstone
Shale
Siltstone
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Bowser Lake Overlap Assemblage

CAPSULE GEOLOGY

An unnamed copper occurrence (#221) is located near Six Mile Creek, 9 kilometres east of Hazelton (Geological Survey of Canada Open File 2322).

The area is underlain by clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group and the Lower Cretaceous Kitsuns Creek Formation, Skeena Group. The units are in fault contact and consist of sandstone, conglomerate, siltstone shale, coal and carbonaceous sediments.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#221)

DATE CODED: 1991/12/30
DATE REVISED: 1992/02/11
CODED BY: RHM
REVISED BY: DEJ
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 180**

NATIONAL MINERAL INVENTORY:

NAME(S): **BLUNT MOUNTAIN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M03W
BC MAP:
LATITUDE: 55 13 48 N
LONGITUDE: 127 17 45 W
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #233, located on Blunt Mountain (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6121710
EASTING: 608383

COMMODITIES: Silver Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Sandstone
Siltstone
Argillite
Shale
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

An unnamed silver-lead-zinc occurrence (#233) is located on the northwest side of Blunt Mountain, 24 kilometres east of Hazelton (Geological Survey of Canada Open File 2322).
The showing is documented as a silver-lead-zinc vein or fracture-controlled occurrence hosted in Middle Jurassic to Lower Cretaceous Bowser Lake Group rocks. These consist of epiclastic sediments including sandstone, siltstone, shale, argillite, conglomerate and minor coal and carbonaceous units.
No other information is available.

BIBLIOGRAPHY

GSC OF *2322 (#233)
WWW http://www.infomine.com/

DATE CODED: 1991/12/31 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 181**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHENISMIKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M11W
BC MAP:
LATITUDE: 55 40 15 N
LONGITUDE: 127 28 32 W
ELEVATION: 460 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #236, near Shenismike Creek north of the Babine River (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6170499
EASTING: 595879

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Sandstone
Siltstone
Shale
Argillite
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

A lead-zinc showing (#236) is located north of the Babine River, 50 kilometres north of Hazelton (Geological Survey of Canada Open File 2322).

The showing is documented as a vein or fracture-related occurrence hosted in Middle Jurassic to Lower Cretaceous Bowser Lake Group sedimentary rocks. These consist of epiclastic sediments including sandstone, shale, siltstone, argillite, conglomerate and minor coal and carbonaceous units.

No other information is available.

BIBLIOGRAPHY

GSC OF *2322 (#236)

DATE CODED: 1991/12/31 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 182**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHEGISTIC**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M12E
BC MAP:
LATITUDE: 55 39 30 N
LONGITUDE: 127 36 58 W
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #240 (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6168922
EASTING: 587067

COMMODITIES: Silver, Lead, Zinc, Antimony

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Sandstone
Shale
Siltstone
Argillite
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

The Shegistic showing (#240) is located near Shegistic Creek, 43 kilometres north of Hazelton (Geological Survey of Canada Open File 2322).

The showing is documented as a vein or fracture-related silver-lead-zinc-antimony occurrence hosted in the Middle Jurassic to Lower Cretaceous Bowser Lake Group sedimentary rocks. These consist mainly of epiclastic sedimentary rocks including sandstone, shale, siltstone, argillite, conglomerate, coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#240)

DATE CODED: 1991/12/31
DATE REVISED: 1992/02/11
CODED BY: RHM
REVISED BY: DEJ
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093M 183**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHEDIN CREEK WEST**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M12E
BC MAP:
LATITUDE: 55 42 31 N
LONGITUDE: 127 37 20 W
ELEVATION: 425 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #238, located west of Shedin Creek (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6174510
EASTING: 586571

COMMODITIES: Silver Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Sandstone
Siltstone
Shale
Argillite
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

A silver-lead-zinc occurrence is shown on Geological Survey of Canada Open File 2322 as being located on the north side of the Babine River, approximately 1 kilometre west of Shedin Creek, 51 kilometres north of Hazelton.

The area is underlain by the Middle Jurassic to Lower Cretaceous Bowser Lake Group, which is composed predominantly of epiclastic sedimentary rocks and includes sandstone, shale, siltstone, argillite, conglomerate, coal and carbonaceous units.

The showing is documented as a vein or fracture-controlled occurrence. No other information is available.

BIBLIOGRAPHY

GSC OF *2322 (#238)

DATE CODED: 1992/01/02 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 184**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHEDIN CREEK EAST**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M12E
BC MAP:
LATITUDE: 55 42 40 N
LONGITUDE: 127 35 42 W
ELEVATION: 425 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #237, located east of Shedin Creek (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6174822
EASTING: 588276

COMMODITIES: Silver Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Sandstone
Shale
Siltstone
Argillite
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

A silver-lead-zinc occurrence is shown on Geological Survey of Canada Open File 2322 as being located on the north side of the Babine River, approximately 1 kilometre east of Shedin Creek, 52 kilometres north of Hazelton.

The area is underlain by the Middle Jurassic to Lower Cretaceous Bowser Lake Group sedimentary rocks. These predominantly comprise epiclastic sedimentary rocks and includes sandstone, shale, siltstone, argillite, conglomerate, coal and carbonaceous units.

The showing is documented as a vein or fracture-controlled occurrence. No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#237)

DATE CODED: 1992/01/02 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 185**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT THOEN RANGE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06E
BC MAP:
LATITUDE: 55 22 36 N
LONGITUDE: 127 11 07 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #243, located on the west side of the Mount Thoen Range (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6138207
EASTING: 614988

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake Plutonic Rocks
PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

A lead-zinc occurrence (#243) is shown on Geological Survey of Canada Open File 2322 as being located on the west side of the Mount Thoen Mountain Range, 35 kilometres east-northeast of Hazelton.

The deposit is shown as a vein or fracture-related occurrence hosted in Late Cretaceous Bulkley Intrusions which are mainly granodiorite in composition. Biotite from the Mount Thoen Intrusion has been dated at 63 million years (Geological Survey of Canada Open File 2322). The intruded rocks are clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group.

BIBLIOGRAPHY

GSC OF *2322 (#243)

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 186**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHICAGO CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04E
BC MAP:
LATITUDE: 55 12 32 N
LONGITUDE: 127 41 34 W
ELEVATION: 425 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #244, located southwest of New Hazelton near Chicago Creek (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6118816
EASTING: 583184

COMMODITIES: Silver Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Sandstone
Siltstone
Conglomerate
Argillite
Shale
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Bowser Lake
PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

An unnamed silver-lead-zinc occurrence (#244) is shown on Geological Survey of Canada Open File 2322 as being located four kilometres southwest of New Hazelton near Chicago Creek.

The showing is documented as being a vein or fracture-related occurrence hosted in a small stock of the Late Cretaceous Bulkley Intrusions and in Upper Jurassic to Lower Cretaceous Bowser Lake Group sedimentary rocks. The Bulkley Intrusions are mainly granodiorite in composition, and the Bowser Lake Group sedimentary rocks are mainly sandstone, siltstone, shale, conglomerate and argillite and minor coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#244)

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 187**

NATIONAL MINERAL INVENTORY:

NAME(S): **BURDICK CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M04W
BC MAP:
LATITUDE: 55 12 45 N
LONGITUDE: 127 52 07 W
ELEVATION: 600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #245, located on Burdick Creek (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6119022
EASTING: 571989

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Sandstone
Siltstone
Shale
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

An unnamed lead-zinc occurrence (#245) is shown on Geological Survey of Canada Open File 2322 as being located on Burdick Creek, twelve kilometres southwest of Hazelton.

The showing is documented as a vein or fracture-related occurrence hosted in the Lower Cretaceous Kitsuns Creek Formation, Skeena Group. The Kitsuns Creek Formation consists of sandstone, siltstone, shale, conglomerate, coal and carbonaceous sediments.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#245)

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 188**

NATIONAL MINERAL INVENTORY:

NAME(S): **SICINTINE RANGE 1**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W
BC MAP:
LATITUDE: 55 58 17 N
LONGITUDE: 127 17 32 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #246, located in the Sicintine Range (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6204212
EASTING: 606583

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Sandstone
Siltstone
Shale
Argillite
Conglomerate
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Bowser Lake

CAPSULE GEOLOGY

A molybdenum occurrence (#246) is shown on Geological Survey of Canada Open File 2322 as being located in the Sicintine Range, 84 kilometres north-northeast of Hazelton.

The showing is documented as a porphyry-type occurrence hosted in Late Cretaceous Bulkley Intrusions which are mainly granodiorite in composition. The Bulkley Intrusions intrude clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. These are mainly sandstone, siltstone, shale, conglomerate, argillite and minor coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#246)

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/01/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 189**

NATIONAL MINERAL INVENTORY:

NAME(S): **SICINTINE RANGE 2**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14W 093M14E
BC MAP:
LATITUDE: 55 57 26 N
LONGITUDE: 127 15 11 W
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #247, located in the Sicintine Range (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6202696
EASTING: 609067

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Sandstone
Siltstone
Shale
Conglomerate
Argillite
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Bowser Lake

CAPSULE GEOLOGY

A molybdenum occurrence (#247) is shown on Geological Survey of Canada Open File 2322 as being located in the Sicintine Range, 83 kilometres north-northeast of Hazelton.

The showing is documented as a porphyry-type occurrence hosted in Late Cretaceous Bulkley Intrusions which are mainly granodiorite in composition. The Bulkley Intrusions intrude clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. These comprise mainly sandstone, siltstone, shale, conglomerate, argillite with minor coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#247)

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/01/06 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 190**

NATIONAL MINERAL INVENTORY:

NAME(S): **SICINTINE RANGE 3**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14E
BC MAP:
LATITUDE: 55 56 20 N
LONGITUDE: 127 13 07 W
ELEVATION: 1550 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #248, located in the Sicintine Range (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6200711
EASTING: 611270

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	
Upper Cretaceous			Bulkley Intrusions

LITHOLOGY: Granodiorite
Sandstone
Siltstone
Shale
Conglomerate
Argillite
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Skeena Ranges
TERRANE: Plutonic Rocks Bowser Lake

CAPSULE GEOLOGY

A molybdenum occurrence (#248) is shown on Geological Survey of Canada Open File 2322 as being located in the Sicintine Range, 82 kilometres north-northeast of Hazelton.

The showing is documented as a porphyry-type occurrence hosted in Late Cretaceous Bulkley Intrusions which are mainly granodiorite in composition. The Bulkley Intrusions intrude clastic sedimentary rocks of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. These comprise mainly sandstone, siltstone, shale, conglomerate, argillite with minor coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#248)

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 191**

NATIONAL MINERAL INVENTORY:

NAME(S): **SICINTINE RANGE 4**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M14E
BC MAP:
LATITUDE: 55 53 15 N
LONGITUDE: 127 12 18 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Occurrence #249, located in the Sicintine Range (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6195015
EASTING: 612268

COMMODITIES: Lead Zinc

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Sandstone
Siltstone
Shale
Conglomerate
Argillite
Coal
Carbonaceous Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

An unnamed lead-zinc occurrence (#249) is shown on Geological Survey of Canada Open File 2322 as being located in the Sicintine Range, 77 kilometres north-northeast of Hazelton.

The showing is documented as a vein or fracture-controlled occurrence hosted in the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The Bowser Lake Group is composed mainly of clastic sediments including sandstone, shale, siltstone, argillite and conglomerate with minor coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322 (#249)

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 192**

NATIONAL MINERAL INVENTORY:

NAME(S): **FIFTEEN MILE CREEK COAL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 18 47 N
LONGITUDE: 127 23 35 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Unnamed coal occurrence, located on Fifteen Mile Creek (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6130805
EASTING: 601987

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Jurassic-Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Sandstone
Shale
Conglomerate
Siltstone
Argillite
Carbonaceous Sediment/Sedimentary
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

An unnamed coal occurrence is shown on Geological Survey of Canada Open File 2322 on Fifteen Mile Creek, 20 kilometres east-northeast of Hazelton.

The area is underlain by moderately-dipping, folded clastic sedimentary strata of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The Bowser Lake Group consists of sandstone, shale, conglomerate, siltstone, argillite with minor coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/01/21 REVISED BY: RHM FIELD CHECK: N

MINFILE NUMBER: **093M 193**

NATIONAL MINERAL INVENTORY:

NAME(S): **EIGHTEEN MILE CREEK COAL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M06W
BC MAP:
LATITUDE: 55 17 42 N
LONGITUDE: 127 19 28 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Unnamed coal occurrence east of Eighteen Mile Creek, 23 kilometres east of Hazelton (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6128899
EASTING: 606390

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Jurassic-Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Bowser Lake	Undefined Formation	

LITHOLOGY: Sandstone
Shale
Conglomerate
Siltstone
Argillite
Carbonaceous Sediment/Sedimentary
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Bowser Lake

PHYSIOGRAPHIC AREA: Skeena Ranges

CAPSULE GEOLOGY

An unnamed coal occurrence is shown on Geological Survey of Canada Open File 2322 as being located east of Eighteen Mile Creek, 23 kilometres east-northeast of Hazelton.

The area is underlain by moderately-dipping, folded clastic sedimentary strata of the Middle Jurassic to Lower Cretaceous Bowser Lake Group. The Bowser Lake Group consists of sandstone, shale, conglomerate, siltstone, argillite with minor coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322

DATE CODED: 1992/01/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 194**

NATIONAL MINERAL INVENTORY:

NAME(S): **STERITT CREEK COAL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093M12E
BC MAP:
LATITUDE: 55 30 54 N
LONGITUDE: 127 39 44 W
ELEVATION: 370 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Unnamed coal occurrence north of Sterritt Creek (Geological Survey of Canada Open File 2322).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6152915
EASTING: 584473

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Skeena	Kitsuns Creek	

LITHOLOGY: Carbonaceous Sediment/Sedimentary
Sandstone
Shale
Siltstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Nass Depression

CAPSULE GEOLOGY

An unnamed coal occurrence is shown on Geological Survey of Canada Open File 2322 as being located north of Sterritt Creek, 29 kilometres north of Hazelton.

The area is underlain by moderately east-dipping clastic sedimentary strata of the Lower Cretaceous Kitsuns Creek Formation (Skeena Group). The strata consist of sandstone, shale, conglomerate and siltstone with minor coal and carbonaceous units.

No other information is available on the occurrence.

BIBLIOGRAPHY

GSC OF *2322

DATE CODED: 1991/02/06 CODED BY: RHM FIELD CHECK: N
DATE REVISED: 1992/02/11 REVISED BY: DEJ FIELD CHECK: N

MINFILE NUMBER: **093M 195**

NATIONAL MINERAL INVENTORY:

NAME(S): **MR**, TORK

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093M02E
BC MAP:
LATITUDE: 55 11 19 N
LONGITUDE: 126 40 59 W
ELEVATION: 1062 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Area of drilling west of Babine Lake, about 64 kilometres east of the community of Hazelton (Assessment Report 22462).

MINING DIVISION: Omineca
UTM ZONE: 09 (NAD 83)
NORTHING: 6118229
EASTING: 647501

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcocite Bornite Silver
ASSOCIATED: Calcite Quartz
ALTERATION: Carbonate Malachite Azurite
ALTERATION TYPE: Carbonate Oxidation
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins
DIMENSION: 300 x 50 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Zone of copper-silver mineralization.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Hazelton	Smithers	

LITHOLOGY: Feldspathic Fossiliferous Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1995
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	35.0000	Grams per tonne
Copper	0.1900	Per cent

COMMENTS: Over 33 metres.
REFERENCE: P. Wojdak, personal communication, 1995.

CAPSULE GEOLOGY

Ralph Keefe found the MR showing in 1990, supported by an MEMPR prospector grant. A zone of copper-silver mineralization 300 metres long and up to 50 metres wide exposed in a clear-cut, was explored by trenching and drilling (14 holes) by Equity Silver Mines in 1991-92.

Hostrocks are feldspathic and fossiliferous sandstone, identified as Smithers Formation of the Upper Triassic-Middle Jurassic Hazelton Group, that is fractured, carbonate altered and mineralized with finely disseminated chalcocite, bornite and traces of native silver. Mineralization is evidenced by secondary malachite and azurite; primary mineralization is so difficult to recognize that reclaimed trenches were re-opened by Equity to extend sampling.

The most distinctive feature is dull brown (iron-) carbonate alteration. Vugs in the fracture zone are partially filled with calcite and chalcedonic quartz. The zone strikes northeast, as do the hostrocks, but is interpreted to dip steeply compared to the moderate northwest dip of the strata. Difficulty in correlating drill and trench intercepts may be due to later faults (P. Wojdak, personal communication, 1995).

Drillhole intercepts are lower grade than trench assays (e.g. 0.43 per cent copper, 74 grams per tonne silver over 16.5 metres in a trench versus 0.19 per cent copper, 35 grams per tonne silver over 33 metres in a diamond-drill hole) suggesting surface enrichment. One

CAPSULE GEOLOGY

high grade drill intercept (3.65 per cent copper and 195.7 grams per tonne silver over 2.84 metres) merits more work. Mineralization is extensive but unusual and generally low grade.

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GSC OF 2322

DATE CODED: 1995/08/17 CODED BY: GO FIELD CHECK: Y
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093N 001**
NATIONAL MINERAL INVENTORY: 093N13 Cu1

NAME(S): **MISTY**, FORE, KAY

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N13E
BC MAP:
LATITUDE: 55 54 57 N
LONGITUDE: 125 30 49 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is for the centre of drill activity where El Paso Mining established the Misty copper reserves (as shown on Figure 7, Assessment Report 21307). Located approximately 56 kilometres north-northwest of Takla Landing.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6199567
EASTING: 342910

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Bornite
ASSOCIATED: Magnetite Quartz
ALTERATION: Chlorite K-Feldspar Malachite
ALTERATION TYPE: Chloritic Potassic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein Stockwork
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
SHAPE: Tabular
MODIFIER: Fractured Faulted
DIMENSION: 500 x 170 x 11 Metres
STRIKE/DIP:
TREND/PLUNGE: 135/
COMMENTS: Dimensions and trend are for the mineralized fault zone outlined by El Paso Mining and Milling Company.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex
Middle Jurassic			Duckling Creek Syenite Complex

LITHOLOGY: Hornblende Biotite Gneiss
Hornblende Monzonite
Syenite Dike
Orthoclase Vein
Syenite
Pegmatite Dike
Pegmatite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks
Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist

INVENTORY
ORE ZONE: MISTY
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1973
QUANTITY: 3000000 Tonnes

COMMODITY	GRADE	
Copper	0.6000	Per cent

COMMENTS: Possible reserves.
REFERENCE: CIM Special Volume 15 (1976), Table 1, No. 95.

CAPSULE GEOLOGY

The Misty occurrence is situated within the Swannell Ranges (Omineca Mountains) near the headwaters of Duckling Creek, approximately 56 kilometres north-northeast of Takla Landing. The area was originally acquired by Kennco Explorations Ltd. in 1948, but it was not until 1960 that extensive surface exploration occurred. In the early 1970s, El Paso Mining and Milling Company carried out geological mapping, geochemical and geophysical surveys and diamond and rotary drilling which successfully outlined a significant zone of

CAPSULE GEOLOGY

copper mineralization. The ground surrounding this zone is currently controlled by Aranlee Resources Ltd.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. Peto (1971) recognized 17 distinct plutonic varieties on the basis of mineralogical, textural and field relation criteria. Garnett (1978) subdivided the southern Hogem batholith into three distinct phases. Phase I rocks, chemically divided into the Hogem granodiorite and the Hogem basic suite, yield potassium/argon dates ranging from 176-212 Ma (Late Triassic to Middle Jurassic). Rocks forming Phase II Duckling Creek and Chuchi syenite complexes yield potassium/argon dates within the limits 162-182 Ma (Middle Jurassic). Dates from Phase III granite range from 108-126 Ma (Early Cretaceous).

Mineral occurrences comprising the Misty developed prospect occur within strongly foliated rocks of the Duckling Creek Syenite Complex. The complex is elongated in a northwesterly direction and contains both intrusive and migmatized rock units showing considerable compositional diversity. Three main rock types are recognized on the property: hornblende monzonite, syenite and pegmatite. These rock types show much variation in texture and are gradational from one to the other. The hornblende monzonite unit is the most common lithology, texturally grading from medium grained to pegmatitic and displaying moderate to intense foliation. The development of gneissic banding is very common. In some areas the monzonite shows evidence of magma cumulate differentiation with the development of mafic and ultramafic fractions. The syenite varies from fine grained to pegmatitic in texture and generally occurs as dikes crosscutting the hornblende monzonite. The pegmatite unit consists of feldspar (85 per cent) and hornblende (15 per cent) and predominantly occurs as dikes cutting the two other lithologies.

Disseminated chalcopyrite, pyrite and minor bornite occur in small amounts throughout most of the foliated rocks. The best mineralization appears to occur in the more intensely foliated rocks showing chlorite and potassium feldspar alteration together with fracturing and faulting.

The preliminary copper inventory outlined by El Paso Mining and Milling Company between 1970 and 1973 occurs within a northwesterly trending fault zone cutting a strongly chloritized, potassium feldspar-altered, hornblende biotite gneiss phase within the hornblende monzonite. The mineralized zone is 500 metres long, averages 11 metres wide and extends to a depth of at least 170 metres. Mineralization comprises disseminated sulphide phases, principally chalcopyrite and pyrite, with veinlets of chalcopyrite and pyrite common along the contact margins of crosscutting syenite dikes and orthoclase veins. The best mineralized sections within the hornblende biotite gneiss are associated with these dikes and veins, as well as potassium feldspar and chlorite alteration and strong foliation, faulting and fracturing. These more intensely altered and mineralized sections show an enriched magnetite content relative to the less altered, less foliated surrounding rock. Possible reserves are 3 million tonnes grading 0.6 per cent copper (CIM Special Volume 15 (1976), Table 1, No.95).

Recent work in the area has outlined two areas of significant mineralization differing from that outlined by El Paso. Three and one half kilometres north of El Paso's Misty deposit, malachite-stained syenite boulders were found to be anomalous in gold and silver, the best sample (BM 505514) assaying 6.83 grams per tonne gold, 243.09 grams per tonne silver and 18.6 per cent copper (Assessment Report 21307, page 13). Two kilometres to the northwest at the Perretts Cliff showing (093N 220), a polymetallic vein was recently discovered assaying high in gold and silver.

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GSC MAP 844A; 907A; 971A; 1424A

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/23 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 002**

NATIONAL MINERAL INVENTORY: 093N14 Cu2

NAME(S): **LORRAINE**, LORREX, BLUE RIDGE, UPPER MAIN, LOWER MAIN, BISHOP, ECKLAND, WEBER, NORTH CIRQUE, JAJAY

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 55 40 N
LONGITUDE: 125 26 27 W
ELEVATION: 1768 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of mineralized zone, 4.5 kilometres north of the west fork of Duckling Creek and 60 kilometres northeast of Takla Landing (Bulletin 70, Figure 15).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6200733
EASTING: 347504

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite Chalcocite Covellite
ASSOCIATED: Magnetite Epidote Aegirine Augite Nepheline
ALTERATION: Biotite Chlorite K-Feldspar Sericite Epidote Magnetite Malachite Azurite
COMMENTS: Also limonite and cuprite.
ALTERATION TYPE: Potassic Sericitic Propylitic Oxidation
MINERALIZATION AGE: Middle Jurassic
ISOTOPIC AGE: 175 +/- 5 Ma DATING METHOD: Potassium/Argon MATERIAL DATED: Biotite pyroxenite

DEPOSIT

CHARACTER: Disseminated Stockwork Vein Shear
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 900 x 240 x 70 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Date is for pyroxenite and should be considered a minimum for the intrusion and a maximum for the sulphide mineralization. Deposit dimension measured roughly off Figures 1, 3 and 4 (CIM Volume 15).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Duckling Creek Syenite Complex
ISOTOPIC AGE: 175 +/- 5 Ma			
DATING METHOD: Potassium/Argon			
MATERIAL DATED: Biotite pyroxenite			
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Syenite Migmatite
Syenite
Granite Dike
Monzonite
Pyroxenite
Diorite
Syenite Feldspar Porphyry
Meta Volcanic

HOSTROCK COMMENTS: Mineralization is in phase I monzodiorite of Duckling Creek Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Quesnel

INVENTORY

ORE ZONE: LORRAINE REPORT ON: Y

CATEGORY: Indicated YEAR: 1998
QUANTITY: 31900000 Tonnes

COMMODITY	GRADE	
Silver	4.7000	Grams per tonne
Gold	0.1700	Grams per tonne
Copper	0.6600	Per cent

COMMENTS: Likely indicated.
REFERENCE: T. Schroeter, personal communication, 1998.

INVENTORY

ORE ZONE: UPPER MAIN REPORT ON: Y

CATEGORY: Inferred YEAR: 1973
QUANTITY: 4500000 Tonnes

COMMODITY	GRADE	
Gold	0.3400	Grams per tonne
Copper	0.7500	Per cent

COMMENTS: Possible reserves, using a 0.4 per cent copper cutoff grade.
REFERENCE: Canadian Mining and Metallurgy Special Volume 15, page 397.

ORE ZONE: LOWER MAIN REPORT ON: Y

CATEGORY: Inferred YEAR: 1973
QUANTITY: 5500000 Tonnes

COMMODITY	GRADE	
Gold	0.1000	Grams per tonne
Copper	0.6000	Per cent

COMMENTS: Possible reserves, using a 0.4 per cent copper cutoff grade.
REFERENCE: Canadian Mining and Metallurgy Special Volume 15, page 397.

CAPSULE GEOLOGY

The Lorraine developed prospect is situated in the Swannell Ranges (Omineca Mountains) near the headwaters of Duckling Creek. Malachite mineralization coating several fault-line cliffs near the base of what now is known as the Upper zone was apparently known to local natives for many years before being shown to prospectors during the first World War.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. Garnett (1978) subdivided the southern Hogem batholith into three distinct phases: I) Late Triassic-Middle Jurassic Hogem granodiorite and Hogem basic suite, II) Middle Jurassic Duckling Creek and Chuchi Syenite complexes and III) Early Cretaceous granite. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

The deposit is hosted within rocks assigned to the Middle Jurassic Duckling Creek Syenite Complex, although rocks representing all three intrusive phases are present in the area. The complex forms a northwesterly trending, roughly elliptical body approximately 5 kilometres wide and 32 kilometres long. Rocks in the complex vary considerably in texture, mafic content and specific mineralogy, but have been subdivided into two main divisions: 1) pink holofelsic syenite, varying in texture from aplitic to pegmatitic and 2) pink, fine to medium-grained syenite migmatite. Copper mineralization (with or without gold), consisting predominantly of disseminated chalcopyrite and bornite, occurs in the mafic-rich portions of foliated syenite migmatite adjacent to the northeast contact of the complex with Phase I monzonite.

The Lorraine deposit consists of two fault-bound mineralized zones (greater than 0.25 per cent copper), referred to as the Upper Main and Lower Main zones. The Upper zone is well exposed and deeply weathered, whereas the Lower zone is concealed and relatively unweathered. The Upper zone consists of one continuous mineralized body; the Lower zone comprises several smaller bodies. Both zones occur in distinctly orange-coloured, foliated syenite migmatite that contains metasomatized relicts of pyroxenite, diorite, monzonite and finely banded, possibly metavolcanic basement rocks. Aplitic to pegmatitic leucocratic syenite and syenite feldspar porphyry form dikes and sills which are younger than the syenite migmatite. Aplitic to pegmatitic leucocratic granite dikes occur throughout the Upper zone. The dikes parallel well-developed, northeasterly trending, nearly vertical fractures and were emplaced after the period of sulphide enrichment.

A potassium-argon age determination using potassium-feldspathized biotite pyroxenite from the Lower zone yielded an age of 175 +/- 5 Ma (Bulletin 70, Appendix 1). This is considered to indicate the minimum age of the syenitic intrusion and the maximum age of the sulphide mineralization (Canadian Institute of Mining and Metallurgy Special Volume 15).

The mineralized zones parallel the westerly trend of the foliated migmatite. Erratic mineralized lenses in the Lower zone are controlled by steeply dipping foliation. However, in overall shape, the zones have the appearance of slabs with moderate westerly dips.

CAPSULE GEOLOGY

Thus, the mineralized zones appear to form lenticular bodies that plunge gently west. Taken as one deposit, the Lorraine has a total length of about 900 metres, an average surficial width of about 240 metres and an average thickness (depth) of about 70 metres (measured from figures 1,3 and 4, Canadian Institute of Mining and Metallurgy, Special Volume 15, pages 398-399).

In the Upper zone, significant copper mineralization appears to be confined to a narrow slab enclosed by relatively unmineralized syenite migmatite. Although the Upper zone has been isolated from the Lower zone by faulting, sulphide deposition in both zones seems to be related to migmatite emplacement.

Three steeply dipping fracture patterns can be distinguished in the general region. The most prominent pattern strikes approximately 285 degrees and is the youngest fracture system. It cuts northeast trending dikes and fractures. The northeast fracture system strikes from 050 to 075 degrees and is the next most prominent set. A third fracture set strikes north.

Numerous faults disrupt and segregate mineralized segments within the Lower zone. Local faults appear to be related to a major north-trending lineament west of the deposit. Although most mineralization is disseminated, primary sulphides are found less commonly on fractures, and some faults are loci for high-grade zones. However, the major fracture patterns cut the mineralization and offset the youngest dikes.

The best mineralized sections contain disseminated chalcopyrite and bornite, although sulphide-bearing veinlets and fracture-fillings are also present. The Lower zone consists entirely of primary sulphides, erratically distributed in mafic-rich lenses in the syenite migmatite. Within individual lenses, there is a mineral zonation from an outer rim of chalcopyrite with minor pyrite, through a zone of chalcopyrite with minor bornite into a core of bornite with minor chalcopyrite. Magnetite is common in veinlets and stringers and as an accessory mineral throughout the zone.

Although the Upper zone has similar primary sulphide content, mineralization is more homogeneous and the syenite migmatite has less mafic streaking. In addition, the Upper zone is highly oxidized and malachite, azurite, chalcocite, covellite, cuprite and limonite have been recognized.

In 2002 new mapping has divided the Duckling Creek Complex (DCC) into two distinct phases, and in doing so has reassigned mafic portions previously thought to be old, to phase one of the younger DCC. Phase one consists of feldspathic biotite pyroxenites, mela syenites, and the host for the mineralization, the monzo-syenite. Alkaline minerals such as pseudoleucite, nepheline, melanite, aegerine, augite are noted. Phase two is mainly leucocratic syenites and megacrystic porphyries dikes. The alteration includes strong potassic calc silicate assemblages followed by minor propylitic or sericitic alteration. Scarce, younger, potash feldspar and quartz veins cut rock. The mineralization in the main zone consists of disseminated copper sulphides and minor veinlets. The minerals are chalcopyrite and bornite and minor pyrite. Abundant secondary minerals may include magnetite and hematite, as well as the typical copper alteration minerals. The minor net textured sulphides are thought to have formed as a result of infiltration (EMPR Geofile 2003-6).

In both zones, the copper mineralization (from 0.25 to 2.0 per cent) is associated with high biotite and chlorite content, potash feldspathization, pervasive sericitization, and the presence of accessory epidote and magnetite.

The first claims on Lorraine Mountain were made by prospectors in 1931. Consolidated Mining and Smelting Company Limited acquired the property in 1943 but allowed the claims to lapse in 1947. Later in 1947, a predecessor to Kennecott staked the property. By 1949 they had mapped the surface of the Main Zone and completed five diamond drill holes. In 1961, the property was enlarged and geochemical and geophysical surveys were completed along with two diamond drill holes. Granby Mining Corporation then optioned the property from 1970 to 1973. They also enlarged the property and conducted soil and rock sampling, trenching, mapping, 3992 metres of diamond drilling and 2,470 metres of percussion drilling on the Main Zone. Further work and more drilling was completed in 1990 and 1993 by Kennecott after the property had been dormant for 15 years. This work discovered the Bishop Zone (093N 066). Lysander, in 1994, drilled a total of 1,221.4 metres in ten holes. Seven holes were drilled on Bishop Zone and three holes in the western part of Upper Zone.

Subsequent to the 1994 drilling, five adjacent Boot-Steele claims of 20 units each were optioned in order to protect both the southeastern extension of the Bishop Zone and other prospects near

CAPSULE GEOLOGY

the presently known Lorraine deposits. The Boot 6 claim was later added in the Boot-Steele option. Recognizing the importance of the Jajay Ring structure led to Lysander's optioning the Dorothy and Steelhead properties and staking the PAL claims in 1996 in order to protect the area of the Jajay Ring.

Indicated potential (possible) reserves based on work by Kennco Explorations and Granby Mining Company through 1976 for the Upper zone are 4.5 million tonnes grading 0.75 per cent copper and 0.34 gram per tonne gold. Similar reserves for the Lower zone are 5.5 million tonnes grading 0.6 per cent copper and 0.10 gram per tonne gold. A 0.4 per cent copper cutoff grade was used for both calculations (Canadian Institute of Mining and Metallurgy Special Volume 15, page 397).

In 1995, with Explore B.C. Program support, Lysander Gold Corporation diamond drilled 26 holes totalling 3843.53 metres. Twenty-three holes totalling 2903 metres were drilled on the Upper Main zone and proved that the mineralization is more extensive and extends deeper than previously recognized. Two holes were drilled on the Bishop zone but intersected only barren pyroxenite, confirming the previously held view that the Bishop zone has been displaced by faulting near the property boundary. One hole was drilled on Jeno Ridge near showings of high grade copper and precious metals indicating that these showings contain significant amounts of precious metals and copper. Overall, the highlights of the 1995 program are the proof that mineralization in the Upper Main zone occurs as steeply dipping irregular masses with considerable vertical extent, not as a gently west-dipping slab as previously held. The program also indicated that mineralized talus below the Upper Main zone contains important amounts of copper. Several other zones such as Eckland, Weber, North Cirque and others remain to be drill tested (Explore B.C. Program 95/96 - M86).

A modest drilling program of 10 holes in 1996 tested extensions of the Upper main zone at depth, the southward extension of the Bishop zone by 300 metres, the potential for higher grades gold mineralization in the Eckland zone and the North Cirque zone. Hole 96-44 assayed 1.49 per cent copper over 32.2 metres, open to depth (1997 Cordilleran Roundup Abstracts, page 39). Three holes were drilled in 1997. Hole 97-47 cut a 64-metre section averaging 0.58 per cent copper and 0.24 grams per tonne gold (Exploration in BC 1997, page 28).

Additional geochemical surveys also occurred in 1997, 1999 and 2000.

Resources, likely indicated, for Lorraine are 31.0 million tonnes grading 0.66 per cent copper, 0.17 grams per tonne gold and 4.7 grams per tonne silver (T. Schroeter, personal communication, 1998).

In October 2000, Eastfield Resources Ltd. announced its agreement to option the Lorraine-Jajay property from Lysander. Easfield has the potential to earn a 75 per cent interest in the property. In the late fall of 2000, Eastfield had completed and initial diamond drilling program on the MacKenzie zone, ll kilometres south of the Lorraine deposits. Eastfield Resources continued drilling in 2001 which has further extended the Lower Main and Upper Main zones.

Drillhole 2001-60 intercepted 133 metres grading 0.76 per cent copper and 0.48 gram per tonne gold. Drilling in early 2002 resulted in a 51 metre intercept in drillhole 2002-62 of 0.89 per cent copper and 0.61 gram per tonne gold (Press Release, June 18, 2002).

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PR REL Lysander Gold Corporation, Sept.14, 1995; Nov.7, 1996; June 18, 2002; Eastfield Resources Ltd., June 18, July 3, 2002; Eastfield Resources Ltd., Aug.12, Sept.16, Dec.19, 2002
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DATE CODED: 2000/03/27 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 2000/03/27 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 003**

NATIONAL MINERAL INVENTORY: 093N14 Cu4

NAME(S): **JENO**, BM, JAJAY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 54 24 N
LONGITUDE: 125 25 14 W
ELEVATION: 1895 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a pod of massive bornite on a north-facing cliff face, about 2.5 kilometres south-southeast of the Lorraine occurrence (093N 002) and 59 kilometres northeast of Takla Landing (Assessment Report 21992, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6198339
EASTING: 348688

COMMODITIES: Copper, Gold, Silver, Palladium, Platinum

MINERALS

SIGNIFICANT: Chalcopyrite, Bornite
ALTERATION: Malachite, Garnet
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Shear
CLASSIFICATION: Hydrothermal, Epigenetic, Porphyry
TYPE: L03 Alkalic porphyry Cu-Au
COMMENTS: The mineralized pods are up to 15 centimetres thick and are restricted to a 10 to 15 metre strike length.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Megacrystic Syenite
Mafic Syenite
Monzonite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY	GRADE	
Silver	276.0000	Grams per tonne
Gold	14.4000	Grams per tonne
Copper	10.0000	Per cent
Palladium	1.8650	Grams per tonne

COMMENTS: Grab sample 114301.
REFERENCE: Assessment Report 21992, page 21.

CAPSULE GEOLOGY

The Jeno occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 2.5 kilometres south-southeast of the Lorraine occurrence (093N 002) and 59 kilometres northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

In the immediate area of the occurrence, medium-grained, strongly foliated, mafic syenite is in contact with light grey

CAPSULE GEOLOGY

coloured megacrystic syenite comprising up to 8 centimetres long, variably foliated potassium feldspar phenocrysts in a medium-grained groundmass. These rocks likely belong to the Middle Jurassic Duckling Creek Syenite Complex, one phase of the Hogem Intrusive Complex.

Early reports (circa 1949) describe the occurrence as comprising chalcopyrite, bornite and malachite hosted by fine-grained, pink syenite or monzonite exposed in a northwesterly trending outcrop 30 metres long by up to 8 metres wide. A chip sample across 2.1 metres reportedly assayed 3.24 per cent copper (Assessment Report 21992, page 10).

Recent reports describe copper-rich pods up to 15 centimetres thick occurring in a vertically dipping east-west fracture near the contact of the mafic and megacrystic syenite units. The pods contain semimassive bornite, lesser chalcopyrite and abundant malachite stains and appear to be restricted to a 10 to 15-metre strike length.

One grab sample from the outcrop assayed 14.4 grams per tonne gold, 276 grams per tonne silver, 1.865 grams per tonne palladium and nearly 10 per cent copper (Assessment Report 21992, page 21). Better results were obtained from local float samples. Values of up to 0.58 gram per gonne platinum are reported from bornite-rich breccia (www.eastfield/group.com).

The BM (Jeno) zone was explored by Lysander Minerals Corp. in 1999 as part of the Jajay property which includes the Lorraine (093N 002). Eastfield Resources Ltd. optioned the Jajay in late 2000.

Petrographic studies indicate that garnet and pyroxene with interstitial bornite and exsolved chalcopyrite, as well as fresh biotite clinopyroxenite with interstial sulphides (Bornite and chalcopyrite) magnetite and apatite both suggests a orthomagmatic origin for the sulphides. One sample, not located, is said to carry 19 grams per tonne gold, 680 ppb, and 3.460 ppm Palladium (Geofile 2002-2).

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EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 98-103
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
WWW www.eastfieldgroup.com/eastfield
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/21 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 004**

NATIONAL MINERAL INVENTORY:

NAME(S): **JO 30**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12E
BC MAP:
LATITUDE: 55 39 01 N
LONGITUDE: 125 43 20 W
ELEVATION: 1710 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample RE-0072, near the headwaters of Quartzite Creek about 25 kilometres northeast of Takla Landing (Assessment Report 12547, Figure 5).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170518
EASTING: 328714

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Psilomelane
COMMENTS: Black manganese oxide mineral may be psilomelane.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Skarn
TYPE: K04 Au skarn

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Phyllite
Cherty Argillite
Andesite Flow
Andesite Tuff
Limestone
Felsite
Aplite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek
Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Regional
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	2.8500	Grams per tonne

COMMENTS: Grab sample (RE-0072) of mineralized skarn.
REFERENCE: Assessment Report 12547, page 7.

CAPSULE GEOLOGY

The Jo 30 occurrence is situated near the headwaters of Quartzite Creek, approximately 25 kilometres northeast of Takla Landing. The showing was located in 1983 during a regional exploration program carried out in the Vital Range.

The upper Quartzite Creek area is underlain by intercalated phyllite, cherty argillite, andesitic flows and tuff, and minor limestone all assigned to the Carboniferous to Jurassic Cache Creek Complex. These units strike north to northwest, with predominantly steep westerly dips. Bedding and foliation are parallel to subparallel and both large and small-scale folds are widespread. Evidence suggests that the rocks have undergone greenschist facies metamorphism.

Locally, small, often lenticular masses of grey, rusty weathering felsitic and white to pink aplitic intrusions have been emplaced into the Cache Creek Complex members.

CAPSULE GEOLOGY

Minor skarn(?) mineralization developed around one such intrusion was observed to host chalcopyrite, pyrite and manganese oxide (psilomelane?) as well as quartz veinlets. A grab sample (RE-0072) of this material assayed 2.85 grams per tonne gold (Assessment Report 12547). Two other samples of similar mineralization yielded only background precious metals.

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EMPR ASS RPT *12547, 14791
EMPR EXPL 1983-465; 1986-C373
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1992/09/23 CODED BY: DMN FIELD CHECK: Y
DATE REVISED: 1993/03/03 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 005**

NATIONAL MINERAL INVENTORY: 093N14 Cu6

NAME(S): **ATO**, RONDAH, DUCK, DUKE, RHONDA, DOREL, JAJAY

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 54 48 N
LONGITUDE: 125 17 30 W
ELEVATION: 1555 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for diamond-drill hole P-70-1, near the headwaters of Rhondah Creek, about 20 kilometres northeast of Old Hogem and 40 kilometres west-northwest of Germansen Landing (Assessment Report 21000, Figures 2 & 3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6198807
EASTING: 356768

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite Bornite Magnetite
ALTERATION: K-Feldspar Pyrite Amphibole Biotite
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Undefined Formation	
Middle Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzonite Dike
Pyroxene Porphyry
Diorite
Monzodiorite
Monzonite
Syenite
Mafic Intermediate Volcanic Flow
Crystal Ash Tuff
Limestone
Dolomite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Quesnel

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1970
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.5100	Per cent

COMMENTS: Sample across a 54.9-metre interval from diamond-drill hole P-70-1.
REFERENCE: Assessment Report 21912, page 2.

CAPSULE GEOLOGY

The Ato occurrence is situated in the Swannell Ranges (Omineca Mountains), approximately 20 kilometres northeast of Old Hogem and 40 kilometres west-northwest of Germansen Landing. Interest in the area began in 1962 when high-grade copper float was discovered in Rhondah Creek, a small north-flowing tributary to Wasi Creek.

The Rhondah Creek area straddles the contact between mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex and volcanic and sedimentary rocks of the Middle Triassic-Lower Jurassic Takla Group. The plutonic rocks form

CAPSULE GEOLOGY

an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

The Hogem Intrusive Complex is represented here by diorite, monzodiorite, monzonite and syenite, the latter belonging to the Middle Jurassic Duckling Creek Syenite Complex. The emplacement of this late magmatic alkalic phase appears to have resulted in a strong metasomatic overprint on the older intrusions. The syenite also appears to be spatially and genetically associated with sulphide mineralization in the area. Takla Group rocks include basic to intermediate volcanic flows with associated crystal and ash tuffs, limestone, dolomite and chert. These rocks are cut by dikes in the area of the contact and occur as xenoliths within the intrusive complex.

Porphyry copper mineralization is confined to a contact zone marked by coincident geochemical and magnetic anomalies, potassium feldspar-rich dikes and stringers and syenitic fracture fillings crosscutting both the intrusion and volcanic hostrocks near the headwaters of Rhondah Creek. The mineralization is in the form of fracture-hosted veinlets and associated disseminations of chalcopyrite, bornite, pyrite and magnetite. Pervasive potassium feldspathization is evident around the contact. A pyritic halo also occurs on the volcanic side of the contact, structurally above the copper mineralization.

Five holes (P-70-1 to 5) drilled to test coincident geochemical/geophysical anomalies in the area of the original discovery intersected copper mineralization predominantly occurring in a feldspathized monzonite dike cutting altered Takla Group pyroxene porphyry. Pyrite, chalcopyrite and minor bornite were reported to be spatially associated with mafic alteration minerals (amphibole and biotite) and potassium feldspar-enriched zones. Pyrite and magnetite with rare chalcopyrite were also noted in the altered volcanics adjacent to the dike. The best results were from a 54.9-metre wide interval in hole P-70-1 which assayed 0.51 per cent copper (Assessment Report 21912, page 2). Subsequent percussion drilling and trenching in the area intersected only low-grade copper mineralization.

Measured geological reserves have been reported at 9,072,000 tonnes at 0.7 per cent copper (1971) but could not be confirmed (Energy, Mines and Resources Mineral Bulletin MR 223).

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EMPR GEM 1970-185; *1971-203-210,213; 1971-213; 1972-455
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR MAP 9
EMR MP CORPFILE (Tyee Lake Resources Ltd.)
GSC MEM 252, pp. 98-103
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
CIM Special Vol. 15 (1976) Map B, #337; Vol. 67, No. 749, pp. 101-106
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EMR MIN BULL MR 223 B.C. 257

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/27 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 006**

NATIONAL MINERAL INVENTORY:

NAME(S): **KC**, KWANIKA, VALLEAU

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11E
BC MAP:
LATITUDE: 55 31 08 N
LONGITUDE: 125 08 36 W
ELEVATION: 1350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample 359284H on the banks of an east-flowing creek, approximately 51 kilometres east of Takla Landing and 40 kilometres southwest of Germansen Landing (Assessment Report 19868, Figure 13).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6154622
EASTING: 364680

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Malachite Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION:
STRIKE/DIP: 162/45W
TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Hornblende Diorite
Hornblende Gabbro
Pyroxenite
Diorite
Hornblendite
Quartz Monzonite
Monzodiorite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range in age fron Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0530	Per cent

COMMENTS: Sample of pyrite and chalcopyrite-bearing quartz veins.
REFERENCE: Assessment Report 19868, page 11.

CAPSULE GEOLOGY

The KC showing occurs at the contact between two intrusive phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The older phase is a composite mafic body referred to as the Valleau Creek Complex (Open Files 1993-3, 4). It is comprised of hornblende gabbro, pyroxenite, hornblende diorite, fine grained to porphyritic diorite and hornblendite. Its strong linear nature to the south near Valleau Creek with a coincident aeromagnetic high suggests a strong structural control on emplacement and is probably Late Triassic to Early Jurassic in age. Early Jurassic monzodiorite and quartz monzonite of the Hogem Intrusive Complex cuts the Valleau Creek Complex at its northern extension.

A 30-centimetre wide rusty quartz vein striking 162 degrees and dipping 45 degrees southwest, occurs in fractured hornblende diorite. A rock sample collected in 1992 (Open File 1993-4) yielded no

CAPSULE GEOLOGY

anomalous values. Previous assessment work reports pyrite and chalcopyrite-bearing quartz veins and stringers at the same locality that assayed 530 ppm copper and 107 ppm zinc (Assessment Report 19868, page 11). The diorite is locally limonitic and malachite stained.

The area was assessed by Noranda Exploration in the early 1970s (see San, 093N 102) and by Westmin Mines in 1990.

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EMPR OF 1993-3; *4
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Placer Dome File

DATE CODED: 1992/11/05 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/02/26 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 007**

NATIONAL MINERAL INVENTORY: 093N14 Cu7

NAME(S): **DOROTHY**, ELDOR, DUCKLING NO. 4 GROUP, ELIZABETH, JAJAY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 53 07 N
LONGITUDE: 125 20 15 W
ELEVATION: 1350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a copper showing, 750 metres east of Duckling Creek and 42 kilometres west-northwest of Germansen Landing (Assessment Report 20938, Figure 3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6195781
EASTING: 353799

COMMODITIES: Copper, Molybdenum, Zinc, Lead, Gold

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite, Covellite, Pyrrhotite, Molybdenite, Sphalerite, Galena
COMMENTS: Only minor bornite, covellite, pyrrhotite, molybdenite, sphalerite and galena were reported.
ASSOCIATED: Magnetite
ALTERATION: Chlorite, Epidote, Silica
ALTERATION TYPE: Chloritic, Epidote, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Stockwork
CLASSIFICATION: Porphyry, Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Microdiorite
Diorite
Quartz Diorite
Pyroxenite
Quartz Plagioclase Dike
Feldspar Porphyry Dike
Basaltic Andesitic Tuff
Basaltic Andesitic Volcanic Breccia
Pegmatite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range in age from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks, Quesnel

CAPSULE GEOLOGY

The Dorothy occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 15 kilometres northeast of Old Hogem and 41 kilometres west-northwest of Germansen Landing. The area first became of interest in the late 1940s when copper-bearing float was discovered on the slopes east of Duckling Creek.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Late Triassic to Early Jurassic rocks of the Hogem granodiorite and basic suite dominate in the area of the Dorothy occurrence. The intrusions vary compositionally from diorite to quartz diorite, although pyroxenite outcrops are quite widespread. These rocks intrude volcanics assigned to the Takla Group to the east and south. These rocks consist of dark green tuff and volcanic breccia of

CAPSULE GEOLOGY

basaltic to andesitic composition, interbedded with flow rocks and commonly cut by pyroxenite and feldspar porphyry dikes.

The occurrence is exposed at an elevation of approximately 1350 metres in a series of east-west trenches located uphill from the mineralized float. The host microdiorite is a finely crystalline dark grey to green, somewhat foliated unit characterized by weak chlorite and epidote alteration and abundant accessory magnetite. It appears to have been hornfelsed as a result of later intrusive activity, resulting in a fine biotitic foliation. Gneissosity striking 080 to 090 degrees and dipping steeply south has also been noted in a few outcrops. Finely disseminated pyrite and chalcopyrite locally comprise over 10 per cent of the rock. The zone extends 500 metres north and 200 metres east-west.

A 91-metre wide quartz plagioclase dike also strikes northerly across the area. The dike varies from aplitic near its margins to medium grained towards the centre and reportedly hosts minor disseminated pyrite. Narrow stringers of pegmatite cut both the dike and diorite in outcrops to the north.

Dioritic talus and bedrock exposed in early trenches reportedly hosted irregularly disseminated grains, blebs and small stringers of chalcopyrite and pyrite with minor bornite, covellite, pyrrhotite, molybdenite, sphalerite and galena. The chalcopyrite reportedly occurred sparsely in the more pyritic, quartz-rich diorite. Drilling determined that the copper mineralization occurred in irregularly silicified areas within the diorite, and that they had little continuity in either strike or dip. The average grade of a few drill sections as much as 15 metres long reportedly varied from 0.5 to 1.0 per cent copper (Geology, Exploration and Mining in British Columbia 1971, page 215).

The nearby Elizabeth showing (093N 074) was examined by Lysander Minerals Corp. in 1999 as part of its Jajay property. Eastfield Resources Ltd. optioned the Jajay property in 2001. See Lorraine (093N 002) for details.

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EMPR AR 1949-A98-A102; 1951-118; 1961-116; 1962-134
EMPR ASS RPT 73, 366, 432, 511, 513, 3855, *20938
EMPR BULL 70
EMPR GEM *1971-203-210,214; 1972-455
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Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/22 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 008** NATIONAL MINERAL INVENTORY: 093N11 Hg1

NAME(S): **BRALORNE TAKLA**, BRALORNE TAKLA MERCURY MINE, TAKLA MERCURY, SB

STATUS: Past Producer Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N11W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 34 07 N NORTHING: 6160663
LONGITUDE: 125 23 26 W EASTING: 349266
ELEVATION: 1087 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for the "B" showings, near the divide between Silver and West Kwanika creeks, northwest of several small unnamed lakes, 37 kilometres east-northeast of Takla Landing (Geological Survey of Canada Memoir 252, page 157).

COMMODITIES: Mercury

MINERALS
SIGNIFICANT: Cinnabar
ASSOCIATED: Calcite Carbonate Pyrite Quartz Clay
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Breccia Stockwork Disseminated
CLASSIFICATION: Epigenetic Hydrothermal Replacement
TYPE: E01 Almaden Hg I08 Silica-Hg carbonate
SHAPE: Irregular
MODIFIER: Fractured
DIMENSION: 152 x 76 x 6 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Orebody at "B" showings.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Limestone
Argillite
Slate
Chert
Schist

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carbonaceous to Jurassic while the Hogem Intrusive Complex has been dated as Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek Plutonic Rocks
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

CAPSULE GEOLOGY

The Bralorne Takla mercury mine is situated near the divide between Silver and West Kwanika creeks, approximately 37 kilometres east-northeast of Takla Landing. Cinnabar mineralization was first located in the area by Bralorne Mines, Limited in July 1942. Exploration culminated with over 1800 metres of diamond drilling that winter.

The area is underlain by interbedded limestone, argillite, slate, chert and derived schist assigned to the Carboniferous to Jurassic Cache Creek Complex. Dark grey, massive limestone is the most common member outcropping in the vicinity of the mine. The argillaceous and siliceous strata strike 330 degrees, dip 60 to 80 degrees to the southwest, and occur predominantly in a band 183 metres wide. The Pinchi fault zone traverses the area from north to south and is marked by widespread brecciation of the sediments.

East of the fault zone, Late Triassic to Early Cretaceous Hogem Intrusive Complex rocks dominate and intrude Middle Triassic to Lower Jurassic Takla Group volcanic rocks.

Numerous subsidiary faults are evident in limestone, both on the surface and underground. Their attitudes are variable, but the dominant faults strike northwest to northeast and dip steeply west. Fault displacements are unknown. Along and near the faults, the limestone has been brecciated across zones 0.3 to 6 metres or more in width. The breccia fragments are cemented with buff-coloured

CAPSULE GEOLOGY

ankeritic carbonate. Solution cavities, up to a metre wide, are common and partly to completely filled with coarsely crystalline calcite. Gouge seams up to 0.6 metre wide and slickensided surfaces mark many of the faults. More than one period of movement is evident, and some of the faults carry veinlets of calcite.

Two areas of cinnabar mineralization, the "A" and "B" showings, are situated approximately 304 metres apart and occur in brecciated limestone. The intervening area is mostly drift covered. The "B" showing has been developed by underground workings where mercury was recovered from an orebody approximately 152 by 76 by 6 metres.

Cinnabar is found in brecciated limestone near faults and fractures. The best ore is found closest to the faults. The cinnabar occurs as veinlets, blebs and individual grains filling minute fissures, and in places forms the breccia cement. It is also evident in solution cavities and as coatings on cleavage planes and the faces of calcite crystals. Limestone wallrock has been partly replaced by cinnabar, especially where it is finely fractured. Minor pyrite is also evident. Coarsely crystalline, pre-cinnabar calcite occurs along fault planes and fills solution cavities while veinlets of post-cinnabar calcite intersect the ore. Very little quartz has been observed in the ore and, apart from a few crystals in open cavities, most is fine grained.

The "B" showings occur along or in the vicinity of two major parallel faults, approximately 36 metres apart. While both strike 015 degrees, one dips 65 degrees northwest and the other nearly vertically. The faults are marked by as much as 3 metres of gouge, clay and breccia. On both faults, the hangingwalls have apparently moved north and down relative to the footwall rocks. Many branching faults and fractures are subsidiary to the major faults; the more pronounced strike is approximately 345 degrees. As fracture intensity decreases away from the faults, cinnabar mineralization also decreases. The resultant orebodies are very irregular in outline.

Two sets of faults have also been recognized at the "A" showings. These strike approximately 030 degrees and 300 degrees respectively. The northwest-striking fault dips approximately 55 degrees southwest and hosts the principal cinnabar mineralization. All the faults are marked by intensely brecciated limestone.

Production from the "B" showings orebodies started in November 1943 and continued to September 1944, when mining ceased. During nine months of operation, 59,914 kilograms of mercury were recovered from 10,206 tonnes of milled ore from the two largest orebodies (Geological Survey of Canada Memoir 252, page 157).

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EMPR BULL 70
EMPR MAP 65 (1989)
EMPR OF 1992-1; 2000-33
EMR MP CORPFILE (Bralorne Pioneer Mines Ltd.)
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, pp. 157-160
GSC P 42-7; 44-5; 45-6; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/30 REVISED BY: GO FIELD CHECK: Y

MINFILE NUMBER: **093N 009** NATIONAL MINERAL INVENTORY: 093N11 Ag1

NAME(S): **LUSTDUST**, TAKLA SILVER, KAY, A.G., KENO

STATUS: Developed Prospect Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N11W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 33 57 N NORTHING: 6160406
LONGITUDE: 125 24 52 W EASTING: 347749
ELEVATION: 1425 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for an adit on a ridge between Silver and West Kwanika creeks, 1.5 kilometres west of the Bralorne Takla mercury mine (093N 008), 35 kilometres east-northeast from Takla Landing (Assessment Report 7059, Figure 7).

COMMODITIES: Silver, Zinc, Lead, Gold, Antimony, Copper

MINERALS

SIGNIFICANT: Sphalerite, Pyrite, Arsenopyrite, Stibnite, Jamesonite, Andorite, Tetrahedrite, Tennantite, Chalcopyrite, Miargyrite, Twinnite, Zinkenite, Galena, Realgar
ASSOCIATED: Quartz, Carbonate, Calcite, Dolomite, Garnet
COMMENTS: Also beudantite.
ALTERATION: Limonite, Calc-Silicate, Covellite, Valentinite, Scorodite, Beudantite, Anglesite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Podiform, Shear
CLASSIFICATION: Replacement, Hydrothermal, Epigenetic, Skarn
TYPE: J01 Polymetallic manto Ag-Pb-Zn, I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Cylindrical
MODIFIER: Faulted, Sheared
DIMENSION: 76 x 61 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: No. 1 zone orebody; 1.5 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Mesozoic			Glover Stock

LITHOLOGY: Limestone, Marble, Phyllite, Argillite, Chert, Chloritic Schist, Feldspar Porphyry Dike, Greywacke, Mafic Tuff, Quartz Monzonite

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic. Preliminary U-Pb dating of zircons yielded an Eocene age between 51-52 million yrs

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek Plutonic Rocks
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: NO. 4 REPORT ON: Y

CATEGORY: Indicated YEAR: 1968
QUANTITY: 74110 Tonnes

COMMODITY	GRADE	
Silver	27.7000	Grams per tonne
Gold	3.2000	Grams per tonne
Zinc	6.6000	Per cent

REFERENCE: Northern Miner - February 12, 1970.

INVENTORY

ORE ZONE: NO. 3 REPORT ON: Y

CATEGORY: Indicated YEAR: 1968
QUANTITY: 233124 Tonnes

COMMODITY	GRADE	
Silver	63.1000	Grams per tonne
Gold	2.4000	Grams per tonne
Zinc	1.5000	Per cent

COMMENTS: Before dilution.
REFERENCE: Northern Miner - February 12, 1970.

ORE ZONE: NO. 1 REPORT ON: Y

CATEGORY: Indicated YEAR: 1968
QUANTITY: 19684 Tonnes

COMMODITY	GRADE	
Gold	4.4500	Grams per tonne

COMMENTS: Indicated reserves for three combined ore shoots.
REFERENCE: Property File - Campbell, 1968.

CAPSULE GEOLOGY

The Lustdust occurrence is situated on a ridge west of the divide between Silver and West Kwanika creeks, approximately 35 kilometres east-northeast of Takla Landing. The showings were originally staked as the Kay group of claims in 1944. In 1992, Alpha Gold Corp. conducted trenching and drilled 2500 metres in 10 holes.

The area is underlain by Carboniferous-Jurassic Cache Creek Complex (Group) rocks comprised of an interbedded sequence of highly deformed chert, phyllite, argillite, local greywacke beds and discontinuous bodies of limestone and metavolcanic rock. To the east, the Pinchi fault zone separates Cache Creek rocks from the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

In the immediate area of the developed prospect, Cache Creek Complex rocks consisting of massive limestone (marble) and interbedded argillite, phyllite, chert and several chloritic schist horizons predominate. The rocks are isoclinally folded, sheared and faulted, and are intruded by feldspar porphyry dikes striking subparallel to bedding. Irregular monzonitic plugs also occur locally. Foliation (and bedding, where observed) generally strikes north-northwest and dips moderately to steeply west. The foliation is interpreted to be an axial plane feature developed in relation to isoclinal folding overturned to the east. The dominant structural features are north-northwest striking faults and shear zones that are subparallel to foliation. Most of the known mineralization is on or closely related to fault and shear zones and in structures that branch off or trend parallel to the main fractures/shears. Feldspar porphyry dikes commonly occupy the faults and shears and are locally mineralized. A number of cross faults are evident and predominantly strike 050 to 060 degrees.

Mineralization at the Lustdust property occurs in quartz-carbonate veins in and along steeply dipping fault/shear zones which strike parallel, or at a very low angle to foliation (No. 1 and 2 zones). Sulphide mineralization also occurs in gossan zones adjacent to faults (No. 3 zone) and as massive lenses within an interbedded sequence of limestone and metasediments (No. 4 zone).

In the No. 1 and 2 zones, quartz-carbonate vein-like bodies ranging from 0.9 to 3 metres wide, but averaging 1.5 to 2.1 metres wide, occur in a steep fault along a limestone-chloritic schist contact. Gangue mineralogy includes altered wallrock and gouge. The principal sulphides are sphalerite, pyrite, arsenopyrite, stibnite and jamesonite. The veining also extends into the wallrocks, well removed from the main mineralization. Surface sampling, drilling and underground development suggest that the dimensions of the No. 1 zone orebody are 76 by 61 by 1.5 metres. Indicated reserves for three combined ore shoots (Portal, Middle and North) are 19,684 tonnes grading 802.15 grams per tonne silver, 2 per cent lead and 4.45 grams per tonne gold (Property File - Campbell, 1968).

The No. 2 zone is 244 metres north of the No. 1 zone and has been exposed by trenches spaced over 61 metres of strike length. Samples have assayed from 102.84 to 685.6 grams per tonne silver, 3 to 12 per cent lead and 1 to 3 per cent zinc across widths of 0.6 to 1.8 metres (Property File - Campbell, 1968).

Two extensive, complex fault/shear zones (No. 3 and 4 zones) lie 800 metres north-northwest of the No. 1 zone. Both zones are expressed on the surface as dark maroon and orange earthy gossan (limonite). The No. 3 zone is 670 metres north-northwest of the No. 1 zone and is a lens-shaped area of gossan, 122 by 30 metres, which

CAPSULE GEOLOGY

lies along the footwall side of a steeply west-dipping fault. Drilling has indicated that the primary sulphides are pyrite and arsenopyrite with minor sphalerite and galena. The zone appears to have developed on a limestone-chloritic schist contact. Drilling has indicated that the No. 3 zone extends at least 48 metres in depth and dips 60 degrees west. Sludge samples from drilling assayed 3.4 to 6.8 grams per tonne gold, 34.28 to 171.4 grams per tonne silver and up to 4 per cent zinc (Property File - Campbell, 1968, page 14). Drilling and trenching resulted in an inferred reserve of about 907,000 tonnes, mostly as oxide material. No overall grade was reported.

The No. 4 zone is 548 metres northwest of the No. 3 zone and consists of a wide zone of branching lenses of strongly oxidized sulphides. The predominant sulphide is arsenopyrite, with subsidiary pyrite, chalcopyrite and sphalerite. Lenses of almost massive sulphide occur as a number of layers within a discrete zone consisting of interbedded limestone, chloritic schist and phyllite which has been subjected to complex faulting. Some mineralization has limestone on both the hangingwall and footwall. The massive lenses range up to 3 metres in width. Drilling indicates that the mineralization extends to a depth of at least 160 metres. The zone strikes 340 degrees and dips 75 degrees west and is 40 to 110 metres wide. Drill core samples across 1.51 metres assayed 0.12 per cent copper, 0.54 per cent lead, 5.62 per cent zinc, 9.94 grams per tonne silver and 0.2 gram per tonne gold (Assessment Report 7759).

Surface and underground samples were sent for metallurgical testing in 1969. The underground sample (unaltered) consisted of massive aggregates and disseminations of sulphides and lead antimonides in a largely siliceous and carbonaceous rock. The surface trench sample was highly oxidized and contained more lead antimonides and secondary minerals. Microscopic examination of the underground sample indicated the major minerals present are arsenopyrite and pyrite, with lesser amounts of sphalerite and jamesonite, and minor amounts of andorite, argentiferous tetrahedrite, miargyrite, realgar, stibnite and chalcopyrite. The gangue minerals consist of quartz and calcite with minor amounts of dolomite (Property File - CANMET Investigation Report 70-64, pages 2-3).

The trench sample contains principally pyrite and arsenopyrite with lesser amounts of jamesonite, sphalerite, twinnite and zinkenite. Argentiferous tetrahedrite, tennantite, andorite and chalcopyrite occurs in minor amounts. Secondary minerals include anglesite, covellite, valentinite, scorodite and beudantite(?). Other gangue minerals include quartz, traces of dolomite and an amorphous phase.

Head analyses of the underground sample yielded 623.89 grams per tonne silver, 2.35 per cent lead, 2.38 per cent zinc, 1.95 per cent antimony and 5.82 grams per tonne gold. Head analyses of the surface trench sample yielded 2207.63 grams per tonne silver, 10.37 per cent lead, 0.76 per cent zinc, 7.65 per cent antimony and 6.17 grams per tonne gold (Property File - CANMET Investigation Report 70-64).

The No. 1 zone has indicated reserves for three combined ore shoots of 19,684 tonnes grading 4.45 grams per tonne gold (Property File - Campbell, 1968). The No. 3 zone is reported to contain an indicated reserve of 233,124 tonnes, before dilution, grading 2.40 grams per tonne gold, 63.1 grams per tonne silver, and 1.5 per cent zinc (Northern Miner - February 12, 1970). The No. 4 zone contains an indicated 74,110 tonnes grading 3.2 grams per tonne gold, 27.7 grams per tonne silver and 6.6 per cent zinc (Northern Miner - February 12, 1970).

Teck Exploration Ltd., under option from Alpha Gold Corp., drilled 16 holes totalling 3063 metres in 1997. The stratigraphic sequence is cut by a series of felsic sills that are spatially related to alteration and mineralization. Feldspar megacrystic dikes and sills also cut stratigraphy and are related to a small monzonite plug that is poorly exposed in the northwest corner of the property. Zones of hornfels, calcsilicate skarn and garnetite have developed within the thermal aureole of the stock. Mineralization ranges from proximal skarns to central mantos to distal sulphosalt veins. Drilling targeted the manto and skarn styles of mineralization that were traced by trenching in 1996. Emplacement of the massive sulphides were controlled by karsting, and in part by folding. Fold hinges are structurally thickened and are promising exploration drilling targets. The massive sulphide mineralization in the nose of a fold on the 4b zone ranges from 6.6 to 20.4 metres in true thickness. Blackjack comprises 70-80 per cent of the massive sulphide layers, with pyrite typically averaging 5-10 per cent.

Garnetite skarn had not been identified or evaluated before last year and is a significant exploration target. Each of the two drill

CAPSULE GEOLOGY

holes that tested the zone intersected approximately 120 metres of garnetite and calcsilicate skarn. However the interval averaged approximately 100 ppb gold. Sulphide content of the garnetite and calc-silicate skarn is variable, but probably averages about 3 per cent. Narrow bands of massive to semimassive sphalerite-pyrite occur within the garnetite. Drilling of skarn mineralization north of Canyon Creek, and closer to the intrusion, may proceed in 1998.

In 2000, Alpha Gold drilled 28 holes totalling more than 3000 metres.

Alpha Gold Corp. drilled 19 NQ bore holes totalling 7790 metres between July 8 and September 6, 2002. This work determined that gold-copper mineralization is associated with skarn developed in calcareous mafic tuffaceous rocks and limestone proximal to the Eocene Glover Stock, and to high-sulphide replacement bodies forming at, or near, a limestone-siliceous phyllite contact. The skarn has a strike length exceeding 500 metres and has been drill tested to depths exceeding 400 metres subsurface. It varies in width from 3 metres to greater than 110 metres. Gold-copper mineralized zones occur both along the limbs, and in the core, of a north-northwest-plunging synform-antiform couple. This structure has been drill tested over a strike length exceeding 300 metres (Press Release, Alpha Gold Corp., September 6, 2002). Significant drill results from the first two drillholes of 2002 are reported. Drillhole DDH 2-01 intersected a 97-metre wide andradite-chlorite skarn body containing several mineralized zones. The highest-grade mineralization is associated with a chalcopyrite-magnetite-chlorite retrograde skarn. Over a drill indicated width of 18.75 metres (531.25 metres to 550.0 metres), 0.95 grams per tonne gold, 17.1 grams per tonne silver and 1.62 per cent copper was cored. Drillhole DDH 2-02 intersected a 114 metre wide skarn body containing a 1-metre (drill indicated width, 510.5 to 511.5 metres) massive sulphide replacement zone developed at the contact between a retrograde skarn zone and limestone and assayed 61.3 grams per tonne gold, 181 grams per tonne silver and 0.87 per cent copper (Press Release, Alpha Gold Corp., September 6, 2002).

The ninth drillhole in the 2002 exploration program intersected 9.7 metres grading 36.7 grams per tonne gold, 182.64 grams per tonne silver and 2.89 per cent copper. The 2002 exploration program demonstrated that significant copper-gold mineralization zones occur within skarn assemblages and that grade increases with depth. Exceptional precious metal values are associated with massive sulphide replacement bodies near the footwall of the skarn front (Press Release, Alpha Gold Corp., October 22, 2002).

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EMPR AR 1945-A64; 1953-94; 1954-A96; 1960-14,15; 1964-53; 1965-105; 1968-148
EMPR ASS RPT *7059, 7509, 7759, 8669, 9937, 21965, 22309
EMPR EXPL 1978-E228; 1979-237,238; 1980-360-361; 1981-160; 1996-C12; 1997-28-29
EMPR FIELDWORK 2001, pp. 257-280, 281-302
EMPR GEM 1970-180
EMPR INF CIRC 1998-1, p. 28
EMPR MAP 65 (1989)
EMPR MER 1992, p. 16
EMPR OF 1998-10; 2000-33; 2002-9
EMPR PF (*CANMET Investigation Report 70-64; *Campbell, D.D. (1966, 1968): Summary Geological Report, Takla Silver Mines Ltd.)
EMR MIN BULL MR 223 B.C. 253
EMR MP CORPFILE (Bralorne Pioneer Mines Limited; Takla Silver Mines, Limited; Anchor Mines Ltd.; Pioneer Metals Corporation)
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 172-173
GSC P 42-7; 45-6; 74-1A; 74-1B, pp. 31-42
GCNL #39,#122, 1985; #195(Oct.9), 1991; #146,#172, 1992; #177(Sept.15), #192(Oct.6), 2000
N MINER May 4, 1998
PR REL Alpha Gold Corp., Sept.6, Oct.22, 2002
STOCKWATCH Oct.1, 2001
WWW http://www.infomine.com/; www.alphagold.bc.ca/
Chevron File
Placer Dome File

MINFILE NUMBER: **093N 010**

NATIONAL MINERAL INVENTORY: 093N15 Zn1

NAME(S): **JEMIMA**, BVD 1-4, B, VERNON

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N15W
BC MAP:
LATITUDE: 55 57 28 N
LONGITUDE: 124 46 39 W
ELEVATION: 1375 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6202807
EASTING: 389027

COMMENTS: The Jemima occurrence is located approximately 400 metres southwest of the Otter Lakes and approximately 19 kilometres north-northwest of Germansen Landing (Open File 1990-17).

COMMODITIES: Zinc, Lead, Silver, Germanium

MINERALS

SIGNIFICANT: Sphalerite, Galena
ASSOCIATED: Dolomite, Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Stratabound
CLASSIFICATION: Replacement
TYPE: J01 Polymetallic manto Ag-Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Otter Lakes	Undefined Formation	
Devonian-Mississipp.	Big Creek	Undefined Formation	

LITHOLOGY: Arenaceous Dolomite
Dolomite
Slate
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP: Syn-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1989

COMMODITY	GRADE	
Silver	115.0000	Grams per tonne
Germanium	0.2200	Per cent
Lead	0.6700	Per cent
Zinc	14.7000	Per cent

COMMENTS: A grab sample from the Jemima area.
REFERENCE: Exploration in British Columbia 1989, page 195.

CAPSULE GEOLOGY

The Jemima occurrence is located approximately 400 metres southwest of the Otter Lakes and approximately 19 kilometres north-northwest of Germansen Landing (Open File 1990-17). This occurrence has similar regional geology to that of the Biddy occurrence (093N 114).

Sulphide mineralization occurs as discontinuous and irregular-shaped pods within arenaceous dolomite and dolomite of the Otter Lakes Group. This carbonate replacement showing is near the geological contact between slates and argillites of the Upper Devonian-Lower Mississippian Big Creek Group and the Otter Lakes Group. Mineralization is in the form of sphalerite and galena. A grab sample analysed 115 grams per tonne silver, 0.67 per cent lead, 14.7 per cent zinc and 0.22 per cent germanium (Exploration in British Columbia 1989, page 195). A chip sample over 4 metres analysed 15.6 per cent combined lead-zinc (Assessment Report 7748).

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EMPR BULL *91
EMPR EXPL *1989, pp. 193-196
EMPR FIELDWORK *1989, pp. 101-114; 1988, pp. 209-220
EMPR OF *1990-17; 1989-12
EMPR ASS RPT 6597, *7748, 16946, 19266, 20492
EMPR EXPL 1977-E203; 1979-283
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 1424A; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/07 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 011**
NATIONAL MINERAL INVENTORY: 093N15 Cu1

NAME(S): **NINA**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N15W
BC MAP:
LATITUDE: 55 56 37 N
LONGITUDE: 124 48 32 W
ELEVATION: 1750 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Nina occurrence is located approximately 4.5 kilometres north of Nina Lake, and about 18 kilometres northwest of Germansen Landing (Open File 1990-17).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6201281
EASTING: 387026

COMMODITIES: Gold, Silver, Copper, Zinc

MINERALS
SIGNIFICANT: Chalcopyrite, Sphalerite, Tennantite, Pyrite
ASSOCIATED: Pyrite
ALTERATION: Silica, Epidote, Pyrite, Malachite, Azurite
COMMENTS: An epidote-silica alteration postdates an earlier silica alteration.
ALTERATION TYPE: Silicific'n, Epidote, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform, Shear, Massive, Disseminated
CLASSIFICATION: Volcanogenic, Epigenetic, Mesothermal
TYPE: G05 Cyprus massive sulphide Cu (Zn)
SHAPE: Irregular
MODIFIER: Sheared
COMMENTS: The mineralized shears strike northwest.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Nina Creek	Mount Howell	

LITHOLOGY: Gabbro
Gabbro Sill
Chert
Siliceous Argillite
Basalt
Pyroxene Porphyry Basalt
Tuff
Argillite

HOSTROCK COMMENTS: The hostrock is predominantly Mount Howell Formation gabbros (Bulletin 91).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Slide Mountain
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	146.5000	Grams per tonne
Gold	6.9000	Grams per tonne

COMMENTS: A grab sample from one of the mineralized shears.
REFERENCE: Assessment Report 17940.

ORE ZONE: SHEAR
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	20.2000	Grams per tonne
Gold	0.6000	Grams per tonne
Copper	14.9100	Per cent

COMMENTS: A grab sample from one of the mineralized shear zones.
REFERENCE: Assessment Report 17940.

CAPSULE GEOLOGY

The Nina occurrence is located approximately 4.5 kilometres north of Nina Lake and approximately 18 kilometres northwest of Germansen Landing (Open File 1990-17). This occurrence was first reported by Armstrong and Thurber, 1945. The regional geology is similar to that of the Biddy occurrence (093N 114).

The Slide Mountain Terrane is represented by Upper Paleozoic oceanic rocks of the Nina Creek Group. The Pennsylvanian to Permian Nina Creek Group consists of a lower argillite-dominated sedimentary package assigned to the Mount Howell Formation and an upper pillowed to massive basalt-dominated sequence assigned to the Pillow Ridge Formation (Bulletin 91). The Mount Howell Formation is the hostrock and, in this area, is comprised of grey-green, fine-grained, pyroxene porphyritic basalts intercalated with laminated, cherty, pale green tuffs, dark grey argillites and gabbro sills. The sedimentary units are of variable thickness and strike northwesterly, dipping to the south.

The predominant hostrocks are the fine-grained gabbro sills and the argillites. These rocks are silicified and brecciated near the northwest-striking shears.

The shears are characterized by being heavily oxidized and appear as red-brown streaks within the green to grey sediments and volcanics on the slopes of the surrounding mountains. The shears are of variable widths.

Massive sulphide mineralization occurs as podiform lenses within the shears. The sulphides consist of massive pyrite with variable chalcopyrite and minor sphalerite. Gold and silver concentrations vary and, based on geochemistry, the silver mineralization is in the form of argentiferous tennantite. The country rocks contain disseminated pyrite and epidote alteration is associated with the silicification (although not as pervasive).

The Main shear zone is 2 to 20 metres in width, striking northerly and dipping steeply to the west. Lenses of massive sulphides and silicified fault breccias are localized within it. A grab sample from one of the mineralized shears analysed 0.60 gram per tonne gold, 20.2 grams per tonne silver and 14.91 per cent copper and another sample analysed 6.90 grams per tonne gold and 146.5 grams per tonne silver (Assessment Report 17940).

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EMPR PF (in 093N 011, Seguro Resources Ltd, 1987 Prospectus, Report on the Nina I Mineral Claim (20 units) by Tully, D.W.)
GSC MAP 971A; 907A; 876A; 1424A; 5249G
GSC MEM 252-183
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/07 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 012**

NATIONAL MINERAL INVENTORY: 093N9 Cb1

NAME(S): **LONNIE**, GRANITE CREEK

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 40 47 N
LONGITUDE: 124 22 47 W
ELEVATION: 1128 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Centre of drilling on a carbonatite zone, 250 metres south and east of Granite Creek, 2.5 kilometres north of Manson Lakes, 140 kilometres north of Fort St. James (Assessment Report 7515). A cat trail, which leads up to the zone from the Manson Creek road, begins just south of Granite Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6171297
EASTING: 413243

COMMODITIES: Niobium, Zirconium, Titanium, Uranium, Thorium, Rare Earths

MINERALS

SIGNIFICANT: Pyrochlore, Columbite, Zircon, Ilmenite, Ilmenorutile
ASSOCIATED: Apatite, Magnetite, Pyrite, Pyrrhotite
ALTERATION: Aegirine, Microcline, Plagioclase, Calcite, Quartz, Arfvedsonite
COMMENTS: Sodic amphibole.
ALTERATION TYPE: Fenitic
MINERALIZATION AGE: Mississippian
ISOTOPIC AGE: 339 Ma DATING METHOD: Zircon MATERIAL DATED: Zircon

DEPOSIT

CHARACTER: Podiform, Concordant, Disseminated
CLASSIFICATION: Magmatic, Hydrothermal, Industrial Min.
TYPE: N01 Carbonatite-hosted deposits
SHAPE: Tabular
DIMENSION: 650 x 50 Metres STRIKE/DIP: 120/60S TREND/PLUNGE:
COMMENTS: Carbonatite zone.

HOST ROCK

DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic	Ingenika	Undefined Formation	
Proterozoic			Wolverine Complex
Devonian-Mississipp.			Unnamed/Unknown Informal

ISOTOPIC AGE: 350-370 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: Zircon

LITHOLOGY: Carbonatite, Aegirine Sovite, Biotite Sovite, Monzodiorite, Monzonite, Syenite, Nepheline Syenite, Fenite, Psammitic Schist, Pelitic Schist

HOSTROCK COMMENTS: Carbonatite is emplaced in metamorphosed rocks of the Ingenika Group. Date from R. Parrish (Open File 1987-17).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Cassiar
Slide Mountain
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Amphibolite
COMMENTS: Lower amphibolite facies.

INVENTORY

ORE ZONE: LONNIE REPORT ON: Y

CATEGORY: Inferred YEAR: 1991
QUANTITY: 272000 Tonnes

COMMODITY	GRADE	
Niobium	0.2000	Per cent

COMMENTS: Possible reserves; up to 15 per cent zircon.
REFERENCE: Z.D. Hora, personal communication, 1991.

CAPSULE GEOLOGY

Syenite, monzonite and carbonatite occur together in single, northwest striking sill-like horizons within uppermost Proterozoic metasedimentary rocks of the Wolverine Complex (Ingenika Group). The Ingenika Group is represented by quartzites and garnet-biotite-muscovite schists. These rocks have been metamorphosed to amphibolite grade. To the west lie rocks of the upper Paleozoic Nina Creek Group. Both intrusive rocks and hostrocks have been deformed and metamorphosed to lower amphibolite facies. The hostrocks comprise psammitic to semipelitic mica schists, micaceous quartzites and marble which strikes southeast (150 to 170 degrees) and dips steeply to the southwest (70 to 80 degrees on average). The various rock units within each intrusive zone are distributed in interfingering lenses. Alkali metasomatism (fenitization) can be detected for a few tens of metres beyond the intrusions. Preliminary uranium/lead systematics suggest that the Lonnie carbonatite was emplaced in Late Devonian to Early Mississippian times; interpreted zircon ages of 350 +/- 10 Ma and 370 +/- 20 Ma were obtained (Open File 1987-17).

Two varieties of carbonatites are present within the Lonnie complex. One is aegirine sovite in which the principal components are calcite, microcline, perthite and aegirine; the other is biotite sovite, comprising calcite, biotite and usually plagioclase. Both the biotite and aegirine sovites are variably foliated and contain apatite (up to 20 per cent), magnetite and pyrochlore as accessory minerals. The biotite sovite may also contain zircon locally; columbite, ilmenorutile and ilmenite have also been reported. The aegirine sovite occurs along the southwestern margin of the complex, the biotite sovite along the northwestern margin. The biotite sovite is variably mylonitized, with the most intense shearing near the contact with the country rocks. Enrichment in zircon, pyrochlore, columbite, pyrite and pyrrhotite has been noted near the contacts of the sovites with syenites.

Feldspathic intrusive rocks, monzodiorite, monzonites and syenites, outcrop as lenticular masses separating the carbonatite units. All phases contain accessory muscovite, biotite, calcite and apatite. Nepheline syenite is also locally present and contains significant amounts of zircon.

Pods and layers of fenite occur within the Lonnie intrusive complex. The fenite is medium to dark green in colour and rusty weathering. It consists of aegirine and sodic amphibole with microcline, plagioclase and calcite in varying amounts. Trace constituents include pyrochlore, magnetite and zircon.

The host psammitic and semipelitic schists are recognizably fenitized for a few tens of metres beyond the intrusive contacts. Microcline, plagioclase and quartz are major constituents, with aegirine and arfvedsonite disseminated throughout, presumably replacing the original mafic silicate minerals. Biotite is present in trace amounts only. Calcite, apatite, magnetite and zircon may be present and coarse-grained arfvedsonite, magnetite and feldspar segregations may be developed locally.

The Lonnie carbonatite zone has been traced by surface trenching for a length of approximately 650 metres with widths up to 50 metres. It strikes 120 degrees and dips approximately 60 degrees southwest. A zone in the centre of the property averages 0.3 per cent niobium (Nb_2O_5) across a width of 7.6 metres and a length of 240 metres (Open File 1987-17). The presence of uranian pyrochlore has been determined from x-ray work by R.M. Thompson (Minister of Mines Annual Report 1954, page A97). A recent spectrometer survey of the area revealed thorium to be the radioactive element (F. Ferri, personal communication, 1990).

Inferred (possible) reserves at Lonnie are 272,000 tonnes grading 0.2 per cent niobium and up to 15 per cent zircon (Z.D. Hora, personal communication, 1991).

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EMPR BULL *91
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GSC P 41-5; 42-2; 45-9
GSC BULL 239, pp. 119-121
GSC OF 551
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33
EMR MP CORPFILE (Moly Mite Mines Inc.; Golden Slipper Resources Inc.)
EMR MIN BULL MR 223 B.C. 251
GCNL #131, 1982
Halleran, A.A.D. (1980): *Petrology, Mineralogy and Origin of the Niobium-bearing Lonnie Carbonatite Complex of the Manson Creek Area, British Columbia, Unpub. B.Sc. Thesis, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/07 REVISED BY: GO FIELD CHECK: Y

MINFILE NUMBER: **093N 013**

NATIONAL MINERAL INVENTORY: 093N4 Cu1

NAME(S): **ADDA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N04W
BC MAP:
LATITUDE: 55 13 10 N
LONGITUDE: 125 59 16 W
ELEVATION: 695 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location is for chalcopyrite seams exposed on the west side of the northwest arm of Takla Lake, just above the lakeshore, about 29 kilometres south of Takla Landing (Minister of Mines Annual Report 1930, page A149).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6123283
EASTING: 309951

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Calcite
COMMENTS: Calcite occurs in separate narrow seams.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	
Triassic-Jurassic			Topley Intrusions

LITHOLOGY: Andesite
Andesitic Basaltic Volcanic
Sediment/Sedimentary
Intrusive

HOSTROCK COMMENTS: The Telkwa/Nilkitkwa formations are undifferentiated in this area.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine
PHYSIOGRAPHIC AREA: Nechako Plateau

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1930
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	5.4900	Grams per tonne
Copper	10.6000	Per cent

COMMENTS: Sample of selected chalcopyrite mineralization.
REFERENCE: Minister of Mines Annual Report 1930, page 149.

CAPSULE GEOLOGY

The Adda occurrence is situated on the west side of the northwest arm of Takla Lake, approximately 29 kilometres south of Takla Landing.

The area is underlain by andesitic to basaltic volcanics and minor sediments assigned to the Lower Jurassic undivided Telkwa/Nilkitkwa formations of the Upper Triassic-Middle Jurassic Hazelton Group, west of a large pluton of the Late Triassic-Early Jurassic Topley intrusions. The north-striking Takla fault separates the Hazelton Group rocks from Cretaceous sediments to the west.

A few veins of chalcopyrite, 5 to 7.6 centimetres in width, and some narrow calcite seams were observed in andesite just above the lakeshore. Selected portions of the chalcopyrite assayed 5.49 grams per tonne silver and 10.6 per cent copper, with trace gold (Minister of Mines Annual Report 1930, page 149).

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR AR *1930-A149
EMPR OF 2000-19

BIBLIOGRAPHY

GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 3071
GSC P 42-7; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/09 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 014**

NATIONAL MINERAL INVENTORY: 093N11 Hg4

NAME(S): **BRALORNE BB**, MERC

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 42 57 N
LONGITUDE: 125 28 09 W
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is for Silver Creek, just north of its confluence with Vital Creek, about 41 kilometres northeast of Takla Landing and 18 kilometres north of the Bralorne Takla mercury mine (093N 008) (National Mineral Inventory).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6177216
EASTING: 344893

COMMODITIES: Mercury

MINERALS
SIGNIFICANT: Cinnabar
ALTERATION: Carbonate Dolomite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: E01 Almaden Hg I08 Silica-Hg carbonate

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Triassic-Jurassic	Takla	Undefined Formation	
Paleozoic-Mesozoic			Unnamed/Unknown Informal
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Limestone
Volcanic
Granodiorite
Carbonatized Serpentine Sill
Ultramafic

HOSTROCK COMMENTS: Cache Creek Complex rocks range from Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek Plutonic Rocks

CAPSULE GEOLOGY

The Bralorne BB occurrence is situated on Silver Creek, just north of the mouth of Vital Creek, approximately 41 kilometres northeast of Takla Landing and 18 kilometres north of the Bralorne Takla mercury mine (093N 008). The showing was discovered in 1940.

The area is underlain by interbedded sediments and minor volcanics assigned to the Carboniferous to Jurassic Cache Creek Complex, which in this area strike north-northwest and dip to the east. These rocks are in contact with west dipping volcanics and minor sediments of the Middle Triassic to Lower Jurassic Takla Group along a north-northeast trending section of the Pinchi fault zone. Further east, the Takla Group rocks have been intruded by granodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. Mississippian to Triassic ultramafic rocks of the Oceanic Ultramafites, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, occur locally. A thick mantle of drift overlies most of these rocks in the vicinity of Silver Creek.

The occurrence is described as consisting of traces of cinnabar hosted within limestone and a carbonatized serpentine sill approximately 23 metres wide, which follows the fault contact. The limestone in the area has been dolomitized and brecciated by numerous subsidiary faults with various orientations (Geological Survey of Canada Memoir 252, page 154).

Extensive surface work undertaken in the early 1940s and a program of geological mapping, geochemical sampling and 183 metres of diamond drilling in three holes carried out in 1965 failed to outline a deposit of economic significance.

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR AR 1965-106
EMPR PF (Miscellaneous map - Northern Omineca Mercury belt)
GSC MEM *252, p. 154
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 44-5, p. 13, 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/23 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 015**

NATIONAL MINERAL INVENTORY: 093N11 Hg3

NAME(S): **SNELL**, AMY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 43 14 N
LONGITUDE: 125 27 12 W
ELEVATION: 895 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the confluence of Silver and Snell creeks, about 39 kilometres northeast of Takla Landing and 13 kilometres north of the Bralorne Takla mercury mine (093N 008).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6177706
EASTING: 345906

COMMODITIES: Mercury Antimony

MINERALS
SIGNIFICANT: Cinnabar Stibnite
ALTERATION: Quartz Carbonate Mariposite
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratabound
CLASSIFICATION: Hydrothermal Epigenetic Replacement
TYPE: E01 Almaden Hg I08 Silica-Hg carbonate
SHAPE: Bladed
MODIFIER: Faulted
DIMENSION: 12 x 2 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Mineralization is faulted off at a depth of 3.66 metres and is concentrated in a siliceous paystreak 10 to 15 centimetres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Triassic-Jurassic	Takla	Undefined Formation	
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Cherty Limestone
Dolomitic Limestone
Argillite
Chert
Tuff
Schist
Andesite
Sandstone
Serpentinite
Granodiorite

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek Quesnel
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1944
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Mercury	0.2500	Per cent

COMMENTS: Grade is average assay of samples from the western orebody taken prior to 1945.
REFERENCE: Geological Survey of Canada Memoir 252, page 156.

CAPSULE GEOLOGY

The Snell occurrence is located just north of the confluence of Kenny and Silver creeks, approximately 39 kilometres northeast of Takla Landing and 13 kilometres north of the Bralorne Takla mercury mine (093N 008). The showing was discovered in 1941 and intermittently explored up until the early 1970s.

The area is underlain by interbedded limestone, argillite, chert, tuff and schist assigned to the Carboniferous to Jurassic

CAPSULE GEOLOGY

Cache Creek Complex, which in this area strike north and dip steeply to the east. These rocks are in contact with west-dipping andesite and sandstone of the Middle Triassic to Lower Jurassic Takla Group along a north-northwest trending section of the Pinchi fault zone. Further east, the Takla Group rocks have been intruded by granodiorite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. A thick mantle of drift overlies most of these rocks in the vicinity of Silver Creek.

Mineralization in the form of cinnabar and minor stibnite occurs in cherty limestone in several locations, one along Silver Creek at the mouth of Snell Creek and another approximately 180 metres to the east (Assessment Report 11977, Figure 4). The former occurrence is approximately 12 metres long by nearly 2 metres wide and reportedly assayed 2 to 3 kilograms per tonne mercury. Drill results, however, suggest that the mineralization is faulted off at a depth of only 3.66 metres and that most of it is concentrated in a siliceous paystreak 10 to 15 centimetres wide (Geological Survey of Canada Memoir 252, page 156). Another "low-grade" drill intercept was obtained on Silver Creek. The cinnabar here was hosted by cherty limestone and carbonate-quartz-mariposite rock at the contact between the limestone and altered serpentinite.

Hydraulic stripping along a creek parallel to and approximately 300 metres north of Snell Creek later exposed lenses of cinnabar in dolomitic limestone along and immediately west of the Pinchi fault zone. Boulders of "rich cinnabar ore" up to 60 centimetres in diameter were also reported to occur in rusty Tertiary gravels in the area.

BIBLIOGRAPHY

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EMPR GEM 1970-184
EMR MRB COMMODITY FILE MR-Hg-301.00 British Columbia
EMPR PF (Miscellaneous drill hole maps)
GSC MEM *252, pp. 154-156
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 44-5A; 45-6; 74-1A; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/22 REVISED BY: DMN FIELD CHECK: Y

MINFILE NUMBER: **093N 016**

NATIONAL MINERAL INVENTORY: 093N5 Cr1

NAME(S): **MITCHELL RANGE**, CYPRUS, MONA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N05E
BC MAP:
LATITUDE: 55 23 15 N
LONGITUDE: 125 35 06 W
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for a chromite occurrence in the Mitchell Range east-southeast of Klowkut Peak, approximately 26 kilometres east-southeast of Takla Landing (Geological Survey of Canada Map 844A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6140954
EASTING: 336258

COMMODITIES: Gold, Chromium

MINERALS

SIGNIFICANT: Chromite
ASSOCIATED: Quartz, Carbonate, Magnesite, Tremolite, Actinolite
ALTERATION: Serpentine, Quartz, Carbonate, Mariposite, Magnesite, Talc, Malachite
ALTERATION TYPE: Serpentin'zn, Silicific'n, Quartz-Carb., Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear, Disseminated
CLASSIFICATION: Hydrothermal, Epigenetic, Magmatic, Industrial Min.
TYPE: M03 Podiform chromite
COMMENTS: Chromite is likely of magmatic origin, while quartz-carbonate shear mineralization is probably hydrothermal.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Peridotite, Pyroxenite

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks, Cache Creek

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	0.3450	Grams per tonne

COMMENTS: Sample of shear-hosted, malachite-stained, quartz-carbonate mineralization.
REFERENCE: Assessment Report 16095, page 6.

CAPSULE GEOLOGY

The Mitchell Range occurrence is situated 3.3 kilometres east-southeast of Klowkut Peak at the northern end of the Mitchell Range. Although the area was originally staked by the Magnum Corporation as the Mona claim, the only recorded exploration was done by Imperial Metals Corporation in 1987, when a program of geochemistry was carried out on its Cyprus claims (Assessment Report 16095). Efforts to relocate the chromite occurrence at this time proved unsuccessful.

The occurrence is reportedly hosted within a pendant of ultramafic rocks in fault contact with Carboniferous to Jurassic sediments assigned to the Cache Creek Complex, near the north end of a large pluton of the Late Triassic-Early Jurassic Topley intrusions. The ultramafic rocks consist of dark black-coloured, variably serpentinized/silicified peridotite hosting pods and lenses of coarse-grained altered pyroxenite (with tremolite-actinolite).

CAPSULE GEOLOGY

Locally, rusty weathering exposures of quartz-carbonate-talc +/- mariposite hosting anastomosing quartz and magnesite veins have been observed.

Detailed descriptions of the Mitchell Range occurrence are lacking. It is probable that it is similar to numerous other chromite occurrences which have been documented within ultramafic rocks underlying the Mitchell Range (Fieldwork 1982-1, pages 234-243). These occurrences comprise small disseminated, aggregate (greater than 75 per cent) and massive chromite nodules and layers which are predominantly hosted by allochthonous, serpentinized harzburgite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. For regional geology details, please refer to the Simpson, Bob and Irish occurrences (093N 033, 34, 35).

A sample of malachite-stained, quartz-carbonate mineralization filling a shear zone approximately 750 metres north of the chromite occurrence's reported location assayed 0.345 grams per tonne gold (Assessment Report 16095, page 6).

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EMPR ASS RPT *16095
EMPR EXPL 1987-C313
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EMPR PF (Whittaker, P. (1983): Unpublished Thesis "Chromite in Alpine Type Peridotites"; Carleton University, 339 pp. (refer to 093N General File))
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 135,189
GSC OF 3071
GSC P 42-7; 45-6; 82-1A, pp. 239-245
Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/15 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 017**

NATIONAL MINERAL INVENTORY: 093N11 Hg7

NAME(S): **BRON**, HOUSTON SOUTH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 33 08 N
LONGITUDE: 125 22 40 W
ELEVATION: 1030 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the site of diamond drilling undertaken in 1970, about 38 kilometres east-northeast of Takla Landing (Geology, Exploration and Mining in British Columbia 1970, Figure 19).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6158812
EASTING: 350009

COMMODITIES: Mercury

MINERALS
SIGNIFICANT: Cinnabar
ALTERATION: Dolomite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal Replacement
TYPE: E01 Almaden Hg I08 Silica-Hg carbonate
COMMENTS: Cinnabar also occurs as films on slip surfaces.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

LITHOLOGY: Limestone
Argillaceous Schist
Chloritic Schist
Slaty Siltstone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Bron occurrence is situated near the divide between Silver and West Kwanika creeks, south of the Bralorne Takla mercury mine (093N 008), approximately 38 kilometres east-northeast of Takla Landing.

The area is underlain by a north-northwest striking, steeply west-dipping sequence of interbedded limestone and argillaceous and chloritic schist assigned to the Carboniferous to Jurassic Cache Creek Complex. These rocks occur within and west of the Pinchi fault zone, a major structural feature traversing the area from north to south. Grey, massive limestone is the most common rock type observed in the area of the occurrence, and it is invariably brecciated and/or dolomitized. North-northwest striking, steeply west-dipping schist and rusty coloured, slaty siltstone were observed to be interbedded with limestone locally.

Early reports (1944) describe a zone of cinnabar mineralization three metres wide on the west fork of Kwanika Creek. The cinnabar reportedly occurred as minute crystals in brecciated limestone and as film on slip planes. Diamond drilling undertaken in 1970, however, failed to intersect significant mineralization, partly due to the deep overburden overlying the area.

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

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EMPR ASS RPT 1755
EMPR GEM 1969-105; 1970-182
EMPR OF 2000-33
EMPR PF (Miscellaneous claim map)
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, p. 160

BIBLIOGRAPHY

GSC P 42-7; *44-5, p. 10; 45-6

DATE CODED: 1985/07/24
DATE REVISED: 1992/10/01

CODED BY: GSB
REVISED BY: DMN

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 018**

NATIONAL MINERAL INVENTORY: 093N11 Hg2

NAME(S): **DAN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 30 35 N
LONGITUDE: 125 20 37 W
ELEVATION: 1050 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location are trenches excavated in the early 1940s, about 40 kilometres east of Takla Landing (Assessment Report 19373, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6154011
EASTING: 352004

COMMODITIES: Mercury, Chromium, Platinum

MINERALS

SIGNIFICANT: Cinnabar, Chromite
ASSOCIATED: Quartz, Carbonate, Mariposite, Chalcedony
ALTERATION: Quartz, Carbonate, Mariposite, Silica
ALTERATION TYPE: Quartz-Carb., Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Vein, Massive
CLASSIFICATION: Epigenetic, Hydrothermal, Magmatic, Industrial Min.
TYPE: E01 Almaden Hg; I08 Silica-Hg carbonate
M03 Podiform chromite
DIMENSION: 1 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Chromite pod.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Ultramafic
Serpentinite
Limestone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks, Cache Creek

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Chromium	0.1665	Per cent
Platinum	0.1580	Grams per tonne

COMMENTS: Sample SW-89-MR-11.
REFERENCE: Assessment Report 19373, page 4.

ORE ZONE: SOUTHWEST
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Mercury	0.0308	Per cent

COMMENTS: Sample 89-NAT-1 of silicified ultramafics hosting disseminated cinnabar.
REFERENCE: Assessment Report 19373, page 4.

CAPSULE GEOLOGY

The Dan occurrence is situated 2 kilometres south of the confluence of Kwanika and West Kwanika creeks, approximately 40 kilometres east of Takla Landing.

The area is underlain by Carboniferous to Jurassic sedimentary and volcanic rocks (and derived schist) assigned to the Cache Creek Complex. To the east, a narrow, linear band of ultramafic rocks,

CAPSULE GEOLOGY

formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites, occurs along the trace of the Pinchi fault zone, which separates the Cache Creek rocks from the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

Early reports describe a 1-metre wide mineralized zone hosted by quartz-carbonate-mariposite rock exposed in a trench. Within the zone, bright red cinnabar was said to be concentrated within a 7.6 centimetre width with associated chalcedonic quartz.

Recent exploration in the area has determined that the Dan occurrence comprises several areas of related mineralization. Cinnabar, as disseminations and in chalcedonic veinlets, is reported to be hosted by quartz-carbonate-mariposite altered ultramafic rocks exposed in a series of trenches to the north. Both the ultramafics and the host limestone have been intensely silicified. Approximately 340 metres to the south, a 1-metre wide pod of massive chromite has been exposed in serpentinite.

Assays from samples of the cinnabar mineralization ranged up to 0.0308 per cent mercury while samples from the chrome showing assayed 0.1665 per cent chromium, 0.0149 per cent nickel and 0.158 grams per tonne platinum (Assessment Report 19373, page 4).

BIBLIOGRAPHY

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EMPR AR 1965-105; 1966-119
EMPR ASS RPT *19373
EMPR PF (Miscellaneous claim map)
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, p. 161
GSC P 42-7; *44-5, pp. 10-11; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/01 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 019**

NATIONAL MINERAL INVENTORY: 093N6 Hg1

NAME(S): **KWANIKA**, TRUMP, VICTORY, BOWLEG

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06W
BC MAP:
LATITUDE: 55 29 01 N
LONGITUDE: 125 19 18 W
ELEVATION: 930 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6151059
EASTING: 353292

COMMENTS: Location is a cinnabar occurrence on Kwanika Creek, 7.2 kilometres above its mouth, about 6 kilometres north of the outlet of Tsayta Lake and 40 kilometres east of Takla Landing (Geological Survey of Canada Memoir 252, page 163).

COMMODITIES: Mercury Arsenic

MINERALS

SIGNIFICANT: Cinnabar Realgar Arsenic Pyrite
ASSOCIATED: Dolomite
ALTERATION: Dolomite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: E01 Almaden Hg I08 Silica-Hg carbonate

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Undefined Formation	
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Argillite
Limestone
Granodiorite Sill
Carbonatized Serpentinite

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Hogem Intrusive Complex is dated as Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel Cache Creek

CAPSULE GEOLOGY

The Kwanika occurrence is situated on Kwanika Creek, 6 kilometres north of the outlet of Tsayta Lake and approximately 40 kilometres east of Takla Landing.

The showing is hosted by Middle Triassic to Lower Jurassic Takla Group argillite immediately east of the Late Triassic to Early Cretaceous Hogem Intrusive Complex and west of limestone assigned to the Carboniferous to Jurassic Cache Creek Complex. The Pinchi fault zone forms the contact between the two sedimentary units, traversing the area from north to south.

Mineralization consists of minor cinnabar occurring in a 0.65-centimetre wide dolomitic stringer cutting argillite adjacent to a narrow, north striking, steeply dipping granodiorite sill. Approximately 800 metres further upstream, similar stringers host realgar, native arsenic and pyrite (Geological Survey of Canada Paper 44-5, page 11).

On the east side of a "pond" believed to be approximately 800 metres southwest of the Kwanika occurrence, a 2.44-metre wide boulder of carbonatized serpentine and limestone reportedly hosted "commercial quantities" of cinnabar. Diamond drilling in the vicinity also intersected carbonatized serpentine carrying "a few specks" of cinnabar.

Mineralization on the Victory and Bowleg groups of claims, to the south and west of the Kwanika occurrence respectively, was not located.

Although recent information concerning these occurrences is unavailable, exploration has been carried out in the area as part of

CAPSULE GEOLOGY

a detailed assessment of the Kwanika Creek occurrence (see 093N 073).

BIBLIOGRAPHY

GSC MEM *252, pp. 161-163
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 44-5; 45-6
GSC OF 3071
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/05 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 020**

NATIONAL MINERAL INVENTORY: 093N6 Hg2

NAME(S): **INDATA LAKE MERCURY**, SUNRISE, NEAL, OMAC, PAM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 18 39 N
LONGITUDE: 125 14 29 W
ELEVATION: 875 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for diamond-drill holes 8 and 9 on the east shore of Indata Lake, about 49 kilometres southeast of Takla Landing (Assessment Report 1236, Figure 201-18).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6131670
EASTING: 357745

COMMODITIES: Mercury

MINERALS

SIGNIFICANT: Cinnabar
ALTERATION: Quartz Magnesite Calcite Ankerite Mariposite Carbonate
COMMENTS: The green mica mineral is believed to be mariposite.
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia Vein
CLASSIFICATION: Epigenetic Hydrothermal Replacement
TYPE: E01 Almaden Hg I08 Silica-Hg carbonate

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Triassic-Jurassic	Takla	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Limestone
Serpentine Sill
Chert
Andesitic Volcanic
Ultramafic

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Cache Creek Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1967
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Mercury	0.0840	Per cent

COMMENTS: Sample across 1.52 metres taken near drillhole 2.
REFERENCE: Assessment Report 1236, page 3.

CAPSULE GEOLOGY

The Indata Lake Mercury occurrence is situated on the east shore of Indata Lake near its outlet, approximately 49 kilometres southeast of Takla Landing. The area was explored for its mercury potential during the Second World War and again in the late 1960s.

The area is underlain by sediments assigned to the Carboniferous to Jurassic Cache Creek Complex in contact to the east with andesitic volcanics of the Middle Triassic to Lower Jurassic Takla Group along a north-northwesterly trending portion of the Pinchi fault zone. Locally, ultramafic masses formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites, have been emplaced in these rocks.

In the area of the occurrence, massive blue-grey coloured Cache Creek Complex limestone hosts local small dikes and sills of serpentine. On the east shore of Indata Lake, a brecciated fault

CAPSULE GEOLOGY

zone, 3 to 6 metres wide, cuts the limestone. This zone strikes north, dips at 70 degrees to the west and has been traced 300 metres north from the lakeshore to where it becomes masked by overburden. A series of northeast-striking crossfaults appear to have offset the zone by up to 3 metres. At the north end, it follows the contact between a serpentine dike and limestone for 53 metres. Along the zone, the limestone has been altered to a buff-coloured carbonate and the serpentine dike has been brecciated and altered to a reddish buff-coloured ankeritic carbonate with local irregular chert fragments and green mica (mariposite?). Stringers of magnesite and quartz up to 5 centimetres wide cut the altered dike. Most of the cinnabar mineralization occurs as widely scattered grains within the chert fragments, either in the dike or in the fault breccia, along calcite-filled fractures or within the interclastic matrix.

A 1.52-metre wide sample across the breccia zone near diamond-drill hole 2 assayed 0.84 kilogram mercury per tonne (0.084 per cent) (Assessment Report 1236, page 3). Traces of cinnabar in cemented volcanic breccia with minor mariposite, showed up in only one of seven holes drilled along the structure.

BIBLIOGRAPHY

EMPR ASS RPT 1236, 12433
EMPR EXPL 1983-455
EMPR OF 2000-19
EMR MP CORPFILE (Ajax Mercury Mines Ltd.)
EMR MRB COMMODITY FILE MR-Hg-301.00 British Columbia
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, pp. 164-165
GSC OF 3071
GSC P 42-7; 42-11, 44-5, p. 12; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/07 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 021**

NATIONAL MINERAL INVENTORY: 093N3,6 Hg1

NAME(S): **TCHENTLO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N03W 093N03E
BC MAP:
LATITUDE: 55 14 53 N
LONGITUDE: 125 15 37 W
ELEVATION: 930 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for a roadcut exposing altered limestone from which rock samples were obtained, west of the north end of Tchentlo Lake, about 52 kilometres southeast of Takla Landing (Assessment Report 11882, Figure 2).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6124724
EASTING: 356320

COMMODITIES: Mercury Gold

MINERALS
SIGNIFICANT: Cinnabar
ASSOCIATED: Quartz Carbonate
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Replacement Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

LITHOLOGY: Limestone
Argillite
Greywacke

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Cache Creek Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Gold	0.1400	Grams per tonne

COMMENTS: Sample CR-WT7 from a roadcut exposing altered limestone.
REFERENCE: Assessment Report 11882, Figure 2.

CAPSULE GEOLOGY

The Tchentlo occurrence is situated west of the north end of Tchentlo Lake, approximately 52 kilometres southeast of Takla Landing. The area was explored for its mercury potential during the Second World War.

The area west of Tchentlo Lake is underlain by sediments assigned to the Carbonaceous to Jurassic Cache Creek Complex, west of the north-northwesterly striking Pinchi fault zone. Blue-grey limestone predominates in the area, although argillite does outcrop on small knolls flanking the lake and was exposed, with greywacke, in trenches.

Several large boulders and small pieces of carbonatized serpentine hosting cinnabar were reported in the area in the early 1940s. Stripping failed to located the bedrock source of this mineralization.

Altered limestone has been exposed in a roadcut approximately 3 kilometres west of the lake. A sample taken of what is described only as a "quartz-carbonate rock" assayed 0.00011 per cent mercury. Another sample assayed 0.140 grams per tonne gold and 0.0405 per cent arsenic (Assessment Report 11882, Figure 2).

BIBLIOGRAPHY

EMPR ASS RPT *11882

BIBLIOGRAPHY

EMPR EXPL 1983-454
EMPR OF 2000-19
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, p. 166
GSC OF 3071
GSC P 42-7; 42-11, p. 18; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/07 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 022** NATIONAL MINERAL INVENTORY: 093N10 Ag1

NAME(S): **BLACK HAWK**, BLACKHAWK

STATUS: Prospect Underground MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N10E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 38 38 N NORTHING: 6167525
LONGITUDE: 124 32 32 W EASTING: 402937
ELEVATION: 1235 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Blackhawk occurrence is located approximately 5 kilometres southwest of Manson Creek.

COMMODITIES: Silver Lead Zinc Copper

MINERALS
SIGNIFICANT: Galena Sphalerite Chalcopyrite
ASSOCIATED: Quartz Pyrite Pyrrhotite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Stockwork
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	

LITHOLOGY: Siliceous Phyllite
Meta Siltstone
Meta Greywacke

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
METAMORPHIC TYPE: Contact Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: ADIT REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1949
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	1398.8000	Grams per tonne
Lead	3.0000	Per cent
Zinc	3.0000	Per cent

COMMENTS: A 1.5-metre rock sample taken across a highly mineralized area of the adit vein.
REFERENCE: Minister of Mines Annual Report 1938, pages C10-C11.

CAPSULE GEOLOGY

The Blackhawk occurrence is centred on an old adit located approximately 5 kilometres southwest of the settlement of Manson Creek and is accessed by a cat trail beginning at an old road on the southeast side of the Manson River.

This occurrence is hosted in the Middle to Upper Triassic Slate Creek Formation (Takla Group). The hostrocks are silicified phyllites, metasiltstones and metagreywackes. The rocks surrounding the veins are predominantly purple to dark green, silicified and fine-grained metasiltstones. Where observed, bedding is contorted or masked by small quartz veinlets. Pervasive silicification obliterates most of the sedimentary structures. These rocks are approximately 2.5 kilometres north of the Cretaceous Germansen batholith and are near the outer edge of the intrusion's metamorphic aureole. Three kilometres to the northeast lies the right-lateral, northwest-striking Manson fault zone of probable Late Cretaceous to Tertiary age.

This occurrence is composed of a minimum of 9 veins ranging in width between 0.5 and 3 metres. The veins are roughly subparallel and strike north-northeast (approximately perpendicular to the

CAPSULE GEOLOGY

batholith contact) and dip steeply to the southwest. These milky, translucent quartz veins occur within a 200-metre wide quartz "stockwork" zone. The sulphides occur as both massive and disseminated and include argentiferous galena, sphalerite, pyrrhotite, pyrite and minor amounts of chalcopyrite. Where massive, the most prevalent sulphide is pyrrhotite with some sphalerite.

The main zone of interest is 30 metres wide and surrounds the main vein and the adit vein. The adit is 5.48 metres in length on a bearing of 203 degrees. It follows a well mineralized quartz vein 0.48 metre in width that dips steeply to the northeast. Mineralization in this zone consists of blebs of galena and pyrrhotite which can be up to 25 centimetres in width. A mineralized 1.6-metre zone yielded 1398.8 grams per tonne silver, 3.0 per cent lead, 3.0 per cent zinc and trace gold (Minister of Mines Annual Report 1938, pages C10-11).

BIBLIOGRAPHY

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EMPR BULL 1, p. 57
EMPR FIELDWORK 1987, pp. 169-180; 1988, pp. 209-220
EMPR ASS RPT 8956, *19501
EMPR OF 1989-12
EMPR BULL *91
GSC MEM *252, p. 173
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33
GSC PROG RPT 1879, 1880, p. B110

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/08/28 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 023**

NATIONAL MINERAL INVENTORY:

NAME(S): **FAIRVIEW**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N09W 093N10E
BC MAP:
LATITUDE: 55 40 34 N
LONGITUDE: 124 29 54 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Fairview occurrence is located approximately 0.5 kilometre northwest of the settlement of Manson Creek (Ferri and Melville, in prep.).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6171050
EASTING: 405776

COMMODITIES: Gold, Silver, Copper

MINERALS

SIGNIFICANT: Chalcopyrite, Tetrahedrite, Gold
ASSOCIATED: Quartz, Pyrite
ALTERATION: Azurite, Malachite, Ankerite, Mariposite
ALTERATION TYPE: Oxidation, Silicific'n, Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Mesothermal
TYPE: l05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
MODIFIER: Sheared, Faulted
DIMENSION: 48 x 3 Metres
STRIKE/DIP: 155/85E
TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	
Pennsylvan.-Permian			Manson Lakes Ultramafites

LITHOLOGY: Mafic Volcanic
Graphitic Argillite
Serpentinite
Gabbro

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Slide Mountain, Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	85.7300	Grams per tonne
Gold	17.8000	Grams per tonne

COMMENTS: The highest values of silver and gold obtained from the Fairview vein (from two different samples).
REFERENCE: Assessment Reports 16602, 20279; Ferri and Melville, Bulletin in prep.

CAPSULE GEOLOGY

The Fairview occurrence is located approximately 0.5 kilometre northwest of the settlement of Manson Creek. Regionally, this occurrence lies within the northwest striking, right-lateral Manson fault zone which, in the immediate area, separates Middle Triassic-Lower Jurassic Takla Group rock from the Pennsylvanian to Permian Manson Lakes Ultramafites.

This occurrence is a northwest-striking quartz vein ranging from 1 to 3 metres in thickness with a known strike length of 48 metres. It is found within rocks of the Manson Lakes Ultramafites and the Middle to Upper Triassic Slate Creek Formation (Takla Group). Rock types within the fault zone are serpentinite, mafic volcanics, gabbro and graphitic argillite.

The vein is massive, white and contains disseminated blebs of

CAPSULE GEOLOGY

pyrite, chalcopyrite and tetrahedrite with related malachite and azurite staining. The vein has a strike of 155 degrees and dips 85 degrees to the east. Smaller quartz veins strike perpendicular to this into the country rock. Free gold has been reported from this vein. Mafic volcanics found on each side of the vein are highly carbonatized, silicified and sheared in the vicinity of the vein with the production of large ankerite porphyroblasts and associated mariposite. Highly altered wallrocks contain high concentrations of gold and silver.

The highest gold value obtained from this vein was 17.8 grams per tonne (Assessment Reports 16602, 20279) and silver values range up to 85.73 grams per tonne (Assessment Report 16602).

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EMPR BULL *91
EMPR EXPL 1980-360; 1982-319; 2002-13-28
EMPR FIELDWORK 1987, pp. 169-180; 1988, pp. 209-220
EMPR GEM 1973-368
EMPR OF 1988-12b; 1989-12
GSC MAP 876A; 907A; 971A; 1586G; 5249G
GSC MEM 252, pp. 131,180
GSC P 41-5; 45-9; 75-33
Chevron File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/17 REVISED BY: FF FIELD CHECK: Y

MINFILE NUMBER: **093N 024** NATIONAL MINERAL INVENTORY: 093N10 Au1

NAME(S): **MOTHERLODE**, FLAGSTAFF, GERMANSEN BEND, VIDI, FLAG

STATUS: Showing MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N10E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 42 09 N NORTHING: 6174130
LONGITUDE: 124 36 02 W EASTING: 399416
ELEVATION: 845 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Motherlode occurrence is located on the big bend in the Germansen River and the vein occurs on both sides of the river (Assessment Report 3956).

COMMODITIES: Gold Silver Copper

MINERALS

SIGNIFICANT: Tetrahedrite Chalcopyrite
ASSOCIATED: Quartz Pyrite
ALTERATION: Ankerite Mariposite Sericite Quartz
ALTERATION TYPE: Carbonate Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal Mesothermal
TYPE: I01 Au-quartz veins
SHAPE: Tabular
MODIFIER: Sheared
DIMENSION: STRIKE/DIP: 120/70W TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	

LITHOLOGY: Phyllite
Mariposite Ankerite Quartz Schist
Ankeritic Phyllite
Carbonatized Mafic Rock
Carbonatized Ultramafic Rock

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1981
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	267.6700	Grams per tonne
Gold	1.6800	Grams per tonne

REFERENCE: Assessment Report 8956.

CAPSULE GEOLOGY

The Motherlode occurrence is located just upstream from the big bend in the Germansen River and is found on both sides of the river (Assessment Report 3956).

This occurrence is composed of sulphide (tetrahedrite, chalcopyrite and pyrite)-bearing quartz veins found within phyllites of the Middle to Upper Triassic Slate Creek Formation (part of the Middle Triassic to Lower Jurassic Takla Group). The veins are up to 1 metre in width and strike 120 degrees, dipping 70 degrees to the west. These veins cut across the dominant northwest striking and steeply dipping foliation. The rocks around the veins vary from weakly carbonatized phyllites, containing ankerite porphyroblasts, to mariposite-ankerite-quartz-sericite schists. These rocks are cut by shear zones parallel to the foliation, and close to the showing are in fault contact with carbonatized mafic and ultramafic rocks. These

CAPSULE GEOLOGY

rocks lie within the right-lateral Manson fault zone of probable Cretaceous to Tertiary age.
Grab samples assayed 1.68 grams per tonne gold and 267.67 grams per tonne silver (Assessment Report 8956).

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EMPR AR 1931-76; 1938-C12
EMPR BULL 1, p. 57; 91
EMPR OF 1989-12
EMPR FIELDWORK 1988, p. 219
EMPR ASS RPT *8956, 9944
GSC MEM 252, p. 178
GSC P 41-5; 45-9; 75-33
GSC MAP 876A; 907A; 971A; 1586G; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/14 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 025**

NATIONAL MINERAL INVENTORY: 093N10,15 Au2

NAME(S): **FARRELL**, FARRELL GROUP, P.E.M.

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10E 093N15E
BC MAP:
LATITUDE: 55 44 52 N
LONGITUDE: 124 40 01 W
ELEVATION: 810 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Farrell occurrence is located on the east side of the Germansen River, 5 kilometres upstream from the mouth of the river. The access is by an old road which connects to the main road, approximately 3 kilometres to the southeast. There is mention of veining on the west side of the river (Minister of Mines Annual Report 1938, page C13).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6179267
EASTING: 395366

COMMODITIES: Gold, Silver, Copper

MINERALS

SIGNIFICANT: Gold, Tetrahedrite, Chalcopyrite
ASSOCIATED: Quartz, Pyrite
ALTERATION: Quartz, Carbonate, Mariposite, Talc, Ankerite, Chlorite, Malachite, Azurite
ALTERATION TYPE: Quartz-Carb., Carbonate, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic, Hydrothermal, Mesothermal
TYPE: I01 Au-quartz veins
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 3 Metres STRIKE/DIP: 012/56W TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Nina Creek	Undefined Formation	
Upper Paleozoic	Cooper Ridge	Undefined Formation	
Pennsylvan.-Permian			Manson Lakes Ultramafites

LITHOLOGY: Basalt, Phyllite, Shale, Serpentinized Ultramafic

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Slide Mountain
METAMORPHIC TYPE: Regional RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

INVENTORY

ORE ZONE: ROCK REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	0.6200	Grams per tonne
Gold	5.7300	Grams per tonne

COMMENTS: A wallrock (silicified and carbonitized basalt) over 1 metre. This sample also contained trace copper.
REFERENCE: Assessment Report 12130.

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1983
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	16.8000	Grams per tonne
Gold	29.6000	Grams per tonne
Copper	0.5900	Per cent

COMMENTS: A chip sample over a 1-metre interval from the centre of the vein.
REFERENCE: Assessment Report 12130.

CAPSULE GEOLOGY

The Farrell occurrence is located approximately 5 kilometres upstream from the mouth of the Germansen River. The mineralization occurs on both sides of the river with the most significant showing being on the east side, about 30 metres above the river.

This occurrence is hosted in rocks belonging to the Pennsylvanian to Permian Nina Creek Group and the Manson Lakes Ultramafites as well as shales of the Mississippian to Permian Cooper Ridge Group. These rocks are within the right-lateral Manson fault zone of probable Cretaceous to Tertiary age.

The occurrence was originally described as 3 zones of silicified and carbonatized volcanics distributed on each side of the river, containing quartz veins rich in tetrahedrite, chalcopyrite and gold.

These veins were re-examined in the early 1980s with the most effort put on the larger vein on the east side of the river. This quartz vein is approximately 6 metres wide, striking 012 degrees and dipping 56 degrees to the west. This attitude is roughly perpendicular to the attitude of the enclosing phyllite. It has an exposed length of 3 metres with the north end cut by a northwest-striking fault. It is found within sheared and altered (quartz-carbonate) basalts and is in close proximity to serpentinized ultramafics. The basalts and ultramafics may be altered to mariposite-talc-ankerite-chlorite schists. The vein carries mineralization in the form of tetrahedrite, free gold, chalcopyrite, malachite, azurite and pyrite.

A 1-metre chip sample from the centre of the vein analysed 29.6 grams per tonne gold, 16.8 grams per tonne silver and 0.59 per cent copper. A 1-metre chip taken from the altered basalt analysed 5.73 grams per tonne gold, 0.62 gram per tonne silver and trace amounts of copper (Assessment Report 12130).

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EMPR ASS RPT 8957, *12130, 12362, 17901, 19211, 20854
EMPR OF 1989-12; 1990-17
EMPR FIELDWORK *1988, pp. 209-220; 1989, pp. 101-114
GSC MEM 252, p. 178
GSC P 41-5; 45-9; 75-33
GSC MAP 876A; 907A; 971A; 1586G; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/14 REVISED BY: FF FIELD CHECK: Y

MINFILE NUMBER: **093N 026**
NATIONAL MINERAL INVENTORY: 093N15 Cu2

NAME(S): **SUNSET**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N15E
BC MAP:
LATITUDE: 55 45 52 N
LONGITUDE: 124 40 42 W
ELEVATION: 800 Metres
LOCATION ACCURACY: Within 500M
MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6181139
EASTING: 394696
COMMENTS: The Sunset occurrence is located on the adit, approximately 3 kilometres south of Germansen Landing, just south of the junction between Germansen River and Plughat Creek (near a large open pit of a placer operation) (Open File 1989-12).

COMMODITIES: Copper Lead Zinc Silver Mercury

MINERALS
SIGNIFICANT: Chalcopyrite Galena Sphalerite
ASSOCIATED: Quartz Pyrite
ALTERATION: Pyrite Malachite
ALTERATION TYPE: Pyrite Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I01 Au-quartz veins
DIMENSION: 37 x 4 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Quartz vein.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Cooper Ridge	Undefined Formation	

LITHOLOGY: Quartzitic/Quartzose Argillite
Quartzitic/Quartzose Phyllite
Argillite
Slate
Phyllite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	52.0000	Grams per tonne
Copper	1.6000	Per cent
Lead	0.0337	Per cent
Zinc	0.0690	Per cent

COMMENTS: Grab sample from mineralized vein (Sample No. FFE88-34-4-4).
REFERENCE: Open File 1989-12.

CAPSULE GEOLOGY

The Sunset occurrence is located on an adit, approximately 3 kilometres south of Germansen Landing, just south of the junction between Germansen River and Plughat Creek (near a large open pit of a placer operation) (Open File 1989-12).

This occurrence is hosted by the Mississippian to Permian Cooper Ridge Group. The Cooper Ridge Group in this area has been included as the uppermost sequence of rocks belonging to the Cassiar Terrane (Bulletin, in preparation). The Cooper Ridge Group is composed predominantly of grey to dark grey or black, rusty weathering, thin bedded, wavy to platy argillites. The argillites may grade into slates or phyllites with cleavage becoming the dominant planar fabric (Bulletin, in preparation). At this location, the Cooper Ridge Group is found within the right-lateral Manson fault zone, a northwest-

CAPSULE GEOLOGY

striking fault of probable Cretaceous to Tertiary age (Bulletin, in preparation).

The entrance to the adit is now near the southwest part of an old placer pit which has exposed numerous quartz veins. These veins vary from 10 centimetres to 4 metres in width and are fairly continuous. Two sets of quartz veining have been observed with one set being linear and concordant with foliation, which strikes 105 to 128 degrees and dips steeply to the southwest. The other set is discordant, fractured, exhibits pinching and swelling, and strikes between 020 and 045 degrees. The concordant veins contain chalcopyrite, galena, sphalerite and pyrite.

The vein within the adit is 3 to 3.65 metres in width, striking northwest for a distance of 37 metres. This vein contains pyrite, chalcopyrite and some malachite staining. An assay of vein material yielded trace gold, 21 grams per tonne silver and 1 per cent copper (Bulletin 1, page 59). A grab sample from one of the veins from the pit analysed 0.066 gram per tonne gold, 52 grams per tonne silver, 1.60 per cent copper, 0.0337 per cent lead, 0.0690 per cent zinc and 8 grams per tonne mercury (Open File 1989-12). This sample was taken from a concordant vein and is bounded by Cooper Ridge Group quartz-rich phyllites and argillites.

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EMPR OF 1990-17; *1989-12; 1988-12
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 907A; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/09 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 027**

NATIONAL MINERAL INVENTORY:

NAME(S): **ASP**, A.G., BOULDER CREEK

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 35 59 N
LONGITUDE: 124 22 08 W
ELEVATION: 925 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The ASP occurrence is located on the north bank of Boulder Creek about 1 kilometre upstream from the mouth.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6162381
EASTING: 413748

COMMODITIES: Lead, Silver, Gold, Zinc, Copper, Molybdenum

MINERALS

SIGNIFICANT: Galena, Sphalerite, Chalcopyrite, Molybdenite
ASSOCIATED: Quartz, Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: l01 Au-quartz veins
SHAPE: Tabular

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic-Paleoz.	Boulder Creek	Undefined Formation	

LITHOLOGY: Quartz Chlorite Muscovite Schist

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Kootenay
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Near Germansen batholith.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	150.0000	Grams per tonne
Copper	4.0000	Per cent

REFERENCE: Open File 1988-12.

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1982
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	15.3000	Grams per tonne
Copper	0.0200	Per cent
Lead	0.6100	Per cent
Zinc	0.4000	Per cent

COMMENTS: Trace amounts of molybdenite are observed in the area.
REFERENCE: Assessment Report 1659.

CAPSULE GEOLOGY

The ASP occurrence is located on the north bank of Boulder Creek about 1 kilometre upstream from the mouth.

The showing is composed of a series of quartz veins containing galena and pyrite with minor sphalerite and chalcopyrite and trace amounts of molybdenite. These veins range in thickness from 0.3 to 4.9 metres and strike northwest, hosted within quartz-chlorite-muscovite schists of the Proterozoic to Paleozoic(?) Boulder Creek Group. These veins are located within the Manson fault zone, a northwest striking right-lateral fault of Cretaceous to Tertiary age. The Germansen batholith intrudes the area approximately 2 kilometres to the west.

CAPSULE GEOLOGY

Grab samples from the ASP claim assayed 15.3 grams per tonne silver, 0.61 per cent lead, 0.02 per cent copper and 0.4 per cent zinc (Assessment Report 1659). Another grab sample from one of these veins analysed 150.0 grams per tonne silver and 4.0 per cent lead (Open File 1988-12).

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EMPR ASS RPT *1659, 10702
EMPR FIELDWORK 1987, pp. 169-180
EMPR OF *1988-12
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GSC MEM 252, p. 180
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33
GSC PROG RPT 1879-80, p. 110B

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/08/24 REVISED BY: FF FIELD CHECK: Y

MINFILE NUMBER: **093N 028**

NATIONAL MINERAL INVENTORY: 093N9 Ag2

NAME(S): **BERTHOLD**, ELSIE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 35 40 N
LONGITUDE: 124 21 46 W
ELEVATION: 930 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Berthold occurrence is located on the west side of lower Manson Lake, 0.5 kilometre southwest of the mouth of Boulder Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6161787
EASTING: 414122

COMMODITIES: Lead Silver

MINERALS
SIGNIFICANT: Galena Pyrite
COMMENTS: Argentiferous galena.
ASSOCIATED: Quartz
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Mesothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Tabular
MODIFIER: Sheared

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic-Paleoz.	Boulder Creek	Undefined Formation	
Cretaceous			Germansen Batholith

LITHOLOGY: Quartz Chlorite Muscovite Schist
Carbonaceous Argillite
Hornblende Trachyte Dike

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Kootenay
PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1968

COMMODITY	GRADE	
Silver	6.2200	Grams per tonne
Lead	13.1800	Per cent

REFERENCE: Assessment Report 1659.

CAPSULE GEOLOGY

The Berthold occurrence is located on west side of lower Manson Lake, 0.5 kilometre southwest of the mouth of Boulder Creek.

Regionally, this occurrence is hosted within schists and argillites of the Proterozoic to Paleozoic(?) Boulder Creek Group which is assigned to the pericratonic Kootenay Terrane. This enigmatic package of metamorphosed, fine-grained clastic rocks and impure carbonates is exposed within the northwest striking right-lateral Manson fault zone, in fault contact with the Slide Mountain and Quesnel terranes. To the west, rocks belonging to the Quesnel Terrane are intruded by the Cretaceous Germansen batholith.

This occurrence is a 3-metre wide galena and pyrite-bearing quartz vein found between quartz-chlorite-muscovite schists and black carbonaceous argillites of the Boulder Creek Group. The surrounding rocks appear sheared and are silicified. The quartz vein strikes 160 degrees and dips steeply northeast. A hornblende trachyte dike locally intrudes these rocks. A grab sample from this vein assayed 6.22 grams per tonne silver, 13.18 per cent lead, 0.03 per cent copper, and 0.01 per cent zinc (Assessment Report 1659).

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EMPR ASS RPT *1659, *7445
EMPR FIELDWORK 1987, pp. 169-180; 1991, pp. 119-126
EMPR BULL 91
GSC MEM 252-180
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33
Chevron File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/31 REVISED BY: FF FIELD CHECK: N

MINFILE NUMBER: **093N 029**

NATIONAL MINERAL INVENTORY: 093N10 Au3

NAME(S): **ERICKSON (GERM)**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10W
BC MAP:
LATITUDE: 55 39 19 N
LONGITUDE: 124 51 12 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located at the headwaters of a small creek just east of Olsen Creek, about 2.5 kilometres south of Germansen Lake and 22 kilometres west of Manson Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6169271
EASTING: 383392

COMMODITIES: Gold Silver Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	
Cretaceous			Germansen Batholith

ISOTOPIC AGE: 106 +/- 4 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Argillite
Granodiorite
Aplite Dike

HOSTROCK COMMENTS: The age of the Germansen batholith is from sample GM87-12-4 which is approximately 20 kilometres to the west (Bulletin 91).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

CAPSULE GEOLOGY

The Erickson (Germ) occurrence is located approximately 2.5 kilometres south of Germansen Lake, 22 kilometres west of Manson Creek.

This occurrence is hosted within argillites belonging to the Middle-Upper Triassic Slate Creek Formation of the Middle Triassic to Lower Jurassic Takla Group. These argillites are intruded by the Cretaceous Germansen batholith approximately 120 metres to the south. The argillites are sheared and intensely hornfelsed near the granodiorite. Near the occurrence, aplite dikes up to 10 metres in width, also intrude the argillites.

The showing consists of two lenticular quartz veins, 20 and 40 centimetres wide, within the sheared basal argillites. The veins are mineralized with pyrite and chalcopyrite, and contain anomalous amounts of gold and silver.

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EMPR BULL 70; *91
EMPR FIELDWORK 1987, pp. 169-180; 1988, pp. 209-220; 1991, pp. 119-126
GSC MEM 252, p. 181
GSC MAP 876A; 907A; 971A; 1424A; 5249G

BIBLIOGRAPHY

GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24
DATE REVISED: 1992/07/31

CODED BY: GSB
REVISED BY: FF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 030**

NATIONAL MINERAL INVENTORY: 093N9 W1

NAME(S): **KATHY**, GLO, TROY, BILLY, TAIT TUNGSTEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 39 28 N
LONGITUDE: 124 28 35 W
ELEVATION: 1040 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Kathy occurrence is located approximately 2 kilometres southeast of the settlement of Manson Creek, just north of Lost Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6168980
EASTING: 407113

COMMODITIES: Lead Silver Tungsten

MINERALS

SIGNIFICANT: Galena Scheelite
COMMENTS: Low concentrations of galena and scheelite.
ASSOCIATED: Quartz Pyrite
ALTERATION: Quartz
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic-Paleoz.	Boulder Creek	Undefined Formation	

LITHOLOGY: Phyllite
Arenaceous Limestone
Sandstone
Quartzite
Siltstone
Argillite
Marble
Amphibolite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Slide Mountain
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Manson Upland
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: ROCK
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1981
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	4.6000	Grams per tonne
Lead	0.1068	Per cent

REFERENCE: Assessment Report 9572.

CAPSULE GEOLOGY

The Kathy occurrence is located approximately 2 kilometres southeast of the settlement of Manson Creek, just north of Lost Creek.

Regionally, this showing occurs within the Proterozoic to Paleozoic(?) Boulder Creek Group. Here, the Boulder Creek Group lies as a fault-bounded sliver within the Manson fault zone. The Boulder Creek Group consists of a series of sandstones, impure quartzites, siltstones, argillites, marbles and minor amphibolite. Immediately to the southwest, lies the Cretaceous Germansen batholith. To the north of this occurrence lies rocks belonging to the Upper Paleozoic or younger Wolf Ridge Gabbro, the Pennsylvanian to Permian Nina Creek Group and pericratonic rocks of North American affinity.

Mineralization is contained within a number of lenticular quartz veins that range from 15 to 17 centimetres wide and consists of

CAPSULE GEOLOGY

galena, scheelite and pyrite. The quartz veins occur in hydrothermally altered phyllites and arenaceous limestones. The veins are controlled by a fault that is related to the Manson fault zone. The occurrence of scheelite within these veins possibly indicate that they may be genetically related to the Germansen batholith. A rock sample taken in 1981 assayed 0.1068 per cent lead, 0.0258 per cent zinc, 4.6 grams per tonne silver, and 0.0222 per cent copper (Assessment Report 9572).

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EMPR BULL *91
EMPR FIELDWORK 1987, pp. 169-180
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33
W MINER Jan. 1953 p. 46

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/27 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 031**

NATIONAL MINERAL INVENTORY: 093N8 Ag1

NAME(S): **BLACKBURN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N08E 093N08W
BC MAP:
LATITUDE: 55 24 39 N
LONGITUDE: 124 14 47 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showing is reported to be located 10 kilometres up Gaffney Creek from the Manson road. The above coordinates are taken from the Blackburn occurrence plot as shown on Preliminary Map 45-9 (Geological Survey of Canada Paper 45-9).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6141217
EASTING: 421089

COMMODITIES: Silver

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Nina Creek	Unnamed/Unknown Formation	

LITHOLOGY: Cherty Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Slide Mountain

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

At the Blackburn showing, a pyritic fracture zone, up to 4 metres wide, in grey, cherty limestone is reported "to contain several ounces of silver a ton" (Geological Survey of Canada Paper 45-9, page 18). Formerly part of the Carboniferous to Cretaceous Cache Creek Complex, the stratigraphy in this area has recently been reassigned to the Pennsylvanian to Permian Nina Creek Group (also formerly part of the Slide Mountain Group) (Ferri and Melville, bulletin in preparation).

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GSC MEM *252, p. 181
GSC OF 2842
GSC P *41-5; 42-2; *45-9, p.18
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 032**

NATIONAL MINERAL INVENTORY: 093N7 Cu1

NAME(S): **KLAWLI**, TEA, KOHSE COPPER, GOLD

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N07W
BC MAP:
LATITUDE: 55 17 29 N
LONGITUDE: 124 46 56 W
ELEVATION: 1050 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the west-flowing tributary to the Klawli River.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6128665
EASTING: 386828

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Pyrrhotite, Chalcopyrite, Pyrite
ALTERATION: Quartz, Carbonate, Chlorite, Malachite, Azurite
ALTERATION TYPE: Silicific'n, Carbonate, Propylitic, Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated, Shear
CLASSIFICATION: Porphyry, Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	

ISOTOPIC AGE: Lower Jurassic
DATING METHOD: Fossil
MATERIAL DATED: Ammonites

LITHOLOGY: Altered Volcanic
Plagioclase Hornblende Porphyritic Flow
Feldspar Porphyritic Flow
Massive Volcanic

HOSTROCK COMMENTS: The fossil date reference for the informally named Chuchi Lake Formation is Fieldwork 1991, page 109.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY	GRADE	
Silver	1225.0000	Grams per tonne
Gold	23.3000	Grams per tonne
Copper	9.3000	Per cent

COMMENTS: Values are from different samples.
REFERENCE: Assessment Report 22099.

CAPSULE GEOLOGY

The Klawli occurrence lies on a west-flowing tributary creek on the east side of the Klawli River. The locality is for a series of trenches and adits on the south side of the creek. The showings have been known since the 1920s when the Consolidated Mining and Smelting Company of Canada sunk several shafts on the property. It has been explored sporadically since then by the Quebec Gold Mining Corporation, Tro-Buttle Exploration Limited, Phelps-Dodge Corporation, Eric Shaede and most recently by Noranda Exploration Company Limited.

The region is underlain by maroon and green plagioclase +/- hornblende porphyritic volcanic flows of the Lower Jurassic Chuchi Lake Formation of the Middle Triassic to Lower Jurassic Takla Group. Early Jurassic rocks of the Hogem Intrusive Complex outcrop to the south and west. The volcanics are variably bleached and altered; areas of carbonate +/- quartz and propylitic alteration occur. In the trenches, the host volcanics are intensely altered and have zones containing disseminated pyrite, chalcopyrite, malachite and azurite.

CAPSULE GEOLOGY

Although the rocks appear sheared and fractured, discrete shear zones and fabrics are not recognized. It appears that the gold mineralization is shear-zone hosted and is associated with pyrrhotite rather than pyrite or chalcopyrite (Faulkner, 1991).

The best assays recorded on the property range from 1.24 to 23.3 grams per tonne gold, 16.1 to 1225 grams per tonne silver and 2.4 to 9.3 per cent copper (Assessment Report 22099). The mineralization is interpreted to be a series of high-grade veins related to a buried porphyry system (Assessment Report 22099).

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EMPR OF 1991-3; 1992-4; 1993-3
GSC MEM 252, p. 184
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A, 1424A; 1586G
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/10 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 033** NATIONAL MINERAL INVENTORY: 093N4 Cr1

NAME(S): **SIMPSON**, ALLOY, X12-X14

STATUS: Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N04E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 13 53 N NORTHING: 6123404
LONGITUDE: 125 30 21 W EASTING: 340647
ELEVATION: 2000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for occurrence X14 on the southwest flank of Chrome Peak, approximately 5 kilometres south-southeast of Nesabut Peaks and 40 kilometres southeast of Takla Landing (Fieldwork 82-1, Figure 1).

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
ASSOCIATED: Olivine
ALTERATION: Serpentine Talc
COMMENTS: Alteration dikes of albitite-rodingite have been observed locally.
ALTERATION TYPE: Serpentin'zn Rodingitiz'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Layered Stratabound Disseminated
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite
SHAPE: Irregular
DIMENSION: STRIKE/DIP: TREND/PLUNGE: 012/
COMMENTS: Individual nodules trend variably from 012 to 155 degrees.

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinized Harzburgite
Dunite
Gabbro Dike
Orthopyroxenite
Limestone
Dolomite
Siltstone
Shaly Siltstone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1942
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Chromium	31.3000	Per cent

COMMENTS: From a composite chip sample of all the chromite nodules.
REFERENCE: Geological Survey of Canada Memoir 252, page 189.

CAPSULE GEOLOGY

The Simpson occurrence is situated in the Mitchell Range east of Takla Lake, near the summit of a mountain known locally as Chrome Peak. It comprises occurrences X12-X14 as outlined by Whittaker (Fieldwork 1982-1, Table 1) and is one of numerous small chromite occurrences located in the southern part of the range (see 093N 034, 35, 36, 37, 38, 39, 40). The showing was originally staked by Hunter Simpson and associates in 1941, but no work was recorded and the claims were allowed to lapse.

The Chrome Peak area is underlain by allochthonous serpentinized

CAPSULE GEOLOGY

ultramafics, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. These rocks host local pre-tectonic orthopyroxenite veins, both pre and post-tectonic gabbro dikes and "alteration dikes" of albitite-rodingite. The massif is bound by north-northeast and east-trending lineaments and is both surrounded by and hosts xenoliths of sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex. Late Triassic-Early Jurassic Topley intrusions have been emplaced into the Cache Creek Complex rocks immediately west and north of the allochthon.

The allochthon comprises widely serpentinized, tectonized harzburgite with minor dunite. The harzburgite is a mottled black-green to black-brown colour on fresh surfaces and is generally intensely foliated. It weathers to a deep brown colour with pale, silvery brown talcose patches. The dunite comprises fine to medium-grained anhedral olivine occurring in contorted, irregularly-shaped patches that reflect the internal deformation of the harzburgite. Xenoliths up to 1 square kilometre in area commonly occur in the southern part of the massif and consist of limestone, dolostone, siltstone with chert laminae and shaly siltstone. Smaller xenoliths occur to the north.

Fine to medium-grained chromite is common as disseminations throughout the ultramafic rocks, varying from trace to two per cent by volume. Harzburgite, however, hosts all but one of the layered and nodular aggregate and massive chromite occurrences in the area, including the Simpson (Fieldwork 1982-1, page 237).

At the Simpson occurrence, numerous small aggregate (greater than 75 per cent) and massive chromite nodules lying parallel to a gently dipping fracture plane are exposed southwest of Chrome Peak. The nodules range from 3 by 8, to 40 by 15 centimetres in area and are believed to have limited vertical extent (Geological Survey of Canada Memoir 252, page 189). Two other aggregate chromite nodules also occur to the north. Much of the chromite was reported to be clean and bright.

Chemical analysis of a composite chip sample collected from all the nodules by C.S. Lord in 1942 gave the following results (Geological Survey of Canada Memoir 252, page 189):

Cr_2O_3	45.7 %
Cr	31.3 %
Fe	15.55 %
Cr:Fe	2.01:1

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GSC P 42-7; 45-6; 82-1A, pp. 239-245
GSC MEM *252, pp. 135,189
GSC MAP 844A; 907A; 971A; 1008A; 1424A
GSC OF 3071
EMR MP COMM FILE MR-Cr-301.00 British Columbia
Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/13 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 034**

NATIONAL MINERAL INVENTORY: 093N4,6 Cr1

NAME(S): **BOB**, X4-X7

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N03W 093N04E 093N06W
BC MAP:
LATITUDE: 55 14 50 N
LONGITUDE: 125 30 11 W
ELEVATION: 1825 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for occurrence X6 north of Chrome Peak, approximately 4 kilometres southeast of Nesabut Peaks and 40 kilometres southeast of Takla Landing (Fieldwork 82-1, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6125159
EASTING: 340887

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
ASSOCIATED: Olivine
ALTERATION: Serpentine Talc
COMMENTS: Alteration dikes of albitite-rodingite have been observed locally.
ALTERATION TYPE: Serpentin'zn Rodingitiz'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Layered Stratabound Massive Disseminated
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite
SHAPE: Irregular
DIMENSION: STRIKE/DIP: TREND/PLUNGE: 155/45
COMMENTS: Trend is for a 2 metre long by 2 centimetre thick chromite layer.

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinized Harzburgite
Dunite
Gabbro Dike
Orthopyroxenite
Limestone
Dolomite
Siltstone
Shaly Siltstone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks
Cache Creek
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1942
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Chromium	20.5000	Per cent

COMMENTS: Value is an average of two composite grab samples of chromite mineralization.
REFERENCE: Geological Survey of Canada Memoir 252, page 190.

CAPSULE GEOLOGY

The Bob occurrence is situated in the Mitchell Range east of Takla Lake, north of the summit of a mountain known locally as Chrome Peak. It comprises occurrences X4-X7 as outlined by Whittaker (Fieldwork 1982-1, Table 1) and is one of numerous small chromite occurrences located in the southern part of the range (see 093N 033, 35, 36, 37, 38, 39, 40)

The Chrome Peak area is underlain by allochthonous serpentinized ultramafics, formerly assigned to the Middle Permian to Late Triassic

CAPSULE GEOLOGY

Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. These rocks host local pre-tectonic orthopyroxenite veins, both pre and post-tectonic gabbro dikes and "alteration dikes" of albitite-rodingite. The massif is bound by north-northeast and east-trending lineaments and is both surrounded by and hosts xenoliths of sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex. Late Triassic-Early Jurassic Topley intrusions have been emplaced into the Cache Creek Complex rocks immediately west and north of the allochthon.

The allochthon comprises widely serpentinized, tectonized harzburgite with minor dunite. The harzburgite is a mottled black-green to black-brown colour on fresh surfaces and is generally intensely foliated. It weathers to a deep brown colour with pale, silvery brown talcose patches. The dunite comprises fine to medium-grained anhedral olivine occurring in contorted, irregularly-shaped patches that reflect the internal deformation of the harzburgite. Xenoliths up to one square kilometre in area commonly occur in the southern part of the massif and consist of limestone, dolostone, siltstone with chert laminae and shaly siltstone. Smaller xenoliths occur to the north.

Fine to medium-grained chromite is common as disseminations throughout the ultramafic rocks, varying from trace to two per cent by volume. Harzburgite, however, hosts all but one of the layered and nodular aggregate and massive chromite occurrences in the area, including the Bob (Fieldwork 1982-1, page 237).

At the Bob occurrence, numerous small aggregate (greater than 75 per cent) and massive chromite nodules and aggregate chromite layers are hosted by serpentinized harzburgite or, in one case, by dunite. The nodules range up to 0.5 metre in diameter while the largest layer is 2 metres long by 2 centimetres thick. This layer strikes 155 degrees and dips at 45 degrees to the southwest.

Chemical analysis of two composite chip samples collected from two areas by C.S. Lord in 1942 gave the following results (Geological Survey of Canada Memoir 252, page 190):

Sample	#1	#2
Cr2O3	28.6 %	31.2 %
Cr	19.6 %	21.4 %
Fe	17.1 %	14.5 %
Cr:Fe	1.15:1	1.48:1

BIBLIOGRAPHY

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EMR MP COMM FILE MR-Cr-301.00 British Columbia
GSC MAP 844A; 907A; 971A; 1008A; 1424A
GSC MEM *252, pp. 135,189-190
GSC OF 3071
GSC P 42-7; 45-6; 72-53, p. 80; 82-1A, pp. 239-245
Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/13 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 035**

NATIONAL MINERAL INVENTORY: 093N6 Cr1

NAME(S): **IRISH**, X1-X2

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N06W
BC MAP:
LATITUDE: 55 16 48 N
LONGITUDE: 125 27 31 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for occurrence X1, approximately 5 kilometres east of Nesabut Peaks and 40 kilometres southeast of Takla Landing (Fieldwork 82-1, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6128705
EASTING: 343840

COMMODITIES: Chromium

MINERALS

SIGNIFICANT: Chromite
ASSOCIATED: Olivine
ALTERATION: Serpentine Talc
COMMENTS: Alteration dikes of albitite-rodingite have been observed locally.
ALTERATION TYPE: Serpentin'zn Rodingitiz'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Layered Stratabound Disseminated Massive
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite
SHAPE: Irregular
DIMENSION: 10 x 3 Metres STRIKE/DIP: TREND/PLUNGE: 027/
COMMENTS: Trend is for one recently described aggregate chromite nodule. Dimensions are the average for the largest chromite lens, from early descriptions.

HOST ROCK

DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinized Harzburgite
Dunite
Gabbro Dike
Orthopyroxenite
Limestone
Dolomite
Siltstone
Slaty Siltstone

HOSTROCK COMMENTS: Cache Creek Comples rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1942
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Chromium	24.3000	Per cent

COMMENTS: Average of 17 channel samples across an average of 1.68 metres taken from several chromite lenses.
REFERENCE: Geological Survey of Canada Memoir 252, page 190.

CAPSULE GEOLOGY

The Irish occurrence is situated at the south end of the Mitchell Range, approximately 5 kilometres east of Nesbut Peaks and 40 kilometres southeast of Takla Landing. It comprises occurrences X1-X2 as outlined by Whittaker (Fieldwork 1982-1, Table 1) and is the largest of numerous chromite occurrences located in the range (see 093N 033, 34, 36, 37, 38, 39, 40).

CAPSULE GEOLOGY

The area is underlain by allochthonous serpentinized ultramafics, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. These rocks host local pre-tectonic orthopyroxenite veins, both pre and post-tectonic gabbro dikes and "alteration dikes" of albitite-rodingite. The massif is bound by north-northeast and east-trending lineaments and is both surrounded by and hosts xenoliths of sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex. Late Triassic-Early Jurassic Topley intrusions have been emplaced into the Cache Creek Complex rocks immediately west and north of the allochthon.

The allochthon comprises widely serpentinized, tectonized harzburgite with minor dunite. The harzburgite is a mottled black-green to black-brown colour on fresh surfaces and is generally intensely foliated. It weathers to a deep brown colour with pale, silvery brown talcose patches. The dunite comprises fine to medium-grained anhedral olivine occurring in contorted, irregularly-shaped patches that reflect the internal deformation of the harzburgite. Xenoliths up to one square kilometre in area commonly occur in the southern part of the massif and consist of limestone, dolostone, siltstone with chert laminae and shaly siltstone. Smaller xenoliths occur to the north.

Fine to medium-grained chromite is common as disseminations throughout the ultramafic rocks, varying from trace to two per cent by volume. Harzburgite, however, hosts all but one of the layered and nodular aggregate and massive chromite occurrences in the area, including the Irish (Fieldwork 1982-1, page 237).

Early reports describe mineralization at the Irish occurrence as comprising several irregular lenses of chromite hosted by serpentinized harzburgite distributed over a strike length of 20.7 metres along a line trending 154 degrees. The largest of these lenses was reported to be 9.9 metres long and averages 2.7 metres wide and the total area of exposed chromite was estimated to be approximately 36 square metres (Geological Survey of Canada Memoir 252, page 190). Recent work carried out in the area, however, identified only two aggregate (greater than 75 per cent) chromite nodules, the largest of these being 8 by 4 centimetres (Fieldwork 1982-1, Table 1). This nodule reportedly trends 027 degrees.

Average assay values from 17 channel samples reportedly taken from several lenses across an average width of 1.68 metres are as follows (Geological Survey of Canada Memoir 252, page 190):

Cr_2O_3	35.6 %
Cr	24.3 %
Fe	10.7 %
Cr:Fe	2.30:1

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EMR MP COMM FILE MR-Cr-301.00 British Columbia
GSC MAP 844A; 907A; 971A; 1008A; 1424A
GSC MEM *252, pp. 135,190
GSC OF 3071
GSC P 42-7; 45-6; 82-1A, pp. 239-245
Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/13 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 036**

NATIONAL MINERAL INVENTORY: 093N6 Cr3

NAME(S): **HOGEM RANGES - X3**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06W
BC MAP:
LATITUDE: 55 16 00 N
LONGITUDE: 125 27 45 W
ELEVATION: 1750 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for occurrence X3, approximately 5 kilometres east of Nesabut Peaks and 40 kilometres southeast of Takla Landing (Fieldwork 82-1, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6127230
EASTING: 343541

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Stratabound
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite
SHAPE: Irregular
DIMENSION: 3 Metres STRIKE/DIP: 145/45N TREND/PLUNGE:
COMMENTS: The dimension and attitude are for the schlieren hosting disseminated chromite.

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinized Harzburgite
Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The Hogem Ranges (X3) occurrence is situated at the south end of the Mitchell Range, approximately 40 kilometres southeast of Takla Landing. It comprises occurrence X3 as outlined by Whittaker (Fieldwork 1982-1, Table 1) and is one of numerous small chromite occurrences located in the southern part of the range (see 093N 033, 34, 35, 37, 38, 39, 40).

The occurrences comprise small disseminated, aggregate (greater than 75 per cent) and massive chromite nodules and layers which are hosted by allochthonous, serpentinized harzburgite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. The intrusion is bound by north-northeast and east-trending lineaments and is both surrounded by and hosts xenoliths of sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex. For additional regional geology details, please refer to the Simpson, Bob and Irish occurrences (093N 033, 34, 35).

This occurrence is described as three aggregate chromite nodules, ranging from 3 by 4 centimetres to 7 centimetres in diameter, and disseminated chromite (50 per cent) in schlieren, all within serpentinized harzburgite. The schlieren strike 145 degrees, dip at 45 degrees to the northeast and are exposed over an area of 15 by 300 centimetres. Accessory chromite is also widely disseminated throughout the ultramafic rocks, varying up to two per cent by volume (Fieldwork 1982-1, page 240).

No economic evaluation of this occurrence is known to have taken place.

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GSC MAP 844A; 907A; 971A; 1008A; 1424A
GSC MEM 252, pp. 135,189
GSC OF 3071
GSC P 42-7; 45-6; *82-1A, pp. 239-245
Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/14 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 037**

NATIONAL MINERAL INVENTORY: 093N6 Cr2

NAME(S): **HOGEM RANGES**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06W
BC MAP:
LATITUDE: 55 15 24 N
LONGITUDE: 125 28 48 W
ELEVATION: 1875 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for a chromite occurrence 3 kilometres northeast of Chrome Peak, approximately 40 kilometres southeast of Takla Landing (Geological Survey of Canada Map 844A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6126157
EASTING: 342390

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Stratabound
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinized Harzburgite
Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The Hogem Ranges occurrence is situated at the south end of the Mitchell Range, approximately 40 kilometres southeast of Takla Landing. It is one of numerous small chromite occurrences located in the range (see 093N 033, 34, 35, 36, 38, 39, 40).

The occurrences comprise small disseminated, aggregate (greater than 75 per cent) and massive chromite nodules and layers which are hosted by allochthonous, serpentinized harzburgite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. The intrusion is bound by north-northeast and east-trending lineaments and is both surrounded by and hosts xenoliths of sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex. For additional regional geology details, please refer to the Simpson, Bob and Irish occurrences (093N 033, 34, 35).

No recent information concerning this occurrence is available, but it was likely mapped by Whittaker as one of the seventeen occurrences he located in the area (Fieldwork 1982-1, Table 1, Figure 1).

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GSC MAP *844A; 907A; 971A; 1008A; 1424A
GSC MEM 252, pp. 135,189
GSC OF 3071
GSC P 42-7; 45-6; 82-1A, pp. 239-245

BIBLIOGRAPHY

Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/14 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 038**

NATIONAL MINERAL INVENTORY:

NAME(S): **X9**, X8, X17

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N03W
BC MAP:
LATITUDE: 55 14 30 N
LONGITUDE: 125 29 01 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for occurrence X9, 1.5 kilometres northeast of Chrome Peak, 40 kilometres southeast of Takla Landing (Fieldwork 82-1, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6124497
EASTING: 342101

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Layered Massive Stratabound
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite
DIMENSION: 2 Metres STRIKE/DIP: 151/66N TREND/PLUNGE:
COMMENTS: Dimension and attitude are for the largest massive chromite layer.

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinized Harzburgite
Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The X9 occurrence is situated at the south end of the Mitchell Range, approximately 40 kilometres southeast of Takla Landing. It comprises occurrences X8, X9 and X17 as outlined by Whittaker (Fieldwork 1982-1, Table 1) which are three of numerous small chromite occurrences located in the range (see 093N 033, 34, 35, 36, 37, 39, 40).

The occurrences comprise small disseminated, aggregate (greater than 75 per cent) and massive chromite nodules and layers which are hosted by allochthonous, serpentinized harzburgite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. The intrusion is bound by north-northeast and east-trending lineaments and is both surrounded by and hosts xenoliths of sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex. For additional regional geology details, please refer to the Simpson, Bob and Irish occurrences (093N 033, 34, 35).

This occurrence is described as two massive and one aggregate chromite layers and two aggregate chromite nodules hosted by serpentinized harzburgite. The following table details information concerning each (Fieldwork 1982-1, Table 1):

Occurrence	Form	Texture	Trend	Dimensions
X8	layer	massive	122/33N	150x44 cms
X9	layer	massive	151/66NE	200x75 cms
X17	layer	aggregate	103/47N	25x4 cms
	nodule	aggregate	-	5x5 cms
	nodule	aggregate	-	4x4 cms

Accessory chromite is also widely disseminated throughout the ultramafic rocks, varying up to two per cent by volume (Fieldwork

CAPSULE GEOLOGY

1982-1, page 240).
No economic evaluation of this occurrence is known to have taken place.

BIBLIOGRAPHY

EMPR FIELDWORK *1982-1, pp. 234-243
EMPR Unpublished Chromite Bulletin, Stevenson, J.S. (1941)
EMPR OF 2000-19
EMPR PF (*Whittaker, P. (1983): Unpublished Ph.D. Thesis; "Chromite in Alpine Type Peridotites", Carleton University, 339 pp. (refer to 093N General File))
GSC MAP 844A; 907A; 971A; 1008A; 1424A
GSC MEM 252, pp. 135,189
GSC OF 3071
GSC P 42-7; 45-6; *82-1A, pp. 239-245
Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/14 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 039**

NATIONAL MINERAL INVENTORY:

NAME(S): **X16**, X15

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N04E
BC MAP:
LATITUDE: 55 13 30 N
LONGITUDE: 125 31 06 W
ELEVATION: 1900 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for occurrence X16, 1.5 kilometres southwest of Chrome Peak, 40 kilometres southeast of Takla Landing (Fieldwork 82-1, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6122722
EASTING: 339827

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Layered Disseminated Stratabound
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite
DIMENSION: 3 Metres STRIKE/DIP: 015/90 TREND/PLUNGE:
COMMENTS: Dimension and attitude are for the largest disseminated chromite layer.

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinized Harzburgite
Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The X16 occurrence is situated at the south end of the Mitchell Range, approximately 40 kilometres southeast of Takla Landing. It comprises occurrences X16 and X15 as outlined by Whittaker (Fieldwork 1982-1, Table 1) which are two of numerous small chromite occurrences located in the range (see 093N 033, 34, 35, 36, 37, 38, 40).

The occurrences comprise small disseminated, aggregate (greater than 75 per cent) and massive chromite nodules and layers which are hosted by allochthonous, serpentinized harzburgite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. The intrusion is bound by north-northeast and east-trending lineaments and is both surrounded by and hosts xenoliths of sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex. For additional regional geology details, please refer to the Simpson, Bob and Irish occurrences (093N 033, 34, 35).

This occurrence is described as one aggregate chromite nodule and two disseminated chromite layers hosted by serpentinized harzburgite. The following table details information concerning each (Fieldwork 1982-1, Table 1):

Occurrence	Form	Texture	Trend	Dimensions
X15	nodule	aggregate	-	10x4 cms
X16	layer	disseminated	015/90	300x2-25 cms
	layer	disseminated	022/66E	100x3 cms

Accessory chromite is also widely disseminated throughout the ultramafic rocks, varying up to two per cent by volume (Fieldwork 1982-1, page 240).

No economic evaluation of this occurrence is known to have taken place.

BIBLIOGRAPHY

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EMPR Unpublished Chromite Bulletin, Stevenson, J.S. (1941)
EMPR OF 2000-19
EMPR PF (*Whittaker, P. (1983): Unpublished Ph.D. Thesis; "Chromite in Alpine Type Peridotites", Carleton University, 339 pp. (refer to 093N General File))
GSC MAP 844A; 907A; 971A; 1008A; 1424A
GSC MEM 252, pp. 135,189
GSC OF 3071
GSC P 42-7; 45-6; *82-1A, pp. 239-245
Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/14 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 040**

NATIONAL MINERAL INVENTORY: 093N4 Cr2

NAME(S): **LEO CREEK**, HOGEM RANGES

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N04E
BC MAP:
LATITUDE: 55 10 08 N
LONGITUDE: 125 33 06 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is a chromite occurrence near the headwaters of Leo Creek, about 47 kilometres south-southeast of Takla Landing (Geological Survey of Canada Map 844A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6116557
EASTING: 337479

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Massive Layered Stratabound
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites
Upper Jurassic			Topley Intrusions

LITHOLOGY: Serpentinized Ultramafic
Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The Leo Creek occurrence is situated at the extreme south end of the Mitchell Range, approximately 47 kilometres south-southeast of Takla Landing. It is one of numerous small chromite occurrences associated with ultramafic rocks located in the range (see 093N 033, 34, 35, 36, 37, 38, 39).

The occurrences comprise small disseminated, aggregate (greater than 75 per cent) and massive chromite nodules and layers which are hosted by allochthonous, serpentinized harzburgite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites.

In the area of the occurrence, a large pluton of the Late Triassic-Early Jurassic Topley intrusions has been emplaced in Cache Creek Complex sediments. At the southern end of the pluton, a small mass of serpentinized ultramafic rocks reportedly hosts chromite mineralization. It is probable that this mineralization is similar to that in the Chrome Peak area to the north (see 093N 033, 34, 35, 36, 37, 38, 39).

No recent information concerning this occurrence is available and no economic evaluation is known to have taken place.

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EMPR Unpublished Chromite Bulletin, Stevenson, J.S. (1941)
EMPR OF 2000-19
EMPR PF (Whittaker, P. (1983): Unpublished Ph.D. Thesis; "Chromite in Alpine Type Peridotites", Carleton University, 339 pp. (refer to 093N General File))
GSC MAP *844A; 907A; 971A; 1008A; 1424A
GSC MEM 252, pp. 135,189
GSC OF 3071
GSC P 42-7; 45-6; 82-1A, pp. 239-245

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Canadian Mineralogist Vol. 22, Pt. 1, Feb.1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/14 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 041**
NATIONAL MINERAL INVENTORY: 093N2 W1

NAME(S): **CHUCHI TUNGSTEN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02W
BC MAP:
LATITUDE: 55 03 41 N
LONGITUDE: 124 48 42 W
ELEVATION: 1075 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showing location, about 15 kilometres south of the east end of Tchentlo Lake (Geological Survey of Canada Paper 45-9, with Preliminary Map 45-9).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6103123
EASTING: 384294

COMMODITIES: Tungsten, Molybdenum, Copper, Silver, Gold

MINERALS
SIGNIFICANT: Scheelite, Powellite, Molybdenite, Chalcopyrite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: I12 W veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Granitic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1945
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	24.0000	Grams per tonne
Molybdenum	0.0150	Per cent
Tungsten	0.0750	Per cent

COMMENTS: Tungsten grade is for WO3 and molybdenum grade is for MoS2.
REFERENCE: Geological Survey of Canada Paper 45-9, page 19.

CAPSULE GEOLOGY

At the Chuchi Tungsten showing, disseminated mineralization occurs in a fracture zone within andesite of the Middle Triassic to Lower Jurassic Takla Group at the contact of a small granitic stock. Scheelite, powellite, molybdenite and chalcopyrite is disseminated throughout the fracture zone, at least 3.65 metres in width, in silicified andesite. Two grab samples averaged 0.075 per cent WO3, 0.015 per cent MoS2, trace gold, and 24 grams per tonne silver (GSC Paper 45-9, page 15 and 19).

BIBLIOGRAPHY

EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; 1992, pp. 87-107
EMPR OF 1991-3; 1992-4; 1993-3
GSC MEM *252, pp. 193
GSC P *45-9, pp. 15,19
GSC PRELIMINARY MAP *45-9
GSC MAP 876A, 907A, 971A, 1424A, 1586G
GSC OF 2842

DATE CODED: 1985/07/24
DATE REVISED: 1993/02/19
CODED BY: GSB
REVISED BY: GJP
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 042**

NATIONAL MINERAL INVENTORY: 093N6 Mn1

NAME(S): **INDATA LAKE MANGANESE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06W
BC MAP:
LATITUDE: 55 17 55 N
LONGITUDE: 125 15 51 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is 1.6 kilometres west of the south end of Indata Lake, about 49 kilometres southeast of Takla Landing (Geological Survey of Canada Memoir 252, page 195 and Map 844A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6130357
EASTING: 356255

COMMODITIES: Manganese

MINERALS
SIGNIFICANT: Braunite Psilomelane
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Industrial Min.
TYPE: J03 Mn veins and replacements
DIMENSION: 18 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The vein varies from several to 61 centimetres wide and has been traced for 18.3 metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

LITHOLOGY: Limestone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Indata Lake Manganese occurrence is situated 1.6 kilometres west of the south end of Indata Lake, approximately 49 kilometres southeast of Takla Landing.

The area is underlain by sediments assigned to the Carbonaceous to Jurassic Cache Creek Complex west of the Pinchi fault zone, which traverses the area in a north-northwesterly direction.

A vein of braunite (manganese silicate) and psilomelane (manganese oxide) reportedly occurs in limestone assigned to the Cache Creek Complex. The seam is said to vary from several to 61 centimetres in width and has been traced for over 18 metres (Geological Survey of Canada Memoir 252, page 195).

BIBLIOGRAPHY

GSC MEM *252, p. 195
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; *42-11, p. 11; 45-6
GSC OF 3071
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/07 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 043** NATIONAL MINERAL INVENTORY: 093N6 Au1

NAME(S): **KWANIKA CREEK**

STATUS: Past Producer Open Pit MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N06W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 26 12 N NORTHING: 6145805
LONGITUDE: 125 18 25 W EASTING: 354049
ELEVATION: 890 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location at the downstream end of a 3.2 kilometre stretch of Kwanika Creek from which placer gold has been discovered (Geological Survey of Canada Memoir 252, page 143).

COMMODITIES: Gold Mercury Silver Jade/Nephrite Gemstones

MINERALS
SIGNIFICANT: Gold Cinnabar Jade
COMMENTS: Arquerite, a natural amalgam of silver and mercury also occurs in the gravels along Kwanika Creek.
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer Industrial Min.
TYPE: C01 Surficial placers Q01 Jade

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Undefined Formation	
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Glacial Fluvial Gravel
Argillite
Greywacke
Limestone

HOSTROCK COMMENTS: Cache Creek Comlex sediments are Carboniferous to Jurassic and, together with Takla Group rocks, underlie the Kwanika Creek basin.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel Cache Creek

CAPSULE GEOLOGY

Kwanika Creek flows southerly into the Nation River near the outlet of Tsayta Lake, approximately 40 kilometres east-southeast of Takla Landing. A 3.2-kilometre stretch of the creek, beginning approximately 3.2 kilometres up from its mouth, was worked intermittently between 1940 and 1963.

The creek in this area is traversed, in a north-northwesterly direction, by the Pinchi fault zone, which separates argillite and greywacke assigned to the Middle Triassic to Lower Jurassic Takla Group on the east from Carboniferous to Jurassic Cache Creek Complex limestone to the west. The former sediments have been intruded by various phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex in the vicinity.

Kwanika Creek flows in what appears to be a postglacial channel which has cut through nearly 8 metres of glacial debris into bedrock. Fairly coarse placer gold has been recovered from this channel, beginning in 1940 when approximately 3438 grams was reportedly won from the gravels. Between 1947-1948, Yuba Consolidated Gold Dredging Company held 19 leases on the creek and drilled two test holes totalling 47.6 metres. In 1955, Martin Mine Limited drilled an additional 12 holes totalling 73.2 metres with unknown results.

The only other production reported in the area occurred in 1963, when approximately 4 tonnes of quality jade was obtained from seven boulders ranging from 0.181 to 7.26 tonnes, discovered in the creek (Minister of Mines Annual Report 1963, page 151).

Aside from gold, arquerite, a natural amalgam of mercury and silver, and cinnabar can reportedly be panned from the creek.

BIBLIOGRAPHY

EMPR AR 1947-191; 1948-174; 1949-240; 1951-202; 1955-83; 1963-151
EMPR BULL 28, p. 43
GSC OF 3071
GSC MEM *252, p. 143
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 42-11; 44-5; 45-6
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/06 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 044**

NATIONAL MINERAL INVENTORY: 093N11 Au2

NAME(S): **VITAL CREEK**

STATUS: Past Producer Open Pit Underground
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 41 57 N
LONGITUDE: 125 29 42 W
ELEVATION: 1050 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is an old hydraulic scar on the north side of Vital Creek, 2.5 kilometres upstream from its confluence with Silver Creek, about 41 kilometres northeast of Takla Landing.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6175419
EASTING: 343204

COMMODITIES: Gold Silver Mercury

MINERALS
SIGNIFICANT: Gold
COMMENTS: Arquerite, a native amalgam of silver and mercury, also occurs in the gold-bearing gravels along Vital Creek.
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Phyllite
Limestone
Tuff

HOSTROCK COMMENTS: Cache Creek Complex rocks range from Carboniferous to Jurassic and underlie the Vital Creek drainage basin.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Vital Creek flows northeasterly from the Vital Range into Silver Creek approximately 41 kilometres northeast of Takla Landing.

Exploration on the creek dates back to 1869 when gold was originally discovered in the district. Initial work was by means of drift diggings, followed later by ground sluicing and hydraulicking. Between 1922 and 1934, two adits, 285 and 42 metres long respectively, were driven along the bedrock/sediment contact in order to follow the preglacial channel. In 1935, drift mining was abandoned in favor of hydraulicking, which too was soon abandoned due to lack of dumping facilities. Subsequent to this, a 27-metre shaft was sunk to bedrock without much success (Geological Survey of Canada Memoir 252, pages 141-142).

The creek drains an area underlain by a north-northwest striking, east-dipping metasedimentary/volcanic suite assigned to the Carboniferous to Jurassic Cache Creek Complex. Here, phyllite, limestone and tuff are the most common members. These rocks host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width.

Recorded gold production from Vital Creek was 117,091 grams, between 1876 and 1900, and 26,031 grams between 1926 and 1940; a total of 143,122 grams of gold (Bulletin 28, page 46). Early recoveries came from the present-day channel below a waterfall, 3 kilometres above the mouth of the creek. Later, gold in the form of extremely coarse, well-worn flakes which lay along bedrock was recovered from the preglacial channel upstream from this point.

Arquerite, a native amalgam of silver and mercury, is also fairly abundant in the gold-bearing gravels of Vital Creek.

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EMPR AR 1875-16; 1879-244; 1897-511,515; 1898-983; 1899-611;
1900-748; 1901-974; 1902-128; 1903-72; 1904-53; 1907-76; 1913-109;
1923-119; 1924-108; 1926-151; 1927-160; 1928-181; 1929-206;
1932-87; 1933-105-106; 1934-G51; 1935-C28,G48; 1936-C39;
1937-C34; 1938-C54; 1940-90
EMPR ASS RPT 11881, 11978, 12546, 14547, 17623
EMPR BULL 1, p. 35; 28, pp. 7, 43, 46
EMPR EXPL 1983-459,462; 1985-C334
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, pp. 141-142
GSC P 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/22 REVISED BY: DMN FIELD CHECK: Y

MINFILE NUMBER: **093N 045**

NATIONAL MINERAL INVENTORY: 093N12 Au1

NAME(S): **QUARTZITE (QUARTZ) CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N12E
BC MAP:
LATITUDE: 55 43 09 N
LONGITUDE: 125 39 37 W
ELEVATION: 1052 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the north end of an 800 metre stretch of Quartzite Creek, approximately 2.4 kilometres up from its confluence with Fall River, which was worked in the 1930s, about 36 kilometres northeast of Takla Landing (Minister of Mines Annual Report 1933, page A107).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6178031
EASTING: 332905

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers
Q01 Jade
C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Phyllite

HOSTROCK COMMENTS: The Cache Creek Complex rocks range from Carboniferous to Jurassic and underlie the Quartzite Creek basin.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Quartzite (Quartz) Creek flows northerly from the Vital Range into Fall River approximately 36 kilometres northeast of Takla Landing. The placer leases extended upstream for 800 metres from a point 2.4 kilometres from its confluence with Fall River and, in part, encompassed a steep-walled canyon.

The earliest recorded work on the creek appears to have taken place in the late 1800s. Further work was again referenced in the 1913 Minister of Mines Annual Report, although it was not until the 1930s that any production was recorded.

The creek drains an area underlain by schistose sediments assigned to the Carboniferous to Jurassic Cache Creek Complex, which in this area is dominated by quartz-rich phyllite. These sediments host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width.

A preglacial channel is reported to be buried in the right(?) bank of the creek, except at a point approximately 600 metres above the canyon, where it is exposed in the left(?) bank. Placer mining efforts were directed at both pre and postglacial gravels. Boulders of both rhodonite and jade were also reportedly discovered in the placer diggings along the creek (see 093N 188).

Recorded production between 1931 and 1945 totalled 13,530 grams (Bulletin 28, page 45).

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EMPR AR 1913-109; 1933-107-108; 1935-C39
EMPR ASS RPT 12541, 12547, 13972, 14791
EMPR BULL 28, p. 45
EMPR EXPL 1983-465-466; 1985-C338; 1986-C373
EMPR OF 2000-33
GSC MEM *252, pp. 142-143

BIBLIOGRAPHY

GSC P 74-1B, pp. 31-42

DATE CODED: 1985/07/24
DATE REVISED: 1992/09/21

CODED BY: GSB
REVISED BY: DMN

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **093N 046**

NATIONAL MINERAL INVENTORY: 093N12 Au3

NAME(S): **HARRISON CREEK**

STATUS: Past Producer Open Pit Underground
REGIONS: British Columbia
NTS MAP: 093N12E
BC MAP:
LATITUDE: 55 37 32 N
LONGITUDE: 125 38 46 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location are the main workings on Harrison Creek, 1.2 kilometres up from its confluence with Kenny Creek, about 26 kilometres northeast of Takla Landing (Geological Survey of Canada Memoir 252, page 140).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6167582
EASTING: 333397

COMMODITIES: Gold Mercury Silver

MINERALS
SIGNIFICANT: Gold
COMMENTS: Arquerite, a natural amalgam of mercury and silver, is reported to occur locally.
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Schistose Argillite
Slate
Chert
Andesite Flow
Andesite Tuff

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic and underlie the Harrison Creek basin.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Harrison Creek flows south-southeastward from the Vital Range into Kenny Creek approximately 26 kilometres northeast of Takla Landing. Exploration on the creek dates back to 1870, but the only record of work being carried out prior to 1930 relates to the construction of a dam across the creek and a now inaccessible adit driven by a man named Bodine.

The creek drains an area underlain by a north-northwest striking, steeply dipping sequence of interbedded schistose argillite, slate, chert and andesitic flows and tuffs assigned to the Carboniferous to Jurassic Cache Creek Complex. These rocks host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width.

Early work concentrated on a preglacial channel approximately 1.6 kilometres in length buried in the right(?) bank, below creek level. In 1934, an adit was driven for 44 metres into the lower end of the channel. A winze sunk to bedrock from the face of this adit was said to have intersected the east rim of the channel, from which "encouraging values in coarse gold" and a 46.66 gram nugget of arquerite, a natural amalgam of mercury and silver, were obtained (Minister of Mines Annual Report 1935, page C28). A flume from Humphrey Creek was proposed in 1936 to facilitate hydraulicking, although it is uncertain whether it was ever constructed. By 1938, three separate workings were being developed, including two shafts to bedrock and the original Gibbon drift, which was now advanced a further 120 metres (Property File - Holland, 1938). Operations, however, appear to have ceased by 1942, although attempts to mine the creek were made as recently as the 1980s.

Recorded production from Harrison Creek up until 1949 is 7216

CAPSULE GEOLOGY

grams of gold (Geological Survey of Canada Memoir 252, page 141). Records of production resulting from work undertaken sporadically into the 1980s are not available.

BIBLIOGRAPHY

EMPR AR *1935-C28; 1936-C39; 1937-C34; 1938-C53; 1940-A90
EMPR ASS RPT 12294
EMPR BULL 28, pp. 43-44
EMPR EXPL 1983-463
EMPR OF 2000-33
EMPR PF (*Holland, S.S. (1938): Report on Harrison Creek Ventures Limited including miscellaneous maps; Anon. (1937): Preliminary Report on Harrison Creek Ventures, Ltd.
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, pp. 140
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/28 REVISED BY: DMN FIELD CHECK: Y

MINFILE NUMBER: **093N 047**

NATIONAL MINERAL INVENTORY: 093N12 Au2

NAME(S): **TOM CREEK**

STATUS: Past Producer Open Pit Underground
REGIONS: British Columbia
NTS MAP: 093N12E
BC MAP:
LATITUDE: 55 36 04 N
LONGITUDE: 125 39 03 W
ELEVATION: 1045 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the downstream end of placer workings on Tom Creek, about 24 kilometres northeast of Takla Landing (Geological Survey of Canada Memoir 252, page 139).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6164874
EASTING: 332996

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Phyllite
Andesitic Tuff
Limestone

HOSTROCK COMMENTS: Cache Creek Complex rocks range from Carboniferous to Jurassic and underlie the Tom Creek basin.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Tom Creek drains the north slopes of Mount Tom and flows into Kenny Creek approximately 24 kilometres northeast of Takla Landing. Placer gold was initially discovered in the creek in 1889, 20 years after it was discovered on Vital Creek (093N 044), 15 kilometres to the northeast.

The creek drains an area underlain by a north-northwest striking, steeply dipping sequence of interbedded phyllite, andesitic tuff and minor limestone assigned to the Carboniferous to Jurassic Cache Creek Complex. These rocks host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width.

The creek was worked profitably from 1899 to 1904 starting upstream from a point 1.6 kilometres from its confluence with Kenny Creek. Gold was originally recovered by means of a deep bedrock flume, but by 1935, tunnelling was employed. Tom Creek Placers, Limited later used a large steam shovel, which was left after operations ceased in 1940.

Recorded production from Tom Creek up until 1949 is 50,512 grams of gold (Geological Survey of Canada Memoir 252, page 139). Production of 74,710 grams of gold up to 1945 is also reported (Bulletin 28, page 46). It is not known which figure is correct.

BIBLIOGRAPHY

EMPR AR 1897-515; 1898-983; 1899-635; 1900-745,750; 1901-974;
1902-129; 1903-2,71; 1904-53; 1907-76; 1908-65; 1909-113;
1924-109; 1927-160; 1929-206; 1932-87; 1933-106; 1935-C28,C38;
1936-C39; 1937-C34; 1938-C53; 1939-105; 1940-90
EMPR ASS RPT 12251, 13887
EMPR BULL 1, p. 35; 28, pp. 43,46
EMPR EXPL 1983-466; 1985-C337
EMPR OF 2000-33
GSC AR 1894, Vol. VII, Pt. C, p. 12

BIBLIOGRAPHY

GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, pp. 140
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/28 REVISED BY: DMN FIELD CHECK: Y

MINFILE NUMBER: **093N 048**

NATIONAL MINERAL INVENTORY: 093N12 Au4

NAME(S): **ALICE CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N12E
BC MAP:
LATITUDE: 55 38 36 N
LONGITUDE: 125 35 24 W
ELEVATION: 1075 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is on Alice Creek, 1.6 kilometres up from its outlet into Byrnes Lake, about 30 kilometres northeast of Takla Landing.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6169427
EASTING: 337003

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Phyllite
Andesitic Tuff
Limestone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic and underlie the Alice Creek drainage basin.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Alice Creek flows southeastward from the Vital Range into Byrnes Lake approximately 30 kilometres northeast of Takla Landing. Exploration in the area dates back to 1869, when gold was discovered on Vital Creek (093N 044), 9 kilometres to the northeast. Little information is available describing development on Alice Creek.

The creek drains an area underlain by a north-northwest striking, variably dipping sequence of interbedded phyllite, andesitic tuff and minor limestone assigned to the Carboniferous to Jurassic Cache Creek Complex. These rocks host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width.

All that is known about work carried out on Alice Creek is that it occurred at the same time (1936-1945) as that on Kelly Creek (093N 049), approximately 1.5 kilometres to the northeast.

Recorded production from Alice Creek (1936-1945) is 2520 grams of gold (Bulletin 28, pages 43 and 44). Records of production resulting from work undertaken sporadically into the 1980s are not available.

BIBLIOGRAPHY

EMPR ASS RPT 12543, 14790
EMPR BULL *28, pp. 43-44
EMPR EXPL 1983-463; 1986-C372-C373
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1992/09/29 — REVISED BY: DMN — FIELD CHECK: N

MINFILE NUMBER: **093N 049**

NATIONAL MINERAL INVENTORY: 093N12 Au4

NAME(S): **KELLY CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N12E
BC MAP:
LATITUDE: 55 39 18 N
LONGITUDE: 125 34 52 W
ELEVATION: 1120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the site of the original discovery on Kelly Creek, approximately 2.4 kilometres up from its outlet into Byrnes Lake, about 32 kilometres northeast of Takla Landing (Minister of Mines Annual Report 1933, page 107).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170704
EASTING: 337611

COMMODITIES: Gold, Silver, Mercury

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Phyllite
Andesitic Tuff
Limestone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic and underlie the Kelly Creek drainage basin.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Kelly Creek flows southward from the Vital Range into Byrnes Lake, approximately 32 kilometres northeast of Takla Landing. Placer gold was originally found at a point approximately 2.4 kilometres up from its outlet into Byrnes Lake in 1933, 64 years after gold was discovered on Vital Creek (093N 044), 7 kilometres to the northeast. Work was apparently carried out at the same time as that on Alice Creek (093N 048) to the southwest. Several old buildings and trails around this site have survived to today.

The creek drains an area underlain by a north-northwest striking, variably dipping sequence of interbedded phyllite, andesitic tuff and minor limestone assigned to the Carboniferous to Jurassic Cache Creek Complex. These rocks host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width.

The postglacial waters of the creek apparently cut down through glacial material masking the west side of the valley almost to bedrock, concentrating the gold and facilitating its extraction.

Production records for Kelly Creek are unavailable, but the creek is believed to have been worked up until 1940 and the gold was reported to be fairly coarse (Minister of Mines Annual Report 1933, page A107).

Arquerite, a natural amalgam of mercury and silver common in the area, was also reported to have been recovered from the creek.

BIBLIOGRAPHY

EMPR AR *1933-107
EMPR ASS RPT 12543, 14790, 16341
EMPR BULL 28
EMPR EXPL 1983-463; 1986-C372-C373
EMPR OF 2000-33

BIBLIOGRAPHY

GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, p. 140
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/29 REVISED BY: DMN FIELD CHECK: Y

MINFILE NUMBER: **093N 050**

NATIONAL MINERAL INVENTORY: 093N11 Au3

NAME(S): **SILVER-KENNY CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 39 31 N
LONGITUDE: 125 27 57 W
ELEVATION: 945 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is on Kenny Creek near the southeast corner of placer lease 4747, where production of 12,441 grams of gold was reported for the period 1980-1982 (Assessment Report 11625, Figure 5).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170842
EASTING: 344876

COMMODITIES: Gold, Mercury, Silver

MINERALS
SIGNIFICANT: Gold, Cinnabar
COMMENTS: Arquerite, a native amalgam of mercury and silver, and cinnabar boulders occur in gravels along Silver Creek.
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Triassic-Jurassic	Takla	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Phyllite
Tuff
Andesite
Sandstone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic and underlie the Silver-Kenny Creek area.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Kenny Creek flows easterly into Silver Creek at a point approximately 39 kilometres northeast of Takla Landing. Gold was originally discovered on Silver Creek in 1868, but production from both creeks was not reported until the 1930s. Drilling was undertaken to test Silver Creek in 1935 and again in 1954, and work has continued sporadically until recently.

The area is underlain by a north-northwest striking, steeply dipping metasedimentary/volcanic suite assigned to the Carboniferous to Jurassic Cache Creek Complex, along and west of the Pinchi fault zone. Here, phyllite and tuff are the most common members. These rocks host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width. East of the fault zone, andesite and sandstone assigned to the Middle Triassic to Lower Jurassic Takla Formation have been mapped.

The creeks have fairly wide valleys with high gravel banks on both sides. Concentrations of placer gold were apparently found in shallow preglacial gravels on or immediately overlying bedrock.

Combined production from Kenny and Silver creeks to 1949 is reported to be 19,968 grams of gold (Geological Survey of Canada Memoir 252, page 141). Recent production from Kenny Creek, approximately 1 kilometre up from its confluence with Silver Creek, is reported to have totalled 22,395 grams gold for the period 1979-1982 (Assessment Report 11625, page 3). Sporadic work has continued up to the present.

Nuggets of arquerite, a native amalgam of silver and mercury, and boulders of cinnabar up to 60 centimetres in diameter have also been found in Silver Creek near its confluence with Kenny Creek (Geological Survey of Canada Memoir 252, page 141).

BIBLIOGRAPHY

EMPR AR 1924-109,111; 1932-87; 1936-C39; 1940-90; 1954-A169
EMPR ASS RPT 11625
EMPR BULL 1, p. 35; 28, pp. 43,45-46
EMPR EXPL 1983-460
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, pp. 140-141
GSC P 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/28 REVISED BY: DMN FIELD CHECK: Y

MINFILE NUMBER: **093N 051**

NATIONAL MINERAL INVENTORY: 093N11 Au4

NAME(S): **TWIN CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N11E
BC MAP:
LATITUDE: 55 36 25 N
LONGITUDE: 125 10 09 W
ELEVATION: 1125 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is along Twin Creek, 750 metres north of its confluence with Kwanika Creek; Twin Creek flows southeast into the headwater area of Kwanika Creek about 15 kilometres southwest of the west end of Germansen Lake. Workings continue upstream is 1.5 kilometres.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6164470
EASTING: 363356

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Twin Creek	
Upper Triassic	Takla	Plughat Mountain	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Augite Olivine Porphyritic Basalt
Plagioclase Augite Hornblende Tuff
Breccia

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Twin Creek flows southeast into the headwater area of Kwanika Creek approximately 15 kilometres southwest of the west end of Germansen Lake. The Twin Creek locality corresponds to the occurrence of placer gold in Twin Creek. The region is underlain by the Middle Triassic-Lower Jurassic Takla Group. The contact between the Upper Triassic Plughat Mountain Formation (Takla Group) and the Lower Jurassic Twin Creek Formation (Takla Group) occurs 500 metres upstream from the occurrence locality (Open File 1993-4). A maroon, augite olivine porphyritic basalt marks the Triassic volcanic package in the immediate area. It is unconformably overlain by probable Jurassic-age heterolithic plagioclase, augite and hornblende-bearing porphyritic lapilli tuffs and breccia. The Plughat Mountain Formation is correlative to the Witch Lake Formation (Takla Group) of the Nation Lakes area and the Twin Creek Formation is correlative to the more felsic Chuchi Lake Formation (Takla Group).

Four kilometres to the west of the placer showing, maroon quartz feldspar porphyritic volcanics of the Twin Creek Formation are intruded by an early phase of the Late Triassic-Early Cretaceous Hogem Intrusive Complex.

The earliest work reported on the creek occurred in 1946 when Winifred Tait prepared the Martin leases for hydraulicking. By 1948, a small hydraulic plant had been installed and operations had commenced. In early 1949, gravels from a pit on the creek were being washed with a 10-centimetre diameter monitor. However, bedrock was never reached and results were reported as disappointing.

Production figures for the creek are unknown, but are thought to be small. Today, remnants of a sluicing system several kilometres long follows the east side of Twin Creek. An old cabin and more recent placer excavations are apparent at the Takla Landing-Manson Creek road crossing of Twin Creek.

BIBLIOGRAPHY

EMPR AR 1946-196; 1947-191; 1948-174; *1949-240
EMPR BULL 28, p. 43
EMPR OF 1993-3
EMPR FIELDWORK 1992, pp. 87-107
GSC MEM 252, p. 154
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 42-11; 44-5; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/19 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 052**

NATIONAL MINERAL INVENTORY: 093N11 Au1

NAME(S): **TWENTY MILE CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N11E
BC MAP:
LATITUDE: 55 40 15 N
LONGITUDE: 125 05 21 W
ELEVATION: 1080 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a point where the Manson Creek-Takla Landing road crosses Twenty Mile Creek, approximately 14.5 kilometres upstream from its outlet into the Omineca River.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6171424
EASTING: 368609

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Plughat Mountain	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Augite Porphyritic Basalt
Augite Plagioclase Porphyritic Basalt
Wacke
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Twenty Mile Creek is situated west of Germansen Lake and flows north into the Omineca River at a point 21 kilometres west of Germansen Landing. Placer operations were largely confined to a stretch of the creek approximately 14.5 kilometres upstream from this point.

The area is underlain by the Upper Triassic Plughat Mountain Formation of the Middle Triassic-Lower Jurassic Takla Group. The closest bedrock outcrops are of green porphyritic basaltic volcanic rocks with large augite phenocrysts and minor plagioclase. Minor wacke and argillite also occurs. Several north striking fault strands crosscut altered volcanics at Twenty Mile Lakes, 1.5 kilometres north of the occurrence locality. Lower Jurassic Takla volcanics of the Twin Creek Formation and intrusive rocks of the Late Triassic-Early Cretaceous Hogem Intrusive Complex outcrop 8 and 12 kilometres to west respectively.

The placer workings were reported to be on extensive gravel flats, where gold was found within a metre of the surface. Boulder clay around the many large boulders along the creek was found to contain coarse and flaky gold, which appeared to have been concentrated in postglacial time.

The earliest recorded activity in the area occurred in 1901, but it was not until 1948 that serious testing of the creek was undertaken. A 7.62-centimetre interval between 15.49 and 15.57 metres in hole 5, one of seven drilled that year, analysed 103 milligrams of gold (Property File - Overburden drill logs). Sporadic activity on the creek continued into the 1960s.

Production of 2084 grams of gold for the period 1941-45 is listed in Table XXVII of Bulletin 28. Presently, small placer workings occur continuously for 1 kilometre south of and 5 kilometres north of the road crossing. The source of the placer gold is unknown.

BIBLIOGRAPHY

EMPR AR 1901-975; 1947-191; 1948-174; 1955-83; 1965-251
EMPR BULL 28, pp. 43,46
EMPR OF 1993-4
EMPR FIELDWORK 1992, pp. 87-107
EMPR PF (Overburden drill logs-1948; sketch of placer leases)
GSC MEM *252, p. 143
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/23 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 053**

NATIONAL MINERAL INVENTORY: 093N7 Au2

NAME(S): **VALLEAU CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07W
BC MAP:
LATITUDE: 55 28 42 N
LONGITUDE: 124 55 15 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on a south-flowing tributary at the headwaters of Valleau Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6149699
EASTING: 378601

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
ALTERATION: Quartz Carbonate Sericite Mariposite
COMMENTS: Quartz-carbonate-sericite and possibly mariposite alteration occurs in the surrounding rocks.
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Inzana Lake	
ISOTOPIC AGE:	Upper Triassic		
DATING METHOD:	Fossil		
MATERIAL DATED:	Conodonts		
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Volcanic Siltstone
Volcanic Sandstone
Lapilli Tuff
Listwanite

HOSTROCK COMMENTS: The region is underlain by the informally named Inzana Lake Formation. The source of placer gold is unknown. Fossil date - Fieldwork 1991.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Multiple, small (1 metre) pits are visible in glacial-fluvial gravels on the western bank of a south-flowing tributary at the headwaters of Valleau Creek. The underlying rocks are foliated volcanic sediments and tuffs of the Upper Triassic Inzana Lake Formation (informal name) of the Takla Group. Moderate to intense quartz-carbonate-sericite alteration affects the rocks in a regional northwest-trending zone. Minor green mica (mariposite?) and anomalous arsenic values suggest a possible listwanite association (see Tsay, 093N 214).

The irregular and wiry nature of the placer gold may indicate a local source (Assessment Report 21700). Placer gold is also described in other tributary creeks in the area (Assessment Report 21228).

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EMPR ASS RPT 15634, 19859, *21700
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; *1992, pp. 87-107
EMPR OF 1991-3; 1992-4; 1993-3
EMPR BULL 28, p. 45
GSC MEM 252, p. 144
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A, 1586G
GSC OF 2842

BIBLIOGRAPHY

Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/11 REVISED BY: KBE FIELD CHECK: N

MINFILE NUMBER: **093N 054**

NATIONAL MINERAL INVENTORY: 093N10,15 Au4

NAME(S): **GERMANSEN RIVER NORTH**, GERMANSEN PITS

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N15E
BC MAP:
LATITUDE: 55 45 59 N
LONGITUDE: 124 40 59 W
ELEVATION: 825 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6181362
EASTING: 394405

COMMENTS: The Germansen River North placer occurrence is located approximately 2.5 kilometres from the mouth of the Germansen River. The location is centred on the northern pit, near the old Germansen town site on the west side of the Germansen River.

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Cooper Ridge	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Boulder Clay
Gravel
Phyllite
Argillite
Felsic Tuff
Silt

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Germansen River North Occurrence is located approximately 2.5 kilometres from the mouth of Germansen River. It is located near the old Germansen townsite and occurs on the west side of the Germansen River, straddling Plughat Creek. The main road passes within 30 metres of the pits and approximately 50 metres to the west, a serviceable airfield is found. This occurrence is restricted to the pits where mining is still active.

Placer gold was first discovered on the Germansen River in 1870. The northwest trending part of the river (from its mouth to the big bend area) has been the area most explored and placer mined. During the early 1940s, there were at least seven pits which were mined by hydraulic operations (hydraulicking). Today, there are only two large pits. The active one lies on the north side of Plughat Creek and the inactive one lies to the south of the creek. In the southern pit, there is an adit at the southern end which is believed to be part of the Sunset occurrence (093N 026). During the 1988 summer field season, a large operation in the northern pit operated 24 hours a day.

The auriferous gravels are approximately 4.5 metres thick and lie on rock benches which are 15 metres above the river. The gold is concentrated near the bedrock which in this area is represented by phyllites, argillites and felsic tuffs belonging to the Mississippian(?) to Lower Permian Cooper Ridge Group.

The overburden at this occurrence varies from approximately 30 to 42 metres in thickness. The glacial overburden consists of boulder clay, silt and gravel.

Prior to 1950, reported gold production for the entire Germansen River varies from 515,851 grams (Bulletin 28, page 43) to 750,776 grams (Geological Survey of Canada, Memoir 252, page 145). See Germansen River South (093N 055).

CAPSULE GEOLOGY

Angel Jade Mines process (between 50,000 and 80,000) yards of gravel annually on their operation.

BIBLIOGRAPHY

EMPR AR 1874, p. 8; 1897, p. 516; 1899, p. 634; 1901, p. 974; 1902, p. 128; 1913, p. 114; 1927, p. 158; 1932, p.87; 1933, p. 111, 1935, p. C38; *1936, pp. C3-8; 1937, p. C34; 1938, p. C53; 1939, p. 105; 1940, p. 90; 1941, p. 84; 1942, p. 84; 1946, p. 196; 1947, p. 190; 1948, p. 174; 1949, p. 240; 1951, p. 202; 1952, p. 236; 1953, p. 174; 1954, p. 168; 1955, p. 83; 1956, p. 139, 1959, p. 146; 1960, p. 121; 1961, p. 129; 1966, p. 255
EMPR BULL 28, p. 43; 91
EMPR FIELDWORK 1989, pp. 101-114
EMPR PF (Holland, S.S. (1937) Geological Report on the Placer Holdings of Germansen Ventures, Ltd., Germansen Creek - Omineca District, B.C.; accompanied geophysical reports and maps (circa 1940)
GSC MAP 876A; 907A; 5249G
GSC MEM *252, pp. 144-146
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/24 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 055**

NATIONAL MINERAL INVENTORY: 093N10,15 Au4

NAME(S): **GERMANSEN RIVER SOUTH**, SLATE CREEK

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 42 35 N
LONGITUDE: 124 36 20 W
ELEVATION: 880 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6174941
EASTING: 399121

COMMENTS: The Germansen River South placer occurrence is located on the east side of the Germansen River (just north of the big bend), approximately 8 kilometres northwest from the settlement of Manson Creek.

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Gravel
Sand
Boulder Clay
Argillite
Slate

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Germansen River South occurrence is located on the east bank of the Germansen River (just north of the big bend) approximately 8 kilometres northwest of the settlement of Manson Creek. This occurrence encompasses all the workings along the Germansen River except for the Germansen pits (093N 054).

Placer gold was first discovered on the Germansen River in 1870. The northwest trending part of the River (from its mouth to the big bend area) has been the area most explored and placer mined. Numerous workings have occurred along the Germansen River and have a long and productive history. Travelling along the main road, cliff faces and pits expose thick volumes of unconsolidated material. These topographic features are the result of past placer mining practices. During the 1930s to the early 1940s, the hydraulic method of placer mining was the most common.

Just north of the big bend area, the bedrock is cut by the Manson fault zone, and consists of slices of Pennsylvanian to Permian Manson Lakes Ultramafites, the Mississippian to Permian Cooper Ridge Group and rocks belonging to the Middle Triassic to Lower Jurassic Takla Group. The most predominant rocks to the southwest of the fault zone are argillites and slates belonging to the Takla Group.

Placer deposits can be found on low-lying benches and in the bed of the river, on rock benches that lie approximately 10 metres above the river, and in deeply buried channels below the river level. Most of the workings are related to the rock benches that lie above the river. These rock benches are overlain by auriferous fine and coarse gravels and sand which are somewhat cemented. The semi-cemented gravel and sand is overlain by approximately 15 metres of coarser gravels and boulder clay. The gravels lower and near to the top of the semi-cemented gravel and sand are also auriferous. The gold is mainly coarse, nuggety and somewhat flat.

During the 1988 field season, a sluice box operation mined material from a low-lying bench near the river, just north of the big

CAPSULE GEOLOGY

bend in the Germansen River.

Prior to 1950, reported gold production for the entire Germansen River varies from 515,851 grams (Bulletin 28, page 43) to 750,776 grams (Geological Survey of Canada, Memoir 252, page 145). Most of this gold recovery was achieved between the years 1876 and 1890, and between 1931 and 1945.

Angel Jade Mines is processing gravel and investigating bedrock potential in the area.

BIBLIOGRAPHY

EMPR AR 1874, p. 8; 1897, p. 516; 1899, p. 634; 1901, p. 974; 1902, p. 128; 1913, p. 114; *1927, pp. 158-159; 1932, p.87; 1933, p. 111, 1935, p. C38; *1936, pp. C3-8; 1937, p. C34; 1938, p. C53; 1939, p. 105; 1940, p. 90; 1941, p. 84; 1942, p. 84; 1946, p. 196; 1947, p. 190; 1948, p. 174; 1949, p. 240; 1951, p. 202; 1952, p. 236; 1953, p. 174; 1954, p. 168; 1955, p. 83; 1956, p. 139, 1959, p. 146; 1960, p. 121; 1961, p. 129; 1966, p. 255
EMPR BULL 28, p. 43; 91
EMPR FIELDWORK 1989, pp. 101-114
EMPR PF (*Holland, S. S. (1937) Geological Report on the Placer Holdings of Germansen Ventures, Ltd., Germansen Creek - Omineca District, B. C.; accompanied geophysical reports and maps (circa 1940)
GSC MAP 876A; 907A; 5249G
GSC MEM *252, pp. 144-146
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/24 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 056**

NATIONAL MINERAL INVENTORY: 093N10 Au5

NAME(S): **SLATE CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 40 14 N
LONGITUDE: 124 32 21 W
ELEVATION: 980 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170488
EASTING: 403195

COMMENTS: The Slate Creek placer occurrence is located to the east of the Slate Creek pond, approximately 3 kilometres west of the settlement of Manson Creek. The location is centred on a barren, gravel-lain large open pit from a past placer operation.

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Gravel
Slate
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The Slate Creek placer occurrence is located along Slate Creek and encompasses all placer occurrences occurring along this drainage. The plotted location is centred on the remnants of a past placer operation operated by the Consolidated Mining and Smelting Company (now Cominco) during the 1930s.

The Slate Creek Valley runs east-west from the settlement of Manson Creek to the Germansen River. The valley is V-shaped, widening to the west and opens into a swampy, wide and flat area. The valley is filled with glacial debris.

The bedrock consists of slates and argillites belonging to the Middle Triassic to Lower Jurassic Takla Group. The Manson fault zone lies approximately three kilometres to the northeast of the valley. A thrust fault runs through the valley.

Placer gold was first discovered on Slate Creek in 1871 with most of the early work attributed to small individual operations. These operations were mainly concerned with the bedrock benches bordering the stream. During the 1900s to the early 1920s, Kildare Mines Limited opened three pits which were between 9 and 18 metres deep using hydraulic methods. Consolidated Mining and Smelting Company held the ground between 1929 and 1943 and during this time operated a dragline-scraper plant. These early placer mines where hampered by tightly-packed gravels above the bedrock. Since the 1940s, Slate Creek has been worked intermittently by individual workers. One operation, which is located approximately two kilometres west of the settlement of Manson Creek along the main road, has operated during the 1987, 1988 and 1989 field seasons and is believed to be still active. Lloyd Worthing ran a placer operation in 2002.

The auriferous gravels occur near the bedrock and overburden thickens to the west. The platy nature of the bedrock is believed to have a natural riffling effect, concentrating the gold in the cracks and crevices of the slates and argillites.

Past production varies from 100,340 grams as reported by Holland, 1950 (Bulletin 28, page 46) to 148,550 grams as reported by

CAPSULE GEOLOGY

Armstrong, 1949 (Geological Survey of Canada, Memoir 252, page 148). According to Holland, almost all of the production came between 1931 and 1935.

BIBLIOGRAPHY

EMPR AR 1901, p. 972; 1903, p. 71; 1913, p. 109; 1924, p. 109; 1929, p. 205; 1933, pp. 109-114; 1935, p. C38; 1936, p. C39; 1938, p. C53; 1949, p. 239; 1965, p. 251
EMPR BULL *28, p. 43; 1, p. 80; 91
EMPR FIELDWORK 1989, pp. 101-114
EMPR OF 1989-12
GSC MEM *252, pp. 147-148
GSC SUM RPT *1933, pp. 9-29
GSC P 41-5; 42-2; 45-9; 75-33
GSC MAP 876A; 907A; 5249G
GCNL #140(Jul.21),#170(Sept.2), 1977

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/24 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 057**

NATIONAL MINERAL INVENTORY: 093N9,10 Au1

NAME(S): **KILDARE GULCH**, KILDARE CREEK

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 37 24 N
LONGITUDE: 124 33 41 W
ELEVATION: 1090 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Kildare Gulch occurrence is located near the mouth of an informally named tributary (Kildare Creek) of the Manson River (Geological Survey of Canada Memoir 252, page 148).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6165265
EASTING: 401679

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Gravel

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The Kildare Gulch placer occurrence is located near the mouth of an informally named tributary (Kildare Creek) along the Manson River. This occurrence lies near the old road into the Manson River area which continues south to Baldy Mountain and then onto Fort St. James.

Very little information exists on placer along this tributary. Most of the placer gold occurs along the banks of the Manson River. Gold has been reported from Kildare Creek and previous to 1949, a company had operated a hydraulic lift on Kildare Creek, but not profitably.

No record of gold production exists for this creek.

BIBLIOGRAPHY

EMPR BULL *28, p. 43; 91
EMPR FIELDWORK 1989, pp. 101-114
EMPR OF 1989-12
GSC MEM *252, p. 149
GSC SUM RPT 1933, pp. 9-29
GSC P 41-5; 42-2; 45-9; 75-33
GSC MAP 876A; 907A; 5249G

DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1992/11/24 — REVISED BY: DMM — FIELD CHECK: N

MINFILE NUMBER: **093N 058**

NATIONAL MINERAL INVENTORY: 093N9,10 Au1

NAME(S): **BLACKJACK GULCH**, UPPER MANSON RIVER

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093N10E 093N09W
BC MAP:
LATITUDE: 55 35 54 N
LONGITUDE: 124 31 26 W
ELEVATION: 1125 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Blackjack Gulch placer occurrence is the upper part of the Manson River, upstream from the informally named Kildare Creek. It is located approximately 9 kilometres south-southwest of the settlement of Manson Creek (Geological Survey of Canada, Memoir 252, page 148).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6162430
EASTING: 403979

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Gravel

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The Blackjack Gulch placer occurrence is located along the Manson River approximately 9 kilometres south-southwest of the settlement of Manson Creek. This location of this placer drainage is ambiguous in historic literature and for this occurrence is considered to be the upper parts of the Manson River and all the tributaries above the informally named Kildare Creek (093N 057).

Gold was first discovered along the Manson River in 1871. The old road which was the original route into this area lies approximately 4 kilometres to the west of the plotted location. A rough road still follows the Manson River on the east side of the river.

The entire length of Blackjack Gulch (upper Manson River) is reported to have been worked with fair results. The workings are continuous along a narrow zone that weaves in and out of the present channel and appears to indicate a zone of continuous auriferous gravels.

Gold production from Blackjack Gulch is recorded for the years between 1881 and 1890, totalling 16701 grams; and the years between 1926 and 1945, totalling 9206 grams (Bulletin 28, page 43,44). The total recorded production is 25907 grams of gold.

BIBLIOGRAPHY

EMPR BULL *28, p. 43; 91
EMPR FIELDWORK 1989, pp. 101-114
EMPR OF 1989-12
GSC MEM *252, p. 149
GSC SUM RPT 1933, pp. 9-29
GSC P 41-5; 42-2; 45-9; 75-33
GSC MAP 876A; 907A; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/24 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 059**

NATIONAL MINERAL INVENTORY:

NAME(S): **PERRETTS CLIFF**, MISTY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N13E
BC MAP:
LATITUDE: 55 55 47 N
LONGITUDE: 125 32 33 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample MD-90-R07 from the Perretts Cliff showing on the Misty claim group, approximately 56 kilometres north-northwest of Takla Landing (Assessment Report 21307, Figure 7).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6201178
EASTING: 341162

COMMODITIES: Gold, Silver, Lead, Zinc, Copper

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Pyrrhotite, Galena
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Hornblende Biotite Gneiss
Gneissic Hornblende Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks
Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	1566.8600	Grams per tonne
Gold	25.8500	Grams per tonne
Copper	0.3800	Per cent
Lead	6.7000	Per cent
Zinc	1.2200	Per cent

COMMENTS: Grab sample of mineralized quartz veining from the Perretts Cliff showing.
REFERENCE: Assessment Report 20004, page iii; Certificates of Assay, Appendix V.

CAPSULE GEOLOGY

The area of the Perretts Cliff showing is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. Rocks in the showing area have been described as gneissic hornblende monzonite and hornblende biotite gneiss.

At the Perretts Cliff showing, approximately two kilometres to the northwest of the Misty deposit (093N 001), a shear cutting rusty-weathering gneiss hosts vein quartz mineralized with pyrite, chalcopyrite, pyrrhotite and galena. One grab sample of this mineralization assayed 25.85 grams per tonne gold, 1566.86 grams per tonne silver, 6.7 per cent lead, 1.22 per cent zinc and 0.38 per cent copper (Assessment Report 20004, page iii; Certificates of Assay, Appendix V). Follow-up chip sampling results were significantly lower.

BIBLIOGRAPHY

EMPR ASS RPT 334, 440, 2778, *20004, *21307
EMPR GEM 1970-184; 1971-203-210,218; 1972-454; 1973-369,370

BIBLIOGRAPHY

EMPR AR 1949-A98-A102; 1961-116; 1962-134
EMPR (PRELIM) MAP 9
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
GSC MEM 252, pp. 98-103
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
EMR MP CORPFILE (Fort Reliance Minerals Limited)
GCNL #190(Oct.1), 1990
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Vol. 67, No. 749, pp. 101-106
CIM Special Volume 15 (1976), Table 1, #95

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 060**

NATIONAL MINERAL INVENTORY: 093N9 Au2

NAME(S): **LOST CREEK**

STATUS: Past Producer Open Pit Underground
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 39 44 N
LONGITUDE: 124 27 45 W
ELEVATION: 940 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6169457
EASTING: 407997

COMMENTS: The Lost Creek placer occurrence is found on Lost Creek which is a tributary of the Manson River. The plotted location corresponds to where an old ditch intersects the creek, about 2.5 kilometres southeast of the settlement of Manson Creek.

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Slate Creek	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Gravel
Slate
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The Lost Creek placer deposit is located on Lost Creek which is a tributary of the Manson River. This occurrence lies approximately 2.5 kilometres southeast of the settlement of Manson Creek. The occurrence location is near an old ditch on Lost Creek.

This occurrence lies near the Manson fault zone and the bedrock is predominantly slates and argillites of the Middle-Upper Triassic Slate Creek Formation of the Middle Triassic to Lower Jurassic Takla Group.

Gold was discovered on the Manson River in 1871 and from 1871 to 1897 placer operations on Lost creek were mainly concerned with the postglacial deposits in the creek bed. During the 1900s to the 1930s, Lost Creek was mined by both a hydraulic operation and by underground methods which consisted of four adits. In the late 1930s, Lost Creek Placer Gold Limited ran a shovel and dragline operation on Lost Creek.

Reported gold production by Holland, 1950 (Bulletin 28, page 45) is 11,384 grams; 3017 grams recovered between 1881 and 1885; and 8367 grams between 1936 and 1945.

BIBLIOGRAPHY

EMPR AR 1901, p. 973; 1973, p. 9731; 1937, p. C35; 1938, p. C53; 1939, p. 104; 1940, p. 89; 1941, p. 84
EMPR BULL *28, p. 43; 1, p. 80; 91
EMPR FIELDWORK 1988, pp. 169-180
EMPR OF 1988-12
GSC MEM *252, pp. 147-148
GSC SUM RPT *1933, pp. 9-29
GSC P 41-5; 42-2; 45-9; 75-33
GSC MAP 876A; 907A; 5249G
GCNL #140(Jul.21),#170(Sept.2), 1977
Prospector July 1979 p. 9

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/29 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 061**

NATIONAL MINERAL INVENTORY: 093N9,10 Au1

NAME(S): **MANSON RIVER**, MANSON CREEK, SKELETON CREEK

STATUS: Past Producer Open Pit Underground
REGIONS: British Columbia
NTS MAP: 093N10E 093N09W
BC MAP:
LATITUDE: 55 39 13 N
LONGITUDE: 124 32 21 W
ELEVATION: 990 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6168603
EASTING: 403153

COMMENTS: The Manson River placer occurrence is located on an old placer site along the Manson River (near the old settlement site of Manson Creek). This occurrence covers that section of the Manson River which stretches from the informally named Kildare Creek (093N 057) and continues downstream to approximately 1 kilometre above the Manson Lakes.

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Gold
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C04 Paleoplacer U-Au-PGE-Sn-Ti-diam-mag-gar-zir C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Unknown	Unnamed/Unknown Group	Unnamed/Unknown Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Gravel
Ultramafic
Slate
Argillite
Sandstone
Quartz Wacke
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel Cassiar

CAPSULE GEOLOGY

The Manson River placer occurrence is located on an old placer site along the Manson River (near the old settlement site of Manson Creek). This occurrence covers that section of the Manson River which stretches from the informally named Kildare Creek (093N 057) and continues downstream to approximately 1 kilometre above the Manson Lakes.

The underlying bedrock along this section of the river includes rock types which belong to the Cassiar, Slide Mountain and Quesnel terranes. The variance of bedrock is due to the Manson fault zone which is associated with all the placer occurrences in the area between Germansen Landing and Manson Creek. The rock types found along this structure are ultramafics, listwanitic rocks, slates, argillites, sandstones and quartz wackes.

Placer gold was first discovered on the Manson River in 1871 and gave rise to the Manson Creek placer gold camp. Placer mining along this drainage system has occurred continuously since that time. The bedrock is covered by glacial material which is in turn covered by postglacial gravels. The auriferous gravels are those that lie directly on the bedrock and the postglacial gravels. The majority of the interest has been the surrounding bedrock benches above the present level of the river. Past mining methods included hydraulics, underground, dredging, shovel and dragline and sluicing. Operations during the late 1980s consisted of moderate to small operations which only operated during the summer months. Gold found by these operations has ranged from fine to coarse in size and semi-round to flat in shape. Jim Thomas ran a placer operation in 2002.

Placer gold production from the Manson River as recorded by Holland, 1950 (Bulletin 28) is mainly for the periods between 1874

CAPSULE GEOLOGY

and 1910, and between 1931 and 1945. The total amount recovered is reported to be 358,032 grams.

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GSC MEM *252, pp. 147-148
GSC P 41-5; 42-2; 45-9; 75-33
GSC SUM RPT 1933, pp. 9-29
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/20 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 062**

NATIONAL MINERAL INVENTORY: 093N14 Cu3

NAME(S): **TIMBER**, DUCKLING, DUCK, AL, FRONT, LING, JAJAY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 49 51 N
LONGITUDE: 125 19 21 W
ELEVATION: 1245 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for the Timber showing, east of Duckling Creek, about 11 kilometres northeast of Old Hogem and 39 kilometres west of Germansen Landing (Assessment Report 10241, Sheet A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6189692
EASTING: 354533

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite
ALTERATION: Epidote, K-Feldspar, Calcite, Malachite
ALTERATION TYPE: Epidote, Potassic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive, Disseminated, Shear
CLASSIFICATION: Epigenetic, Hydrothermal, Porphyry
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 3 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Dimension is the width of the semimassive sulphide zone in the third trench from the east.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Basalt, Monzonite, Syenite, Hybrid Rock, Syenite Porphyry Dike, Pyroxene Porphyry Dike

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	64.5000	Grams per tonne
Gold	2.3850	Grams per tonne
Copper	0.4400	Per cent

COMMENTS: Best assay of five samples taken from the trenched area in 1987.
REFERENCE: Assessment Report 16831, Appendix I, sample LNG-87-78R.

CAPSULE GEOLOGY

The Timber showing is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 11 kilometres northeast of Old Hogem and 39 kilometres west of Germansen Landing.

The area is underlain by Middle Triassic-Lower Jurassic Takla Group volcanics which have been intruded to the north and west by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with

CAPSULE GEOLOGY

graben development (Bulletin 70).

Takla Group rocks in the area of the occurrence are predominantly basaltic in composition and host abundant, although erratically distributed epidote (with or without pyrite) as veinlets, stringers, pods and patchy replacements. These rocks are cut by numerous pyroxene porphyry "feeder" dikes which are pre-Hogem in age. Hogem complex intrusions range in composition from monzonite through syenite and are potassically altered, locally hosting up to 50 per cent pink feldspar as veins and envelopes several centimetres wide around fractures. Dikes of fine to medium-grained syenite porphyry cut the volcanic rocks in the area. Near the contact, a dark hybrid rock of uncertain composition has been mapped. It is, however, almost certainly related to the emplacement of the intrusions.

The Timber showing is exposed in a series of connected trenches on a west-facing slope above Duckling Creek. In the third trench from the east, a 3-metre wide zone of semimassive sulphides comprising up to 50 percent (average 20 per cent) pyrite and chalcopyrite is hosted by basalt. The basalt also hosts calcite, epidote and some "argillic material". Malachite occurs locally as fracture coatings near the massive mineralization. Two metres to the east, a 2-metre wide zone containing 10 per cent pyrite with minor chalcopyrite is exposed. Like the Discovery showing (093N 089) to the east, the mineralization appears to be structurally controlled along an east-striking shear zone, but is discontinuous along strike and at depth.

The best sample from a 1981 evaluation of the showing assayed greater than 1 per cent copper, 0.36 gram per tonne gold and 25.0 grams per tonne silver across 2 metres (Assessment Report 10241, page 7) while more recently, a grab sample from the area of the trenches analysed 0.44 per cent copper, 64.5 grams per tonne silver and 2.385 grams per tonne gold (Assessment Report 16831, Appendix I, sample LNG-87-78R).

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GSC MEM 252, pp. 98-103
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CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/28 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 063**

NATIONAL MINERAL INVENTORY: 093N10 Ag2

NAME(S): **DISCOVERY BAR**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 40 00 N
LONGITUDE: 124 30 46 W
ELEVATION: 970 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Discovery Bar occurrence is located approximately 2 kilometres southwest of the settlement of Manson Creek, along the Manson River.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170019
EASTING: 404845

COMMODITIES: Silver Lead Zinc

MINERALS
SIGNIFICANT: Galena Sphalerite
ASSOCIATED: Pyrite
ALTERATION: Quartz Carbonate
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic Mesothermal
SHAPE: Irregular
MODIFIER: Faulted

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	
Pennsylvan.-Permian			Manson Lakes Ultramafites

LITHOLOGY: Calcareous Graphitic Phyllite
Listwanite
Altered Ultramafic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP: Slide Mountain
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1949
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	41.1000	Grams per tonne
Lead	1.5800	Per cent
Zinc	0.4900	Per cent

REFERENCE: Geological Survey of Canada, Memoir 252, page 131.

CAPSULE GEOLOGY

The Discovery Bar occurrence is located approximately 2 kilometres southwest of Manson Creek, along the Manson River near Discovery Bar.

The general area is within the Manson fault zone, a right-lateral fault of probable Late Cretaceous to Tertiary age. This fault dissects rocks belonging to the Slide Mountain and Quesnel terranes.

This occurrence is hosted near one of the splays of the Manson fault zone which separates black phyllites belonging to the Middle to Upper Triassic Slate Creek Formation (Takla Group), to the southwest, from quartz-carbonate altered ultramafics (listwanite) belonging to the Pennsylvanian to Permian Manson Lakes Ultramafites, to the northeast.

This occurrence consists of numerous parallel stringers 6 to 12 centimetres wide that occur (in part) en echelon within calcareous graphitic phyllites. These stringers occur in a zone that is 3.65 metres wide. Quartz veins and stringers in the general area are sparsely mineralized with galena, pyrite and sphalerite.

A grab sample analysed 1.58 per cent lead, 41.1 grams per tonne

CAPSULE GEOLOGY

silver and 0.49 per cent zinc (Geological Survey of Canada, Memoir 252-131).

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GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24	CODED BY: GSB	FIELD CHECK: N
DATE REVISED: 1992/09/26	REVISED BY: DMM	FIELD CHECK: Y

MINFILE NUMBER: **093N 064**

NATIONAL MINERAL INVENTORY: 093N11 Gem2

NAME(S): **VITAL**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 42 06 N
LONGITUDE: 125 28 40 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is described as being 0.8 kilometre upstream from the bridge crossing Vital Creek, about 41 kilometres northeast of Takla Landing (Minister of Mines Annual Report 1963, page 151).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6175659
EASTING: 344296

COMMODITIES: Jade/Nephrite — Gemstones

MINERALS
SIGNIFICANT: Nephrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer — Industrial Min.
TYPE: Q01 Jade

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Phyllite
Limestone
Tuff

HOSTROCK COMMENTS: Cache Creek Complex rocks range from Carboniferous to Jurassic and underlie the Vital Creek drainage basin.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Vital Creek flows northeasterly from the Vital Range into Silver Creek approximately 41 kilometres northeast of Takla Landing.

The creek drains an area underlain by a north-northwest striking, east-dipping metasedimentary/volcanic suite assigned to the Carboniferous to Jurassic Cache Creek Complex. Here, phyllite, limestone and tuff are the most common members. These rocks host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width.

In 1963, three nephrite jade boulders, weighing 2267, 907 and 363 kilograms, were reportedly recovered from a point on Vital Creek approximately 0.8 kilometre upstream from the bridge.

No recent information pertaining to this occurrence is available.

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EMPR AR *1963-151
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1992/09/22 — CODED BY: DMN — FIELD CHECK: Y
DATE REVISED: 1992/09/29 — REVISED BY: DMN — FIELD CHECK: Y

MINFILE NUMBER: **093N 065**

NATIONAL MINERAL INVENTORY:

NAME(S): **MARIPOSITE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N13E
BC MAP:
LATITUDE: 55 52 37 N
LONGITUDE: 125 42 47 W
ELEVATION: 880 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location from Geological Survey of Canada Map 844A, on Mariposite Creek about 48 kilometres north-northeast of Takla Landing.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6195711
EASTING: 330279

COMMODITIES: Mercury

MINERALS
SIGNIFICANT: Cinnabar
COMMENTS: Host serpentinite is described as carbonatized which, in this area, generally results in the development of either carbonate-quartz-mariposite or talc-carbonate assemblages.
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: E01 Almaden Hg I08 Silica-Hg carbonate

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Carbonatized Serpentinite

HOSTROCK COMMENTS: Mineralization is described as being hosted by carbonatized serpentinite which has intruded Cache Creek sediments.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The Mariposite occurrence is situated on Mariposite Creek, which drains into the Omineca River approximately 48 kilometres north-northeast of Takla Landing.

Although sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex predominate in the area, the occurrence is reported to be associated with a small sill(?) of altered serpentinite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites.

Mineralization is reported to consist of crystals of cinnabar hosted by carbonatized serpentinite outcropping in Mariposite Creek (Geological Survey of Canada Memoir 252, page 171).

Although no recent information pertaining to this occurrence is available, it is likely similar to numerous other mercury occurrences related to the Pinchi fault zone (093N 008, 14, 17, 18, 19, 20, 21, 80, 142, 143, 146, 182).

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GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, p. 171
GSC P 42-7; 44-5, p. 13; 45-6; 74-1A; 74-1B, pp. 31-42

DATE CODED: 1992/09/18 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/03 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 066**

NATIONAL MINERAL INVENTORY:

NAME(S): **BISHOP**, STEELE, LORRAINE, GK, JAJAY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 55 12 N
LONGITUDE: 125 25 21 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for Bishop zone on Lorraine, GK and Steele claims northwest of Cliff Lake, about 60 kilometres northeast of Takla Landing (Assessment Report 24030, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6199827
EASTING: 348619

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite
COMMENTS: Bornite is rare.
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound
CLASSIFICATION: Hydrothermal Epigenetic Porphyry
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION:
STRIKE/DIP: 160/
TREND/PLUNGE:
COMMENTS: Strike is for the syenite subcrop (dike?).

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Syenite
Quartz Monzonite
Pyroxenite
Syenite Dike

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is a Middle Jurassic phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	0.3300	Grams per tonne
Copper	0.7000	Per cent

COMMENTS: Chip sample across eight metres.
REFERENCE: Assessment Report 21992, page 20.

CAPSULE GEOLOGY

The Bishop occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 1.5 kilometres southeast of the Lorraine prospect (093N 002) and 60 kilometres northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

In the immediate area of the occurrence, buff grey-coloured, equigranular, fine to medium-grained syenite is exposed as abundant

CAPSULE GEOLOGY

angular subcrop boulders and massive ledges up to 8 metres across. The rocks, which likely belong to the Middle Jurassic Duckling Creek Syenite Complex, a phase of the Hogem Intrusive Complex, are weakly foliated and are not strongly altered. Outcrops of quartz monzonite and pyroxenite have also been mapped in the area.

The syenite is well mineralized with fine-grained chalcopyrite and rare bornite that is uniformly distributed in the exposed rocks. Malachite is common along fractures and minor pyrite has also been observed. This mineralization is either hosted within a syenite dike striking 160 degrees (as outcrop suggests) or controlled by the east-southeast foliation, as is the case at the Lorraine deposit to the northwest.

In 1991, Kennecott Canada Inc. resumed management of the Lorraine property (093N 002) and embarked on a 12-hole (2,392 metres) diamond drill program with 9 holes in the Bishop zone (then known as the Lorraine Extension). Kennecott followed with detailed rock sampling of the zone in 1993. In 1994, Lysander Gold Corporation optioned the Lorraine property from Kennecott. On the Bishop zone, they drilled 7 holes in 1994, 2 holes in 1995, an unspecified number in 1996, and 3 holes in 1999. Additional geochemical surveys occurred in 1997, 1999 and 2000.

The Bishop zone appears to be about 450 metres long - by less than 200 metres in width. Grades are reported to be similar to those of the Lorraine deposit.

Eastfield Resources Ltd. announced in October 2000 an agreement to option the Lorraine-Jajay property with a potential to gain ownership of 75 per cent of the property. Eastfield commenced drilling on the MacKenzie zone to the south in Fall 2000.

Chip samples collected in 1991 on the adjacent Steele claim by BP Resources yielded up to 0.71 per cent copper and 0.33 gram per tonne gold across 8 metres (Assessment Report 21992, page 20). Two holes drilled to test the showing, however, failed to intersect significant mineralization at depth. The mineralization on the Steele is the southeast extension of the Bishop zone on the Lorraine claims.

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EMPR BULL 70
EMPR GEM 1971-203-210
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EMPR (PRELIM) MAP 9
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 98-103
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
WWW www.eastfieldgroup.com/eastfield/etfhome.html
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DATE CODED: 1992/10/22 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/08 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 067**

NATIONAL MINERAL INVENTORY: 093N11 Cu2

NAME(S): **TAK**, BOB, GAV, SLOPE, CIRQUE, CHEM, SLIDE, TOM, TAIT

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N11E 093N11W
BC MAP:
LATITUDE: 55 42 13 N
LONGITUDE: 125 14 46 W
ELEVATION: 2000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample 10129 on Goat Ridge, about 35 kilometres west-southwest of Germansen Landing (Assessment Report 20838, Drawing 6).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6175379
EASTING: 358858

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite
ASSOCIATED: Quartz
ALTERATION: Epidote, Malachite, Azurite
ALTERATION TYPE: Epidote, Oxidation, Potassic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Shear, Vein, Podiform
CLASSIFICATION: Hydrothermal, Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Twin Creek	
Upper Triassic	Takla	Plughat Mountain	
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Hybrid Intrusive Rock
Plagioclase Hornblende Augite Tuff
Heterolithic Lapilli Tuff
Diorite
Monzodiorite
Andesite
Hybrid Volcanic Rock
Hybrid Sub Volcanic Rock

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Jurassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	40.5000	Grams per tonne
Gold	1.8000	Grams per tonne
Copper	1.5300	Per cent

COMMENTS: Sample (10129) is a malachite/azurite stained hybrid intrusion with 5 per cent semimassive chalcopyrite from the Goat Ridge area.
REFERENCE: Assessment Report 20838, Appendix 2.

CAPSULE GEOLOGY

The Tak occurrence is situated on the western rim of a cirque basin, on what is known locally as Goat Ridge, approximately 35 kilometres west-southwest of Germansen Landing. Mineralization was originally discovered here in 1966 and samples assaying up to 4.31 per cent copper, 37.7 grams per tonne silver and 0.69 gram per tonne gold were reported (Assessment Report 816, Assay Certificate).

The prospect occurs at the contact between volcanic rocks of the Lower Jurassic Twin Creek Formation of the Middle Triassic-Lower

CAPSULE GEOLOGY

Jurassic Takla Group, and dioritic and monzodioritic phases of probable Early Jurassic age of the Late Triassic-Early Cretaceous Hogem Intrusive Complex. The contact is a complex hybrid zone of intrusive, subvolcanic and volcanic rocks. Volcanic textures are difficult to discern due to contact metamorphism; many volcanic fragments occur as ghost outlines and clots of epidote suggesting resorption and metasomatic alteration with intrusive phases.

The ridge 1 kilometre east of Goat Ridge is underlain by subhorizontal plagioclase, hornblende and augite-bearing heterolithic lapilli tuffs typical of the lower part of the Twin Creek Formation. The Upper Triassic Plughat Mountain Formation (Takla Group) outcrops just below the Twin Creek Formation at an elevation of 1700 metres. A small plug of leucocratic syenite outcrops 2 kilometres east of the occurrence and quartz feldspar porphyry dikes intrude the northern part of Goat Ridge. Four kilometres northeast of the occurrence, a spectacular cliff-forming limestone reef is perched on the side of Eaglenest Mountain within augite phyric basaltic flows and agglomerates of the Plughat Mountain Formation.

Traces of finely disseminated pyrite are ubiquitous in the volcanic rocks and are marked by the development of gossans on Goat Ridge. Chalcopyrite mineralization (up to 5 per cent by volume) appears to occur within fractures/faults cutting intrusive bodies and as disseminations, stringers and fillings within a few metres of such structures. Minor bornite has also been observed. Silver and gold exhibit a strong association with the sulphides.

A grab sample (10129) of epidotized, malachite/azurite stained hybrid intrusive rock hosting up to 5 per cent chalcopyrite in semimassive pods from a showing on Goat Ridge assayed 1.53 per cent copper, 1.80 grams per tonne gold and 40.5 grams per tonne silver. A second grab (10126) of potassically altered andesite hosting quartz stringers on the east rim of the basin assayed 2.15 per cent copper, 0.16 gram per tonne gold and 25.2 grams per tonne silver. This sample contained 5 per cent disseminated and stringer chalcopyrite and 5 per cent pyrite as fracture fillings (Assessment Report 20838, Appendix 2).

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EMPR OF 1993-4
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GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/23 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 068**

NATIONAL MINERAL INVENTORY: 093N3 Mo1

NAME(S): **FALCON**, BAL, HI, A

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N03E
BC MAP:
LATITUDE: 55 12 16 N
LONGITUDE: 125 05 41 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location are the southwestern trenches within the "Pyrite Zone", approximately 500 metres north of Tchentlo Lake, about 64 kilometres southeast of Takla Landing (Assessment Report 20272, Figure 5).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6119544
EASTING: 366696

COMMODITIES: Copper, Molybdenum, Lead

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite, Molybdenite, Galena
ASSOCIATED: Quartz
ALTERATION: Epidote, K-Feldspar, Jarosite, Hematite
ALTERATION TYPE: Potassic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork, Vein, Disseminated
CLASSIFICATION: Hydrothermal, Porphyry
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 400 x 350 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: A zone of pyritized hornblende/syenodiorite.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Hornblende Diorite
Syeno Diorite
Monzonite
Diorite
Gabbro

HOSTROCK COMMENTS: Rocks are part of the Hogem basic suite, a Late Triassic to Early Jurassic phase of the complex.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Copper	0.4440	Per cent
Molybdenum	0.0131	Per cent

COMMENTS: Sample 414115 from the westernmost trench in the zone (Assessment Report 20825, Figure 5).
REFERENCE: Assessment Report 20272, Appendix A.

CAPSULE GEOLOGY

The Falcon occurrence is situated just south of the Swannell Ranges (Omineca Mountains) near the shores of Tchentlo Lake, approximately 64 kilometres southeast of Takla Landing. The area was explored for copper and molybdenum between 1969 and 1970, and is now undergoing re-evaluation as a result of interest generated by the Mount Milligan deposit (093N 194), 65 kilometres to the east.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. Refer to the Lorraine occurrence (093N 002) for a more detailed geological description of the complex.

Of the three phases comprising the Hogem Intrusive Complex, only

CAPSULE GEOLOGY

rocks of the Late Triassic to Lower Jurassic Hogem basic suite underlie the area of the occurrence. These rocks include syenodiorite, monzonite, diorite and gabbro, whose mafic minerals possess a strong alignment parallel to the Pinchi fault zone to the west. In addition, a variable, but well-developed joint pattern parallel to the major structure presumed to underlie Tchentlo Lake, is evident in the area.

A 350 by 400-metre zone of pyritized hornblende syenodiorite occurs north of the lake. Within this zone, a quartz-potassium feldspar-epidote-pyrite stockwork system has developed. The potassically altered intrusive rocks host massive pyrite veins and disseminations comprising up to 15 per cent of the rock and are locally gossanous (jarosite and/or hematite). Minor chalcopyrite, molybdenite and galena have also been noted within quartz stockwork veins.

Three of the better chip samples taken from trenches exposing this mineralization in the southwest part of the zone assayed as follows (Assessment Reports 20272, Figure 5 and 20272, Appendix A):

Sample #	Copper (ppm)	Molybdenum (ppm)	Tungsten (ppm)
414105	947	832	250
414114	645	416	680
414115	4440	131	330

Scattered occurrences of disseminated chalcopyrite, pyrite and magnetite occur in altered syeno/monzodiorite to the north of the trenches.

BIBLIOGRAPHY

EMPR ASS RPT 1947, 2010, 2321, 2617, 2729, 20272, *20825
EMPR GEM 1969-107; 1970-179
EMPR PF (Sinclair, A.J. (1971): Report on BAL, TC, PJ, HI and J Group of Claims for Tchentlo Lake Mines Ltd; claim map; prospectus for Nation Lake Mines Limited; Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR BULL 70
EMR MP CORPFILE (Nation Lake Mines Limited)
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/12 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 069**

NATIONAL MINERAL INVENTORY:

NAME(S): **FAL**, FALCON, PJ, OVB

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N03E
BC MAP:
LATITUDE: 55 12 30 N
LONGITUDE: 125 04 11 W
ELEVATION: 925 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location are old trenches on the south bank of a creek flowing south into Tchentlo Lake, about 65 kilometres southeast of Takla Landing (Assessment Report 20825, Figure 5).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6119929
EASTING: 368300

COMMODITIES: Copper Zinc Lead Silver Arsenic

MINERALS

SIGNIFICANT: Magnetite Pyrite Chalcopyrite
COMMENTS: Various unspecified oxide minerals (gossan) apparently cement the sulphides and magnetite.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic Industrial Min.
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Gabbro
Ultramafic Rock
Gossan

HOSTROCK COMMENTS: Rocks are part of the Hogem basic suite, a Late Triassic to Early Jurassic phase of the complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Rock

YEAR: 1990

COMMODITY	GRADE	
Silver	10.0000	Grams per tonne
Arsenic	1.0260	Per cent
Copper	0.4363	Per cent
Lead	0.1457	Per cent
Zinc	0.4935	Per cent

COMMENTS: Sample of gossanous material hosting pyrite, chalcopyrite and magnetite.
REFERENCE: Assessment Report 20272, page 10 and Appendix A, sample F89-R-7.

CAPSULE GEOLOGY

The Fal occurrence is situated just south of the Swannell Ranges (Omineca Mountains) near the shores of Tchentlo Lake, approximately 65 kilometres southeast of Takla Landing. The area was explored for copper and molybdenum between 1969 and 1970, and is now undergoing re-evaluation as a result of interest generated by the Mount Milligan deposit (093N 194), 65 kilometres to the east.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. Refer to the Lorraine occurrence (093N 002) for additional information regarding regional geology and the Falcon occurrence (093N 068) for local geology details.

The Fal occurrence comprises magnetite-rich gabbro and

CAPSULE GEOLOGY

ultramafic rubble apparently blasted from now overgrown trenches on the south side of a south-flowing creek entering Tchentlo Lake near its middle. These rocks reportedly host up to two per cent chalcopyrite, although only magnetite is evident in the blasted material. A sample of boxwork pyrite mineralization hosted by a bleached intrusive rock taken from the trenches reportedly assayed 1146 ppm copper and 5.3 grams per tonne silver (Assessment Report 20272, page 10 and Appendix A, sample F89-R-8). A second sample of gossanous material hosting 1-centimetre round pyrite, chalcopyrite and magnetite crystals, taken approximately 300 metres downstream, assayed 4363 parts ppm copper, 1457 ppm lead, 4935 ppm zinc, 103 ppm nickel, 10,262 ppm arsenic and 10.0 grams per tonne silver (Assessment Report 20272, page 10 and Appendix A, sample F89-R-8).

BIBLIOGRAPHY

EMPR ASS RPT 2729, 10077, 10904, 20272, *20825
EMPR GEM 1970-179
EMPR PF (Sinclair, A.J. (1971): Report on BAL, TC, PJ, HI and J Group of Claims for Tchentlo Lake Mines Ltd; claim map; prospectus for Nation Lake Mines Limited (all refer to 093N 068); Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR BULL 70
EMR MP CORPFILE (Nation Lake Mines Limited)
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/12 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 070**

NATIONAL MINERAL INVENTORY:

NAME(S): **DIP**, NATION COPPER, BON, CHUCHI LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02W
BC MAP:
LATITUDE: 55 10 01 N
LONGITUDE: 124 46 32 W
ELEVATION: 975 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Drill location, located about 3 kilometres south-southeast of the east end of Tchentlo Lake (Property File - drill hole location map, 1964).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6114808
EASTING: 386899

COMMODITIES: Copper, Iron, Magnetite, Gold

MINERALS
SIGNIFICANT: Magnetite
ASSOCIATED: Epidote, Calcite
ALTERATION: Chlorite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated, Massive
CLASSIFICATION: Industrial Min.
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Peridotite
Quartz Diorite
Syenite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel
Plutonic Rocks

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1964
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Gold	0.3400	Grams per tonne
Copper	0.1600	Per cent
Iron	21.8800	Per cent

COMMENTS: From a 2.13-metre drill intersection.
REFERENCE: Property File - Certificate of Assay, 1964.

CAPSULE GEOLOGY

In 1964, Asbestos Corporation Limited put down three holes on their Dip claims (Property File - Stevenson, 1965). Petrographic analysis of drill core showed the intersected rock to consist of quartz diorite, syenite and peridotite (Property File - Carswell, 1964). The peridotite is strongly chloritized and veined by epidote and calcite, and consists of about one third magnetite. The quartz diorite is also strongly chloritized and altered. A 2.13-metre drill intersection assayed 0.16 per cent copper, 21.88 per cent magnetite and 0.34 gram per tonne gold (Property File - Vertical Cross Section, 1964; Certificate of Assay, 1964).

The area is underlain by the southeastern end of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. In this region, the Hogem complex rocks are determined to be Early Jurassic (Fieldwork 1991; Open File 1992-4).

BIBLIOGRAPHY

EMPR ASS RPT 1056, 1994, 3337, 338, 13510, 19810, 21124
EMPR PF *(Carswell, H.J. (1964): Report on Examination of Seven Rocks, for Asbestos Corporation, 1964; Four maps showing claims, drill sites and cross-section, 1963-1964; Correspondence discussing work

BIBLIOGRAPHY

done on the property in 1964, Stevenson, W.G., Asbestos Corporation Limited, 1965)
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118
EMPR OF 1991-3; 1992-4
EMPR BULL 70
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 071**

NATIONAL MINERAL INVENTORY: 093N3 Cu1,6,7

NAME(S): **HEATH #3**, HEATH, NS, CAT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E 093N03E
BC MAP:
LATITUDE: 55 16 01 N
LONGITUDE: 125 08 54 W
ELEVATION: 1110 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for a narrow epidote-chalcopyrite veinlet southeast of the Heath #1 occurrence (093N 072), about 57 kilometres southeast of Takla Landing (Assessment Report 20552, Figure 7).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6126601
EASTING: 363499

COMMODITIES: Copper, Silver, Gold

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Bornite
ASSOCIATED: Magnetite, Epidote, Calcite, Hematite
ALTERATION TYPE: Propylitic, Potassic, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Stockwork, Vein
CLASSIFICATION: Hydrothermal, Epigenetic, Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY:
Diorite
Clinopyroxene Gabbro
Pyroxenite
Hornblendite
Feldspar Porphyry Dike
Diabase Dike
Andesite Porphyritic Dike
Granodiorite Dike
Granodiorite

HOSTROCK COMMENTS: Rocks underlying the area belong to the Late Triassic-Early Jurassic Hogem basic suite and Hogem granodiorite phase of the complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	761.1000	Grams per tonne
Gold	0.8600	Grams per tonne
Copper	2.1200	Per cent

COMMENTS: Sample (89-D-232-A) of a 5 to 20-cenitmetre wide epidote-chalcopyrite veinlet.
REFERENCE: Assessment Report 20552, page 14, Appendix I.

CAPSULE GEOLOGY

The Heath #3 showing is situated between Mount Nation and the west end of Tchentlo Lake, approximately 57 kilometres southeast of Takla Landing. Copper mineralization was originally discovered to the northwest at the Heath #1 prospect (093N 072) in 1968, as a result of anomalies outlined by a regional geochemistry survey.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. Of the three phases comprising the Hogem Intrusive Complex, only rocks of the Late Triassic to Lower Jurassic Hogem granodiorite and Hogem basic suite

CAPSULE GEOLOGY

underlie the Mount Nation area. Diorite is the most abundant rock type, hosting irregular bodies of coarse-grained clinopyroxene gabbro, pyroxenite and hornblendite and local feldspar porphyry, diabase, granodiorite and andesite porphyry dikes. Granodiorite has also been mapped to the east. These rocks are disrupted along several subordinate faults paralleling the Pinchi fault zone to the east and have undergone widespread propylitic and potassic and local carbonate alteration.

Widely distributed disseminations, stringers and fracture fillings consisting of chalcopyrite, pyrite, epidote, calcite, magnetite, hematite and bornite occur in diorite exposed in the area. A sample of one, 15-centimetre wide epidote-chalcopyrite vein exposed south of a small creek assayed 2.12 per cent copper, 761.1 grams per tonne silver and 0.86 gram per tonne gold (Assessment Report 20552, page 14).

BIBLIOGRAPHY

EMPR ASS RPT 1965, 2799, 3200, 3201, 4672, *20552, 21948
EMPR GEM 1969-106; 1970-180; 1971-199; 1973-366
EMR MP CORPFILES (Nation Lake Mines Limited)
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/10 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 072**

NATIONAL MINERAL INVENTORY: 093N3 Cu1,6,7

NAME(S): **HEATH #1**, HEATH, NS, CAT

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N06E 093N03E
BC MAP:
LATITUDE: 55 16 15 N
LONGITUDE: 125 09 46 W
ELEVATION: 1105 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is Trench Locality A, east of Lisa Lake, about 56 kilometres southeast of Takla Landing (Assessment Report 20552, Figure 7).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6127062
EASTING: 362595

COMMODITIES: Copper, Silver, Gold, Lead, Zinc

MINERALS
SIGNIFICANT: Chalcopyrite, Pyrite, Galena, Sphalerite
ASSOCIATED: Magnetite, Quartz, Calcite
ALTERATION TYPE: Propylitic, Potassic, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Disseminated, Stockwork
CLASSIFICATION: Porphyry, Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
SHAPE: Tabular
DIMENSION: 40 x 2 Metres
STRIKE/DIP: 135/60N
TREND/PLUNGE:
COMMENTS: A magnetite-chalcopyrite vein at Trench Locality A.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Clinopyroxene Gabbro
Pyroxenite
Hornblendite
Feldspar Porphyry Dike
Diabase Dike
Andesite Porphyritic Dike
Granodiorite Dike
Granodiorite

HOSTROCK COMMENTS: Rocks underlying the area belong to the Late Triassic-Early Jurassic Hogem basic suite and Hogem granodiorite phase of the complex.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1989

COMMODITY	GRADE	
Silver	1419.4000	Grams per tonne
Gold	4.9700	Grams per tonne
Copper	0.7600	Per cent
Lead	4.0600	Per cent
Zinc	0.8200	Per cent

COMMENTS: Sample (89-T-104-A) of carbonatized diorite impregnated with galena, sphalerite, pyrite and chalcopyrite from Trench Locality C.
REFERENCE: Assessment Report 20552, page 13, Appendix I.

CAPSULE GEOLOGY

The Heath #1 prospect is situated between Mount Nation and the west end of Tchentlo Lake, approximately 56 kilometres southeast of Takla Landing. Copper mineralization was originally discovered here in 1968, as a result of anomalies outlined by a regional geochemistry survey.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which

CAPSULE GEOLOGY

have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70). Refer to the Lorraine occurrence (093N 002) for a detailed regional geology description.

Of the three phases comprising the Hogem Intrusive Complex, only rocks of the Late Triassic to Lower Jurassic Hogem granodiorite and Hogem basic suite underlie the area. Diorite is the most abundant rock type, hosting irregular bodies of coarse-grained clinopyroxene gabbro, pyroxenite and hornblendite and local feldspar porphyry, diabase, granodiorite and andesite porphyry dikes. Granodiorite has also been mapped to the east. These rocks are disrupted along several subordinate faults paralleling the Pinchi fault zone to the east and have undergone widespread propylitic and potassic and local carbonate alteration.

The original discovery, now exposed at Trench Locality A, comprises a magnetite-chalcopyrite vein exposed over a strike length of 40 metres. The vein, which varies from 0.2 to 2.2 metres wide, strikes 135 degrees and dips 45 to 60 degrees to the northeast. A core zone of nearly massive chalcopyrite reaches a thickness of 40 centimetres. Diffuse chalcopyrite mineralization extends into the diorite wallrocks, which are strongly propylitized and carry abundant magnetite.

Approximately 350 metres to the north-northeast, at Trench Locality B, two narrow magnetite-chalcopyrite-pyrite veins are exposed in diorite. The first strikes 110 degrees and averages 25 centimetres wide, while the second strikes 105 degrees and averages 15 centimetres wide.

At Trench Locality C, a further 200 metres to the north, four trenches expose a magnetite-chalcopyrite-pyrite vein over a strike length of 40 metres. The vein averages 35 centimetres thick and strikes 150 degrees. The host diorite is carbonate altered (up to two metres from the vein) and is mineralized with disseminations and stockwork veinlets of galena, sphalerite, pyrite and chalcopyrite with quartz and calcite.

A grab sample of veining from Trench Locality A assayed 18.88 per cent copper, 230.4 grams per tonne silver and 1.54 grams per tonne gold (Assessment Report 20552, page 12, sample 89-T-99-A). A 20-centimetre wide sample of veining from Trench Locality B assayed 7.46 per cent copper, 28.8 grams per tonne silver and 0.82 gram per tonne gold (Assessment Report 20552, page 12, sample 89-D-279-A). Grab samples of wallrock mineralization at Trench Locality C assayed up to 0.76 per cent copper, 1419.4 grams per tonne silver, 4.97 grams per tonne gold, 4.06 per cent lead and 0.82 per cent zinc. (Assessment Report 20552, page 13, sample 89-T-104-A).

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EMPR ASS RPT 1965, 2799, 3200, 3201, 4672, *20552, 21948
EMPR GEM 1969-106; 1970-180; 1971-199; 1973-366
EMR MP CORPFILES (Nation Lake Mines Limited)
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/10 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 073**

NATIONAL MINERAL INVENTORY: 093N11 Cu1

NAME(S): **SWAN**, BOOM, FRANKIE, KWANIKA CREEK, KWAH

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 30 27 N
LONGITUDE: 125 20 00 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for the North zone, along the east bank of Kwanika Creek, 50 kilometres south-southwest of Germansen Landing (Property File - North zone geology map).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6153741
EASTING: 352645

COMMODITIES: Copper, Gold, Molybdenum

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Bornite, Molybdenite
ASSOCIATED: Quartz, Carbonate
ALTERATION: Chlorite, Epidote, K-Feldspar, Quartz, Hematite, Carbonate, Malachite, Azurite
COMMENTS: Also limonite.
ALTERATION TYPE: Chloritic, Potassic, Epidote, Silicific'n, Argillic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Stockwork
CLASSIFICATION: Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Bladed
MODIFIER: Fractured
DIMENSION: 488 x 305 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Copper deposit.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Hybrid Quartz Monzonite
Quartz Monzonite
Granite
Argillite
Mudstone
Siltstone
Greywacke
Aphanitic Dike
Feldspar Porphyry Dike

HOSTROCK COMMENTS: The Hogem Intrusive Complex has been dated as Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks, Quesnel

INVENTORY

ORE ZONE: MAIN
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1974
QUANTITY: 36000000 Tonnes

COMMODITY	GRADE	
Copper	0.2000	Per cent

COMMENTS: Geological reserves.
REFERENCE: CIM Special Volume 15 (1976), Table 1, No.97.

CAPSULE GEOLOGY

The Swan developed prospect is situated on Kwanika Creek, 2 kilometres south of its confluence with West Kwanika Creek and approximately 40 kilometres east of Takla Landing. The area was first recognized as having copper (with or without molybdenum) potential in 1964, when Hogan Mines Ltd. (later Bow River Resources

CAPSULE GEOLOGY

Ltd.) optioned the Boom and Frankie groups of claims.

Regionally, the area is underlain by Middle Triassic to Lower Jurassic Takla Group sediments intruded by various phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. Carboniferous to Jurassic Cache Creek Complex rocks occur to the west. The proximity of the north-striking Pinchi fault zone is evidenced by the presence of numerous fractures, shears and faults.

Although a thick mantle of glacial drift covers the Kwanika Creek valley, two generally altered phases of the Hogem Intrusive Complex appear to host the majority of the mineralization. The oldest phase is Early Jurassic in age and has been classified by Garnett (1978) as a hybrid quartz-bearing monzonite. The rocks are leucocratic, varying in colour from a mottled pink to green, medium grained to aphanitic (where strongly chlorite altered) and weakly to strongly fractured. They have undergone extensive alteration, including potassic, chloritic, epidotization, argillic and silicification. In addition, hematite commonly occurs on fracture surfaces (in association with chlorite and epidote alteration). Quartz and/or carbonate veinlets are present throughout the phase, the former generally associated with potassic alteration.

The younger phase is Early Cretaceous in age and has been classified as ranging in composition from quartz monzonite to granite. The rocks are orange to pink in colour, leucocratic, medium grained and weakly to intensely fractured and faulted. They are locally cut by dark green-black aphanitic dikes and rare feldspar porphyry dikes. Plagioclase feldspars have been commonly altered to sericite in areas of fracturing. Hematite is present as patchy stains on fracture surfaces, but is also locally pervasive. This phase has been observed in contact with and intruding Takla Group rocks as well as intruding the hybrid quartz-bearing monzonite phase.

Takla Group rocks predominantly comprise argillite with interbedded black mudstone and brown siltstone. These sediments strike from north to northwest and dip steeply to the east or west. A slaty cleavage parallel to bedding has developed within these rocks. Greywacke and greywacke/volcaniclastic members are also present in the area. The greywacke members vary from siltstone to sandstone, are massive and usually exhibit a weak limonitic stain. Angular shards within the greywacke/volcaniclastic members distinguish them from the greywackes.

The area surrounding the Swan prospect is structurally complex, the Pinchi fault zone being the most prominent feature. Its proximity to Kwanika Creek has resulted in strong to intense fracturing, faulting and brecciation. Fracturing within any single outcrop usually shows several orientations and these display complex crosscutting relationships. Northeast-striking faults appear to be the best developed in the area. Pyrite (with or without chalcopyrite) stringers, quartz veinlets, calcite, potassium feldspar, hematite, chlorite and epidote commonly occur within fractures.

The most common mineral present is pyrite which occurs as disseminated grains, blebby masses up to 10 centimetres across in shears and as fracture fillings in the hybrid quartz-bearing monzonite and quartz monzonite to granite phases. Pyrite as large blebs, 2 to 3-millimetre wide stringers and disseminations forming up to 20 per cent of the outcrop also occurs in rusty gossanous zones associated with intense shearing. Chalcopyrite is most often associated with pervasive chlorite alteration in the hybrid quartz-bearing monzonite phase. Here, it occurs as disseminated fine grains with pyrite and local bornite. Chalcopyrite also occurs in the quartz monzonite to granite phase as blebs up to 5 millimetres in size (with malachite and rarely azurite), as halos and on fracture surfaces. Molybdenite is rare in the hybrid quartz-bearing monzonite and quartz monzonite to granite phases. It has, however, been observed in the hybrid quartz-bearing monzonite as blebs in quartz veins. In the quartz monzonite to granite phase, it is associated with chalcopyrite and argillic alteration, occurring as disseminated grains. A gold assay value of 1.081 grams per tonne was obtained from a sample of silicified, limonitic hybrid quartz-bearing monzonite hosting 5 per cent pyrite/chalcopyrite (Assessment report 19373, page 11).

Intermittent exploration work from 1965 to 1974 on the South and North zones has resulted in the definition of a low-grade copper deposit within an area of 488 by 305 metres. The North zone, where inferred reserves of 36 million tonnes grading 0.2 per cent copper have been outlined, has received the most intensive work to date (Canadian Institute of Mining and Metallurgy Special Volume 15 (1976), Table 1, #97).

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EMPR OF 1992-1
EMPR PF (Pentland, W.S. (1967): Report on Hogan Mines Ltd., Kwanika Creek Property for Canex Aerial Exploration Ltd.; Seraphim, R.H. (1971): Report on the Kwanika Creek Prospect of Hogan Mines Ltd.; various diamond drill-hole sections and logs, claim, location and geology/geophysics maps)
EMR MP CORPFILE (Canex Aerial Exploration Ltd.; Great Plains Development Company of Canada, Ltd.; Bow River Resources Ltd.)
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 42-11; 44-5; 45-6
GCNL Dec.9, 1975; #85(May 3), 1989; #26(Feb.6),#58(Mar.22), #130(Jul.8),#139(Jul.19), 1991
CIM Vol. 67, No. 749, pp. 101-106
CIM Special Volume 15 (1976), Table 1, #97
N MINER Jul.10, 1989; Oct.14, 1996
W MINER Jun., 1970
EMR MIN BULL MR 223 B.C. 252
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/05 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 074**

NATIONAL MINERAL INVENTORY: 093N14 Cu1

NAME(S): **ELIZABETH**, DOROTHY , ELDOR, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 52 33 N
LONGITUDE: 125 19 41 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6194710
EASTING: 354354

COMMENTS: Location is a copper showing on the east side of Duckling Creek, southeast of the Dorothy occurrence (093N 007), about 15 kilometres northeast of Old Hogem and 40 kilometres west-northwest of Germansen Landing (Assessment Report 73, Plate No. 1).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Malachite Azurite Cuprite Chrysocolla
COMMENTS: All significant minerals are actually alteration minerals, forming as a result of the oxidation of primary sulphides, likely chalcopyrite and bornite in this case.
ALTERATION: Malachite Azurite Cuprite Chrysocolla K-Feldspar
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Breccia Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Granite
Gabbro
Pegmatite Dike

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous. Lithologies show a compostional range of rocks.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1999
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	22.1600	Per cent

REFERENCE: Page, J.W. (1999): Reconnaissance Report, Lysander Minerals Ltd.

CAPSULE GEOLOGY

The Elizabeth occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 15 kilometres northeast of Old Hogem and 40 kilometres west-northwest of Germansen Landing. The area first became of interest in the late 1940s when copper-bearing float was discovered on the slopes east of Duckling Creek, near the eventual site of the Dorothy occurrence (093N 007). Both occurrences have been explored intermittently up to the present.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Heterogeneous intrusive rocks varying compositionally from

CAPSULE GEOLOGY

granite to gabbro occur in the area of the Elizabeth occurrence. These rocks are cut by pegmatitic stringers and by two sets of steeply dipping faults, the first striking northerly and the second striking east-northeasterly. Secondary mineralization consisting of malachite, azurite, cuprite and chrysocolla cement breccia fragments of highly altered intrusive rock at the intersection of these two faults. Similar copper mineralization occurs within a network of tiny fractures and seams in potassium feldspar-enriched wallrock adjacent to the faults. Trenches reveal a lack of continuity to mineralization at depth and along strike of the faults (Geology, Exploration and Mining in British Columbia 1971, page 215).

Lysander Minerals Corp. owned the showing in 1999 as part of its Jajay property. They describe the breccia matrix as consisting of bornite, chalcocite, and malachite, making up 40 per cent of the rock. A sample of the rock yielded 22.16 per cent copper and low precious metal content (Page, 1999 (Property File). Less than 1 kilometre to the east of the Elizabeth breccia, road cuts expose a grey syenite that is pervasively altered and contains minor amounts of pyrite and chalcopyrite. One sample yielded 0.6 per cent copper (Page, 1999).

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EMPR (PRELIM) MAP 9
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 98-103
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek Area of the Hogem Batholith, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/22 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 075**

NATIONAL MINERAL INVENTORY: 093N15 Zn1

NAME(S): **W. VERNON**, BVD 32, VERNON

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N15W
BC MAP:
LATITUDE: 55 56 10 N
LONGITUDE: 124 45 31 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The W. Vernon occurrence is located approximately 1 kilometre to the west of the northwest end of Echo Lake and is approximately 17 kilometres north-northwest of Germansen Landing (Open File 1990-17).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6200366
EASTING: 390145

COMMODITIES: Zinc, Lead, Silver, Barite

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: Silver is in form of argentiferous galena.
ASSOCIATED: Barite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Breccia, Stratabound, Massive
CLASSIFICATION: Replacement, Industrial Min.
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Otter Lakes	Undefined Formation	
Silurian-Devonian	Echo Lake	Undefined Formation	

LITHOLOGY: Fine Grained Dolomite
Arenaceous Dolomite
Dolomitic Breccia
Shale

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	61.2200	Grams per tonne
Zinc	7.0000	Per cent

COMMENTS: Zinc is given as a range from 5 to 7 per cent.
REFERENCE: Assessment Report 16946.

CAPSULE GEOLOGY

The W. Vernon occurrence is located approximately 1 kilometre to the west of the northwest end of Echo Lake and is approximately 17 kilometres north-northwest of Germansen Landing (Open File 1990-17). This occurrence has similar regional geology to that of the Biddy occurrence (093N 114).

Sphalerite occurs as disseminated grains in fine-grained dolomite and/or breccia matrix in arenaceous dolomite. Galena primarily occurs massively with barite in small localized shear zones with varying amounts of sphalerite. Silver, in the form of argentiferous galena, is generally very low grade. The hostrocks are primarily dolomites and dolomitic breccias of the Middle Devonian Otter Lakes Group with lesser mineralization found within dolomites and arenaceous dolomites of the Silurian to Lower Devonian Echo Lake Group. Mineralization is typically found in the uppermost parts of the Otter Lakes Group, near the contact with the overlying shales of the Devonian to Mississippian Big Creek Group. A grab sample from this area analysed 61.22 grams per tonne silver and 5 to 7 per cent zinc (Assessment Report 16946).

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EMPR BULL *91
EMPR EXPL *1989, pp. 193-196
EMPR FIELDWORK *1989, pp. 101-114; 1988, pp. 209-220
EMPR GEM 1973-380
EMPR AR 1952-99,106
EMPR OF *1990-17; 1989-12
EMPR ASS RPT 1653, *4815, *16946, 19266, *20492
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 1424A; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/07 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 076**

NATIONAL MINERAL INVENTORY: 093N15 Zn1

NAME(S): **VERNON**, B.V.D. 33, ZONE E

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N15E 093N15W
BC MAP:
LATITUDE: 55 56 33 N
LONGITUDE: 124 45 03 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Vernon occurrence is located approximately 1 kilometre northwest of the northwest end of Echo Lake and is approximately 17 kilometres north-northwest of Germansen Landing (Open File 1990-17).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6201064
EASTING: 390649

COMMODITIES: Zinc, Lead, Silver, Germanium

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: Silver is in the form of argentiferous galena.
ASSOCIATED: Barite Quartz Calcite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated, Breccia, Massive, Shear
CLASSIFICATION: Sedimentary, Industrial Min.
TYPE: E12 Mississippi Valley-type Pb-Zn
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Otter Lakes	Undefined Formation	
Silurian-Devonian	Echo Lake	Undefined Formation	

LITHOLOGY: Fine Grained Limestone
Arenaceous Dolomite
Dolomite
Dolomitic Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	84.0000	Grams per tonne
Germanium	0.1300	Per cent
Lead	5.2000	Per cent
Zinc	8.7000	Per cent

COMMENTS: A grab sample from a trench.
REFERENCE: Exploration in British Columbia 1989, page 195.

CAPSULE GEOLOGY

The Vernon occurrence is located approximately 1 kilometre northwest of the northwest end of Echo Lake and is approximately 17 kilometres north-northwest of Germansen Landing (Open File 1990-17). This occurrence has similar regional geology to that of the Biddy occurrence (093N 114).

Sphalerite occurs as disseminated grains in fine-grained dolomite and as breccia cement within arenaceous dolomite. Galena primarily occurs massively with barite in small localized shear zones with varying amounts of sphalerite. Silver, in the form of argentiferous galena, is generally very low grade. Minor quartz, calcite, and barite are associated with the sulphides. The hostrocks are primarily dolomites and dolomitic breccias of the Middle Devonian Otter Lakes Group and arenaceous dolomites of the Echo Lake Group (Silurian to Lower Devonian).

The mineralization at this locality may be related to a northeast-striking normal fault. A grab sample from this area

CAPSULE GEOLOGY

analysed 84 grams per tonne silver, 5.2 per cent lead, 8.7 per cent zinc and 0.13 per cent germanium (Exploration in British Columbia 1989, page 195).

BIBLIOGRAPHY

EMPR BULL *91
EMPR EXPL *1989, pp. 193-196
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EMPR OF *1990-17; 1989-12
EMPR GEM 1973-380
EMPR AR 1952-99,106
EMPR ASS RPT 1653, 4815, 16946, 19266, 20492
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 1424A; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/07 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 077**

NATIONAL MINERAL INVENTORY:

NAME(S): **NORTH KWANIKA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 28 40 N
LONGITUDE: 125 13 57 W
ELEVATION: 1725 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is near the headwaters of a south-flowing tributary to Halobia, about 46 kilometres east of Takla Landing Creek (Peto, P. (1971): Report on the Hogem Project for Amoco Mining, page 61 and Figure 4 - 093N General File).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6150225
EASTING: 358905

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Bornite Chalcopyrite
COMMENTS: Bornite occurs as nodular segregations.
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Leucocratic Quartz Monzonite
Syeno Diorite
Monzonite
Melanocratic Diorite
Porphyritic Quartz Monzonite
Granodiorite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The North Kwanika occurrence is situated in the Kwanika Range near the headwaters of a south-flowing tributary to Halobia Creek, approximately 46 kilometres east of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic to Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

The principle rock type in the area of the occurrence is leucocratic quartz monzonite. A northwesterly trending intrusive contact between syenodiorite to monzonite and melanocratic diorite occurs nearby, and porphyritic quartz monzonite to granodiorite is in contact with syenodiorite to monzonite on the north side of the divide, near a small tarn. A north-striking fault cuts these rocks to the east.

Mineralization, in the form of segregated nodules of bornite, disseminated chalcopyrite and associated malachite, is scattered and sparse, but reportedly extends north across the divide (Property File - Peto, 1971). No recent information concerning this occurrence is available.

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EMPR BULL 70
EMPR PF (*Peto, P. (1971): Report on the Hogem Project for Amoco Mining, p. 61 and Figure 4 (refer to 093N General File))

BIBLIOGRAPHY

GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1992/11/05 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1992/11/09 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 078**

NATIONAL MINERAL INVENTORY:

NAME(S): **GKO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10W
BC MAP:
LATITUDE: 55 44 11 N
LONGITUDE: 124 48 04 W
ELEVATION: 1490 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The GKO occurrence is located approximately 1.5 kilometres southeast of Plughat Mountain, near the headwaters of Goodasany Creek (Assessment Report 20923).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6178210
EASTING: 386912

COMMODITIES: Copper, Silver

MINERALS
SIGNIFICANT: Chalcopyrite, Malachite, Pyrite
ASSOCIATED: Quartz
ALTERATION: Silica, Malachite
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein, Shear
CLASSIFICATION: Porphyry, Hydrothermal
SHAPE: Irregular
MODIFIER: Fractured

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Siliceous Lapilli Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	44.9000	Grams per tonne
Copper	1.2220	Per cent

REFERENCE: Assessment Report 20923.

CAPSULE GEOLOGY

The GKO occurrence is located approximately 1.5 kilometres southeast of Plughat Mountain, near the headwaters of Goodasany Creek.

This occurrence is hosted in the Upper Triassic Plughat Mountain Formation, part of the Middle Triassic to Lower Jurassic Takla Group. The Plughat Mountain Formation is a thick sequence of augite-bearing, mafic to intermediate(?), calcalkaline to alkaline pyroclastic rocks, massive flows and lesser epiclastic rocks. In this area, the Plughat Mountain Formation is the upper volcanic sequence of the Takla Group. The lower, sediment-dominated sequence of rocks, are part of the Middle-Upper Triassic Slate Creek Formation (Takla Group). To the northeast, the Takla Group is in fault contact (the Manson fault zone) with the Pennsylvanian to Permian Nina Creek Group. To the south, the Takla Group has been intruded by the Cretaceous Germansen batholith, a multiphase granitic to granodiorite intrusion.

Mineralization occurs in a 1-metre wide shear zone, consisting of fractured siliceous lapilli tuffs of the Plughat Mountain Formation. A small quartz vein, less than 3 centimetres, occurs in the middle of the shear zone. The quartz vein is vuggy and sparsely mineralized. Fractures within the lapilli tuff are filled with malachite and the rock itself contains trace amounts of disseminated pyrite and chalcopyrite. A grab sample of the sheared, siliceous

CAPSULE GEOLOGY

lapilli tuff analysed 44.1 grams per tonne silver and 1.2223 per cent copper (Assessment Report 20923). Minor amounts of molybdenum has also been reported (16 ppm).

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EMPR ASS RPT *20923
EMPR OF 1989-12
EMPR FIELDWORK 1988, pp. 209-220
EMPR BULL *91
GSC MEM 251
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/27 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 079**

NATIONAL MINERAL INVENTORY: 093N2 Cu2

NAME(S): **JEAN**, JW, A, B, C, N

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N02W
BC MAP:
LATITUDE: 55 06 18 N
LONGITUDE: 124 57 22 W
ELEVATION: 1025 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6108223
EASTING: 375206

COMMENTS: Area of percussion drilling on the JW claims (Assessment Report 5343, Map 2). This showing also includes the Jean occurrence (formerly 093N 083) which was deleted as an independent occurrence because no documented evidence of mineralization can be found. The property is located about 10 kilometres south of Tchentlo Lake.

COMMODITIES: Copper, Molybdenum, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Molybdenite, Bornite, Pyrite
ASSOCIATED: Quartz, Pyrite
ALTERATION: K-Feldspar, Malachite, Hematite
ALTERATION TYPE: Potassic, Oxidation, Propylitic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein, Stockwork
CLASSIFICATION: Hydrothermal, Epigenetic, Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Lower Cretaceous			Unnamed/Unknown Informal

ISOTOPIC AGE: 131 +/- 4 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Hornblende

LITHOLOGY:
Granodiorite
Quartz Diorite
Pyroxene Porphyry
Andesite
Syenite Dike
Plagioclase Syenite Porphyry Dike
Aplitic Syenite Dike
Granite Dike
Syenite

HOSTROCK COMMENTS: The isotopic date is from J.A Garnett (Bulletin 70).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel, Plutonic Rocks

INVENTORY

ORE ZONE: JEAN
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1997
QUANTITY: 27000000 Tonnes

COMMODITY	GRADE	
Copper	0.3000	Per cent
Molybdenum	0.0150	Per cent

COMMENTS: "Probable resource" in the A and B zone. A further 27,000,000 tonnes of 0.11 per cent copper and 0.017 per cent molybdenum occurs in the C zone (resource calculation likely from 1970's drilling).
REFERENCE: GCNL #230(Dec.1), 1997.

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1995
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.5620	Per cent

COMMENTS: Over 35.7 metres.
REFERENCE: Explore B.C. Program 95/96 - M26.

CAPSULE GEOLOGY

The JW (Jean) area is underlain by a mainly granodiorite-quartz diorite stock (the Jean Marie stock) which has intruded rocks of the Middle Triassic to Lower Jurassic Takla Group. Mineralized zones occur along the contact of the stock with dark grey aphanitic andesites and pyroxene porphyries, probably of the Upper Triassic Witch Lake Formation (Takla Group). A sample of the granodiorite yield two potassium/argon dates: 1) 136 +/- 4 Ma (biotite) and; 2) 131 +/- 4 Ma (hornblende) (Bulletin 70, page 63). These Early Cretaceous intrusive rocks are cut by numerous dikes ranging in composition from plagioclase syenite porphyry through aplitic syenite to red granite.

Copper and molybdenum are reported to occur in three zones on the JW and Jean claims. The three zones are reported to grade from 0.3 to 0.4 per cent copper equivalent (Canadian Institute of Mining and Metallurgy, Volume 15, Table 1, Deposit No. 98). The zones are 150 by 500 metres to 260 by 800 metres in area.

Chalcopyrite and molybdenite with hematite occur along potash feldspathized fractures in granodiorite and quartz diorite. Chalcopyrite is reported to occur as replacements of hornblende in syenite dikes, and also along with pyrite in quartz veins and fractures cutting granodiorite and syenites. Malachite is common within fault zones along which granite and syenite dikes have cut the main intrusion and the volcanic rocks. The volcanic rocks exhibit blocky fracturing generally more pervasive than the fracture density in the crosscutting intrusive rocks, and chalcopyrite is locally significant along hairline fractures and smeared along small faults in the andesites within the altered contact zone. Bornite also occurs on the property.

The property was first staked in 1969 by the NBC syndicate. During the next several years numerous geochemical and geophysical surveys were conducted and over 4000 metres of diamond and percussion drilling were completed.

Work done in 1995 by International Focus Resources Inc., with support from the Explore B.C. Program, included 27 kilometres of grid lines, 29.4 kilometres of IP survey and 838.4 metres of diamond drilling in 5 holes. The IP survey defined a 4 by 2 kilometre anomaly that warrants drill testing, while the diamond drilling significantly upgraded copper values from earlier percussion drilling. The best hole was 95-2 with 28.2 metres grading 0.61 per cent copper and 35.7 metres grading 0.562 per cent copper in the previously drilled B zone (Explore B.C. Program 95/96 - M26).

Continental Energy Corporation (formerly Continental Copper Corp.) drilled a 186-metre interval graded 0.38 per cent copper and 0.009 per cent molybdenum (Exploration in BC 1997, page 29) in 1997. The company reports a "probable resource" of 27,000,000 tonnes of 0.3 per cent copper and 0.015 per cent molybdenum in the A and B zones and a further 27,000,000 tonnes of 0.11 per cent copper and 0.017 per cent molybdenum in the C zone (resource calculation likely from 1970's drilling) (GCNL #230(Dec.1), 1997).

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GSC P 41-5; 42-2; 45-9
CIM Special Vol. 15, Table 1, #98
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GCNL #157(Aug.15), #183(Sept.23), #213(Nov.5), #233(Nov.20),

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*#230(Dec.1), 1997

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1996/10/29 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 080**

NATIONAL MINERAL INVENTORY:

NAME(S): **INDATA NO.5**, INDA 1

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 18 48 N
LONGITUDE: 125 13 37 W
ELEVATION: 925 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a breccia zone within the old Indata No.5 claim, about 50 kilometres southeast of Takla Landing (Geological Survey of Canada Memoir 252, Figure 12).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6131919
EASTING: 358670

COMMODITIES: Mercury

MINERALS
SIGNIFICANT: Cinnabar
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Breccia
CLASSIFICATION: Epigenetic Hydrothermal Replacement

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Triassic-Jurassic	Takla	Undefined Formation	

LITHOLOGY: Limestone
Chert
Argillite
Andesitic Flow
Andesitic Tuff
Andesitic Breccia
Andesite

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek Quesnel

CAPSULE GEOLOGY

The Indata No.5 occurrence is situated 2 kilometres north of the outlet of Indata Lake, approximately 50 kilometres southeast of Takla Landing. The area was explored for its mercury potential during the Second World War.

The area is underlain by sediments assigned to the Carbonaceous to Jurassic Cache Creek Complex in contact with andesitic flows, tuff and breccia of the Middle Triassic to Lower Jurassic Takla Group along a north-northwesterly trending portion of the Pinchi fault zone.

In the area of the occurrence, Cache Creek limestone, ribbon chert and argillite are in contact along various splays of the main fault zone. Approximately 1 kilometre east of the lake, "specks" of cinnabar were reportedly observed in chert and argillite which had been carbonatized and brecciated along a north-northwest striking fault. Stripping, trenching and diamond drilling failed to outline significant quantities of mineralization.

Efforts to reassess the occurrence in 1984 met with disappointing results (Assessment Report 12433, page 3).

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/07 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 081**
NATIONAL MINERAL INVENTORY: 093N2 Cu3

NAME(S): **CAMP**, FOE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 04 57 N
LONGITUDE: 124 35 06 W
ELEVATION: 1040 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showing is located 2 kilometres east of the southwest end of Witch Lake (Open File 1992-4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6105120
EASTING: 398822

COMMODITIES: Copper Magnetite

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Malachite Magnetite
ASSOCIATED: Magnetite
ALTERATION: Epidote Chlorite Biotite Carbonate Malachite Magnetite
COMMENTS: Secondary biotite.
ALTERATION TYPE: Propylitic Biotite Potassic Carbonate
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal Industrial Min.
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Inzana Lake	

LITHOLOGY: Augite Hornblende Porphyry
Andesite
Hornfels
Fine Grained Siliceous Tuff
Siltstone
Augite Porphyry Agglomerate
Hornblende Porphyry Dike
Latite
Syenite
Graphitic Sediment/Sedimentary

HOSTROCK COMMENTS: Informal formation name is Inzana Lake.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Copper	0.1800	Per cent

COMMENTS: From a 127.40-metre interval.
REFERENCE: Assessment Report 21295, page 10.

CAPSULE GEOLOGY

The Camp prospect is located near the centre of the Camp halo, an area of hornfelsing and alteration (Fieldwork 1991, page 115). Hornfelsed fine-grained dust tuffs and siltstones of the Upper Triassic Inzana Lake Formation (Takla Group) are intruded by hornblende porphyry dikes similar to those on the Tas property (093K 080). Drillholes also intersected syenite, graphitic sediments, hornfelsed volcanics and augite/hornblende porphyry of andesitic to latitic composition.

Pervasive chlorite and epidote alteration is observed and potassic alteration is indicated by very fine-grained interstitial biotite. Carbonate alteration is widespread.

Pyrite, pyrrhotite and chalcopyrite occur as disseminations and

CAPSULE GEOLOGY

malachite is present on some fracture surfaces. In drillhole 91-2, augite porphyry, hornfels and andesite are all copper-bearing from 25.30 metres to the end of the hole at 152.70 metres, a total of 127.40 metres. This interval averages 0.18 per cent (1823 parts per million) copper and 0.033 gram per tonne (33 parts per billion) gold (Assessment Report 21295, page 10). Another drillhole intersected altered volcanics with up to 25 per cent magnetite.

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GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/11 REVISED BY: GJP FIELD CHECK: Y

MINFILE NUMBER: **093N 082**

NATIONAL MINERAL INVENTORY: 093N11 Au5,Cu3

NAME(S): **TAKLA-RAINBOW**, TWIN

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 39 44 N
LONGITUDE: 125 18 18 W
ELEVATION: 1610 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the centre of the West zone, near the headwaters of Twin Creek, 52 kilometres west of Manson Creek (Assessment Report 17013, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170896
EASTING: 355005

COMMODITIES: Gold, Silver, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Gold, Galena, Sphalerite
ASSOCIATED: Quartz, Carbonate, Sericite, Chlorite, Pyrrhotite, Magnetite, Hematite
ALTERATION: Sericite, Chlorite, Epidote, K-Feldspar
ALTERATION TYPE: Sericitic, Chloritic, Epidote, Potassic, Carbonate, Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Shear, Disseminated, Vein
CLASSIFICATION: Porphyry, Hydrothermal, Epigenetic
TYPE: L04 Porphyry Cu ± Mo ± Au
SHAPE: Bladed
MODIFIER: Sheared
DIMENSION: 289 x 140 x 100 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: West zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Mesozoic	Takla	Twin Creek	Hogem Intrusive Complex

LITHOLOGY: Porphyritic Andesite
Andesite
Basalt Flow
Volcanic Breccia
Lapilli Tuff
Orthoclase Megacrystic Granite Dike
Diorite Porphyry
Syenite
Diorite
Granodiorite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel
Plutonic Rocks

INVENTORY

ORE ZONE: TAKLA RAINBOW
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1987
QUANTITY: 199580 Tonnes

COMMODITY	GRADE	
Gold	13.7100	Grams per tonne

COMMENTS: Reserves are uncut, undiluted and calculated using a 3.43 grams per tonne gold cutoff grade and a 1.22 metre mining width.
REFERENCE: Assessment Report 17013, page 27.

CAPSULE GEOLOGY

The Takla-Rainbow developed prospect is situated in the Swannell Ranges (Omineca Mountains) near the headwaters of Twin Creek, approximately 52 kilometres west of Manson Creek. The area first became of interest in 1970, when the N.B.C. Syndicate staked an easterly trending zone of chalcopyrite-pyrite mineralization hosted by an embayment of volcanic rocks along the east contact of the Late Triassic-Early Cretaceous Hogem Intrusive Complex.

CAPSULE GEOLOGY

The northwest-trending tongue of volcanic rocks belongs to the Lower Jurassic Twin Creek Formation of the Middle Triassic-Lower Jurassic Takla Group. It is intruded by Early Jurassic granodiorite and quartz monzonite phases and an Early Cretaceous granite phase of the Hogem Intrusive Complex. The original nature of these rocks is commonly obscured by intense hydrothermal alteration. Most of the strongly altered volcanic rocks in the area are geochemically anomalous in gold and silver.

The principal rock type exposed in the area is massive to porphyritic, fine-grained andesite assigned to the Takla Group. Minor amounts of chloritized basalt flows, coarse volcanic breccia and lapilli tuffs are also present. The andesite has been moderately to intensely chloritized and comprises blocky grains of plagioclase cemented by a network matrix of intergranular, fine-grained chlorite. The plagioclase grains are strongly altered to fine-grained sericite with lesser chlorite and carbonate. The rock is cut by veinlets of carbonate (dolomite/ankerite/calcite) and epidote is concentrated in rather diffuse, vein-like zones of microbrecciation. Minor pockets of potassium feldspar appear spatially related to some of the altered fracture zones. The volcanics are upward facing and dip gently (approximately 15 degrees) to the southwest.

The dominant structural features affecting these rocks are northwest-striking faults. The regional-scale Twin Creek fault passes through the Takla-Rainbow property (Open File 1993-4). Stratigraphic offsets suggest a southwest-side-down normal motion on the fault. Drilling has indicated that at least three, subvertically dipping fault structures exist and that zones of related brecciation in the volcanics and intrusions reach 23 metres wide. Closely-spaced subparallel systems of sheeted microfractures in the porphyritic volcanics also seem to be the locus of carbonate and epidote alteration. A second, northeasterly striking fault system is also present in the area.

Mineralization occurs in three closely-spaced zones: the West, East and South. Within these zones, mineralization occurs in one or more parallel, steeply dipping, northwest-striking shears within or adjacent to intrusive rocks. The majority of the testing to date has been carried out in the West zone, which underlies the upper reaches of Twin Creek.

At the West zone, mineralization is spatially and probably genetically related to the emplacement of a northwest striking intrusive body confined to the contact between Takla Group volcanics to the south and a dioritic boarder phase of the Hogem Intrusive Complex to the north. The presence of abundant orthoclase megacrystic granite dikes, many of them sheared, within the Twin Creek fault suggests syn-plutonic, probably Cretaceous-aged motion and mineralization (Fieldwork 1992, page 87).

The zone, which consists of up to five parallel, subvertical gold-bearing structures, measures 289 metres along strike by 100 metres wide and extends to a depth of 140 metres. It occurs within a strong pyritic halo measuring over 1000 metres in length and 150 metres in width. The most common type of mineralization intersected in drillholes is in the form of narrow quartz fillings along fractures ranging up to several decimetres in width, and as disseminations of sulphides and native gold in both porphyries and volcanics. Mineral association in the zone is represented by pyrite, chalcopyrite, quartz, native gold, carbonates, sericite, chlorite and minor pyrrhotite, magnetite, galena, sphalerite, and specular hematite. This mineralization is confined to zones marked by microshearing, intense fracturing, pyritization, carbonatization and silicification. Gold is in its native form and gold-pyrite and gold-chalcopyrite associations are common.

The East zone measures 183 metres along strike, is 130 metres wide and extends 140 metres below surface. The zone contains two or more parallel subvertical gold-bearing structures. To the west, the zone is bound by weak mineralization and the eastern boundary is undefined.

The South zone is largely untested and measures approximately 275 metres along strike. The zone is bound by weak mineralization on the west side and seems to be cut off to the east. A 2.99-metre wide mineralized drill intersection grading 5.83 grams per tonne was made at a depth of 180 metres in 1987 (Assessment Report 17013, page 26).

Total undiluted, uncut, drill indicated (inferred) reserves of 199,580 tonnes grading 13.71 grams per tonne gold have been outlined at the West and East zones (Assessment Report 17013, page 27). This figure was calculated using a 3.43 grams per tonne cutoff grade and a minimum mining width of 1.22 metres.

The ridge south of the Twin Creek fault is underlain by a strong quartz-kaolinite-pyrite alteration zone, capped by a discontinuous, horizontal alunite-quartz zone up to 5 metres thick that extends over

CAPSULE GEOLOGY

500 metres. It represents an unexplored epithermal target (Fieldwork 1992, page 105).

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EMPR MAP 65 (1989)
EMPR OF 1992-1; 1992-2; 1993-4
EMPR PF (Cathedral Gold Corporation 1988 Annual Report (refer to Patterson - 103J 017); GCNL #155, 1986; Cathedral Gold Corporation News Release, June 23, 1989; Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMR MIN BULL MR 223 B.C. 254
EMR MP CORPFILE (Cathedral Gold Corporation; Reymont Resources Ltd.)
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CIM Vol. 67, No. 749, pp. 101-106
GCNL #155,#243, 1986; #70,#111,#147,#158,#181, 1988; #3(Jan.4), #97(May 18),#104(May 30),#183(Sept.21),#193(Oct.4), 1990; #63(Mar.30), 1992
N MINER June 25, 1990; Jan.27, 1992
WWW http://www.infomine.com/
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/23 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 083**

NATIONAL MINERAL INVENTORY:

NAME(S): **CREEK**, SKOOK 4

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 12 39 N
LONGITUDE: 124 32 08 W
ELEVATION: 1050 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing location on an unnamed east-flowing creek on the Skook 4 claim, just north of Chuchi Lake (Assessment Report 21820, Figure 6). The zone is located at grid coordinates BL110N, 90E - 92E.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6119329
EASTING: 402293

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: K-Feldspar Epidote Chlorite
ALTERATION TYPE: Propylitic Potassic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Plagioclase Porphyritic Monzonite
Andesite
Latite
Siltstone

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1991

COMMODITY	GRADE	
Gold	0.7100	Grams per tonne
Copper	1.2700	Per cent

COMMENTS: From an 8-metre drill intersection.
REFERENCE: Assessment Report 21820, page 33.

CAPSULE GEOLOGY

The area north of Chuchi Lake is underlain by the southeastern end of the Hogem Intrusive Complex which comprises at least three main phases ranging in age from Late Triassic to Early Cretaceous. Recent mapping north of Chuchi Lake (Open File 1992-4), however, indicates that the intrusions in this area comprise mainly Early Jurassic monzonite and syenite. These rocks have intruded volcanic and sedimentary rocks of the Lower Jurassic Chuchi Lake Formation, a new informal division of the Middle Triassic to Lower Jurassic Takla Group (Fieldwork 1990 and 1991).

At the Creek showing, narrow, high-grade chalcopyrite veinlets and minor disseminated pyrite occur in moderately to strongly epidotized and potassically altered fine-grained volcanics (latite) and plagioclase porphyritic monzonite.

One drillhole intersection yielded 1.27 per cent copper and 0.71 gram per tonne gold over 8 metres (Assessment Report 21820, page 33). This drillhole cut monzonite and strongly potassium feldspar and chlorite/epidote-altered andesite and siltstone. Anomalous amounts of silver were also reported from chip samples.

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EMPR OF 1991-3; 1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A
GSC OF 2842

DATE CODED: 1993/02/17 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093N 084**
NATIONAL MINERAL INVENTORY: 093N2 Cu9

NAME(S): **MOSS**, PU

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 08 14 N
LONGITUDE: 124 31 52 W
ELEVATION: 1025 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located between Chuchi and Witch lakes on the Chuchi claims.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6111132
EASTING: 402396

COMMODITIES: Copper Gold Lead

MINERALS
SIGNIFICANT: Pyrrhotite Pyrite Magnetite Chalcopyrite Marcasite
Galena Bornite
COMMENTS: Galena and bornite observed in thin section.
ALTERATION: Epidote Sericite Carbonate Chlorite Albite
Garnet Actinolite Clinozoisite
COMMENTS: Wollastonite, sphene, diopside, biotite and potassium feldspar, limonite and goethite alteration is also present.
ALTERATION TYPE: Propylitic Skarn Potassic Carbonate Oxidation
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry Skarn
TYPE: L03 Alkalic porphyry Cu-Au K01 Cu skarn

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	

LITHOLOGY: Altered Rock
Augite Plagioclase Porphyritic Andesite
Monzonite Intrusive Breccia
Plagioclase Hornblende Porphyry Monzonite
Monzonite Dike

HOSTROCK COMMENTS: Informal formation name is Witch Lake.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Lowland
GRADE: Zeolite

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip
YEAR: 1991

COMMODITY	GRADE	
Gold	1.6000	Grams per tonne
Copper	0.1200	Per cent

COMMENTS: This grade was obtained from a 56-metre trench interval.
REFERENCE: Assessment Report 21988, page 11.

CAPSULE GEOLOGY

The Moss prospect is hosted within the Upper Triassic Witch Lake Formation of the Takla Group. On the Chu claims, these rocks are intruded by coeval Takla Group equivalents consisting of crowded plagioclase hornblende porphyry monzonites and monzonite intrusive breccias.

The prospect occurs in an area of strong alteration and mineralization related to a larger porphyry system between Chuchi and Witch lakes, the Chuchi-Witch alteration halo (Fieldwork 1991, pages 114,115) (refer also to the Witch occurrence, 093N 164). Surface weathering has produced a well-developed limonite and goethite cap over the occurrence, ranging in thickness from less than 1 metre up to 3 metres. Rocks exposed within trenches are variably altered augite (plus/minus plagioclase) porphyritic andesites intruded by a series of monzonite dikes. Alteration consists of a propylitic assemblage consisting of epidote, sericite, carbonate, chlorite

CAPSULE GEOLOGY

plus/minus albite; and a skarn assemblage consisting of garnet, actinolite, clinozoisite, wollastonite, sphene and diopside. Secondary biotite and weak potassium feldspar alteration is minor and occurs locally. In stronger zones of alteration, the original textures of the rock are destroyed.

Mineralization consists primarily of disseminated pyrite, pyrrhotite, magnetite and localized chalcopyrite. Minor occurrences of marcasite, galena and bornite have been seen in thin section. The strongest zones of mineralization contain 10 to 15 per cent pyrrhotite as blebby aggregates with the other sulphides. Gold mineralization is reported to be associated with stronger zones of alteration and in particular, zones of better-developed skarn.

Trench sampling has outlined a zone grading 1.6 grams per tonne gold and 0.12 per cent copper over 56 metres east-west in Trench I; and 1.1 grams per tonne gold and 0.016 per cent copper over 34 metres north-south in Trench II (Assessment Report 21988, page 11). Nine diamond-drill holes were drilled in 1991 in and around the Moss prospect. The best intersection obtained was 0.064 gram per tonne (64 parts per billion) gold and 0.035 per cent (347 parts per million) copper (Assessment Report 21988, page 17).

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EMPR OF MAP 1991-3; 1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/17 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 085**

NATIONAL MINERAL INVENTORY: 093N7 Cu2

NAME(S): **APLITE CREEK**, AHDATAY, LUC, CUL, PHIL 2

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N07W
BC MAP:
LATITUDE: 55 19 25 N
LONGITUDE: 124 52 46 W
ELEVATION: 1215 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located approximately 4.75 kilometres east-southeast of the southern end of Ahdatay Lake, along Aplite Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6132412
EASTING: 380752

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: K-Feldspar Biotite Chlorite Epidote Hematite Malachite Azurite Limonite
ALTERATION TYPE: Potassic Propylitic Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: Metres
STRIKE/DIP:
TREND/PLUNGE: 345/
COMMENTS: There are two prominent fracture trends, 345 and 060 degrees.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Diorite
Gabbro
Intrusive Breccia
Augite Hornblende Porphyritic Monzodiorite
Aplite Dike
Monzonite Dike

HOSTROCK COMMENTS: The intrusive body is informally called the Aplite Creek Intrusive Complex (Fieldwork 1992); it may be a phase of the Hogem complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Gold	6.4000	Grams per tonne
Copper	0.0980	Per cent

COMMENTS: From a 6-metre drill interval.
REFERENCE: Assessment Report 20943.

CAPSULE GEOLOGY

The Aplite Creek prospect is hosted within the Early Jurassic Aplite Creek Intrusive Complex (informal name); a possible phase of the larger Late Triassic to Early Cretaceous Hogem Intrusive Complex. The Aplite Creek complex is composed of equigranular and porphyritic diorite and gabbro, augite (hornblende) porphyritic monzodiorite, intrusive breccia and aplite and monzonite dikes. An Early Jurassic age is assumed for the complex since it intrudes the Lower Jurassic Chuchi Lake Formation of the Takla Group.

The area was first explored for copper-molybdenum porphyry systems in the early 1970s by the Luc Syndicate, Chalico Silver Mines, Noranda and Pechiney Development. Since 1983, BP-Selco and BP have re-examined the region for alkaline copper-gold porphyry targets. The most recent work (1990) on the prospect involved 6

CAPSULE GEOLOGY

diamond-drill holes.

Rocks of the Aplite Creek Intrusive Complex are cut by fracture zones trending northwest (345 degrees) or northeast (060 degrees). Deeply incised gullies with good outcrop exposures are coincident with the subvertical fracture zones and form prominent topographic linears. Moderate to intense propylitic and potassic alteration envelopes up to 20 to 25 metres thick occur around the fractures (potassium feldspar, biotite, chlorite and epidote).

Mineralization consists of disseminated pyrite, pyrrhotite and chalcopyrite in anastomosing quartz-carbonate veins up to 4 centimetres thick. Sulphides are also present in the matrix of the country rocks, locally up to 100 metres away from the fractures. Various amounts of malachite, azurite, limonite and hematite are associated with the sulphide minerals. The best assay intersection recorded in drill core was 6 metres of 6.4 grams per tonne gold and 0.098 per cent copper (Assessment Report 20943).

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EMPR GEM 1970-181, 1972-449
EMPR OF 1991-3; 1992-4; *1993-3
GSC MAP 876A; 907A; 971A; 1424A; 1586G
GSC MEM 252
GSC OF 2842
GSC P 41-5; 42-2; 45-9
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/11 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 086**

NATIONAL MINERAL INVENTORY:

NAME(S): **PACQ**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10W
BC MAP:
LATITUDE: 55 42 26 N
LONGITUDE: 124 54 09 W
ELEVATION: 1475 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located north of Germansen Lake, approximately 3.5 kilometres northeast from the bridge at the Germansen Narrows (Assessment Report 21803).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6175135
EASTING: 380458

COMMODITIES: Copper, Silver, Zinc, Gold

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated, Vein
CLASSIFICATION: Porphyry, Hydrothermal
SHAPE: Irregular

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Basaltic Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	18.8000	Grams per tonne
Gold	0.7600	Grams per tonne
Copper	0.0480	Per cent
Zinc	0.1578	Per cent

COMMENTS: A grab sample from an altered area marked by quartz-sulphide veinlets (sample 86226).
REFERENCE: Assessment Report 21803.

CAPSULE GEOLOGY

The Pacq occurrence is located north of Germansen Lake, approximately 3.5 kilometres northeast from the bridge at the Germansen Narrows (Assessment Report 21803).

This occurrence is hosted in the Plughat Mountain Formation, part of the Middle Triassic to Lower Jurassic Takla Group. The Plughat Mountain Formation is a thick sequence of augite-bearing, mafic to intermediate(?), calcalkaline to alkaline pyroclastic rocks, massive flows and lesser epiclastic rocks. In this area, the Plughat Mountain Formation is the upper volcanic sequence of the Takla Group. The lower, sediment-dominated sequence of rocks, are part of the Middle-Upper Triassic Slate Creek Formation (Takla Group). To the northeast, the Takla Group is in fault contact (the Manson fault zone) with the Pennsylvanian to Permian Nina Creek Group. To the south, the Takla Group has been intruded by the Cretaceous Germansen batholith, a multiphase granitic to granodiorite intrusion.

Mineralization consists of disseminated pyrite and chalcopyrite occurring within anastomosing quartz-sulphide veinlets hosted by carbonate-altered basaltic rocks of the Plughat Mountain Formation. The alteration zone is approximately 50 metres wide. A grab sample

CAPSULE GEOLOGY

analysed 18.8 grams per tonne silver, 0.0482 per cent copper, 0.1578 per cent zinc, 0.0694 per cent lead and 0.760 gram per tonne gold (Assessment Report 21803).

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EMPR ASS RPT *21803
EMPR OF 1989-12
EMPR FIELDWORK 1988, pp. 209-220
EMPR BULL *91
GSC MEM 251
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1992/09/27	REVISED BY:	DMM	FIELD CHECK:	N

MINFILE NUMBER: **093N 087**

NATIONAL MINERAL INVENTORY: 093N9 Ba1

NAME(S): **OMINECA QUEEN**, DISCOVERY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N09E
BC MAP:
LATITUDE: 55 31 28 N
LONGITUDE: 124 06 36 W
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located on Barite Creek, about 4.5 kilometres northeast of lower Gaffney Creek bridge. Access is via an old cat trail up the creek, the condition of which is unknown.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6153713
EASTING: 429926

COMMODITIES: Barite, Silver, Lead, Zinc

MINERALS
SIGNIFICANT: Barite, Galena, Sphalerite, Tetrahedrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform, Layered
CLASSIFICATION: Sedimentary, Exhalative, Replacement, Industrial Min.
TYPE: E17 Sediment-hosted barite
SHAPE: Tabular
MODIFIER: Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Big Creek	Undefined Formation	

LITHOLOGY: Graphitic Slate
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1974
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Barite	63.1500	Per cent

COMMENTS: Grade given is for BaO, across 5 metres (sample 4).
REFERENCE: Geology, Mining and Exploration in British Columbia, page 374.

CAPSULE GEOLOGY

This barite occurrence is situated 800 metres upstream from the mouth of Barite Creek, immediately south of the Manson River and 4.5 kilometres northeast of the lower Gaffney Creek bridge. The occurrence was discovered and staked in 1966.

The Omineca Queen occurrence is found in both sides of the creek and consists of 3 to 7-metre thick sequences of layered barite found with graphitic slates and argillites of the Upper(?) Devonian to Lower Permian Big Creek Group, formerly the Cooper Ridge Group. Layering within the barite is produced by impurities such as quartz and organic matter. The barite is faulted and folded and strikes northwest with a vertical attitude. Although these barite bands appear to replace quartz-rich layers, they also indicate that the deposit may have formed as a sedimentary exhalative. Minor amounts of galena, sphalerite and tetrahedrite are known to exist.

A sample cut across 5 metres plus 3 metres of exposed barite 120 metres east of a gully yielded 63.15 per cent BaO (Geology, Exploration and Mining in British Columbia, page 374).

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EMPR GEM 1970-490, *1974-373
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GSC MAP 876A; 971A; 1424A; 5249G
GSC MEM 252
GSC P 41-5; 42-2; 45-9; 75-33
EMPR OF 2000-22

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/29 REVISED BY: FF FIELD CHECK: N

MINFILE NUMBER: **093N 088**

NATIONAL MINERAL INVENTORY: 093N9 Au3

NAME(S): **BOULDER CREEK**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 35 54 N
LONGITUDE: 124 21 39 W
ELEVATION: 875 Metres
LOCATION ACCURACY: Within 1 KM

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6162217
EASTING: 414253

COMMENTS: The Boulder Creek placer occurrence is located along the banks Boulder Creek, west of the middle lake of the Manson Lakes, about 12 kilometres southeast of the present location of the Manson Creek settlement. No mention is made of how far up the creek placer mining has occurred.

COMMODITIES: Gold Tungsten

MINERALS
SIGNIFICANT: Gold Scheelite
MINERALIZATION AGE: Quaternary

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Sand
Gravel

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Kootenay

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The Boulder Creek placer occurrence is located on Boulder Creek, west of the middle lake of the Manson Lakes. It is approximately 12 kilometres southeast of the present location of the Manson Creek settlement. Vehicle access is controlled by the water levels of the Manson Lakes as the crossing is located near a narrow channel connecting the upper and lower portions of the middle lake of the Manson Lakes.

Boulder Creek drains ultramafic rocks, metamorphosed sediments, sedimentary rocks and granitic rocks belonging to the Pennsylvanian to Permian Manson Lakes Ultramafites, the Proterozoic Boulder Creek Group, the Middle Triassic to Lower Jurassic Takla Group and the Cretaceous Germansen batholith, respectively.

The creek is reported to be rich in coarse gold with a recorded production for the period of 1936 to 1940 being 3421 grams of gold (Bulletin 28, page 44). The wash is apparently difficult to work as it contains many large, closely-packed boulders weighing up to 27.2 tonnes.

In the 1960s, scheelite was discovered in the placer concentrate. This discovery shifted the focus from placer exploration to the search for tungsten during the early 1970s.

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EMPR BULL *28, pp. 43,44; 1, p. 80; 91
EMPR FIELDWORK 1987, pp. 169-180
EMPR OF 1988-12; 1999-3
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC MEM 252
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DATE CODED: 1985/07/24 — CODED BY: GSB — FIELD CHECK: N
DATE REVISED: 1992/08/05 — REVISED BY: DMM — FIELD CHECK: N

MINFILE NUMBER: **093N 089**

NATIONAL MINERAL INVENTORY: 093N14 Cu3

NAME(S): **DISCOVERY**, DUCKLING, DUCK, AL, FRONT, LING, JAJAY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 49 41 N
LONGITUDE: 125 18 09 W
ELEVATION: 1475 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for the Discovery showing, east of Duckling Creek, about 12 kilometres northeast of Old Hogem and 38 kilometres west of Germansen Landing (Assessment Report 16831, Figure 3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6189341
EASTING: 355776

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Pyrite Bornite Covellite Chalcopyrite
COMMENTS: Bornite and covellite are described as minor and chalcopyrite is thought to be very fine grained and occurs in association with pyrite.
ASSOCIATED: Pyrrhotite
ALTERATION: Epidote Malachite K-Feldspar
ALTERATION TYPE: Epidote Potassic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Massive Shear
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 12 x 3 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimensions are maximums for the mineralized shear zone.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Basalt
Monzonite
Syenite
Hybrid Rock
Syenite Porphyry Dike
Pyroxene Porphyry Dike

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel Plutonic Rocks

INVENTORY

ORE ZONE: SHOWING REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1970
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	12.5400	Per cent

COMMENTS: Assay described as best of Discovery shear zone samples.
REFERENCE: Geology, Exploration and Mining in British Columbia 1971, page 211.

CAPSULE GEOLOGY

The Discovery occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 12 kilometres northeast of Old Hogem and 38 kilometres west of Germansen Landing.

The area is underlain by Middle Triassic-Lower Jurassic Takla Group volcanics which have been intruded to the north, west and southeast by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the

CAPSULE GEOLOGY

intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Takla Group rocks in the area of the occurrence are predominantly basaltic in composition and host abundant, although erratically distributed epidote (with or without pyrite) as veinlets, stringers, pods and patchy replacements. These rocks are cut by numerous pyroxene porphyry "feeder" dikes which are pre-Hogem in age. Hogem complex intrusions range in composition from monzonite through syenite and are potassically altered, locally hosting up to 50 per cent pink feldspar as veins and envelopes several centimetres wide around fractures. Dikes of fine to medium-grained syenite porphyry cut the volcanic rocks in the area. Near the contact, a dark hybrid rock of uncertain composition has been mapped. It is, however, almost certainly related to the emplacement of the intrusions.

Mineralization is exposed in three trenches over a strike length of 12 metres. Here, disseminated and massive sulphides are hosted within a highly epidotized east-trending shear zone cutting basalt. In the easternmost trench, the zone varies up to 1 metre wide and contains patches of massive pyrite. In the next trench, five metres to the west, the highly fractured zone is still 1 metre wide, but hosts approximately 25 per cent pyrite with minor bornite and covellite. A further seven metres west, poddy, pyritized zones up to 2.7 metres wide are exposed. Malachite can be observed locally as fracture coatings within a few metres of this mineralization and pyrrhotite was noted locally. Although reports differ, very fine-grained chalcopyrite is thought to occur in association with the pyrite.

The best assay obtained from samples of this mineralization was 12.54 per cent copper across 1.22 metres (Geology, Exploration and Mining in British Columbia 1971, page 211). Another sample across 2.44 metres reportedly assayed 2.7 per cent copper, 24 grams per tonne silver and 0.34 gram per tonne gold (Assessment Report 10241, page 1). Three chip/grab samples taken during a more recent evaluation all analysed greater than 1 per cent copper and up to 0.52 gram per tonne gold and 50.0 grams per tonne silver. Three holes drilled in 1970 to test the zone determined that it is discontinuous at depth and along strike.

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Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Special Vol. 15 (1976), Map B, #375; Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/28 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 090**

NATIONAL MINERAL INVENTORY: 093N4 Cu2

NAME(S): **LUCY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N04W
BC MAP:
LATITUDE: 55 07 12 N
LONGITUDE: 125 56 30 W
ELEVATION: 1145 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location is the approximate centre of the now lapsed Lucy 1-24 claims, about 40 kilometres south of Takla Landing (Minister of Mines Annual Report 1968, page 148).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6112097
EASTING: 312416

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Hazelton	Telkwa	

LITHOLOGY: Intermediate Volcanic
Andesitic Basaltic Volcanic
Sediment/Sedimentary

HOSTROCK COMMENTS: The Telkwa/Nilkitkwa formations are undifferentiated in this area.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Nechako Plateau

CAPSULE GEOLOGY

The Lucy occurrence is situated northeast of Natowite Lake, approximately 40 kilometres south of Takla Landing. The area was explored in 1968 when a program of geological mapping and soil geochemistry was carried out over the Lucy claims.

The area is underlain by andesitic to basaltic volcanics and minor sediments assigned to the undivided Lower Jurassic Telkwa/Nilkitkwa formations of the Hazelton Group southwest of a large pluton of the Late Triassic-Early Jurassic Topley intrusions. The north-striking Takla fault separates the Hazelton Group rocks from Cretaceous sediments to the west.

Minor pyrite and chalcopyrite were reportedly found in small quartz veins and shears in intermediate volcanic rocks.

No recent information concerning this occurrence is available.

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GSC MAP 844A; 907A; 971A; 1424A
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GSC OF 3071
GSC P 42-7; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/09 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 091**

NATIONAL MINERAL INVENTORY: 093N2 Cu4

NAME(S): **EAGLE**, NIGHTHAWK, SK,
NIGHT HAWK, RT, NATION COPPER

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N02W
BC MAP:
LATITUDE: 55 11 03 N
LONGITUDE: 124 51 46 W
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Nighthawk showings, 3 kilometres south of Tchentlo Lake, about 5 kilometres west-southwest from the east end of the lake (Assessment Report 21762, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6116869
EASTING: 381395

COMMODITIES: Copper, Gold, Silver, Iron, Magnetite

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite, Magnetite
ALTERATION: Chlorite, Magnetite, Epidote, Carbonate, Quartz, Clay
ALTERATION TYPE: Propylitic, Argillic, Silicific'n, Biotite
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated, Stockwork, Vein, Shear
CLASSIFICATION: Porphyry, Hydrothermal, Industrial Min.
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Diorite, Granodiorite, Gabbro, Monzonite, Augite Porphyry, Tuff

HOSTROCK COMMENTS: The Takla volcanic rocks are assumed to be of the informally named Witch Lake Formation.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel, Plutonic Rocks

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	3.8500	Grams per tonne
Gold	0.3200	Grams per tonne
Copper	0.8700	Per cent

COMMENTS: From a 27.28-metre drill interval.
REFERENCE: Assessment Report 21762, page 8.

CAPSULE GEOLOGY

The Nighthawk prospect is located south of Tchentlo Lake, about 5 kilometres west-southwest of its eastern end. This area is underlain by the southeastern end of the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which has been recently mapped, to the east and northeast, as consisting primarily of Early Jurassic monzonite and syenite phases; these intrude rocks of the Middle Triassic to Lower Jurassic Takla Group (Open File 1992-4). Noranda Exploration Limited, however, has mapped the intrusive rock in the Nighthawk area as mainly diorite with lesser areas of granodiorite and gabbro. South of the intrusive contact the rocks have been identified as augite porphyries and volcanic tuffs, probably of the Upper Triassic Witch Lake Formation, Takla Group.

The intrusive rocks are moderately fractured with the principle

CAPSULE GEOLOGY

shear zones striking northwest. The two dominant fracture orientations are: 1) 150 degrees strike with 65 degrees east dip, and 2) 050 degrees strike with 40 degrees west dip. The main copper mineralization is associated with the northwest-striking shear zones with the three main showings (Vector (093N 092), Mid (093N 139), and Nighthawk) forming a roughly linear feature.

The showings, located the near the highest point of land in the area, consist of disseminated to semimassive pockets and stockwork veinlets of chalcopyrite and pyrite in altered diorite. Alteration includes chlorite, magnetite and epidote and is associated with strong copper mineralization.

In 1991, Noranda drilled two holes into the Nighthawk zone. These holes intersected diorite containing zones of strong fracturing, and strong alteration consisting of chlorite and carbonate plus/minus quartz and clay and containing abundant pyrite (2 to 3 per cent) and chalcopyrite (2 to 4 per cent). A 27.28-metre drill interval (from 5.07 to 32.35 metres) averaged 0.87 per cent copper, 0.32 gram per tonne gold and 3.85 grams per tonne silver (Assessment Report 21762, page 8). In the 1960s, West Coast Mining and Exploration put down a drillhole in the vicinity of the Nighthawk occurrence and intersected 21 metres of massive magnetite (Assessment Report 1056, page 1).

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EMPR OF 1991-3; 1992-4
EMPR GEM 1969-107, 1971-197
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 092**

NATIONAL MINERAL INVENTORY:

NAME(S): **VECTOR**, EAGLE, NATION COPPER, SAB, SK, RT

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N02W
BC MAP:
LATITUDE: 55 12 06 N
LONGITUDE: 124 53 19 W
ELEVATION: 975 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Vector prospect, located less than 1 kilometre south of Tchentlo Lake, 7 kilometres west of the east end of the lake (Assessment Report 21762, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6118860
EASTING: 379803

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Magnetite
ALTERATION: Albite Chlorite Magnetite Quartz Carbonate
ALTERATION TYPE: Propylitic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stockwork Vein Disseminated Shear
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Lower Jurassic	Takla	Witch Lake	Hogem Intrusive Complex

LITHOLOGY: Diorite
Granodiorite
Gabbro
Monzonite
Augite Porphyry
Tuff

HOSTROCK COMMENTS: The Takla volcanic rocks south of the Hogem complex intrusive rocks are assumed to be of the Witch Lake Formation (informal name).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel Plutonic Rocks

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Silver	4.1100	Grams per tonne
Gold	0.4700	Grams per tonne
Copper	0.8200	Per cent

COMMENTS: From a 17.90-metre drill interval.
REFERENCE: Assessment Report 21762, page 10.

CAPSULE GEOLOGY

The Vector prospect occurs south of Tchentlo Lake, about 7 kilometres west of its eastern end. This area is underlain by the southeastern end of the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which has been recently mapped, to the east and northeast, as consisting primarily of Early Jurassic monzonite and syenite phases; these intrude rocks of the Middle Triassic to Lower Jurassic Takla Group (Open File 1992-4). Noranda Exploration Limited, however, has mapped the intrusive rock in the Vector area as mainly diorite with lesser areas of granodiorite and gabbro. South of the intrusive contact the rocks have been identified as augite porphyries and volcanic tuffs, probably of the Upper Triassic Witch Lake Formation, Takla Group.

The intrusive rocks are moderately fractured with the principle

CAPSULE GEOLOGY

shear zones striking northwest. The two dominant fracture orientations are: 1) 150 degrees strike with 65 degrees east dip, and 2) 050 degrees strike with 40 degrees west dip. The main copper mineralization is associated with the northwest-striking shear zones with the three main showings (Vector, Mid (093N 139), and Nighthawk (093N 091)) forming a roughly linear feature.

The showings can be traced in outcrop for up to 350 metres along a creek. This zone is strongly to intensely propylitically altered throughout most of its strike length. The altered zones invariably contains 2 to 3 per cent pyrite and 2 to 5 per cent chalcopyrite. Mineralization occurs most commonly as fracture filling veinlets (1 to 8 millimetres wide) surrounded by an albite-chlorite-magnetite alteration halo with pervasive finely disseminated sulphides. Some sulphides occur with massive magnetite in what appears to be a brecciated zone in intrusive rock.

In 1991, Noranda drilled two holes into the Vector zone. These holes intersected diorite containing zones of strong fracturing, and strong alteration consisting of chlorite plus/minus quartz and carbonate with abundant pyrite and chalcopyrite. A 17.90-metre drill interval (from 18.50 to 36.40 metres) averaged 0.82 per cent copper, 0.47 gram per tonne gold and 4.11 grams per tonne silver (Assessment Report 21762, page 10).

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EMPR OF 1991-3; 1992-4
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842
Placer Dome File
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 093**

NATIONAL MINERAL INVENTORY: 093N13 Cu2

NAME(S): **TAM**, REM, HAM, BOUNDARY, MIDWAY, CREEK, SAM, CIRQUE, FAULT, SLIDE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N13E 093N14W
BC MAP:
LATITUDE: 55 58 19 N
LONGITUDE: 125 30 14 W
ELEVATION: 1450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for the Boundary deposit, 1.5 kilometres south of Haha Creek and approximately 61 kilometres north-northwest of Takla Landing (Assessment Report 20914, Figure 5).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6205787
EASTING: 343743

COMMODITIES: Copper Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Biotite K-Feldspar Magnetite
ALTERATION: K-Feldspar Biotite Sericite Malachite
ALTERATION TYPE: Potassic Argillic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stockwork Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Undefined Formation	
Mesozoic			Hogem Intrusive Complex
Middle Jurassic			Duckling Creek Syenite Complex

LITHOLOGY: Leucocratic Syenite
Mesocratic Syenite
Greenschist
Greenstone
Mica Schist
Volcaniclastic
Quartz Monzonite
Monzodiorite
Monzonite
Syeno Diorite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
Plutonic Rocks RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: BOUNDARY
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1974
QUANTITY: 7200000 Tonnes

COMMODITY	GRADE	
Silver	4.1100	Grams per tonne
Copper	0.5500	Per cent

COMMENTS: Possible reserves.
REFERENCE: Dyson, 1974.

CAPSULE GEOLOGY

The Tam developed prospect is situated in the Swannell Ranges (Omineca Mountains), approximately 22 kilometres north of Old Hogem and 61 kilometres north-northeast of Takla Landing. The original showing, now known as the Cirque, was discovered in a north-facing basin overlooking Haha Creek in the late 1940s.

The area is underlain by mesozonal plutonic rocks assigned to

CAPSULE GEOLOGY

the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. Garnett (1978) subdivided the southern Hogem batholith into three distinct phases: I) Late Triassic to Middle Jurassic Hogem granodiorite and Hogem basic suite, II) Middle Jurassic Duckling Creek and Chuchi Syenite complexes and III) Early Cretaceous granite. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Three rock units predominate in the area of the occurrences. The first comprises mottled grey-pink-red, medium to coarse-grained equigranular to porphyritic, massive to foliated, strongly magnetic mesocratic syenite. The second unit consists of pink, brown and/or orange-coloured, medium to very coarse-grained, massive to weakly foliated, weakly magnetic leucocratic syenite. Both these units form part of the Duckling Creek Syenite Complex. Pendants(?) comprising an assemblage of foliated border facies or epizonal roof rocks including greenstone, greenschist, mica schist (paragneiss) and deformed volcaniclastics (Takla Group?) also occur within these intrusions. In addition to these rocks, Phase I monzodiorite/ syenodiorite and quartz monzonite tentatively grouped with Phase III granites have also been mapped in the area (Assessment Report 20914).

Several localized areas of copper mineralization, including the Boundary, Creek, Ridge and Midway prospects, have been observed to occur within pendant rocks (foliates) adjacent to a leucosyenite plug. Others, like the Cirque and Fault prospects, occur entirely within intrusive rocks.

The Boundary deposit is located at the intrusive contact between a northwest-trending, vertically-dipping septum of foliates and a leucosyenite plug with associated dikes. Remnants of altered mesocratic syenite intrude and are preserved within the foliates. Copper mineralization occurs both as fine-grained disseminations and as fracture fillings (quartz +/- pyrite, quartz +/- chalcopyrite, biotite +/- chalcopyrite, potassium feldspar +/- chalcopyrite, magnetite +/- chalcopyrite and chalcopyrite +/- pyrite veins, veinlets, stringers and discontinuous seams). Some mineralized fractures show reddish potassium feldspar +/- pyrite +/- sericite alteration envelopes. Quartz vein stockwork is poorly developed. Chalcopyrite to pyrite ratios are very high near the core of the deposit, but an outer pyrite halo is either weak or poorly preserved. No propylitic alteration assemblages were observed within or marginal to the deposit, but the strongest copper mineralization is clearly coincident with strong potassic (secondary potassium feldspar and biotite) alteration. Gold values are generally erratic and low in comparison to other porphyry copper-gold deposits (Assessment Report 20914, page 7).

The Creek showing, 500 metres south of the Boundary deposit, consists largely of disseminated fine-grained blebs of chalcopyrite within schistose to gneissic monzonite. The Ridge showing, a further 350 meters to the south, consists of malachite-stained, highly fractured schistose monzonite. The Cirque showing, 500 metres southwest of the Ridge, consists of disseminated chalcopyrite in magnetite-rich biotite syenite intruded by leucosyenite dikes. The Fault showing, a further 0.5 kilometre south of the Cirque showing, consists of disseminated chalcopyrite and bornite in iron-stained foliated monzonite exposed in a prominent northwesterly trending lineament. The Midway showing, 650 metres southeast of the Boundary deposit, consists of sparsely disseminated chalcopyrite in dark, fine, grey foliated monzonite. Malachite mineralization hosted by greenschist and local mesosyenite-hosted drusy quartz veins carrying disseminated bornite have also been outlined within and northwest of the Slide grid, north of Haha River.

Faults, where observed in drill core, are postmineral and accompanied by strong argillic alteration. It is speculated that a strong northwest-trending zone truncates the deposit to the southeast with possible right-lateral displacement to the northwest. Interpolation between surface lineaments and the location of faults observed in drill core suggests that the deposit is almost entirely enclosed within a down-faulted block or the keel-shaped protuberance of a roof pendant engulfed by the intrusions (Assessment Report 20914).

Work carried out to 1974 resulted in the definition of inferred (possible) reserves for the Boundary deposit of 7.2 million tonnes grading 0.55 per cent copper and 4.11 grams per tonne silver (Dyson, 1974).

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EMPR GEM 1971-217; 1972-454; 1973-378-379; 1974-281-284
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EMPR OF 1992-1; 1998-10
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMR MP CORPFILE (Union Miniere Explorations and Mining Corporation Limited)
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GSC P 42-7; 45-6
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Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/19 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 094**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHENT**, HILLTOP

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 13 22 N
LONGITUDE: 124 37 15 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Hilltop zone, located about 5 kilometres north of Chuchi Lake and 4 kilometres east of Klawdetelle Creek (Assessment Report 21994).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6120780
EASTING: 396898

COMMODITIES: Copper Lead Zinc

MINERALS

SIGNIFICANT: Specularite Hematite Galena Sphalerite
COMMENTS: Trace galena and sphalerite.
ASSOCIATED: Magnetite Hematite Quartz Fluorite
ALTERATION: Silica Malachite
ALTERATION TYPE: Silicific'n Potassic Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Monzonite
Syenite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.5700	Per cent

REFERENCE: Assessment Report 21994.

CAPSULE GEOLOGY

The Chent occurrences comprises a stockwork vein system reported to occur within a monzonite intrusion on the southwest flank of Lhole Tse (Chuchi) Mountain. The area around the mountain is mapped as an Early Jurassic syenite body (the Chuchi syenite) and is encompassed by Early Jurassic monzonite, all part of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. These intrusions form the southeastern end of the Hogem complex, which has intruded volcanic and sedimentary rocks of the Middle Triassic to Lower Jurassic Takla Group.

The mineralized structure comprises a silicified and potassically altered and brecciated stockwork of magnetite, hematite and quartz veins with subordinate malachite staining, trace galena, sphalerite and fluorite. Some magnetite veins are up to 10 centimetres wide. The copper mineralization appears to be related to the hematitic veins, which on fresh surfaces occurs as specular hematite. The extent of the system is obscured by overburden but may be up to 400 by 200 metres in area. One rock sample yielded 0.57 per cent copper (Assessment Report 21994).

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GSC MEM 252
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DATE CODED: 1993/02/19 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093N 095**

NATIONAL MINERAL INVENTORY: 093N11 Cu4

NAME(S): **LOOP**, TRN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11E
BC MAP:
LATITUDE: 55 39 43 N
LONGITUDE: 125 15 55 W
ELEVATION: 1860 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location on a ridge top between Twin Creek and Twenty Mile Creek drainages, about 17 kilometres southeast of Old Hogem.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170782
EASTING: 357502

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Magnetite
ALTERATION: Malachite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Porphyry

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Twin Creek	

LITHOLOGY: Plagioclase Porphyritic Flow
Plagioclase Hornblende Augite Tuff
Heterolithic Lapilli Tuff
Aphanitic Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Loop occurrence was initially located approximately 2 kilometres east of the present locality based on an early assessment report (3269). Re-evaluation of the report showed that the Loop property was below tree line where there was scarce outcrop. The property was thought to be underlain by Middle Triassic-Lower Jurassic Takla Group volcanic rocks. The copper mineralization described as disseminated blebs of chalcopyrite associated with calcareous quartz stringers and malachite-stained fractures occurs in multiple lithologies in the cirque headwall outside of the property area.

Reconnaissance geological mapping in the region (Open File 1993-4) identified a 2-metre wide zone, striking 030 degrees, in a grey, fine-grained, plagioclase porphyritic flow of the Lower Jurassic Twin Creek Formation of the Takla Group. The zone contains multiple stringers of silicified, bleached and possibly sheared rock containing chalcopyrite, malachite and magnetite. Disseminated malachite also occurs along fractures. A grab sample analysed 1.25 per cent copper and 0.030 grams per tonne gold. This mineralization is also described in Assessment Report 15319 as the TRN grid, part of the Takla-Rainbow occurrence (093N 082). Although it is not known with certainty if this copper showing represents the exact showing(s) described in the original assessment report (3269), it is of similar character. Assessment report 20968 reports minor disseminated chalcopyrite and malachite in several other areas in the cirque region. These very small mineralized spots should be included with the Loop showing.

The mineralization in the cirque may be related to the Takla-Rainbow prospect located 2.5 kilometres west of the Loop. Twin Creek Formation volcanic rocks in the area of the occurrence consist of plagioclase, hornblende, and augite-bearing heterolithic lapilli tuff and breccia and aphanitic volcanics.

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CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/24 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 096**

NATIONAL MINERAL INVENTORY: 093N1 Cu1

NAME(S): **TAYLOR**, MITZI, BUZ, TAY, AL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01W
BC MAP:
LATITUDE: 55 07 01 N
LONGITUDE: 124 25 20 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showing is located 3 kilometres south of the outlet of Witch Lake on a northeast-flowing tributary of Wittsichica Creek (Assessment Report 19926, Drawing 3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6108729
EASTING: 409291

COMMODITIES: Copper, Gold

MINERALS

SIGNIFICANT: Pyrrhotite, Pyrite, Chalcopyrite
ALTERATION: Chlorite, Garnet, Biotite, Tourmaline, Amphibole, Epidote
ALTERATION TYPE: Skarn, Chloritic, Biotite, Tourmalinz'n, Potassic, Propylitic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Podiform, Disseminated
CLASSIFICATION: Skarn, Porphyry

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	

LITHOLOGY: Plagioclase Augite Porphyritic Latite
Diorite Dike
Gabbro Dike

HOSTROCK COMMENTS: Witch Lake Formation name informal at this time. The intrusions are probably coeval equivalents of the Takla Group.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Zeolite
COMMENTS: Zeolite to pumpellyite-prehnite grade metamorphism.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	4.9000	Grams per tonne
Copper	1.5900	Per cent

REFERENCE: Assessment Report 19184.

CAPSULE GEOLOGY

The Taylor showing is found on the Mitzi claim group and is located in a northeast-flowing tributary of Wittsichica Creek, 3 kilometres south of the outlet of Witch Lake.

The showing is hosted in trachytic plagioclase augite porphyritic latites assigned to the Upper Triassic Witch Lake Formation of the Middle Triassic to Lower Jurassic Takla Group. Intrusive rocks on the Mitzi claims include diorite and gabbro dikes (Assessment Report 19184).

An outcrop, less than 20 metres long, shows diverse alteration including secondary biotite, chlorite, secondary amphibole, black tourmaline, garnet skarning and white bleaching. Up to 10 per cent pyrrhotite occurs with fine-grained pyrite and chalcopyrite. Values of 1.59 per cent copper and 4.9 grams per tonne gold have been obtained from grab samples (Assessment Report 19184).

Also in this vicinity, propylitic and potassic alteration assemblages and chloritic-rich zones occur. Disseminated pyrrhotite, pyrite and traces of chalcopyrite occur in the volcanics, with the

CAPSULE GEOLOGY

sulphide content varying directly with the intensity of alteration. Drilling in 1990 failed to intersect significant mineralization (Assessment Report 22179).

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GSC MAP 876A; 907A; 971A
GSC OF 2842
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/09 REVISED BY: GJP FIELD CHECK: Y

MINFILE NUMBER: **093N 097**

NATIONAL MINERAL INVENTORY: 093N14 Cu9

NAME(S): **KIP**, STEELHEAD, PAL 48,
JAJAY, STL, PIK,
STEELE CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 58 34 N
LONGITUDE: 125 24 05 W
ELEVATION: 1875 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6206024
EASTING: 350155

COMMENTS: Location is the approximate centre of a group of small copper occurrences on a ridge near the headwaters of Steele Creek, about 24 kilometres north of Old Hogem and 65 kilometres northeast of Takla Landing (Assessment Report 3341, Plate III).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz K-Feldspar
ALTERATION: K-Feldspar Malachite
ALTERATION TYPE: Potassic Biotite Albitic Chloritic Epidote
Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzodiorite
Leucocratic Ortho Syenite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY	GRADE	
Copper	1.6950	Per cent

COMMENTS: Sample AJ-3.
REFERENCE: Assessment Report 21420, Appendix 1.

CAPSULE GEOLOGY

The Kip occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 24 kilometres north of Old Hogem and 65 kilometres northeast of Takla Landing.

The Duckling Creek area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Upper Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

The Steele Creek area is underlain by quartz-deficient, monzodioritic border phases of the Hogem Intrusive Complex into which leucocratic, orthosyenite intrusions of the Middle Jurassic Duckling Creek Syenite Complex have been emplaced. The small intrusions range from fine grained to megaporphyritic orthosyenite and represent the

CAPSULE GEOLOGY

latest stage of the intrusive event, having resulted in widespread potassium metasomatism. These rocks display variable potassic, biotite, albitic, chloritic and epidote alteration.

Copper sulphide mineralization, occurring in quartz veins and as minute disseminations along intergranular boundaries in the hostrock, is believed to be a late-stage event, spatially related to quartz and potassium feldspar veining. Quartz flooding occurs principally in syenite megaporphyry, where milky comb and drusy veins up to 30 centimetres wide have been observed. Blebs of chalcopyrite occur rarely within the veins or in the adjacent wallrocks. Elsewhere, chalcopyrite abundance appears to increase with the degree of potassium feldspathization. These zones are evident in the field by "sheet staining" of malachite on vertical faces. Pyrite, as fracture coatings, is generally restricted to monzonitic rocks which impart a reddish hue upon weathering and does not bear any spatial relationship to chalcopyrite mineralization.

Results from over 200 rock samples taken from approximately 35 minor copper occurrences located on the ridge surrounding Steele Creek in the early 1970s ranged from 90 ppm to 0.06 per cent copper and up to 0.044 per cent zinc (Assessment Report 3341, page 23). Samples taken in 1991 ranged up to 1.695 per cent copper, with background gold values (Assessment Report 21420, Appendix 1, Sample AJ-3).

Lysander Minerals Corp. collected talus fines and rock samples from the showing in 1999. The Steelhead and Pal 48 claims that cover the showings are part of the Jajay property, which was optioned to Eastfield Resources Ltd. in 2000.

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EMPR PF (* Pearse, T. (1971): Geology and Geochemistry, Steele Creek Property for Noranda Exploration Company Ltd.; Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File); Page, J.W. (1999): 1999 Reconnaissance on the Jajay property, Lysander Minerals Corp. (in Lorraine - 093N 002))
EMPR (PRELIM) MAP 9
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 98-103
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/26 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 098**

NATIONAL MINERAL INVENTORY: 093N6 Cu1

NAME(S): **B**, ROT, ROTTACKER CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 20 38 N
LONGITUDE: 125 10 28 W
ELEVATION: 1065 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location are pit/trenches on Rottacker Creek, about 53 kilometres east-southeast of Takla Landing (Assessment Report 1064, Plate IL-67-3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6135213
EASTING: 362108

COMMODITIES: Copper, Silver

MINERALS

SIGNIFICANT: Chalcopyrite, Pyrite
ASSOCIATED: Quartz, Calcite
ALTERATION: Malachite, Hematite, Silica
ALTERATION TYPE: Silicific'n, Potassic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Hydrothermal, Porphyry
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION:
STRIKE/DIP: 156/63N
TREND/PLUNGE:
COMMENTS: Attitude is for major fault zone.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Quartz Monzonite
Granodiorite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1971
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	4.4600	Grams per tonne
Copper	0.1400	Per cent

COMMENTS: Sample is a rough, 3-metre wide chip across the major fault zone.
REFERENCE: Assessment Report 3407, page 6.

CAPSULE GEOLOGY

The B occurrence is situated in the Swannell Ranges (Omineca Mountains) on a west-southwest flowing tributary to Rottacker Creek, approximately 53 kilometres east-southeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded predominantly sedimentary rocks of the Middle Triassic to Lower Jurassic Takla Group and Lower Cretaceous Uslika Formation to the northwest. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

In the area of the occurrence, sheared and silicified quartz monzonite/granodiorite cut by several directions of faulting is exposed in a 15-metre wide pit just north of the creek. Chalcopyrite, pyrite and hematite occur with quartz and calcite in stringers and as disseminations along fractures and joints parallel and adjacent to a major fault zone striking 156 degrees and dipping 63 degrees to the northeast. The quartz monzonite adjacent to the zone appears to have been potassically altered. Malachite staining is also evident in quartz monzonite exposed on either side of the

CAPSULE GEOLOGY

creek. A vertically dipping, 5-centimetre wide quartz vein with pyritic margins is exposed for approximately 6 metres west of the fault zone.

A 3-metre wide, rough chip sample across the zone assayed 0.14 per cent copper and 4.46 grams per tonne silver (Assessment Report 3407, page 6). No recent information concerning this occurrence is available.

BIBLIOGRAPHY

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EMPR AR 1967-118
EMPR GEM 1971-200
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/09 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 099**

NATIONAL MINERAL INVENTORY: 093N2 Cu6

NAME(S): **TOP**, POT, ANOM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 10 59 N
LONGITUDE: 124 39 59 W
ELEVATION: 920 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Small showings concentrated near the north shore of Chuchi Lake (Assessment Report 3409, Map 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6116429
EASTING: 393895

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Molybdenite
COMMENTS: Chalcopyrite and pyrite; molybdenite in previous report.
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
COMMENTS: Chalcopyrite along fractures.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Coarse Grained Equigranular Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Nechako Lowland

CAPSULE GEOLOGY

The Top showing includes several small occurrences of chalcopyrite, pyrite and possibly molybdenite along fracture surfaces in coarse-grained, equigranular Early Jurassic monzonite of the Hogem Intrusive Complex. In the vicinity of the mineralization, alteration consists chiefly of epidote.

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EMPR OF 1991-3; *1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/22 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 100**

NATIONAL MINERAL INVENTORY: 093N14 Cu12

NAME(S): **ST**, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 51 14 N
LONGITUDE: 125 18 07 W
ELEVATION: 1555 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is the common corner of the ST 64 to 67 claims, about 38 kilometres west-northwest of Germansen Landing (Assessment Report 3461, Figure 2).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6192214
EASTING: 355906

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Copper-molybdenum mineralization.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Monzonite
Gabbro
Hornfelsed Volcanic

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Quesnel

CAPSULE GEOLOGY

The ST occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), north of the Discovery (Duckling) showing (093N 089) and approximately 38 kilometres west-northwest of Germansen Landing. The ST claims were evaluated in the early 1970s by Passport Mines Ltd.

The area is underlain by Middle Triassic to Lower Jurassic Takla Group volcanics which have been intruded to the north and west by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Copper and molybdenum mineralization is reported to occur as a shear zone filling within contact phases between a monzonite intrusion and either a gabbroic border phase of the Hogem Intrusive Complex or hornfelsed Takla Group volcanics (Geology, Exploration and Mining in British Columbia 1971, page 214).

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR ASS RPT 3461
EMPR GEM *1971-203-211,214
EMPR BULL 70
EMPR PF (Chisholm, E.O. (1971): A Geochemical Report on the ST Claims for Passport Mines Ltd.; Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9
EMR MP CORPFILE (Fortune Channel Mines Ltd.)
GSC MEM 252, pp. 98-103
GSC MAP 844A; 907A; 971A; 1424A

BIBLIOGRAPHY

GSC P 42-7; 45-6
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CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/28 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 101**

NATIONAL MINERAL INVENTORY: 093N2,7 Cu7

NAME(S): **COL**, CHUCHI

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N02W 093N02E 093N07W 093N07E
BC MAP:
LATITUDE: 55 14 57 N
LONGITUDE: 124 45 33 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 5 kilometres north of the west end of Chuchi Lake and 1 kilometre east of the Klawli River, 108 kilometres north of Fort St. James (Assessment Report 18123).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6123930
EASTING: 388173

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: K-Feldspar Quartz Magnetite Tremolite Actinolite Chlorite
ALTERATION: K-Feldspar Quartz Magnetite Tremolite Actinolite Chlorite Malachite
ALTERATION TYPE: Potassic Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stockwork Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
SHAPE: Irregular
MODIFIER: Fractured
DIMENSION: Metres STRIKE/DIP: 140/90 TREND/PLUNGE:
COMMENTS: Predominant fractures containing mineralization; steep dips.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic Mesozoic	Takla	Chuchi Lake	Hogem Intrusive Complex

LITHOLOGY: Hornblende Monzonite
Syenite
Aplite
Pegmatite
Volcanic Flow
Plagioclase Porphyry Flow

HOSTROCK COMMENTS: Informally named Chuchi Lake Formation of the Takla Group.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: A REPORT ON: Y

CATEGORY: Indicated YEAR: 1973
QUANTITY: 1814200 Tonnes

COMMODITY	GRADE	
Copper	0.6000	Per cent

COMMENTS: Drill indicated. The copper grade is only approximate due to flawed data.
REFERENCE: Prospectus, Kookaburra Gold Inc. Jan.27, 1989 - Jenkins, May 30, 1988.

CAPSULE GEOLOGY

The Col property lies within the Quesnel Terrane represented in the area by early Mesozoic Takla Group volcanic and sedimentary rocks of island-arc affinity and related intrusions, situated near the southern end of the Late Triassic-Early Cretaceous Hogem Intrusive Complex. Two alteration haloes are developed within the complex: the western half of the Chuchi halo north of Chuchi Lake (see Chuchi Lake, 093N 159), and the Col halo west of Chuchi Mountain (Fieldwork 1991).

The Col deposit is hosted within alkaline intrusive rocks near the contact with volcanic flows of the Lower Jurassic Chuchi Lake

CAPSULE GEOLOGY

Formation (informal name) of the Middle Triassic to Lower Jurassic Takla Group. Medium to coarse-grained hornblende monzonite and lesser pink, fine to medium-grained syenite with aplite and pegmatite are the main intrusive phases.

Copper mineralization comprising chalcopyrite, bornite and malachite are concentrated along steep parallel fractures striking 140 degrees that have 1 to 4 centimetre salmon-pink potassium feldspar-rich alteration envelopes around them. These zones may also contain quartz, minor magnetite and hairline seams of tremolite/ actinolite plus chlorite. Some outcrops are so heavily striped with alteration zones that they take on a gneissic appearance. While some of these zones appear to be late magmatic syenitic injections into the monzonite, most appear to be the result of metasomatic potassic alteration of the monzonite. A later crosscutting set of steep fractures strikes 050 degrees, but contains only minor mineralization.

Indicated reserves are 1,814,200 tonnes grading 0.6 per cent copper (Prospectus, Kookaburra Gold Inc. January 27, 1989 - D.M. Jenkins, May 30, 1988). Trenching in 1987 yielded average grades of 2.2 grams per tonne gold and 3.16 per cent copper over a 3.7-metre interval (Assessment Report 18123).

Extensive copper staining (malachite and chalcopyrite) occurs on a cliff exposure 1.75 kilometres east-northeast of the main showing. At this locality grey and maroon plagioclase porphyry flows of the Chuchi Lake Formation are contact metamorphosed by the Hogem complex and host the disseminated mineralization.

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EMPR BULL 70
EMPR FIELDWORK 1990, pp. 89-110; *1991, pp. 115; 1992, pp. 87-107
EMPR GEM 1970-178; 1971-197; 1972-436
EMPR OF 1991-3; 1992-4; 1998-8-G, pp. 1-30
EMPR PF (Kookaburra Gold Corp. Information folder, 1991)
EMR MIN BULL MR 223 B.C. 250
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842
GSC P 41-5; 42-2; 45-9
CIM Special Vol. 15 (1976), Table 1, #96
GCNL #73(Apr.17),#214(Nov.7), 1989; #128 (July 4), #162(Aug.22) 1991
N MINER Jul.10, 1989

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/09/17 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 102**

NATIONAL MINERAL INVENTORY: 093N6 Cu2

NAME(S): **SAN**, NIK, KWANIKA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E 093N11E
BC MAP:
LATITUDE: 55 29 07 N
LONGITUDE: 125 10 02 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is a mineralized outcrop on the common boundary between the San 23 and 24 claims, about 50 kilometres east of Takla Landing (Assessment Report 3856, Figure 5B).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6150929
EASTING: 363056

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
COMMENTS: Earlier reports describe chalcopyrite and molybdenite mineralization in the general area.
ALTERATION: K-Feldspar
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Hydrothermal Porphyry

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Monzonite
Leucocratic Granite
Syeno Diorite
Pyroxenite
Basalt
Porphyritic Andesite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Quesnel

CAPSULE GEOLOGY

The San occurrence is situated in the Kwanika Range near the headwaters of Valleau Creek, approximately 50 kilometres east of Takla Landing. The area was assessed by Noranda Exploration in the early 1970s.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic to Lower Jurassic Takla Group to the east. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

The principle rock types underlying the headwater area of Valleau Creek are medium to coarse-grained syenodiorite and pyroxenite of the Hogem Intrusive Complex and Takla Group basalt and porphyritic andesite.

Although extensive overburden masks much of the area, a small mineralized outcrop was discovered along the common boundary of the now lapsed San 23 and 24 claims (Assessment Report 3856, Figure 5B). The copper(?) mineralization is reportedly hosted by potassium feldspathized monzonite near a contact with leucocratic granitic rock (Geology, Exploration and Mining in British Columbia 1972, page 449). Although the specific minerals are not described, earlier reports mention chalcopyrite and molybdenite associated with granitic rocks near their contact with Takla Group volcanics. A significant copper-molybdenum soil anomaly outlined in the area was attributed to this outcrop.

CAPSULE GEOLOGY

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR ASS RPT *3856, 3857, 19868, 20897
EMPR GEM 1971-199; 1972-448
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR FIELDWORK 1992, pp. 87-107
GSC OF 3071
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Placer Dome File

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1992/11/03	REVISED BY:	DMN	FIELD CHECK:	N

MINFILE NUMBER: **093N 103**

NATIONAL MINERAL INVENTORY: 093N6 Cu3

NAME(S): **KW**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 27 00 N
LONGITUDE: 125 12 23 W
ELEVATION: 1432 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is approximately 9 kilometres east of Tsayta Lake, about 49 kilometres southwest of Germansen Landing (Geology, Exploration and Mining in British Columbia 1971, page 200).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6147082
EASTING: 360457

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzonite
Pyroxenitic Lamprophyre Dike
Syenitic K-Feldspar Dike

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The KW occurrence is situated in the Kwanika Range near the headwaters of Halobia Creek, approximately 9 kilometres east of Tsayta Lake and 49 kilometres southwest of Germansen Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Upper Triassic to Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

The only reference to the occurrence describes chalcopyrite, pyrite and molybdenite mineralization on fracture surfaces in monzonite cut by pyroxenitic lamprophyre dikes and small syenitic potassium feldspar dikes (Geology, Exploration and Mining in British Columbia 1971, page 200).

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR GEM *1971-200
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/05 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 104**

NATIONAL MINERAL INVENTORY: 093N2 Cu8

NAME(S): **SRM**, CIR, KLAW

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N02E 093N01W
BC MAP:
LATITUDE: 55 14 01 N
LONGITUDE: 124 31 21 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the SRM showing, 5 kilometres north from the north shore of Chuchi Lake (Open File 1992-4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6121845
EASTING: 403179

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Chalcopyrite Malachite Pyrite Pyrrhotite
COMMENTS: Mineralization found only in float and drill core.
ASSOCIATED: Chalcedony Quartz Carbonate
ALTERATION: Silica Chlorite
ALTERATION TYPE: Silicific'n Chloritic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Breccia Disseminated
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: 15 x 2 Metres STRIKE/DIP: 162/90 TREND/PLUNGE:
COMMENTS: Attitude and dimensions of siliceous breccia vein.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	

DATING METHOD: Fossil
MATERIAL DATED: Ammonite
Lower Jurassic

Hogem Intrusive Complex

LITHOLOGY: Medium Grained Equigranular Diorite
Gabbro
Pyroxenite
Augite Plagioclase Porphyritic Agglomerate
Augite Plagioclase Porphyritic Flow

HOSTROCK COMMENTS: Informal formation name is Chuchi Lake. Fossil age is lower Jurassic (Geological Fieldwork 1991, page 109).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Gold	0.9700	Grams per tonne
Copper	0.7000	Per cent

COMMENTS: From a 5-metre drill interval.
REFERENCE: Assessment Report 21807, page 14.

CAPSULE GEOLOGY

The SRM (Klaw) occurrence covers several small mineral showings straddling the contact between green and maroon augite plagioclase porphyritic flows and agglomerates of the Lower Jurassic Chuchi Lake Formation (Takla Group) and Early Jurassic rocks of the Hogem Intrusive Complex.

The SRM showing consists of an orange-weathering chalcedonic quartz breccia vein exposed over a 15-metre area. The vein is approximately 2 metres wide and strikes 162 degrees. Silicified and chloritized float in a gully 30 metres east of this contains chalcopyrite, pyrite and malachite. One kilometre due south of the

CAPSULE GEOLOGY

vein, disseminated chalcopyrite occurs in small swarms of quartz veinlets that crosscut equigranular, medium grained salt and pepper diorite and heterogeneous pyroxenite/gabbro of the Hogem Intrusive Complex. The vein swarms have an average width of 4 metres and strike 110 to 115 degrees.

BP Resources reports that in 1989, Noranda completed 29 diamond-drill holes totalling 2962 metres on the Klaw 3, 8 and 9 claims, 6 of which are documented in Assessment Report 20134 and their locations known (Assessment Report 21807). One of the best intersections graded about 0.7 per cent copper and 0.97 gram per tonne gold over 5 metres (95-100 metres) (Assessment Report 21807, page 14,19). This 5-metre section consisted of gabbro-diorite, locally pegmatitic, containing fault gouge, strong iron oxide staining and broken quartz-carbonate-chalcopyrite veins. The location of this drillhole is not documented.

Approximately 250 metres northeast of the breccia vein showing, disseminated chalcopyrite, pyrite and pyrrhotite hosted in augite plagioclase porphyritic volcanics have been documented from the diamond drilling program. The best value obtained was 0.39 per cent copper over 3.5 metres (Assessment Report 20314).

The GG occurrence (093N 209), located about 2 kilometres to the south, is also on the Klaw 9 claim and may be of related interest.

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EMPR FIELDWORK 1990, pp. 89-110; *1991, pp. 103-118
EMPR OF 1991-3; *1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/18 REVISED BY: GJP FIELD CHECK: Y

MINFILE NUMBER: **093N 105**

NATIONAL MINERAL INVENTORY: 093N14 Cu13

NAME(S): **FOX**, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 55 25 N
LONGITUDE: 125 19 47 W
ELEVATION: 1650 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a copper showing east of the north fork of Duckling Creek, approximately 20 kilometres north-northeast of Old Hogem and 43 kilometres west-northwest of Germansen Landing (Assessment Report 3860, Figure 3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6200030
EASTING: 354429

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite Bornite
COMMENTS: Chalcopyrite and bornite mineralization described as minor.
ALTERATION: K-Feldspar Malachite
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

ISOTOPIC AGE: 175 +/- 5 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Diorite
Monzonite
Porphyritic Syenite Dike

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic-Early Cretaceous Hogem Intrusive Complex. Date by Garnett (1978).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1972
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	1.5500	Per cent

COMMENTS: Sample identified only as Sample No. 2.
REFERENCE: Assessment Report 3860, page 3.

CAPSULE GEOLOGY

The Fox occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 7 kilometres west of the Lorraine occurrence (093N 002) and 64 kilometres northeast of Takla Landing.

The Duckling Creek area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Upper Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Mapping carried out in the area of the Fox occurrence in the early 1970s determined that coarse-grained, magnetite-rich diorite and fine-grained, foliated monzonite predominate in the area.

CAPSULE GEOLOGY

Scattered dikes and irregular lenses(?) of light-coloured, fine to coarse-grained (porphyritic) syenite, possibly related to the Middle Jurassic Duckling Creek Syenite Complex, were also described.

Widespread mineralization including malachite and pyrite with local chalcopyrite and bornite was reported to be associated with the syenite dikes, feldspar fracture filling and zones of potassium feldspar enrichment of the host intrusions. Two samples believed to be taken from showings exposed on a north-trending ridge east of the north fork of Duckling Creek assayed 1.38 and 1.55 per cent copper, respectively (Assessment Report 3860 page 3).

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

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EMPR ASS RPT *3860, 21429
EMPR BULL 70
EMPR GEM 1971-203-210; 1972-456
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File); Nevin A.E. (1971): Report on the Fox 1-42 and 43-44 Fr. Claims for Acano Explorations Ltd. (N.P.L.))
EMPR (PRELIM) MAP 9
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 98-103
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/26 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 106**

NATIONAL MINERAL INVENTORY: 093N11 Cu5

NAME(S): **HOOEY**, GROUNDHOG

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 37 04 N
LONGITUDE: 125 17 46 W
ELEVATION: 1530 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is the approximate centre of the Hooey claims near the headwaters of Groundhog Creek, about 52 kilometres west of Manson Creek (Assessment Report 3858).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6165932
EASTING: 355400

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ALTERATION: Epidote
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Orthoclase Megacrystic Granite
Monzonite
Syenite
Quartz Monzonite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The exact location of the Hooey occurrence is not known with certainty. It is based on a 1971 report that documents chalcopyrite in epidotized monzonite to quartz monzonite (Geology, Exploration and Mining in British Columbia 1971, page 203). The Hooey showing is plotted just south of a small lake at the headwaters of Groundhog Creek in the central part of the Hooey claims or Groundhog property. Assessment reports for the area (3268, 3858) document no outcrop on the Groundhog property but briefly describe medium-grained, equigranular, leucocratic syenodiorite on ridge tops in the vicinity.

Recent geological mapping (Open File 1993-4) suggests that the Hooey showing occurs very near the contact between an Early Jurassic predominantly monzonite phase, and Early Cretaceous more felsic, orthoclase megacrystic granitic and syenitic phases of the Late Triassic-Early Cretaceous Hogem Intrusive Complex. The area is located approximately 2 kilometres west of the Hogem-Takla Group contact and 5 kilometres south of the Takla-Rainbow occurrence (093N 082).

BIBLIOGRAPHY

EMPR ASS RPT 3268, 3858
EMPR GEM *1971-202; 1972-453
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR OF 1993-3
EMPR FIELDWORK 1992, pp. 87-107
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6

BIBLIOGRAPHY

CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/24 REVISED BY: KBE FIELD CHECK: N

MINFILE NUMBER: **093N 107**

NATIONAL MINERAL INVENTORY: 093N11 Mo1

NAME(S): **BURN**, SNAG, SIBERIA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11E 093N06E
BC MAP:
LATITUDE: 55 30 14 N
LONGITUDE: 125 13 43 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the middle of a trench west of Burn Creek, about 46 kilometres east of Takla Landing (Assessment Report 7432, Figure 3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6153123
EASTING: 359244

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Pyrite Molybdenite Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Silica Epidote Chlorite Pyrite Magnetite
ALTERATION TYPE: Silicific'n Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzonite
Alaskite Dike
Leucocratic Granite
Quartz Syenite
Hornblende Diorite
Quartz Monzonite
Alaskite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Burn occurrence is situated in the Kwanika Range on Burn Creek, approximately 46 kilometres east of Takla Landing. Extensive exploration was undertaken between 1971 and 1979 as a result of stream sediment anomalies outlined on Burn Creek.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic to Lower Jurassic Takla Group approximately 4 kilometres to the east. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

Burn Creek is underlain by leucocratic granite, quartz syenite and alaskite which, according to Garnett (1978), represent an Early Cretaceous phase of the Hogem Intrusive Complex. Hornblende diorite and quartz monzonite were also intersected in trenches and in percussion-drill holes. Recent mapping by Nelson et al (Open File 1993-4) interpret the monzonites and granodiorites underlying the Burn property to be of probable Early Jurassic age.

Early reports describe a showing of pyrite with very minor molybdenite and chalcopyrite in fractures cutting monzonite exposed in a northeast-flowing creek entering Burn Creek approximately 6 kilometres upstream from its outlet into Kwanika Creek. Follow-up work outlined a north-south zone of silicified monzonite hosting scattered molybdenite in fractures and in local quartz veins. The monzonite was characterized by silicification with local epidote, minor chlorite and weak but pervasive pyrite and some magnetite. This zone was though to extend past Kwanika Creek to the north and Burn Creek to the east and to the access road up Burn Creek to the west. Drilling within the zone failed to intersect economically

CAPSULE GEOLOGY

significant mineralization, the best hole (79-2) averaging only 0.00118 per cent molybdenum and 0.00119 per cent copper over its 83.3-metre length (Assessment Report 7898, page 5).

Locally coarse molybdenum mineralization(?) associated with an alaskite dike was also observed near the centre of the property. This showing, however, was thought to be of little economic significance.

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EMPR OF 1993-4
EMPR FIELDWORK 1992, pp. 87-107
EMPR ASS RPT 5619, *7432, 7898, 7926
EMPR GEM 1971-202; 1972-452; 1973-369
EMPR EXPL 1975-E151; 1976-E157-158; 1979-235-236; 1980-358-359
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Special Vol. 15 (1976), Map B, #370; Vol. 67, No. 749, pp. 101-106
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/25 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 108**

NATIONAL MINERAL INVENTORY: 093N5 Cu1

NAME(S): **BOL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N05W
BC MAP:
LATITUDE: 55 24 30 N
LONGITUDE: 125 57 19 W
ELEVATION: 970 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is the centre of an intrusive plug, approximately 5 kilometres south of Takla Landing (Minister of Mines Annual Report 1967, page 119).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6144205
EASTING: 312909

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Upper Jurassic	Takla	Undefined Formation	Topley Intrusions

LITHOLOGY: Granodiorite
Diorite
Quartz Monzonite
Andesitic Basaltic Volcanic
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Takla Trench
TERRANE: Plutonic Rocks Stikine

CAPSULE GEOLOGY

The Bol occurrence is situated on the west side of Takla Lake, approximately 8 kilometres south of Takla Landing. The area was explored between 1966 and 1967 when geological, geochemical and geophysical surveys were carried out. A short, EX-sized hole was reportedly drilled to test the showing.

The area is underlain by andesitic to basaltic volcanics and minor sediments of the Middle Triassic to Lower Jurassic Takla Group east of the north-striking Takla fault. An elongate plug of granodiorite, diorite and/or quartz monzonite assigned to the Late Triassic-Early Jurassic Topley intrusions has been emplaced into these rocks.

Chalcopyrite mineralization is reported to occur within the intrusions. No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR AR 1966-119; 1967-119
EMPR OF 2000-19
EMR MP CORPFILE (Magnum Consolidated Mining Co. Ltd.)
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 3071
GSC P 42-7; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/09 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 109**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILLY 2**, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 53 22 N
LONGITUDE: 125 18 21 W
ELEVATION: 1845 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample 74934 near the common legal corner post of the Willy 2 and 4 claims, about 39 kilometres west-northwest of Germansen Landing (Assessment Report, Figure 7a).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6196178
EASTING: 355794

COMMODITIES: Copper, Gold, Silver

MINERALS

SIGNIFICANT: Chalcopyrite
ASSOCIATED: K-Feldspar, Quartz, Pyrrhotite
ALTERATION: Epidote, K-Feldspar, Malachite
ALTERATION TYPE: Epidote, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork, Disseminated
CLASSIFICATION: Hydrothermal, Porphyry
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 150 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Dimension is mineralized outcrop length.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Quartz Monzodiorite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	8.9000	Grams per tonne
Gold	0.5060	Grams per tonne
Copper	1.3000	Per cent

COMMENTS: Sample was a composite grab of mineralized intrusion.
REFERENCE: Assessment Report 21428, page 21.

CAPSULE GEOLOGY

The Willy 2 occurrence is situated in the Swannell Ranges (Omineca Mountains) on the ridge immediately east of Duckling Creek, approximately 39 kilometres west-northwest of Germansen Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex west of their contact with volcanic and sedimentary rocks of the Upper Triassic to Lower Jurassic Takla Group. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Mineralization at the Willy 2 occurrence comprises stockwork potassium feldspar veinlets varying from 2 millimetres to 20 centimetres wide hosted by epidote-rich quartz monzodiorite. Sparsely distributed fractures also contain thin quartz veinlets with chalcopyrite, pyrrhotite and conspicuous malachite over an outcrop distance of 150 metres. Some chalcopyrite is also disseminated in the wallrocks.

CAPSULE GEOLOGY

A composite grab sample (74934) of mineralized intrusion assayed 0.506 gram per tonne gold, 8.9 grams per tonne silver and 1.3 per cent copper (Assessment Report 21428, page 21).

BIBLIOGRAPHY

EMPR ASS RPT *21428
EMPR GEM 1971-203-210
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9
GSC MEM 252, pp. 98-103
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED:	1992/10/29	CODED BY:	DMN	FIELD CHECK:	N
DATE REVISED:	1993/03/10	REVISED BY:	DMN	FIELD CHECK:	N

MINFILE NUMBER: **093N 110** NATIONAL MINERAL INVENTORY:

NAME(S): **SOURCE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12W
BC MAP:
LATITUDE: 55 36 45 N
LONGITUDE: 125 45 37 W
ELEVATION: 1745 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for a quartz vein with visible gold, about 20 kilometres northeast of Takla Landing (Assessment Report 20077, Figure 3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6166410
EASTING: 326153

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Gold
COMMENTS: An unidentified dull, steel-grey, metallic mineral was also observed.
ASSOCIATED: Quartz
ALTERATION: Carbonate Malachite Quartz Ankerite Mariposite
ALTERATION TYPE: Carbonate Quartz-Carb. Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: l01 Au-quartz veins
DIMENSION: 100 Metres STRIKE/DIP: 090/ TREND/PLUNGE:
COMMENTS: Vein subcrop is 25 centimetres wide and has been traced for 100 metres on the surface.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Andesite
Phyllite
Serpentinite
Andesitic Flow

HOSTROCK COMMENTS: The hostrock is described only as volcanic, but is most probably Cache Creek Complex andesite in this area.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	89.8000	Grams per tonne
Gold	7.2700	Grams per tonne

COMMENTS: Results from grab sample 89-G-25-A of quartz vein subcrop with visible gold.
REFERENCE: Assessment Report 20077, page 4.

CAPSULE GEOLOGY

The Source occurrence is situated 4 kilometres east-northeast of Mount Bodine, approximately 20 kilometres northeast of Takla Landing. It is the first confirmed discovery of visible gold in quartz in the Vital Range.

The showing occurs near a fault contact between serpentinite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions now termed Mississippian to Triassic Oceanic Ultramafites, and phyllite and andesitic flows assigned to the Carboniferous to Jurassic Cache Creek Complex. The ultramafic rocks are dark green to black coloured, massive and widely sheared. Local quartz-carbonate alteration has resulted in tabular zones of rusty weathering quartz-ankerite-mariposite mineralization (Assessment Report 12548). The Cache Creek rocks strike predominantly north, dip to the east and

CAPSULE GEOLOGY

host local felsitic and aplitic intrusions.
     At the Source occurrence, very fine grained visible gold occurs in a narrow (25-centimetre wide), east-striking trending quartz vein subcrop that has been traced for 100 metres on the surface. The host volcanic rock exhibits strong to intense carbonate alteration. The gold occupies late, discontinuous microfractures and is commonly associated with an equally fine grained, dull, steel-grey metallic mineral with attendant malachite.
     One assay result obtained from samples of the quartz was 8.16 grams per tonne gold. Another sample assayed 7.27 grams per tonne gold and 89.8 grams per tonne silver (Assessment Report 20077, page 4).

BIBLIOGRAPHY

EMPR ASS RPT 12548, 14554, *20077
EMPR EXPL 1983-464; 1985-C337
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1992/09/24 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/10 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 111**

NATIONAL MINERAL INVENTORY: 093N7 Au1

NAME(S): **VALLEY GIRL**, KLAWLI RIVER NORTH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07W
BC MAP:
LATITUDE: 55 28 18 N
LONGITUDE: 124 57 00 W
ELEVATION: 1250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The location is for the centre of the Valley Girl claims (Assessment Report 15634).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6149008
EASTING: 376737

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Gold Pyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate Magnetite
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein Shear Disseminated Unconsolidated
CLASSIFICATION: Hydrothermal Epigenetic Placer

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Inzana Lake	
ISOTOPIC AGE:	Upper Triassic		
DATING METHOD:	Fossil		
MATERIAL DATED:	Conodonts		
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Crystal Tuff
Lapilli Tuff
Volcanic Siltstone
Medium Grained Equigranular Monzonite
Gabbro
Basalt

HOSTROCK COMMENTS: The fossil date for the informally named Inzana Lake Formation is is from Geological Fieldwork 1991, page 107.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Valley Girl showing occurs at the headwaters of Valleau Creek. The MINFILE coordinates for this occurrence represents the centre of the Valley Girl claim group (Assessment Report 15634) which covers the area of the original showing as shown on GSC Preliminary Map 45-9. Minor mineralization and multiple gold and copper soil anomalies have been documented in the claim area.

Historically, the showing was described as numerous quartz-carbonate veins up to 15 centimetres wide with minor free gold in one (GSC Paper 45-9, page 15). An 8-centimetre wide fractured quartz-carbonate vein was observed in 1992 but occurs approximately 2 kilometres northwest of the Valley Girl location. Pyritic shears trending 340 and 360 degrees are associated with veining. Minor disseminated pyrite, chalcopyrite and magnetite have been noted in basalt and placer gold has been documented in several creeks in the area (see Valleau Creek, 093N 053).

The region is underlain by variably foliated and hornfelsed volcanic sediments (siltstone) and tuffs of the Upper Triassic Inzana Lake Formation of the Takla Group. These are intruded by minor plugs of coarse-grained, equigranular monzonite and gabbro that are probably associated with the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which in this area is Early Jurassic.

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EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; *1992, pp. 87-107
EMPR OF 1991-3; 1992-4; *1993-3
GSC MEM 252

BIBLIOGRAPHY

GSC P 41-5; 42-2; *45-9, p. 15
GSC MAP 876A; 907A; 971A; 1424A; 1586G; 1595G
GSC OF 2842
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/11 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 112**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROTTACKER CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 24 10 N
LONGITUDE: 125 11 41 W
ELEVATION: 1585 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is approximately 3 kilometres north of the lake near the prominent east bend in Rottacker Creek, about 49 kilometres east-southeast of Takla Landing (Peto, P. (1971): Report on the Hogem Project for Amoco Mining, pages 59-60 and Figure 4 - 093N General File).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6141805
EASTING: 361029

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Malachite
ASSOCIATED: Quartz Feldspar
ALTERATION: Chlorite Limonite Hematite Malachite
COMMENTS: Malachite is thought to have been deposited as a result of supergene enrichment.
ALTERATION TYPE: Chloritic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Syeno Diorite
Monzonite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Rottacker Creek occurrence is situated in the Kwanika Range south of Halobia Creek, approximately 49 kilometres east-southeast of Takla Landing. It was discovered in 1971 during a regional exploration program carried out by Amoco Mining.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Upper Triassic-Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

At the Rottacker Creek occurrence, chalcopyrite-malachite mineralization occurs along a narrow, northwesterly trending contact zone between leucocratic and mafic-rich syenodiorite-monzonite phases of the Hogem Intrusive Complex. Chlorite alteration within these units is extensive and limonite/hematite staining is common. Malachite is the most abundant mineral and tends to occur along fracture and joint faces and as encrustations in fault gouge. It appears to have been deposited as a result of supergene enrichment. Chalcopyrite occurs along quartz-alkali feldspar fracture fillings within the more mafic phase.

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR ASS RPT 21734
EMPR BULL 70
EMPR PF (*Peto, P. (1971): Report on the Hogem Project for Amoco Mining, pp. 59-60 and Figure 4 (refer to 093N General File))

BIBLIOGRAPHY

GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1992/11/09 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1992/11/09 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 113**

NATIONAL MINERAL INVENTORY:

NAME(S): **NATION MOUNTAIN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 17 08 N
LONGITUDE: 125 08 09 W
ELEVATION: 1675 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location is on the west flank of Mount Nation, about 57 kilometres southeast of Takla Landing (Peto, P. (1971): Report on the Hogem Project for Amoco Mining, page 59 and Figure 4 - 093N General File).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6128647
EASTING: 364357

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite also occurs as crystal aggregates.
ALTERATION: Chlorite Epidote
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Magmatic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Gabbro
Syeno Gabbro
Syeno Diorite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Nation Mountain occurrence is situated on the west flank of Mount Nation, approximately 57 kilometres southeast of Takla Landing. The area was assessed as part of a regional exploration program carried out by Amoco Mining in 1971.

The Mount Nation area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic to Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

At an elevation of 1675 metres, chalcopyrite is exposed as medium-grained crystal aggregates situated within and contiguous to mafic clots and as disseminated grains along fracture faces within a gabbroic body. The gabbro shows pervasive propylitization (development of chlorite and epidote) and grades laterally into syenogabbro and syenodiorite. The chalcopyrite mineralization is sparse, low grade and is thought to be of magmatic origin.

No recent information concerning this occurrence is available, although its discovery probably resulted in the staking of the Tyger claims by Amoco Canada Petroleum in 1973. Refer to the Tyger occurrence (093N 173) for further details.

BIBLIOGRAPHY

EMPR BULL 70
EMPR PF (*Peto, P. (1971): Report on the Hogem Project for Amoco Mining, p. 59 and Figure 4 (refer to 093N General File))
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071

BIBLIOGRAPHY

CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1992/11/09 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/10 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 114**

NATIONAL MINERAL INVENTORY:

NAME(S): **BIDDY**, RAE, OMI, NICA

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N15W
BC MAP:
LATITUDE: 55 58 04 N
LONGITUDE: 124 48 12 W
ELEVATION: 1475 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located approximately 7 kilometres north-northeast of Nina Lake (Open File 1990-17).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6203961
EASTING: 387443

COMMODITIES: Zinc, Lead, Silver, Germanium

MINERALS

SIGNIFICANT: Sphalerite Galena
COMMENTS: The silver is found as argentiferous galena and the germanium is contained within the sphalerite.
ASSOCIATED: Barite Pyrite
MINERALIZATION AGE: Cambrian
ISOTOPIC AGE: DATING METHOD: Lead/Lead MATERIAL DATED: Galena

DEPOSIT

CHARACTER: Podiform, Massive, Disseminated, Breccia
CLASSIFICATION: Replacement, Hydrothermal
TYPE: E14 Sedimentary exhalative Zn-Pb-Ag
SHAPE: Irregular
MODIFIER: Faulted
COMMENTS: The lead has a Cambrian shale curve model age, even though it is hosted in younger strata (Ferri and Melville, in prep.).

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Otter Lakes	Undefined Formation	
Silurian-Devonian	Echo Lake	Undefined Formation	

LITHOLOGY: Dolomitic Breccia
Arenaceous Dolomite
Shale
Limestone
Dolomite
Sandy Dolomite
Quartzite
Argillite
Sandstone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Lead	1.0000	Per cent
Zinc	1.3000	Per cent

COMMENTS: A 2-metre drill interval from a drillhole in the Biddy area.
REFERENCE: Assessment Report 20492.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	28.0000	Grams per tonne
Germanium	0.1200	Per cent
Zinc	4.1100	Per cent

COMMENTS: A grab sample from the Biddy area.
REFERENCE: Exploration in British Columbia 1989, page 195.

CAPSULE GEOLOGY

The Biddy occurrence is located near the headwaters of Big Creek, approximately 7 kilometres north-northeast of Nina Lake and approximately 3 kilometres south-southwest of Razorback Mountain. It lies within 1 kilometre to the west of the Otter Lakes, near an old exploration gravel road that connects to the Germansen Landing road south of Nina Lake.

Regionally, the general area is divided by a major, layer parallel, thrust fault that separates para-autochthonous North American rocks of the Cassiar Terrane from rocks belonging to the Intermontane Superterrane represented by the Slide Mountain and Quesnel terranes (Ferri and Melville, in prep). This fault boundary roughly corresponds to the Omineca-Intermontane belts boundary. This regional stratigraphy forms part of a southwest-dipping homoclinal sequence that is cut by a series of northwest-striking normal faults to the north of the Biddy occurrence and northeast-striking normal faults to the south. With the exception of the easternmost portions of the pericratonic strata, all other rocks have been weakly metamorphosed up to chlorite grade (Ferri and Melville, in prep. and Exploration in British Columbia 1989, pages 193-196).

The Cassiar Terrane is represented by a Proterozoic to Mississippian carbonate and siliciclastic miogeoclinal wedge. These sequences of miogeoclinal rocks include the Proterozoic Ingenika Group, the Lower Cambrian Atan Group, the Cambrian (?) to Ordovician Razorback Mountain Group, the Silurian to Lower Devonian Echo Lake Group, the Middle Devonian Otter Lakes Group, the Upper (?) Devonian to Mississippian Big Creek Group and the Mississippian to Permian Cooper Ridge Group (Ferri and Melville, in prep.).

The Slide Mountain Terrane is represented by Upper Paleozoic oceanic rocks of the Nina Creek Group. The Pennsylvanian to Permian Nina Creek Group consists of a lower argillite-dominated sedimentary package and an upper pillowed to massive basalt-dominated sequence. Rocks belonging to the Quesnel Terrane lie to the west of the Nina Creek Group, across the Manson fault zone, and are represented by the Middle Triassic to Lower Jurassic Takla Group.

The Biddy occurrence is hosted within the Middle Devonian Otter Lakes Group and the Silurian to Lower Devonian Echo Lake Group. The Otter Lakes Group is characterized by approximately 150 to 200 metres of grey to black limestones and dolostones that are direct correlatives of the carbonates of the McDame Group in the Cassiar area (Ferri and Melville, in prep.). The Echo Lake Group is a thick succession of approximately 100 metres of limestone, dolomite, sandy dolomite and minor quartzite. It is divided into two units with the lower unit consisting primarily of carbonate and the upper unit, sandy dolomites and quartzites. Overlying these two groups is the Upper (?) Devonian to Lower Mississippian Big Creek Group that is approximately a 500 metre thick succession of blue-grey to dark grey shales, argillites and minor sandstones.

Mineralization is stratabound within a stratigraphic interval from the Otter Lakes-Big Creek contact downwards to the uppermost sandy dolomites of the Echo Lake Group. The sulphides occur as semimassive irregular-shaped pods in solution breccias (dolomitic breccias), as massive sulphides in localized shear zones and as disseminated blebs in arenaceous dolomites. Where brecciated, the mineralization is found towards the top of the Otter Lakes Group, near the Big Creek shale contact. The sulphides within the breccias may replace clasts, matrix or a combination of both suggesting multiphase fluid influx and deposition (Exploration in British Columbia 1989, pages 193-196). Mineralization consists of sphalerite and galena with associated barite and minor pyrite. Lead-lead dates from the galena have a Cambrian shale curve model age (Ferri and Melville, in prep.). The sphalerite is on average 0.05 per cent germanium (Assessment Report 16946). A grab sample from this occurrence analysed 4.11 per cent zinc, 28 grams per tonne silver and 0.120 per cent germanium (Exploration in British Columbia 1989, page 195). One of the best drillhole intersections analysed 1.3 per cent zinc and 1 per cent lead over a 2-metre interval (Assessment Report

CAPSULE GEOLOGY

20492).

BIBLIOGRAPHY

EMPR BULL *91
EMPR EXPL *1989, pp. 193-196
EMPR FIELDWORK 1988, pp. 209-220; *1989, pp. 101-114
EMPR OF *1990-17; 1989-12
EMPR ASS RPT *16946, 19266, *20492
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 1424A; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/03 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 115**

NATIONAL MINERAL INVENTORY: 093N10 Asb1

NAME(S): **GERMANSEN RIVER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 44 36 N
LONGITUDE: 124 40 05 W
ELEVATION: 828 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located on the Germansen River approximately 10 kilometres from its mouth and 1 kilometre east of the Germansen Landing road.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6178774
EASTING: 395284

COMMODITIES: Asbestos Nickel

MINERALS
SIGNIFICANT: Chrysotile Asbestos
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal Industrial Min.
TYPE: M06 Ultramafic-hosted asbestos

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	
Pennsylvan.-Permian			Manson Lakes Ultramafites

LITHOLOGY: Serpentinite
Ultramafic
Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Slide Mountain
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Manson Upland
RELATIONSHIP: Syn-mineralization Post-mineralization
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Nickel	0.2500	Per cent

COMMENTS: Two samples, within 250 metres, from ultramafics (serpentinite).
REFERENCE: Open File 1989-12, samples FFE88-10-9-1 and DME88-8-2-1.

CAPSULE GEOLOGY

The Germansen River occurrence is located on Germansen River approximately 10 kilometres from its mouth.

This occurrence is hosted within a fault-bounded slice of the Pennsylvanian-Permian Manson Lakes Ultramafites. The ultramafics are altered and are predominantly serpentinite. This fault-bounded ultramafic package is found within the northwest striking, right-lateral Manson fault zone of probable Late Cretaceous to Tertiary age. To the immediate southwest, across a fault boundary, lies sediments of the Middle to Upper Triassic Slate Creek Formation (Takla Group). To the north of this ultramafic package, lies fault-bounded rocks of North American affinity; the Mississippian to Permian Cooper Ridge Group and the Upper(?) Devonian to Mississippian Big Creek Group.

This occurrence was originally described in Geological Survey of Canada Paper 45-9 as a low-grade chrysotile asbestos showing. The chrysotile occurs as thin discontinuous veinlets running through the serpentinite. Two grab samples near this location yielded 0.25 per cent nickel (Open File 1989-12, samples FFE88-10-9-1 and DME88-2-1).

BIBLIOGRAPHY

EMPR ASS RPT 1938, 12130, 12362
EMPR AR 1924-111; 1927-158; 1936-C3,39; 1938-C7

BIBLIOGRAPHY

EMPR OF *1989-12; 1995-25
EMPR FIELDWORK 1988, pp. 209-220
EMPR BULL *91
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P *41-5, pp. 8,15; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/08/28 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 116**

NATIONAL MINERAL INVENTORY: 093N10 Ni1

NAME(S): **AH HOO CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 43 28 N
LONGITUDE: 124 38 09 W
ELEVATION: 851 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Near confluence of Ah Hoo Creek and Germansen River.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6176624
EASTING: 397257

COMMODITIES: Nickel

MINERALS
SIGNIFICANT: Pyrrhotite Pentlandite
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Magmatic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian			Manson Lakes Ultramafites

LITHOLOGY: Ultramafic
Serpentinite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Slide Mountain

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1988

COMMODITY	GRADE	
Nickel	0.1900	Per cent

COMMENTS: A grab sample of serpentinite, sample DME88-2-1-1.
REFERENCE: Open File 1989-12.

CAPSULE GEOLOGY

The Ah Hoo Creek occurrence is located near the confluence of Ah Hoo Creek and the Germansen River.

This occurrence is hosted within the Permian to Pennsylvanian Manson Lakes Ultramafites. Mineralization consists of disseminated pyrrhotite and occurs in serpentinized ultramafic bodies within and near the Manson fault zone. A serpentinite sample assayed 0.19 per cent nickel (Open File 1989-12). Pentlandite and trace amounts of gold have been reported in this general area.

BIBLIOGRAPHY

EMPR OF *1989-12
EMPR FIELDWORK 1988, pp. 209-220
EMPR AR 1936-C6
EMPR ASS RPT 12130, 12362
EMPR BULL *91
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/27 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 117**

NATIONAL MINERAL INVENTORY: 093N9 Pb1

NAME(S): **LOST CREEK LEAD**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 39 51 N
LONGITUDE: 124 27 32 W
ELEVATION: 1070 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The occurrence is located approximately between Lost and Skeleton creeks by the description of pre-1938 adit (Minister of Mines Annual Reports 1928, page 181 and 1938, page C10).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6169668
EASTING: 408228

COMMODITIES: Lead

MINERALS
SIGNIFICANT: Galena Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	

LITHOLOGY: Altered Limestone
Altered Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

CAPSULE GEOLOGY

The Lost Creek Lead occurrence is located approximately between Lost and Skeleton creeks, just south of the Manson River. It is located on an old description of a pre-1938 adit. The only references of this occurrence is from two Minister of Mines Annual Reports (1938 and 1928). It is described as a number of lenticular quartz veins, 15 to 75 centimetres in width, occurring within hydrothermally altered bands of grey to black fissile limestones and argillites of the Middle to Upper Triassic Slate Creek Formation (Takla Group). These galena and pyrite-bearing veins strike northwest and dip steeply. It is found less than a kilometre to the east of the AJM occurrence (093N 136) and may be the same one. Where located, this occurrence is within the right-lateral, northwest-striking Manson fault zone.

BIBLIOGRAPHY

EMPR AR *1928-181, *1938-C10
EMPR BULL *91
EMPR OF 1988-12
EMPR FIELDWORK 1987, pp. 169-180
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24
DATE REVISED: 1992/08/27
CODED BY: GSB
REVISED BY: DMM
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 118**

NATIONAL MINERAL INVENTORY: 093N9 Mo1

NAME(S): **BLACKJACK EAST**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 34 46 N
LONGITUDE: 124 28 34 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Blackjack East occurrence is centred on the trenches located between the Manson River and Boulder Creek, approximately 8.5 kilometres north of Mount Gillis. The access is by a cat trail that follows the Manson River and connects to the Takla Landing road (Assessment Report 1161).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6160263
EASTING: 406945

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite
ASSOCIATED: Quartz Pyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L05 Porphyry Mo (Low F- type)
SHAPE: Irregular

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Plughat Mountain	
Cretaceous			Germansen Batholith

ISOTOPIC AGE: 106 +/- 4 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granodiorite
Hornfels
Quartz Monzonite
Aplite

HOSTROCK COMMENTS: The bulk of the mineralization is in the Germansen batholith with minor amounts within the Takla Group.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

CAPSULE GEOLOGY

The Blackjack Central trenches are found near the headwaters of the Manson River, 8 kilometres northeast of Mount Gillis. The access is by cat trail up Manson River which connects with a road to Takla Landing at Slate Creek (Assessment Report 1161).

Molybdenite is found in veinlets as disseminated in massive quartz veins within granodiorite, quartz monzonite and possibly, aplite of the Cretaceous Germansen batholith. This showing is located at the contact of an outlier of hornfelsed Upper Triassic Plughat Mountain Formation rocks (Takla Group). Lesser molybdenite-bearing quartz veins are found within these hornfelsed rocks. Associated with some of the molybdenite showings are pyrite, pyrrhotite and chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT 1161, 2185, 2689, 13752
EMPR AR 1965, pp. 106-108
EMPR BULL 70; *91
EMPR FIELDWORK *1987, pp. 169-180; 1991, pp. 119-126
EMPR OF 1988-12
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G

BIBLIOGRAPHY

GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24
DATE REVISED: 1992/07/29

CODED BY: GSB
REVISED BY: FF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 119**

NATIONAL MINERAL INVENTORY: 093N9 Mo2

NAME(S): **BLACKJACK CENTRAL**, BLACKJACK SOUTH

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 33 48 N
LONGITUDE: 124 28 30 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Blackjack Central trenches are found near the headwaters of the Manson River, 5 kilometres northeast of Mount Gillis. The access is by cat trail up Manson River which connects with a road to Takla Landing at Slate Creek (Assessment Report 1161).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6158469
EASTING: 406977

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite Pyrite
ASSOCIATED: Quartz Calcite
ALTERATION TYPE: Biotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L05 Porphyry Mo (Low F- type)
SHAPE: Irregular
MODIFIER: Sheared

HOST ROCK
DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Plughat Mountain	
Cretaceous			Germansen Batholith

ISOTOPIC AGE: 106 +/- 4 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Biotite Hornblende Hornfels

HOSTROCK COMMENTS: The date was obtained from sample GM87-12-4 which is located approximately 5 kilometres to the southeast of the occurrence.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels
COMMENTS: Outlier or roof pendant of Takla Group sediments within the batholith.

CAPSULE GEOLOGY

The Blackjack Central showing is located on the trenched area approximately 5 kilometres northeast of Mount Gillis, near the headwaters of the Manson River. This showing is one of several found along the headwaters of the Manson River.

Three molybdenite-bearing quartz veins are found within a biotite and hornblende(?) hornfels. This hornfels is part of an outlier of the Upper Triassic Plughat Mountain Formation (Takla Group) found within the Cretaceous Germansen batholith. These hornfels have a northwest-trending fabric and are cut by several shear zones. To the south of the main showing is a 15-centimetre wide sheared quartz-calcite vein which is brecciated and contains molybdenite on fracture surfaces. Pyrite is also associated with the molybdenite.

BIBLIOGRAPHY

EMPR AR 1965, pp. 106-108
EMPR ASS RPT *1161
EMPR BULL 70; *91
EMPR FIELDWORK *1987, pp. 169-180; 1991, pp. 119-126
EMPR OF 1988-12
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G

BIBLIOGRAPHY

GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24
DATE REVISED: 1992/07/29

CODED BY: GSB
REVISED BY: FF

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 120**
NATIONAL MINERAL INVENTORY: 093N10 Mo1

NAME(S): **BLACKJACK WEST**, WESTERN SHOWING, W

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10E 093N09W
BC MAP:
LATITUDE: 55 34 01 N
LONGITUDE: 124 30 07 W
ELEVATION: 1195 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Blackjack West showing is located on the west bank of a western tributary of the Manson River, approximately 10 to 12 metres above creek level (Assessment Report 2185).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6158907
EASTING: 405286

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L05 Porphyry Mo (Low F- type)
SHAPE: Tabular
MODIFIER: Fractured
DIMENSION: STRIKE/DIP: 130/60E TREND/PLUNGE:
COMMENTS: The strike and dip is the orientation of the intrusive contact, the cleavage and the foliation in the plutonic rocks.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Unnamed/Unknown Formation	
Cretaceous-Tertiary			Germansen Batholith

ISOTOPIC AGE: 106 +/- 4 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Granitic Rock
Hornfelsed Slaty Rock
Granite
Hornfels

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels

CAPSULE GEOLOGY

The Blackjack West occurrence is located on the west bank of a western tributary of the Manson River, approximately 10 to 12 metres above the creek level (Assessment Report 2185). This occurrence has similar regional geology to that of the Jordi occurrence (093N 133).

This showing occurs at the contact between granitic rocks of the Cretaceous Germansen batholith and hornfelsed slaty rocks of the Middle Triassic to Lower Jurassic Takla Group. The plutonic rocks are foliated with the foliation being parallel to the contact as well as the cleavage of the hornfelsed slaty rocks. The strike is 130 degrees and dips 60 degrees to the northeast.

Molybdenite with or without quartz occurs in joints at this contact. The molybdenite seems to be present over a width of about 0.63 metre (Assessment Report 2185).

BIBLIOGRAPHY

EMPR AR 1965, pp. 106-107
EMPR GEM 1970-182
EMPR ASS RPT *2185, 2689
EMPR BULL 70; 91
EMPR FIELDWORK 1987, pp. 169-180; 1988, pp. 209-220; 1991, pp. 119-126
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G

BIBLIOGRAPHY

GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24
DATE REVISED: 1992/07/31

CODED BY: GSB
REVISED BY: DMM

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 121**

NATIONAL MINERAL INVENTORY:

NAME(S): **GILLIS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07E
BC MAP:
LATITUDE: 55 25 30 N
LONGITUDE: 124 34 54 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized outcrop near the centre of the Gillis 1-4 claim group (Assessment Report 19844, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6143224
EASTING: 399900

COMMODITIES: Copper Nickel

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Pentlandite Chalcopyrite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation Serpentin'zn
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Magmatic
TYPE: M02 Tholeiitic intrusion-hosted Ni-Cu

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Germansen Batholith

LITHOLOGY: Pyroxenite
Gabbro
Granite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The Gillis occurrence is underlain by the middle to Late Cretaceous Germansen batholith which is composed of coarse-grained granite (Fieldwork 1991, page 113). About 4 kilometres to the southwest, the batholith is in contact with sedimentary and volcanic rocks of the Upper Triassic Inzana Lake Formation, Takla Group.

Weakly serpentinized bodies of pyroxenite and gabbro within the batholith are reported to contain from 1 to 5 per cent disseminated pyrite, pyrrhotite, pentlandite and chalcopyrite (Assessment Report 19844). Malachite also occurs.

BIBLIOGRAPHY

EMPR ASS RPT *19844
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118, 119-126
EMPR OF 1991-3; 1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842
Placer Dome File

DATE CODED: 1993/02/25 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1993/02/25 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 122**

NATIONAL MINERAL INVENTORY:

NAME(S): **GUN**, BID, MAR, PIT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02W 093N07W
BC MAP:
LATITUDE: 55 14 31 N
LONGITUDE: 124 48 37 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The given location coordinates are for the centre of the Gun, Bid, Mar and Pit claims (Assessment Report 3460). The location of reported mineralization on the claim group is not known.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6123209
EASTING: 384904

COMMODITIES: Copper

MINERALS

SIGNIFICANT:	Malachite			
ALTERATION:	Silica	Chlorite	Malachite	
ALTERATION TYPE:	Silicific'n	Chloritic	Oxidation	
MINERALIZATION AGE:				

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Granodiorite
Syenite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The Gun property was worked in 1971; soil magnetometer and IP surveys were conducted (Assessment Report 3460). Early Jurassic granodiorite and syenite of the Late Triassic to Early Cretaceous Hogem Intrusive Complex is slightly silicified and chloritized locally. Malachite staining occurs in one location.

BIBLIOGRAPHY

EMPR GEM *1971-198
EMPR ASS RPT *3460
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; 1992, pp. 87-107
EMPR OF 1991-3; 1992-4; 1993-3
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/10 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 123**

NATIONAL MINERAL INVENTORY:

NAME(S): **SNOWSHOE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01E
BC MAP:
LATITUDE: 55 08 42 N
LONGITUDE: 124 06 00 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The area of diamond-drill hole activity, about 5 kilometres due south of Mount Milligan (Assessment Report 21078).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6111479
EASTING: 429890

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite Molybdenite
COMMENTS: Trace chalcopyrite and molybdenite.
ASSOCIATED: Magnetite
ALTERATION: Carbonate Sericite Chlorite Epidote Biotite Malachite
ALTERATION TYPE: Carbonate Sericitic Propylitic Potassic Oxidation
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Latite
Latite Tuff
Latite Pyroclastic
Monzodiorite
Calcareous Argillite
Carbonaceous Argillite
Monzodiorite Dike
Monzodiorite Sill
Syeno Monzonite Dike
Syeno Monzonite Sill

HOSTROCK COMMENTS: The monzonitic dikes and sills are coeval equivalent intrusion of the Takla Group.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Nechako Lowland

CAPSULE GEOLOGY

The Snowshoe occurrence area is underlain mainly by a moderately east-dipping series of calcareous and carbonaceous argillites, latitic fragmentals, and calcareous latitic tuffs of the Upper Triassic Witch Lake Formation of the Middle Triassic to Lower Jurassic Takla Group. The strata has been intruded by minor intrusions consisting of medium-grained subporphyritic monzodiorite to medium-grained hornblende plagioclase porphyritic syenomonzonite dikes and sills. In this region, these intrusions are considered to be coeval equivalents of the Takla Group and are therefore constrained by the same Middle Triassic to Early Jurassic age.

Results of a diamond drilling program in 1990 indicate variable amounts of predominantly pyrite mineralization, some pyrrhotite locally, and traces of chalcopyrite, molybdenite, malachite and magnetite. Alteration minerals include carbonate, sericite, chlorite, epidote and biotite (potassic).

BIBLIOGRAPHY

EMPR ASS RPT 19921, *21078
EMPR FIELDWORK 1990, pp. 89-110
EMPR OF 1991-3; 1992-3
GSC P 41-5; 42-2; 45-9

BIBLIOGRAPHY

GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1993/02/08 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093N 124**

NATIONAL MINERAL INVENTORY: 093N11 Pb1

NAME(S): **PINCHI FAULT**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 34 56 N
LONGITUDE: 125 24 44 W
ELEVATION: 1250 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location as shown on Geological Survey of Canada Map 907A, about 37 kilometres east-northeast of Takla Landing.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6162225
EASTING: 347952

COMMODITIES: Lead Silver

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

LITHOLOGY: Limestone
Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Pinchi Fault occurrence, as referred to in the National Mineral Inventory listings, is situated just north of the Lustdust occurrence (093N 009), approximately 37 kilometres east-northeast of Takla Landing. It is shown as a lead-silver occurrence on Geological Survey of Canada Map 907A, but descriptions of this mineralization have yet to be located.

The area is underlain by a north-northwest striking, steeply west-dipping sequence of interbedded sediments assigned to the Carboniferous to Jurassic Cache Creek Complex. Immediately south of the occurrence, mottled grey, massive, crystalline limestone predominates and is the most probable host to the lead-silver mineralization. These rocks have been disrupted along the Pinchi fault zone, a major regional structure that strikes northwesterly through the Omineca district and, in this area, parallels Silver Creek.

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR OF 2000-33
GSC MAP 844A; *907A; 971A; 1424A
GSC MEM 252
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/29 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 125**

NATIONAL MINERAL INVENTORY:

NAME(S): **WEST KWANIKA CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 33 26 N
LONGITUDE: 125 25 16 W
ELEVATION: 1250 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location from Geological Survey of Canada Map 971A.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6159463
EASTING: 347295

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

LITHOLOGY: Limestone
Phyllite
Argillite
Chert
Schist

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic and underlie the West Kwanika Creek area.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

This gold-silver occurrence is shown on Geological Survey of Canada Maps 907A and 971A. The West Kwanika Creek occurrence area is underlain by sediments assigned to the Carboniferous to Jurassic Cache Creek Complex and consists of interbedded limestone, phyllite, argillite, chert and schist.

Although no descriptions of this occurrence are available, it is possible that it may be related to the silver-lead-zinc (with or without gold) mineralization developed in fault-controlled, quartz-carbonate veins at the Lustdust occurrence (093N 009) to the north.

BIBLIOGRAPHY

EMPR OF 2000-33
GSC MAP 844A; *907A; *971A; 1424A
GSC MEM 252
GSC P 42-7; 45-6; 74-1A; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/30 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 126**

NATIONAL MINERAL INVENTORY:

NAME(S): **MYRINDA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12W
BC MAP:
LATITUDE: 55 44 40 N
LONGITUDE: 125 46 24 W
ELEVATION: 948 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for a nephrite jade outcrop on the north side of the Fall River forestry access road, about 31 kilometres east-northeast of Takla Landing (Assessment Report 15273, Index Map #4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6181121
EASTING: 325919

COMMODITIES: Jade/Nephrite Gemstones

MINERALS
SIGNIFICANT: Nephrite
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform
CLASSIFICATION: Replacement Metamorphic Industrial Min.
TYPE: Q01 Jade

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinite
Andesitic Tuff
Andesitic Flow
Schist
Phyllite
Cherty Argillite
Limestone
Andesite
Ultramafic

HOSTROCK COMMENTS: Nephrite is described as occurring where underlying serpentinite is in contact with country rocks (likely Cache Creek Complex members).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Myrinda occurrence is situated on Fall River, midway between Akus and Kelly lakes, approximately 31 kilometres north-northeast of Takla Landing.

The Fall River area is underlain by intercalated volcanic and sedimentary members of the Carboniferous to Jurassic Cache Creek Complex. In the area of the showing, these members include andesitic flows and tuff, schist, phyllite, cherty argillite, and minor limestone and generally strike north to northwest with steep dips. Locally serpentinized ultramafic rocks formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites, intrude the Cache Creek Complex rocks to the west (Geological Survey of Canada Paper 74-1, Part A, page 32).

The showing is exposed on the north side of the Fall River forestry access road and consists of a 24-metre long lens of nephrite jade occurring where underlying serpentinite is in contact with "country rock" (likely Cache Creek Complex members). Diamond drilling undertaken in three, 1-metre holes determined that the jade was of very low quality, being badly fractured, a blue-grey colour and of limited thickness (Assessment Report 15273, page 3). Additional occurrences of jade were located in the area which were thought to hold better potential.

BIBLIOGRAPHY

EMPR ASS RPT *15273
EMPR EXPL 1986-C375
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1992/09/24 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/11 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 127**

NATIONAL MINERAL INVENTORY:

NAME(S): **JO 49**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12E
BC MAP:
LATITUDE: 55 36 48 N
LONGITUDE: 125 44 49 W
ELEVATION: 1785 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample RE-0038, about 20 kilometres northeast of Takla Landing (Assessment Report 12548, Figure 6).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6166470
EASTING: 326997

COMMODITIES: Gold Silver

MINERALS

SIGNIFICANT: Sulphide
ASSOCIATED: Quartz Pyrite Pyrrhotite Magnetite
ALTERATION: Quartz Ankerite Mariposite Talc Chrysotile Actinolite Tremolite
ALTERATION TYPE: Quartz-Carb. Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown
COMMENTS: The style of the mineralization at the main showing is poorly described.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Andesite Flow
Cherty Phyllite
Felsite
Aplite
Serpentinite
Andesite

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek
Plutonic Rocks RELATIONSHIP:
METAMORPHIC TYPE: Regional
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1983
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	17.0000	Grams per tonne
Gold	4.0000	Grams per tonne

COMMENTS: Grab sample (RE-0038) of sulphides hosted by an andesite flow.
REFERENCE: Assessment Report 12548, page 7.

CAPSULE GEOLOGY

The Jo 49 occurrence is situated near the headwaters of Humphrey Creek, approximately 20 kilometres northeast of Takla Landing. The showing was located in 1983 during a regional exploration program carried out in the Vital Range.

The upper Humphrey Creek area is underlain by locally cherty phyllite and andesitic flows assigned to the Carboniferous to Jurassic Cache Creek Complex. These rocks strike predominantly north and dip to the east. Bedding and foliation are parallel to subparallel and both large and small-scale folds are widespread. Evidence suggests that the rocks have undergone greenschist facies metamorphism.

In contact with the Cache Creek Complex rocks immediately west

CAPSULE GEOLOGY

of the showing is serpentinite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites. This dark green to black-coloured unit is massive, sheared and hosts talc and chrysotile veinlets together with coarsely crystalline actinolite and tremolite. Local quartz-carbonate alteration of the serpentinite has resulted in tabular zones of quartz-ankerite-mariposite mineralization hosting variable amounts of pyrite, pyrrhotite and magnetite.

Locally, small, often lenticular masses of grey, rusty weathering felsitic and white to pink aplitic intrusions have been emplaced into the Cache Creek Complex members. In many cases, these intrusions were seen only as subcrop and as angular float trains.

The Jo 49 showing is described only as comprising sulphides(?) hosted within an andesite flow. One grab sample (RE-0038) from this showing assayed 4.0 grams per tonne gold and 17.0 grams per tonne silver (Assessment Report 12548, page 7). Attempts to reproduce this result proved unsuccessful (Assessment Report 14554). Another sample (RE-0184) taken of quartz stringers hosted by a felsite intrusion 150 metres south of sample RE-038 analysed 2.5 grams per tonne gold (Assessment Report 12548).

BIBLIOGRAPHY

EMPR ASS RPT *12548, 14554
EMPR EXPL 1983-464; 1985-C337
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1992/09/24 CODED BY: DMN FIELD CHECK: Y
DATE REVISED: 1993/03/11 REVISED BY: DMN FIELD CHECK: Y

MINFILE NUMBER: **093N 128**

NATIONAL MINERAL INVENTORY:

NAME(S): **WASI RIDGE**, WILLY, BLONDIE, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14E
BC MAP:
LATITUDE: 55 52 15 N
LONGITUDE: 125 14 11 W
ELEVATION: 1755 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample 74921, about 35 kilometres west-northwest of Germansen Landing (Assessment Report 21428, Figure 7a).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6193965
EASTING: 360070

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite
COMMENTS: Chalcopyrite is described as minor.
ALTERATION: Epidote Calcite Quartz
ALTERATION TYPE: Epidote
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Shear
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimension is length of the mineralized outcrop.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

LITHOLOGY: Cherty Tuff
Monzonite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0878	Per cent

COMMENTS: Sample of cherty tuff hosting less than 1 per cent pyrrhotite and minor pyrite.
REFERENCE: Assessment Report 21428, page 22, Appendix 2.

CAPSULE GEOLOGY

The Wasi Ridge occurrence is situated at the south end of the ridge separating Wasi and Discovery creeks, approximately 35 kilometres west-northwest of Germansen Landing. The area was evaluated in 1991 by Golden Rule Resources.

The ridge is underlain by a thick succession of volcaniclastic/ pyroclastic rocks assigned to the Upper Triassic Willy George sequence of the Takla Group which have been intruded by various phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. To the west, these mesozonal plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

At the occurrence, disseminated and fracture controlled sulphide mineralization, averaging less than 1 per cent by volume, is hosted by very fine grained, siliceous, cherty, bedded tuff at and near the contact with monzonitic intrusions. Pyrrhotite is the dominant sulphide, followed by pyrite and minor chalcopyrite. Epidote alteration with attendant calcite and rarer quartz veining is common

CAPSULE GEOLOGY

throughout these rocks.
The best assay, 0.0878 per cent copper, came from a grab sample of cherty tuff carrying disseminated pyrrhotite with minor pyrite exposed for 50 metres along the ridge (Assessment Report 21428, page 22).
Several other small copper showings occur along Wasi Ridge at sample localities 74920 and 74922, however, they have lower copper values associated with them. These copper showings and many of the others (shown in maps of Assessment Report 21428) are related to the Takla Group-Hogem Intrusive Complex contact.

BIBLIOGRAPHY

EMPR ASS RPT *21428
EMPR OF 1993-5
EMPR FIELDWORK 1992, pp. 87-107
EMPR GEM 1971-203-210
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9
GSC MEM 252, pp. 98-103
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1992/10/29 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/02/26 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 129**

NATIONAL MINERAL INVENTORY:

NAME(S): **X11**, X10

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N03W
BC MAP:
LATITUDE: 55 14 19 N
LONGITUDE: 125 30 02 W
ELEVATION: 1750 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for occurrence X11, 0.5 kilometre north of Chrome Peak, 40 kilometres southeast of Takla Landing (Fieldwork 82-1, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6124195
EASTING: 341011

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive Disseminated Stratabound
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite
DIMENSION: 1 x 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The largest nodule is 100 by 130 centimetres in area and consists of a massive chromite core surrounded by a disseminated chromite rim.

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinized Harzburgite
Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The X11 occurrence is situated at the south end of the Mitchell Range, approximately 40 kilometres southeast of Takla Landing. It comprises occurrences X10 and X11 as outlined by Whittaker (Fieldwork 1982-1, Table 1) which are two of numerous small chromite occurrences located in the range (see 093N 033, 34, 35, 36, 37, 38, 39, 40).

The occurrences comprise small disseminated, aggregate (greater than 75 per cent) and massive chromite nodules and layers which are hosted by allochthonous, serpentinized harzburgite, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions, and now termed Mississippian to Triassic Oceanic Ultramafites. The intrusion is bound by north-northeast and east-trending lineaments and is both surrounded by and hosts xenoliths of sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex. For additional regional geology details, please refer to the Simpson, Bob and Irish occurrences (093N 033, 34, 35).

This occurrence is described as four aggregate chromite nodules, one massive chromite nodule and one massive chromite nodule with a disseminated chromite rim, all hosted by serpentinized harzburgite. The following table details information concerning each (Fieldwork 1982-1, Table 1):

Occurrence	Form	Texture	Trend	Dimensions
X10	nodule	massive	073	10x3 cms
X10	nodule	aggregate	-	10x2 cms
(cont)	nodule	aggregate	-	5x2 cms
	nodule	aggregate	-	4x1 cms
	nodule	aggregate	-	12x12 cms
X11	nodule	massive/ disseminated	-	130x100 cms

Accessory chromite is also widely disseminated throughout the

CAPSULE GEOLOGY

ultramafic rocks, varying up to two per cent by volume (Fieldwork 1982-1, page 240).

No economic evaluation of this occurrence is known to have taken place.

BIBLIOGRAPHY

EMPR FIELDWORK *1982-1, pp. 234-243
EMPR Unpublished Chromite Bulletin, Stevenson, J.S. (1941)
EMPR OF 2000-19
EMPR PF (*Whittaker, P. (1983): Unpublished Ph.D. Thesis; "Chromite in Alpine Type Peridotites", Carleton University, 339 pp. (refer to 093N General File))
GSC MAP 844A; 907A; 971A; 1008A; 1424A
GSC MEM 252, pp. 135,189
GSC OF 3071
GSC P 42-7; 45-6; *82-1A, pp. 239-245
Canadian Mineralogist Vol. 22, Pt. 1, Feb 1984

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/14 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 130**

NATIONAL MINERAL INVENTORY:

NAME(S): **JEA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 42 29 N
LONGITUDE: 124 35 55 W
ELEVATION: 875 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The occurrence is located on the Germansen River, 500 metres west of the big bend (from west flowing to north flowing), approximately 8 kilometres northwest of Manson Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6174746
EASTING: 399553

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Tetrahedrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic Pennsylvan.-Permian	Cooper Ridge	Undefined Formation	Manson Lakes Ultramafites

LITHOLOGY: Altered Ultramafic
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Slide Mountain
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

CAPSULE GEOLOGY

The JEA occurrence is located near the big bend of the Germansen River, approximately 8 kilometres northwest of the settlement of Manson Creek.

This occurrence is only described in the Geological Survey of Canada Paper 41-5 as a quartz vein with tetrahedrite which assayed fair gold and silver values. This showing is located in argillites and altered ultramafics of the Mississippian to Permian Cooper Ridge Group and the Pennsylvanian to Permian Manson Lakes Ultramafites. These rocks have been dissected by the right-lateral, northwest-striking Manson fault zone of probable Cretaceous to Tertiary age.

There are no other tetrahedrite-bearing veins known in the general area and this occurrence may be an early reference to the Motherlode and Flagstaff showing (093N 024) which contains tetrahedrite and is in the immediate area.

BIBLIOGRAPHY

EMPR OF 1989-12
EMPR FIELDWORK 1988, pp. 209-220
EMPR BULL *91
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P *41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24
DATE REVISED: 1992/08/27
CODED BY: GSB
REVISED BY: FF
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 131**

NATIONAL MINERAL INVENTORY:

NAME(S): **WEBB**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01W
BC MAP:
LATITUDE: 55 06 48 N
LONGITUDE: 124 20 03 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Area of mineralized drillholes, about 6 kilometres south-southeast of the eastern end of Chuchi Lake (Assessment Report 21495, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6108216
EASTING: 414899

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ALTERATION: Chlorite Epidote K-Feldspar
ALTERATION TYPE: Propylitic Potassic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L04 Porphyry Cu ± Mo ± Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Andesitic Fragmental Tuff
Andesitic Crystal Tuff
Sediment/Sedimentary
Quartz Monzonite
Feldspar Porphyry Dike

HOSTROCK COMMENTS: The monzonite intrusions are probably coeval with the Takla Group.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: DRILLHOLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1991

COMMODITY	GRADE	
Copper	0.1300	Per cent

COMMENTS: From a 15-metre drill interval.
REFERENCE: Assessment Report 21495.

CAPSULE GEOLOGY

The area of the Webb occurrence is underlain by dark green sediments interlayered with light to dark green andesite and andesitic fragmental and crystal tuffs of the Middle Triassic to Lower Jurassic Takla Group, possibly the Lower Jurassic Chuchi Lake Formation. This package is crosscut by quartz monzonite and feldspar porphyry dikes. A quartz monzonite stock, thought to be coeval with the Takla volcanics intrudes the strata to the west. The area is covered, for the most part, by a thick blanket of overburden.

Several diamond-drill holes were completed in 1990. Within the drilled area, chlorite and epidote alteration is prevalent and minor secondary potassium feldspar was noted locally. Mineralization consists of pyrite, pyrrhotite and minor chalcopyrite as disseminations and fracture fillings. One drillhole intersection yielded 0.13 per cent copper over 15 metres (from 164 to 179 metres drill depth); a 3-metre section of this 15-metre interval yielded 0.34 per cent copper (Assessment Report 21495).

BIBLIOGRAPHY

EMPR ASS RPT 20228, *21495
EMPR FIELDWORK 1990, pp. 89-110
EMPR OF 1991-3; 1992-3
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1993/02/02 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1993/03/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 132**

NATIONAL MINERAL INVENTORY:

NAME(S): **SEM**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 40 57 N
LONGITUDE: 124 23 14 W
ELEVATION: 1025 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The SEM occurrence is located 2.5 kilometres upstream from the mouth of Granite Creek, at the main fork in Granite Creek and is found along a trail.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6171616
EASTING: 412777

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Mesothermal

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic	Ingenika	Stelkuz	

LITHOLOGY: Quartzite

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

CAPSULE GEOLOGY

The SEM occurrence is located 2.5 kilometres upstream from the mouth of Granite Creek, at the main fork in Granite Creek and is found along a trail.

Very little is known about this showing save its mention in Geological Survey of Canada Papers 41-5 and 42-2. It was originally described as disseminated pyrite in quartzite with low gold and silver assays. These quartzites are part of the Proterozoic Stelkuz Formation of the Ingenika Group and are at upper greenschist grade of metamorphism.

BIBLIOGRAPHY

EMPR BULL *91
EMPR OF 1988-12
EMPR FIELDWORK 1987, pp. 169-180
GSC MEM 252, p. 181
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P *41-5; *42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/31 REVISED BY: FF FIELD CHECK: N

MINFILE NUMBER: **093N 133**

NATIONAL MINERAL INVENTORY:

NAME(S): **JORDI**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 31 09 N
LONGITUDE: 124 24 15 W
ELEVATION: 1625 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located 2 kilometres northeast of Mount Gillis (Assessment Report 9860).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6153462
EASTING: 411344

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
ASSOCIATED: Feldspar Quartz Muscovite Apatite Sphene
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L05 Porphyry Mo (Low F- type)
SHAPE: Irregular

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Slate Creek	
Cretaceous			Germansen Batholith

ISOTOPIC AGE: 106 +/- 4 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Biotite Monzonite
Granite
Hornfelsed Argillite
Diorite
Granodiorite
Feldspar Porphyry Dike

HOSTROCK COMMENTS: The date was obtained from sample GM87-12-4 which is located approximately 2 kilometres to the west of the occurrence.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Hornfels
COMMENTS: Contact of Germansen batholith with a raft of hornfelsed argillite.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1981
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Molybdenum	0.2680	Per cent

REFERENCE: Assessment Report 9860.

CAPSULE GEOLOGY

The Jordi occurrence is located approximately 2 kilometres northeast of Mount Gillis, on a steep, north-facing slope (Assessment Report 9860).

Regionally, this occurrence is hosted within the Germansen batholith, a middle-Late Cretaceous multiphase granitic intrusion. Small rafts of hornfelsed Middle-Upper Triassic Slate Creek Formation argillites, belonging to the Middle Triassic to Lower Jurassic Takla Group, are common in the area.

Molybdenite is found in a feldspar-quartz-muscovite vein hosted by biotite monzonite of the Germansen batholith. This vein occurs near the contact between the intrusions and the basal argillites of the Slate Creek Formation. It occurs just below a large raft of hornfelsed argillite which is highly oxidized. Other phases of the

CAPSULE GEOLOGY

batholith include diorite and granodiorite. Cutting both the batholith and country rocks are dikes of light coloured feldspar porphyry up to 20 metres wide.

The mineralized veins vary in size from 5 centimetres to 3 metres wide and contain feldspar, quartz, muscovite, apatite and sphene. A sample in 1981 analysed 0.268 per cent molybdenum and a trace of zinc (Assessment Report 9860).

BIBLIOGRAPHY

EMPR ASS RPT 8117, *9860
EMPR EXPL 1981-138
EMPR BULL 70; *91
EMPR FIELDWORK *1987, pp. 169-180; 1991, pp. 119-126
EMPR OF 1988-12
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/28 REVISED BY: FF FIELD CHECK: N

MINFILE NUMBER: **093N 134**

NATIONAL MINERAL INVENTORY:

NAME(S): **GAM**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 40 19 N
LONGITUDE: 124 23 49 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located on Granite Creek approximately 1 kilometre upstream from its mouth and several hundred metres north from the Manson Creek road.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170453
EASTING: 412142

COMMODITIES: Gold Silver

MINERALS
SIGNIFICANT: Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Mesothermal
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic	Ingenika	Stelkuz	

LITHOLOGY: Unknown

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

CAPSULE GEOLOGY

The GAM occurrence is located on Granite Creek approximately 1 kilometre upstream from its mouth and several hundred metres north from the Manson Creek road.

This occurrence is only made reference to in Geological Survey of Canada Open Papers 41-5 and 42-2, where it is described as a quartz vein containing pyrite with low gold and silver values. Very little else is known about it. It is situated in the upper parts of the Proterozoic Ingenika Group (Stelkuz Formation) and is found in close proximity to the Manson fault zone, a Cretaceous to Tertiary right-lateral, northwest-striking fault.

BIBLIOGRAPHY

EMPR BULL *91
EMPR OF 1988-12
EMPR FIELDWORK 1987, pp. 169-180
GSC MEM 252, p. 181
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; *42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/31 REVISED BY: FF FIELD CHECK: N

MINFILE NUMBER: **093N 135**

NATIONAL MINERAL INVENTORY:

NAME(S): **NRS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 40 19 N
LONGITUDE: 124 29 41 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located just west of the settlement of Manson Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170582
EASTING: 405993

COMMODITIES: Chromium

MINERALS
SIGNIFICANT: Chromite
ASSOCIATED: Serpentinite
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Disseminated
CLASSIFICATION: Magmatic Industrial Min.
TYPE: M03 Podiform chromite

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian			Manson Lakes Ultramafites

LITHOLOGY: Serpentinized Ultramafic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Slide Mountain
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

CAPSULE GEOLOGY

The NRS chromite occurrence is located just to the west of the settlement of Manson Creek.

It was first noted by Lang (1941) as a serpentinized zone containing chromite. It is found within ultramafic rocks of the Pennsylvanian-Permian Manson Lakes Ultramafites. These rocks lie within the Manson fault zone, a right-lateral fault of Cretaceous to Tertiary age.

BIBLIOGRAPHY

EMPR BULL 91
EMPR FIELDWORK 1987, pp. 169-180
EMPR OF 1988-12
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G
GSC P *41-5; *42-2; 45-9; 75-33

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/08/28 REVISED BY: FF FIELD CHECK: N

MINFILE NUMBER: **093N 136**

NATIONAL MINERAL INVENTORY:

NAME(S): **AJM**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 39 30 N
LONGITUDE: 124 28 06 W
ELEVATION: 975 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The occurrence is located approximately 2.5 kilometres southeast of Manson Creek, approximately 1.5 kilometres upstream from the mouth of Lost Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6169032
EASTING: 407621

COMMODITIES: Lead Gold Silver

MINERALS
SIGNIFICANT: Galena Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Mesothermal

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	

LITHOLOGY: Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Manson Upland
RELATIONSHIP:
GRADE: Greenschist

CAPSULE GEOLOGY

The AJM occurrence is located along Lost Creek, approximately 1.5 kilometres upstream from its mouth.

The only reference to this showing comes from Geological Survey of Canada Paper 41-5. It is described as quartz veins containing galena and pyrite with low gold and silver concentrations. No values are given. It is found less than a kilometre to the west of the Lost Creek Lead occurrence (093N 117) and may be the same one.

Where located, this occurrence is hosted by the Middle to Upper Triassic Slate Creek Formation argillites (Takla Group) which is within the right-lateral, northwest-striking Manson fault zone.

BIBLIOGRAPHY

EMPR BULL *91
EMPR OF 1988-12
EMPR FIELDWORK 1987, pp. 169-180
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P *41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24
DATE REVISED: 1992/08/27
CODED BY: GSB
REVISED BY: FF
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 137**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOLD 1**, STROH, SPANER

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 36 24 N
LONGITUDE: 124 23 06 W
ELEVATION: 1025 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located 1.5 kilometres west of the North end of lower Manson Lakes. The access is provided by an old gravel road which leaves the Manson creek road between the Manson Lakes.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6163174
EASTING: 412748

COMMODITIES: Lead, Silver, Molybdenum, Zinc, Copper

MINERALS

SIGNIFICANT: Galena, Sphalerite, Molybdenite, Chalcopyrite
COMMENTS: Galena is the most abundant.
ASSOCIATED: Quartz, Carbonate, Pyrite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic-Paleoz.	Boulder Creek	Unnamed/Unknown Formation	

LITHOLOGY: Schist
Mariposite Talc Ankerite Schist
Limestone

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Kootenay
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Near the Germansen batholith.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1982
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	152.0000	Grams per tonne
Copper	0.0100	Per cent
Lead	21.5000	Per cent
Zinc	5.8200	Per cent

COMMENTS: A sample of rubble near the showing (proximal float).
REFERENCE: Assessment Report 6941.

CAPSULE GEOLOGY

The Bold 1 occurrence is located 1.5 kilometres west of the North end of lower Manson Lakes. The access is provided by an old gravel road which leaves the Manson creek road between the Manson Lakes.

Regionally, this occurrence is hosted within schists and limestones of the Proterozoic to Paleozoic(?) Boulder Creek Group which is assigned to the pericratonic Kootenay Terrane. This enigmatic package of metamorphosed, fine-grained clastic rocks and impure carbonates is exposed within the northwest-striking right-lateral Manson fault zone, in fault contact with the Slide Mountain and Quesnel terranes. To the west, rocks belonging to the Quesnel Terrane are intruded by the Cretaceous Germansen batholith.

This occurrence consists of a series of quartz-carbonate veins mineralized with galena, chalcopyrite, sphalerite, molybdenite and pyrite. The veins cut the rocks belonging to the Boulder Creek Group which are in contact with altered ultramafic rocks (mariposite-talc-ankerite schists). They can be up to 1 metre thick, contain

CAPSULE GEOLOGY

significant pyrite and are associated with a pervasive silica alteration.

A sample of rubble near the showing assayed 152 grams per tonne silver, 0.01 per cent copper, 21.5 per cent lead and 5.82 per cent zinc (Assessment Report 6941).

BIBLIOGRAPHY

EMPR PF (Prospectus by J.H. Montgomery on Boulder Creek Prospect)
EMPR ASS RPT 1659, 3864, 4611, *6941, *10702
EMPR EXPL 1978-E228; 1982-320
EMPR FIELDWORK 1987, pp. 169-180
EMPR OF 1991-17
EMPR BULL *91
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1992/07/31	REVISED BY:	FF	FIELD CHECK:	Y

MINFILE NUMBER: **093N 138**

NATIONAL MINERAL INVENTORY: 093N Cu1

NAME(S): **D**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 09 30 N
LONGITUDE: 124 41 59 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The copper showings, just south of the D claims (1972) are located about 2 kilometres south of Chuchi Lake and 2 kilometres west of Jean Marie Creek (Assessment Report 3852).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6113729
EASTING: 391705

COMMODITIES: Copper Iron

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
COMMENTS: Trace chalcopyrite.
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Inzana Lake	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Andesite
Basalt
Gabbro
Pyroxenite
Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Nechako Lowland

CAPSULE GEOLOGY

The D showing occurs south of Chuchi Lake near its western end. This area is underlain by the southeastern end of the Late Triassic to Early Cretaceous Hogem Intrusive Complex, here consisting of an Early Jurassic monzonite phase. The monzonite is in contact with volcanic and sedimentary rocks of the Upper Triassic Inzana Lake Formation, Takla Group (Open File 1992-4).

Andesite-basalt plus coarser gabbro-pyroxenite comprise the rocks immediately south of the west-trending intrusive contact. No mineralization was observed in the monzonite but the rocks south of the contact are pyritic and contain traces of chalcopyrite (Assessment Report 3851, page 6).

An iron showing occurs about 2 kilometres to the east-northeast of these copper showings, just southwest of the mouth of Jean Marie Creek in Chuchi Lake (Geological Survey of Canada Preliminary Map 45-9, Paper 45-9). No other information is available on this iron showing.

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EMPR OF 1991-3; 1992-4
GSC MEM 252
GSC P 41-5; 42-2; *45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842

DATE CODED: 1993/03/02 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1993/03/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 139**

NATIONAL MINERAL INVENTORY:

NAME(S): **MID**, EAGLE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02W
BC MAP:
LATITUDE: 55 11 41 N
LONGITUDE: 124 52 50 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Mid showings, located about 2 kilometres south of Tchentlo Lake, 6 kilometres west of the east end of the lake (Assessment Report 21762, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6118074
EASTING: 380294

COMMODITIES: Copper, Gold, Silver

MINERALS
SIGNIFICANT: Pyrite, Chalcopyrite
ASSOCIATED: Magnetite
ALTERATION: Chlorite
ALTERATION TYPE: Propylitic, Chloritic
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Shear, Vein
CLASSIFICATION: Hydrothermal, Epigenetic, Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Diorite
Granodiorite
Gabbro
Monzonite
Augite Porphyry
Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
Plutonic Rocks

PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1989

COMMODITY	GRADE	
Silver	9.1000	Grams per tonne
Gold	1.6000	Grams per tonne
Copper	3.9000	Per cent

REFERENCE: Assessment Report 20245, sample 108335.

CAPSULE GEOLOGY

The Mid showing occurs south of Tchentlo Lake, about 6 kilometres west of its eastern end. This area is underlain by the southeastern end of the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which has been recently mapped, to the east and northeast, as consisting primarily of Early Jurassic monzonite and syenite phases; these intrude rocks of the Middle Triassic to Lower Jurassic Takla Group (Open File 1992-4). Noranda Exploration Limited, however, has mapped the intrusive rock in the Mid area as mainly diorite with lesser areas of granodiorite and gabbro. South of the intrusive contact the rocks have been identified as augite porphyries and volcanic tuffs, probably of the Upper Triassic Witch Lake Formation, Takla Group.

The intrusive rocks are moderately fractured with the principle shear zones striking northwest. The two dominant fracture orientations are: 1) 150 degrees strike with 65 degrees east dip, and 2) 050 degrees strike with 40 degrees west dip. The main copper mineralization is associated with the northwest-striking shear zones

CAPSULE GEOLOGY

with the three main showings (Vector (093N 092), Mid and Nighthawk (093N 091)) forming a roughly linear feature.

The Mid zone is located in an area of very strong propylitic alteration. The showing is interpreted to be a shear zone approximately 2 metres wide that contains 15 to 20 per cent pyrite and chalcopyrite in a strong chloritic alteration zone. In the vicinity, two massive magnetite veins that contain chalcopyrite also occur. A sample taken at the Mid showings yielded 3.9 per cent copper, 1.6 grams per tonne gold and 9.1 grams per tonne silver (Assessment Report 20245, analysis sheet - sample 108335). Refer also to Assessment Report 20406, Drawing 5 for additional details.

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EMPR ASS RPT 851, 1056, 1599, 3337, 3338, 19239, *20245, *20406, 21762, 21799
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118
EMPR OF 1991-3; 1992-4
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842
Placer Dome File

DATE CODED: 1993/03/04 CODED BY: GJP FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093N 140**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKOOK**, CL II, SOUTH

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 12 00 N
LONGITUDE: 124 31 42 W
ELEVATION: 940 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is for the CL II zone, located on the Skook claim group on the north shore of Chuchi Lake (Assessment Report 21820, Figure 6).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6118113
EASTING: 402726

COMMODITIES: Gold, Silver, Copper, Zinc, Lead

MINERALS

SIGNIFICANT: Pyrite, Sphalerite, Chalcopyrite, Galena, Bornite, Pyrrhotite
ASSOCIATED: Quartz
ALTERATION: Chlorite, K-Feldspar, Pyrite, Sericite, Epidote, Biotite, Calcite, Tourmaline
COMMENTS: Garnet is also present.
ALTERATION TYPE: Chloritic, Tourmalinz'n, Propylitic, Skarn, Potassic, Silicific'n
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein, Disseminated
CLASSIFICATION: Epithermal, Porphyry, Hydrothermal, Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: Metres
STRIKE/DIP: 090/90
TREND/PLUNGE:
COMMENTS: Rough strike of one-metre wide zone containing a mineralized quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	

ISOTOPIC AGE: Early Jurassic
DATING METHOD: Fossil
MATERIAL DATED: Ammonite

Lower Jurassic — Hogem Intrusive Complex

LITHOLOGY: Siliceous Tuff, Andesite, Hornfels, Porphyritic Monzonite

HOSTROCK COMMENTS: Informal formation is Chuchi Lake. Fossil age is Early Jurassic (Geological Fieldwork 1991, page 109).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Contact metamorphism due to proximity to Hogem Intrusive Complex.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	11.7000	Grams per tonne
Gold	0.0220	Grams per tonne
Copper	0.4900	Per cent
Zinc	0.5000	Per cent

COMMENTS: From a 1-metre chip sample at the South zone.
REFERENCE: Assessment Report 21820.

INVENTORY

ORE ZONE: VEIN REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	16.6000	Grams per tonne
Gold	13.4000	Grams per tonne
Zinc	2.3000	Per cent

COMMENTS: A grab sample from the CL II zone.
REFERENCE: Assessment Report 18073.

CAPSULE GEOLOGY

The Skook alteration system contains several small showings and occurs primarily within a Lower Jurassic (late Pliensbachian) sedimentary marker unit of the Chuchi Lake Formation near its contact with Early Jurassic intrusive rocks of the Hogem Intrusive Complex (Fieldwork 1991, page 115). The complex, the southeastern end of which outcrops on the north and south shores of Chuchi Lake, comprises at least three main phases ranging in age from Late Triassic to Early Cretaceous.

The CL II zone is the area of most intense alteration and highest density of crowded porphyry monzonite intrusions. It is exposed in an east-trending gully in a logging cut. The sediments are bleached and hornfelsed; alteration minerals include potassium feldspar, chlorite, pyrite, sericite, epidote, biotite, calcite and minor tourmaline (Assessment Report 18073). These rocks contain disseminated pyrite, pyrrhotite and minor chalcopyrite and bornite. White-weathering siliceous tuffs with limy nodules are baked and have developed weak skarn alteration minerals such as garnet and chlorite. A polymetallic quartz vein contains sphalerite, galena and chalcopyrite. The best assay results from grab samples from this locality are 13.4 grams per tonne gold, 16.6 grams per tonne silver and 2.3 per cent zinc (Assessment Report 18073).

The South zone lies 250 metres south-southwest of this vein and consists of a silicified zone in volcanics that contains quartz, calcite, pyrite and chalcopyrite. A 1-metre chip sample of a 20-centimetre wide quartz vein that cuts strongly silicified andesite yielded 0.49 per cent copper, 0.0045 per cent lead, 0.50 per cent zinc, 11.7 grams per tonne silver and 0.022 gram per tonne gold (Assessment Report 21820).

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EM EXPL 2002-13-28
EMPR ASS PRT *18073, 21108, *21820
EMPR FIELDWORK 1990, pp. 89-110; *1991, pp. 103-118
EMPR OF 1991-3; 1992-4
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842
GSC P 41-5; 42-2; 45-9

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/16 REVISED BY: GJP FIELD CHECK: Y

MINFILE NUMBER: **093N 141**

NATIONAL MINERAL INVENTORY: 093N1 Pb1

NAME(S): **WIT**, WAG, CHUCHI GROUP, SKOOK

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N01W
BC MAP:
LATITUDE: 55 12 52 N
LONGITUDE: 124 26 57 W
ELEVATION: 960 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located approximately 4 kilometres northwest of the outflow of the Nation River from Chuchi Lake (Assessment Report 21820, Figure 6; Open File 1991-3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6119613
EASTING: 407797

COMMODITIES: Zinc, Lead, Silver, Gold

MINERALS

SIGNIFICANT: Sphalerite, Galena, Argentite, Tetrahedrite, Pyrite
ASSOCIATED: Chalcedony, Quartz, Calcite, Barite, Albite, Celadonite
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein, Breccia, Disseminated
CLASSIFICATION: Epithermal, Hydrothermal, Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Plagioclase Porphyry Flow
Plagioclase Porphyry Agglomerate
Polymictic Breccia
Lahar
Syenite Dike
Monzonite
Syenite

HOSTROCK COMMENTS: Chuchi Lake Formation name is informal at present time.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Zeolite
COMMENTS: Zeolite to prehnite-pumpellyite grade metamorphism.

INVENTORY

ORE ZONE: WIT
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1965
QUANTITY: 20000 Tonnes

COMMODITY	GRADE	
Lead	4.7000	Per cent
Zinc	2.3000	Per cent

COMMENTS: Combined lead-zinc is 7 per cent. The ratio of zinc to lead is not known and is here arbitrarily split 3:1 based on drill assays.
REFERENCE: Assessment Report 9705.

CAPSULE GEOLOGY

The Wit prospect is located 1.4 kilometres north of the north shore of Chuchi Lake and is accessed by a forestry road that joins the Fort St. James-Germansen logging road, 5 kilometres north of the Nation River crossing.

The area north of Chuchi Lake is underlain by the Lower Jurassic Chuchi Lake Formation, a subaerial volcanic package belonging to the Middle Triassic to Lower Jurassic Takla Group. The formation is progressively underlain by submarine augite +/- plagioclase volcanic porphyry flows of the Upper Triassic Witch Lake Formation (Takla Group) and volcanically derived epiclastic sediments of the Upper

CAPSULE GEOLOGY

Triassic Inzana Lake Formation (Takla Group). The base of the sequence is the Upper Triassic Rainbow Creek Formation (Takla Group) consisting of fine-grained slates and sediments derived, in part, from a continental source. A few kilometres to the west, the southeast contact of the Late Triassic to Early Cretaceous Hogem Intrusive Complex outcrops, comprising mainly Early Jurassic monzonite and syenite.

The hostrocks of the mineralization are maroon and green plagioclase volcanic porphyry flows and agglomerates and matrix-supported polymictic breccias and lahars of the Chuchi Lake Formation. The volcanics are in places scoriaceous and amygdaloidal and have calcite, albite and celadonite vesicle infillings. Sulphides are also found disseminated in the hostrocks and in fracture fillings. A syenite dike, 9 metres thick, intrudes the volcanics.

The main showing is an irregular epithermal vein (5 metres wide by 20 metres vertical) of banded white and grey quartz and chalcedony that is exposed in and around a trench. Results of two drillholes in 1991 indicate that the vein system dips almost vertically and has a true width of 31 metres. The vein hosts small pods and disseminations of galena and sphalerite with possible argentite and tetrahedrite. The surface showing seems to be the top of a larger epithermal system. Barite lenses and stockworks as well as strongly oxidized and limonitic zones have also been documented.

Banded chalcedony and quartz with calcite, pyrite and trace galena occurs 150 metres east of the main vein outcrop.

One drill intersection from 1991 (Assessment Report 21820) yielded 2.5 per cent zinc and 0.9 per cent lead. Another 2-metre section analysed 0.5 per cent zinc, 0.15 per cent lead and 97 grams per tonne silver. Gold values from the 1991 program were low, mostly between 0.2 and 0.6 gram per tonne, except for one value of 1.3 grams per tonne over 2 metres.

Previous work on the property (Assessment Reports 9705, 18073 and Open File 1992-1) has delineated a calculated orebody of 20,000 tonnes grading 7 per cent combined lead-zinc (Assessment Report 9705).

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EMPR GEM 1969-108
EMPR ASS RPT 1119, 1660, *9705, 18073, 21355, *21820
EMPR FIELDWORK *1990, pp. 89-110; 1991, pp. 103-118
EMPR OF 1991-3; 1992-1; 1992-4
EMPR EXPL 1981-96
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A; 1594G
GSC MEM 252
GSC OF 2842
EMR MP CORPFILE (Vanmetals Exploration Ltd.)
EMR MIN BULL MR 223 B.C. 249

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/17 REVISED BY: GJP FIELD CHECK: Y

MINFILE NUMBER: **093N 142**

NATIONAL MINERAL INVENTORY: 093N11 Hg5

NAME(S): **HOUSTON NORTH**, LIL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 35 36 N
LONGITUDE: 125 24 39 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a mercury occurrence south of the confluence of Silver and Dream creeks, about 37 kilometres east-northeast of Takla Landing (Geology, Exploration and Mining in British Columbia 1970, Figure 19).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6163458
EASTING: 348083

COMMODITIES: Mercury

MINERALS
SIGNIFICANT: Cinnabar
ASSOCIATED: Calcite
ALTERATION: Dolomite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Breccia
CLASSIFICATION: Epigenetic Hydrothermal Replacement

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

LITHOLOGY: Limestone
Argillaceous Schist
Chloritic Schist

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Houston North occurrence is situated south of the confluence of Silver and Dream creeks and north of the Bralorne Takla mercury mine (093N 008), approximately 37 kilometres east-northeast of Takla Landing.

The area is underlain by a north-northwest striking, steeply west-dipping sequence of interbedded limestone and argillaceous and chloritic schist assigned to the Carboniferous to Jurassic Cache Creek Complex. These rocks occur within and west of the Pinchi fault zone, a major structural feature traversing the area from north to south. Grey, massive limestone is the only rock type observed in the area of the occurrence, and it is invariably brecciated and/or dolomitized.

Early reports (1944) describe cinnabar mineralization in a brecciated limestone outcrop 3 metres in diameter. Diamond drilling, however, determined that the deposit pinched out at a depth of 4.57 metres. In the early 1970s, cinnabar mineralization occurring as disseminated grains and blebs in secondary calcite vugs within brecciated limestone was exposed in a small creek in the general area. The extent of this mineralization is not known.

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR AR 1968-148
EMPR ASS RPT 1755
EMPR GEM 1969-105; 1970-182
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, p. 160
GSC P 42-7; *44-5, p. 10; 45-6; 74-1A; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/29 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 143**

NATIONAL MINERAL INVENTORY: 093N3 Hg2

NAME(S): **TAKATOOT LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N03E
BC MAP:
LATITUDE: 55 07 02 N
LONGITUDE: 125 07 40 W
ELEVATION: 910 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a mercury occurrence 800 metres east of Takatoot Lake, about 66 kilometres southeast of Takla Landing (Geological Survey of Canada Map 884A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6109903
EASTING: 364297

COMMODITIES: Mercury Copper

MINERALS
SIGNIFICANT: Cinnabar Chalcopyrite
ASSOCIATED: Carbonate
ALTERATION: Carbonate
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Undefined Formation	
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinite
Sediment/Sedimentary
Volcanic

HOSTROCK COMMENTS: The Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The Takatoot Lake occurrence is situated 800 metres east of Takatoot Lake, approximately 66 kilometres southeast Takla Landing.

The area is underlain by sediments assigned to the Carboniferous to Jurassic Cache Creek Complex in contact with volcanics of the Middle Triassic to Lower Jurassic Takla Group along a north-northwesterly trending section of the Pinchi fault zone. Locally, ultramafic masses, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites, have been emplaced within these rocks.

Early reports describe cinnabar mineralization hosted by carbonatized serpentine within the Pinchi fault zone.

An examination of the area in 1983 was unsuccessful in locating the cinnabar showing, although minor chalcopyrite was noted in outcrop (Assessment Report 11698, page 1).

BIBLIOGRAPHY

EMPR ASS RPT 11698
EMPR EXPL 1983-454
GSC OF 3071
GSC MEM *252, p. 171
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 42-11; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/08 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 144**

NATIONAL MINERAL INVENTORY:

NAME(S): **DAVE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 44 22 N
LONGITUDE: 124 36 14 W
ELEVATION: 1260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located approximately 7 kilometres southeast of Germansen Landing on a southwest-facing slope.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6178246
EASTING: 399302

COMMODITIES: Silver, Copper, Antimony

MINERALS
SIGNIFICANT: Tetrahedrite
ASSOCIATED: Quartz, Pyrite, Calcite
ALTERATION: Malachite, Azurite, Silica
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
DIMENSION:
STRIKE/DIP: 020/90
TREND/PLUNGE:
COMMENTS: Quartz veins.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Devonian-Mississipp.	Big Creek	Undefined Formation	
Jurassic			Wolf Ridge Gabbro

LITHOLOGY: Siliceous Gabbro
Argillite
Phyllite
Siltstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Slide Mountain
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	128.0000	Grams per tonne
Copper	0.7800	Per cent
Antimony	0.3200	Per cent

REFERENCE: Open File 1989-12, sample DME88-2-4-5.

CAPSULE GEOLOGY

The Dave occurrence is located approximately 7 kilometres southeast of Germansen Landing, on a southwest-facing slope of a small knoll west of Jackfish Creek.

This occurrence lies in close proximity to the Manson fault zone, just north of a northwest-striking splay separating silicified argillites, phyllites and siltstones of the Upper(?) Devonian to Mississippian Big Creek Group on the south from altered gabbros of the Jurassic or older Wolf Ridge Gabbro.

This occurrence consists of malachite and azurite stained, milky white quartz veins containing tetrahedrite and minor pyrite. The veins are hosted by silicified gabbros of the Wolf Ridge Gabbro intrusion. The veins predominantly strike 020 degrees and dip vertically. They range from 1 to 12 centimetres in width with the larger veins containing the mineralization. The mineralized veins are typically offset by small (0.5 centimetre) calcite stringers.

A grab sample from a mineralized quartz vein yielded 0.164 gram per tonne gold, 128.0 grams per tonne silver, 0.78 per cent copper, 0.064 per cent zinc, 0.048 per cent arsenic and 0.32 per cent

CAPSULE GEOLOGY

antimony (Open File 1989-12, Sample DME88-2-4-5).

BIBLIOGRAPHY

EMPR OF *1989-12
EMPR FIELDWORK 1988, pp. 209-220
EMPR BULL *91
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1988/11/25 CODED BY: DMM FIELD CHECK: Y
DATE REVISED: 1992/08/26 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 145**

NATIONAL MINERAL INVENTORY:

NAME(S): **DOG CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10W
BC MAP:
LATITUDE: 55 40 31 N
LONGITUDE: 124 57 01 W
ELEVATION: 1120 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located approximately 1 kilometre from the mouth of Dog Creek, south of the west end of Germansen Lake.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6171664
EASTING: 377356

COMMODITIES: Silver, Copper, Antimony, Zinc

MINERALS

SIGNIFICANT: Tetrahedrite, Chalcopyrite, Malachite
ASSOCIATED: Quartz, Limonite, Pyrite
ALTERATION: Silica, Limonite
ALTERATION TYPE: Silicific'n, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
SHAPE: Irregular
DIMENSION:
STRIKE/DIP: 080/90
TREND/PLUNGE:
COMMENTS: Limonitic shear.

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Plughat Mountain	
Cretaceous			Germansen Batholith

LITHOLOGY: Siliceous Calcareous Andesite
Limestone
Dolomitic Limestone
Porphyritic Hornblende Basaltic Andesite
Gossan

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
GRADE: Zeolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	450.0000	Grams per tonne
Copper	0.5300	Per cent
Antimony	0.2400	Per cent
Zinc	0.1100	Per cent

COMMENTS: Grab sample DME88-26-6-1 from a quartz vein.
REFERENCE: Open File 1989-12 (Sheet 2 of 2).

CAPSULE GEOLOGY

The Dog Creek occurrence is located approximately 1 kilometre from the mouth of Dog Creek, south of the west end of Germansen Lake. The location is centred on a mineralized quartz vein and includes a hand-trenched gossan zone found approximately 400 metres to the south, on the east bank of the creek.

Regionally, this occurrence lies within the Middle Triassic to Lower Jurassic Takla Group, a volcanic and sedimentary assemblage. To the east, across the Manson fault zone, Upper Paleozoic oceanic rocks of the Nina Creek Group dominate. To the south the Takla Group is intruded by the Cretaceous Germansen batholith.

Locally, the area is underlain by volcanics and sediments of the Upper Triassic Plughat Mountain Formation (Takla Group). Tinnecha Hill, to the southeast of the occurrence, is mainly porphyritic hornblende basaltic andesite. Volcanics directly surrounding the

CAPSULE GEOLOGY

occurrence are silicified andesites which are slightly calcareous and weakly metamorphosed by the Germansen batholith. Minor amounts of recrystallized dark grey to black limestone (in part dolomitic) are found just to the south of the trenched gossan zone.

This occurrence includes a 1.5-metre hand trench that follows a 1.3-metre wide zone of gossan (in part silicified) found approximately 400 metres to the south of the mineralized quartz vein. The gossan zone is a 1.3 metre wide, limonitic shear that is made up of malachite-stained quartz pods and oxidized fault gouge. It strikes 080 degrees and dips vertically. The quartz vein is parallel to the shear, is malachite stained and contains pyrite with trace amounts of chalcopyrite and tetrahedrite. It is less than 0.5 metre in width and a grab sample of this vein analysed 450 grams per tonne silver, 0.53 per cent copper, 0.11 per cent zinc, 0.098 per cent lead, 0.24 per cent antimony with trace amounts of gold (0.026 grams per tonne) (Open File 1989-12, sample DME88-26-6-1).

BIBLIOGRAPHY

EMPR OF 1989-12
EMPR FIELDWORK 1988, pp. 209-220; 1991, pp. 119-126
EMPR BULL *91
GSC MEM 252, p. 180
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1988/11/25 CODED BY: DMM FIELD CHECK: Y
DATE REVISED: 1992/08/26 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 146**

NATIONAL MINERAL INVENTORY: 093N3 Hg3

NAME(S): **TCHENTLO LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N03E 093N06E
BC MAP:
LATITUDE: 55 14 53 N
LONGITUDE: 125 11 35 W
ELEVATION: 875 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for a mercury occurrence east of the north end of Tchentlo Lake, about 55 kilometres southeast of Takla Landing (Geological Survey of Canada Map 844A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6124588
EASTING: 360592

COMMODITIES: Mercury

MINERALS
SIGNIFICANT: Cinnabar
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Triassic-Jurassic	Takla	Undefined Formation	

LITHOLOGY: Limestone
Volcanic

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek

PHYSIOGRAPHIC AREA: Nechako Lowland

CAPSULE GEOLOGY

The Tchentlo Lake occurrence is situated east of the north end of Tchentlo Lake, approximately 55 kilometres southeast of Takla Landing. The area was explored for its mercury potential during the Second World War.

The area is predominantly underlain by limestone assigned to the Carbonaceous to Jurassic Cache Creek Complex in contact with volcanics of the Middle Triassic to Lower Jurassic Takla Group along a north-northwesterly trending section of the Pinchi fault zone.

Early reports describe a few "specks" of cinnabar mineralization hosted by silicified limestone approximately 800 metres east of the lake.

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR OF 2000-19
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM *252, p. 171
GSC OF 3071
GSC P 42-7; 42-11; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/08 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 147**

NATIONAL MINERAL INVENTORY: 093N15 Cu3

NAME(S): **RLA**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N15W
BC MAP:
LATITUDE: 55 46 28 N
LONGITUDE: 124 50 17 W
ELEVATION: 1075 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Nine kilometres west-southwest of Germansen Landing, on the east branch of Evans Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6182506
EASTING: 384705

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	
Cretaceous			Germansen Batholith

LITHOLOGY: Argillite
Siltstone
Volcanic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Zeolite

CAPSULE GEOLOGY

The RLA occurrence is located approximately 9 kilometres west-southwest of Germansen Landing, on an east branch of Evans Creek (Bulletin-in preparation).

Regionally, this occurrence lies within the Middle Triassic-Lower Jurassic Takla Group rocks of the Quesnel Terrane. These rocks are intruded to the south by the Cretaceous Germansen batholith.

Little is known of this showing. Chalcopyrite and pyrite occur within argillites and siltstone of the Upper Triassic Slate Creek Formation (Takla Group) near a probable thrust fault placing lowermost Takla argillites atop Takla volcanics.

BIBLIOGRAPHY

EMPR BULL *91
EMPR FIELDWORK *1988, pp. 209-220; 1991, pp. 119-126
EMPR OF *1989-12
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 971A; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/08/25 REVISED BY: FF FIELD CHECK: N

MINFILE NUMBER: **093N 148**

NATIONAL MINERAL INVENTORY: 093N9 Pb3

NAME(S): **BLACKJACK MOUNTAIN**, BOULDER CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 37 44 N
LONGITUDE: 124 26 00 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The Blackjack Mountain occurrence is located 1 kilometre due west of Skeleton Mountain and approximately 6 kilometres southeast of Manson Creek. A small trail is found in the valley, 300 metres west of the occurrence.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6165709
EASTING: 409755

COMMODITIES: Lead

MINERALS

SIGNIFICANT: Galena
COMMENTS: The showing is only known as a lead occurrence and it is assumed that galena is the source.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Unknown
CLASSIFICATION: Unknown

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic-Paleoz.	Boulder Creek	Unnamed/Unknown Formation	

LITHOLOGY: Phyllite
Argillite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Kootenay
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist

CAPSULE GEOLOGY

The Blackjack Mountain occurrence is located 1 kilometre due west of Skeleton Mountain and approximately 6 kilometres southeast of Manson Creek. A small trail is found in the valley, 300 metres west of the occurrence.

Very little is known about this occurrence except its location and commodity. The showing is found within phyllites and argillites of the Proterozoic to Paleozoic(?) Boulder Creek Group and along the right-lateral Manson fault zone. This showing is found 4 kilometres northwest (along strike) of lead-silver showings (093N 027, 28, 137) on Boulder Creek and is assumed to be genetically related.

BIBLIOGRAPHY

EMPR BULL *91
EMPR OF 1988-12
EMPR FIELDWORK 1987, pp. 169-180
GSC MEM 252, p. 181
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1985/07/24
DATE REVISED: 1992/07/31
CODED BY: GSB
REVISED BY: FF
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 149**

NATIONAL MINERAL INVENTORY: 093N7 Gyp1

NAME(S): **MOOSMOOS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07E
BC MAP:
LATITUDE: 55 21 40 N
LONGITUDE: 124 34 51 W
ELEVATION: 1333 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: A gypsum occurrence, plotted near the east side of a north-flowing tributary of Moosmoos River (Geological Survey of Canada Map 876A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6136114
EASTING: 399791

COMMODITIES: Gypsum

MINERALS
SIGNIFICANT: Gypsum
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Industrial Min.
TYPE: F02 Bedded gypsum

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Inzana Lake	

LITHOLOGY: Volcanic Sandstone
Siltstone
Cherty Tuff
Mudstone
Argillite
Lapilli Tuff
Augite Porphyry Tuff

HOSTROCK COMMENTS: The listed rock types are general types only. The actual hostrocks are not reported.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

A gypsum occurrence, shown on Geological Survey of Canada Map 876A, is plotted next to a north-flowing tributary of Moosmoos River. The area has recently been mapped as rocks of the Upper Triassic Inzana Lake Formation, Takla Group (Open File 1992-4). The formation consists of volcanic sandstone, siltstone, cherty tuff, mudstone, argillite, lapilli tuff and augite porphyry tuff. No further information is available on the Moosmoos showing.

BIBLIOGRAPHY

EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118
EMPR OF 1991-3; 1992-4
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP *876A; 907A; 971A; 1424A
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/02 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 150**

NATIONAL MINERAL INVENTORY:

NAME(S): **DISCOVERY CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14E
BC MAP:
LATITUDE: 55 50 37 N
LONGITUDE: 125 07 14 W
ELEVATION: 880 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a coal occurrence on Discovery Creek, 6 kilometres north of its confluence with the Omineca River.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6190708
EASTING: 367223

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Eocene

DEPOSIT
CHARACTER: Podiform Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
COMMENTS: The best seam is described as 76 centimetres thick.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous-Tertiary	Undefined Group	Uslika	

LITHOLOGY: Coal
Conglomerate
Arkosic Sandstone
Siltstone
Mudstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Discovery Creek coal occurrence is located on the east bank of Discovery Creek approximately 6 kilometres north of its confluence with the Omineca River. The bituminous grade coal bed is 76 centimetres thick and contains minor sandy layers. It is interbedded with grey and black conglomerate, arkosic sandstone, siltstone and mudstone. The stratigraphy strikes 135 degrees and dips 80 degrees to the southwest.

A palynology sample from the coal yielded an Eocene age (Geological Survey of Canada Fossil Report AS-93-01). This age suggests that the coal is part of the Cretaceous-Tertiary Uslika Formation and may be correlatable to the Sustut Group.

The coal occurrence is preserved in a fault-bounded graben structure which is part of the Discovery Creek fault zone (Fieldwork 1993). The fault zone broadly separates rocks of the Quesnel and Harper Ranch terranes and also involves slivers of Lower Jurassic sediments and Cretaceous-Tertiary sediments and volcanics. The structure links with the Manson fault zone to the south through a zone of compression.

Another 10-centimetre thick coal seam is documented 150 metres upstream. The economic potential of the occurrence is thought to be low.

BIBLIOGRAPHY

EMPR OF 1993-5
EMPR FIELDWORK 1992, pp. 87-107
GSC Fossil Report AS-93-01
GSC MEM *252, pp. 55,135,196
GSC MAP 844A; *907A; 971A; 1424A
GSC P 42-7; 45-6

DATE CODED: 1985/07/24
DATE REVISED: 1993/02/17

CODED BY: GSB
REVISED BY: KBE

FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **093N 151**

NATIONAL MINERAL INVENTORY: 093N14 Cu14

NAME(S): **TED**, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 55 30 N
LONGITUDE: 125 24 33 W
ELEVATION: 1750 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a copper showing on the crest of an east-west ridge, south of a small lake, about 61 kilometres northeast of Takla Landing (Assessment Report 4151, Figure 2).

MINING DIVISION: Omineca

UTM ZONE: 10 (NAD 83)

NORTHING: 6200354
EASTING: 349471

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Bornite Chalcopyrite
ASSOCIATED: K-Feldspar Pyrite Magnetite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation Potassic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex
Middle Jurassic			Duckling Creek Syenite Complex

LITHOLOGY: Monzonite
Diorite
Pyroxenite
Pegmatite
Syenite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is a Middle Jurassic phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Ted occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 2 kilometres east of the Lorraine occurrence (093N 002) and 61 kilometres northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Mapping carried out in the area in the early 1970s identified several intrusive phases of the Hogem complex including diorite, monzonite, pyroxenite, pegmatite and syenite. The latter rock unit likely belongs to the Middle Jurassic Duckling Creek Syenite Complex. The more mafic phases also host accessory magnetite.

Several copper showings hosted within monzonite have been located on a ridge east of the Lorraine occurrence. Mineralization consists predominantly of malachite with bornite and chalcopyrite in shear zones containing potassium feldspar filling. This mineralization, together with abundant pyrite also occurs in float below these showings. Minor amounts of copper mineralization have also been found in association with a pegmatite.

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR ASS RPT *4151, 4152, 21992
EMPR AR 1949-A98-A102
EMPR GEM 1971-203-210; 1972-456
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9
GSC MEM 252, pp. 98-103
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/21 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 152**

NATIONAL MINERAL INVENTORY:

NAME(S): **SMOKE COPPER**, LIN 24

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 35 24 N
LONGITUDE: 125 18 17 W
ELEVATION: 1225 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is pyrite/chalcopyrite mineralization exposed in an easterly flowing creek within the Lin 24 claim, about 43 kilometres east-northeast of Takla Landing (Assessment Report 3997, Plate I).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6162860
EASTING: 354756

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzonite
Granite
Alaskite
Gabbro

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel Plutonic Rocks

CAPSULE GEOLOGY

The Smoke Copper occurrence is situated at the southern end of the Swannell Ranges (Omineca Mountains), approximately 43 kilometres east-northeast of Takla Landing. It was discovered in 1974 by Anglo-Bomarc Mines Ltd., who thought it held little economic potential.

The area is underlain by monzonite, granite, alaskite and gabbroic phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

Chalcopyrite and molybdenite mineralization reportedly occur in outcrop in an east-flowing creek draining the north slopes of a prominent knoll, east-northeast of the Bralorne Takla mercury mine (093N 008) (Assessment Report 5373, page 3). Earlier reports depict chalcopyrite and pyrite mineralization hosted by monzonite exposed in the same creek, approximately 1.5 kilometres east of a small Z-shaped lake (Assessment Report 3997, Plate I).

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR OF 1993-4
EMPR FIELDWORK 1992, pp. 87-107
EMPR ASS RPT *3997, *5372, 5495
EMPR GEM 1972-452; 1974-280; 1977-E202
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMR MP CORPFILE (Anglo Bomarc Mines Ltd.)
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6

BIBLIOGRAPHY

Saunders, C.R. (1974): Report on the Smoke Property for Dolmage Campbell and Associates Ltd.
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1992/11/03 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1992/11/03 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 153**

NATIONAL MINERAL INVENTORY: 093N10 Cu1

NAME(S): **GERM**, GUS, GKO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10W
BC MAP:
LATITUDE: 55 42 59 N
LONGITUDE: 124 52 26 W
ELEVATION: 1065 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6176106
EASTING: 382283

COMMENTS: The occurrence is located approximately 2.5 kilometres northwest from the campsite where Paquette Creek enters Germansen Lake. The occurrence lies approximately 15 kilometres southwest of Germansen Landing (Assessment Report 20923).

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Pyrite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Plughat Mountain	

LITHOLOGY: Altered Lapillistone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Silver	3.1000	Grams per tonne
Copper	0.0208	Per cent

REFERENCE: Assessment Report 20923.

CAPSULE GEOLOGY

The Germ occurrence is located approximately 2.5 kilometres northwest from the campsite where Paquette Creek enters Germansen Lake. The occurrence lies approximately 15 kilometres southwest of Germansen Landing.

This occurrence is hosted in the Upper Triassic Plughat Mountain Formation, part of the Middle Triassic to Lower Jurassic Takla Group. The Plughat Mountain Formation is a thick sequence of augite-bearing, mafic to intermediate(?), calcalkaline to alkaline pyroclastic rocks, massive flows and lesser epiclastic rocks. In this area, the Plughat Mountain Formation is the upper volcanic sequence of the Takla Group. The lower, sediment-dominated sequence of rocks are part of the Middle-Upper Slate Creek Formation (Takla Group). To the northeast, the Takla Group is in fault contact (the Manson fault zone) with the Pennsylvanian to Permian Nina Creek Group. To the south, the Takla Group has been intruded by the Cretaceous Germansen batholith, a multiphase granitic to granodiorite intrusion.

Mineralization consists of disseminated pyrite and chalcopyrite occurring within altered lapillistones of the Plughat Mountain Formation. The pyrite can make up to five per cent of the pale grey silicified lapillistone. A grab sample analysed 3.1 grams per tonne silver, 0.0208 per cent copper, 0.0220 per cent zinc and 0.0138 per cent lead (Assessment Report 20923).

Trace amounts of chalcopyrite are also found approximately 550

CAPSULE GEOLOGY

metres to the northeast of this showing. Pyrite also occurs with the chalcopyrite and these sulphides are found disseminated within altered volcanics.

BIBLIOGRAPHY

EMPR GEM 1972-451
EMPR ASS RPT *20923, 21803
EMPR OF 1989-12
EMPR FIELDWORK 1988, pp. 209-220
EMPR BULL *91
GSC MEM 251
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1992/09/27	REVISED BY:	DMM	FIELD CHECK:	N

MINFILE NUMBER: **093N 154**

NATIONAL MINERAL INVENTORY: 093N6 Cu4

NAME(S): **LO**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 25 30 N
LONGITUDE: 125 09 06 W
ELEVATION: 1370 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location is the approximate centre of the now lapsed Lo claims, near the headwaters of Halobia Creek, about 51 kilometres east-southeast of Takla Landing (Geology, Exploration and Mining in British Columbia 1972, page 448).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6144192
EASTING: 363831

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Syeno Diorite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Lo occurrence is situated in the Kwanika Range near the headwaters of Halobia Creek, approximately 51 kilometres east-southeast of Takla Landing. The area was the subject of a program of soil geochemistry undertaken by Noranda Exploration in 1972.

The Halobia Creek area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic to Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

The only reference to the Lo occurrence describes chalcopyrite mineralized fractures and disseminations in syenodiorite (Geology, Exploration and Mining in British Columbia 1972, page 448).

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

EMPR GEM *1972-448
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/09 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 155**

NATIONAL MINERAL INVENTORY: 093N14 Cu15

NAME(S): **GK**, COL, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 56 33 N
LONGITUDE: 125 26 06 W
ELEVATION: 1905 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a copper showing on the crest of a ridge in the northeast corner of the GK 17 claim, about 20 kilometres north of Old Hogem and 61 kilometres northeast of Takla Landing (Assessment Report 3995, page 8, Plate 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6202358
EASTING: 347926

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ASSOCIATED: Quartz
ALTERATION: K-Feldspar Malachite
ALTERATION TYPE: Potassic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Vein Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

ISOTOPIC AGE: 175 +/- 5 Ma
DATING METHOD: Potassium/Argon
MATERIAL DATED: Biotite

LITHOLOGY: Quartz Monzodiorite
Monzonite
Porphyritic Pegmatitic Syenite
Pyroxenite
Dike
Ultramafic Dike

HOSTROCK COMMENTS: Date by Garnett (Bulletin 70, Appendix I). Rocks of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The GK occurrence is situated in the Swannell Ranges (Omineca Mountains), approximately 20 kilometres north of Old Hogem and 61 kilometres northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Mapping carried out in the area in the early 1970s identified two major rock units: 1) granitoid rocks of the Hogem Intrusive Complex and 2) Duckling Creek Syenite Complex, a Middle Jurassic phase of the first unit. The most common granitoid rocks are quartz-bearing monzodiorite and monzonite, while the Duckling Creek rocks include porphyritic to pegmatitic syenite and holomafic pyroxenite. All of these rocks have reportedly been potassium feldspathized by fluids which preceded and accompanied the emplacement of the syenite complex (Assessment Report 3610, page 35).

A copper showing associated with dike emplacement has been located on the ridge immediately north of the Lorraine occurrence

CAPSULE GEOLOGY

(093N 002). The mineralization occurs over a width of 61 metres, but can be traced for only 53 metres across the ridge before becoming obscured by talus. Malachite and chalcopyrite are hosted, not only by the underlying intrusive rocks, but also within small quartz veins. The grade of this mineralization has been visually estimated at 0.3 per cent copper (Assessment Report 3995, page 8).

Small, glassy quartz veins are common throughout the map area, cutting all rock types. One unusually large vein, traced for over 41 metres along strike and averaging 60 centimetres wide, is exposed approximately 700 metres south-southwest of the ridge showing (Assessment Report 3995, Plate 1). This vein reportedly hosts malachite as well as a lens of massive chalcopyrite.

Other showings in the area include ultrabasic dikes hosting significant chalcopyrite and malachite mineralization over an area 36 by 15 metres further south on the same ridge, and fractures hosting up to 2.5 centimetres of bornite mineralization east of the Lorraine occurrence.

No recent information concerning this occurrence is available.

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GSC MEM 252, pp. 98-103
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Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/21 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 156**

NATIONAL MINERAL INVENTORY: 093N13 Gem1

NAME(S): **JADE AND OGDEN CREEKS**, ED, TT

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093N13W
BC MAP:
LATITUDE: 55 50 04 N
LONGITUDE: 125 48 42 W
ELEVATION: 1342 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is the confluence of Ogden and Jade creeks, where initial production from placer leases is reported to have occurred, about 40 kilometres north-northeast of Takla Landing.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6191230
EASTING: 323920

COMMODITIES: Jade/Nephrite Gemstones

MINERALS
SIGNIFICANT: Nephrite
ALTERATION: Nephrite Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated Massive
CLASSIFICATION: Placer Metamorphic Industrial Min.
TYPE: Q01 Jade
COMMENTS: No detailed descriptions of the bedrock source of nephrite jade are available.

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Recent			Glacial/Fluvial Gravels
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Glacial Fluvial Gravel
Serpentinite
Meta Sediment/Sedimentary
Granitic Rock

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The Jade and Ogden Creeks occurrence is situated 4 kilometres southwest of Mount Ogden, approximately 40 kilometres north-northeast of Takla Landing.

Nephrite jade was initially discovered on Mount Ogden in 1967 and by 1969, 15 placer leases had been staked near the confluence of Ogden Creek and a tributary known locally as Jade Creek.

The area is underlain by variably metamorphosed sedimentary rocks assigned to the Carboniferous to Jurassic Cache Creek Complex into which Late Triassic-Early Jurassic Topley intrusions and local sill-like serpentinite bodies, formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites, have been emplaced.

Initial production occurred in 1968 when Northern Jadex Co. Ltd. shipped approximately 51 tonnes of nephrite boulders to North Vancouver. The following year, Kuan-Yin Jade Industries Ltd. shipped an 18-tonne "jade" boulder for exhibition in the British Columbia pavilion at the Osaka Exposition.

In addition to the placer leases, Northern Jadex acquired the Ed group of mineral claims and reportedly mined 45 tonnes of jade from a serpentinite bedrock source in 1970.

This occurrence is one of numerous placer and in-situ jade discoveries made in the Mount Ogden area (see 093N 157, 165).

BIBLIOGRAPHY

EMPR CORPFILE (*Northern Jadex Co. Ltd., Kuan-Yin Jade

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Industries Ltd.)
EMPR GEM 1969-389; 1970-498
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/21 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 157**

NATIONAL MINERAL INVENTORY: 093N13 Gem2

NAME(S): **LEE**, CONTINENTAL JADE, JADE WEST, NEW WORLD JADE

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093N13W
BC MAP:
LATITUDE: 55 50 34 N
LONGITUDE: 125 49 51 W
ELEVATION: 1525 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is a jade occurrence near the common boundary of the Lee 2 and 3 claims, about 70 kilometres west-northwest of Germansen Landing (Assessment Report 5221).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6192206
EASTING: 322758

COMMODITIES: Jade/Nephrite Gemstones

MINERALS

SIGNIFICANT: Nephrite
ASSOCIATED: Talc Serpentine
ALTERATION: Serpentine Talc
ALTERATION TYPE: Serpentin'zn Rodingitiz'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Unconsolidated
CLASSIFICATION: Metamorphic Placer Industrial Min.
TYPE: Q01 Jade
DIMENSION: 45 x 3 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Jade zone.

HOST ROCK

DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinite
Talc Schist
Rodingite
Argillite
Chert
Limestone
Greenstone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek

CAPSULE GEOLOGY

The Lee occurrence is situated on the southwest slopes of Mount Ogden, approximately 70 kilometres west-northwest of Germansen Landing. Initial discoveries of "placer" jade boulders in the area were made between the years 1967 and 1969, but it was not until late 1969 that in-situ nephrite was discovered. It is one of many occurrences eventually located in the Ogden Mountain area (see 093N 156, 165).

The region is underlain by a northwest-trending, fault-bound belt of argillite, chert, limestone and greenstone of the Carboniferous to Jurassic Cache Creek Complex. Locally, these rocks have been intruded(?) by sill-like bodies of serpentinite formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites.

Nephrite jade occurs in a zone, exposed over a length of 45 metres, along the contact between serpentinite and other Cache Creek rocks. Part of the zone consists of talc schist and rodingite, which together with the jade, is up to 3 metres wide.

Jade was produced by Teegee Explorations and New World Jade Ltd. in the early 1970s, during the early stage of development of the deposit. Most of this production came from loose parts of the deposit and from blocks and boulders in the vicinity of outcrop. Production for 1971 is estimated at 90 to 140 tonnes (National Mineral Inventory card). Production in 1988 was 22,000 kilograms,

CAPSULE GEOLOGY

all of which was marketed in China (Mining in British Columbia 1988, page 87).

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GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P *72-53, p. 45,48; 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/21 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093N 158**

NATIONAL MINERAL INVENTORY: 093N15 Zn1

NAME(S): **CRIN**, CRY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N15W
BC MAP:
LATITUDE: 55 59 51 N
LONGITUDE: 124 48 47 W
ELEVATION: 1325 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is centred on a trenched area, located approximately 3 kilometres west of Razorback Mountain and approximately 24 kilometres north-northwest of Germansen Landing (Open File 1990-17).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6207285
EASTING: 386923

COMMODITIES: Lead, Zinc

MINERALS
SIGNIFICANT: Sphalerite, Galena
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive, Disseminated
CLASSIFICATION: Replacement, Hydrothermal
SHAPE: Irregular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Otter Lakes	Undefined Formation	
Devonian-Mississipp.	Big Creek	Undefined Formation	

LITHOLOGY: Dolomite
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Omineca Mountains
RELATIONSHIP: Syn-mineralization
GRADE: Greenschist

CAPSULE GEOLOGY

The Crin occurrence is centred on a trenched area, located approximately 3 kilometres west of Razorback Mountain and approximately 24 kilometres north-northwest of Germansen Landing (Open File 1990-17). This occurrence has similar regional geology to that of the Biddy occurrence (093N 114).

This occurrence is found in the upper part of the Middle Devonian Otter Lakes Group, near the contact with the overlying Upper Devonian-Lower Mississippian Big Creek Group shales.

Massive to disseminated sphalerite and galena occur in the Otter Lakes Group dolomites. The showings are relatively poorly exposed and poorly documented.

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EMPR EXPL 1989, pp. 193-196
EMPR FIELDWORK 1988, pp. 209-220; *1989, pp. 101-114
EMPR OF 1989-12; *1990-17
EMPR ASS RPT 4815, 5729
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G

DATE CODED: 1985/07/24
DATE REVISED: 1992/07/07
CODED BY: GSB
REVISED BY: FF
FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **093N 159**

NATIONAL MINERAL INVENTORY: 093N7 Cu4

NAME(S): **CHUCHI LAKE**, CHUCHI, KLAW, KLA, DINGLE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N07E
BC MAP:
LATITUDE: 55 15 47 N
LONGITUDE: 124 32 43 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located south of Klawdetelle Creek, approximately 6 kilometres north of Chuchi Lake and 90 kilometres north of Fort St. James (Assessment Report 20018).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6125153
EASTING: 401803

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite Chalcopyrite
ASSOCIATED: K-Feldspar Magnetite
ALTERATION: K-Feldspar Magnetite Biotite Epidote
ALTERATION TYPE: Potassic Propylitic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Stockwork Disseminated Shear
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Plagioclase Porphyry Monzonite
Sandstone
Siltstone
Tuff
Lapilli Tuff
Agglomerate
Hornfels

HOSTROCK COMMENTS: Informally named Chuchi Lake Formation of the Takla Group.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional Contact RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist Hornfels

INVENTORY

ORE ZONE: MAIN
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1991
QUANTITY: 50000000 Tonnes

COMMODITY	GRADE	
Gold	0.2100	Grams per tonne
Copper	0.2100	Per cent

COMMENTS: A rough estimate of the geological resource, grading between 0.21 and 0.40 per cent copper and 0.21 and 0.44 gram per tonne gold.
REFERENCE: Digger Resources Inc, News Release, October 17, 1991.

CAPSULE GEOLOGY

The Chuchi Lake property lies within the Quesnel Terrane which is represented in the area by Early Mesozoic Takla Group volcanic and sedimentary rocks of island-arc affinity and related intrusions. In the region, four haloes of pervasive alteration and related porphyry copper-gold systems are associated with syn-Takla intrusions. The most prominent is the Chuchi/Klaw halo.

The Chuchi Lake occurrence is located at the approximate centre of an extensive zone (6 square kilometres) of porphyry-style stockwork and disseminated mineralization. It includes both BP Resources Chuchi Lake property, the apparent centre of the porphyry system, and Rio Algom's Klaw property which occurs on the fringes of

CAPSULE GEOLOGY

the alteration halo approximately 1.25 kilometres to the north.

The system is bounded to the east by a north-trending fault, and to the north by the fault in Klawdetelle Creek. Within it, crowded plagioclase porphyry monzonite stocks intrude the sedimentary horizon in the Lower Jurassic Chuchi Lake Formation (informal name) of the Middle Triassic to Lower Jurassic Takla Group, and blossom out into sill swarms. The sedimentary unit is of Pliensbachian age (Fieldwork 1991). In many instances in drill core, hornfelsed sedimentary rocks show soft-sediment deformation, and are intimately intercalated with monzonite. The fine-grained, well-bedded sandstones, siltstones and tuffs grade downwards into massive coarse lapilli tuffs and agglomerates. In many cases, intrusive clasts form a large percentage of the fragmental material. Crowded plagioclase porphyry clasts with small blocky plagioclase crystals less than 2 millimetres across are common, and identical to the later porphyries that intrude the sediments. Clasts with pink secondary potassium feldspar, magnetite and epidote are also present.

In light of the geological evidence that sedimentation, intrusion and porphyry-style copper-gold mineralization were roughly coeval, the Early Jurassic (Pliensbachian) fossil ages of the sedimentary horizon would also date the Chuchi porphyry system (Fieldwork 1991).

Both the monzonite and the sediments at Chuchi Lake are extensively altered. Secondary potassium feldspar occurs in pink veinlets in the monzonite with magnetite, pyrite and chalcopyrite. The sedimentary rocks show a strong biotite hornfels overprint, with subsequent mottling by potassic and propylitic alteration. Hairline veinlets with bleached selvages and magnetite veinlets and disseminations are also characteristic of alteration.

Copper-gold mineralization is accompanied by pervasive potassic and propylitic alteration and abundant secondary magnetite. The best grades fall within a northeast-trending zone that crosses the monzonite stock. This system was drilled extensively by BP Resources in 1990-1991. The gold mineralization appears to be shear-zone hosted and is associated with pyrrhotite rather than pyrite or chalcopyrite (Faulkner, 1991).

A rough estimate of the geological resource at Chuchi Lake is 50 million tonnes with grades between 0.21 and 0.40 per cent copper and 0.21 and 0.44 gram per tonne gold (Digger Resources Inc., News Release, October 17, 1991).

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GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842
GCNL #206(Oct.26),#237(Dec.11), 1989; #141(Jul.23),#198(Oct.12), #219(Nov.13), 1990; #117(June 18),#148(Aug.1),#153(Aug.9), #181(Sept.19), 1991; #95(May 18), 1993
N MINER Feb.5, 1990; Apr.1, Sept.16, 1991
PR REL Digger Resources, October 17, 1991
WWW http://www.infomine.com/

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/25 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 160**

NATIONAL MINERAL INVENTORY:

NAME(S): **HAL 4**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 24 24 N
LONGITUDE: 125 10 47 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample H91R05, about 50 kilometres east-southeast of Takla Landing (Assessment Report 21734, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6142208
EASTING: 361992

COMMODITIES: Copper Silver

MINERALS
SIGNIFICANT: Chalcocite
ALTERATION: Epidote Chlorite Limonite Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 1 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Width is for copper mineralization at the eastern zone.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Granodiorite
Monzodiorite
Granite Dike
Aplite Dike
Gossan

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Silver	11.5000	Grams per tonne
Copper	1.6000	Per cent

COMMENTS: Sample of locally derived limonitic talus hosting chalcocite and malachite mineralization.
REFERENCE: Assessment Report 21734, Appendix II, sample H91R07.

CAPSULE GEOLOGY

The Hal 4 occurrence is situated in the Kwanika Range south of Halobia Creek, approximately 50 kilometres east-southeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic-Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

The Hal 4 occurrence is situated in an area underlain by light coloured, medium to fine-grained granodiorite in contact with darker coloured, medium to coarse-grained monzodiorite to the west. Local granite/aplite dikes have been observed in monzodiorite west of this contact. These rocks have been propylitized, with chlorite and locally pervasive epidote common.

Two areas of limonitic, weathered granodiorite(?) talus hosting

CAPSULE GEOLOGY

chalcocite in fractures with attendant malachite staining occur on the ridge south of Halobia Creek. The eastern gossan is 4 metres wide, with copper mineralization restricted to a 1-metre wide zone, while malachite staining at the western gossan occurs across a 5 to 6-metre width. Given its location on the ridge top, the talus is believed to have been derived locally.

Samples (H91R05 and 7) from the eastern and western gossans assayed 1.60 per cent copper and 11.5 grams per tonne silver and 1.04 per cent copper and 20.8 grams per tonne silver respectively (Assessment Report 21734, Appendix II).

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GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1992/11/05 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/15 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 161**

NATIONAL MINERAL INVENTORY:

NAME(S): **ERICKSON**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 29 23 N
LONGITUDE: 125 08 41 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is sample A4465, about 51 kilometres east of Takla Landing (Assessment Report 20338, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6151380
EASTING: 364493

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Magnetite
ASSOCIATED: Quartz Epidote
ALTERATION: Chlorite Limonite
ALTERATION TYPE: Chloritic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
COMMENTS: Vein is three centimetres wide.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Leucocratic Granodiorite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.2350	Per cent

COMMENTS: Sample (A4465) of a quartz-epidote vein hosting pyrite and magnetite.
REFERENCE: Assessment Report 20338, Appendix II.

CAPSULE GEOLOGY

The Erickson occurrence is situated in the Kwanika Range near the headwaters of Valleau Creek, approximately 51 kilometres east of Takla Landing. The area was assessed by Noranda Exploration in the early 1970s (see San, 093N 102) and by Placer Dome in 1990.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic-Lower Jurassic Takla Group immediately to the east. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

The only outcrops observed in the area of the Erickson occurrence comprise generally unaltered, medium to coarse-grained, leucocratic granodiorite. A 3-centimetre wide, limonitic, quartz-epidote vein was noted in one chloritized outcrop. This vein contains 2 per cent pyrite and 1 per cent magnetite blebs and assayed 0.235 per cent copper and 2.7 grams per tonne silver (Assessment Report 20338, Appendix II, sample A4465). Quartz-magnetite, quartz-epidote-potassium feldspar and quartz-pyrite-magnetite-chalcopyrite float also occurs in the area.

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GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1992/11/05 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/15 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 162**

NATIONAL MINERAL INVENTORY: 093N7 Cu3

NAME(S): **LSD**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07E 093N02E
BC MAP:
LATITUDE: 55 15 15 N
LONGITUDE: 124 35 12 W
ELEVATION: 1690 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located south of Klawdatelle Creek (Assessment Report 3862).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6124223
EASTING: 399150

COMMODITIES: Copper Lead Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite Galena Magnetite Molybdenite
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic			Hogem Intrusive Complex

LITHOLOGY: Medium Grained Equigranular Quartz Syenite
Coarse Grained Hornblende Monzonite
Pegmatite
Aplite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The LSD showing is underlain by two Early Jurassic phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex; coarse-grained hornblende monzonite and the later medium-grained equigranular quartz syenite (Chuchi syenite). Minor pegmatite and aplite phases occur.

Fractures in the intrusive rocks contain small occurrences of chalcopyrite and pyrite. Previous reports document minor galena, magnetite and molybdenite along weakly altered fractures.

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GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842
CIM Special Volume 15, Map B, Table 2

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/25 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 163**

NATIONAL MINERAL INVENTORY:

NAME(S): **MILLIGAN 6**, NATION RIVER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01E
BC MAP:
LATITUDE: 55 11 21 N
LONGITUDE: 124 06 44 W
ELEVATION: 1350 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of mineralized rock sample taken about 300 metres northwest of Mount Milligan peak (Assessment Report 20227, Figure 19).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6116406
EASTING: 429189

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Magnetite Chalcopyrite
COMMENTS: Trace chalcopyrite.
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Mount Milligan Intrus. Complex

LITHOLOGY: Plagioclase Porphyritic Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.1400	Per cent

REFERENCE: Assessment Report 20227, sample BB-17555.

CAPSULE GEOLOGY

The Milligan 6 showing occurs about 300 metres northwest of Mount Milligan peak where a rock sample yielded 0.14 per cent (1409 parts per million) copper (Assessment Report 20227). The area is underlain by the Mount Milligan Intrusive Complex which consists of at least two separate Early Jurassic intrusive phases. The sampled rock is described as a medium-grained, massive, equigranular, biotitic, plagioclase porphyritic monzonite. Mineralization consists of disseminated pyrite, magnetite and traces of chalcopyrite (Assessment Report 20227, Appendix A (II), page 14, sample BB-17555).

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GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842
Placer Dome File

DATE CODED: 1993/02/01
CODED BY: GJP
FIELD CHECK: N
DATE REVISED: / /
REVISED BY:
FIELD CHECK: N

MINFILE NUMBER: **093N 164**

NATIONAL MINERAL INVENTORY: 093N2 Cu10

NAME(S): **WITCH**, CHU, DP 14

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 08 58 N
LONGITUDE: 124 31 28 W
ELEVATION: 1050 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located in the central area of the Chuchi-Witch alteration halo, between Chuchi and Witch lakes (Open File 1991-3; 1992-4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6112482
EASTING: 402850

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ALTERATION: Epidote K-Feldspar Biotite Garnet Diopside
ALTERATION TYPE: Propylitic Potassic Skarn
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
SHAPE: Irregular
MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Augite Porphyry Flow
Augite Porphyry Crystal Tuff
Fragmental Augite Porphyry
Altered Volcanic
Limy Tuffaceous Sediment/Sedimentary
Plagioclase Porphyritic Monzonite
Monzonite Intrusive Breccia
Coarse Grained Equigranular Monzonite
Syenite
K-Feldspar Pegmatite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Nechako Lowland

CAPSULE GEOLOGY

The Witch occurrence locality encompasses a large (3 by 5 kilometres) irregular alteration system between Witch and Chuchi lakes. It is referred to as the Chuchi-Witch halo and is characterized by widespread biotite hornfelsing and patchy, but often strong potassic and propylitic alteration (Fieldwork 1991, pages 114,115). Pyrite and pyrrhotite are abundant and minor chalcopyrite occurs in several places. Epidote-garnet-diopside skarn exists in limy tuffaceous sediments.

Volcanic rocks of the Upper Triassic Witch Lake Formation (Takla Group), including augite porphyry flows and fragmentals, aphanitic volcanics and minor tuffs are intruded by coeval Takla Group intrusive equivalents consisting of crowded plagioclase porphyritic monzonite and monzonite intrusive breccias. These intrusive rocks are probably responsible for the porphyry-style alteration and mineralization. This region is also intruded by several Early Jurassic(?) phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex including coarse-grained equigranular monzonite, sericite-bearing potassium feldspar pegmatite and coarse-grained syenite.

The strongest area of mineralization in this system is the Moss showing (093N 084).

In 1995, with Explore B.C. Program support, Artina Resources Ltd. conducted a late season induced polarization survey and diamond drilled 301.5 metres in 3 holes on the Composite stock anomaly. This program was inconclusive and did not test the anomaly completely

CAPSULE GEOLOGY

(Explore B.C. Program 95/96 - M51).

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EMPR Explore B.C. Program 95/96 - M51
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1996/11/04 REVISED BY: VAP FIELD CHECK: Y

MINFILE NUMBER: **093N 165** NATIONAL MINERAL INVENTORY: 093N13 Gem3

NAME(S): **OGDEN MOUNTAIN**, WIRE-SAW, NEW JADE,
VOLCANIC RIDGE, CONTINENTAL JADE, JADE WEST,
FAR NORTH, RALF, LCF,
LF, VANCOUVER

STATUS: Past Producer Open Pit MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N13W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 50 45 N NORTHING: 6192581
LONGITUDE: 125 50 41 W EASTING: 321902
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the Volcanic Ridge showing, northeast of Squawkbird Lake on the southwest slopes of Mount Ogden, about 40 kilometres north-northeast of Takla Landing (Assessment Report 4523, Figure G2).

COMMODITIES: Jade/Nephrite Gemstones

MINERALS
SIGNIFICANT: Nephrite
ASSOCIATED: Garnet Diopside Sericite Chlorite
ALTERATION: Talc
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Massive
CLASSIFICATION: Placer Replacement Metamorphic Industrial Min.
TYPE: Q01 Jade

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites
Upper Jurassic			Topley Intrusions

LITHOLOGY: Serpentinite
Phyllite
Argillaceous Quartzite
Greenstone
Granodiorite Sill

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks Cache Creek
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

INVENTORY

ORE ZONE: VOLCANIC RIDGE REPORT ON: Y

CATEGORY: Indicated YEAR: 1987
QUANTITY: 363 Tonnes

COMMODITY	GRADE	
Jade/Nephrite	99.0000	Per cent

COMMENTS: Reserves are for jade of 'moderate quality' and are estimated.
REFERENCE: Assessment Report 16737.

ORE ZONE: OGDEN MOUNTAIN REPORT ON: Y

CATEGORY: Indicated YEAR: 1987
QUANTITY: 109 Tonnes

COMMODITY	GRADE	
Jade/Nephrite	99.0000	Per cent

COMMENTS: Estimated reserves comprise two boulders uncovered north of the camp.
REFERENCE: Assessment Report 16737.

CAPSULE GEOLOGY

The Ogden Mountain occurrences are situated on the southwest slopes of Mount Ogden, approximately 40 kilometres north-northeast of Takla Landing. Nephrite boulders were initially discovered in the

CAPSULE GEOLOGY

area in the late 1960s and efforts to locate their source(s) eventually resulted in the discovery of numerous in-situ nephrite showings (see 093N 156, 157).

Variably metamorphosed sedimentary and volcanic rocks of the Carboniferous to Jurassic Cache Creek Complex are intruded by sill-like serpentinite bodies formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites, and rocks of the Late Triassic-Early Jurassic Topley intrusions, 7 kilometres west of the Pinchi fault.

The nephrite occurrences in the Mount Ogden area occur within a belt of ultramafic rocks and serpentinite melange informally referred to as the Cache Creek Ultramafic unit.

The ultramafic unit is mainly serpentinite and serpentine-carbonate-talc schist with abundant "knocker" of green show, amphibolite and metasedimentary rocks.

The eastern margine of the ultramafic unit is an east-dipping thrust fault. The western rocks are clastic sedimentary unit of the Sitlika assemblage.

An elongate stock of coarse-grained 2 mica granite cuts through the ultramafic unit. The contact between the two is a contact metamorphic zone. Locally garnetite, marble and nephrite and nephrite schist form at the contact. Nephrite also occurs along the tectonic contacts.

Discontinuous nephrite (tremolitic amphibole) bands and lenses occur at the contact of serpentinite and metasedimentary rocks. Colluvial boulders of nephrite are also widely distributed on the property. Nephrite also occurs as a steeply dipping vein-like zone at the contact of serpentinite and a leucocratic phase of a granodiorite sill. Accessory garnet, diopside, sericite, chlorite, and calcsilicates are associated with the nephrite zones.

The original Wire-Saw zone, from which 272 tonnes of nephrite has been mined, occurs at a serpentinite/metasediment contact. A large lens of nephrite occurs approximately 5 metres below the original lens. This lens, estimated to contain 36 tonnes of nephrite, is for the most part strongly laminated or fractured and only 4.5 tonnes was marketable. A pit above this zone intersected low-grade nephrite boulders and a large lens striking northeast into a hill. Four hundred metres southeast along the strike of the serpentinite/metasediment contact, trenching has exposed five boulders of low-grade nephrite.

At the Volcanic Ridge zone, along a serpentinite/volcanic contact, a large lens of nephrite measuring 8 by 7 by 2.5 metres is estimated to contain approximately 363 tonnes of "moderate quality" material.

At the New Jade zone, a steeply dipping band of high quality nephrite, 25 centimetres wide, occurs at the contact of serpentinite and a leucocratic granodiorite sill-like intrusion. Indicated reserves are 374 tonnes, but only 10 per cent of this amount may eventually be recovered due to the narrowness and steep dip of the zones (Assessment Report 16737).

Numerous boulders of black nephrite have also been located in the area. North of the camp, two such boulders represent indicated reserves of 108 tonnes (Assessment Report 16737).

Total production of nephrite to 1992 from the Mount Ogden occurrences is estimated to be 1441 tonnes (Mining in British Columbia 1975-1980, 1981-1985, 1988; Kirk Makepeace (Jade West), personal communication, 1993 (production for 1989 to 1992)).

In 1992, Jade West Resources Ltd. conducted trenching and 500 metres of percussion drilling (Information Circular 1993-1).

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 2003/03/04 REVISED BY: MPS FIELD CHECK: N

MINFILE NUMBER: **093N 166**

NATIONAL MINERAL INVENTORY: 093N13 Cu17

NAME(S): **PIK**, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 56 39 N
LONGITUDE: 125 27 40 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is the approximate centre of the now lapsed Pik claim group, about 20 kilometres north of Old Hogem and 60 kilometres northeast of Takla Landing (Assessment Report 4522, Drawing No. 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6202601
EASTING: 346302

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Bornite
ALTERATION: K-Feldspar
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex
Middle Jurassic			Duckling Creek Syenite Complex

LITHOLOGY: Leucocratic Syenite
Monzodiorite
Pyroxenite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Pik occurrence is situated in the Swannell Ranges (Omineca Mountains), approximately 20 kilometres north of Old Hogem and 60 kilometres northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Reports from the early 1970s indicate that the area is underlain by three, silica-deficient intrusive rock units: 1) leucocratic syenite, 2) monzodiorite and 3) pyroxenite. The syenite is described as being pegmatitic and megaporphyritic and belonging to the Duckling Creek Syenite Complex, a Middle Jurassic phase of the Hogem Intrusive Complex. The oldest unit, the monzodiorite, is medium-grained, mesocratic and potash-enriched. Holomafic feldspathic pyroxenite, the least abundant rock type, occurs in small, irregularly-shaped pods in association with syenite. All of these rocks have undergone potassium feldspathization by fluids which preceded and accompanied the emplacement of the syenite complex.

Chalcopyrite and bornite were the only sulphides observed in outcrop, occurring as rare disseminated intergranular blebs within the monzodiorite and syenite units, generally in close proximity to pyroxenite pods (Assessment Report 4522, page 4).

No recent information concerning this occurrence is available.

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DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/21 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 167**

NATIONAL MINERAL INVENTORY: 093N6 Cu5

NAME(S): **HAL**, HALOBIA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 26 49 N
LONGITUDE: 125 10 12 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location is a coincident copper-molybdenum-zinc soil geochemical anomaly within the Hal 10 claim, about 50 kilometres east of Takla Landing (Assessment Report 3774, Drawing No. 1 and 2).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6146670
EASTING: 362747

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au
COMMENTS: Minor copper and molybdenum mineralization(?).

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Leucocratic Granite
Mafic Diorite
Quartz Monzonite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Hal occurrence is situated in the Kwanika Range near the headwaters of Halobia Creek, approximately 50 kilometres east of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic-Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The principle rock types underlying the headwater area of Halobia Creek are leucocratic coarse-grained granite and mafic-rich diorite.

Although initial reports state that no significant sulphide mineralization had been observed in outcrop, minor copper and molybdenum mineralization(?) was apparently uncovered along a contact between diorite and quartz monzonite, as a result of work carried out in 1972 (Geology, Exploration and Mining in British Columbia 1972, page 448). This work included geological mapping, induced polarization and magnetic geophysics and surface diamond drilling.

No recent information concerning this occurrence is available.

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GSC P 42-7; 45-6
GSC OF 3071

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CIM Vol. 67, No. 749, pp. 101-106

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DATE REVISED: 1992/11/06 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 168**

NATIONAL MINERAL INVENTORY: 093N11 Cu6

NAME(S): **LIN 18**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 34 45 N
LONGITUDE: 125 17 49 W
ELEVATION: 1175 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is chalcopyrite/molybdenite mineralization exposed within the now lapsed Lin 18 claim, about 43 kilometres east-northeast of Takla Landing (Assessment Report 3997, Plate I).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6161638
EASTING: 355206

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Molybdenite
COMMENTS: Molybdenum mineralization not specified.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Monzonite
Granite
Alaskite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel Plutonic Rocks

CAPSULE GEOLOGY

The Lin 18 occurrence is situated at the southern end of the Swannell Ranges (Omineca Mountains), approximately 43 kilometres east-northeast of Takla Landing. It was evaluated in 1972 by the Luc Syndicate.

The area is underlain by monzonite, granite and alaskite assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

Chalcopyrite and molybdenum mineralization(?) reportedly occur in minor fractures cutting monzonite (Assessment Report 3997, Plate I, page 4). Although rock samples do not appear to have been taken, geochemical values from soil samples around the area were anomalous in copper and molybdenum.

No recent information concerning this occurrence is available.

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GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24
DATE REVISED: 1992/11/03

CODED BY: GSB
REVISED BY: DMN

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 169**

NATIONAL MINERAL INVENTORY: 093N7 Mo1

NAME(S): **SOONER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07W
BC MAP:
LATITUDE: 55 19 12 N
LONGITUDE: 124 54 18 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximately 4 kilometres southeast of Ahdatay Lake (Geology, Exploration and Mining in British Columbia 1973).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6132054
EASTING: 379120

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	
ISOTOPIC AGE:	Lower Jurassic		
DATING METHOD:	Fossil		
MATERIAL DATED:	Ammonites		
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Alaskite
Volcanic

HOSTROCK COMMENTS: The fossil age date is from Fieldwork 1991, page 109.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The Sooner showing is described as molybdenite in fractures and veinlets of alaskite cutting Takla volcanics (Geology, Exploration and Mining in British Columbia 1973, page 367). The region is largely underlain by float of intrusive material probably derived from the nearby Late Triassic to Early Cretaceous Hogem Intrusive Complex, Early Jurassic in this region, and the Early Jurassic Aplite Creek Intrusive Complex (informal names). Nearby volcanics belong to the Lower Jurassic Chuchi Lake Formation of the Takla Group. Volcanics noted at the showing may be part of the same formation.

The Sooner showing is not well documented and may be related to the nearby Aplite Creek prospect (093N 085).

BIBLIOGRAPHY

EMPR ASS RPT 3962, 4431
EMPR GEM 1972-449, 1973-367
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; *1992, pp. 87-107
EMPR OF 1991-3; 1992-4; 1993-3
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A, 1424A
GSC OF 2842

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/03/11 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 170**
NATIONAL MINERAL INVENTORY: 093N15 Pb1

NAME(S): **OSI**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N15W
BC MAP:
LATITUDE: 55 59 43 N
LONGITUDE: 124 46 20 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located on the west-facing slope of Razorback Mountain, approximately 23 kilometres north of Germansen Landing (Open File 1990-17).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6206971
EASTING: 389463

COMMODITIES: Lead Zinc

MINERALS

SIGNIFICANT: Galena Sphalerite
COMMENTS: The lead from the galena in this area has a Cambrian shale model age (Ferri and Melville, in preparation).
ASSOCIATED: Siderite Hematite Quartz
ALTERATION: Silica Siderite Hematite
ALTERATION TYPE: Silicific'n Oxidation
MINERALIZATION AGE: Cambrian
ISOTOPIC AGE: DATING METHOD: Lead/Lead MATERIAL DATED: Galena

DEPOSIT

CHARACTER: Disseminated Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Irregular

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Silurian-Devonian	Echo Lake	Undefined Formation	

LITHOLOGY: Dolomite
Limestone
Limestone Breccia

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist

CAPSULE GEOLOGY

The Osi occurrence is located on the western slope of Razorback Mountain, approximately 23 kilometres north of Germansen Landing (Open File 1990-17). This occurrence has regional geology similar to that of the Biddy occurrence (refer to 093N 114 for the regional geology and a more detailed stratigraphic description of the Echo Lake Group).

Disseminated galena and sphalerite occur within the Siluro-Devonian Echo Lake Group. The mineralization is found in stockworks that are iron-bearing (siderite, hematite). Galena also occurs within quartz veins that cut the Echo Lake carbonates. The carbonates in this area consist of white to grey, coarse dolomite, limestone and limestone breccia. The strata can be thin to thickly bedded or massive and may be partially silicified.

BIBLIOGRAPHY

EMPR BULL *91
EMPR EXPL *1989, pp. 193-196
EMPR FIELDWORK 1988, pp. 209-220; 1989, pp. 101-114
EMPR OF 1989-12; *1990-17
EMPR ASS RPT 4955, 5454
EMPR GEM 1973-380; 1974-284
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 1424A; 5249G

DATE CODED: 1985/07/24
DATE REVISED: 1992/07/06
CODED BY: GSB
REVISED BY: DMM
FIELD CHECK: N
FIELD CHECK: Y

MINFILE NUMBER: **093N 171**

NATIONAL MINERAL INVENTORY: 093N13 Cu3

NAME(S): **HAWK**, HAW WEST, HAW EAST, HAW SOUTH, DEN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N13E
BC MAP:
LATITUDE: 55 58 54 N
LONGITUDE: 125 42 01 W
ELEVATION: 1833 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6207331
EASTING: 331533

COMMENTS: Location is for sample 55003, about 29 kilometres northwest of Old Hogem and 59 kilometres north-northeast of Takla Landing (Assessment Report 21713, page 10).

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Chalcopyrite Bornite Pyrite Chalcocite Gold
ASSOCIATED: Quartz
ALTERATION: Malachite Chlorite Biotite Epidote
ALTERATION TYPE: Oxidation Chloritic Epidote Biotite
MINERALIZATION AGE: Jurassic

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic Porphyry
TYPE: L03 Alkalic porphyry Cu-Au I02 Intrusion-related Au pyrrhotite veins

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic Mesozoic	Takla	Undefined Formation	Hogem Intrusive Complex

ISOTOPIC AGE: 192.3 + 21/-4.8 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: Zircon

LITHOLOGY: Leucocratic Granite
Quartz Syenite
Alaskite
Pyroxenite
Biotite Pyroxenite
Syenitic Migmatite
Leucocratic Syenite
Gneiss

HOSTROCK COMMENTS: The rocks comprising this phase of the Hogem Intrusive Complex have been dated as Lower Jurassic.

GEOLOGICAL SETTING

TECTONIC BELT:
TERRANE:

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Copper	2.1300	Per cent

COMMENTS: Sample (55003) was a chip across a 46-centimetre wide malachite-stained quartz vein.
REFERENCE: Assessment Report 21713, page 10.

CAPSULE GEOLOGY

The Hawk occurrence is situated in the Swannell Ranges (Omineca Mountains), approximately 29 kilometres northwest of Old Hogem and 59 kilometres north-northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the

CAPSULE GEOLOGY

batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Garnett (1978) shows the area as being underlain by leucocratic granite, quartz syenite and alaskite, which together represent a Cretaceous phase of the Hogem Intrusive Complex. Recent reports also describe pyroxenite and biotite pyroxenite cumulate lenses and pendants within these rocks, as well as widespread chlorite, epidote and local biotite alteration (Assessment Report 21713, pages 8, 9).

The age of the leucotonalite host to the Hawk veins, and which cuts the Duckling Creek has been determined to be Lower Jurassic (192 Ma) and has a significant inherited component (678+253/-234 Ma) (personal communication J. Nelson, 2003, data from Friedman, 2003).

The age of the mineralization has lead isotope ratios most consistent with a middle Jurassic age (EM Fieldwork 2002, pages 97-113).

Veins are quartz rich and pyrite, chalcopyrite, galena and sphalerite bearing with occassional blebs of tungsten minerals. Occassional visible gold is noted. Anomalous Bi. Silver and Bi are present in anomalous quantities but no Bi mineral has yet been identified.

Early work defined three zones of veins, these have been extended and splays have been recognized. They may be reactivated secondary structures associated with the Pinchi Fault just to the west (EMPR Fieldwork 2002, pages 97-113).

Old reports describe chalcopyrite, bornite and pyrite occurring as disseminated grains within several gneiss lenses enveloped by Duckling Creek Syenite Complex rocks. More recently, sulphide mineralization comprising chalcopyrite and pyrite occurring as disseminations and fracture-fillings, has been reported within foliated syenite migmatite and leucocratic syenite. Malachite staining and local chalcocite was also observed on fracture surfaces. One chip sample (55003) of a 46-centimetre wide quartz vein with malachite staining assayed 2.13 per cent copper, while a selective grab (55908) of vuggy quartz vein float hosting 1 to 2 per cent galena analysed 14.47 grams per tonne gold and 11 grams per tonne silver (Assessment report 21713, page 10).

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EMPR ASS RPT *21713
EMPR BULL 70
EM FIELDWORK 2002, pp. 97-113
EMPR GEM 1971-203-210; 1973-369
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 98-103
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/20 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 172**

NATIONAL MINERAL INVENTORY: 093N15 Zn2

NAME(S): **SHEILA**, ECHO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N15E
BC MAP:
LATITUDE: 55 55 24 N
LONGITUDE: 124 42 07 W
ELEVATION: 1075 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located approximately 350 metres southeast of the southeast end of Echo Lake and is approximately 15 kilometres north of Germansen Landing (Open File 1990-17).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6198855
EASTING: 393649

COMMODITIES: Zinc, Lead

MINERALS
SIGNIFICANT: Sphalerite, Galena
ASSOCIATED: Pyrite, Barite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated, Vein, Breccia
CLASSIFICATION: Replacement, Hydrothermal
SHAPE: Irregular

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Otter Lakes	Undefined Formation	
Devonian-Mississipp.	Big Creek	Undefined Formation	

LITHOLOGY: Dolomite
Dolomitic Breccia
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N
CATEGORY: Assay/analysis
YEAR: 1973
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Zinc	12.4500	Per cent

COMMENTS: A high-grade sample.
REFERENCE: Assessment Report 4899.

ORE ZONE: ROCK
REPORT ON: N
CATEGORY: Assay/analysis
YEAR: 1974
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Lead	0.4000	Per cent
Zinc	8.3500	Per cent

REFERENCE: Assessment Report 5453.

CAPSULE GEOLOGY

The Sheila occurrence is located approximately 350 metres southeast of the southeast end of Echo Lake and is approximately 15 kilometres north of Germansen Landing (Open File 1990-17). This occurrence has regional geology similar to that of the Biddy occurrence (093N 114).

Mineralization occurs within dolomites of the Middle Devonian Otter Lakes Group. This mineralization occurs just below the contact of the Otter Lakes Group with the Upper Devonian-Lower Mississippian Big Creek Group shales. Mineralization is primarily sphalerite with lesser barite and galena. Mineralization is found as: (i) very fine grained aggregates of sphalerite and pyrite up to 1 centimetre long within grey, fine-grained dolomite, (ii) sphalerite in a dolomite vein cutting (i) above and, (iii) coarse galena, sphalerite and

CAPSULE GEOLOGY

barite in-filling a dolomitic breccia.
A high-grade sample from this occurrence analysed 12.45 per cent zinc (Assessment Report 4899) and another sample analysed 8.35 per cent zinc and 0.4 per cent lead (Assessment Report 5453).

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EMPR BULL *91
EMPR EXPL *1989, pp. 193-196
EMPR FIELDWORK 1988, pp. 209-220; *1989, pp. 101-114
EMPR OF 1989-12; *1990-17
EMPR ASS RPT *4899, *5453
EMPR 1973-380; 1974-285
GSC P 41-5; 42-2; 45-9; 75-33
GSC MEM 252
GSC MAP 876A; 1424A; 5249G

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/07/07 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 173**

NATIONAL MINERAL INVENTORY: 093N6 Cu6

NAME(S): **TYGER**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E
BC MAP:
LATITUDE: 55 18 00 N
LONGITUDE: 125 08 06 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location is for the now lapsed Tyger claims, northwest of Mount Nation, about 56 kilometres southeast of Takla Landing (Geology, Exploration and Mining 1973 in British Columbia page 366).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6130253
EASTING: 364459

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
COMMENTS: Chalcopyrite occurs as coatings on fractures.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Shear
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Hornblendite
Diorite
Granodiorite
Quartz Monzonite

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Tyger occurrence is situated on the north flanks of Mount Nation, approximately 56 kilometres southeast of Takla Landing. The area was mapped and geochemical and geophysical surveys were carried out by Amoco Canada Petroleum in 1973.

The Mount Nation area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have intruded volcanic and sedimentary rocks of the Middle Triassic-Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

The only reference to the Tyger occurrence describes chalcopyrite occurring as coatings on widely-spaced fractures cutting hornblendite and dioritic phases of the Hogem Intrusive Complex which have been intruded by granodiorite-quartz monzonite bodies (Geology, Exploration and Mining in British Columbia 1973, page 366).

This occurrence may be related to the Nation Mountain occurrence (093N 113), discovered in the same general area by Amoco Mining in 1971.

BIBLIOGRAPHY

EMPR GEM *1973-366
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
GSC MEM 252
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
GSC OF 3071
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/09 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 174** NATIONAL MINERAL INVENTORY: 093N9 Cb2

NAME(S): **VIRGIL**, BRENT, WOLVERINE

STATUS: Prospect MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N09W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 42 51 N NORTHING: 6175175
LONGITUDE: 124 24 54 W EASTING: 411103
ELEVATION: 1400 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Trenches (Assessment Report 10729). Easily accessed by a foot trail beginning at the south end of Wolverine Lakes, approximately 7 kilometres north-northeast of Manson Creek.

COMMODITIES: Niobium, Zirconium, Titanium, Uranium, Lanthanum, Neodymium, Rare Earths

MINERALS

SIGNIFICANT: Columbite, Pyrochlore, Zircon
ASSOCIATED: Calcite, Biotite, Feldspar, Apatite
ALTERATION TYPE: Fenitic
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform, Concordant
CLASSIFICATION: Magmatic, Industrial Min.
TYPE: N01 Carbonatite-hosted deposits
SHAPE: Tabular
DIMENSION: 120 x 40 Metres STRIKE/DIP: 140/70W TREND/PLUNGE:
COMMENTS: Deposit classification is metasomatic (carbonatite).

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic	Ingenika	Undefined Formation	
Devonian-Mississipp.			Unnamed/Unknown Informal

ISOTOPIC AGE: 350 Ma, 370 Ma
DATING METHOD: Uranium/Lead
MATERIAL DATED: Zircon

LITHOLOGY: Carbonatite
Syenite
Syenitic Carbonatite
Biotite Sovite
Aegirine Sovite
Fenite
Quartz Hornblende Gneiss
Quartzite
Sericitic Schist
Garnet Biotite Muscovite Schist

HOSTROCK COMMENTS: Carbonatite emplaced within rocks of the Ingenika Group. Dates from R. Parrish (Open File 1987-17).

GEOLOGICAL SETTING

TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Cassiar
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1982
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Niobium	0.1900	Per cent
Zirconium	0.1800	Per cent

COMMENTS: A 120-metre sample. Assays are 0.19 per cent Nb2O5 and 0.18 per cent zirconium.
REFERENCE: Assessment Report 10729.

CAPSULE GEOLOGY

The Virgil occurrence is located approximately 7 kilometres north-northeast of Manson Creek and can be accessed by a foot trail from the southern end of the Wolverine Lakes. This carbonatite

CAPSULE GEOLOGY

complex is probably related to the Lonnie complex (093N 012) found 3 kilometres to the southeast along strike, and is most likely of the same age (Upper Devonian to Lower Mississippian).

A syenite-carbonatite complex of Upper Devonian to Lower Mississippian age occurs in metasediments of the Proterozoic Ingenika Group. The metasediments consist of quartz hornblende gneiss, quartzite, sericitic schist, feldspathic wacke and garnet-biotite-muscovite schist. These rocks are metamorphosed to amphibolite grade and impose a penetrative fabric on the complex, concordant with that of the country rocks. The carbonatite appears fault bounded and may be within a mylonitized zone relating to regional tectonism. The country rocks are variable fenitized for tens of metres around the complex. Rocks of the Pennsylvanian to Permian Nina Creek Group lie to the west.

The carbonatite consists of syenite and biotite sovite, which is composed of calcite, biotite, and minor feldspar, apatite, zircon, columbite and pyrochlore. The zone which strikes 135 degrees and dips 50 degrees, is 120 metres long and up to 40 metres wide. Sampling along the length assayed 0.19 per cent Nb_2O_5 and 0.18 per cent zirconium (Assessment Report 10729). A sample assayed 0.007 per cent uranium and another (chips along 56 metres) assayed 0.15 per cent TiO_2, 0.05 per cent lanthanum and 0.03 per cent neodymium (Geology, Exploration and Mining in British Columbia 1974).

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EMPR ASS RPT *10729
EMPR GEM 1973-368; *1974-278-279
EMPR EXPL 1979-237; 1982-321
EMPR MAP 22; 56
EMPR OF *1987-17, pp. 37-41; 1988-12; 1990-32
EMPR FIELDWORK 1974, p. 86; 1987, pp. 169-180
EMPR BULL *91
GSC EC GEOL 16 (Rev.), p. 233; 18, pp. 29,31; 29, pp. 71,134
GSC BULL 239, pp. 119-121
GSC MAP 876A; 907A; 971A; 1424A: 5249G
GSC P 41-5; 42-2; 45-9; 75-33
GSC OF 551
GSC ECON GEOL 18, p. 29
GCNL #131, 1982
Chevron File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/24 REVISED BY: FF FIELD CHECK: Y

MINFILE NUMBER: **093N 175**

NATIONAL MINERAL INVENTORY: 093N11 U1

NAME(S): **SMOKE URANIUM**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 35 07 N
LONGITUDE: 125 19 23 W
ELEVATION: 1455 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the summit of a prominent knoll north of the confluence of Kwanika and West Kwanika creeks, where uranium mineralization has been reported, about 42 kilometres east-northeast of Takla Landing (Assessment Report 5372, Figure 6).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6162373
EASTING: 353583

COMMODITIES: Uranium

MINERALS
SIGNIFICANT: Unknown
COMMENTS: Uranium mineralization(?).
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Alaskite
Granite
Monzonite
Gabbro

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range in age from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1969
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Uranium	0.1200	Per cent

COMMENTS: Sample of uranium mineralization in quartz veins hosted by alaskite.
REFERENCE: Assessment Report 5495, page 3.

CAPSULE GEOLOGY

The Smoke Uranium occurrence is situated at the southern end of the Swannell Ranges (Omineca Mountains), approximately 42 kilometres east-northeast of Takla Landing. It was discovered in 1974 by Anglo-Bomarc Mines Ltd., who thought it held little economic potential.

The area is underlain by granite, monzonite and gabbroic phases of the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River.

A plug of alaskite, approximately 300 metres in diameter, intrudes granite on a prominent knoll, east-northeast of the Bralorne Takla mercury mine (093N 008). Uranium mineralization(?) occurs locally in narrow quartz veinlets and stringers in widely-spaced fractures cutting the alaskite.

Two samples of this mineralization assayed 0.07 and 0.14 per cent U_3O_8 (0.06 and 0.12 per cent uranium) respectively, while samples of the alaskite itself ranged from 0.003 to 0.012 per cent U_3O_8 (Assessment Report 5372, page 3). No recent information

CAPSULE GEOLOGY

concerning this occurrence is available.

BIBLIOGRAPHY

EMPR ASS RPT *5372, 5495
EMPR GEM 1974-280; 1977-E202
EMPR OF *1990-32, p. 40; 1993-4
EMPR MAP 22, #57
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR FIELDWORK 1992, pp. 87-107
EMR MP CORPFILE (Anglo Bomarc Mines Ltd.)
GSC OF 551
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GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
Saunders, C.R. (1974): Report on the Smoke Property for Dolmage Campbell and Associates Ltd.
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1992/11/02	REVISED BY:	LDJ	FIELD CHECK:	N

MINFILE NUMBER: **093N 176**

NATIONAL MINERAL INVENTORY: 093N13 Cu4

NAME(S): **FLAME**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N13E 094C04E
BC MAP:
LATITUDE: 55 59 57 N
LONGITUDE: 125 35 52 W
ELEVATION: 1275 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is the common corner of the Flame 5-8 claims, on a southeast flowing tributary to Haha Creek, about 27 kilometres north-northwest of Old Hogem and 63 kilometres north-northeast of Takla Landing (Assessment Report 5252, Figure 3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6209032
EASTING: 338000

COMMODITIES: Copper Molybdenum

MINERALS
SIGNIFICANT: Chalcopyrite Bornite Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic Mesozoic			Duckling Creek Syenite Complex Hogem Intrusive Complex

LITHOLOGY: Foliated Migmatitic Syenite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Flame occurrence is situated in the Swannell Ranges (Omineca Mountains), approximately 27 kilometres north-northwest of Old Hogem and 63 kilometres north-northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Garnett (1978) shows the area as being entirely underlain by foliated migmatitic syenite of the Duckling Creek Syenite Complex, a Middle Jurassic phase of the Hogem Intrusive Complex.

Reports detailing work carried out in 1974 describe local chalcopyrite, bornite and molybdenite mineralization erratically distributed in outcrop throughout the area.

No recent information concerning this occurrence is available.

BIBLIOGRAPHY

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EMPR BULL 70
EMPR GEM 1971-203-210; 1974-283
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 98-103
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British

BIBLIOGRAPHY

Columbia

DATE CODED: 1985/07/24
DATE REVISED: 1992/10/20

CODED BY: GSB
REVISED BY: DMN

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 177**

NATIONAL MINERAL INVENTORY: 093N14 Cu18

NAME(S): **JO ANN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 56 21 N
LONGITUDE: 125 28 39 W
ELEVATION: 1450 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is diamond-drill hole JA-1, about 19 kilometres north of Old Hogem and 59 kilometres northeast of Takla Landing (Assessment Report 5993, Figure 2).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6202081
EASTING: 345259

COMMODITIES: Copper Lead

MINERALS
SIGNIFICANT: Chalcopyrite Galena Bornite
ASSOCIATED: Quartz
ALTERATION: K-Feldspar
ALTERATION TYPE: Potassic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Jurassic			Duckling Creek Syenite Complex
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Syenite
Diorite
Foliated Migmatitic Syenite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is one phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core

YEAR: 1973

COMMODITY	GRADE	
Copper	0.0600	Per cent

COMMENTS: Grade is across 46.9 metres.
REFERENCE: Assessment Report 5993, page 3.

CAPSULE GEOLOGY

The Jo Ann occurrence is situated in the Swannell Ranges (Omineca Mountains), approximately 19 kilometres north of Old Hogem and 59 kilometres northeast of Takla Landing.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Garnett (1978) mapped the area as being underlain by foliated migmatitic syenite of the Duckling Creek Syenite Complex, a Middle Jurassic phase of the Hogem Intrusive Complex. The only outcrop described by previous workers occurs on a small ridge northwest of the Lorraine occurrence (093N 002). Here, quartz deficient, intrusive rocks ranging in composition from syenite to diorite are locally potassium feldspar altered.

Numerous quartz veins, some hosting chalcopyrite and galena

CAPSULE GEOLOGY

mineralization, are reported to cut the rusty, altered intrusions (Assessment Report 5649, page 3). Two short diamond-drill holes collared to the west-northwest also intersected altered diorite carrying disseminated bornite in 1973. Grades of 0.02 per cent copper over 61.6 metres and 0.06 per cent copper over 46.9 metres were reported (Assessment Report 5993, page 3).

No recent information concerning this occurrence is available.

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EMPR AR 1949-A98-A102
EMPR ASS RPT 4273, 4676, *5649, 5804, 5993
EMPR BULL 70
EMPR GEM 1971-203-210; 1973-378, 1974-283, 1975-E152, 1976-E158
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 98-103
GSC P 42-7; 45-6
CIM Vol. 67, No. 749, pp. 101-106
Chevron File
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/20 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 178**

NATIONAL MINERAL INVENTORY: 093N14 Cu11

NAME(S): **ST 12**, ST 11, DC,
ME, BILL, BIG,
BX 1, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14E 093N14W
BC MAP:
LATITUDE: 55 50 10 N
LONGITUDE: 125 14 48 W
ELEVATION: 1175 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is near trenches on the BX 1 claim, about 15 kilometres east-northeast of Old Hogem and 35 kilometres west-northwest of Germansen Landing (Assessment Report 21428, Figure 7A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6190122
EASTING: 359301

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Epidote
ALTERATION: Epidote
ALTERATION TYPE: Propylitic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Mesozoic	Takla	Plughat Mountain	Hogem Intrusive Complex

LITHOLOGY: Pyroxene Porphyritic Basalt
Monzonite
Monzodiorite
Syenite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The ST 12 occurrence is situated in the Swannell Ranges (Omineca Mountains), approximately 15 kilometres east-northeast of Old Hogem and 35 kilometres west-northwest of Germansen Landing.

The area is underlain by Upper Triassic Plughat Formation (Takla Group) volcanics which have been intruded to the west by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex, which form an elongate batholith extending from Chuchi Lake north to the Mesilinka River. A small syenite outlier also intrudes the volcanic rocks to the south.

The ST 12 showing is described as pyrite and minor chalcopyrite associated with epidote stringers in strongly pyritized pyroxene porphyritic basalt. Minor sulphides also occur as disseminations.

The Hogem Intrusive Complex intrudes the Takla volcanics 3 kilometres northwest of the showing. In this area it is composed mainly of monzonite, monzodiorite and syenite and is probably Jurassic in age. A smaller syenite-dominated body occurs 1.5 kilometres south of the showing and is likely a satellite of the main Hogem complex.

BIBLIOGRAPHY

EMPR OF 1993-5
EMPR FIELDWORK 1992, pp. 87-107
EMPR ASS RPT 3219, 3461, *5186, *21428
EMPR GEM 1971-203-210,213; 1974-284; 1975-E152-153
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File))
EMPR (PRELIM) MAP 9

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GSC MEM 252, pp. 98-103
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GSC P 42-7; 45-6
Chisholm, E.O. (1970): Qualifying Report on the ST claims for Fortune Channel Mines Ltd.
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1993/02/26 REVISED BY: KBE FIELD CHECK: N

MINFILE NUMBER: **093N 179**

NATIONAL MINERAL INVENTORY:

NAME(S): **EUREKA**, CRYSTAL, RUTH, TL, BODINE, SITLIKA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12W
BC MAP:
LATITUDE: 55 36 44 N
LONGITUDE: 125 47 54 W
ELEVATION: 1500 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6166475
EASTING: 323756

COMMENTS: Location is the showing exposed along a north-facing wall of a ravine occupied by a creek draining the northeast slopes of Mount Bodine, about 18 kilometres northeast of Takla Landing (Assessment Report 8485, Figure 4).

COMMODITIES: Copper Gold Silver Zinc

MINERALS

SIGNIFICANT: Chalcopyrite Pyrite
ALTERATION: Silica
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Podiform Disseminated Shear
CLASSIFICATION: Volcanogenic Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic			Sitlika Assemblage

LITHOLOGY: Rhyolite
Dacite
Rhyolitic Dacitic Flow
Breccia
Tuff
Graphitic Argillite
Chert
Chloritic Volcaniclastic

HOSTROCK COMMENTS: The Sitlika Assemblage has been dated as Upper Triassic to/or Jurassic and has been correlated with the Takla and Asitka groups.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Stikine

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1981

COMMODITY	GRADE	
Silver	77.1400	Grams per tonne
Gold	1.9900	Grams per tonne
Copper	4.3400	Per cent
Zinc	0.0500	Per cent

COMMENTS: Sample is from the Eureka showing taken prior to 1981.
REFERENCE: Assessment Report 9547, page 5.

CAPSULE GEOLOGY

The Eureka occurrence is situated 2 kilometres northeast of Mount Bodine in the Hogem Ranges, approximately 18 kilometres northeast of Takla Landing.

The area is underlain by felsic volcanic and sedimentary members of the Upper Triassic to/or Jurassic Sitlika Assemblage. To the west, volcanic members include rhyolitic and dacitic flows, breccia and tuff, while weakly graphitic argillite dominates to the east. These rocks generally strike between 150 to 160 degrees, with relatively shallow westerly dips.

Two mineralized showings have been located to date. The Eureka, the easterly of the two, consists of siliceous boudins, measuring 70 by 30 centimetres, hosting disseminated chalcopyrite and pyrite. The

CAPSULE GEOLOGY

boudins are enclosed in a gouge-like matrix of sheared rhyolite and are located near the pyritic felsic volcanic/sediment contact (Assessment Report 8485, page 6). Another report describes the occurrence as a 1 to 2-metre wide massive sulphide lens exposed "across" 6 metres (Assessment Report 9547).

The best assay from surface samples taken of this mineralization is 4.34 per cent copper, 0.05 per cent zinc, 1.99 grams per tonne gold and 77.14 grams per tonne silver (Assessment Report 9547, page 5). A 127.5-metre diamond-drill hole intersected scattered intervals of copper and zinc mineralization in 1989, the best interval grading 0.44 per cent zinc across 3.8 metres.

The Crystal showing, situated approximately 500 metres west of the Eureka, comprises a 2 to 5-centimetre wide band of pyritic chert at the contact between chloritic volcaniclastics and massive rhyolite. Significant assays from samples of this mineralization have not been reported.

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EMPR OF 2000-33
EMPR PF (Miscellaneous geology and geochemistry maps by Kennco Explorations (Western) Limited)
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1A; P 74-1B, pp. 31-42

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/25 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 180**

NATIONAL MINERAL INVENTORY:

NAME(S): **MANSON RIVER EAST**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09E
BC MAP:
LATITUDE: 55 35 09 N
LONGITUDE: 124 01 12 W
ELEVATION: 980 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Manson River East occurrence is exposed in a roadcut on a logging road 0.75 kilometre east of the Manson River and 5.5 kilometres northeast of the mouth of Munro Creek (Open File 1988-12).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6160458
EASTING: 435707

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Irregular

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic			Wolverine Complex

LITHOLOGY: Amphibolite Gneiss
Hornblende Granitic Gneiss
Quartz Feldspar Pegmatite
Granodiorite Dike

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.1200	Per cent

REFERENCE: Open File 1988-12.

CAPSULE GEOLOGY

The Manson River East occurrence is exposed in a roadcut on a logging road 0.75 kilometres east of the Manson River and 5.5 kilometres northeast of the mouth of Munro Creek (Open File 1988-12).

Visible mineralization consists of disseminated chalcopyrite and pyrite hosted by amphibolite gneisses of the Proterozoic Wolverine Complex. The amphibolite gneiss is interlayered with a hornblende-bearing granitic gneiss with the layers being 10 to 30 centimetres thick. The interlayered gneisses are cut by quartz feldspar pegmatites up to 2 metres in width and intruded by granodiorite dikes and sills. These intrusions comprise up to 50 to 75 per cent of the total exposure. A grab sample analysed 0.12 per cent copper and 3 grams per tonne silver (Open File 1988-12).

BIBLIOGRAPHY

EMPR BULL *91
EMPR FIELDWORK *1987, pp. 169-180; 1992, pp. 301-306
EMPR OF *1988-12
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33
Placer Dome File

DATE CODED: 1988/04/20
DATE REVISED: 1992/07/27

CODED BY: FF
REVISED BY: DMM

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **093N 181**

NATIONAL MINERAL INVENTORY:

NAME(S): **DON**, JOHN, DAIRY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N05E
BC MAP:
LATITUDE: 55 18 12 N
LONGITUDE: 125 33 59 W
ELEVATION: 1495 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is diamond-drill hole DJD #3, about 31 kilometres southeast of Takla Landing (Assessment Report 8357, Drill Hole Location Map).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6131547
EASTING: 337092

COMMODITIES: Molybdenum Copper

MINERALS
SIGNIFICANT: Molybdenite Chalcopyrite Pyrite
ASSOCIATED: Quartz
ALTERATION: Kaolinite
ALTERATION TYPE: Argillic
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Porphyry
TYPE: L05 Porphyry Mo (Low F- type)

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic			Topley Intrusions

LITHOLOGY: Quartz Monzonite
Biotite Quartz Monzonite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Don occurrence is situated within the Mitchell Range of mountains, 4 kilometres north of the Nesabut Peaks and approximately 31 kilometres southeast of Takla Landing.

The area is underlain by granitic rocks assigned to the Late Triassic-Early Jurassic Topley intrusions, which form an elongate pluton underlying the majority of the range. The most prevalent rock type is a pink-grey, medium-grained, equigranular to porphyritic quartz monzonite into which a younger phase of grey, medium-grained, equigranular biotite quartz monzonite has intruded. Local weak to pervasive argillic alteration is the predominant type of alteration observed in these rocks.

Narrow (1 to 2-millimetre wide) quartz-molybdenite veinlets form a stockwork across several widely spaced, 6 to 10-metre wide zones of weakly kaolinitized monzonite along a ridge crest 4 kilometres north of the Nesabut Peaks.

A diamond-drill hole (DJD #3) collared in late-phase quartz monzonite to the north of this mineralization intersected a minor clot of molybdenite-chalcopyrite-pyrite mineralization in a quartz vein. No assays were reported.

BIBLIOGRAPHY

EMPR ASS RPT *6814, 7468, *8357, 8358
EMPR EXPL 1978-E227; 1979-235; 1980-358
EMPR OF 2000-19
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 3071
GSC P 42-7; 45-6

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/10/15 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 182**

NATIONAL MINERAL INVENTORY:

NAME(S): **BAR**, LO

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N03E
BC MAP:
LATITUDE: 55 09 50 N
LONGITUDE: 125 10 58 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is for sample A6855, about 61 kilometres southeast of Takla Landing (Assessment Report 20037, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6115203
EASTING: 360952

COMMODITIES: Mercury

MINERALS

SIGNIFICANT: Cinnabar
ASSOCIATED: Quartz Chalcedony Calcite Ankerite Mariposite
ALTERATION: Quartz Carbonate Mariposite Ankerite Chalcedony
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Breccia Shear
CLASSIFICATION: Epigenetic Hydrothermal Replacement
TYPE: E01 Almaden Hg I08 Silica-Hg carbonate

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Andesitic Tuff
Andesitic Basaltic Tuff
Andesite
Olivine Basalt
Andesitic Basaltic Flow
Pyroxenite
Volcaniclastic
Limestone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Plateau
TERRANE: Plutonic Rocks Cache Creek

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Mercury	0.0010	Per cent

COMMENTS: Sample A6855. Mercury grade is greater than 10,000 parts per billion.
REFERENCE: Assessment Report 20037, Figure 2.

CAPSULE GEOLOGY

The Bar occurrence is situated between Tchentlo and Takatoot lakes, approximately 61 kilometres southeast of Takla Landing.

The area is underlain by a north-northwest trending package of Carboniferous to Jurassic rocks assigned to the Cache Creek Complex which have been intruded by Mesozoic mafic and ultramafic rocks formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions now termed Mississippian to Triassic Oceanic Ultramafites.

Within the Bar grid, a northwest-trending suite of olivine basalt and pyroxenite, intercalated with a thin lens of volcaniclastics(?) is in contact with massive limestone to the southwest and andesitic to basaltic tuffs and flows to the northeast. Magnetic data suggest that the ultramafic rocks form a steeply dipping dike. Local brecciation and shearing occur within both the intrusions and the Cache Creek rocks and is thought to be a result of a moderately to steeply dipping, north-northwesterly striking splay

CAPSULE GEOLOGY

of the Pinchi fault zone. Locally, hydrothermal alteration of the ultramafic rocks has resulted in the development of quartz-carbonate-mariposite (listwanite) mineralization.

Trace amounts of cinnabar occur as blebs and fracture coatings in brecciated and quartz-carbonate altered, intermediate to mafic rocks (andesitic tuff?) and brecciated limestone. Quartz, chalcedony, calcite, ankerite, mariposite and very minor sulphides also occur in veinlets and as fracture coatings. Several float boulders were noted to contain carbonate-quartz veining hosting trace, fine-grained arsenopyrite(?) disseminations.

Three samples of quartz-carbonate altered rock with mariposite assayed greater than 0.001 per cent mercury. Of these, sample A6855 also analysed 0.080 grams per tonne gold (Assessment Report 20037, Figure 4).

BIBLIOGRAPHY

EMPR ASS RPT 19223, 19673, *20037
EMPR OF 2000-19
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 3071
GSC P 42-7; 42-11; 45-6

DATE CODED: 1992/10/08 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/02 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 183**

NATIONAL MINERAL INVENTORY:

NAME(S): **NATION**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 30 54 N
LONGITUDE: 125 22 52 W
ELEVATION: 1170 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the 1988 discovery on a small tributary to West Kwanika Creek (Assessment Report 18781, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6154678
EASTING: 349656

COMMODITIES: Gold Arsenic

MINERALS

SIGNIFICANT: Pyrite Arsenopyrite
ASSOCIATED: Quartz Carbonate Albite Calcite
ALTERATION: Ankerite Siderite Carbonate
ALTERATION TYPE: Oxidation Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Stockwork Vein Disseminated
CLASSIFICATION: Epigenetic Hydrothermal Industrial Min.
TYPE: H05 Epithermal Au-Ag: low sulphidation

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Limestone
Quartz Sericite Schist
Chloritic Schist
Siltstone
Jasperoid
Porphyritic Dacite
Latite
Latite Porphyry
Quartz Feldspar Sill
Feldspar Porphyry Sill

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic and locally host intermediate-felsic intrusions of unknown relationship.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1989
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Arsenic	0.7917	Per cent
Gold	0.3050	Grams per tonne

COMMENTS: Sample 88NBR9 of ankeritic siltstone.
REFERENCE: Assessment Report 19373, page 3.

CAPSULE GEOLOGY

The Nation occurrence is situated near a small creek which flows northeast into West Kwanika Creek at its confluence with Kwanika Creek. It was discovered in 1988 as a result of efforts to locate the source of a significant arsenic-gold silt anomaly outlined by a 1983 regional geochemical survey (Geological Survey of Canada Open File 1001, Map 66-1983).

The area is underlain by Carboniferous to Jurassic sedimentary and volcanic rocks (and derived schist) assigned to the Cache Creek Complex. To the east, a narrow, linear band of ultramafic rocks formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian-Triassic Oceanic Ultramafites, occurs along the trace of the Pinchi fault zone which

CAPSULE GEOLOGY

separates the Cache Creek rocks from the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

At the Nation occurrence, blue-grey coloured limestone occurs in contact with quartz sericite schist, chloritic schist and a "jasperoid-like" unit. Quartz feldspar and feldspar porphyry sills have also been emplaced parallel to stratigraphy. Foliation in the schists strikes 160 degrees and dips steeply west.

Mineralization exposed to date occurs in several forms: 1) stockwork quartz-carbonate veins in limestone adjacent to jasperoid-like rocks, 2) ankeritic carbonate-rich siltstone hosting greater than 5 per cent combined pyrite and arsenopyrite, also adjacent to jasperoid-like rocks, 3) auriferous porphyritic dacite and 4) auriferous sideritic latite porphyry hosting fine-grained veinlets of quartz-albite-calcite-pyrite.

One sample of dacite porphyry rubble assayed 0.590 gram per tonne gold, while ankeritic siltstone analysed 0.305 gram per tonne gold and 7917 ppm arsenic (Assessment Report 19373, page 3).

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EMPR ASS RPT 18781, *19373
EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 42-7; 44-5; 45-6

DATE CODED: 1992/10/01 CODED BY: DMN FIELD CHECK: N
DATE REVISED: 1993/03/15 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 184**

NATIONAL MINERAL INVENTORY:

NAME(S): **KLAWDETELLE CREEK**, CHENT

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02E
BC MAP:
LATITUDE: 55 13 09 N
LONGITUDE: 124 40 35 W
ELEVATION: 1000 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized outcrop, reported to be on the west side of Klawdetelle Creek; however, the plot location of samples are shown on the east side (Assessment Report 21994, Figure 16).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6120462
EASTING: 393354

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Malachite
ALTERATION: K-Feldspar Malachite
ALTERATION TYPE: Potassic Oxidation
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Porphyritic Gabbro
Porphyritic Basalt
Porphyritic Diabase
Mafic Diorite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1991
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.1000	Per cent

REFERENCE: Assessment Report 21994.

CAPSULE GEOLOGY

An outcrop adjacent to Klawdetelle Creek is composed of potassically altered "mafic diorite" and contains traces of malachite. A sample of the rock yielded 0.1 per cent copper (Assessment Report 21994).

The area of the occurrence along the creek was recently surveyed by the B.C. Geological Survey; exposures of sparsely porphyritic diabase/basalt were mapped (Open File 1992-4). These exposures are part of the Late Triassic to Early Cretaceous Hogem Intrusive Complex which in this area is considered to be Early Jurassic.

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EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118
EMPR OF 1991-3; 1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1993/02/22
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 185**

NATIONAL MINERAL INVENTORY:

NAME(S): **GIBSON**, EAGLE 9

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N02W
BC MAP:
LATITUDE: 55 10 13 N
LONGITUDE: 124 53 42 W
ELEVATION: 1260 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Gibson vein, 4 kilometres south of Tchentlo Lake, about 7.5 kilometres west-southwest from the east end of the lake (Assessment Report 21762, Figure 1).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6115379
EASTING: 379301

COMMODITIES: Gold, Silver, Lead, Zinc, Copper

MINERALS

SIGNIFICANT: Pyrite, Arsenopyrite, Galena, Sphalerite, Chalcopyrite
ASSOCIATED: Quartz, Sericite
ALTERATION: Clay, Carbonate, Sericite, Quartz
ALTERATION TYPE: Argillic, Carbonate, Sericitic, Silicific'n
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein, Podiform, Breccia, Massive
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I05 Polymetallic veins Ag-Pb-Zn±Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Augite Porphyry
Tuff
Hornfels
Diorite
Monzonite
Granodiorite
Gabbro
Syenite

HOSTROCK COMMENTS: The volcanic rocks are assumed to belong to the Witch Lake Formation, an informally named formation of the Takla Group.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Lowland
GRADE: Hornfels

INVENTORY

ORE ZONE: DRILLHOLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1991

COMMODITY	GRADE	
Silver	224.3000	Grams per tonne
Gold	4.3400	Grams per tonne
Lead	0.9000	Per cent
Zinc	0.6000	Per cent

COMMENTS: From a 9.18-metre drill interval.
REFERENCE: Assessment Report 21762, page 11.

CAPSULE GEOLOGY

The Gibson prospect is located 4 kilometres south of Tchentlo Lake, about 7.5 kilometres west-southwest of its eastern end.

This area is underlain by rocks of the Middle Triassic to Lower Jurassic Takla Group and their contact with the southeastern end of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. To the east and northeast, recent mapping indicates that the Hogem complex in this area consists primarily of Early Jurassic monzonite and syenite phases (Open File 1992-4). Noranda Exploration Limited, however, has mapped the intrusive rock to the north of the Gibson prospect as mainly diorite with lesser areas of granodiorite and

CAPSULE GEOLOGY

gabbro. South of the intrusive contact, underlying the area of the showings, the rocks have been identified as augite porphyries and volcanic tuffs, probably of the Upper Triassic Witch Lake Formation, Takla Group. These volcanic rocks are variably hornfelsed near the contact zone. The hornfelsed rocks are generally very fine-grained purple rocks commonly containing 3 to 5 per cent disseminated pyrite and locally some chalcopyrite.

The occurrence consists of fine-grained arsenopyrite and pyrite filling a quartz sericite breccia zone within which are banded galena-sphalerite veins and pods. The quartz-sulphide mineralization is enveloped within a zone of very fine-grained clay-carbonate alteration with 5 to 10 per cent pyrite.

In 1991, Noranda drilled 9 holes into the Gibson zone. All holes intersected significant clay-sericite-quartz altered and pyrite-galena-sphalerite mineralized volcanics. A 9.18-metre drill interval (from 14.10 to 23.28 metres) averaged 4.34 grams per tonne gold, 224.3 grams per tonne silver, 0.9 per cent lead and 0.6 per cent zinc (Assessment Report 21762, page 11).

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EMPR OF 1991-3; 1992-4
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842
Placer Dome File

DATE CODED: 1993/03/04 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1993/03/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 186**

NATIONAL MINERAL INVENTORY:

NAME(S): **INDATA LAKE**, LIMESTONE RIDGE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06W
BC MAP:
LATITUDE: 55 17 34 N
LONGITUDE: 125 16 00 W
ELEVATION: 1050 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location centred on sample site 8, 120 kilometres northwest of Fort St. James (Geological Survey of Canada Memoir 252, page 36).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6129713
EASTING: 356076

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
ALTERATION: Dolomite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Fusulinids

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 6000 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone strikes northwest and dips to the southwest(?).

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
DATING METHOD:	Fossil		
MATERIAL DATED:	Fusulinids		
Triassic-Jurassic	Takla	Undefined Formation	

LITHOLOGY: Limestone
Chert
Argillite
Andesite
Greenstone
Andesitic Basaltic Volcanic

HOSTROCK COMMENTS: Cache Creek Complex rocks range from Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1949
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	55.1400	Per cent

COMMENTS: Grade given for calcium oxide.
REFERENCE: Geological Survey of Canada Memoir 252, page 36, Sample 8.

CAPSULE GEOLOGY

A mass of limestone outcrops just west of the south end of Indata Lake on Limestone Ridge, 120 kilometres northwest of Fort St. James.

The deposit lies within a 200 kilometre long, northwest-trending belt of massive Permian-Pennsylvanian limestone with minor chert and argillite of the Carboniferous to Jurassic Cache Creek Complex. The belt is approximately 6 kilometres wide in the vicinity of Indata Lake. To the east the limestone is separated from Middle Triassic to Lower Jurassic Takla Group andesitic to basaltic volcanics by the Pinchi fault zone. Overlying chert, argillite and greenstone (andesite) of the Cache Creek Complex outcrop to the west.

The limestone is variably dolomitized along the Pinchi fault zone due to hydrothermal alteration. A sample of buff-coloured

CAPSULE GEOLOGY

limestone exposed on the east shore of Indata Lake at its south end analysed 51.32 per cent CaO, 1.38 per cent MgO, 3.07 per cent SiO2, 1.56 per cent Fe2O3+Al2O3 and 3.21 per cent insolubles (Geological Survey of Canada Memoir 252, page 36, Sample 7). A second sample of blue-grey limestone on Limestone Ridge, west of the south end of Indata Lake, analysed 55.14 per cent CaO, 0.07 per cent MgO, 0.22 per cent SiO2, 0.14 per cent Fe2O3+Al2O3 and 0.55 per cent insolubles (Geological Survey of Canada Memoir 212, page 36, Sample 8).

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EMPR IND MIN FILE (*McCammon, J.W. (1973): Limestone Occurrences in British Columbia, p. 25 (in Ministry Library)
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 32-36
GSC OF 3071
GSC P 42-7; 42-11; 45-6
Placer Dome File

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1992/10/07	REVISED BY:	PSF	FIELD CHECK:	N

MINFILE NUMBER: **093N 187**

NATIONAL MINERAL INVENTORY:

NAME(S): **KWANIKA CREEK LIMESTONE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N06E 093N11E
BC MAP:
LATITUDE: 55 29 47 N
LONGITUDE: 125 21 21 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location centred on sample site #6, about 135 kilometres northwest of Fort St. James (Geological Survey of Canada Memoir 252, page 36).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6152553
EASTING: 351182

COMMODITIES: Limestone Dolomite

MINERALS
SIGNIFICANT: Calcite Dolomite
ALTERATION: Dolomite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Fusulinids

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 3800 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone strikes northwest, dips southwest and is about 3.8 kilometres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
DATING METHOD:	Fossil		
MATERIAL DATED:	Fusulinids		
Triassic-Jurassic	Takla	Undefined Formation	

LITHOLOGY: Limestone
Argillite
Chert
Andesitic Basaltic Volcanic
Greenstone
Andesite

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1949
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	55.4100	Per cent

COMMENTS: Sample from a ridge west of Kwanika Creek. Grade given for calcium oxide.
REFERENCE: Geological Survey of Canada Memoir 252, page 36, Sample 6.

CAPSULE GEOLOGY

A deposit of limestone outcrops predominantly to the west of Kwanika Creek, just northeast of Tsayta Lake, 135 kilometres northwest of Fort St. James.

The deposit lies within a 200 kilometre long northwest-trending belt of massive Permian-Pennsylvanian limestone with minor chert and argillite of the Carboniferous to Jurassic Cache Creek Complex. The belt is approximately 3.8 kilometres wide along the west side of Kwanika Creek. To the east, the limestone is separated from Middle Triassic to Lower Jurassic Takla Group andesitic to basaltic volcanics by the Pinchi fault zone. Overlying chert, argillite and greenstone (andesite) of the Cache Creek Complex outcrop to the west.

The limestone is variably dolomitized along the Pinchi fault

CAPSULE GEOLOGY

zone due to hydrothermal alteration. A sample of massive, buff-coloured limestone exposed near the Pinchi fault on the lower part of Kwanika Creek analysed 34.03 per cent CaO, 17.97 per cent MgO, 0.38 per cent insolubles and 1.59 per cent Fe203+Al2O3 (Geological Survey of Canada Memoir 252, page 36, Sample 5). A second sample of limestone from a ridge west of Kwanika Creek analysed 55.41 per cent CaO, 0.31 per cent MgO, 0.07 per cent insolubles and 0.15 per cent Fe2O3+Al2O3 (Geological Survey of Canada Memoir 252, page 36, Sample 6).

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EMPR IND MIN FILE (*McCammon, J.W. (1973): Limestone Occurrences in British Columbia, p. 25 (in Ministry Library))
EMPR OF 2000-19
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 32-36
GSC OF 3071
GSC P 74-1A; 74-1B, pp. 31-42
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/30 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093N 188**

NATIONAL MINERAL INVENTORY:

NAME(S): **QUARTZITE CREEK**, QUARTZ CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12E
BC MAP:
LATITUDE: 55 42 49 N
LONGITUDE: 125 39 53 W
ELEVATION: 1054 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is for the centre of placer workings on Quartzite Creek, which extended upstream from a point approximately 2.4 kilometres up from its confluence with Fall River, about 36 kilometres northeast of Takla Landing (Minister of Mines Annual Report 1933, page A107).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6177423
EASTING: 332602

COMMODITIES: Rhodonite, Jade/Nephrite, Gemstones

MINERALS
SIGNIFICANT: Rhodonite, Nephrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer, Industrial Min.
TYPE: C01 Surficial placers; Q02 Rhodonite; Q01 Jade

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Quaternary			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Fluvial Gravel
Phyllite
Sericitic Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

Quartzite (Quartz) Creek flows northerly from the Vital Range into Fall River approximately 36 kilometres northeast of Takla Landing. Placer workings extend upstream for 800 metres from a point 2.4 kilometres from its confluence with Fall River.

The earliest recorded work on the creek appears to have taken place in the late 1800s. Further work was again referenced in the 1913 Minister of Mines Annual Report, although it was not until the 1930s that any gold production was recorded.

The creek drains an area underlain by schistose sediments assigned to the Carboniferous to Jurassic Cache Creek Complex, which in this area is dominated by quartz-rich phyllite. These sediments host numerous barren-looking, locally rusty, white quartz veins varying up to a metre in width.

Placer mining efforts were directed at both pre and postglacial gravels and reportedly uncovered boulders of both rhodonite and jade (Geological Survey of Canada Paper 72-53, page 59). The most probable bedrock source for these boulders is the Mount Ogden area (see 093N 165) to the northwest, where nephrite has been located in-situ.

BIBLIOGRAPHY

EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P *72-53, p. 59; 74-1B, pp. 31-42
Canadian Rockhound Feb. 1966: Rhodonite in British Columbia, p. 10

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/09/22 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 189**

NATIONAL MINERAL INVENTORY:

NAME(S): **WOLVERINE RANGE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 43 53 N
LONGITUDE: 124 19 27 W
ELEVATION: 1860 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The occurrence is located within the Wolverine Range approximately 12 kilometres northeast from the settlement of Manson Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6176979
EASTING: 416845

COMMODITIES: Mica Feldspar

MINERALS
SIGNIFICANT: Feldspar Muscovite
ASSOCIATED: Quartz Plagioclase Biotite Garnet
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Pegmatite Syngenetic Industrial Min.
TYPE: O04 Feldspar-quartz pegmatite

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic			Wolverine Complex
Tertiary			Unnamed/Unknown Informal

LITHOLOGY: Pegmatite
Garnet Muscovite Biotite Granodiorite

HOSTROCK COMMENTS: Preliminary U-Pb data from zircon analysis indicate an early Tertiary age for the granodiorites within the Wolverine Complex.

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar

PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Wolverine Range occurrence is located within the Wolverine Range, approximately 12 kilometres northeast from the settlement of Manson Creek.

Pegmatites at the showing are coarse grained and consist of quartz, plagioclase, orthoclase, muscovite, biotite and garnet. These pegmatites are dike shaped and are found within garnet-muscovite-biotite granodiorites of the Proterozoic Wolverine Complex. Preliminary U-Pb data from zircon analysis indicate an early Tertiary age for the granodiorites within the complex (Bulletin-in preparation).

BIBLIOGRAPHY

EMPR OF 1991-10
EMPR BULL 91
EMPR FIELDWORK 1988, pp. 169-180
GSC P 41-5; 42-2; 45-9; 75-33
GSC MAP 876A; 907A; 1424A; 5249G
GSC MEM *252, p. 28

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/11/29 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 190**

NATIONAL MINERAL INVENTORY:

NAME(S): **MILLIGAN 9**, NATION RIVER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01E
BC MAP:
LATITUDE: 55 10 04 N
LONGITUDE: 124 04 00 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showings are located about 3 kilometres southeast of Mount Milligan peak. They are reported to be visible in gullies on the Milligan 9 claim near its southern boundary, and close to the northern boundaries of the Phil 1 and 10 claims (Assessment Report 20227, Target Area 1, Figure 19).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6113981
EASTING: 432053

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic			Mount Milligan Intrus. Complex

LITHOLOGY: Monzodiorite

HOSTROCK COMMENTS: Both major phases of the Mount Milligan Intrusive Complex have been dated as Early Jurassic (J.L. Nelson, personal communication, 1993).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel Plutonic Rocks
PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.1160	Grams per tonne
Copper	0.2100	Per cent

REFERENCE: Assessment Report 20227, page 25.

CAPSULE GEOLOGY

Two mineralized outcrops of monzodiorite, almost entirely covered with overburden, are reported to occur in an area underlain by the Mount Milligan Intrusive Complex (informal name). Mineralization consists of disseminated pyrite and chalcopyrite. Two samples assayed 0.09 (933 parts per million) and 0.21 (2090 parts per million) per cent copper and 0.088 (88 parts per billion) and 0.116 (116 parts per billion) gram per tonne gold respectively (Assessment Report 20227, page 25).

The Mount Milligan Intrusive Complex consists of at least two separate Early Jurassic phases: a sphene-bearing monzonite with gabbro and hornblende granite end members, and porphyritic granite. Its wallrocks and numerous pendants include regionally metamorphosed amphibolites and granulites as well as contact hornfelses. The earlier of the two plutonic bodies on Mount Milligan is an equigranular, massive to foliated quartz-deficient monzonite. The later plutonic body is a porphyritic, medium-grained granite with peripheral pegmatite and aplite stringers. The complex was later uplifted as a horst, accompanied by Late Cretaceous to Early Tertiary felsic intrusive activity.

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EMPR FIELDWORK 1990, pp. 89-110

BIBLIOGRAPHY

EMPR OF 1991-3; 1992-3
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 3071
Placer Dome File

DATE CODED: 1993/02/01 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1993/02/01 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 191** NATIONAL MINERAL INVENTORY: 093N1 Au1

NAME(S): **MT. MILLIGAN (SOUTHERN STAR)**, SOUTHERN STAR, MOUNT MILLIGAN, MT. MILLIGAN, PHIL-HEIDI, PHIL, HEIDI

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N01E
BC MAP:
LATITUDE: 55 07 05 N
LONGITUDE: 124 01 57 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of the Southern Star deposit of the Mt. Milligan property (Open File 1991-3). Situated 9.25 kilometres south-southeast of Mount Milligan peak.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6108415
EASTING: 434148

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Magnetite Bornite Covellite Chalcocite Djurleite Cuprite Tenorite Copper
COMMENTS: Pyrite, chalcopyrite, magnetite and bornite form the economically significant hypogene mineralization.
ASSOCIATED: K-Feldspar Biotite
ALTERATION: K-Feldspar Biotite Actinolite Epidote Calcite Chlorite Albite Pyrite
COMMENTS: Alteration minerals also include malachite, azurite, goethite, hematite, siderite and limonite.
ALTERATION TYPE: Potassic Propylitic Carbonate
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated Stockwork Massive
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Brecciated Monzonite
Plagioclase Porphyritic Monzonite
Hornblende Plagioclase Porphyritic Monzonite
Augite Andesitic Lapilli Tuff
Augite Andesitic Crystal Tuff
Augite Phyric Andesitic Flow
Andesite
Latite

HOSTROCK COMMENTS: The monzonitic plutons are coeval with the Takla Group volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: Greenschist

CAPSULE GEOLOGY

The area of the Mt. Milligan porphyry copper deposits are underlain by the Upper Triassic Takla Group consisting of north-northwest trending volcanic rocks of the Witch Lake Formation and minor sedimentary rocks of the Rainbow Creek Formation. Early Tertiary volcanic and sedimentary rocks are also present. The Witch Lake rocks are intruded by coeval Takla Group and post-Takla Group intrusions related to the informally named Early Jurassic Mount Milligan Intrusive Complex centred around Mount Milligan, about 9 kilometres to the northwest. The monzonitic MBX, Southern Star, Goldmark and North Slope stocks host mineralization on the property. The Mt. Milligan property is made up of the Main and Southern Star deposits. Refer to Mt. Milligan (093N 194) for a description of the Main deposit and for further details of the Southern Star deposit.

The Southern Star deposit comprises the Southern Star zone, which occurs in the hangingwall and footwall of the Southern Star stock. Approximately 70 per cent of the ore in the Southern Star deposit is in brecciated monzonite and only about 30 per cent in

CAPSULE GEOLOGY

volcanic rocks of the Witch Lake Formation.

The volcanic rocks consist mainly of monolithic fragmental andesitic varieties which include actinolite-altered augite porphyritic lapilli tuff with minor augite crystal and lithic tuff. Minor augite porphyritic flows and heterolithic debris flows are interbedded with the fragmental rocks. Plagioclase and/or hornblende phenocrysts occur locally within flows and within lapilli or crystal tuffs. Latitic volcanic rocks (potassically altered andesites) underlie much of the area around the MBX stock of the Main zone to the north and less commonly, areas adjacent to the Southern Star stock.

The Southern Star stock is a moderately west-dipping, northwest-striking, tabular body of monzonite, which forks at its northern end. The stock is approximately 800 by 300 metres in area and is composed mainly of plagioclase porphyritic monzonite and, along some of the stock margins, plagioclase hornblende porphyritic monzonite. Hydrothermal breccias occur throughout the Southern Star stock, and less commonly in adjacent volcanic rocks. These areas are characterized by potassium feldspar flooding.

Potassic and propylitic alteration assemblages are present throughout the Mt. Milligan deposits with gold and copper mineralization mainly associated with the potassic assemblage. Minor postmineral carbonate alteration is also present. The potassic alteration is best developed around the contacts of stocks, decreasing in intensity towards the core of the stock and away from the contacts for several hundred metres into fractured country rocks. The alteration is characterized by secondary potassium feldspar and, in areas of intense potassic alteration, fine-grained secondary biotite (up to 40 per cent), chalcopyrite, lesser magnetite and minor bornite. Pyroxene phenocrysts, where present are replaced by actinolite. The propylitic alteration is widespread and generally pervasive. It is developed best outside the zone of potassic alteration, outward from the stocks for up to 2500 metres. The assemblage consists of epidote with varying amounts of calcite, chlorite, albite and pyrite.

Widespread disseminated mineralization accompanied by lesser veinlet and fracture-filling mineralization occurs. Mineralization consists mostly of chalcopyrite, lesser magnetite and minor bornite in areas of potassic alteration, and pyrite in areas of propylitic alteration.

Sporadic supergene enrichment also occurs in the Southern Star deposit. Secondary copper minerals identified in these areas consist of the sulphides, covellite, chalcocite and djurleite; the oxides, cuprite and tenorite; the carbonates, malachite and azurite and; native copper. The sulphides occur as rims around chalcopyrite; and the oxides, in particular cuprite, occur as surface coatings on native copper. Secondary copper minerals commonly occur with goethite, magnetite, hematite and siderite. Limonite, which includes goethite, commonly replaces sulphide minerals or occurs as coatings on fracture surfaces and hairline cracks.

No separate reserve figures are available for the Southern Star deposit. The reader is referred to Mt. Milligan (093N 194), the reserve figure of which includes the Southern Star orebody.

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GSC P 41-5; 42-2; 45-9
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842
GCNL #223, 1988; #134,#38,#60,#61,#51,#111,#128,#27,#50,#68,#73,#6, #1,#86,#9,#135(Jul.14),#148(Aug.2),#150(Aug.4),#161(Aug.22), #202(Oct.20),#215(Nov.8),*#229(Nov.29),#246(Dec.22), 1989; #24(Feb.2),#207(Oct.25), 1990

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N MINER MAG Feb. 1991, pp. 13-16
NW PROSP March/April, May/June, Sept./Oct., Nov./Dec., 1989

DATE CODED:	1993/02/01	CODED BY:	GJP	FIELD CHECK:	N
DATE REVISED:	1993/03/25	REVISED BY:	GJP	FIELD CHECK:	N

MINFILE NUMBER: **093N 192**

NATIONAL MINERAL INVENTORY:

NAME(S): **INDATA**, INDIO, SCHNAPPS, MAIN, SOUTH, NORTH, ALBERT LAKE, LAKE COPPER

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N06W
BC MAP:
LATITUDE: 55 23 39 N
LONGITUDE: 125 20 14 W
ELEVATION: 1197 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location are the collars of diamond-drill holes 88-I-9 to 11, 1 kilometre east of the northern tip of Albert Lake and 40 kilometres east-southeast of Takla Landing (Assessment Report 19382, Geology Map, Sheet 2).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6141141
EASTING: 351975

COMMODITIES: Copper, Gold, Silver, Antimony, Lead, Molybdenum

MINERALS

SIGNIFICANT: Arsenopyrite, Pyrite, Chalcopyrite, Pyrrhotite, Stibnite, Galena, Bornite, Tetrahedrite, Sphalerite, Pentlandite, Scheelite, Bismuthinite
COMMENTS: Minor tetrahedrite, sphalerite, pentlandite, scheelite, bismuthinite and bismuth-telluride mineralization has been noted locally.
ASSOCIATED: Quartz, Carbonate
ALTERATION: Malachite, Azurite, Silica, Talc, Carbonate
ALTERATION TYPE: Talc, Silicific'n, Propylitic, Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Disseminated, Shear
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Triassic-Jurassic	Takla	Undefined Formation	
Triassic-Jurassic			Topley Intrusions
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Hornblende Andesite Flow, Pillow Breccia, Tuff Breccia, Andesite Crystal Lithic Tuff, Andesite, Serpentinite, Gabbro, Hornblende Diorite, Biotite Quartz Monzonite, Limestone

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Cache Creek, Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: MAIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Drill Core
YEAR: 1988

COMMODITY	GRADE	
Gold	31.5700	Grams per tonne

COMMENTS: Sample across 6.09 metres in a talc-carbonate altered serpentinite.
REFERENCE: George Cross Newsletter No. 172, 1988.

CAPSULE GEOLOGY

The Indata occurrence is situated between Albert and Indata lakes, 4 kilometres south of the outlet of Tsayta Lake and

CAPSULE GEOLOGY

approximately 40 kilometres east-southeast of Takla Landing. Interest in the area began in 1983 when a regional exploration program was conducted by Imperial Metals Corporation along the Pinchi fault zone. Results of the 1984 regional geochemical release served to focus this interest in the area of Radio Lake and eventually led to the discovery of in-situ mineralization.

The area is underlain by sediments assigned to the Carbonaceous to Jurassic Cache Creek Complex and volcanic rocks similar to those of the Middle Triassic to Lower Jurassic Takla Group to the east. These groups of rocks are separated by the Pinchi fault zone, which traverses the area in a north-northwesterly direction, and have been intruded by intermediate to felsic plutons and by ultramafic bodies. The oldest rock in the area is massive to well bedded, light to blue-grey Cache Creek limestone outcropping as prominent hills and bluffs. Much of the area between Albert and Indata lakes, however, is underlain by hornblende andesite flows and pyroclastics, including pillow breccia, tuff, tuff breccia and crystal lithic tuff. Small areas of dark amygdaloidal basalt flows have also been observed. Three intrusive suites have been mapped in the area. Hornblende diorite, the oldest intrusive unit, forms a pluton east of the occurrence and occurs as dikes. It is thought that this unit may be comagmatic with the volcanic rocks, as it does not intrude other rock types. Intruding both volcanic rocks and the diorite are dark green to black coloured, locally altered serpentinite (metaperidotite) and gabbroic bodies formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites. The youngest intrusive rocks in the area consist of coarse-grained, light to reddish grey biotite quartz monzonite to granite.

Regionally, similar granites have been described as belonging to the Late Triassic-Early Jurassic Topley intrusions. At least two periods of faulting have affected volcanic rocks in the area. An early set of north striking, east-dipping faults has been cut by predominantly east striking, steeply dipping normal faults. The latter faults are thought to be post-mineralization, as they tend to displace veins hosted by the north-striking faults. Copper mineralization is also hosted by fracture systems in the volcanic rocks thought to be set up by the emplacement of the diorite pluton.

Mineralization found to date is of two types: 1) polymetallic vein mineralization occurring within shallowly dipping, north-striking shear zones and 2) veinlet and disseminated sulphide mineralization in fractured volcanic rocks.

The polymetallic mineralization is characterized by up to 7.6-metre wide veins hosting zonally distributed, massive arsenopyrite with associated pyrrhotite, chalcopyrite, pyrite and local stibnite and galena in a quartz-carbonate gangue. Gold and silver associated with the sulphide mineralization occur in variable amounts, with gold:silver ratios increasing from south to north. Minor tetrahedrite, sphalerite, pentlandite, scheelite, bismuthinite and bismuth-telluride mineralization has also been noted locally. Wallrock alteration depends upon rock type, with silicification prominent in volcanic rocks and talc alteration more prevalent in ultramafic wallrocks.

The second type of mineralization is characterized by chalcopyrite (with or without pyrite) with attendant malachite and azurite as fracture coatings and as disseminations within propylitically altered (and locally silicified) wallrock.

Diamond-drill hole 88-I-11, collared to test part of an 800-metre long geophysical/geochemical anomaly known as the Main zone, intersected a 1.2-metre wide quartz-sulphide vein grading 6.1 grams per tonne gold. The same drillhole also intersected disseminated sulphide mineralization within talc-carbonate altered serpentinite, 7 metres further down the hole. A 6-metre wide sample across this mineralization graded 31.57 grams per tonne gold (George Cross Newsletter No. 172, 1988; Property File - Eastfield Resources Ltd. Newsletter).

At the north end of Albert Lake, disseminated and stringer pyrite-chalcopyrite mineralization occurs in a shear zone in chlorite-epidote altered basalt. A diamond-drill hole intersection across 0.3 metre graded 1.95 per cent copper (Assessment Report 14074, Appendix III).

In 1996, Clear Creek Resources Ltd. drilled and intersected 96.5 metres of 0.12 per cent copper (GCNL #72 (Apr.15), 1998).

Wildrose Resources Ltd. and Clear Creek Resources Ltd. completed a 10-hole, 955-metre drill program in 1998. One hole intersected 0.20 per cent copper over 145.2 metres (GCNL #72 (Apr.15), 1998).

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EMPR PF (Vancouver Stockwatch Sept.23, Oct.29, Dec.3, 1987; *Eastfield
Resources Ltd. Newsletter; see Nifty, 093D 006 - Wildrose Resources
Ltd. Corporate Information; 1989 Snapshot Review Form)
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 3071
GSC P 42-7; 42-11; 44-5; 45-6
N MINER Oct.3, 1988
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#4(Jan.7), #39(Feb.25), #72(Apr.15), #220(Nov.17), 1998
WWW http://www.eastfieldgroup.com/wildrose/wrshome.html;
http://www.infomine.com/
Placer Dome File

DATE CODED: 1986/03/13 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1992/10/06 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093N 193**

NATIONAL MINERAL INVENTORY:

NAME(S): **PHIL 20**, PHIL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02W
BC MAP:
LATITUDE: 55 09 34 N
LONGITUDE: 124 53 52 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The vein is located 3.5 kilometres north-northwest of Mount Alexander, south of Tchentlo Lake (Assessment Report 13509).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6114178
EASTING: 379091

COMMODITIES: Gold Silver Lead

MINERALS
SIGNIFICANT: Galena Pyrite
ASSOCIATED: Quartz Ankerite
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	

LITHOLOGY: Cherty Tuff
Augite Porphyry Flow
Dacitic Tuff
Argillite
Chert
Volcanic Greywacke

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1984

COMMODITY	GRADE	
Silver	265.0000	Grams per tonne
Gold	16.1000	Grams per tonne

REFERENCE: Assessment Report 13509, page 3.

CAPSULE GEOLOGY

Volcanic rocks of the Middle Triassic to Lower Jurassic Takla Group consisting of dacitic tuffs and augite porphyry flows are overlain by a sedimentary package containing argillite, chert and volcanic greywacke. The volcanics are assumed to part of the informal Upper Triassic Witch Lake Formation (Takla Group) (Nelson et al., Fieldwork 1990 and 1991).

A narrow (1 centimetre wide) galena-pyrite-quartz-ankerite vein crosscuts cherty tuffs near a contact with augite porphyry flows. A grab sample of vein material yielded 16.1 grams per tonne gold, 265 grams per tonne silver, 0.19 per cent arsenic and 0.027 per cent copper (Assessment Report 13509, page 3).

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EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118
EMPR OF 1991-3; 1992-4
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842

DATE CODED: 1986/03/13 CODED BY: AFW FIELD CHECK: N
DATE REVISED: 1993/03/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 194**

NATIONAL MINERAL INVENTORY: 093N1 Au1

NAME(S): **MOUNT MILLIGAN**, MT. MILLIGAN, MAIN,
SOUTHERN STAR, PHIL-HEIDI, PHIL,
HEIDI, MBX, WBX,
66, DWBX, CREEK,
ESKER

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093N01E
BC MAP:
LATITUDE: 55 07 26 N
LONGITUDE: 124 01 39 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: MBX zone, 8.75 kilometres south-southeast from the summit of Mount Milligan, 7.75 kilometres west from Philip Lakes (Assessment Report 16966).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6109060
EASTING: 434476

COMMODITIES: Gold, Copper, Silver, Lead, Zinc, Molybdenum

MINERALS

SIGNIFICANT: Pyrite, Chalcopyrite, Magnetite, Bornite, Covellite, Chalcocite, Djurleite, Cuprite, Tenorite, Copper, Sphalerite, Galena, Molybdenite, Arsenopyrite, Tetrahedrite, Tennantite
COMMENTS: Pyrite, chalcopyrite, magnetite and bornite form the economically important hypogene mineralization. The remaining minerals in this list belong to the less significant supergene enrichment assemblage or the outlying polymetallic vein systems.
ASSOCIATED: K-Feldspar, Quartz, Calcite
ALTERATION: K-Feldspar, Biotite, Actinolite, Epidote, Calcite, Chlorite, Albite, Pyrite
COMMENTS: Alteration minerals also occurring include malachite, azurite, goethite, hematite, siderite and limonite.
ALTERATION TYPE: Potassic, Propylitic, Carbonate
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated, Stockwork, Massive
CLASSIFICATION: Porphyry, Hydrothermal, Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au
SHAPE: Regular
MODIFIER: Fractured
DIMENSION: 1300 x 950 x 244 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: Main deposit dimensions. Does not include Southern Star (093N 191).

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Upper Triassic	Takla	Rainbow Creek	
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Augite Andesitic Lapilli Tuff
Augite Andesitic Crystal Tuff
Augite Porphyritic Andesitic Flow
Andesite
Latite
Trachyte
Trachytic Flow
Trachytic Tuff
Plagioclase Porphyritic Monzonite
Monzonite Breccia

HOSTROCK COMMENTS: The monzonitic hostrocks are coeval with the Takla Group volcanics.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist

INVENTORY

ORE ZONE: MOUNT MILLIGAN REPORT ON: Y

CATEGORY: Combined YEAR: 1997
QUANTITY: 445000000 Tonnes

COMMODITY	GRADE	
Gold	0.4150	Grams per tonne
Copper	0.2150	Per cent

COMMENTS: Measured and indicated resource.
REFERENCE: Property File - Mt. Milligan Project, Economic Growth...12/15/97.

CAPSULE GEOLOGY

The Mt. Milligan property is situated in the central part of the Quesnel belt which comprises equivalent rocks of the Middle Triassic to Lower Jurassic Takla, Nicola and Stuhini groups. Bounded to the west by the Pinchi fault, the belt is separated from deformed uplifted Carboniferous to Jurassic Cache Creek Complex (Group) rocks. To the east, the Manson fault zone separates the belt from the high-grade metamorphic Proterozoic Wolverine Complex and the Mississippian to Permian Slide Mountain Group. About 25 kilometres west-northwest of the Mt. Milligan deposit is the southern tip of the northwest-elongate Late Triassic to Early Cretaceous Hogem Intrusive Complex. The main phase of the complex is dated at between 176 to 212 Ma, and is considered to be an intrusive equivalent of the Takla Group.

In the Mount Milligan area, the Takla Group has recently been divided into four informal units - the Upper Triassic Rainbow Creek, Inzana Lake and Witch Lake formations and the Lower Jurassic Chuchi Lake Formation (Fieldwork 1990, page 93). The Rainbow Creek Formation is a basinal layer of slate, and lesser siltstone and epiclastic interbeds. Overlying epiclastic sediments of the Inzana Lake Formation are in turn overlain by augite and other porphyritic volcanics and pyroclastics of the Witch Lake Formation. These pass upward into polymictic lahars and subaerial flows of the Chuchi Lake Formation.

The Mount Milligan Intrusive Complex, located about Mount Milligan peak, approximately 9 kilometres northwest of the Mt. Milligan deposit, consists of at least two separate Early Jurassic intrusive phases. It includes sphene-bearing monzonite, with gabbro and hornblende granite end members; and porphyritic granite. Its wallrocks and numerous pendants include regionally metamorphosed amphibolites and granulites as well as contact hornfelses. The earlier of the two plutonic bodies on Mount Milligan is an equigranular, massive to foliated quartz-deficient monzonite. The later plutonic body is a porphyritic, medium-grained granite with peripheral pegmatite and aplite stringers. The complex was later uplifted as a horst, accompanied by Late Cretaceous to Early Tertiary felsic intrusive activity.

The area of the Mt. Milligan porphyry copper deposits are underlain mainly by north-northwest trending volcanic rocks of the Witch Lake Formation and minor sedimentary rocks of the Rainbow Creek Formation; early Tertiary volcanic and sedimentary rocks are also present. The Witch Lake rocks are intruded by coeval Takla Group and post-Takla Group intrusions related to the Mount Milligan Intrusive Complex. The monzonitic MBX, Southern Star, Goldmark and North Slope stocks host mineralization on the property.

The Mt. Milligan deposits are made up of the Main and Southern Star (093N 191) deposits. The Main deposit comprises the MBX zone, the WBX zone, the 66 zone and the DWBX zone. The Main deposit occurs within the MBX stock and adjacent latitic and trachytic rocks of the Witch Lake Formation. The Southern Star deposit occurs in the Southern Star stock, and adjacent andesitic rocks of the Witch Lake Formation. Refer to the Southern Star occurrence for details of that deposit.

Andesitic rocks underlie most of the area around the Southern Star stock and areas away from the MBX stock. Monolithic fragmental varieties, which form most of the unit, are characterized by actinolite-altered augite porphyritic lapilli tuff with minor augite crystal and lithic tuff. Minor augite porphyritic flows and heterolithic debris flows are interbedded with the fragmental rocks. Plagioclase and/or hornblende phenocrysts occur locally within flows and within lapilli or crystal tuffs.

Latitic volcanic rocks are texturally similar to andesitic volcanic rocks since they are potassically altered andesites. They underlie most of the area around the MBX stock and, less commonly, areas adjacent to the Southern Star stock. These rocks can be distinguished from andesitic volcanic rocks through their darker colour; general absence of visible hornblende; presence of biotite; and greater than one-third potassic feldspar (visible when stained).

Trachytic volcanic rocks are characterized by high potassium feldspar content and a lack of mafic minerals; minor fine-grained

CAPSULE GEOLOGY

plagioclase is also present. Pyrite and chlorite occur in the rock as curvilinear partings in a massive rock type, and along bedding planes and disseminated throughout in a bedded type. The trachytic rocks are porous and intensely potassically-altered. They are interbedded with latitic volcanic rocks in the eastern portion of the Main deposit which is the only indication of stratigraphy in the area of the deposits.

The above sequence has been intruded by a number of small stocks and dikes of porphyritic monzonite and lesser syenite related to the Mount Milligan Intrusive Complex and aligned with that complex along a northwest-trending belt, indicating that their emplacement was structurally controlled. The MBX stock is a moderately west-dipping monzonite body approximately 400 metres in diameter. In the southeastern portion of the Main deposit, the Rainbow dike, up to 50 metres wide, extends from the footwall of the MBX stock forming an elongate bowl-like body with gently dipping sides open to the southeast. The Southern Star stock is a moderately west-dipping, north-northwest striking tabular body of monzonite which forks at its northern end. This stock is approximately 800 by 300 metres in area. These stocks contain up to 30 per cent plagioclase feldspar phenocrysts, 1 to 10 millimetres in length, occurring within a fine-grained grayish pink groundmass composed mostly of potassium feldspar with lesser plagioclase feldspar, and minor quartz, hornblende, biotite and accessory magnetite. Rafts of volcanic rocks are common in both MBX and Southern Star stocks, and xenoliths of volcanic rock and/or lesser earlier monzonite occur locally.

Hydrothermal breccia occurs extensively throughout the Southern Star stock and less commonly in adjacent volcanic rocks and along the margins of the MBX stock. It is characterized by potassium feldspar veinlets and flooding that vary in amount and size.

Three types of postmineral dikes cut the deposits; trachytic, monzonitic and dioritic varieties. These dikes are characterized by lack of sulphide mineralization, with only the monzonitic and dioritic types showing alteration of a weak propylitic and carbonate nature respectively.

Potassic and propylitic alteration assemblages are present throughout the deposits with gold and copper mineralization mainly associated with the potassic assemblage. Minor postmineral carbonate alteration is also present. The potassic alteration is best developed around the contacts of the MBX stock, Rainbow dike and Southern Star stock, decreasing in intensity towards the core of the stocks and away from the contacts for several hundred metres into fractured country rocks. The alteration is characterized by secondary potassium feldspar and, in areas of intense potassic alteration, fine-grained secondary biotite (up to 40 per cent), chalcopyrite, lesser magnetite and minor bornite. Pyroxene phenocrysts, where present, are replaced by actinolite. The propylitic alteration is widespread and generally pervasive. It is best developed outside the zone of potassic alteration, outward from the stocks for up to 2500 metres. The assemblage consists of epidote with varying amounts of calcite, chlorite, albite and pyrite. The propylitic alteration locally overprints the potassic assemblage and less commonly potassic alteration overprints the propylitic assemblage; this relationship is possible because of the contemporaneous nature of the two types of alteration.

At least four episodes of postmineral faulting affected the area containing the deposits. The earliest is manifested by the northerly striking, shallow east-dipping Great Eastern and Rainbow faults. The Great Eastern fault is a moderate east dipping, north to northwest striking regional structure that truncates the southeastern portion of the Main deposit and separates it from sedimentary rocks of the Rainbow Creek Formation and early Tertiary volcanic and sedimentary rocks. The Rainbow fault follows the Rainbow dike, and may be a splay off the Great Eastern fault.

Northwest striking, steeply east-dipping faults occur in the Southern Star deposit and in the western portion of the Main deposit. The most important fault of this type is the Divide fault which separates the Main deposit from the Southern Star deposit.

North-striking faults, possibly related to Tertiary block faulting, are manifested by the steeply east-dipping Harris fault, which separates the WBX and DWBX zones.

Prominent east-northeast striking crossfaults are the latest episode of faulting in the area. These include the Oliver fault, Southern Star crossfaults and the Caira faults, although the latter may belong to an earlier episode that predates the Rainbow fault.

Hypogene mineralization within the Main deposit occurs in the MBX, 66, WBX and DWBX zones, apparently forming one contiguous, blanket-shaped mineralized body over 1300 metres long, up to 950 metres wide and up to 244 metres thick. The MBX zone is in the

CAPSULE GEOLOGY

central portion of the deposit along the footwall of the MBX stock, and surrounds the Rainbow dike where it protrudes from the stock. This zone contains gold and copper, and grades into the 66 zone to the southeast. The gold-rich copper-poor 66 zone surrounds the Rainbow dike. The WBX zone and its downfaulted western extension, the DWBX zone, form the northwest portion of the deposit. Both occur along the hangingwall of the MBX stock, and contains gold and copper.

The Southern Star deposit occurs in the hangingwall and footwall of the Southern Star stock, and contains gold and copper.

Mineralization consists mostly of chalcopyrite, lesser magnetite and minor bornite in areas of potassic alteration, and pyrite in areas of propylitic alteration. In areas of potassic alteration, mineralization is developed best in monzonitic and volcanic rocks adjacent the footwall and, to a lesser extent, the hangingwall contact of the stocks. It is also present in and around trachytic volcanic rocks and the Rainbow dike. In areas of propylitic alteration, mineralization generally decreases away from the stock.

Chalcopyrite occurs mostly as fine-grained disseminations and fracture fillings, and less commonly as veinlets and selvages of veinlets. In veins, chalcopyrite occurs with magnetite and pyrite in a gangue of potassium feldspar, quartz and calcite. Magnetite occurs as disseminations (common in biotite-rich rock), patches and in veinlets, laminae and breccia matrix. A unique occurrence of magnetite breccia occurs as a small zone consisting of 50 per cent massive magnetite veins along the contact of the MBX stock. Bornite occurs as blebs and disseminations in lensoidal zones within volcanic rocks close to the footwall contacts of the MBX and Southern Star stocks where potassium feldspar veinlets are common. Bornite also occurs within the southern portion of the Southern Star stock. Pyrite occurs as disseminations, veinlets, large clots, patches and as replacements in mafic minerals. Several generations of pyrite veinlets are indicated. Gold occurs as grains ranging from 5 to 100 micrometres that fill microfractures, adhere to imperfections on the outside of pyrite grains, and also as inclusions in pyrite, chalcopyrite and magnetite grains. Visible gold is rare.

A diamond-drill hole intersection from the WBX zone across 4.99 metres assayed 12.58 grams per tonne gold and 0.26 per cent copper (George Cross News Letter No.111, 1989). From the gold-enriched 66 zone, a diamond-drill hole intersection across 6.0 metres assayed 4.45 grams per tonne gold and 0.26 per cent copper (George Cross Newsletter No.111, 1989).

Supergene alteration in the deposit is recognized in the MBX, WBX and Southern Star zones. The alteration is deepest and most extensive in the MBX and WBX zones where it is about 20 metres thick over most of the area, with localized areas up to 60 metres thick. However, supergene enrichment is only sporadic and does not form well-defined zones. Secondary copper minerals identified in these areas consist of the sulphides, covellite, chalcocite and djurleite; the oxides, cuprite and tenorite; the carbonates, malachite and azurite; and native copper. The sulphides occur as rims around chalcopyrite; and the oxides, in particular cuprite, occur as surface coatings on native copper. Secondary copper minerals commonly occur with goethite, magnetite, hematite and siderite. Limonite, which includes goethite, commonly replaces sulphide minerals or occurs as coatings on fracture surfaces and hairline cracks.

Gold-silver bearing veins are present in propylitically altered volcanic rocks adjacent to the MBX and Southern Star stocks, apparently radiating outward from the MBX stock and occurring mainly within 500 metres of the stock. They comprise sulphide-rich and carbonate-quartz rich types. The best developed sulphide-rich veins occur in the Creek and Esker zones where 3 to 5 subparallel veins strike northeast and dip steeply northwest through andesitic rocks. The Creek zone is about 400 metres south-southwest of the MBX stock; the Esker zone is about 600 metres southwest of the stock. The veins contain mostly pyrite with lesser chalcopyrite, sphalerite, galena, molybdenite, arsenopyrite and tetrahedrite-tennantite, and minor quartz, potassium feldspar and carbonate. At the Creek zone, a diamond-drill hole intersection across 1 metre assayed 4.4 grams per tonne gold and 82.0 grams per tonne silver (Assessment Report 16966). The carbonate-quartz rich veins, which contain sphalerite, galena and pyrite, occur in propylitically altered latitic volcanics northwest and northeast of the MBX stock.

In general, higher copper values occur along the footwall of the Southern Star stock and as a halo around the MBX stock. The distribution of higher gold grades is similar to copper, but with several important differences. Where concentrations of chalcopyrite are greater near the margins of the MBX stock and the Southern Star stocks, gold values are higher. However, within the 66 zone, where chalcopyrite is sparse and pyrite is abundant, higher gold grades are

CAPSULE GEOLOGY

associated with zones where clots of pyrite, carbonate and chlorite are present. Generally, gold grades are lower around the Southern Star stock and have a much broader distribution around the MBX stock particularly in the 66 zone where the highest grades occur. Lower gold:copper ratios occur in the Southern Star deposit, whereas higher ratios, indicating higher gold grade, occur away from the MBX stock. In general, copper and gold mineralization form a core zone around which peripheral gold-only mineralization occurs in the upper portion of the hydrothermal system.

Placer Dome acquired the property from Continental Gold and BP Minerals in 1990.

A prefeasibility study in 1991 estimated the mineable reserve at 298,400,000 tonnes of ore grading 0.45 gram per tonne gold and 0.22 per cent copper (Information Circular 1995-1, page 14).

A geological resource (no economic considerations) for the MBX and Southern Star zones is reported to total 1,153,135,000 tonnes grading 0.254 gram per tonne gold and 0.126 per cent copper (Mt. Milligan Project, Stage 1 Report, Volume 1 - Development Plan (Mine Development Review Process), April 1991, Placer Dome Inc., Table 3.4, page 3-12).

The Mount Milligan deposit has a measured and indicated resource of 445 million tonnes of ore grading 0.415 gram per tonne gold and 0.215 per cent copper. More than 70 per cent of the measured and indicated resource is considered as a mineable reserve which is economically viable to extract. Mount Milligan's reserve is 257 million tonnes of ore grading 0.510 gram per tonne gold and 0.240 per cent copper (Property File - Mt. Milligan Project, Economic Growth for B.C. & Shareholder Value for Placer Dome, 12/15/97).

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GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842
GSC P 41-5; 42-2; 45-9
GCNL #223, 1988; #134,#38,#60,#61,#51,#111,#128,#27,#50,#68,#73,#6, #1,#86,#9,#135(Jul.14),#148(Aug.2),#150(Aug.4),#161(Aug.22), #202(Oct.20),#215(Nov.8),*#229(Nov.29),#246(Dec.22), 1989; #24(Feb.2),#207(Oct.25), 1990
MIN REV Winter 1996/97 p. 32
N MINER Jan.16, Feb.27, Mar.20, Apr.17, June 19, Jul.10, 1989; Dec.5, 1988; Feb.27, Mar.20, Apr.17, Aug.7,28, Oct.16, 1989; Jan.1,15, Feb.19, Mar.12, May 28, Sept.10, Dec.3, 1990; May 27, June 17, July 8, Oct.28, 1991; Feb.10,17, 1992
N MINER MAG Feb. 1991, pp. 13-16
NW PROSP March/April, May/June, Sept./Oct., Nov./Dec., 1989
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MINFILE NUMBER: **093N 195**

NATIONAL MINERAL INVENTORY:

NAME(S): **HUMPHREY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12W
BC MAP:
LATITUDE: 55 37 40 N
LONGITUDE: 125 45 47 W
ELEVATION: 1675 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the approximate centre of a northeast-trending zone of talc-ankerite altered ultramafic rocks, northwest of Humphrey Lake, about 20 kilometres northeast of Takla Landing (Open File 1988-19, Figure 20).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6168117
EASTING: 326046

COMMODITIES: Talc, Chrysotile

MINERALS

SIGNIFICANT: Talc, Chrysotile
ASSOCIATED: Actinolite, Tremolite
ALTERATION: Ankerite, Quartz, Carbonate, Mariposite
ALTERATION TYPE: Serpentin'zn, Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein, Shear
CLASSIFICATION: Hydrothermal, Epigenetic, Industrial Min.

HOST ROCK

DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinite
Harzburgite
Peridotite
Greenstone
Cherty Phyllite
Meta Sediment/Sedimentary

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic while the Oceanic Ultramafites are Mississippian to Triassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks
METAMORPHIC TYPE: Regional
RELATIONSHIP: Cache Creek
GRADE: Greenschist

CAPSULE GEOLOGY

The Humphrey occurrence is located northwest of Humphrey Lake, approximately 20 kilometres northeast of Takla Landing.

A major structural feature, the Vital fault, strikes north-northwest and dips easterly through the area, dividing metasediments and greenstone of the Carboniferous to Jurassic Cache Creek Complex to the east and serpentinite and ultramafic rocks (peridotite and harzburgite) formerly assigned to the Middle Permian to Late Triassic Trembleur intrusions and now termed Mississippian to Triassic Oceanic Ultramafites, to the west. The ultramafics are variably serpentinized and have locally undergone quartz-carbonate alteration, resulting in generally lenticular zones of quartz-ankerite-mariposite. The alteration zones are cream to light brown, weather orange-brown and are most prominent adjacent to the main fault (Assessment Report 14554).

Serpentinite in the area is described as massive, widely sheared and hosts talc and chrysotile veinlets together with coarsely crystalline actinolite and tremolite (Assessment Report 12548, page 4).

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EMPR EXPL 1983-464; 1985-C337
EMPR OF *1988-19, p. 49; 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252

BIBLIOGRAPHY

GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1988/01/21 CODED BY: MM FIELD CHECK: N
DATE REVISED: 1992/10/11 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 196**

NATIONAL MINERAL INVENTORY:

NAME(S): **AXEL**, GOLDAXE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N13W
BC MAP:
LATITUDE: 55 57 55 N
LONGITUDE: 125 57 30 W
ELEVATION: 1550 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate location of Trench A, about 54 kilometres north of Takla Landing (Assessment Report 15936, Figure 5).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6206167
EASTING: 315360

COMMODITIES: Gold, Silver, Antimony, Lead, Copper, Zinc

MINERALS

SIGNIFICANT: Stibnite, Galena, Chalcopyrite, Sphalerite, Chalcocite
ASSOCIATED: Quartz, Fluorite, Calcite, Carbonate, Arsenopyrite, Pyrite
ALTERATION: Silica, Carbonate, Azurite, Malachite
ALTERATION TYPE: Silicific'n, Carbonate
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Hydrothermal, Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Triassic-Jurassic	Takla	Undefined Formation	
Eocene			Babine Intrusions

LITHOLOGY: Syenite Porphyry, Felsite, Lapilli Tuff, Conglomerate, Ultramafic, Phyllitic Schist, Meta Volcanic, Shale, Siltstone

HOSTROCK COMMENTS: Plutonic rocks are related to the Eocene Glover stock.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Plutonic Rocks, Cache Creek

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1987

COMMODITY	GRADE	
Silver	171.4000	Grams per tonne
Gold	12.6000	Grams per tonne
Copper	2.3300	Per cent
Antimony	1.3300	Per cent
Zinc	0.3400	Per cent

COMMENTS: Grab sample from Trench A of quartz-fluorite-calcite veins hosting stibnite, chalcocite, galena, sphalerite and pyrite.
REFERENCE: Assessment Report 15936.

CAPSULE GEOLOGY

The Axel occurrence is situated on the northeast facing slopes of the Axelgold Range, approximately 54 kilometres north of Takla Landing.

The range has been divided by a series of faults and thrusts, with foliated rocks assigned to the Carboniferous to Jurassic Cache Creek Complex to the west and sediments of the Middle Triassic to Lower Jurassic Takla Group to the east. The Cache Creek rocks can be

CAPSULE GEOLOGY

differentiated from the younger sediments by their highly tectonized-foliated state and comprise phyllitic schist with minor interbedded metavolcanics. Takla Group rocks are dominated by shale and siltstone, with a coarse conglomerate appearing in a fault wedge to the north. The conglomerate is moderately to strongly foliated, dips moderately to steeply northeast and appears to overlie and envelope intrusive rocks on the property. A number of small ultramafic bodies are also caught up as slivers within the fault zone.

A syenitic mass, referred to as the Axel intrusion, has been emplaced within the northwest-striking fault zone. It is represented by a pyritic sequence of variably silicified/carbonatized felsic and siliceous rocks related to either the Late Triassic to Early Cretaceous Hogem Intrusive Complex or the Late Triassic-Early Jurassic Topley intrusions. In general, the core of the intrusion comprises coarse-grained syenite porphyry flanked by a variably altered finer grained syenite porphyry which is, in turn, overlain by a felsic unit which is capped by lapilli tuff. All structural attitudes are northwest striking and dip moderately to steeply northeast.

The similarity between the Axel syenite and the Glover pluton of the Lustdust deposit,and other Eocene Babine Intrusives is stressed in later work (EMPR Fieldwork 2002, pages 97-113).

Mineralization, in most cases, was found to be of the quartz vein-type, averaging 2 centimetres thick, having no consistent orientation and occurring in felsitic rocks which themselves were not particularly mineralized. The veins host variable amounts of stibnite, galena and chalcopyrite and most contain anomalous concentrations of gold.

Gold mineralization within the Axelgold Syenite (previously called the Axel syenite) is of the disseminated to stringer, and rarely vein style. Higher gold values tend to be associated with the potash feldspar-biotite plagioclase monzonite. Mineralization consists of quartz, carbonate, fluorite, pyrite, chalcopyrite, chalcocite, ?tetrahedrite, galena and stibnite. The alteration is extensive and pervasive (EMPR Fieldwork 2002, pages 97-113).

Trench A, located to find the origin of copper-stained float observed in a small debris track, exposed silicified syenite porphyry hosting massive pyrite as well as up to 7-centimetre wide quartz-stibnite and fluorite-calcite veins, the latter carrying local stibnite, chalcocite, galena, sphalerite, arsenopyrite, pyrite, malachite and azurite. In addition, several quartz-fluorite veins hosting stibnite and chalcopyrite occur within silicified megacrystic syenite porphyry within 200 metres of this seven metre trench.

The best assay, 12.6 grams per tonne gold, 171.4 grams per tonne silver, 1.33 per cent antimony, 2.33 per cent copper and 0.34 per cent zinc, came from a grab sample from Trench A (Assessment Report 15936).

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2002-13-28
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GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252
GSC P 74-1B, pp. 31-42; 76-1A, pp. 75-76

DATE CODED: 1988/03/14 CODED BY: GSA FIELD CHECK: N
DATE REVISED: 1992/09/17 REVISED BY: DMN FIELD CHECK: N

MINFILE NUMBER: **093N 197**

NATIONAL MINERAL INVENTORY:

NAME(S): **BOLD 2**, BOULDER CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09W
BC MAP:
LATITUDE: 55 36 13 N
LONGITUDE: 124 22 43 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located on the north bank of Boulder Creek, approximately 2 kilometres upstream from its mouth.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6162826
EASTING: 413144

COMMODITIES: Lead Zinc Molybdenum Silver

MINERALS

SIGNIFICANT: Galena Sphalerite Molybdenite
COMMENTS: The sulphides are in found in very low concentrations.
ASSOCIATED: Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
SHAPE: Irregular
MODIFIER: Fractured

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic-Paleoz.	Boulder Creek	Undefined Formation	
Cretaceous			Germansen Batholith

LITHOLOGY: Arenite
Carbonate
Mariposite Talc Ankerite Schist

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
TERRANE: Kootenay

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: VEIN

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Chip

YEAR: 1982

COMMODITY	GRADE	
Silver	127.5000	Grams per tonne
Molybdenum	0.2860	Per cent
Lead	4.3500	Per cent
Zinc	1.3000	Per cent

REFERENCE: Assessment Report 10702.

CAPSULE GEOLOGY

The Bold 2 occurrence is located on the north bank of Boulder Creek, approximately 2 kilometres upstream from its mouth. This occurrence is similar to the Bold 1 occurrence (093N 137).

This occurrence consists of disseminated galena, sphalerite, molybdenite and pyrite occurring within arenites and carbonates of the Proterozoic to Paleozoic(?) Boulder Creek Group. These sulphides are found below a fault-bounded body of mariposite-talc-ankerite schist (altered ultramafic). The sediments are highly deformed exhibiting both ductile and brittle deformation. These rocks are intruded by the Cretaceous Germansen batholith 2 kilometres to the west and are found within the right-lateral Manson fault zone of probable Cretaceous to Tertiary age.

Chip samples over 1.1 metres assayed 4.35 per cent lead, 1.3 per cent zinc, 0.286 per cent molybdenum and 127.5 grams per tonne silver (Assessment Report 10702).

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EMPR BULL *91
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1988/03/31 CODED BY: FF FIELD CHECK: Y
DATE REVISED: 1992/08/11 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 198** NATIONAL MINERAL INVENTORY:

NAME(S): **BRALORNE LIMESTONE**, BRALORNE TAKLA

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 34 02 N
LONGITUDE: 125 23 18 W
ELEVATION: 1070 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is centred on the Bralorne Takla mercury mine (093N 008), about 145 kilometres northwest of Fort St. James (Geological Survey of Canada Map 907A).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6160504
EASTING: 349400

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
ALTERATION: Dolomite
COMMENTS: Product of hydrothermal alteration of limestone.
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Fusulinids

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 2000 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: The limestone strikes northwest and dips to the southwest; it is up to 2 kilometres wide.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

DATING METHOD: Fossil
MATERIAL DATED: Fusulinids

LITHOLOGY: Limestone
Argillite
Chert
Greenstone
Andesite

HOSTROCK COMMENTS: Cache Creek Complex rocks are Carboniferous to Jurassic.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1949
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	56.0500	Per cent

COMMENTS: Grade given for calcium oxide.
REFERENCE: Geological Survey of Canada Memoir 252, page 36, Sample 10.

CAPSULE GEOLOGY

Numerous outcrops of limestone occur in the vicinity of the Bralorne Takla mercury mine (093N 008), just west of Silver Creek, 145 kilometres northwest of Fort St. James.

The deposit lies within a 200-kilometre long, northwest-trending belt of massive Permian to Pennsylvanian limestone with minor chert and argillite assigned to the Carboniferous to Jurassic Cache Creek Complex. The belt is bound to the west by the northwest-striking Pinchi fault zone. Overlying chert, argillite and greenstone (andesite) of the Cache Creek Complex outcrop to the west. The belt is up to 2 kilometres wide to the west of Silver Creek, which flows along the Pinchi fault zone.

Hydrothermal activity along the fault zone has resulted in the

CAPSULE GEOLOGY

variable dolomitization of these carbonates. The limestone in the vicinity of the Bralorne Takla mercury mine is variably brecciated and white to blue-grey to buff in colour. A sample of brecciated buff-coloured limestone from the "A" showing at the mine analysed 50.06 per cent CaO, 0.05 per cent MgO, 3.04 per cent SiO2, 0.41 per cent Fe2O3+Al2O3 and 4.21 per cent insolubles (Geological Survey of Canada Memoir 253, page 36, Sample 11). A second sample of white limestone from the same showing analysed 56.05 per cent CaO, 0.05 per cent MgO, nil SiO2, 0.10 per cent Fe2O3+Al2O3 and 0.19 per cent insolubles (Geological Survey of Canada Memoir 252, page 36, Sample 10).

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EMPR OF 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 32-36
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1989/08/14 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1992/09/30 REVISED BY: DMN FIELD CHECK: Y

MINFILE NUMBER: **093N 199**

NATIONAL MINERAL INVENTORY:

NAME(S): **BB**, VITAL CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11W
BC MAP:
LATITUDE: 55 43 06 N
LONGITUDE: 125 28 18 W
ELEVATION: 850 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location centred on the BB group of claims, about 160 kilometres northwest of Fort St. James (Industrial Minerals File - McCammon, 1973).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6177499
EASTING: 344746

COMMODITIES: Limestone

MINERALS

SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
ALTERATION: Dolomite
ALTERATION TYPE: Carbonate
MINERALIZATION AGE: Pennsylvan.-Permian
ISOTOPIC AGE: DATING METHOD: Fossil MATERIAL DATED: Fusulinids

DEPOSIT

CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 760 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone strikes northwest and dips southwest(?); it is up to 760 metres wide.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

DATING METHOD: Fossil
MATERIAL DATED: Fusulinids

LITHOLOGY: Limestone
Chert
Argillite
Greenstone
Andesite
Quartzite

HOSTROCK COMMENTS: Cache Creek Complex rocks range from Carboniferous to Jurassic.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Cache Creek
PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1949
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Limestone	55.4600	Per cent

COMMENTS: Grade given for calcium oxide.
REFERENCE: Geological Survey of Canada Memoir 252, page 36, sample 14.

CAPSULE GEOLOGY

Limestone is exposed in the vicinity of the BB group of claims on Silver Creek, just north of its confluence with Vital Creek, 160 kilometres northwest of Fort St. James (see 093N 014).

The deposit lies within a 200 kilometre long, northwest-trending belt of massive Permian-Pennsylvanian limestone with minor chert and argillite assigned to the Carboniferous to Jurassic Cache Creek Complex. The limestone is bound to the east by the north-northwest striking Pinchi fault zone and overlain to the west by a sequence of chert, argillite, quartzite and greenstone (andesite) also assigned to the Cache Creek Complex. Locally, the belt is up to 760 metres in width.

The limestone is variably dolomitized along the Pinchi fault

CAPSULE GEOLOGY

zone due to hydrothermal alteration. A sample of blue-grey limestone outcropping on the BB claims analysed 55.46 per cent CaO, 0.27 per cent MgO, 0.11 per cent SiO2, 0.20 per cent Fe2O3+Al2O3 and 0.41 per cent insolubles (Geological Survey of Canada Memoir 252, page 36, sample 14).

BIBLIOGRAPHY

EMPR IND MIN FILE (*McCammon, J.W. (1973): Limestone Occurrences in British Columbia, p. 25 (in Ministry Library))
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252, pp. 32-36
GSC P 74-1A; 74-1B, pp. 31-42

DATE CODED: 1989/08/15 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1992/09/23 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093N 200**

NATIONAL MINERAL INVENTORY:

NAME(S): **QCM**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N10E
BC MAP:
LATITUDE: 55 41 22 N
LONGITUDE: 124 35 35 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is centred on the area of most intense alteration, approximately 7 kilometres northwest of Manson Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6172667
EASTING: 399854

COMMODITIES: Gold

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Quartz Sericite Albite
ALTERATION: Ankerite Mariposite Pyrite Albite Sericite Quartz
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	

LITHOLOGY: Volcaniclastic
Volcanic Siltstone
Volcanic Sandstone
Volcanic Wacke
Volcanic Conglomerate
Argillite
Aphanitic Flow
Pyroxene Phyric Flow
Chert
Listwanite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Greenschist
COMMENTS: Related to the Manson fault zone.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1982
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Gold	4.2000	Grams per tonne

COMMENTS: A 1-metre chip sample of quartz-carbonate altered material from an intensely altered zone.
REFERENCE: Assessment Report 10746.

CAPSULE GEOLOGY

The QCM occurrence is located approximately 7 kilometres northwest of Manson Creek, on a north slope of a small knoll. It is accessed by an old cat road and the location is centred on the most intense alteration zone.

Anomalous gold, silver, copper and zinc from soil and rock geochemistry in 1972 outlined two large anomalous trends, the Flag and the Central zones (Assessment Report 4245). This geochemistry led to extensive geological, geochemical and geophysical surveys and eventually reverse circulation drilling in 1983 (Assessment Report 11627).

Rocks in the area are poorly exposed and are volcanically derived sediments belonging to the Middle-Upper Triassic Slate Creek

CAPSULE GEOLOGY

Formation (Takla Group). These sediments are a mixture of siltstones, sandstones, wackes and conglomerates. Also present are argillites, aphanitic to pyroxene phyric flows and lesser cherts. The argillites are thin to moderately bedded, cream to rusty weathered and grey on fresh surfaces. They are interbedded with cream to beige, thin to moderately bedded siltstones to siliceous siltstones in sequences 1 to 10 metres thick. The coarser grained sediments are less abundant and contain clasts of subangular feldspar and augite crystal fragments, feldspar augite porphyries, aphanitic volcanics and minor argillite. The basalts are green to dark green, amygdaloidal mafic flows with small phenocrysts of pyroxene and plagioclase.

All the rocks have been affected by variable carbonate alteration characterized by ankerite and pyrite. Two types of carbonate alteration have been distinguished with the first being characterized by large porphyroblasts which have poikiloblastic cores containing quartz, feldspar, hematite and other opaques. The second is characterized by idioblastic, iron-poor porphyroblasts which may be related to the inclusion-free rims of the porphyroblasts of the first type. Fine grained and idioblastic pyrite is the only sulphide associated with these alteration zones and forms up to ten per cent of the rock.

Alteration assemblages are dependent upon lithology. In the mafic and intermediate volcanics, the alteration assemblage is typically ankerite-albite-sericite-quartz +/- mariposite and pyrite. The volcaniclastic rocks typically contain ankerite, sericite, albite and quartz with or without pyrite. The most intensely altered zones contain abundant quartz veins of varying widths.

The most important zone is the central zone, which is 200 by 300 metres and this zone is hosted by epiclastic rocks of the Takla Group. These sediments are bleached to a whitish to cream-coloured rock composed primarily of sericite, quartz, iron-carbonates, pyrite (5 per cent) and albite. The original clastic nature and texture of these rocks are barely discernible. This zone contains very little quartz veining.

These altered rocks occupy a northwest-trending sliver of the right-lateral Manson fault zone. To the southeast, other splays of the Manson fault zone control the quartz-carbonate (listwanite) alteration.

Surface lithogeochemical sampling from the altered zones analysed as high as 4.2 grams per tonne gold from 1-metre chip samples (Assessment Report 10746). Coincident gold and pyrite concentrations suggest that the gold may be within the pyrite and may also be disseminated within the altered volcanics.

BIBLIOGRAPHY

EMPR ASS RPT 4245, 4246, 9944, 10746, *11627
EMPR BULL *91
EMPR EXPL *1988, p. 139-142
EMPR FIELDWORK *1988, pp. 217-219
EMPR OF 1989-12
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC MEM 252
GSC P 41-5; 42-2; 45-9; 75-33
PR REL Royal County Minerals Corp., Feb.17, 2003

DATE CODED: 1989/02/20 CODED BY: DMM FIELD CHECK: Y
DATE REVISED: 1992/08/24 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 201**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILL**, WILL NO. 2

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09E 093O12W
BC MAP:
LATITUDE: 55 34 26 N
LONGITUDE: 124 00 23 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 2 kilometres east of Manson River, 5 kilometres northeast of the mouth of Munro Creek.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6159116
EASTING: 436546

COMMODITIES: Thorium, Lanthanum, Cerium, Neodymium, Yttrium, Tantalum, Copper, Rare Earths

MINERALS
SIGNIFICANT: Monazite, Chalcopyrite
ASSOCIATED: Aegirine, Augite, Quartz, Pyrite, Malachite, Magnetite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Layered, Disseminated
CLASSIFICATION: Magmatic, Pegmatite
TYPE: O02 Rare element pegmatite - NYF family

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic	Ingenika	Undefined Formation	
Proterozoic			Wolverine Complex

LITHOLOGY: Meta Schist, Pegmatite, Gneiss, Monzodiorite, Alkalic Dike, Monzonite

HOSTROCK COMMENTS: The Wolverine Complex is defined as part of the lower Ingenika Group found above the sillimanite isograd.

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Manson Upland
RELATIONSHIP: Post-mineralization
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Cerium	0.2700	Per cent
Lanthanum	0.1300	Per cent
Neodymium	0.1000	Per cent
Thorium	0.1300	Per cent

COMMENTS: Sample of aegirine-augite monzodiorite for thorium value. Sample of altered rock for rare-earth values.
REFERENCE: Property File - Halleran, 1989; Assessment Report 17872.

CAPSULE GEOLOGY

The Will occurrence is found approximately 2 kilometres east of the Manson River, approximately 5 kilometres northeast of the mouth of Munro Creek.

The area lies within the Omineca Belt consisting of siliciclastic sediments with minor carbonates and mafic rocks. These rocks belong to the late Proterozoic Ingenika Group. Within the Wolverine Range, the sediments are highly metamorphosed and subsequently intruded by granodioritic bodies and associated pegmatites which are most likely early Tertiary in age. The Proterozoic Wolverine Complex rocks consist of amphibolite and calcsilicate gneiss, schists, micaceous quartzite and crystalline limestone.

CAPSULE GEOLOGY

The occurrence area is underlain by monzonite (Mount Bisson intrusions), metasomatized Wolverine Complex schists and gneisses (alkalic unit), pegmatites and late crosscutting alkaline dikes. The rocks strike northwest and dip 45 to 65 degrees southwest. The alkaline overprinting is characterized by the presence of aegirine-augite and rare earth element-bearing minerals. Monazite is common in the area. The alkalic dikes appear to parallel the attitude of the host units, which strike 320 degrees and dip 55 degrees southwest. These dikes contain minor chalcopyrite, pyrite, malachite and magnetite.

A sample (UG-7813) from the altered rocks assayed 0.13 per cent lanthanum, 0.27 per cent cerium, and 0.1 per cent neodymium. A sample (UG-7816) from a dike assayed 0.23 per cent lanthanum, 0.42 per cent cerium and 0.15 per cent neodymium (Assessment Report 17872). A radioactive sample (UG-38M) of aegirine augite monzodiorite assayed 0.13 per cent thorium (Property File - Halleran, 1989).

BIBLIOGRAPHY

EMPR ASS RPT *17872
EMPR PF (Report by Halleran, A.A.D., 1989)
EMPR BULL *91
EMPR FIELDWORK *1987, pp. 169-180; 1992, pp. 301-306
EMPR OF 1988-12; 1990-32
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33
Chevron File

DATE CODED: 1990/08/01 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1992/09/15 REVISED BY: FF FIELD CHECK: N

MINFILE NUMBER: **093N 202**

NATIONAL MINERAL INVENTORY:

NAME(S): **CAT**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N10W
BC MAP:
LATITUDE: 55 40 08 N
LONGITUDE: 124 46 52 W
ELEVATION: 1325 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located approximately 1.3 kilometres south of the eastern part of Germansen Lake, 18 kilometres west of Manson Creek and is centred on a zinc anomaly.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170667
EASTING: 387975

COMMODITIES: Zinc

MINERALS
SIGNIFICANT: Sphalerite
ASSOCIATED: Quartz Pyrite Pyrrhotite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein Shear Podiform
CLASSIFICATION: Hydrothermal Epigenetic
SHAPE: Irregular
MODIFIER: Faulted Sheared
COMMENTS: Veins are roughly parallel to east-striking bedding.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Takla	Slate Creek	
Cretaceous			Germansen Batholith

LITHOLOGY: Shale
Siltstone
Greywacke
Hornfels
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Hornfels

CAPSULE GEOLOGY

The Cat occurrence is found approximately 1.3 kilometres south of Germansen Lake. Quartz veins are found in shales, siltstones and greywacke/sandstones of the Middle-Upper Triassic Slate Creek Formation (the basal part of the Middle Triassic to Lower Jurassic Takla Group). These east-striking sediments have been intruded by the Cretaceous Germansen batholith several hundred metres to the south.

This showing comprises white to milky quartz veins up to 1.5 metres in thickness in clusters of 5 to 10 over a thickness of 2 to 10 metres. These veins are found in fault and shear zones of the hornfelsed sediments, are roughly east striking and occur as pods, discrete veins or irregular swarms. Only traces of sphalerite were reported on the Cat claims. Pyrite and pyrrhotite occur extensively within the mineralized zone.

BIBLIOGRAPHY

EMPR ASS RPT 13955
EMPR OF 1989-12
EMPR FIELDWORK 1988, pp. 209-220; 1991, pp. 119-126
EMPR BULL *91
GSC MEM 252
GSC MAP 876A; 907A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1990/06/08 CODED BY: FF FIELD CHECK: N
DATE REVISED: 1992/08/26 REVISED BY: DMM FIELD CHECK: N

MINFILE NUMBER: **093N 203**

NATIONAL MINERAL INVENTORY:

NAME(S): **MON**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N09E 093O12W
BC MAP:
LATITUDE: 55 31 22 N
LONGITUDE: 124 01 18 W
ELEVATION: 1035 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The occurrence is located in the centre of a logged area on the north side of Munro Creek. The graphite-bearing hostrock continues to the southeast onto NTS map sheet 93O/12W (Open File 1988-12).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6153442
EASTING: 435499

COMMODITIES: Graphite

MINERALS
SIGNIFICANT: Graphite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated Layered Stratabound
CLASSIFICATION: Metamorphic Industrial Min.
TYPE: P04 Crystalline flake graphite
SHAPE: Tabular

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic	Ingenika	Unnamed/Unknown Formation	
Proterozoic			Wolverine Complex

LITHOLOGY: Graphitic Marble
Calc-silicate
Biotite Schist
Marble

HOSTROCK COMMENTS: The Wolverine Complex is part of the lower Ingenika Group found above the sillimanite isograd.

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Manson Upland
RELATIONSHIP: Syn-mineralization
GRADE: Amphibolite

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1986
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Graphite	4.7300	Per cent

COMMENTS: Assay reported.
REFERENCE: Assessment Report 14545.

CAPSULE GEOLOGY

The Mon graphite occurrence is located just north of Munro Creek, approximately 5.5 kilometres upstream from its mouth. Metasediments containing graphite occur over a wide area (several square kilometres) and are found in spotty occurrences northwest and southeast of this locality.

Graphite occurs as disseminated flakes 1 to 5 millimetres in length and in concentrations as high as 4.75 per cent (Assessment Report 14545). These graphite flakes are found in marbles, calcsilicates or biotite schists. As well, nearly pure graphite layers (with lesser calcsilicates) up to 6 centimetres thick are also reported.

The hostrocks form part of the upper amphibolite grade rocks of the Proterozoic Wolverine Complex which are highly metamorphosed Proterozoic Ingenika Group rocks.

BIBLIOGRAPHY

EMPR ASS RPT *14545
EMPR BULL *91
EMPR FIELDWORK *1987, pp. 169-180; 1992, pp. 301-306

BIBLIOGRAPHY

EMPR OF 1988-12
GSC MEM 252
GSC MAP 876A; 971A; 1424A; 5249G
GSC P 41-5; 42-2; 45-9; 75-33

DATE CODED: 1990/05/25 CODED BY: FF FIELD CHECK: N
DATE REVISED: 1992/07/27 REVISED BY: DMM FIELD CHECK: Y

MINFILE NUMBER: **093N 204**

NATIONAL MINERAL INVENTORY:

NAME(S): **MITZI**, PHIL

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01E
BC MAP:
LATITUDE: 55 09 38 N
LONGITUDE: 124 03 30 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 1 kilometre north-northeast of the east end of Mitzi Lake, approximately 4.5 kilometres northwest of the Mount Milligan deposit (093N 194).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6113169
EASTING: 432572

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Tetrahedrite Chalcopyrite
ASSOCIATED: Quartz Ankerite
ALTERATION: Biotite Garnet
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
DIMENSION: Metres STRIKE/DIP: 045/65N TREND/PLUNGE:
COMMENTS: Attitude of twenty-centimetre wide quartz vein.

HOST ROCK

DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	

LITHOLOGY: Augite Porphyry Agglomerate
Coarse Grained Equigranular Syeno Diorite
Mafic Biotite Schist
Diorite

HOSTROCK COMMENTS: The Witch Lake Formation is an informal name proposed by Nelson et. al. (Fieldwork 1990).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Zeolite to prehnite-pumpellyite grade metamorphism.

PHYSIOGRAPHIC AREA: Nechako Lowland
GRADE: Zeolite

CAPSULE GEOLOGY

The Mitzi showing is located on the Phil claim group, 1 kilometre north-northeast of the east end of Mitzi Lake and 4.5 kilometres northwest of the Mount Milligan deposit (093N 194). The showing is a tetrahedrite-chalcopyrite bearing quartz-ankerite breccia vein hosted in hornfelsed augite porphyry agglomerate of the Upper Triassic Witch Lake Formation, Takla Group. The 20-centimetre vein strikes 045 degrees, dips 65 degrees northwest and contains up to 5 per cent tetrahedrite with minor chalcopyrite. Alteration in the metavolcanics includes massive garnet and biotite. Prominent gossans occur within 500 metres of the vein, but contain no visible sulphides.

Outcrops around the showing include strongly foliated biotite-rich mafic schists that are intruded by and occur as xenoliths in coarse-grained equigranular diorite/syenodiorite. These regionally metamorphosed amphibolitic schists have been brought to the surface by the Mount Milligan horst. See the Mount Milligan deposit description (093N 194) for related information.

BIBLIOGRAPHY

EMPR FIELDWORK *1990, pp. 89-110
EMPR OF *1991-3; 1992-3
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1990/09/06 CODED BY: MM FIELD CHECK: Y
DATE REVISED: 1993/02/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 205**

NATIONAL MINERAL INVENTORY:

NAME(S): **RAINBOW CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01E
BC MAP:
LATITUDE: 55 02 41 N
LONGITUDE: 124 03 15 W
ELEVATION: 1100 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located along a north-flowing tributary of Rainbow Creek, about 15 kilometres south of the Mount Milligan deposit (093N 194) (Open File 1991-3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6100276
EASTING: 432643

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ASSOCIATED: Quartz Carbonate Fuchsite Magnesite
ALTERATION TYPE: Silicific'n
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Breccia
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I01 Au-quartz veins

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	

LITHOLOGY: Augite Porphyry Agglomerate
Tuffaceous Siltstone
Mudstone
Andesitic Flow
Andesitic Breccia
Andesite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Zeolite
COMMENTS: Zeolite to prehnite-pumpellyite grade metamorphism.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	1.4000	Grams per tonne

REFERENCE: Fieldwork 1990, page 108.

CAPSULE GEOLOGY

The Rainbow Creek showing is located on the Rain claims along a north-flowing tributary into Rainbow Creek, about 15 kilometres south of the Mount Milligan deposit (093N 194).

The showing consists of up to 20 per cent pyrite in a grey and black fault zone breccia with quartz and carbonate veining. The fault zone cuts through augite porphyry agglomerates and white-weathering tuffaceous black siltstone and mudstone of the Upper Triassic Witch Lake Formation, Takla Group. Gossanous zones contain 3 per cent disseminated pyrite with magnesite and traces of fuchsite. One of the veins analysed 1.4 grams per tonne gold and 0.18 per cent arsenic (Fieldwork 1990, page 108).

A strong arsenic-antimony-zinc geochemical anomaly occurs at the creek confluence. Trace amounts of chalcopyrite were also observed in andesitic flows and breccias on the property.

BIBLIOGRAPHY

EMPR ASS RPT *17860, 19164, 21660,
EMPR FIELDWORK *1990, pp. 89-110
EMPR OF *1991-3; 1992-3

BIBLIOGRAPHY

GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1990/09/05 CODED BY: MM FIELD CHECK: Y
DATE REVISED: 1993/02/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 206**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHIC**, GOLDFINGER

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01E
BC MAP:
LATITUDE: 55 12 52 N
LONGITUDE: 124 24 48 W
ELEVATION: 940 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Showing location, about 2 kilometres north of the east end of Chuchi Lake (Open File 1991-3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6119566
EASTING: 410077

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite Chalcopyrite
ALTERATION: Kaolinite Quartz Epidote
ALTERATION TYPE: Argillic
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epithermal Hydrothermal Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	

LITHOLOGY: Intrusive K-Feldspar Porphyry
K-Feldspar Porphyritic Andesite
Amygdaloidal Zeolite Epidote Dacite
Amygdaloidal Dacitic Flow
Dacite

HOSTROCK COMMENTS: Chuchi Lake Formation is an informal name at the present time.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Regional RELATIONSHIP:
COMMENTS: Zeolite to prehnite-pumpellyite grade metamorphism.

PHYSIOGRAPHIC AREA: Nechako Lowland
GRADE: Zeolite

CAPSULE GEOLOGY

The Chic showing is located on the Goldfinger claim group approximately 3 kilometres north of the outlet of the Nation River on Chuchi Lake. The showing is an epithermal vein within a megacrystic potassium feldspar porphyry intrusion. The vein contains light green kaolinite and quartz with abundant blebs of disseminated pyrite and traces of chalcopyrite (Fieldwork 1990, page 107).

The feldspar porphyry is likely the intrusive equivalent of nearby potassium feldspar porphyritic andesites and purple amygdaloidal dacitic flows. The rocks are assigned to the Lower Jurassic Chuchi Lake Formation of the Middle Triassic to Lower Jurassic Takla Group and is comprised of subaerial volcanic flows and lahars. It is progressively underlain by submarine augite plagioclase volcanic porphyritic flows of the Upper Triassic Witch Lake Formation (Takla Group) and volcanically derived epiclastic sediments of the Upper Triassic Inzana Lake Formation (Takla Group). The base of the sequence is the Upper Triassic Rainbow Formation (Takla Group) consisting of fine-grained slates and sediments derived, in part, from a continental source.

BIBLIOGRAPHY

EMPR ASS PRT 19365, 20509, 21069
EMPR FIELDWORK *1990, pp. 89-110; 1991, pp. 103-118
EMPR OF *1991-3; 1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1990/08/31 CODED BY: MM FIELD CHECK: Y
DATE REVISED: 1993/02/18 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 207**

NATIONAL MINERAL INVENTORY:

NAME(S): **KBE**, BN 2, FRAN, ROADSIDE, MIDRIDGE, HILLTOP

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01E 093K16E
BC MAP:
LATITUDE: 55 00 27 N
LONGITUDE: 124 24 09 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 5 kilometres southeast from the east end of Mudzenchoot Lake and 10 kilometres north-northeast of the east end of Inzana Lake (Open File 1991-3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6096525
EASTING: 410304

COMMODITIES: Copper Gold

MINERALS
SIGNIFICANT: Malachite
ALTERATION: Magnetite Epidote
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic Cretaceous-Tertiary	Takla	Inzana Lake	Unnamed/Unknown Informal

LITHOLOGY: Hornblende Granite
Hornblende Granodiorite
Epiclastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel
PHYSIOGRAPHIC AREA: Nechako Lowland
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Zeolite
COMMENTS: Zeolite to pumpellyite-prehnite grade metamorphism.

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.2000	Per cent

REFERENCE: Fieldwork 1990, page 107.

CAPSULE GEOLOGY

The small isolated KBE showing is located approximately 10 kilometres north-northeast of the east end of Inzana Lake and 5 kilometres southeast of Mudzenchoot Lake. The showing consists of less than 1 per cent disseminated malachite in a bleached and slightly gossanous hornblende granite/granodiorite intrusion. No pyrite or other sulphides are associated with the malachite. Minor amounts of epidote and magnetite are found in the granite within 100 metres of the showing. A grab sample from this showing yielded 0.196 gram per tonne gold and 0.2 per cent copper (Fieldwork 1990, page 107).

The granite intrudes volcanically derived epiclastic sediments of the Upper Triassic Inzana Lake Formation, one of four newly named (still informal) formations which form the Middle Triassic to Lower Jurassic Takla Group in this region. The Inzana Lake Formation is underlain by the Rainbow Formation consisting of fine-grained slates and sediments derived, in part, from a continental source. In turn, it is overlain by augite porphyry flows and agglomerates of the Witch Lake Formation and the subaerial maroon and green flows of the Chuchi Lake Formation. The granite is Late Cretaceous to early Tertiary in age (Open File 1991-3).

Navasota Resources Ltd. drilled in the area in January and February 2002. Drill intersections in the Roadside area were 16.1

CAPSULE GEOLOGY

grams per tonne gold over 0.9 metre and 6.43 grams per tonne gold over 4.55 metres (Navasota Resources Ltd., Press Release March 5, 2002). The Hilltop area lies 2.7 kilometres southwest of the KBE showing and the Roadside area lies 3 kilometres to the south southwest of the KBE.

Navasota completed an eight-drillhole program on the KBE property in May 2002. Drilling on the Hill Top Structure No. 3 (HTS No. 3) zone returned results that include 4.24 grams per tonne gold over 26 metres in drillhole DDH-FR-027. Mineralization is hosted in quartz veining that cuts plagioclase porphyry and is associated with pyrrhotite, pyrite, chalcopyrite and trace arsenopyrite (Navasota Resources Ltd. News Release, May 21, 23, 2002).

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EMPR ASS RPT 21744, 25870, 26282
EMPR FIELDWORK *1990, pp. 89-110
EMPR OF *1991-3
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842
GSC P 41-5; 42-2; 45-9
PR REL Navasota Resources Ltd., Feb.25, 27, March 5, May 21,23, Aug.29, Sept.19, 2002; Cassidy Gold Corp., Dec.4, 2002
WWW http://www.navasota.com; http://www.infomine.com/

DATE CODED: 1990/09/05 CODED BY: MM FIELD CHECK: Y
DATE REVISED: 1993/02/09 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 208** NATIONAL MINERAL INVENTORY:

NAME(S): **RIG BRECCIA**, CENTRAL SKOOK, SKOOK

STATUS: Showing MINING DIVISION: Omineca
REGIONS: British Columbia
NTS MAP: 093N02E 093N01W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 12 21 N NORTHING: 6118731
LONGITUDE: 124 30 22 W EASTING: 404154
ELEVATION: 945 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the Rig Breccia zone, near the north shore of Chuchi Lake on the Skook claim group (Assessment Report 21820, Figure 6).

COMMODITIES: Zinc Copper Silver Gold Lead

MINERALS
SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite
ASSOCIATED: Quartz Carbonate
ALTERATION: Malachite Azurite
COMMENTS: Strong iron and manganese staining observed.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein Breccia
CLASSIFICATION: Epithermal Hydrothermal Epigenetic
TYPE: H05 Epithermal Au-Ag: low sulphidation
SHAPE: Irregular
MODIFIER: Faulted
DIMENSION: Metres STRIKE/DIP: 290/90 TREND/PLUNGE:
COMMENTS: Attitude of gouge zone that hosts mineralized and brecciated veinlets.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	

ISOTOPIC AGE: Early Jurassic
DATING METHOD: Fossil
MATERIAL DATED: Ammonite
Lower Jurassic — Hogem Intrusive Complex

LITHOLOGY: Plagioclase Porphyry
Monzonite

HOSTROCK COMMENTS: Fossil age date for the informal Chuchi Lake Formation is Early Jurassic (Fieldwork 1991, page 109).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane PHYSIOGRAPHIC AREA: Nechako Lowland
TERRANE: Quesnel
METAMORPHIC TYPE: Contact RELATIONSHIP: GRADE: Greenschist
COMMENTS: Contact metamorphism due to Hogem Intrusive Complex.

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1991
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Silver	2.5000	Grams per tonne
Gold	0.1100	Grams per tonne
Copper	0.1200	Per cent
Lead	0.0300	Per cent
Zinc	0.6100	Per cent

COMMENTS: A chip sample taken over 3 metres.
REFERENCE: Assessment Report 21820.

CAPSULE GEOLOGY

The Rig Breccia occurrence is located at the contact between Early Jurassic monzonite of the Hogem Intrusive Complex and the Lower Jurassic Chuchi Lake Formation of the Takla Group. It is probably related to other epithermal veins near the edge of the Hogem Intrusive Complex; see Skook (093N 140), SRM (093N 104) and GG (093N 209).

The showing is exposed in two old trenches 25 metres apart on

CAPSULE GEOLOGY

both sides of a small stream on the north shore of Chuchi Lake. It consists of a 1.2-metre wide steeply dipping gouge zone that strikes 290 degrees through altered fine-grained plagioclase porphyritic wallrock and hosts vuggy and brecciated epithermal quartz-carbonate veinlets. Sulphides observed in the zone are chalcopyrite, sphalerite, galena and pyrite. Also occurring are malachite, trace azurite and strong iron and manganese staining. Two chip samples averaged 0.12 per cent copper, 0.03 per cent lead, 0.61 per cent zinc, 2.5 grams per tonne silver and 0.11 gram per tonne gold over 3 metres (Assessment Report 21820, page 19). Some samples yielded higher values in gold and silver.

The Central Skook zone is located about 400 metres east-southeast of the Rig Breccia zone and consists of fracture-controlled pyrite within fine-grained monzonite. A grab sample yielded 0.05 per cent copper, 0.03 per cent zinc and 0.02 gram per tonne gold (Assessment Report 21820).

BIBLIOGRAPHY

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EMPR FIELDWORK 1990, pp. 89-110; *1991, pp. 103-118
EMPR OF 1991-3; 1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1991/10/01 CODED BY: KBE FIELD CHECK: N
DATE REVISED: 1993/02/16 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 209**

NATIONAL MINERAL INVENTORY:

NAME(S): **GG**, KLAW

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N02E 093N01W
BC MAP:
LATITUDE: 55 13 06 N
LONGITUDE: 124 30 28 W
ELEVATION: 1055 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 3 kilometres north from the north shore of Chuchi Lake on the Klaw claims.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6120124
EASTING: 404078

COMMODITIES: Copper Lead Zinc

MINERALS
SIGNIFICANT: Sphalerite Galena Chalcopyrite Pyrite
ASSOCIATED: Quartz
COMMENTS: Rusty-weathering zone.
ALTERATION TYPE: Oxidation
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Epigenetic Hydrothermal
DIMENSION: 5 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Vein material occurs as a float zone, 5 metres wide.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	
ISOTOPIC AGE:	Early Jurassic		
DATING METHOD:	Fossil		
MATERIAL DATED:	Ammonite		
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Plagioclase Porphyritic Latite Agglomerate
Latite
Monzonite
Syenite

HOSTROCK COMMENTS: The fossil age date of the informal Chuchi Lake Formation is Early Jurassic (Fieldwork 1991, page 109).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The GG showing, located on the southern portion of the Klaw 9 claim, is a 5-metre wide float zone of rusty weathering quartz vein material containing sphalerite, galena, chalcopyrite and pyrite. Vein segments are 5 to 10 centimetres wide and are hosted within contact metamorphosed grey and maroon-grey plagioclase-porphyritic latitic agglomerate of the Lower Jurassic Chuchi Lake Formation (Takla Group). The agglomerate contains fragments and large irregular amygdules in a broken crystal matrix. Early Jurassic monzonitic and syenitic intrusions of the Late Triassic to Early Cretaceous Hogem Intrusive Complex form much of the bedrock in the area.

This showing may be related to the Skook alteration halo (093N 140) and other sulphide vein occurrences near the contact of the Hogem complex. Refer also to the SRM occurrence (093N 104) which comprises mineralized ground on the Klaw 3, 8 and 9 claims.

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EMPR ASS PRT 3704, 18392, 20314, 21807
EMPR FIELDWORK 1990, pp. 89-110; *1991, pp. 103-118
EMPR OF 1991-3; *1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252

BIBLIOGRAPHY

GSC OF 2842

DATE CODED: 1991/09/19
DATE REVISED: 1993/02/18

CODED BY: KBE
REVISED BY: GJP

FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **093N 210**

NATIONAL MINERAL INVENTORY:

NAME(S): **GERTIE**, JAN

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07E
BC MAP:
LATITUDE: 55 18 26 N
LONGITUDE: 124 44 12 W
ELEVATION: 1480 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located approximately 5 kilometres south of Klawli Lake on the Jan claims (Open File 1992-4). The given coordinates are for the western showing. Another showing occurs 1 kilometre to the east.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6130353
EASTING: 389764

COMMODITIES: Copper, Silver

MINERALS

SIGNIFICANT: Copper, Malachite, Azurite, Chalcopyrite, Chalcocite, Tetrahedrite
COMMENTS: Possibly tetrahedrite.
ASSOCIATED: Quartz, Calcite, Carbonate, Jasper
ALTERATION: Epidote, Chlorite, Hematite, Carbonate, Jasper, Malachite, Azurite
COMMENTS: Minor propylitic and hematitic alteration.
ALTERATION TYPE: Propylitic, Hematite, Carbonate, Silicific'n, Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated, Vein, Breccia
CLASSIFICATION: Hydrothermal, Epigenetic

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	

ISOTOPIC AGE: Early Jurassic
DATING METHOD: Fossil
MATERIAL DATED: Ammonite

LITHOLOGY: Plagioclase Phyric Latite Flow, Latite, Crystal Lapilli Tuff, Altered Intrusive

HOSTROCK COMMENTS: The fossil age date of the informal Chuchi Lake Formation is Early Jurassic (Fieldwork 1991, page 109).

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: OUTCROP

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1991

COMMODITY	GRADE	
Silver	17.4900	Grams per tonne
Copper	1.0800	Per cent

COMMENTS: Grab sample from eastern outcrop.
REFERENCE: Fieldwork 1991, page 116.

CAPSULE GEOLOGY

The Gertie copper showing lies on the Jan 5 and 6 claims approximately 5 kilometres south of Klawli Lake. It is hosted by volcanic flows of the Lower Jurassic Chuchi Lake Formation (Takla Group). The showing consists of two large outcrops spaced roughly 1 kilometre apart.

The westernmost outcrop is exposed along a glacial gully. An amygdaloidal, maroon and grey, plagioclase phyric latite flow hosts disseminated and fracture controlled malachite and minor azurite. Pink calcite (rhodochrosite?) and jasperoid quartz occur as vesicle infillings. A single grab sample from this locality yielded 0.2 per cent copper (Fieldwork 1991, page 116). A brecciated zone in a more greenish and aphanitic area of the outcrop contains minor

CAPSULE GEOLOGY

chalcopyrite and has areas of bleaching and hairline fractures with chlorite envelopes. Multidirectional vuggy quartz veinlets are also present and some contain malachite.

Native copper blebs, 1 by 2 centimetres in size, are associated with carbonate and jasper in open-space fillings and occur within a highly amygdaloidal part of the same flow package, 75 metres north of the gully. Two, 1-metre wide zones of strong propylitic alteration (epidote, chlorite) cut the outcrop and contain disseminated malachite.

An altered and bleached intrusive body outcrops 150 metres south of the gully. It contains a crackle breccia that grades into a matrix-supported breccia with milled fragments of intrusive rock floating in a hematite-rich matrix; no sulphides were visible at this locality.

The eastern outcrop is 1.2 kilometres northeast of the native copper showing. Brecciated green, grey and maroon crystal-lapilli tuff contains disseminated malachite, chalcocite and possibly tetrahedrite. A representative grab sample from this outcrop yielded 1.08 per cent copper and 17.5 grams per tonne silver (Fieldwork 1991, page 116).

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EMPR ASS RPT 21569
EMPR FIELDWORK 1990, pp. 89-110; *1991, pp. 103-118
EMPR OF 1991-3; *1992-4
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842

DATE CODED:	1991/12/11	CODED BY:	KBE	FIELD CHECK:	Y
DATE REVISED:	1993/02/25	REVISED BY:	KBE	FIELD CHECK:	Y

MINFILE NUMBER: **093N 211**

NATIONAL MINERAL INVENTORY:

NAME(S): **HANNAH**, MM

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07E
BC MAP:
LATITUDE: 55 16 59 N
LONGITUDE: 124 40 34 W
ELEVATION: 1700 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showing is located 3.25 kilometres southeast of 'Adade Yus Mountain (Open File 1992-4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6127570
EASTING: 393543

COMMODITIES: Gold Copper

MINERALS
SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
COMMENTS: Rare chalcopyrite.
ALTERATION: Epidote Chlorite K-Feldspar
COMMENTS: Potassic alteration(?) and bleaching.
ALTERATION TYPE: Propylitic Potassic
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	

ISOTOPIC AGE: Early Jurassic
DATING METHOD: Fossil
MATERIAL DATED: Ammonite

LITHOLOGY: Heterolithic Andesitic Agglomerate
Andesite
Altered Monzonite

HOSTROCK COMMENTS: The fossil age date for the informal Chuchi Lake Formation is Early Jurassic (Fieldwork 1991, page 109).

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: OUTCROP

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY	GRADE	
Gold	0.8400	Grams per tonne
Copper	0.0220	Per cent

REFERENCE: Assessment Report 21853, page 14.

CAPSULE GEOLOGY

The Hannah occurrence incorporates several areas that have concentrations of mineralized and altered monzonite fragments within green, heterolithic andesitic agglomerate of the Lower Jurassic Chuchi Lake Formation, Takla Group. Fine-grained fragments are rusty weathering and contain disseminated pyrite, pyrrhotite and rare chalcopyrite. Epidote and chlorite alteration is generally pervasive.

The main Hannah showing outcrops approximately 3.25 kilometres southeast of 'Adade Yus Mountain. At this locality crowded porphyry monzonite fragments are bleached and potassically(?) altered. A sample taken for analysis from an area rich in rusty monzonite fragments yielded 0.84 gram per tonne gold and 0.022 per cent copper (Assessment Report 21853).

The heterolithic agglomerates around 'Adade Yus Mountain and the Hannah showing appear to be tapping a mineralizing porphyry system (Fieldwork 1991, page 117).

BIBLIOGRAPHY

EMPR ASS RPT *21853
EMPR FIELDWORK 1990, pp. 89-110; *1991, pp. 103-118
EMPR OF 1991-3; *1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1991/12/09 CODED BY: KBE FIELD CHECK: Y
DATE REVISED: 1993/02/25 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 212**

NATIONAL MINERAL INVENTORY:

NAME(S): **GROUNDHOG**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N11E
BC MAP:
LATITUDE: 55 36 30 N
LONGITUDE: 125 13 15 W
ELEVATION: 1250 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The showing is situated on a creek crossed by the Takla Rainbow - Manson Creek road at Groundhog Pass, approximately 2 kilometres south of the confluence of Groundhog and Twin creeks.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6164727
EASTING: 360107

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Magnetite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Twin Creek	

LITHOLOGY: Plagioclase Porphyritic Basaltic Andesite
Andesite
Amygdaloidal Flow

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1992
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0890	Per cent

COMMENTS: Sample of magnetite-filled amygdaloidal volcanics.
REFERENCE: Fieldwork 1992.

CAPSULE GEOLOGY

The Groundhog showing is situated on a creek crossed by the Takla Rainbow-Manson Creek road at Groundhog Pass, approximately 2 kilometres south of the confluence of Groundhog and Twin creeks. A multi-element stream sediment anomaly was identified at the mouth of this creek during a Regional Geochemical Survey (RGS) in 1983. Follow-up assessment work by BP Resources Canada Limited in 1984 failed to locate the source of the anomaly.

Recent mapping (Open File 1993-4) identified mineralization within fresh, maroon, amygdaloidal plagioclase porphyritic basaltic andesites. The gently dipping volcanics are part of the Lower Jurassic Twin Creek Formation of the Middle Triassic-Lower Jurassic Takla Group. Amygdules up to 1 centimetre in diameter are filled with massive magnetite and was probably deposited by late-stage magmatic fluids. The magnetite amygdules are the probable source of the RGS anomaly.

A grab sample from an amygdaloidal flow assayed 0.0890 per cent copper, 0.0100 per cent zinc and 0.0012 per cent lead. Malachite was noted on a fracture surface (Fieldwork, 1993).

BIBLIOGRAPHY

EMPR ASS RPT *13505
EMPR OF *1993-4
EMPR FIELDWORK *1992, pp. 87-107
EMPR BULL 70

BIBLIOGRAPHY

GSC MEM 252

DATE CODED: 1993/02/25 CODED BY: KBE FIELD CHECK: Y
DATE REVISED: 1993/03/15 REVISED BY: KBE FIELD CHECK: N

MINFILE NUMBER: **093N 213**

NATIONAL MINERAL INVENTORY:

NAME(S): **VALL**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07W
BC MAP:
LATITUDE: 55 21 08 N
LONGITUDE: 124 50 22 W
ELEVATION: 1050 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the northeast bank of Valleau Creek, approximately 5.5 kilometres from its confluence with the Klawli River (Open File 1993-3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6135528
EASTING: 383374

COMMODITIES: Gold Copper

MINERALS

SIGNIFICANT: Pyrite
ASSOCIATED: Carbonate
ALTERATION: Epidote Garnet Pyrite
ALTERATION TYPE: Skarn
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein
CLASSIFICATION: Skarn

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	

ISOTOPIC AGE: Early Jurassic
DATING METHOD: Fossil
MATERIAL DATED: Ammonites

LITHOLOGY: Augite Plagioclase Porphyritic Basalt
Augite Plagioclase Porphyritic Flow

HOSTROCK COMMENTS: The fossil age date of the Chuchi Lake Formation (informal name) is from Fieldwork 1991, page 109.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1992

COMMODITY	GRADE	
Gold	0.1300	Grams per tonne
Copper	0.0176	Per cent

REFERENCE: Open File 1993-3.

CAPSULE GEOLOGY

The Vall occurrence is located along the northeast bank of Valleau Creek approximately 5.5 kilometres from its confluence with the Klawli River.

The occurrence is hosted by hornfelsed coarse augite and minor plagioclase porphyritic basalts of the Lower Jurassic Chuchi Lake Formation of the Middle Triassic to Lower Jurassic Takla Group.

The Vall skarn, 20 centimetres wide, strikes 360 degrees and dips 78 degrees to the east. It is associated with a small, irregular carbonate vein system.

A grab sample from the showing containing epidote, garnet and pyrite yielded 0.130 grams per tonne gold and 0.0176 per cent copper (Open File 1993-3).

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EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; *1992, pp. 87-107
EMPR OF 1991-3; 1992-4; *1993-3
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A, 1424A

BIBLIOGRAPHY

GSC OF 2842

DATE CODED: 1993/03/11 CODED BY: KBE FIELD CHECK: N
DATE REVISED: 1993/03/12 REVISED BY: KBE FIELD CHECK: Y

MINFILE NUMBER: **093N 214**

NATIONAL MINERAL INVENTORY:

NAME(S): **TSAY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07W
BC MAP:
LATITUDE: 55 27 15 N
LONGITUDE: 124 51 36 W
ELEVATION: 1505 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 3.5 kilometres north-northeast of the east end of Wudtsi Lake (Open File 1993-3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6146905
EASTING: 382374

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Pyrite
ALTERATION: Quartz Carbonate Sericite Mariposite
ALTERATION TYPE: Quartz-Carb.
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Epigenetic Hydrothermal
TYPE: I01 Au-quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Inzana Lake	

ISOTOPIC AGE: Early Triassic
DATING METHOD: Fossil
MATERIAL DATED: Conodonts

LITHOLOGY: Altered Sediment/Sedimentary
Volcanic Sandstone
Volcanic Siltstone
Listwanite

HOSTROCK COMMENTS: The fossil age date is from Fieldwork 1991, page 107. Alteration suggests occurence of listwanite.

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1992
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0098	Per cent

REFERENCE: Open File 1993-3.

CAPSULE GEOLOGY

The Tsay occurrence is situated 3.5 kilometres north-northeast of the east end of Wudsti Lake. It is hosted by a regional-scale northwest-trending structure that extends 10 kilometres from the west end of Tsaydaychi Lake to the headwaters of Valleau Creek. The zone, 1.5 to 2 kilometres wide, lies entirely within the Upper Triassic Inzana Lake Formation (Takla Group) and is characterized by iron-carbonate and quartz-sericite alteration. Disseminated green mica (mariposite?) and pyrite occur in intensely altered, pale buff-coloured, foliated sediments. A grab sample yielded 0.0135 per cent arsenic and 0.0098 per cent copper (Open File 1993-3).

The presence of anomalous arsenic values with carbonate-quartz-sericite alteration and mariposite suggests a listwanite association. The fault structure has potential for hosting gold-bearing quartz veins, and is thus an interesting regional exploration target. Placer gold in the area (Valleau Creek, 093N 053) may be related to this structure.

BIBLIOGRAPHY

EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; *1992, pp. 87-107

BIBLIOGRAPHY

EMPR OF 1991-3; 1992-4; *1992-3
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A, 1424A
GSC OF 2842

DATE CODED: 1993/03/12 CODED BY: KBE FIELD CHECK: Y
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093N 215**

NATIONAL MINERAL INVENTORY:

NAME(S): **WUDTSI**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07W
BC MAP:
LATITUDE: 55 27 55 N
LONGITUDE: 124 53 55 W
ELEVATION: 1280 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the eastern bank of a north-flowing tributary of Valleau Creek (Open File 1993-3).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6148208
EASTING: 379966

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrrhotite Pyrite
ASSOCIATED: Quartz
ALTERATION: Biotite K-Feldspar
COMMENTS: Hornfelsing and minor potassic alteration.
ALTERATION TYPE: Biotite Potassic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Vein Disseminated
CLASSIFICATION: Porphyry Hydrothermal

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Inzana Lake	

ISOTOPIC AGE: Late Triassic
DATING METHOD: Fossil
MATERIAL DATED: Conodonts
Upper Triassic

Unnamed/Unknown Informal

LITHOLOGY: Mesocratic Hornblende Diorite
Gabbro
Epiclastic Sandstone
Epiclastic Siltstone
Hornfels

HOSTROCK COMMENTS: The intrusion is probably coeval with the volcanics. The fossil date is from Fieldwork 1991, page 107.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Hornfels

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1992
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0190	Per cent

REFERENCE: Open File 1993-3.

CAPSULE GEOLOGY

At the headwaters of Valleau Creek, approximately 5 kilometres north of the south end of Wudtsi Lake, a small, hybrid stock intrudes the volcanic sediments of the Upper Triassic Inzana Lake Formation of the Middle Triassic to Lower Jurassic Takla Group. The stock is a varitextured diorite and gabbro body and is probably of similar age to the Takla rocks. A hornfelsed mesocratic hornblende diorite phase contains pyrrhotite-bearing quartz stringers that yielded 190 ppm copper when analysed (Open File 1993-3). Epiclastic sandstone and siltstone hosts are hornfelsed and potassically(?) altered and contain disseminated pyrite.

BIBLIOGRAPHY

EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; *1992, pp. 87-107
EMPR OF 1991-3; 1992-4; *1993-3
GSC MEM 252

BIBLIOGRAPHY

GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A, 1424A
GSC OF 2842

DATE CODED: 1993/03/12 CODED BY: KBE FIELD CHECK: Y
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093N 216**

NATIONAL MINERAL INVENTORY:

NAME(S): **TAKLA 3**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N07E 093N07W 093N02E
BC MAP:
LATITUDE: 55 15 34 N
LONGITUDE: 124 45 05 W
ELEVATION: 1600 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the middle of three copper showings on an west-northwest trending ridge, about 6 kilometres north of the west end of Chuchi Lake (Assessment Report 22142, Figure 6).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6125061
EASTING: 388696

COMMODITIES: Copper

MINERALS
SIGNIFICANT: Chalcopyrite
ASSOCIATED: Quartz
ALTERATION: Epidote Malachite
ALTERATION TYPE: Propylitic Oxidation
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Disseminated Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Jurassic	Takla	Chuchi Lake	
Lower Jurassic			Hogem Intrusive Complex

LITHOLOGY: Augite Porphyry
Brecciated Tuff

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1991

COMMODITY	GRADE	
Copper	0.5500	Per cent

REFERENCE: Assessment Report 22142.

CAPSULE GEOLOGY

The Takla 3 occurrence is underlain by volcanic and sedimentary rocks of the Lower Jurassic Chuchi Lake Formation of the Middle Triassic to Lower Jurassic Takla Group. Regionally, the Takla rocks are intruded by the southeastern end of the Late Triassic to Early Cretaceous Hogem Intrusive Complex. This part of the Hogem complex consists mainly of monzonitic and syenitic intrusive phases of Early Jurassic age.

Three copper showings occur along a west-northwest trending ridge, over a length of about 1.5 kilometres. The westernmost showing consists of chalcopyrite and malachite in augite porphyry. The rocks are flooded with epidote and propylitically altered. A sample taken for analysis yielded 0.55 per cent copper and 0.055 gram per tonne gold (Assessment Report 22142, page 19). About 500 metres east-southeast, minor chalcopyrite was noted in a quartz stringer in brecciated tuff. A further 900 metres east-southeast, near the highest point of the ridge, minor malachite staining was noted in a quartz stringer in tuff.

BIBLIOGRAPHY

EMPR ASS RPT *22142
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118; 1992, pp. 87-107
EMPR OF 1991-3; 1992-4
GSC P 41-5; 42-2; 45-9

BIBLIOGRAPHY

GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842
Placer Dome File

DATE CODED: 1993/02/23 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1993/03/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 217**

NATIONAL MINERAL INVENTORY:

NAME(S): **SKL**, SKUNK LAKE, SKUNK

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N08E
BC MAP:
LATITUDE: 55 24 10 N
LONGITUDE: 124 08 19 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: A 4-kilometre long northwest-trending ridge of limestone. The given coordinates are for a point halfway along the ridge, about 2 kilometres west of Skunk Lake (Assessment Report 20286, Figure 4).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6140203
EASTING: 427898

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Paleozoic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION:
STRIKE/DIP: 137/65E
TREND/PLUNGE:
COMMENTS: Attitude of bedding.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Pennsylvan.-Permian	Nina Creek	Unnamed/Unknown Formation	

LITHOLOGY: Limestone
Conglomerate
Shale
Andesite

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Slide Mountain
PHYSIOGRAPHIC AREA: Manson Upland

CAPSULE GEOLOGY

The SKL prospect is a northwest-trending ridge of medium to light grey, locally buff-coloured weathering limestone of the Pennsylvanian to Permian Nina Creek Group (formerly part of the Cache Creek Complex (Group) and/or Slide Mountain Group) (Ferri and Melville, bulletin in preparation). The limestone is bounded to the northeast by conglomerate, shales and andesite. Adjacent units to the southwest were not observed. Rare bedding generally strikes from 130 to 145 degrees, dipping 60 to 70 degrees southwest.

The maximum per cent sulphur determined by analysis was 0.002 per cent. The acid generating potential is zero; the neutralizing potential was calculated as being from 988 to 998 tons $CaCO_3$ equivalent per thousand tons material. Paste pH varied from 8.1 to 8.7, and one sample gave a specific gravity of 2.73.

Volume calculations were made using a computer program which estimated the topographic surface of the deposit based on elevation contours; the base of the deposit was estimated from the lowest visible outcropping of limestone. Based on this, the SKL deposit is estimated to contain 120,413,198 tonnes of limestone (Assessment Report 20268).

BIBLIOGRAPHY

EMPR ASS RPT *20286
EMPR BULL 91
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118
EMPR OF 1988-12a; 1991-3; 1992-4
GSC MEM 252
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC OF 2842

DATE CODED: 1993/03/01
DATE REVISED: 1993/03/01

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 218**

NATIONAL MINERAL INVENTORY:

NAME(S): **CAS**, MITZI

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01W
BC MAP:
LATITUDE: 55 04 17 N
LONGITUDE: 124 27 49 W
ELEVATION: 1300 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Mineralized area about 7 kilometres south-southwest of the east end of Witch Lake (Assessment Report 22179, Figure 4). Part of the Mitzi property (see 093N 096).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6103714
EASTING: 406545

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Magnetite Chalcopyrite
ALTERATION: Epidote Chlorite Carbonate
ALTERATION TYPE: Propylitic Carbonate
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Andesite
Trachyandesite
Andesitic Tuff
Andesitic Flow
Trachyandesite Tuff
Trachyandesite Flow
Monzonite
Biotite Hornfels
Diorite
Megacrystic Orthoclase Syenite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel
METAMORPHIC TYPE: Contact
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Nechako Lowland
GRADE: Hornfels

CAPSULE GEOLOGY

The Cas occurrence falls within the Mudzenchoot halo (Open File 1991-3), an area where the volcanic rocks are silicified and strongly hornfelsed. Fine-grained diorite and megacrystic orthoclase syenite outcrop within the halo (Fieldwork 1990, page 105).

The Cas area is underlain by scattered outcrops of andesite and trachyandesite flows and tuffs of the Upper Triassic Witch Lake Formation (Takla Group) intruded by a monzonite plug and associated dikes (Assessment Report 22179). These intrusions are considered to be coeval intrusive equivalents of the Middle Triassic to Lower Jurassic Takla Group.

The volcanics contain an average of 1 to 2 per cent disseminated pyrite and/or pyrrhotite, commonly associated with epidote, chlorite and carbonate alteration or biotite hornfels. This propylitic suite is prominently developed along the north and west flank of the plug, which also contains the same volume of sulphides. The higher sulphide areas in the volcanics locally contains 2 to 3 per cent disseminated magnetite and specks of chalcopyrite.

BIBLIOGRAPHY

EMPR ASS RPT *22179
EMPR FIELDWORK 1990, pp. 89-110
EMPR OF 1991-3; 1992-3
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A

BIBLIOGRAPHY

GSC MEM 252
GSC OF 2842

DATE CODED: 1993/02/09
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093N 219**

NATIONAL MINERAL INVENTORY:

NAME(S): **WN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N01W 093N02E
BC MAP:
LATITUDE: 55 08 22 N
LONGITUDE: 124 29 31 W
ELEVATION: 1200 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Situated about 1 kilometre north of Witch Lake, about 4 kilometres from its east end. Located on mineralized rock sample with high copper analysis (Assessment Report 21068, Sample 107549).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6111325
EASTING: 404897

COMMODITIES: Copper

MINERALS

SIGNIFICANT: Pyrite Pyrrhotite Chalcopyrite
ALTERATION: Epidote Chlorite
ALTERATION TYPE: Epidote Propylitic
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Porphyry Hydrothermal
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Takla	Witch Lake	
Triassic-Jurassic			Unnamed/Unknown Informal

LITHOLOGY: Feldspar Porphyritic Andesite
Monzonite

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Quesnel

PHYSIOGRAPHIC AREA: Nechako Lowland

INVENTORY

ORE ZONE: SAMPLE

REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab

YEAR: 1900

COMMODITY	GRADE	
Copper	0.1314	Per cent

REFERENCE: Assessment Report 21068, Sample 107549.

CAPSULE GEOLOGY

The WN occurrence area is underlain by Upper Triassic Witch Lake Formation (Takla Group) volcanics and Triassic to Jurassic stocks and dikes, mainly monzonites. The volcanics consist of feldspar porphyritic andesites and a strongly epidote-altered version of the same. The volcanics contain 1 to 2 per cent disseminated pyrite +/- chalcopyrite +/- pyrrhotite. A sample of altered porphyritic andesite containing chalcopyrite yielded 0.1314 per cent copper and 0.030 gram per tonne (30 parts per billion) gold (Assessment Report 21068).

BIBLIOGRAPHY

EMPR ASS RPT 20008, 20205, *21068, 22093
EMPR FIELDWORK 1990, pp. 89-110; 1991, pp. 103-118
EMPR OF 1991-3; 1992-4
GSC P 41-5; 42-2; 45-9
GSC MAP 876A; 907A; 971A; 1424A
GSC MEM 252
GSC OF 2842

DATE CODED: 1993/02/10 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1993/03/23 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 220**

NATIONAL MINERAL INVENTORY:

NAME(S): **DON W**, DON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12W
BC MAP:
LATITUDE: 55 35 39 N
LONGITUDE: 125 49 29 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of vein system, about 1 kilometre southwest of Mount Bodine (EMPR OF MAP 1997-2 (Sheet 2)).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6164534
EASTING: 322013

COMMODITIES: Copper Gold Silver

MINERALS
SIGNIFICANT: Chalcopyrite Malachite Azurite
ASSOCIATED: Quartz
ALTERATION: Limonite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stockwork Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic			Sitlika Assemblage

LITHOLOGY: Volcanic Rock
Clastic Rock

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Pronounced penetrative cleavage.

PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1996
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	2.1700	Per cent
Gold	0.3800	Grams per tonne
Silver	1.8000	Grams per tonne

COMMENTS: A sample of mineralized material from a thick vein.
REFERENCE: Fieldwork 1996, page 93.

CAPSULE GEOLOGY

The Don showing comprises a system of mineralized quartz veins that occur within the Permian to Upper Jurassic Sitlika volcanic unit about a kilometre southwest of Mount Bodine. The veins are exposed, although not easily accessible, over a distance of about 200 metres in the south wall of the cirque basin, west of the mountain. Veins just below the ridge crest at the end of the system occur on either side of northeast-striking fault that defines a 300 metre apparent dextral offset of the contact between the volcanic and eastern clastic units. They range from a few centimetres to about a metre in width, and most dip at moderate to shallow angles to the southwest. Most of the thicker veins contain patches, up to several centimetres across, of limonite-altered pyrite, locally with chalcopyrite, malachite and azurite. A sample of mineralized material from one of these thick veins contained 2.17 per cent copper, 0.38 gram per tonne gold and 1.8 grams per tonne silver (Fieldwork 1996, page 93). Veins farther west within the system are in part marked by gossan zones, but were not examined.

BIBLIOGRAPHY

EMPR FIELDWORK *1996, pp. 79-100

BIBLIOGRAPHY

EMPR OF 1997-2; 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252

DATE CODED: 1997/02/19 CODED BY: GJP FIELD CHECK: Y
DATE REVISED: 1997/04/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 221**

NATIONAL MINERAL INVENTORY:

NAME(S): **SHANE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N12W
BC MAP:
LATITUDE: 55 38 51 N
LONGITUDE: 125 46 57 W
ELEVATION: 1800 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of vein on ridge, 6 kilometres north-northwest of Mount Bodine (EMPR OF MAP 1997-2 (Sheet 2)).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170360
EASTING: 324910

COMMODITIES: Copper Lead

MINERALS
SIGNIFICANT: Chalcopyrite Pyrite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Vein
CLASSIFICATION: Hydrothermal Epigenetic
TYPE: I06 Cu±Ag quartz veins

HOST ROCK
DOMINANT HOSTROCK: Metavolcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	

LITHOLOGY: Greenstone
Amphibolite
Ultramafic

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cache Creek
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE: Greenschist
COMMENTS: Pronounced penetrative cleavage.

INVENTORY

ORE ZONE: VEIN
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1997
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Copper	0.0880	Per cent

COMMENTS: Sample of vein material. Not anomalous in gold or silver.
REFERENCE: Fieldwork 1996, page 96.

CAPSULE GEOLOGY

The Shane showing is a mineralized quartz vein that was discovered within the Pennsylvanian to Lower Jurassic Cache Creek ultramafic unit, about 6 kilometres north-northwest of Mount Bodine. It occurs within a large lens of greenstone to amphibolite that measures about 1 kilometre in its longest, north-northwest direction.

The vein is about 1 metre wide, dips steeply to the south, and was traced for several tens of metres along its east-west strike. The white quartz contains local cavities lined with small quartz crystals, and is separated into discontinuous sheets by partings of chlorite and rusty carbonate. The partings are oriented approximately parallel to the vein walls, and some contain slickensides or mineral fibres that pitch at moderate angles to the east. Wallrocks are variably altered with rusty carbonate and pyrite for one to two metres beyond the vein. Mineralization within the vein consists of scattered blebs of chalcopyrite and pyrite.

A single grab sample of vein material yielded 0.088 per cent copper but did not contain anomalous concentrations of gold or silver (Fieldwork 1996, page 96). A sample of altered wallrock did not contain significantly anomalous base or precious metal concentrations.

BIBLIOGRAPHY

EMPR FIELDWORK *1996, pp. 79-100

BIBLIOGRAPHY

EMPR OF 1997-2; 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252

DATE CODED: 1997/02/19 CODED BY: GJP FIELD CHECK: Y
DATE REVISED: 1997/04/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 222**

NATIONAL MINERAL INVENTORY:

NAME(S): **FRAN 3**

STATUS: Past Producer — Open Pit
REGIONS: British Columbia
NTS MAP: 093N13W
BC MAP:
LATITUDE: 55 48 29 N
LONGITUDE: 125 50 22 W
ELEVATION: 950 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of workings at base of Ogden Mountain (Open File 1997-2, Sheet 2).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6188365
EASTING: 322060

COMMODITIES: Jade/Nephrite

MINERALS
SIGNIFICANT: Nephrite
ALTERATION: Serpentine
ALTERATION TYPE: Serpentin'zn
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Podiform — Massive
CLASSIFICATION: Metamorphic — Industrial Min.
TYPE: Q01 Jade

HOST ROCK
DOMINANT HOSTROCK: Metaplutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Paleozoic-Mesozoic	Cache Creek	Undefined Formation	
Paleozoic-Mesozoic			Oceanic Ultramafites

LITHOLOGY: Serpentinite
Meta Chert
Greenstone

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Cache Creek
METAMORPHIC TYPE: Regional — RELATIONSHIP:
COMMENTS: Pronounced penetrative cleavage.

PHYSIOGRAPHIC AREA: Omineca Mountains
GRADE: Greenschist

CAPSULE GEOLOGY

The Fran 3 occurrence consists of a nephrite lens within the Cache Creek ultramafic unit. The nephrite occurs along the contact between serpentinite and structurally overlying metachert and greenstone. N. Scafe, owner of the claim, and L. Warren extracted about 90 tonnes of low quality nephrite from this locality in the mid 1980s (L. Warren, Personal Communication, 1996).

BIBLIOGRAPHY

EMPR FIELDWORK *1996, pp. 79-100
EMPR OF 1997-2; 2000-33
GSC MAP 844A; 907A; 971A; 1424A
GSC MEM 252

DATE CODED: 1997/02/19 — CODED BY: GJP — FIELD CHECK: Y
DATE REVISED: / / — REVISED BY: — FIELD CHECK: N

MINFILE NUMBER: **093N 223**

NATIONAL MINERAL INVENTORY: 093N14 Cu3

NAME(S): **MACKENZIE**, LING, DUCKLING, DUCK, JAJAY

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 49 52 N
LONGITUDE: 125 19 57 W
ELEVATION: 1020 Metres
LOCATION ACCURACY: Within 500M

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6189730
EASTING: 353900

COMMENTS: MacKenzie showing, east of Duckling Creek, about 11 kilometres northeast of Old Hogem and 39 kilometres west of Germansen Landing (Page, 1999 (Property File)).

COMMODITIES: Copper Gold Silver

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite
ALTERATION: Epidote K-Feldspar Calcite Malachite
ALTERATION TYPE: Epidote Potassic Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Massive Disseminated Shear
CLASSIFICATION: Epigenetic Hydrothermal Porphyry
TYPE: L03 Alkalic porphyry Cu-Au
DIMENSION: 3 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Dimension is the width of the semimassive sulphide zone in the third trench from the east.

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic-Jurassic	Takla	Undefined Formation	
Mesozoic			Hogem Intrusive Complex

LITHOLOGY: Altered Intrusive
Monzonite
Syenite
Hybrid Rock
Syenite Porphyry Dike
Pyroxene Porphyry Dike
Basalt

HOSTROCK COMMENTS: Phases of the Hogem Intrusive Complex range from Late Triassic to Early Cretaceous.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Quesnel Plutonic Rocks

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1999
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Silver	16.1000	Grams per tonne
Gold	0.4000	Grams per tonne
Copper	2.6800	Per cent

COMMENTS: A 1.6 metre channel sample at the north MacKenzie showing.
REFERENCE: Page, J.W., 1999, Lysander Minerals Corp (Property File).

CAPSULE GEOLOGY

The MacKenzie prospect is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), approximately 11 kilometres northeast of Old Hogem and 39 kilometres west of Germansen Landing.

In 1970, Donna Mines held the property as the Duckling claims and conducted geochemical sampling and trenching and drilled three diamond drill holes on the Discovery zone (093N 089). They followed up in 1971 with an 8 kilometre ground magnetic survey. Dimac Resource Corp. staked the Duckling claim in 1981 and followed up by taking 13 rock and 45 soil samples. In 1987, Cathedral Gold Corporation conducted mapping and geochemical survey consisting of 55

CAPSULE GEOLOGY

rock and 326 soil samples on its Ling claims which covered much of the same ground as the previous Duckling claims. Cathedral followed in 1989 by taking 73 rock and 163 soil samples. In 1999, Lysander Minerals Corp staked the Duck claims where the Mackenzie showings occur. Eastfield Resources, under a 2000 option agreement with Lysander (see Lorraine (093N 002)), completed an initial diamond-drilling program on the MacKenzie zone. Follow-up geophysical and geochemical surveys are planned by Eastfield.

The area is underlain by Middle Triassic-Lower Jurassic Takla Group volcanics which have been intruded to the north and west by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Takla Group rocks in the area of the occurrence are predominantly basaltic in composition and host abundant, although erratically distributed epidote (with or without pyrite) as veinlets, stringers, pods and patchy replacements. These rocks are cut by numerous pyroxene porphyry "feeder" dikes which are pre-Hogem in age. Hogem complex intrusions range in composition from monzonite through syenite and are potassically altered, locally hosting up to 50 per cent pink feldspar as veins and envelopes several centimetres wide around fractures. Dikes of fine to medium-grained syenite porphyry cut the volcanic rocks in the area. Near the contact, a dark hybrid rock of uncertain composition has been mapped. It is, however, almost certainly related to the emplacement of the intrusions.

The MacKenzie showing, beside Duckling Creek, is reported to cosist of two showings separated by 250 metres of clay material. The north showing consists of massive pyrite-chalcopyrite exposed in a creek cut-bank. The host was described as an intensely fractured, chlorite-rich, intermediate to mafic intrusive with a late potassic overprint consisting of mainly of potassium feldspar veins. Eastfield's 2000 drill program indicated the area to consist of intensley potassium-altered intrusive rock. A 1.6 metre channel sample taken across this zone assayed 2.68 per cent copper, 16.1 grams per tonne silver and 0.4 gram per tonnne gold (Page, 1999 (Property File)).

The south showing consist of a one metre wide massive chalcopyrite lens dipping into the creek bank. A sample of this material yielded 20.75 per cent copper, 127.6 grams per tonne silver and 6.8 grams per tonne gold (Page, 1999 (Property File)).

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EMPR EXPL 1981-241
EMPR BULL 70
EMPR PF (Peto, P. (1971): Report on the Hogem Project for Amoco Mining (refer to 093N General File);*Page, J.W. (1999): 1999 Reconnaissance Report on the Jajay Property, Lysander Minerals Corp.(in Lorraine - 093N 002))
EMPR (PRELIM) MAP 9
EMR MP CORPFILE (Donna Mines Ltd.; Fortune Channel Mines Ltd.)
GSC MEM 252, pp. 98-103
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 2001/03/28 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 2001/03/28 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093N 224**

NATIONAL MINERAL INVENTORY:

NAME(S): **PAGE**, SOUTH CIRQUE, STEELE, LORRAINE-JAJAY, JAJAY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093N14W
BC MAP:
LATITUDE: 55 55 16 N
LONGITUDE: 125 25 42 W
ELEVATION: 1750 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Area of mineralization in southernmost cirque on Steele 3 claim (Page, 1999, Figures 5-9 (Property File)).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6199950
EASTING: 348250

COMMODITIES: Copper Gold

MINERALS

SIGNIFICANT: Pyrite Chalcopyrite Bornite
ASSOCIATED: Magnetite
ALTERATION: Malachite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE:

DEPOSIT

CHARACTER: Shear Vein Disseminated
CLASSIFICATION: Porphyry Hydrothermal Epigenetic
TYPE: L03 Alkalic porphyry Cu-Au

HOST ROCK

DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mesozoic			Hogem Intrusive Complex
Middle Jurassic			Duckling Creek Syenite Complex

LITHOLOGY: Syenite
Monzonite
Diorite
Pyroxenite
Pegmatite

HOSTROCK COMMENTS: The Duckling Creek Syenite Complex is a Middle Jurassic phase of the Late Triassic to Early Cretaceous Hogem Intrusive Complex.

GEOLOGICAL SETTING

TECTONIC BELT: Intermontane
TERRANE: Plutonic Rocks

PHYSIOGRAPHIC AREA: Omineca Mountains

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1999
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Gold	0.9700	Grams per tonne
Copper	0.7100	Per cent

REFERENCE: Page, J.W., Lysander Minerals Corp. 1999 (Property File).

CAPSULE GEOLOGY

The Page occurrence is situated in the Duckling Creek area of the Swannell Ranges (Omineca Mountains), 61 kilometres northeast of Takla Landing.

The Page is part of the Jajay property which includes the Lorraine prospect (093N 002). Lysander Minerals Corp. discovered the Page mineralization on its Steele 3 claim in 1999. Eastfield Resources Ltd. optioned the Jajay in 2000. See the Lorraine description for more details.

The area is underlain by mesozonal plutonic rocks assigned to the Late Triassic to Early Cretaceous Hogem Intrusive Complex which have been emplaced into volcanic rocks of the Middle Triassic-Lower Jurassic Takla Group, east of the Pinchi fault zone. The plutonic rocks form an elongate batholith, extending from Chuchi Lake, north to the Mesilinka River. The structural setting of the batholith and the intruded Takla Group is one of vertical tectonics associated with graben development (Bulletin 70).

Mapping carried out in the area in the early 1970s identified

CAPSULE GEOLOGY

several intrusive phases of the Hogem complex including diorite, monzonite, pyroxenite, pegmatite and syenite. The latter rock unit likely belongs to the Middle Jurassic Duckling Creek Syenite Complex. The more mafic phases also host accessory magnetite.

Prospecting and sampling in 1999 yielded a number of geochemical anomalies in talus fines, soil samples and the discovery of a zone of malachite-stained, mineralized syenite. Mineralization consists of disseminated blebs of pyrite, chalcopyrite and bornite in medium-grained, malachite-stained, magnetite-rich, grey syenite. The mineralizaion, which is found adjacent to the south side of a shear zone, was traced discontinuosly for approximately 50 metres. Visibly mineralized grey syenite assayed 0.71 per cent copper and 0.97 gram per tonne gold (Page, 1999 (Property File)). A 10-centimetre wide quartz vein in the shear zone contained disseminated specks of bornite and pyrite and yielded 19.0 grams per tonne gold when assayed (Page, 1999).

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EMPR (PRELIM) MAP 9
GSC MEM 252, pp. 98-103
GSC MAP 844A; 907A; 971A; 1424A
GSC P 42-7; 45-6
Harivel, C. (1972): Unpublished B.Sc. Thesis on the Duckling Creek area of the Hogem Batholith, University of British Columbia
CIM Vol. 67, No. 749, pp. 101-106

DATE CODED: 2001/03/29 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 2001/03/29 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 001**

NATIONAL MINERAL INVENTORY: 093O5 Mo1

NAME(S): **FORTUNE'S EYE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O05W
BC MAP:
LATITUDE: 55 28 37 N
LONGITUDE: 123 50 37 W
ELEVATION: 1525 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location given is for the north end of "Barren Ridge" (Property File - Extracts from Pacific Great Eastern Railway Lands, Survey of Resources Report, 1930).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6148191
EASTING: 446678

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
COMMENTS: Molybdenite occurs at several localities along Barren Ridge.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous-Tertiary			Wolverine Complex

LITHOLOGY: Schist
Quartz Feldspar Gneiss
Amphibolite Gneiss
Calc-silicate Gneiss
Marble
Granodiorite
Pegmatite

HOSTROCK COMMENTS: The Wolverine complex comprises amphibolite facies sediments extensively intruded by granodioritic bodies.

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Manson Upland
GRADE: Amphibolite
COMMENTS: Wolverine Complex metamorphics within the Cassiar Terrane

CAPSULE GEOLOGY

This occurrence lies at the eastern edge of the Manson Uplands within the Cassiar Terrane, 40 kilometres west of the town of Mackenzie. A block of the Wolverine Complex, highly metamorphosed siliciclastic sediments extensively intruded by granodioritic bodies and associated pegmatites of probable Cretaceous age, lies between the Paleozoic Harper Ranch subterrane to the west and the Paleozoic Slide Mountain Terrane to the east. Wolverine metasediments are probably equivalents of the Upper Proterozoic Ingenika Group but the metamorphic grade is so high that original lithologic determinations are not possible.

The Fortune's Eye occurrence is poorly documented with only one "molybdenite-rich" rock collected from "one of several molybdenite occurrences" reported along the north trending Barren Ridge. No work is known to have been performed on the occurrence.

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EMPR PF (*Extracts from Pacific Great Eastern Railway Lands, Survey of Resources, 1936)
GSC MAP 1424A; 1961-11
GSC OF 925
Placer Dome File

DATE CODED: 1985/07/24
DATE REVISED: 1991/01/31
CODED BY: GSB
REVISED BY: GKK
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 002**

NATIONAL MINERAL INVENTORY: 093O3 Au1

NAME(S): **TUDYAH LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O03E
BC MAP:
LATITUDE: 55 05 00 N
LONGITUDE: 123 00 51 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Pyritic outcrop 50 metres east of Hart Highway, 3 kilometres north of Melville Lodge (Minister of Mines Annual Report 1959, page 22).

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6104065
EASTING: 499096

COMMODITIES: Gold

MINERALS
SIGNIFICANT: Pyrite
COMMENTS: Sparse pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Unknown
COMMENTS: Pyritic quartzite.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cambrian	Gog	Unnamed/Unknown Formation	
Proterozoic-Cambrian	Misinchinka	Unnamed/Unknown Formation	

LITHOLOGY: Quartzite

HOSTROCK COMMENTS: Grey gritty quartzite of Misinchinka or Gog groups.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench
GRADE: Greenschist

CAPSULE GEOLOGY

The Tudyah Lake showing lies in the Rocky Mountain Trench at the western margin of the Ancestral North American miogeocline, approximately 25 kilometres south of the town of Mackenzie. This area is underlain by Cambro-Proterozoic Misinchinka Group quartzite, siltstone and slate and Lower Cambrian Gog Group limestone, dolostone, quartzite, siltstone and slate. Regional subgreenschist facies metamorphism extends west to the McLeod Lake fault, west of which metasedimentary rocks attain migmatitic sillimanite grade.

A small showing of grey gritty quartzite "only sparsely mineralized with pyrite" was reported to contain 137 to 206 grams per tonne gold but there is no evidence to support this. In 1959, two pyritic samples collected by S. Holland of the Ministry of Mines assayed nil in gold. No recent work is known to have been performed on the showing.

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GSC MAP 1424A; 1961-11
GSC P 91-1A, pp. 285-291
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/02/01 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 003**

NATIONAL MINERAL INVENTORY: 093O13 Au1

NAME(S): **BILL CUST'S BAR**

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093O13E 093O12E
BC MAP:
LATITUDE: 55 45 00 N
LONGITUDE: 123 41 06 W
ELEVATION: 700 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Bill Cust's Bar lies 30 kilometres above the mouth of the Parsnip River which is now flooded by Lake Williston (Minister of Mines Annual Report 1906, page 103).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6178468
EASTING: 457003

COMMODITIES: Gold Platinum Iridium

MINERALS
SIGNIFICANT: Gold Platinum
COMMENTS: Fine gold, minor platinum and iridium from assays only.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers
COMMENTS: Fine flat gold and minor platinum occurs in reworked glacial gravel bars and benches.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Reworked Glacial Gravel

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench

CAPSULE GEOLOGY

Bill Cust's Bar, located on the Parsnip River 30 kilometres up stream from the Peace River/Finlay River confluence and 50 kilometres northwest of the town of Mackenzie, is now covered by Lake Williston. Gold and platinum placer occurrences found in the Finlay, Parsnip and Peace rivers have been worked since the first discovery by Bill Cust in 1861.

In the 1920's and 1930's, the Ministry of Mines reported that numerous individuals were working the gravels of Parsnip River, recovering fine gold and small amounts of platinum. The placers generally occur in the top 1.5 to 3 metres of reworked glacial gravels deposited in streams and as benches along streams. Normally worked by hand, these placer operations had limited success. The gold is fine and flat and while platinum is common with high values reported locally, it was considered unimportant in most of these placers.

Between 1931 and 1940, 6220 grams of gold were recovered from the Parsnip River (Bulletin 28, page 45). Some iridium values have shown up in assays.

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GSC ANN RPT 1894 VOL III pp. 38c-40c
GSC EC GEOL 13, p. 81
GSC MEM 259, pp. 142-143

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/02/06 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 004**

NATIONAL MINERAL INVENTORY: 093O4,5 Au2

NAME(S): **NATION RIVER BAR**

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093O05E
BC MAP:
LATITUDE: 55 18 18 N
LONGITUDE: 123 39 20 W
ELEVATION: 750 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: This occurrence comprises 8 kilometres of placer mineralization on the Nation River. The location given is for gravels worked at the confluence of Philip Creek with the Nation River (Geological Survey of Canada Memoir 259, pages 142-143).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6128928
EASTING: 458384

COMMODITIES: Gold Platinum Iridium

MINERALS
SIGNIFICANT: Gold Platinum
COMMENTS: Fine flat gold, minor platinum and iridium from assays only.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Reworked Glacial Gravel

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Slide Mountain Cassiar
COMMENTS: Reworked glacial gravels lie on Slide Mountain and Cassiar terranes.

CAPSULE GEOLOGY

Gold and platinum placer occurrences found in the Finlay, Parsnip and Peace rivers have been worked since the first discovery by Bill Cust in 1861. The placers generally occur in the top 1.5 to 3 metres of reworked glacial gravels that were deposited in streams and as benches along streams. Normally worked by hand, these placer operations had limited success. The gold is fine and flat and while platinum is common with high values reported locally, it was considered unimportant in most of these placers.

The Nation River occurrence comprises a number of placer workings along the Nation River between Philip Creek and 65 Mile Creek. Prior to 1931, records of production in this area were poorly kept. Between 1931 and 1940, 5598 grams of gold were recovered from the Nation River from an unknown amount of gravel (Bulletin 28, page 45).

Iridium values have also been obtained from assays.

BIBLIOGRAPHY

EM FIELDWORK 2001, pp. 303-312
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EMPR BULL 1, pp. 82-88; 2, pp. 45-46; 21, p. 18; *28, p. 45
GSC ANN RPT 1894 VOL III, pp. 38c-40c
GSC EC GEOL 13, p. 81
GSC MEM *259, pp. 142-143
GSC OF 925
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/02/05 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 005**

NATIONAL MINERAL INVENTORY: 093O4 Au1

NAME(S): **RAINBOW CREEK**

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093O04W
BC MAP:
LATITUDE: 55 13 27 N
LONGITUDE: 123 58 06 W
ELEVATION: 875 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location of George Snell's showing (Bulletin 1, page 82).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6120164
EASTING: 438404

COMMODITIES: Gold Platinum Iridium

MINERALS
SIGNIFICANT: Gold Platinum
COMMENTS: Fine flat gold, minor platinum and iridium from assays only.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated Stratabound
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Reworked Glacial Gravel

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel Harper Ranch

CAPSULE GEOLOGY

Gold and platinum placer occurrences found in the Finlay, Parsnip and Peace rivers have been worked since the first discovery by Bill Cust in 1861. The placers generally occur in the top 1.5 to 3 metres of reworked glacial gravels deposited in streams and as benches along streams. Normally worked by hand, these placer operations had limited success. The gold is fine and flat and platinum is common with local high values reported, but it was considered unimportant in most of these placers.

Rainbow Creek, a tributary of the Nation River flows north through the Manson Upland, approximately 60 kilometres south of the town of Mackenzie. Discovery of gold in Rainbow Creek, 2 to 3 kilometres above its confluence with the Nation River, in 1929, led to over 40 kilometres of the Creek being staked and worked by 1931. The fine grained nature of the gold and the low platinum content meant many showings were not profitable. Between 1931 and 1935, 1431 grams of gold were recovered from Rainbow Creek. No other accurate production records are available. Iridium values have also been obtained from assays.

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EMPR AR 1906-103; 1923-141; 1929-206; 1930-159; 1933-104; 1936-C34; 1949-240
EMPR BULL *1, pp. 82-88; 2, pp. 45-46; 21, p. 18; 28, p. 44
GSC ANN RPT 1894 VOL III, pp. 38c-40c
GSC EC GEOL 13, p. 81
GSC MEM 259, pp. 142-143
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/02/05 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 006**

NATIONAL MINERAL INVENTORY: 093O4,5 Au2

NAME(S): **PHILIP AND WHEEL CREEKS**

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093O04E 093O05E
BC MAP:
LATITUDE: 55 11 52 N
LONGITUDE: 123 31 22 W
ELEVATION: 900 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer workings are reported along the length of Philip and Wheel creeks. The location given is for a water wheel on Wheel Creek (Minister of Mines Annual Report 1936, page C34).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6116925
EASTING: 466724

COMMODITIES: Gold Platinum Iridium

MINERALS
SIGNIFICANT: Gold Platinum
COMMENTS: Fine flat gold and minor platinum. Iridium from assays only.
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated Stratabound
CLASSIFICATION: Placer
TYPE: C01 Surficial placers

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Reworked Glacial Gravel

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Quesnel Cassiar

CAPSULE GEOLOGY

Gold and platinum placer occurrences found in the Finlay, Parsnip and Peace rivers have been worked since the first discovery by Bill Cust in 1861. The placers generally occur in the top 1.5 to 3 metres of reworked glacial gravels deposited as bars and benches along streams and rivers. Normally worked by hand, these placer operation had limited success. The gold is fine and flat and while platinum is common with high values reported locally, it was considered unimportant in most of these placers.

Philip Creek, a tributary of the Nation River, flows north through the Manson Upland, meandering to its Nation River confluence approximately 35 kilometres southwest of the town of Mackenzie. Most of the placers along Philip Creek were worked in the very early 1900's. Wheel Creek, a tributary 15 kilometres up stream from the mouth of Philip Creek, has a water wheel and other structures, comprising the most advanced workings of this area. Accurate production figures are not available.

Values in iridium were also derived from assays.

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EM FIELDWORK 2001, pp. 303-312
EM GEOFILE 2000-2; 2000-5
EMPR AR 1906-103; 1923-141; 1929-206; 1930-159; 1933-104; *1936-C34; 1949-240
GSC ANN RPT 1894 VOL III, pp. 38c-40c
GSC BULL 1, pp. 82-88; 2, pp. 45-46; 21, p. 18
GSC EC GEOL 13, p. 81
GSC MEM 259, pp. 142-143
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/02/05 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 007**

NATIONAL MINERAL INVENTORY:

NAME(S): **NOMAN CREEK**, CLEVELAND CREEK, PINE PASS

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O09W
BC MAP:
LATITUDE: 55 36 00 N
LONGITUDE: 122 20 35 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is for the area of the Noman Creek coal seams, adjacent and north of the Hart Highway. Noman Creek, between Cleveland and Fisher creeks, flows south into the Pine River. The Falling and Beaudette creek coal areas are located several kilometres to the southeast on the opposite side of the Pine River valley (Bulletin 36).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6161758
EASTING: 541394

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Lower Cretaceous	Bullhead	Cadomin	

LITHOLOGY: Sandstone
Shale
Siltstone
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

INVENTORY

ORE ZONE: NOMAN CREEK REPORT ON: Y

CATEGORY: Measured YEAR: 1969
QUANTITY: 2270000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Estimated open pit mineable.
REFERENCE: Coal Assessment Report 562.

CAPSULE GEOLOGY

In the Noman Creek area, the most important coal seams occur in the Lower Cretaceous Gething Formation (Bullhead Group). The main seams, 60 (0 - 1.6 metres thick), 78 (1.0-4.2 metres thick) 76 (4.0-7.0 thick metres), 40 (0-1 metre thick), and 9 (0-1.5 metres thick), are interbedded with sandstone, shale and siltstone. Seam 60 varies considerably in thickness and is mostly dirty and dull coal. Seam 78 varies in thickness and is fairly clean with average ash and volatile content of 7 per cent and 25.8 per cent respectively. Seam 76 is the main seam and is most continuous. Average ash and volatile matter contents on an air dried basis are 5 per cent and 23 per cent respectively. Sulphur content varies from 0.4 to 0.7 per cent. Seams 39 and 40 are discontinuous and deep.

A total of about 8 million tonnes of coal is estimated for the Noman Creek area (Bulletin 36, page 17). In 1969, Brameda Resources estimated the mineable reserves in the area southwest of Noman fault, the only portion of the area "of interest to Brameda", as 2.27 million tonnes (Coal Assessment Report 561).

On the west side of Cleveland Creek, four seams of coal of

CAPSULE GEOLOGY

commercial thickness are exposed at the base of the Gething Formation. They are termed Seam 92 (2 metres thick) at about 76 metres above the base of the Gething, Seam 95 (1.2 metres thick) at 46 metres, Seam 97 (about 2.8 metres of coal) at 37 metres and Seam 100 (2.4 metres thick) at 20 metres. No estimate of reserve is given.

The structure consists of three main northwest trending folds the Noman Creek syncline, Noman Creek anticline and the Fisher Creek syncline. The Noman Creek syncline is asymmetrical and plunges approximately 12 degrees southeast, decreasing towards the northwest. The Noman Creek anticline is cut by the northwest trending, southwest dipping Noman Creek fault (reverse), which is in turn displaced approximately 80 metres to the west by a northeast trending normal fault.

The underlying Cadomin Formation contains some coal seams, up to 1 metre thick.

The Falling Creek/Beaudette Creek area is structurally complex with Gething coal occurring mostly below variable thicknesses of Moosebar Formation rock.

BIBLIOGRAPHY

EMPR AR 1968-467
EMPR BULL 24; *36, pp. 15-17; 51; 52, p. 87
EMPR COAL ASS RPT 560, *561, 562, 823, 827
EMPR FIELDWORK 1991, pp. 433-440
EMPR GEM 1969-423
EMPR MAP 33
GSC BULL 219
GSC MAP 11-1961
GSC MEM 259
GSC OF 286; 925
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/02/05 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **WILLOW CREEK**, PINE VALLEY , PINE RIVER, NORTH, CENTRAL

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O09E
BC MAP:
LATITUDE: 55 36 00 N
LONGITUDE: 122 14 05 W
ELEVATION: 853 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of the property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6161828
EASTING: 548220

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Claystone
Mudstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: MVol Bituminous
COMMENTS: Low to medium volatile bituminous rank coal.

INVENTORY

ORE ZONE: WILLOW CREEK REPORT ON: Y

CATEGORY: Inferred YEAR: 1997
QUANTITY: 33000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Estimated geologic resources.
REFERENCE: T. Schroeter, personal communication, 1997.

ORE ZONE: WILLOW CREEK REPORT ON: Y

CATEGORY: Measured YEAR: 1997
QUANTITY: 15650000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Measured open pit coal reserves.
REFERENCE: George Cross News Letter No.164 (August 26), 1997.

CAPSULE GEOLOGY

Eight major coal zones (greater than 1.5 metres thick) of low to medium volatile bituminous coal occur in the Lower Cretaceous Gething Formation (Bullhead Group) in the Willow Creek occurrence area. The coal is interbedded with sandstone, siltstone, and claystone. Average coal seam thickness varies from 2.0 (seams 2 and 5) to 3.6 metres (seam 4) and 4.2 metres (seam 7). Coal zones 1, 4 and 7 are most continuous; zones 6 and 5 show a shorter strike length while zones 2, 3 and 8 are least continuous.

Average ash content varies from 7.28 per cent (seam 6) to 14.98 per cent (seam A); volatile matter from 15.63 per cent (seam 7) to

CAPSULE GEOLOGY

23.72 per cent (seam 1); fixed carbon from 62.47 per cent (seam 2) to 76.58 per cent (seam 7) and sulphur from 0.43 per cent (seam 3) to 0.70 per cent (seam 5) on a dry basis.

The coal property covers the northern part of the northwest Willow Creek anticlinorium in which the Gething Formation is exposed.

The anticlinorium consists of four parallel northwest trending anticlines with intervening syncline axes exposed in the west. The syncline axes in the north are marked by northwest trending faults. Dips vary from 6 to 50 degrees, and are commonly 15 to 30 degrees.

Combined (measured, indicated and inferred) resources at Willow Creek are 72,560,000 tonnes of coal (Coal Assessment Report 690).

Globaltex Industries Inc., Matsushima Canada and BCR Ventures conducted an advanced stage drilling program in 1996. A total of 7500 metres of drilling in 240 holes were completed. Preliminary resources are estimated at 27 million tonnes of metallurgical coal. Various environmental studies are ongoing and the companies hope to receive approval-in-principal for a 500,000 tonne per year mine in late 1997. A full feasibility study is planned to be completed by late 1996-early 1997.

To date (ca. 1997), 523 exploration drillholes totalling 34,500 metres have been completed. In addition, 50 percussion-drill holes have been drilled on claims to the southeast in the Pine Pass area. The mineable reserve at Willow Creek is 15.65 million tonnes of thermal and low grade metallurgical coal (Exploration in B.C., 1997).

Estimated geologic resources are 33 million tonnes of metallurgical coal (T. Schroeter, personal communication, 1997).

Pine Valley Coal Limited submitted a Stage 2 report which outlines plans for a 900,000 tonnes per year operation for 15 years. Production is planned in 1999.

Bulk sample programs included 200 kilograms for PCI coal testing and 600 kilograms for testing of carbonization characteristics and applicability as a semi-soft coking coal.

Globaltex Industries Inc. shipped 36,000 tonnes in 2001 and and 84,376 tonnes in 2002. The property is owned two-thirds by Globaltex and one-third by Mitsui Matshushima Canada Ltd.

BIBLIOGRAPHY

EM EXPL 1996-A25,C13; 1997-31; 1998-13
EMPR BULL 24; *36; 51; 52
EMPR COAL ASS RPT 689, 690, 824, 846, 848, 861, 862
EMPR FIELDWORK 1991, pp. 405-417, 433-440
EMPR INF CIRC 1993-13; 1997-1, p. 24; 1998-1, p. 23; 1999-1, pp. 12, 13
EMPR MAP 33; 65
EMPR OF 1992-1; 1994-1
EMPR PF (Willow Creek Coal Project)
GSC BULL 219
GSC MAP 11-1961
GSC MEM 259
GSC OF 286; 925
GCNL #164(Aug.26), 1997; #51(Mar.13), 1998; #23(Feb.3), 1999
N MINER *Apr.12, 1999
PR REL Globaltex Industries Inc., Mar.10, 2003
WWW http://www.globaltexinc.com/projects.html

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1997/06/09 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **093O 009**

NATIONAL MINERAL INVENTORY:

NAME(S): **PINE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O10E
BC MAP:
LATITUDE: 55 31 45 N
LONGITUDE: 122 36 53 W
ELEVATION: 760 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the south side of John Hart Highway, on the south side of Pine River, 2.5 kilometres due east of Link Creek (Assessment Report 20372).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6153747
EASTING: 524320

COMMODITIES: Vanadium

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Industrial Min.
DIMENSION: 200 x 100 Metres
STRIKE/DIP:
TREND/PLUNGE:
COMMENTS: The vanadium was probably deposited syngenetically with possible epigenitic enrichment also occurring.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Undefined Group	Sulphur Mountain	

LITHOLOGY: Calcareous Mudstone
Calcareous Siltstone

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: SHOWING
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1990
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Vanadium	0.4700	Per cent

COMMENTS: The highest of several samples taken.
REFERENCE: Assessment Report 20372.

CAPSULE GEOLOGY

The area of the Pine showing is underlain by the Lower, Middle and Upper Triassic Sulphur Mountain Formation consisting of calcareous mudstone or siltstone. The sequence, where exposed, has a strike averaging 125 degrees with a dip averaging 35 degrees west. The rocks are gently folded and have a shallow northward plunge.

Sampling has defined a vanadium-bearing zone with a length of 200 metres and an estimated true width of 100 metres. Several assayed samples range in value from 0.219 to 0.470 per cent vanadium (Assessment Report 20372). Reports indicate that it is not visually possible to separate unmineralized rock from mineralized.

BIBLIOGRAPHY

EMPR ASS RPT *20372
EMPR FIELDWORK 1991, pp. 433-440
GSC OF 925
GSC MAP 11-1961

DATE CODED: 1992/01/22
DATE REVISED: 1992/01/22
CODED BY: GJP
REVISED BY: GJP
FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 010**

NATIONAL MINERAL INVENTORY: 093O3 Mo1

NAME(S): **JACK**, HART

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O03W
BC MAP:
LATITUDE: 55 00 18 N
LONGITUDE: 123 17 06 W
ELEVATION: 990 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Centre of property (Geology, Exploration and Mining in B.C., 1971).

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6095385
EASTING: 481771

COMMODITIES: Molybdenum

MINERALS
SIGNIFICANT: Molybdenite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Unknown
TYPE: L05 Porphyry Mo (Low F- type)
COMMENTS: Molybdenum is hosted in a quartz porphyry sill.

HOST ROCK
DOMINANT HOSTROCK: Volcanic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Slide Mountain	Unnamed/Unknown Formation	

LITHOLOGY: Quartz Porphyry Sill
Fragmental Basalt
Diorite
Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Slide Mountain
COMMENTS: Upper Paleozoic Slide Mountain volcanics and sediments.

PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench

CAPSULE GEOLOGY

The Jack occurrence lies 16 kilometres west of McLeod Lake and 36 kilometres south-southwest of the town of Mackenzie.
Diamond drilling in 1971 intersected molybdenite hosted in a quartz porphyry sill intruding Carboniferous to Permian Slide Mountain Group fragmental basalt, diorite and limestone. Detailed results of this 7-hole, 610-metre, drill program are not available.

BIBLIOGRAPHY

EMPR GEM *1971-219
GSC P 91-1A, pp. 285-291
GSC OF 925; 1565; 1895

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/03/13 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 011**
NATIONAL MINERAL INVENTORY: 093O10 Phs1

NAME(S): **LEMORAY**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O10E
BC MAP:
LATITUDE: 55 31 20 N
LONGITUDE: 122 32 35 W
ELEVATION: 750 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Located on the north side of Hart highway near Lemoray (Butrenchuk, 1992).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6153001
EASTING: 528849

COMMODITIES: Phosphate

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE: Triassic

DEPOSIT
CHARACTER: Stratabound
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: F07 Upwelling-type phosphate
COMMENTS: 1 to 2 centimetre phosphorite bed.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Undefined Group	Toad	
Triassic	Undefined Group	Sulphur Mountain	

LITHOLOGY: Phosphorite
Shale
Siltstone
Dolomite
Chert

HOSTROCK COMMENTS: Phosporite beds in Triassic Toad Formation (correlative with Sulphur Mountain Formation (Whistler member) south of Pine River.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Permo-Triassic Ancestral North American passive margin prism.

PHYSIOGRAPHIC AREA: Hart Ranges

CAPSULE GEOLOGY

The Lemoray occurrence lies north of the Pine Pass Highway near Lemoray.

Phosphate deposits in the Rocky Mountains of northeast British Columbia occur in a sequence of marine strata, ranging in age from Cambrian to Jurassic but only Triassic occurrences appear to have possible economic significance. At Lemoray, a 1 to 2 centimetre phosphorite bed is present in Triassic strata, believed to belong to the Toad Mountain Formation (correlative with the Whistler Member of the Sulphur Mountain Formation south of Pine River). In thin section it is seen to consist of dark brown to black, ovoid pellets in fine-grained dolomite, quartz and clay matrix. Some chert is also present

BIBLIOGRAPHY

EMPR AR 1967-314
EMPR FIELDWORK *1987, pp. 396-410; 1991, pp. 433-440
GSC OF 925
*Butrenchuk, S.B. (1992): Phosphates in British Columbia (EMPR Paper in press)

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/03/19 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 012**

NATIONAL MINERAL INVENTORY:

NAME(S): **PEACE RIVER CANYON**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O16E
BC MAP:
LATITUDE: 55 56 18 N
LONGITUDE: 122 09 00 W
ELEVATION: 609 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of property (Coal Assessment Report 576).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6199543
EASTING: 553096

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Claystone
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
GRADE: MVol Bituminous

INVENTORY

ORE ZONE: PEACE RIVER CANYON REPORT ON: Y

CATEGORY: Combined YEAR: 1980
QUANTITY: 19783851 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Measured and indicated reserves suitable for surface mining.
REFERENCE: Coal Assessment Report 576, page 25.

ORE ZONE: PEACE RIVER CANYON REPORT ON: Y

CATEGORY: Measured YEAR: 1980
QUANTITY: 37735360 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Measured reserves suitable for underground mining.
REFERENCE: Coal Assessment Report 576, page 25.

CAPSULE GEOLOGY

In the Peace River Canyon occurrence area, approximately 11 coal seams and zones occur in the Lower Cretaceous Gething Formation (mostly within the Middle Gething, Bullhead Group) which consists of interbedded sandstone, siltstone, claystone and coal. Average seam thicknesses in area A are as follows: Trojan, 2.4 metres; Titan, 1.7 metres; Falls, 2.1 metres; Gething, 0.6 metre; Little Mogul, 0.7 metre; Mogul; 1.8 metres; Castle Point, 0.9 metre; and Milligan, 0.8 metre. Thinner seams are present between some of the above. Ash content varies from 2.14 to 7.58 per cent and sulphur from 0.60 to 1.23 per cent.

The structure consists of a northwest trending anticline cut by several northwest trending, southwest dipping thrust faults.

Combined (measured and indicated) reserves suitable for surface mining are 19,783,851 tonnes; measured reserves suitable for

CAPSULE GEOLOGY

underground mining are 37,735,360 tonnes (Coal Assessment Report 576, page 25).

BIBLIOGRAPHY

EMPR COAL ASS RPT 573, 574, 575, *576
EMPR OF 1987-21; 1992-1
EMPR MAP 33; 65 (1989)
EMPR BULL 51
GSC P 68-28; 89-4
GSC MAP 11-1961
GSC MEM 69; 259
GSC OF 286; 925
GSC BULL 219

DATE CODED:	1985/07/24	CODED BY:	GSB	FIELD CHECK:	N
DATE REVISED:	1990/08/15	REVISED BY:	EVFK	FIELD CHECK:	N

MINFILE NUMBER: **093O 013**

NATIONAL MINERAL INVENTORY: 093O1 Sia1

NAME(S): **AN**, ANZAK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O01E
BC MAP:
LATITUDE: 55 05 33 N
LONGITUDE: 122 07 55 W
ELEVATION: 1707 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property (Open File 1987-15).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6105429
EASTING: 555400

COMMODITIES: Silica

MINERALS
SIGNIFICANT: Silica
MINERALIZATION AGE: Proterozoic-Cambrian

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R07 Silica sandstone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic	Misinchinka	Undefined Formation	
Lower Cambrian	Gog	Undefined Formation	

LITHOLOGY: Quartzite

HOSTROCK COMMENTS: Misinchinka or Gog group quartzite.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Cambro-Proterozoic Ancestral North American quartzite.

PHYSIOGRAPHIC AREA: Hart Ranges

CAPSULE GEOLOGY

The An occurrence lies approximately 3 kilometres southeast of Mount Kinney and 65 kilometres southeast of the town of Mackenzie, in the Liard Mining Division.

This quartzite occurrence is probably part of the Cambrian Gog or Upper Proterozoic Misinchinka Group. At least five holes have been drilled on the occurrence. Company information suggests there is a substantial tonnage of silica with the following analysis: SiO_2, 99.43 per cent; Fe_2O_3, 0.09 per cent; Al_2O_3, 0.08 per cent; CaO, 0.011 per cent; and LOI, 0.18 per cent (Letter by Ritchie (Property File)).

BIBLIOGRAPHY

EMPR ASS RPT 5178, 5637
EMPR EXPL 1975, p. 203
EMPR GEM 1974, p. 400
EMPR OF *1987-15
EMPR PF (Letter by A.C. Ritchie, 1979)
GSC MAP 11-1961
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/03/16 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 014**

NATIONAL MINERAL INVENTORY: 093O2 Sia1

NAME(S): **WIN**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O02W
BC MAP:
LATITUDE: 55 02 02 N
LONGITUDE: 122 53 46 W
ELEVATION: 1250 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: General location of drill collars from 1974 drill program (Assessment Report 16646).

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6098567
EASTING: 506640

COMMODITIES: Silica

MINERALS
SIGNIFICANT: Silica
COMMENTS: Sedimentary quartz and quartz viens.
ALTERATION: Limonite Hematite Sericite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Proterozoic-Cambrian

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R07 Silica sandstone
SHAPE: Regular
MODIFIER: Faulted
DIMENSION: 600 x 50 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A 600-metre east-west strike length 50 metre wide steeply dipping quartzite bed truncated at east and west ends by northeast stiking faults.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic	Misinchinka	Undefined Formation	
Lower Cambrian	Gog	Undefined Formation	
Unknown			Unnamed/Unknown Informal

LITHOLOGY: Quartzite
Quartz Vein

HOSTROCK COMMENTS: Misinchinka or Gog group white to pale pink quartzite with common quartz veins.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Cambro-Proteozoic Ancestral North American quartzite.

PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: WIN REPORT ON: Y

CATEGORY: Inferred YEAR: 1974
QUANTITY: 4500000 Tonnes

COMMODITY	GRADE
Silica	45.8200 Per cent

COMMENTS: Contaminant levels are above silicon metal production requirements but within ferrosilicon production requirements.
REFERENCE: Assessment Report 16646.

CAPSULE GEOLOGY

The Win occurrence lies on the crest of Mount Chingee, 30 kilometres southeast of the town of Mackenzie, in the Cariboo Mining Division.

A southeast trending quartzite unit has been traced for 600 metres along strike and has a width roughly estimated at 50 metres. The unit is truncated to the east and west by northeast striking faults. Silty phyllite occurs to the south and strata to the north consists of highly deformed interbedded metamorphosed pelites, siltstones and dirty to clean quartzites.

The quartzite, of the Lower Cambrian Gog Group or the Upper Proterozoic Misinchinka Group, is normally a buff white, well-sorted, fine to medium-grained rock, however, grit-sized quartz grains may

CAPSULE GEOLOGY

constitute up to 40 per cent of the rock. It is generally pure, although it sometimes contains traces of sericite and minor hematite and limonite stains, especially on joint surfaces. Quartz veins may account for over 70 per cent of the rock volume over widths of tens of metres.

Six holes totalling 390 metres were drilled in 1974 and four continuous chip samples were collected in 1987. An inferred reserve of 4.5 million tonnes grading 98.03 percent SiO2 (or 45.82 per cent silicon), 0.10 percent Fe2O3, 0.38 percent Al2O3, 0.01 percent CaO and 0.19 percent LOI was confirmed by the 1987 program (Assessment Report 16646). (Conversion to silicon using the factor 2.1393.) Three samples collected by the Geological Survey Branch in 1981 assayed 94.14, 96.02 and 96.10 per cent silica.

BIBLIOGRAPHY

EMPR ASS RPT 5025; *16646
EMPR GEM 1974, p. 401
EMPR FIELDWORK 1982, p. 196
EMPR OF *1987-15
GSC P 91-1A, pp. 285-291
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/03/16 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 015**

NATIONAL MINERAL INVENTORY:

NAME(S): **JET**, PEACE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O13E
BC MAP:
LATITUDE: 55 59 24 N
LONGITUDE: 123 34 32 W
ELEVATION: 1580 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Sphalerite and galena bearing outcrop (Assessment Report 5643).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6205116
EASTING: 464095

COMMODITIES: Lead Zinc

MINERALS

SIGNIFICANT: Galena Sphalerite Smithsonite
COMMENTS: Disseminated sphalerite and galena and oxidized equivalents.
ASSOCIATED: Dolomite
ALTERATION: Hydrozincite Anglesite
ALTERATION TYPE: Oxidation
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated Stratabound Breccia
CLASSIFICATION: Replacement
TYPE: E12 Mississippi Valley-type Pb-Zn
DIMENSION: 210 x 120 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Lead and zinc bearing breccia rubble covers a surface area 210 by 120 metres.

HOST ROCK

DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	
Middle Devonian	Undefined Group	Stone	

LITHOLOGY: Dolomite Breccia
Dolomite

HOSTROCK COMMENTS: Dolomite breccia at the contact of the Stone and Dunedin formations

GEOLOGICAL SETTING

TECTONIC BELT: Foreland
TERRANE: Ancestral North America
COMMENTS: Ancestral North American Paleozoic platformal carbonates.

PHYSIOGRAPHIC AREA: Muskwa Ranges

INVENTORY

ORE ZONE: DRILLHOLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1976
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Lead	22.0000	Per cent
Zinc	0.0140	Per cent

COMMENTS: A 1.5-metre interval from drill hole 11B.
REFERENCE: Assessment Report 6028.

CAPSULE GEOLOGY

The Jet occurrence, located 3 kilometres southeast of Mount Selwyn and 80 kilometres north of the town of Mackenzie, is hosted in Lower Paleozoic platformal carbonates of the Ancestral North America terrane.

Silurian Nonda Formation, Silurian-Devonian Muncho-McConnell Formation, Lower and Middle Devonian Stone Formation and Middle Devonian Dunedin Formation carbonates and minor clastics, overlain by Besa River Formation shale, comprise a platformal sequence near a facies change to basinal shale. This southwest dipping package is folded and faulted and divided by a prominent thrust fault.

The deposit occurs in dolomite breccia healed by coarse sparry dolomite. The breccia occurs at the contact between the Stone and Dunedin formations, but the irregular nature of this contact causes uncertainty as to which formation hosts the occurrence. Coarse galena, sphalerite, smithsonite, anglesite and hydrozincite are disseminated in the sparry dolomite matrix but are also found occasionally replacing the dolomite clasts. Core samples, containing

CAPSULE GEOLOGY

up to 22 per cent lead and 4 per cent zinc, have been collected (Assessment Report 6028), however grab samples from the 120 by 210 metre showing commonly contain less than 2 per cent lead and zinc.

BIBLIOGRAPHY

EMPR GEM 1975-E153, 1976-E159
EMPR ASS RPT *5643, 6028
GSC MAP 1961-11; 1424A
GSC MEM 425, p. 28
GSC OF 261
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/01/23 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 016**
NATIONAL MINERAL INVENTORY: 093O11 Fe1

NAME(S): **FALCON**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O11W
BC MAP:
LATITUDE: 55 42 14 N
LONGITUDE: 123 20 57 W
ELEVATION: 1690 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Massive magnetite in saddle on Falcon 1 claim (Assessment Report 6280).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6173179
EASTING: 478057

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Hematite
ASSOCIATED: Quartz Pyrite
ALTERATION: Chlorite Sericite
ALTERATION TYPE: Chloritic
MINERALIZATION AGE: Proterozoic

DEPOSIT
CHARACTER: Stratiform Massive Concordant
CLASSIFICATION: Exhalative Sedimentary Industrial Min.
TYPE: G01 Algoma-type iron-formation F11 Ironstone
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: Metres STRIKE/DIP: TREND/PLUNGE: 120/20
COMMENTS: The occurrence is thickened in the nose of a southeast trending fold.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Proterozoic	Misinchinka	Undefined Formation	

LITHOLOGY: Lithic Fragmental Mudstone
Tuffaceous Siltstone
Magnetite Iron Formation
Cherty Iron Formation
Hematite Iron Formation
Banded Iron Formation
Carbonate Ironstone
Tuffaceous Carbonate Iron Formation
Siliceous Ironstone

HOSTROCK COMMENTS: An iron formation lies in a lower clastic unit of the Misinchinka group metsediments.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
PHYSIOGRAPHIC AREA: Hart Ranges
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: Greenschist
COMMENTS: Proterozoic Ancestral North American metasediments.

INVENTORY

ORE ZONE: SILICA REPORT ON: Y

CATEGORY: Inferred YEAR: 1986
QUANTITY: 3890000 Tonnes

COMMODITY	GRADE	
Iron	29.3000	Per cent

COMMENTS: Grade is total iron.
REFERENCE: Assessment Report 14839.

ORE ZONE: BANDED REPORT ON: Y

CATEGORY: Inferred YEAR: 1986
QUANTITY: 3180000 Tonnes

COMMODITY	GRADE	
Iron	38.7000	Per cent

COMMENTS: Grade is total iron.
REFERENCE: Assessment Report 14839.

INVENTORY

ORE ZONE: LOWER REPORT ON: Y

CATEGORY: Inferred YEAR: 1986
QUANTITY: 2010000 Tonnes

COMMODITY	GRADE	
Iron	36.4000	Per cent

COMMENTS: Grade is total iron.
REFERENCE: Assessment Report 14839.

CAPSULE GEOLOGY

The Falcon prospect, located in the Misinchinka Range, 40 kilometres northwest of the town of Mackenzie, lies in Upper Proterozoic Misinchinka Group metasediments.

The Misinchinka Group, comprised of Cambro-Proterozoic metasediments, minor volcanics and carbonates is overlain by Cambrian carbonates. North-northwest trending folds plunge to the southeast and west dipping thrusts locally repeat the sequence. A regional foliation is pronounced in less competent beds and metamorphism grades up to greenschist facies.

The Falcon prospect, a 15 to 20 metre thick iron formation of probable exhalite origin, is enclosed in mudstone, siltstone and tuffaceous sediments of the Misinchinka Group. The deposit occurs in the nose of an anticline which trends 110 to 130 degrees and plunges gently to the southeast and to the northwest. This occurrence comprises seven iron formation sub-units as follows: (1) silicate; (2) banded; (3) magnetite-rich; (4) hematite-rich; (5) chert; (6) carbonate; and (7) tuffaceous carbonate. Magnetite and hematite are associated with quartz and pyrite. Chlorite and sericite are noted in the footwall. The iron formation, probably deposited in two cycles, has reserves as follows (Assessment Report 14839):

-UPPER FORMATION
Banded Iron Formation - 3,180,000 tonnes grading 38.7 per cent total iron and 30.1 per cent magnetic iron.
Silica facies..... - 3,890,000 tonnes grading 29.3 per cent total iron and 15.6 per cent magnetic iron.
-LOWER FORMATION..... - 2,010,000 tonnes grading 36.4 per cent total iron and 23.2 per cent magnetic ir

BIBLIOGRAPHY

EMPR ASS RPT 6280, 7400, *7929, *14839
EMPR EXPL 1977-E204; 1978-E230; 1979-239
EMPR OF *1988-28, p. 131; 1998-8-I, pp. 1-20
GSC MAP 1961-11, 1424A
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/02/06 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 017**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT MURRAY**, PINE PASS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O07W
BC MAP:
LATITUDE: 55 27 36 N
LONGITUDE: 122 45 07 W
ELEVATION: 884 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centered on sample site 5-1070, 3.8 kilometres southeast of Garbit Station along Highway 97 (plotted on Peace River pre-emptor map, Energy, Mines and Petroleum Resources Industrial Mineral File).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6146010
EASTING: 515686

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Upper Cambrian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Folded
COMMENTS: On the east limb of northwest trending anticline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cambrian	Undefined Group	Lynx	

LITHOLOGY: Limestone
Dolomite

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1957
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	25.7000	Per cent

COMMENTS: Taken across 15 metres. Grade given for calcium oxide.
REFERENCE: Minister of Mines Annual Report 1957, page 86.

CAPSULE GEOLOGY

Limestone of the Upper Cambrian Lynx Formation is exposed along the John Hart Highway, 3.8 kilometres southeast of Garbit Station of the B.C. Railway. The limestone lies on the east side of a northwest trending anticline.

The roadcut exposes dark grey to black limestone in thin crinkled beds with some scattered 0.15 to 0.6 metre thick layers of light grey dolomite. A sample taken across 15 metres of limestone, perpendicular, to the bedding contained 25.70 per cent CaO, 5.56 per cent MgO, 38.56 per cent insolubles, 2.90 per cent R2O3, 2.03 per cent Fe2O3, 0.04 per cent MnO, 0.12 per cent P2O5, 0.12 per cent sulphur, 27.29 per cent ignition loss and 0.22 per cent water (Minister of Mines Annual Report 1957, page 86). The dolomite bands were excluded from sampling.

BIBLIOGRAPHY

EMPR AR 1957-86
GSC MAP 11-1961
GSC OF 925

BIBLIOGRAPHY

Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/02/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093O 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOLITUDE MOUNTAIN**, PINE PASS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O10E 093O07E
BC MAP:
LATITUDE: 55 30 05 N
LONGITUDE: 122 37 55 W
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location centered on sample site S-1071, 1.0 kilometre northwest of the summit of Solitude Mountain, along Highway 97 (Energy, Mines and Petroleum Resources Industrial Mineral Map 11-1961).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6150649
EASTING: 523249

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica
MINERALIZATION AGE: Mississippian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Folded
COMMENTS: Folded into a northwest trending syncline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mississippian	Undefined Group	Prophet	

LITHOLOGY: Limestone
Chert

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1957
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	38.2000	Per cent

COMMENTS: Taken across 46 metres. Grade given for calcium oxide.
REFERENCE: Minister of Mines Annual Report 1957, page 86.

CAPSULE GEOLOGY

A roadcut along the John Hart Highway (Highway 97), 1 kilometre northwest of the summit of Solitude Mountain exposes a 46-metre thick section of fine-grained, black limestone of the Mississippian Prophet Formation. This section lies on the west flank of a northwest trending syncline. The rock displays a well developed cleavage. In the upper most portion of the section the limestone becomes interbedded with chert. A sample taken across the 46-metre section contained 38.2 per cent CaO, 1.94 per cent MgO, 25.5 per cent insolubles, 0.70 per cent R2O3, 0.91 per cent Fe2O3, 0.01 per cent MnO, 0.03 per cent P2O5, 0.33 per cent sulphur, 32.6 per cent ignition loss and 0.09 per cent water (Minister of Mines Annual Report 1957, page 86).

Limestone of the same formation is exposed on the east side of Solitude Mountain along the east flank of the syncline. A cut along the highway, 3.7 kilometres west of the previous exposure, displayed thickly bedded, fine-grained, black, siliceous limestone. A sample across 61 metres of road cut contained, 20.8 per cent CaO, 2.94 per cent MgO, 47.9 per cent insolubles, 1.22 per cent R2O3, 2.09 per cent Fe2O3, 0.02 per cent MnO, 0.16 per cent P2O5, 1.40 per cent sulphur and 24.7 per cent ignition loss (Minister of Mines Annual Report 1957, page 86).

BIBLIOGRAPHY

EMPR AR 1957-86
EMPR FIELDWORK 1991, pp. 433-440
GSC MAP 11-1961
GSC OF 925
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1989/10/16 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093O 019**

NATIONAL MINERAL INVENTORY:

NAME(S): **SILVER SANDS**, PINE PASS

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O10E
BC MAP:
LATITUDE: 55 31 14 N
LONGITUDE: 122 32 05 W
ELEVATION: 732 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centered on sample site S-1073, along Highway 97, 2.1 kilometres northeast of the Pine River bridge (plotted on Peace River pre-emptor map in Energy, Mines and Petroleum Resources Industrial Mineral File).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6152819
EASTING: 529376

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Silica
MINERALIZATION AGE: Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Folded
COMMENTS: On west limb of northwest trending syncline.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Triassic	Undefined Group	Toad	
Triassic	Undefined Group	Grayling	

LITHOLOGY: Siliceous Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1957
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	18.1000	Per cent

COMMENTS: Taken across 30.5 metres. Grade given for calcium oxide.
REFERENCE: Minister of Mines Annual Report 1957, page 86.

CAPSULE GEOLOGY

Black, siliceous limestone of the Triassic Toad, Grayling and Liard formations outcrops in a small roadcut along the John Hart Highway (Highway 97), 2.1 kilometres northeast of the Pine River bridge on the west limb of a northwest trending anticline. A chip sample taken across 30.5 metres contained 18.1 per cent CaO, 8.30 per cent MgO, 48.8 per cent insolubles, 0.64 per cent R2O3, 0.63 per cent Fe2O3, 0.03 per cent MnO, 0.06 per cent sulphur and 0.27 per cent ignition loss (Minister of Mines Annual Report 1957, page 86).

BIBLIOGRAPHY

EMPR AR *1957-86
EMPR FIELDWORK 1991, pp. 433-440
GSC MAP 11-1961
GSC OF 925
Placer Dome File

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/02/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093O 020**

NATIONAL MINERAL INVENTORY:

NAME(S): **PEACE RIVER**, CLEARWATER CREEK, WILLISTON LAKE

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O14E
BC MAP:
LATITUDE: 55 53 18 N
LONGITUDE: 123 12 09 W
ELEVATION: 1128 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Location centered on surface trace of 25 kilometre long limestone band (Geological Survey of Canada Open File 925 - Unit Dd).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6193670
EASTING: 487334

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Dolomite
MINERALIZATION AGE: Middle Devonian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Evaporite Industrial Min.
TYPE: R09 Limestone
SHAPE: Irregular
MODIFIER: Folded
DIMENSION: 9999 x 2500 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: Limestone band strikes northwest for 25 kilometres. Deposit dimensions are 25000 by 2500 metres.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Middle Devonian	Undefined Group	Dunedin	

LITHOLOGY: Limestone
Argillaceous Limestone
Dolomite
Calcareous Shale
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Muskwa Ranges

CAPSULE GEOLOGY

A band of limestone of the Middle Devonian Dunedin Formation outcrops on the east arm of Williston Lake (formerly the Peace River), 6 kilometres east of the mouth of Clearwater Creek, and continues southeastward for 25 kilometres. Exposed widths vary up to 2.5 kilometres. The southern half of the band is folded about the crest of a northwest trending syncline.

The band is comprised of limestone and argillaceous limestone that is locally replaced by massive dolomite. Calcareous shale and minor sandstone are also present.

BIBLIOGRAPHY

EMPR IND MIN FILE (Limestone Occurrences in British Columbia by McCammon, J.W. 1973, p. 267 (in Ministry Library))
GSC MAP 11-1961
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1992/02/06 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093O 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **LAURA**, LAURA NO. 2, MOUNT BISSON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O12W
BC MAP:
LATITUDE: 55 31 19 N
LONGITUDE: 123 56 27 W
ELEVATION: 1585 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of sample UG-7826, east of Manson River and 2.2 kilometres west of Mt. Bisson.

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6153277
EASTING: 440601

COMMODITIES: Thorium, Rare Earths, Lanthanum, Cerium, Praseodymium, Neodymium, Samarium

MINERALS

SIGNIFICANT: Allanite, Monazite
ASSOCIATED: Quartz, Magnetite, Nepheline, Feldspar
ALTERATION: Aegirine, Augite
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Pegmatite
TYPE: O02 Rare element pegmatite - NYF family

HOST ROCK

DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic	Ingenika	Undefined Formation	
Upper Proterozoic			Wolverine Complex

LITHOLOGY: Allanite Pegmatite
Gneiss
Monzonite
Biotite Amphibolite
Aegirine Augite Feldspar Syenite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Manson Upland
TERRANE: Ancestral North America
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1988
SAMPLE TYPE: Rock

COMMODITY	GRADE	
Cerium	2.5300	Per cent
Lanthanum	2.2400	Per cent
Neodymium	0.5800	Per cent
Praseodymium	0.1300	Per cent
Samarium	0.5000	Per cent
Thorium	0.1100	Per cent

COMMENTS: Sample of allanite pegmatite.
REFERENCE: Property File and Assessment Report 17872.

CAPSULE GEOLOGY

The area of the Laura showing lies within the Omineca Belt consisting of siliciclastic sediments with minor carbonates and mafic rocks. These rocks belong to the Upper Proterozoic Ingenika Group. Within the Wolverine Range, the sediments are highly metamorphosed and subsequently intruded by granodioritic bodies and associated pegmatites which are possibly Early Cretaceous in age. These high grade metamorphics, known as the Wolverine complex, consist of amphibolite and calc-silicate gneiss, schists, micaceous quartzite, and crystalline limestone. Metasomatism of the Wolverine amphibolite gneisses resulted in a secondary alkalic overprinting, possible related to a deep-seated intrusion.

The Laura showing occurs within a 110 by 60 metre zone of alkalic alteration. Monzonite (Mount Bisson intrusions) outcrops to the south. Biotite amphibolite appears to be altered to banded

CAPSULE GEOLOGY

aegirine augite-alkali feldspar syenite. Within the alteration zone are various pegmatites containing allanite, nepheline, monazite, quartz, magnetite, and feldspar. The allanite pegmatites are up to 30 metres long and 4 metres wide.

A sample (UG-7911) of allanite pegmatite assayed 0.11 per cent thorium, 2.24 per cent lanthanum, 2.53 per cent cerium, 0.13 per cent praseodymium, 0.58 per cent neodymium, and 0.5 per cent samarium. (Assessment Report 17872 and Property File). A radioactive sample (UG-7826), 350 metres to the southeast, assayed 0.305 per cent thorium (Halleran, 1989 - Property File).

BIBLIOGRAPHY

EMPR ASS RPT 17734, *17872, 19404
EMPR PF (Report by Halleran, A.A.D., 1989)
EMPR FIELDWORK 1987, pp. 169-180; *1989, pp. 297-304; 1992, pp. 301-306
EMPR EXPL 1988-C182
GSC MAP 11-1961
GSC OF 925
Chevron File

DATE CODED: 1990/08/01 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 1992/01/21 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 022**

NATIONAL MINERAL INVENTORY:

NAME(S): **FALLS**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O11W
BC MAP:
LATITUDE: 55 40 53 N
LONGITUDE: 123 26 35 W
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: The Falls claims are situated on the north fork of Six Mile Creek (Minister of Mines Annual Report 1904, page G112).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6170709
EASTING: 472141

COMMODITIES: Mica

MINERALS
SIGNIFICANT: Mica
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Industrial Min.
COMMENTS: A detailed description for this occurrence is not available.

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic	Misinchinka	Unnamed/Unknown Formation	

LITHOLOGY: Unknown

HOSTROCK COMMENTS: The Falls claims may be underlain by Misinchinka Group sediments.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench

CAPSULE GEOLOGY

The Falls occurrence is situated on the north fork of Six Mile Creek, approximately 44 kilometres northwest of the town of Mackenzie, in the Omineca Mining Division.

The Falls occurrence lies within Ancestral North America terrane sediments, possibly within the Upper Proterozoic Misinchinka Group. As recorded in the 1904 Department of Mines Annual Report "the mica appears to be very good grade and the surface showing is said to be very encouraging". A more detailed description is not available.

BIBLIOGRAPHY

EMPR AR *1904-G112
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/03/15 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 023**

NATIONAL MINERAL INVENTORY:

NAME(S): **GETHING CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O16W
BC MAP:
LATITUDE: 55 59 10 N
LONGITUDE: 122 17 06 W
ELEVATION: 670 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Measured section above the south fork of Gething Creek (Geological Survey of Canada Bulletin 259, Figure 11).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6204765
EASTING: 544609

COMMODITIES: Bentonite

MINERALS
SIGNIFICANT: Bentonite
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: A 10-centimetre thick bed of bentonite.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Fort St. John	Moosebar	

LITHOLOGY: Bentonite
Shale
Sandstone

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
COMMENTS: Post-accretion Lower Cretaceous Blairmore clastic wedge.

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

The Gething bentonite occurrence lies above the south fork of Gething Creek, 6 kilometres west of Portage Mountain and 90 kilometres northeast of the town of Mackenzie, in the Liard Mining Division.

A 10-centimetre seam of bentonite, near the base of a measured section of several hundred metres of Lower Cretaceous Moosebar Formation (Fort St. John Group) shale and sandstone, was reported in Geological Survey of Canada Paper 44-19. A detailed description was not given.

BIBLIOGRAPHY

GSC MEM *259, p. 75
GSC P *44-19, pp. 7-8
GSC OF 925

DATE CODED: 1985/07/24
DATE REVISED: 1991/03/15

CODED BY: GSB
REVISED BY: GKK

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 024**

NATIONAL MINERAL INVENTORY:

NAME(S): **CRASSIER CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O09W
BC MAP:
LATITUDE: 55 38 00 N
LONGITUDE: 122 17 19 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: A measured section on a southwest dipping slope above Crassier Creek approximately 5 kilometres north of Pine River (Geological Survey of Canada Paper 43-13).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6165501
EASTING: 544786

COMMODITIES: Bentonite

MINERALS
SIGNIFICANT: Bentonite
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Industrial Min.
COMMENTS: A 3-centimetrte thick seam of bentonite strikes northwest and dips northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Fort St. John	Moosebar	

LITHOLOGY: Bentonite
Shale
Sandstone

HOSTROCK COMMENTS: Lower Cretaceous Moosebar Formation shale and sandstone strike northwest and dip northeast.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
COMMENTS: Post accretion Lower Cretaceous Blairmore clastic wedge.

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

The Crassier Creek occurrence lies above Crassier Creek, 5 kilometres north of Pine River and 63 kilometres northeast of the town of Mackenzie, in the Liard Mining Division.

A 3-centimetre seam of bentonite, in several hundred metres of Lower Cretaceous Moosebar Formation (Fort St. John Group) shale and sandstone, was reported (Geological Survey of Canada Paper 43-13). A detailed description was not given.

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 433-440
GSC MEM 259, p. 74
GSC P 43-13, pp. 3-4
GSC OF 925

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1991/03/15 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **DOWLING CREEK**, PEACE RIVER, TROJAN

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O16W
BC MAP:
LATITUDE: 55 58 30 N
LONGITUDE: 122 17 36 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property (Coal Assessment Report 511).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6203523
EASTING: 544101

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Mudstone
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP: Post-mineralization
GRADE:

INVENTORY

ORE ZONE: TROJAN
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1976
QUANTITY: 15000000 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: In-place reserves on the northern part of property.
REFERENCE: Coal Assessment Report 511.

CAPSULE GEOLOGY

Three main coal seams, the Trojan, the Murray, and the Grant occur in the Lower Cretaceous Gething Formation (457 metres thick) of the Bullhead Group, interbedded with sandstone and mudstone. The Trojan seam lies 37 metres below the top of the Gething while the Murray and Grant seams occur over 305 metres lower in the succession, making the Trojan seam the most important, having the least overburden thickness. The Gething is overlain by younger formations in places.

The Trojan seam is 2.1 to 2.6 metres thick in the Dowling Creek area, but is thinner (0.9 metre) and contains a split of sandstone in the area of Drill Hole 77-7. It thins to the east and appears to be absent in some drill holes. A sub-Trojan seam, 0.5 metre thick, is also present in this area. Other thinner seams are common and the Superior seam above the Trojan was intersected in several drill holes.

In place reserves of 15 million tonnes (Trojan seam) are thought to be present in the northern part of the property. Analyses for the plus 28 mesh material indicate a yield of approximately 60 per cent at 6.6 per cent ash, 0.7 per cent sulphur and free swelling index of 4.

The structure consists of a gently dipping, north-northwest trending, broad syncline which is essentially unfaulted. Sharply faulted anticlines occur to the east and west.

BIBLIOGRAPHY

EMPR COAL ASS RPT 510, *511, 512
EMPR MAP 33
GSC MAP 11-1961
GSC MEM 69, 259
GSC OF 286; 925
GSC P 68-28

DATE CODED: 1986/02/16 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1991/03/19 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 026**

NATIONAL MINERAL INVENTORY:

NAME(S): **SOUTH MOUNT GETHING**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093O16W 094B01W
BC MAP:
LATITUDE: 55 58 00 N
LONGITUDE: 122 25 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6202522
EASTING: 536308

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Shale
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP: Post-mineralization
GRADE:

CAPSULE GEOLOGY

Approximately twelve coal seams (0.07 - 4.5 metres thick) occur in the Lower Cretaceous Gething Formation (Bullhead Group) interbedded with medium to fine-grained sandstones, shales, and siltstones, which were deposited in fluvial floodplain and deltaic environments.

In the upper part of the section, the Superior seam averages 2.06 metres thick (1.65 to 2.59 metres). The Trojan seam thins and splits from the Bri-Dowling Creek property (to the east, 093O 029) to the South Mount Gething area. The Titan seam appears to be channeled in places. The Falls seam thins from 1.4 metres to 1.25 metres and splits into two 0.6 metre thick seams in the northeast of the property. The older (and generally thinner) seams are not named. Samples of the coal from Drill Hole RDH - SMG - 81-28 showed ash, sulphur, volatile matter, fixed carbon, BTU and FSI (on an air dry basis) to range as follows: ash, 11.12 per cent to 49.51 per cent; sulphur, 0.45 per cent to 2.61 per cent (mostly less than 1 per cent); volatile matter, 17.51 per cent to 29.84 per cent; fixed carbon, 29.29 per cent to 57.69 per cent; BTU, 6895 to 13523 and FSI, 1 to 8.

The structure consists of a broad, south plunging anticline which is cut (at its base) by numerous northwest-southeast trending southwest dipping thrust faults. Minor folding and faulting are common.

BIBLIOGRAPHY

EMPR COAL ASS RPT *638, *639, *640
EMPR MAP 33
EMPR P 1983-3
GSC MAP 11-1961
GSC MEM 69, 259
GSC OF 286; 925

BIBLIOGRAPHY

GSC P 68-28

DATE CODED: 1986/02/16
DATE REVISED: 1992/02/07

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 027**

NATIONAL MINERAL INVENTORY:

NAME(S): **WEST CARBON CREEK**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093O15W
BC MAP:
LATITUDE: 55 57 00 N
LONGITUDE: 122 50 06 W
ELEVATION: 1989 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Twenty-three coal licences make an irregular horseshoe arrangement centred on Mount Rockford.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6200527
EASTING: 510304

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Fossil Fuel Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Minnes	Bickford	

LITHOLOGY: Sandstone
Siltstone
Shale
Mudstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP: Post-mineralization GRADE:

CAPSULE GEOLOGY

Up to 30 seams of metallurgical coal, ranging in thickness from 0.03 to 1.33 metres, occur in the Lower Cretaceous Bickford Formation of the Minnes Group. The unit, which is 650 to 750 metres thick, consists of interbedded sandstones, siltstones, silty mudstones, mudstones, coal and some conglomerates of nearshore deltaic origin. Sandstone frequently truncates the tops of coal seams. The seams show significant variability in thickness and lateral extent. An important correlation tool given the lack of reliable marker horizons are reflective indices.

The Bickford Formation conformably overlies the Lower Cretaceous Monach Formation (Minnes Group) which contains quartz arenites, siltstones, mudstones and thin coal seams, and which in turn overlies the Lower Cretaceous Beattie Peak Formation (Minnes Group) with recessive thinly interbedded siltstone, fine sandstone, mudstone and rare coals. The contact between the Bickford Formation and the overlying Lower Cretaceous Cadomin Formation (Bullhead Group) is a regional erosional unconformity, but the Cadomin Formation is not exposed on the West Carbon Creek property.

The structure of the property consists of a major syncline (in the west) and an anticline (in the east) with a series of en echelon folds trending north-northwest. The syncline, in the core of which the Bickford Formation is exposed, tightens northward. The area contains at least two steeply dipping (west-southwest) reverse faults with movement between 80 and 150 metres. Faulting and folding are considered contemporaneous.

The south-southeast trending belt of flat lying to gently dipping Bickford Formation sediments in the core of the Western syncline represents an area of approximately 9 square kilometres. and hold the greatest potential for mineable coal. Many of the coals sampled have good coking characteristics and are low in sulphur.

BIBLIOGRAPHY

EMPR COAL ASS RPT *507
EMPR P *1988-3
EMPR BULL 24
EMPR FIELDWORK 1978, p. 73; 1982, p. 93; *1984, pp. 227-232;
1985 p. 155; 1986 p. 365; 1991, pp. 441-449
EMPR MAP 33
EMPR OF 1987-21; 1992-12
GSC BULL 219
GSC MAP 11-1961
GSC MEM 69, 259
GSC OF 286; 925

DATE CODED: 1986/02/16 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1992/02/07 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 028**

NATIONAL MINERAL INVENTORY:

NAME(S): **CARBON CREEK**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O15E
BC MAP:
LATITUDE: 55 56 45 N
LONGITUDE: 122 39 36 W
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Property centred on Carbon Creek, 7 kilometres north of the McAllister Creek tributary.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6200103
EASTING: 521235

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A03 Sub-bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Chert Pebble Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP:
GRADE: MVol Bituminous

INVENTORY

ORE ZONE: CARBON CREEK
REPORT ON: Y

CATEGORY: Combined
YEAR: 1972
QUANTITY: 221831300 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Measured, indicated and inferred reserves calculated on 11 principal coal seams.
REFERENCE: Coal Assessment Report 496, Table 2.

CAPSULE GEOLOGY

At Carbon Creek, twelve principal thermal grade coal seams, greater than 1 metre thick, occur in the Lower Cretaceous Gething Formation (Bullhead Group). The Gething Formation, which reaches a thickness of 1,067 metres (maximum known thickness in northeast British Columbia), consists of non-marine interbedded sandstone, siltstone, mudstone, coal and minor chert pebble conglomerate. The upper Gething Formation (610 metres) was deposited in a lower delta plain environment and contains thinner, laterally discontinuous and occasionally high sulphur coal seams (2.49 per cent sulphur). The lower 457 metres represents upper delta plain deposition with coarser sediments and laterally continuous, relatively thick and lower sulphur coal seams (less than 1 per cent; average of 0.8 per cent sulphur).

The free swelling index (FSI) is less than 3 in all seams except seam 40 (FSI is 4), and seams 53 and 31 (FSI is 5). Seams 14 and 15 are low in volatile matter (average approximately 22 per cent), while all other seams range from 27 to 31 per cent volatile material.

The contact between the Gething and underlying Cadomin Formation (Bullhead Group) is transitional, both vertically and laterally. The marine Lower to Upper Cretaceous Moosebar Formation (Fort St. John

CAPSULE GEOLOGY

Group) overlies the Gething Formation.
The structure consists of a broad, northwest trending syncline (axis follows the course of Carbon Creek) with Gething Formation rocks occurring in the core. The Gething Formation sediments are flat-lying (0 to 15 degrees), with steeper dips associated with four high-angle reverse faults dipping to the east. The faults have broken the coal seams into mineable blocks with steeply dipping unmineable coal near the faults. The dips increase up to approximately 30 degrees locally in the limbs of the syncline to the west and east. Some parasitic folding was noted in the eastern limb.
Measured, indicated and inferred reserves calculated on 11 principal coal seams at Carbon Creek are 221,831,300 tonnes (Coal Assessment Report 496, Table 2).

BIBLIOGRAPHY

EMPR COAL ASS RPT *496, *504
EMPR FIELDWORK 1978, pp. 73-77; 1982, pp. 93-97; 1984, pp. 227-232; *1985, pp. 155-160; 1986, pp. 365-368; 1991, pp. 405-417, 441-449
EMPR BULL 24; 51
EMPR OF 1987-21; 1992-1; 1992-12
EMPR MAP 33; 65 (1989)
EMPR P 1988-3
GSC MAP 11-1961
GSC MEM 69; 259
GSC OF 286; 925
GSC BULL 219
GSC P 80-12; 89-4

DATE CODED: 1986/02/16 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1990/08/14 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093O 029**

NATIONAL MINERAL INVENTORY:

NAME(S): **BRI - DOWLING CREEK**, DOWLING CREEK, PEACE RIVER

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093O16W
BC MAP:
LATITUDE: 55 57 00 N
LONGITUDE: 122 18 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The coordinates are for the approximate centre of the property, mainly the Dowling Creek property - concentrated on Dowling Creek.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6200735
EASTING: 543609

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal A03 Sub-bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Carbonaceous Shale
Shale
Mudstone
Coal

HOSTROCK COMMENTS: The sediments represent deposition in an aggrading flood plain environment.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
COMMENTS: All seams med. bituminous except Trojan which is high vol. bituminous.

CAPSULE GEOLOGY

The upper four coal seams of the Lower Cretaceous Gething Formation (Bullhead Group) are considered to have economic potential in the area. From top to bottom, they are the Superior, Trojan, Titan, and Falls seams, interbedded with sandstones, shales, siltstones and carbonaceous shales deposited in an aggregate flood plain environment.

The area is predominantly underlain by the west limb (east dipping) of a broad south plunging (approximately north-northwest trending) syncline. In the north, dips are 0 to 20 degrees and there is little evidence of faulting. To the northeast is the axis of the syncline. Towards the south and west gentle folds become more intense and anticlines are cut by thrust faults.

The Superior seam, although continuous throughout the property, is only sufficiently thick and laterally extensive in the southern part of the property. It is low ash, low sulphur, medium volatile bituminous coal with excellent thermal and metallurgical qualities. A number of thrust faults divide the seam into four separate blocks. The seam thins and splits to the northeast.

The Trojan seam is the thickest and most extensive seam in the property area. It is greater than 0.92 metre in the northeast and southwest parts of the area, thins towards the central region and is channeled in places. The seam is generally low sulphur, high ash, high volatile "A" bituminous coal, with the high ash content caused by thin mudstone, sandstone, or siltstone splits. The seam is cut by thrust faults in the south, but in the northeast is continuous, well developed, and relatively flat lying (5 to 8 degrees).

The Titan and Falls seams attain economic thicknesses only in the southern part of the property, but are of limited areal extent. The Titan seam is low in ash and sulphur and is of thermal quality only. It is medium volatile bituminous.

The Falls seam is the least economic, not being consistently

CAPSULE GEOLOGY

thick (very variable in thickness). The Titan and Falls seams, in the area of economic interest, are offset by thrust faults.

BIBLIOGRAPHY

EMPR COAL ASS RPT *467, *468, *469
EMPR P 1988-3
EMPR MAP 33
GSC MAP 11-1961
GSC MEM 69; 259
GSC OF 286; 925
GSC P 68-28

DATE CODED: 1986/02/16 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1992/02/10 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 030**

NATIONAL MINERAL INVENTORY:

NAME(S): **KING GETHING**, PORTAGE MOUNTAIN, KING,
48, FORTY-EIGHT, GRANT FLAT,
KING-GETHING, KING GETHING NO. 3, GETHING NO. 3,
PEACE RIVER, CANYON NO. 1

STATUS: Past Producer Underground
REGIONS: British Columbia
NTS MAP: 093O16E
BC MAP:
LATITUDE: 55 58 40 N
LONGITUDE: 122 07 05 W
ELEVATION: 853 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: The location given is for the King seam, worked as the King-Gething mine, on the east side of Portage Mountain (Geological Survey of Canada Bulletin 259). The Grant seam, over 2 kilometres southwest of the King-Gething mine, was worked as the Grant Flat mine.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6203957
EASTING: 555036

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: MVol Bituminous
COMMENTS: Mogul, Galloway, Johnston #2 are low vol. bit.; Grant is intermediate.

CAPSULE GEOLOGY

Fifty coal seams, thicker than 0.3 metre, occur in the Lower Cretaceous Gething Formation, Bullhead Group, interbedded with sandstone and shale. The structure consists of northwest trending folds, with the main anticline (Butler Ridge anticline) plunging locally to the southeast. Dips vary from 5 to 40 degrees and are generally less than 15 degrees. Coal-bearing strata occur on either flank of the anticline. The east limb of the anticline contains the generally north trending, west dipping east Portage Thrust fault at the contact between the Cadomin and Gething formations. Twelve of the coal seams are thicker than 0.8 metre.

In the South block, the main seam is the Trojan, (2.2 metres with sandstone partings 0.15 metre thick). Ash content varies from 6.1 to 21.5 per cent (lower to upper); volatile matter, 18.8 to 28.6 per cent (upper to lower); fixed carbon, 58.6 to 64.6 per cent (upper to lower); and sulphur, around 0.8 per cent.

The North block contains two past producing mines which extracted coal from the "King" and "48" seams. The King seam is medium volatile bituminous, averages 1.5 metres thick and contains 1.4 to 17.1 per cent ash, 22.7 to 28.5 per cent volatile matter, 54.4 to 73.9 per cent fixed carbon, and 0.9 to 1.8 per cent sulphur. The "48" seam (2.0 metres) varies from 4.6 to 25.7 per cent ash, 13.1 to 18 per cent volatile matter, 60.1 to 78.3 per cent fixed carbon and 0.3 to 0.5 per cent sulphur. Other seams present in the North block are the Kreuger (2.3 metres), Intermediate (1.0 metre) and Road (0.9 metre) seams.

The Grant seam, at the west end of Grant Flat on the north side of the Peace River and immediately south of Portage Mountain, was the first seam in the area actively worked. In 1922, it was opened by an adit, 109 metres long.

BIBLIOGRAPHY

EMPR AR 1944-88,128-129; 1945-139,172-175; 1946-218,248; 1947-238,266; 1948-204,241; 1949-278,308-309; 1950-244,275-276; 1951-249,289-290; 1952-286,321; 1953-226,258; 1954-214,248; 1955-132,163; 1956-198,225; 1957-121,145; 1958-135,154; 1959-253,274; 1960-218,238; 1961-253,274; 1962-258,278; 1963-239,264; 1964-308,325; 1965-410; 1966-393; 1967-458; 1968-467
EMPR COAL ASS RPT *596
EMPR MAP 33
GSC MAP 11-1961
GSC MEM 69; *259, pp. 174-176
GSC OF 286; 925
GSC P 68-28

DATE CODED: 1986/02/16 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1992/02/10 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 031**

NATIONAL MINERAL INVENTORY:

NAME(S): **FISHER CREEK**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093O09W
BC MAP:
LATITUDE: 55 38 00 N
LONGITUDE: 122 17 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6165504
EASTING: 545031

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Claystone
Carbonaceous Claystone
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP: Post-mineralization
GRADE: MVol Bituminous

CAPSULE GEOLOGY

In the Fisher Creek area, two main coal seams occur in the Lower Cretaceous Gething Formation, Bullhead Group, interbedded with sandstone, siltstone, claystone, carbonaceous claystone and minor coal seams. Seams are of medium volatile bituminous coal and vary from a few centimetres to 1.96 metres and are generally 0.5 to 1 metre thick. The main seam zones, lower and upper, are 0.6 to 6.7 metres and 0.3 to 3 metres thick respectively. From three trench samples, ash, moisture, volatile matter, fixed carbon and sulphur were found to vary as follows: 11.2 to 24.7 per cent; 2.8 to 8.3 per cent; 21.8 to 25.7 per cent; 48.0 to 60.3 per cent; and 0.68 to 0.78 per cent respectively.

The structure is controlled by the northwest trending Fisher Creek anticline to the north and west, and by the Willow Creek anticline to the south and east. These structures have not been followed as distinct elements on the property, which contains a number of northwest trending lesser folds cut by minor high angle reverse faults, and a northwest trending, southwest dipping thrust fault.

BIBLIOGRAPHY

EMPR COAL ASS RPT *528
EMPR BULL 24, 51, 52
EMPR MAP 33
EMPR FIELDWORK 1991 pp. 433-440
GSC BULL 219
GSC MAP 11-1961
GSC MEM 259
GSC OF 286; 925

DATE CODED: 1986/02/16
DATE REVISED: 1992/02/10

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 032**

NATIONAL MINERAL INVENTORY:

NAME(S): **TREFI**, CARON, HIGHHAT

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O09E 093O16W 093P12W 093P05W
BC MAP:
LATITUDE: 55 40 30 N
LONGITUDE: 122 00 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Pine River divides the northwest trending property into two blocks designated the North Pine and South Pine blocks. The property extends for over 80 kilometres. The above coordinates are for the centre of the property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6170361
EASTING: 562802

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Fort St. John		
Lower Cretaceous	Boulder Creek		

LITHOLOGY: Sandstone
Siltstone
Claystone
Carbonaceous Claystone
Conglomerate
Coal

HOSTROCK COMMENTS: Coal occurs in the Walton Member of the Boulder Creek Formation and is also found in the Gates and Gething formations.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP: Post-mineralization
GRADE: MVol Bituminous

INVENTORY

ORE ZONE: HIGHHAT
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1981
QUANTITY: 16530800 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Highhat seam reserves.
REFERENCE: Coal Assessment Reports 680 and 681.

ORE ZONE: CARON
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1981
QUANTITY: 106009098 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Caron seam reserves.
REFERENCE: Coal Assessment Reports 680 and 681.

CAPSULE GEOLOGY

The main coal-bearing unit in the Fort St. John Group is what was known as the Walton Member or Member 4 (Bulletin 52) in the Lower Cretaceous Boulder Creek Formation. This consists of sandstone, siltstone, claystone, carbonaceous claystone, occasional conglomeratic sandstone and 2 main coal seams. This member overlies the upper conglomerate in the Boulder Creek Formation. The coal

CAPSULE GEOLOGY

occurs towards the base of the member, which, in the south, varies from 60 to 88 metres thick, averaging 68 metres and, in the north, varies from 51 to 65 metres thick, averaging 54 metres.

Coal also occurs in the Lower Cretaceous Gates (Fort St. John Group) and Gething (Bullhead Group) formations, but these formations do not outcrop extensively and the coal occurs at depth.

The dominant structural feature on the property is the northwest trending Pine River anticline. This lies along the west margin of the property. The northeast limb dips 25 to 45 degrees northeast and shallows towards the Hulcross syncline. The latter is broad and narrows to the southeast, terminating north of Highhat Mountain. To the northeast, the Hulcross syncline is paired with the Commotion anticline which converges with the Pine River anticline to the north. Folds are broad with some localized faulting and all folds plunge southeast. South of Highhat Mountain the structure becomes more complex with fold amplitudes increasing and some thrusting taking place.

Two main seams are present but other thin seams also occur. All the seams show considerable lateral variation. The coal is thought to have been deposited in a high energy, inter distributary, prograding deltaic environment which resulted in poor lateral seam continuity. Due to channel cut-outs and limited areas of deposition, seam characteristics vary considerably both vertically and laterally.

The Caron seam (foremost economic seam on the property) varies in thickness from 2.7 metres to 0.18 metre, and exhibits very rapid lateral changes. It is the most laterally extensive of the Trefi seams (the 1.0-metre isopach ranges from north of the Highhat River to the southern extent of coal deposition on the property). The eastern edge is lobate in nature, indicating adjacent areas of thickening and thinning.

The extent of the Highhat seam is much more limited, and it attains a marginal economic thickness north of the Highhat River only. Its thickness ranges from 0.32 to 1.62 metres, and its composition varies laterally.

Analyses of air dried raw coal from the Caron seam yielded the following data: ash, 7.78 to 28.46 per cent; volatile matter, 18.08 to 22.66 per cent; fixed carbon, 52.8 to 68.77 per cent; BTU per pound, 10482 to 13749; and sulphur, 0.32 to 0.38 per cent.

Total inferred resources are 106,009,098 tonnes for the Caron seam and 16,530,800 for the Highhat seam (Coal Assessment Reports 680, 681).

BIBLIOGRAPHY

EMPR BULL 51, *52
EMPR COAL ASS RPT *680, *681
EMPR FIELDWORK 1991, pp. 433-440
EMPR MAP 33
GSC MAP 11-1961
GSC MEM 259
GSC OF 286; 925
PR REL Forum Development Corp., Feb.5, Mar.5, 2003

DATE CODED: 1986/02/16 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1991/03/18 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 033**

NATIONAL MINERAL INVENTORY:

NAME(S): **PINE RIVER**, WILLOW CREEK

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O09E
BC MAP:
LATITUDE: 55 36 00 N
LONGITUDE: 122 14 45 W
ELEVATION: Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6161820
EASTING: 547520

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Carbonaceous Shale
Mudstone
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP: Post-mineralization
GRADE:

CAPSULE GEOLOGY

The Pine River deposit (Licence 3993) consists of numerous coal zones in the Lower Cretaceous Gething Formation, Bullhead Group, interbedded with mudstone, coaly shale, siltstone, and sandstone. Approximate thicknesses (from trenches) range up to 6.2 metres and are generally less than 3 metres, however, many shale partings are present in some coal zones.

The structure consists of two tightly folded structures trending northwest. In the southwest is the Willow Creek anticline (which exhibits some minor folding on the limb) and a syncline to the northeast with dips ranging from 15 to 70 degrees over the area. At least two northwest trending faults are present.

There are three major coal zones with a combined thickness of 11 metres of coal dipping at from 27 to 40 degrees. In some seams, the coal is of metallurgical grade.

On a dry basis, ash content ranges from 7.76 to 62.21 per cent (generally less than 20 per cent); volatile matter, 15.46 to 38.15 per cent; fixed carbon, 23.12 to 69.34 per cent (generally about 50 per cent); BTU per pound, 3409 to 12799; and sulphur, 0.28 to 0.80 per cent.

BIBLIOGRAPHY

EMPR COAL ASS RPT *593, *594
EMPR BULL 24; 36; 51; 52
EMPR MAP 33
EMPR FIELDWORK 1991, pp. 433-440
GSC BULL 219
GSC MAP 11-1961
GSC MEM 259
GSC OF 286; 925

DATE CODED: 1986/02/16
DATE REVISED: 1992/02/10

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 034**

NATIONAL MINERAL INVENTORY:

NAME(S): **GOODRICH**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O08W 093O08E 093O09W
BC MAP:
LATITUDE: 55 29 47 N
LONGITUDE: 122 22 06 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Around 1981, the Goodrich property consisted of 367 coal licences totalling some 107,741 hectares. The licences, covering a northwest trending belt, spanned almost all of 093O/8 map sheet and part 093O/9 map sheet. The above coordinates are for the central region covered by the licences (Coal Assessment Report 531).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6150213
EASTING: 539906

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Jurassic-Cretaceous	Minnes	Brenot	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Carbonaceous Mudstone
Coal

HOSTROCK COMMENTS: In addition to the Gething Formation coal, coal also occurs in the Brenot Formation, Minnes Group.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
COMMENTS: Gething coal is a medium to high volatile metallurgical coal.

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Indicated YEAR: 1981
QUANTITY: 100000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Potentially surface mineable coal estimated from two of four seams within the Upper Gething Formation.
REFERENCE: Coal Assessment Report 532, page 1.

CAPSULE GEOLOGY

In the Goodrich occurrence area, coal seams occur in the Jurassic-Lower Cretaceous Brenot Formation (Minnes Group) and the Lower Cretaceous Dresser and Gething formations (Bullhead Group), however, the most economic seams are within the Gething Formation.

Coal seams occur in the Upper and Middle Brenot Formation in the north, and in the Middle and Lower Brenot Formation in the south. The coal:rock and coal ratio ranges from 0.04:0.04 metres to 2.18:2.18 metres. The coal is fairly clean with minor rock splits. Seam thicknesses up to 5.52 metres may be a result of fault thickening.

Coal seams occur in the upper part of the Cadomin/Dresser Formation (Bullhead Group), with coal:rock and coal ratios from 0.24:0.70 metres to 2.36:2.88 metres, with seams thickening and becoming cleaner towards the north.

CAPSULE GEOLOGY

The Gething Formation coal is medium to high volatile bituminous rank (metallurgical quality) and occurs interbedded with mudstones, siltstones, very fine to coarse sandstones and carbonaceous mudstones. The majority of the seams occur in the Upper and Middle Gething, with some in the Lower Gething. The coal:rock and coal ratios average from 0.50:0.50 metres to 4.73:7.19 metres (0.20:020 metres to 3.91:4.12 metres in the north, and 3.08:3.79 metres (true thickness) in a seam on the west limb of the White Rabbit syncline in the White Rabbit Block). At least four upper Gething coal zones are continuous and have an aggregate true thickness of 16 metres over 180 metres.

Potential in-situ resources in the Brenot and Gething formations are estimated (1981) at approximately 1.25 billion tonnes. Two are of open pit potential and are defined by the No. 1 and No. 3 coal seams.

The No. 1 seam (1.14 metres thick in the north and 10 metres thick in the south, averaging approximately 8 metres) contains approximately 80 million tonnes of coal in-place in the Lossan-Axis syncline pair. The No. 3 seam (average thickness 4 metres) contains 20 million tonnes of coal in-place (Coal Assessment Report 532).

The range of approximate analyses on an air dried basis for the Gething No. 1 seam are 11.1 to 16.9 per cent ash, 23.2 to 28.6 per cent volatile matter, 58.6 to 64.5 per cent fixed carbon, 0.2 to 0.28 per cent sulphur and 12,500 to 13,300 BTU per pound.

The structure consists of numerous northwest trending variably plunging folds which are tight towards the west of the property and become more open to the east and northeast. The folds are cut by numerous predominantly northwest trending (some north-northwest trending), southwest dipping thrust faults and a small number of northwest trending normal faults (i.e. Burnt Normal fault). Fewer thrust faults are present in the northeast of the property.

Potentially surface mineable coal estimated from two of four seams within the upper Gething Formation total 100 million tonnes (Coal Assessment Report 532, page 1).

BIBLIOGRAPHY

EMPR COAL ASS RPT *532
EMPR MAP 65 (1989)
EMPR OF 1992-1; 1992-12
EMPR BULL 51
EMPR FIELDWORK 1991, pp. 405-417, 433-440, 441-449
GSC MAP 11-1961
GSC MEM 69; 259
GSC OF 286; 925
GSC BULL 219
GSC P 89-4

DATE CODED: 1986/02/16 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1992/03/04 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093O 035**

NATIONAL MINERAL INVENTORY:

NAME(S): **FALLS MOUNTAIN**, FALLING CREEK-FALLS MOUNTAIN

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093O09E 093O09W
BC MAP:
LATITUDE: 55 33 00 N
LONGITUDE: 122 15 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The approximate centre of the property. The potential reserve block is centred on Falling Creek at 55 degrees 33 minutes north and 122 degrees 15 minutes west (Coal Assessment Report 526).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6156252
EASTING: 547230

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Shale
Carbonaceous Mudstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: MVol Bituminous
COMMENTS: Lower Cretaceous Blairmore clastic wedge overlap assemblage.

CAPSULE GEOLOGY

Coal seams are found in the Lower Cretaceous Gething Formation, Bullhead Group, interbedded with sandstone, shale, carbonaceous mudstone, and minor conglomerate. The coal, at least 3 metres and possibly up to 5 metres thick, is medium volatile, low sulphur, low ash coking coal. Occasional thin coal seams also occur in the Lower Cretaceous Gates Formation of the Fort St. John Group.

The structure consists of a gently west dipping monocline (dips 5 to 30 degrees). It may be interpreted as a syncline with a north-west trending axis through Falls Mountain. The detailed structure is complex and faults may be common.

BIBLIOGRAPHY

EMPR COAL ASS RPT *526
EMPR BULL *36
EMPR MAP 33
EMPR FIELDWORK 1991, pp. 433-440
GSC MAP 11-1961
GSC MEM 259
GSC P *44-7
GSC OF 286; 925

DATE CODED: 1986/02/16
CODED BY: EVFK
FIELD CHECK: N
DATE REVISED: 1991/03/18
REVISED BY: GKK
FIELD CHECK: N

MINFILE NUMBER: **093O 036**

NATIONAL MINERAL INVENTORY:

NAME(S): **FALLING CREEK**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O08E 093O09E 093P04W 093P05W
BC MAP:
LATITUDE: 55 27 45 N
LONGITUDE: 122 05 05 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Property extends from 55 degrees 40' north 122 degrees 24' west to 55 degrees 10' north 121 degrees 37' west, and the main property is centred on the latitude and longitude given above.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6146641
EASTING: 557873

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Jurassic-Cretaceous	Minnes	Unnamed/Unknown Formation	

LITHOLOGY: Sandstone
Siltstone
Shale
Coal

HOSTROCK COMMENTS: Most of the coal seams are in the Gething Formation but two are in the Minnes Group.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP: Post-mineralization
GRADE: HVol Bituminous
COMMENTS: High vol. A bituminous (40 per cent low volatile bituminous).

INVENTORY

ORE ZONE: FALLING CREEK
REPORT ON: Y

CATEGORY: Unclassified
YEAR: 1980
QUANTITY: 100000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: From 5 seams ranging in thickness from 1 to 2 metres.
REFERENCE: Coal Assessment Report 522.

CAPSULE GEOLOGY

The majority of the coal seams are found in the Gething Formation (320 metres thick) of the Bullhead Group, however, two seams also occur in the Upper Jurassic to Lower Cretaceous Minnes Group. Rank is generally high volatile a bituminous with 40 per cent of the seams being up to low volatile bituminous. Coal seams up to 3 metres thick are interbedded with sandstone, siltstone, and carbonaceous shale, usually in fining upward cycles. The cycles are 1 to 10 metres thick and were deposited in fluvial channel and floodplain environments. The upper seams may represent coastal coal swamps.

The dominant structural elements are tight, angular, horizontally plunging northwest trending folds. There are several northwest striking, west dipping thrust faults and four sets of high angle faults. The former have moderate displacement while the latter have small displacements.

An average of 20 per cent of the seams are made up of shale and coaly shale partings. Roof rocks vary from coaly shale, shale or

CAPSULE GEOLOGY

siltstone to sandstone, and silty sandstone, while floors are carbonaceous to coaly shale. Average ash content (without partings) is 19 per cent; volatile matter, 23 per cent; fixed carbon, 54 per cent; and sulphur, 0.52 per cent.

The estimated coal inventory for the area is around 100 million tonnes in 5 seams that range from 1.0 to 2.7 metres. Most of this is underground recoverable (Coal Assessment Report 522).

BIBLIOGRAPHY

EMPR COAL ASS RPT *522
EMPR MAP 33
EMPR FIELDWORK 1991, pp. 433-440, 441-449
EMPR OF 1992-12
GSC MAP 11-1961
GSC MEM 259
GSC OF 286; 925

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1991/03/18 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 037**

NATIONAL MINERAL INVENTORY:

NAME(S): **ADAMS**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093O15E 094B02E 093O16W 094B01W
BC MAP:
LATITUDE: 55 59 29 N
LONGITUDE: 122 31 15 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The Adams property covers 9288 hectares in thirty-two coal licences along a northwest trend for over 25 kilometres through map sheets 093O15 and 16 and 094B01 and 02. The above coordinates are for the approximate centre of the property (Coal Asssessment Report 456).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6205225
EASTING: 529891

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Mudstone
Siltstone
Sandstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP: Post-mineralization
GRADE: MVol Bituminous

CAPSULE GEOLOGY

Over 25 coal seams, varying in thickness from several centimetres to 4.5 metres, occur in the Lower Cretaceous Gething Formation, Bullhead Group, interbedded with mudstones, siltstones, sandstones, and occasional conglomerates. The Trojan seam is in the top 70 metres of the Gething Formation and is generally over 2 metres thick. A number of seams over 2 metres thick are also present lower in the section.

The structure consists of a northwest trending and southeast plunging syncline (Adams syncline, in the northwest) and anticline (Gething Creek anticline, in the southeast). The axial regions dip 10 to 20 degrees while dips on the flanks are up to 60 degrees. In the northwest of the property, the Carbon Creek fault (northwest trending, southwest dipping) thrusts Triassic and Jurassic rocks, from the west, over Cretaceous rocks. Except for this, faulting on the Adams property is minor.

The coal is medium volatile bituminous, with high heat value and low ash content. Analyses (1973) of seams over 0.3 metre showed ash contents varying from 3.17 to 28.10 per cent; volatile matter, from 20.70 to 32.90 per cent; and FSI's, from 1 to 7.

BIBLIOGRAPHY

EMPR COAL ASS RPT *455, *456
EMPR FIELDWORK 1982, p. 93; 1985, p. 155; 1986, p. 365; 1991, 441-449
EMPR MAP 33
EMPR OF 1987-21; 1992-12
EMPR P 1988-3
EMPR PRELIMINARY MAP 57 (with notes)
GSC BULL 219
GSC MAP 11-1961

BIBLIOGRAPHY

GSC MEM 69; 259
GSC OF 286

DATE CODED: 1986/02/12
DATE REVISED: 1992/02/11

CODED BY: EVFK
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 038**

NATIONAL MINERAL INVENTORY:

NAME(S): **BAKER CREEK**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O01E
BC MAP:
LATITUDE: 55 09 10 N
LONGITUDE: 122 06 50 W
ELEVATION: Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located 5 kilometres northwest of the headwaters of Baker Creek.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6112151
EASTING: 556467

COMMODITIES: Phosphate

MINERALS
SIGNIFICANT: Fluorapatite
MINERALIZATION AGE: Permian

DEPOSIT
CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Regular
DIMENSION: 1 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Permian	Undefined Group	Mowitch	
Permian	Undefined Group	Fantasque	

LITHOLOGY: Phosphatic Sandstone
Sandstone
Chert

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: SHOWING REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Phosphate	11.6600	Per cent

COMMENTS: Phosphate is P2O5.
REFERENCE: Steve Butrenchuk, personal communication, 1991.

CAPSULE GEOLOGY

A 1-metre thick sandstone bed of the Permian Mowitch Formation, containing 20 to 30 per cent phosphate nodules by volume, overlies a chert bed of the Permian Ranger Canyon Formation. The Mowitch and Roger Canyon formations are correlative with the Permian Fantasque Formation. A grab sample from this locality contained 11.66 per cent phosphate (P2O5) as fluorapatite (S. Butrenchuk, personal communication, 1991).

BIBLIOGRAPHY

EMPR FIELDWORK, 1987, pp. 396-410
GSC OF 925

DATE CODED: 1987/07/09 CODED BY: SSB FIELD CHECK: Y
DATE REVISED: 1991/03/18 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093O 039** NATIONAL MINERAL INVENTORY:

NAME(S): **MCKENZIE LIMESTONE**, WILLISTON LAKE, BEND

STATUS: Past Producer Open Pit MINING DIVISION: Cariboo
REGIONS: British Columbia
NTS MAP: 093O03E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 10 17 N NORTHING: 6113882
LONGITUDE: 123 12 03 W EASTING: 487208
ELEVATION: 792 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location centred on quarry site 2000 metres southwest of Williston Lake (McLeod, W.A. (1988): Report, Figure 1).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Clay Dolomite Silica
MINERALIZATION AGE: Mississippian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Tabular
MODIFIER: Faulted
DIMENSION: 180 x 60 x 30 Metres STRIKE/DIP: 133/28S TREND/PLUNGE:
COMMENTS: Attitude of contact with overlying impure limestone.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Slide Mountain	Undefined Formation	

LITHOLOGY: Limestone
Siliceous Limestone
Dolomitic Limestone

GEOLOGICAL SETTING
TECTONIC BELT: Omineca PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench
TERRANE: Slide Mountain

INVENTORY

ORE ZONE: MCKENZIE LIMESTONE REPORT ON: Y

CATEGORY: Measured YEAR: 1988
QUANTITY: 300000 Tonnes

COMMODITY	GRADE	
Limestone	55.0600	Per cent

COMMENTS: The grade given is for per cent calcium oxide.
REFERENCE: Industrial Mineral File - MacLeod, W.A., 1988, page 2.

CAPSULE GEOLOGY

Limestone was quarried 2 kilometres southwest of Williston Lake, 1.3 kilometres northwest of Lignite Creek by Knox Western Capital Inc.

The quarry is developed in limestone of the Carboniferous to Permian Slide Mountain Group, just west of the McLeod fault. The limestone is exposed in a 108 by 60 metre outcrop, projecting 130 metres above the surrounding overburden.

The outcrop is comprised of a 50-metre thick bed of clean, buff coloured, chemical grade limestone with some argillaceous carbonate, overlain and underlain by siliceous and dolomitic limestone. The contact with the overlying impure limestone strikes 133 degrees and dips 28 degrees southwest. A fault of similar orientation cuts through the middle of the purer limestone bed. Mapping, surface sampling and diamond drilling have defined 300,000 tonnes of economically recoverable limestone averaging 55.06 per cent CaO, 0.41 per cent MgO, 0.17 per cent SiO2, 0.46 per cent Al2O3 and 0.17 per cent Fe2O3 (Industrial Mineral File - MacLeod, W.A., 1988, page 2).

The deposit was initially quarried by B.C. Forest Products Ltd. to construct a causeway across the south end of Williston Lake, sometime prior to 1986. Knox Western Capital Inc. began quarrying limestone in 1988 for paper mills at MacKenzie and Quesnel. A total

CAPSULE GEOLOGY

of 33,000 tonnes were quarried on a seasonal basis during 1988 and 1989. The company did not resume quarrying operations in 1990 due to financial difficulties.

BIBLIOGRAPHY

EMPR PF (*MacLeod, W.A. (1986): Report; *MacLeod, W.A. (1988): Report)
GSC MAP 11-1961; 1424A
GSC OF 925

DATE CODED: 1989/10/06 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1991/03/11 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093O 040**

NATIONAL MINERAL INVENTORY:

NAME(S): **CHIN**, MOUNT CHINGEE, MCLEOD LAKE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093O02W 093J15W
BC MAP:
LATITUDE: 55 00 11 N
LONGITUDE: 122 54 24 W
ELEVATION: 1036 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Test sample site (Industrial Mineral File - Klein, G. (1989): Prospecting Report on Chin Claims).

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6095135
EASTING: 505970

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
ASSOCIATED: Mica
MINERALIZATION AGE: Lower Cambrian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: STRIKE/DIP: TREND/PLUNGE: 145/
COMMENTS: Bedding trends 120 to 150 degrees.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cambrian	Undefined Group	Undefined Formation	

LITHOLOGY: Limestone
Quartz

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1989
SAMPLE TYPE: Drill Core

COMMODITY	GRADE	
Limestone	55.0100	Per cent

COMMENTS: Average of cuttings from 33 percussion holes.
REFERENCE: Industrial Minerals File - G. Klein, 1989.

CAPSULE GEOLOGY

The Chin prospect is located 3.5 kilometres south-southwest of Mount Chingee.

An unnamed Lower Cambrian sequence comprised of beds ranging from quartzite to limestone outcrops for 15 kilometres along a ridge culminating in the peak of Mount Chingee. Bedding trends 120 to 150 degrees. The sequence occasionally contains beds of high calcium limestone.

A microscopic examination of cuttings from 12 percussion holes revealed white to light grey limestone with some rusty staining and slight contamination by white and dark mica.

Cuttings from 33 percussion holes averaged as follows (in per cent) (Industrial Minerals File - G. Klein, 1989):

CaO	55.01
MgO	0.95
SiO2	0.87
Al2O3	0.30
Fe2O3	0.18
Na2O	0.053
K2O	0.099
TiO2	0.018
P2O5	0.011
MnO	0.011
Cr2O3	0.010

CAPSULE GEOLOGY

The area south and west of Mount Chingee was prospected, sampled and drilled by G. Klein in 1989.

BIBLIOGRAPHY

EMPR PF (*Klein, G. (1989): Prospecting Report for Chin Claims)
GSC MAP 11-1916; 1204A
GSC OF 925

DATE CODED: 1990/01/15 CODED BY: PSF FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK:

MINFILE NUMBER: **093O 041**

NATIONAL MINERAL INVENTORY:

NAME(S): **URSA**, MOUNT BISSON

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O05W 093O12W
BC MAP:
LATITUDE: 55 29 49 N
LONGITUDE: 123 57 51 W
ELEVATION: 1080 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located east of Manson River, along the Munro Creek logging road (Assessment Report 16781).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6150516
EASTING: 439089

COMMODITIES: Thorium, Rare Earths, Lanthanum, Cerium, Praseodymium, Neodymium, Samarium

MINERALS
SIGNIFICANT: Monazite
ASSOCIATED: Quartz
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Disseminated
CLASSIFICATION: Pegmatite
TYPE: O02 Rare element pegmatite - NYF family

HOST ROCK
DOMINANT HOSTROCK: Metasedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic	Ingenika	Undefined Formation	
Upper Proterozoic			Wolverine Complex

LITHOLOGY: Mylonitic Pegmatite
Gneiss
Syenite

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Manson Upland
RELATIONSHIP: Post-mineralization
GRADE: Amphibolite

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
SAMPLE TYPE: Grab
YEAR: 1988

COMMODITY	GRADE	
Cerium	0.6500	Per cent
Lanthanum	0.5900	Per cent
Neodymium	0.4400	Per cent
Praseodymium	0.0700	Per cent
Samarium	0.3600	Per cent
Thorium	0.2500	Per cent

COMMENTS: Grab sample (UG-1) of pegmatite.
REFERENCE: Assessment Report 16781.

CAPSULE GEOLOGY

The area lies within the Omineca Crystalline Belt consisting of siliciclastic sediments with minor carbonates and mafic rocks. These rocks belong to the Late Proterozoic Ingenika Group. Within the Wolverine Range, the Igenika sediments are highly metamorphosed and subsequently intruded by granodioritic bodies and associated pegmatites which are possibly of early Cretaceous age. These metamorphic rocks, called the Wolverine Complex, consist of amphibolite and calc-silicate gneiss, schists, micaceous quartzite, and crystalline limestone.

The Ursa showing occurs within a 10 by 2 metre zone of mylonitized, gneissic pegmatite. Coarse to fine-grained monazite is disseminated in clotty layers. The quartz is shattered and smokey. The pegmatite is bounded on the west by fine-grained radioactive syenite. Other rocks include calc-silicates with biotite, phlogopite and diopside.

A grab sample (UG-1) of the pegmatite assayed 0.25 per cent thorium, 0.59 per cent lanthanum, 0.65 per cent cerium, 0.07 per cent

CAPSULE GEOLOGY

praseodymium, 0.44 per cent neodymium, and 0.36 per cent samarium. (Assessment Report 16781).

BIBLIOGRAPHY

EMPR ASS RPT *16781, 17872
EMPR FIELDWORK 1987, pp. 169-180; *1989, pp. 297-304; 1992, pp. 301-306
EMPR EXPL 1988-C182
GSC MAP 11-1961
GSC OF 925
Chevron File

DATE CODED: 1990/08/01 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: 2000/11/23 REVISED BY: LDJ FIELD CHECK: N

MINFILE NUMBER: **093O 042**

NATIONAL MINERAL INVENTORY:

NAME(S): **KOOTS**, SEAN, WINDY

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O03W
BC MAP:
LATITUDE: 55 05 25 N
LONGITUDE: 123 23 16 W
ELEVATION: 1613 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of trench 3 (Assessment Report 9921).

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6104906
EASTING: 475250

COMMODITIES: Molybdenum, Tungsten, Copper, Lead, Zinc

MINERALS

SIGNIFICANT: Pyrrhotite, Magnetite, Pyrite, Molybdenite, Scheelite, Chalcopyrite, Sphalerite, Galena
ALTERATION: Garnet
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn
TYPE: K07 Mo skarn

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic			Wolverine Complex

LITHOLOGY: Garnet Schist
Limestone
Argillite
Gneiss
Granodiorite
Quartz Monzonite
Granite
Alaskite
Pegmatite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench
TERRANE: Cassiar
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE: Hornfels
COMMENTS: Contact metamorphism in intrusives and Wolverine metasediments.

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1981
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Molybdenum	3.1000	Per cent

COMMENTS: Altered garnet schist from trench #3.
REFERENCE: Assessment Report 9921.

CAPSULE GEOLOGY

Situated in the Wolverine Range, the Koots occurrence lies within the Cassiar Terrane, 35 kilometres southeast of the town of Mackenzie.

High-grade schists and gneisses, extensively intruded by pegmatites and granitic bodies of probable Cretaceous age, comprise the Wolverine Complex, an undifferentiated high metamorphic grade equivalent of the Upper Proterozoic Ingenika Group. Andesitic volcanic, greenstone, argillite, shale, and limestone of Upper Paleozoic age are interwoven with the metamorphic rocks.

The Koots occurrence, a sulphide-bearing skarn at the contact between a multi-phased intrusive and limy metasediments, consists of disseminated pyrrhotite, magnetite, pyrite, molybdenite, scheelite and chalcopyrite, and rare galena and sphalerite in the intrusive and metasedimentary rocks.

Away from the calc-silicate skarn are recrystallized, coarse-grained, dirty grey limestones and siliceous and phyllitic

CAPSULE GEOLOGY

argillites. The intrusive grades southward from quartz monzonite-granodiorite through to granite and alaskite. Fine-grained equivalents occur as dikes, sills and aplites in the stock and in the surrounding metamorphosed sediments.

A chip sample of altered garnet schist taken from a trench gave a high assay of 3.1 per cent molybdenum (Assessment Report 9921).

BIBLIOGRAPHY

EMPR ASS RPT 8775; *9921
EMPR EXPL 1980-362; 1981-154
EMPR FIELDWORK 1987, p. 169; 1989, p. 297
GSC MAP 1424A
GSC OF 925
Chevron File

DATE CODED: 1991/02/28 CODED BY: GKK FIELD CHECK: N
DATE REVISED: 1992/02/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 043**

NATIONAL MINERAL INVENTORY:

NAME(S): **NITE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O03W
BC MAP:
LATITUDE: 55 05 46 N
LONGITUDE: 123 18 46 W
ELEVATION: 1380 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location of trench 1 (Assessment Report 9764).

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6105531
EASTING: 480040

COMMODITIES: Molybdenum Tungsten Copper Zinc

MINERALS

SIGNIFICANT: Pyrrhotite Magnetite Pyrite Molybdenite Scheelite Chalcopyrite Bornite Sphalerite
COMMENTS: Molybdenite rossettes, sheelite grains and minor chalcopyrite, bornite and sphalerite.
ALTERATION: Biotite Garnet Diopside
ALTERATION TYPE: Skarn
MINERALIZATION AGE: Unknown

DEPOSIT

CHARACTER: Disseminated
CLASSIFICATION: Skarn
TYPE: K07 Mo skarn
SHAPE: Irregular
COMMENTS: Metasomatic aureoles 10's of metres in diameter.

HOST ROCK

DOMINANT HOSTROCK: Metamorphic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Proterozoic			Wolverine Complex

LITHOLOGY: Hornfels
Biotite Schist
Garnet Diopside Skarn
Coarse Grained Limestone
Granite
Aplitic Dike
Porphyritic Quartz Monzonite Dike
Porphyritic Syenite Dike
Pegmatite

GEOLOGICAL SETTING

TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Omineca Mountains
TERRANE: Cassiar
METAMORPHIC TYPE: Contact
RELATIONSHIP: Syn-mineralization
GRADE: Hornfels
COMMENTS: Skarn in Wolverine Complex.

INVENTORY

ORE ZONE: TRENCH
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1981
SAMPLE TYPE: Channel

COMMODITY	GRADE	
Copper	0.0200	Per cent
Molybdenum	0.0640	Per cent
Tungsten	0.0800	Per cent

COMMENTS: Sample 81030727 from trench No.1.
REFERENCE: Assessment Report 9746.

CAPSULE GEOLOGY

The Nite occurrence, located in the Swanell Ranges 30 kilometres southeast of the town of Mackenzie, is hosted in the Wolverine Complex.

High-grade schists and gneisses, extensively intruded by pegmatites and granitic bodies of probable Cretaceous age, comprise the Wolverine Complex, an undifferentiated high metamorphic grade equivalent of the Upper Proterozoic Ingenika Group. Andesitic volcanic, greenstone, argillite, shale, and limestone of Upper Paleozoic age are interwoven with the metamorphic rocks.

The Nite claims are underlain by hornfels, biotite schist and

CAPSULE GEOLOGY

garnet diopside skarn halos within metasediments which are in sharp contact with a granitoid stock and associated aplite, quartz monzonite and syenite dikes. The skarns are in contact with dirty grey, recrystallized limestone. Pyrrhotite, magnetite, pyrite, molybdenite, scheelite, chalcopyrite, bornite and sphalerite are hosted in the metasediments and the intrusives. A channel sample taken from a trench through molybdenite-bearing outcrop contained 0.064 per cent molybdenum, 0.08 per cent tungsten and 0.02 per cent copper (Assessment Report 9746).

BIBLIOGRAPHY

EMPR EXPL 1981-112
EMPR ASS RPT *9764
GSC MAP 1634A
GSC MEM 425

DATE CODED: 1991/02/22 CODED BY: GKK FIELD CHECK: N
DATE REVISED: 1992/02/04 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 044**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROYER LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O03E
BC MAP:
LATITUDE: 55 03 30 N
LONGITUDE: 123 12 16 W
ELEVATION: 975 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Pyroxenite outcrops in a prominant knob (L.C. Struik, personal communication, 1991).

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6101302
EASTING: 486941

COMMODITIES: Iron Magnetite

MINERALS
SIGNIFICANT: Magnetite Pyrite
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Podiform Disseminated
CLASSIFICATION: Industrial Min.
SHAPE: Regular
MODIFIER: Faulted
DIMENSION: 10 x 10 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A 10 by 10 metre zone of pyroxenite hosts small pods of medium grained magnetite and minor pyrite.

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Slide Mountain	Unnamed/Unknown Formation	

LITHOLOGY: Coarse Grained Pyroxenite

HOSTROCK COMMENTS: Upper Paleozoic rusty pyroxenite.

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench
TERRANE: Slide Mountain
COMMENTS: Upper Paleozoic Slide Mountain or Takla volcanics and carbonates.

CAPSULE GEOLOGY

The Royer Lake occurrence is located 1 kilometre north of Royer Lake, approximately 30 kilometres south of the town of Mackenzie, in the Cariboo Mining Division.

The area is underlain by ultramafic rocks of the Carboniferous to Permian Slide Mountain Group. Medium grained magnetite and pyrite in small pods are hosted in a rusty, locally gossan-like, coarsely crystalline pyroxenite. The magnetite pods, disseminated over a 10 by 10 metre area are exposed in a prominent knob north of Royer Lake.

BIBLIOGRAPHY

EMPR PF
GSC OF 1565, 1895
GSC P 91-1A PP 285-291

DATE CODED: 1991/03/14 CODED BY: GKK FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093O 045**

NATIONAL MINERAL INVENTORY:

NAME(S): **PARSNIP RIVER**

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093O11W
BC MAP:
LATITUDE: 55 33 04 N
LONGITUDE: 123 23 57 W
ELEVATION: 670 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Placer lease 1440 on the west bank of the Parsnip River, now covered by Lake Williston (Assessment Report 248).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6156194
EASTING: 474817

COMMODITIES: Gold Platinum Silver

MINERALS
SIGNIFICANT: Gold Platinum
COMMENTS: Fine flakey gold and minor platinum. Silver from assays only.
MINERALIZATION AGE: Recent

DEPOSIT
CHARACTER: Unconsolidated Stratabound
CLASSIFICATION: Placer
TYPE: C01 Surficial placers
DIMENSION: 150 x 30 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: A 150 by 30 metre area of placer gravels, worked on the west bank of the Parsnip River until 1940, now flooded by Lake Williston.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Recent			Glacial/Fluvial Gravels

LITHOLOGY: Glacial Gravel

HOSTROCK COMMENTS: Reworked glacial/fluvial gravels are deposited as bars and benches.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench
TERRANE: Ancestral North America
COMMENTS: Unconsolidated gravels on Ancestral North American sediments.

CAPSULE GEOLOGY

Gold and platinum placer occurrences found in the Finlay, Parsnip and Peace rivers have been worked since the first discovery by Bill Cust in 1861. The placers generally occur in the top 1.5 to 3 metres of reworked glacial gravels deposited in streams and as benches along streams. Normally worked by hand, these placer operations had limited success. The gold is fine and flat and platinum is common with local high values reported, but it was considered unimportant in most of these placers.

The Parsnip River occurrence is located on the Parsnip River, 2 kilometres north of the Nation River confluence and 30 kilometres down stream from Bill Custs bar (093O 003). A 150 by 30 metre area was worked on the west bank of Parsnip River. In the 1920's and 1930's, the Ministry of Mines reported that numerous individuals were working the gravels of Parsnip River and recovering fine gold (and platinum in much smaller amounts than gold). Prior to 1931, production records were poorly kept. Between 1931 and 1940, 6220 grams of gold were recovered from placers on the Parsnip River. The occurrence is now flooded by Lake Williston.

BIBLIOGRAPHY

EM FIELDWORK 2001, pp. 303-312
EM GEOFILE 2000-2; 2000-5
EMPR AR 1906-103; 1923-141; 1929-206; 1930-159; 1933-104; 1936-C34; 1949-240
EMPR ASS RPT *248
EMPR BULL 1, pp. 82-88; 2, pp. 45-46; 21, p. 18; *28, p. 45
GSC ANN RPT 1894 VOL III, pp. 38c-40c
GSC EC GEOL 13, p. 81
GSC MEM 259, pp. 142-143
GSC OF 925

DATE CODED: 1991/03/18 CODED BY: GKK FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093O 046**

NATIONAL MINERAL INVENTORY:

NAME(S): **GLEN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O10E
BC MAP:
LATITUDE: 55 35 00 N
LONGITUDE: 122 39 36 W
ELEVATION: 1370 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is for the approximate centre of the Glen claim group, stretching about 15 kilometre along a northwest trend, attaining a width of up to 1 kilometre (Assessment Report 20410).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6159760
EASTING: 521433

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Triassic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
DIMENSION: 9999 x 20 Metres STRIKE/DIP: TREND/PLUNGE:

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Triassic	Undefined Group	Bocock	

LITHOLOGY: Limestone
Calcarenite

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: SAMPLE REPORT ON: N

CATEGORY: Assay/analysis YEAR: 1990
SAMPLE TYPE: Chip

COMMODITY	GRADE	
Limestone	55.1000	Per cent

COMMENTS: Taken across 21 metres. The grade given is for calcium oxide (CaO).
REFERENCE: Assessment Report 20410, Table 3.1.

CAPSULE GEOLOGY

The Upper Triassic Bocock Formation varies from 0 to 63 metres thick between Silver Sands and Carbon creeks, having been completely eroded in the lower part of Silver Sands Creek. It consists of very resistant light-grey to grey weathering, grey to brownish grey limestone that is typically micritic to very finely crystalline, but which also has some coarse bioclastic units containing rounded crinoid and brachiopod fragments. To the north, along the west side of McNairn Creek, it becomes coarse-grained calcarenite and is slightly more silty and dolomitic than to the south. Bedding is thick to indistinguishable, and massive.

A minimum of 20 metres of limestone averaging nearly 55 per cent CaO is reported to be present from Discovery Creek to Tiger Creek, a distance of over 10 kilometres (Assessment Report 20410, Figure 2.2). The analysis of one sample taken across 21 metres is recorded as 55.1 per cent CaO, 0.1 per cent MgO, 0.9 per cent insolubles, 0.5 per cent R2O3, 43.7 per cent loss on ignition and 0 per cent SiO2 (Assessment Report 20410, Table 3.1).

BIBLIOGRAPHY

EMPR FIELDWORK 1991, pp. 433-440
EMPR ASS RPT *20410
GSC MAP 11-1961

BIBLIOGRAPHY

GSC OF 925

DATE CODED: 1992/01/31
DATE REVISED: / /

CODED BY: GJP
REVISED BY:

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 047**

NATIONAL MINERAL INVENTORY:

NAME(S): **SPARKY**, SEE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O04W
BC MAP:
LATITUDE: 55 03 04 N
LONGITUDE: 123 46 43 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is for the Sparky's Knob deposit. The "1242 Knob" deposit occurs about 1200 metres to the east (Assessment Report 20230).

MINING DIVISION: Omineca
UTM ZONE: 10 (NAD 83)
NORTHING: 6100756
EASTING: 450257

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Paleozoic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Slide Mountain	Unnamed/Unknown Formation	

LITHOLOGY: Limestone
Dolomite
Sandstone
Quartzite
Argillite

GEOLOGICAL SETTING
TECTONIC BELT: Intermontane
TERRANE: Slide Mountain
PHYSIOGRAPHIC AREA: Manson Upland

INVENTORY

ORE ZONE: 1242 KNOB REPORT ON: Y

CATEGORY: Inferred YEAR: 1991
QUANTITY: 819445 Tonnes

COMMODITY	GRADE	
Limestone	100.0000	Per cent

REFERENCE: Assessment Report 20230.

ORE ZONE: SPARKY'S KNOB REPORT ON: Y

CATEGORY: Inferred YEAR: 1991
QUANTITY: 861159 Tonnes

COMMODITY	GRADE	
Limestone	100.0000	Per cent

REFERENCE: Assessment Report 20230.

CAPSULE GEOLOGY

The area of the Sparky limestone occurrence is mapped as Carboniferous and Permian Slide Mountain Group consisting of greenstone, argillite, limestone, slate and quartzite. The prospect consists of two separate areas (knobs), 1200 metres apart, underlain by limestone.

Sparky's knob is underlain by limestone, dolostone, sandstone, quartzite and argillite. The massive, buff and grey weathering, medium to dark grey limestone outcrops from the 1060 metre elevation level to the peak at 1170 metres elevation. Strikes vary from east-west in the limestone to north-south in the underlying sediments.

The easternmost knob, called the 1242 Knob, is underlain by massive, medium grey weathering, buff to dark grey limestone which strikes 160 degrees and dips 53 degrees to the northeast. The limestone is confined to the top 40 to 80 metres of the knob.

The limestone was tested for total sulphur, maximum potential

CAPSULE GEOLOGY

acidity, neutralization potential, paste pH, specific gravity and rock-forming oxides. The maximum per cent sulphur was 0.023 per cent with all other samples being between 0.002 per cent and less than 0.001 per cent. The acid generating potential for the samples taken was zero and the neutralizing potential was calculated as being from 918 to 971 tons CaCO3 equivalent per thousand tons of material. Paste pH varied from 8.1 to 8.8, and the one sample checked gave a specific gravity of 2.70.

Volume calculations were made using a computer program which estimated the topographic surface of the deposit based on elevation contours; the base of the deposit was estimated from the lowest outcropping. The Sparky's Knob deposit was estimated to contain 861,159 tonnes of limestone and the 1242 Knob, 819,445 tonnes (Assessment Report 20230).

BIBLIOGRAPHY

EMPR ASS RPT *20230
GSC OF 925

DATE CODED: 1992/01/31 CODED BY: GJP FIELD CHECK: N
DATE REVISED: 1992/01/31 REVISED BY: GJP FIELD CHECK: N

MINFILE NUMBER: **093O 048**

NATIONAL MINERAL INVENTORY:

NAME(S): **LST**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093O03E
BC MAP:
LATITUDE: 55 10 12 N
LONGITUDE: 123 13 00 W
ELEVATION: 914 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: The location is for the central area of the LST claim group (Assessment Report 20224).

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6113731
EASTING: 486199

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Upper Paleozoic

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Paleozoic	Slide Mountain	Unnamed/Unknown Formation	

LITHOLOGY: Limestone
Quartz Schist

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Slide Mountain
PHYSIOGRAPHIC AREA: Northern Rocky Mountain Trench

INVENTORY

ORE ZONE: LST
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1991
QUANTITY: 945809138 Tonnes

COMMODITY	GRADE	
Limestone	100.0000	Per cent

REFERENCE: Assessment Report 20224.

CAPSULE GEOLOGY

The area of the LST occurrence is underlain by limestone of the Carboniferous and Permian Slide Mountain Group. Limestone on the property is reported to be pure, massive or banded and varying in colour from grey to white to beige. The strata appears to strike north to northwest with dips of 25 to 43 degrees to the east and northeast respectively. Some outcrops of quartz schist occur in the area.

The limestone was tested for total sulphur, maximum potential acidity, neutralization potential, paste pH and specific gravity. Sulphur content was between 0.002 per cent and less than 0.001 per cent. The acid generating potential for the samples taken was zero and the neutralizing potential was calculated as being from 983 to 1052 tons CaCO3 equivalent per thousand tons of material. Paste pH varied from 8.5 to 9.0 and a specific gravity on one sample was 2.74.

Rough limestone reserve calculations were made using a computer program which estimated the topographic surface of the deposit based on elevation contours; the base of the deposit was estimated from the lowest outcropping of limestone. The LST deposit was estimated to contain 945,809,138 tonnes of limestone (Assessment Report 20224).

BIBLIOGRAPHY

EMPR ASS RPT *20224
GSC OF 925

DATE CODED: 1992/02/03
DATE REVISED: 1992/02/03

CODED BY: GJP
REVISED BY: GJP

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093O 049**

NATIONAL MINERAL INVENTORY:

NAME(S): **ASPEN**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093O03W
BC MAP:
LATITUDE: 55 03 20 N
LONGITUDE: 123 20 00 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Centre of Aspen claims.

MINING DIVISION: Cariboo
UTM ZONE: 10 (NAD 83)
NORTHING: 6101024
EASTING: 478707

COMMODITIES: Granite Dimension Stone Building Stone

MINERALS
SIGNIFICANT: Unknown
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Massive
CLASSIFICATION: Syngenetic Industrial Min.
TYPE: R03 Dimension stone - granite

HOST ROCK
DOMINANT HOSTROCK: Plutonic

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous			Unnamed/Unknown Informal

LITHOLOGY: Granite

GEOLOGICAL SETTING
TECTONIC BELT: Omineca
TERRANE: Cassiar
PHYSIOGRAPHIC AREA: Omineca Mountains

CAPSULE GEOLOGY

The Aspen claims cover an attractive pale pink, coarse-grained Cretaceous granite. In 1998, Hunter Humphries and Jim Bellevance quarried ten 10-tonne blocks and submitted them to a plant in Washington for preliminary processing and test marketing.

BIBLIOGRAPHY

EM EXPL 1998-44
EMPR OF 1995-6; 1995-24
GSC MAP 1634A
GSC MEM 425

DATE CODED: 1999/06/25 CODED BY: LDJ FIELD CHECK: N
DATE REVISED: / / REVISED BY: FIELD CHECK: N

MINFILE NUMBER: **093P 001** NATIONAL MINERAL INVENTORY:

NAME(S): **BULLMOOSE**, SOUTH FORK, WEST FORK, NE BULLMOOSE, TECK CORPORATION

STATUS: Past Producer Open Pit MINING DIVISION: Liard
REGIONS: British Columbia
NTS MAP: 093P04E 093P03W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 08 50 N NORTHING: 6112190
LONGITUDE: 121 30 30 W EASTING: 595066
ELEVATION: 1463 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of property (Coal Assessment Report 477).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Fort St. John	Gates	

LITHOLOGY: Sandstone
Siltstone
Shale
Conglomerate
Coal

HOSTROCK COMMENTS: The coal-bearing unit is 80 metres thick in the lower half of the Gates Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: MVol Bituminous

INVENTORY

ORE ZONE: BULLMOOSE REPORT ON: Y

CATEGORY: Indicated YEAR: 2002
QUANTITY: 10300000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Mineral resource as at December 31, 2001.
REFERENCE: Teck Cominco Limited, Annual Report 2001.

ORE ZONE: BULLMOOSE REPORT ON: Y

CATEGORY: Measured YEAR: 2002
QUANTITY: 12000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Resources as at December 31, 2001.
REFERENCE: Teck Cominco Limited, Annual Report 2001.

ORE ZONE: BULLMOOSE REPORT ON: Y

CATEGORY: Proven YEAR: 2002
QUANTITY: 2800000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Mineable reserves as at December 31, 2001.
REFERENCE: Teck Cominco Limited, Annual Report 2001.

CAPSULE GEOLOGY

A minimum of six coal seams occur in the Lower-Upper Cretaceous Gates Formation (approximately 200 metres thick) of the Fort St. John Group, interbedded with sandstone, siltstone, shale and minor pebble

CAPSULE GEOLOGY

conglomerate, deposited in a deltaic setting. The sediments form a prominent broad syncline plunging gently northwest. In the Mount Chamberlain area the fold is asymmetrical (the west flank dips up to 70 degrees, the east flank dips at less than 20 degrees). To the south, the dips on both limbs are more gentle where the West and South Fork areas lie along the axial portion of the fold, with dips less than 20 degrees. A northwest trending thrust fault at West Fork dips southwest and shows appreciably large displacement. A thrust fault at South Fork appears to show little displacement.

The coal seams in ascending stratigraphic order are A, B, C, D, E and F seams. Quality and thickness vary between and also within seams. Generally, seam characteristics improve from younger to older and most of the seams also improve southwards. In the West and South Fork areas, the seams are thicker and more easily correlated than to the north, where they are frequently split and contain numerous rock partings.

Seam A is a thin coaly horizon in the northeast becoming thicker and cleaner to the south. The thickness averages 1.8 metres in the West Fork area (shaly parting up to 0.6 metres) and exceeds 4.5 metres in the South Fork area where the parting is also thicker (approximately 1.8 metres). Ash percentage is 7.2 and 13.2 (lower and upper) and 18.8 in the South and West Fork areas respectively and sulphur percentage is 0.35 to 0.45 (lower and upper) and 0.38 respectively.

Seam B is widespread and is most important because of its thickness. It is generally free of rock partings and appears hard and bright. In the north of the property, although thick, the seam is very shaly but thickens and improves in quality southwards. The B seam averages 3.4 metres and 4.8 metres in the West and South Fork areas respectively. The B seam contains 7.2 and 18.0 per cent ash (lower and upper) and 7.2 and 19.8 per cent ash (lower and upper) in the South and West Fork areas respectively, with sulphur values 0.23 per cent (lower and upper) and 0.25 per cent (lower and upper) respectively.

Seam C is 1.9 metres thick in 3 splits in the West Fork area and 1.8 metres at South Fork, including some dirt bands. Generally dull with some bright bands, ash percentage is 22.4 and 20.6 and sulphur 0.44 and 0.35 per cent in the South and West Fork areas respectively.

The D seam is variable in thickness and quality at West Fork, with the thicker sections having very high ash contents. Average ash and sulphur are 34.5 per cent and 0.26 per cent respectively at West Fork. The seam is more uniform and averages 1.5 metres thick at South Fork. Here it is dull and includes rock partings, with ash and sulphur percentages averaging 35.9 and 0.33 respectively.

The E seam is a distinct seam only at West Fork (less than 1 metre) and South Fork (greater than 1 metre). In the north it consists of several coaly horizons. The seam is thickest at South Fork (greater than 1 metre) where it is hard and bright with minor shale partings. Ash and sulphur percentages are 14.1 and 0.51 respectively at South Fork.

The F seam is represented by one or more coaly horizons in the southern part of the Bullmoose property, it does not occur at South and West Fork.

Volatile matter contents vary from 20.6 per cent (D seam) to 26.9 per cent (E seam) at South Fork and 20.4 (E seam) to 26.6 per cent (lower B seam) at West Fork. Free swelling index ranges from 2.5 to 5 with lower values more common at West Fork. Fixed carbon ranges from 43.6 per cent (D seam, South Fork) to 68.2 per cent (lower A seam, South Fork).

The Bullmoose mine expects to ship 2 million tonnes of coal in 1995. This includes 400,000 tonnes transferred from the Quintette contract. The arrangement has been renewed for an additional two years, ensuring that Bullmoose stays at the 2 million tonnes production level until at least 1998. During 1995, 20 development holes were completed in the South Fork pit (Information Circular 1996-1, page 9).

Three mining methods, depending on coal seam dip angles, are now used at the South Fork pit, which has a mineable reserve of 13.5 million tonnes (sufficient until mid-2003). The mineral resource in the nearby West Fork zone is an estimated 14.3 million tonnes (T. Schroeter, personal communication, 1997).

Production from the South Fork pit in 1998 was about 1.8 million tonnes of clean metallurgical coal. Reserves as of December 31, 1998 was 11.0 million tonnes (Exploration in BC 1998, page 37). Reserves as of January 1, 2000 was 5.8 million tonnes (Information Circular 2001-1, page 6).

Reserves at December 31, 2001 were 2.8 million tonnes proven. Resources were 12 million tonnes measured, 10.3 million tonnes

CAPSULE GEOLOGY

indicated and 2.6 million tonnes inferred (Teck Cominco Limited, Annual Report 2001).

The Bullmoose mine has operated continuously since production began in 1983 and has shipped over 32 million tonnes of metallurgical coal to overseas steel producers. The mine will close April 4, 2003.

BIBLIOGRAPHY

EMPR BULL 52
EMPR COAL ASS RPT 472, 475, 476, *477, 478, 481
EMPR Coal in British Columbia (1976)
EMPR COALFILE
EMPR ENG INSP Annual Report 1989, 1990
EMPR EXPL 1975-E224,E225; 1977-E272; 1979-356,357; 1982-18; 1985-A33; 1986-A56; 1987-A58,A59; 1996-A12,C6; 1997-22; 1998-37
EMPR FIELDWORK 1977, p. 60; 1978, p. 86; 1981, pp. 244-258; 1984, pp. 251-277; 1986, pp. 369-382; 1987, pp. 451-470; 1988, pp. 565-576; 1991, pp. 397-417
EMPR GEM 1971-502,503; 1972-640
EMPR INF CIRC 1993-13; 1996-1, p .9; 1997-1, p. 11; 1998-1, p. 12; 2001-1, p. 6
EMPR IR 1984-5; 1986-1, p. 104
EMPR MAP 65 (1989)
EMPR MIN STATS 1985, p. 42; 1987, pp. 44,46; 1990, pp. 40,46,52; 1992, p. 20; 1993, p. 30; 1994, p. 34
EMPR MINING 1981-1985, p. 76; 1986-1987, p. 73; 1988, p. 73
EMPR OF 1987-6, 7; 1990-33; 1992-1; 1994-1
EMPR P *1981-3; 1986-3, pp. 18-21
EMPR PF (093P General - Mathews, W.H. (1950,1952,1954,1955): Various reports on the Peace River District; Map of Dawson Creek area showing leases, wells and seismic surveys; General surficial and bedrock geology maps; Preliminary Feasibility Report on Townsite Community Development (1977); Teck Corporation Annual Report 1985); The Bullmoose Mine brochure)
GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
GCNL #80(Apr.27), 1999
N MINER Feb.22, Apr.12, Nov.1, 1999; Feb.14, Mar.13, May 8, 2000
WWW http://www.teckcominco.com; http://www.infomine.com/index/properties/BULLMOOSE_MINE.html
Teck Cominco Limited, Annual Reports
Teck Corporation 1996, 1997, 1998 Annual Reports
Times Colonist, Feb.16, 2000, p. D3; Mar.2, 2000, p. B5

DATE CODED: 1985/07/24 CODED BY: GSB FIELD CHECK: N
DATE REVISED: 1986/02/12 REVISED BY: EVFK FIELD CHECK: N

MINFILE NUMBER: **093P 002**

NATIONAL MINERAL INVENTORY:

NAME(S): **POUCE COUPE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093P09E
BC MAP:
LATITUDE: 55 43 09 N
LONGITUDE: 120 07 05 W
ELEVATION: 609 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Beside pump station on river bank, due east from the town of Pouce Coupe (Property File).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6178587
EASTING: 681014

COMMODITIES: Clay

MINERALS
SIGNIFICANT: Clay
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unknown
CLASSIFICATION: Industrial Min.
TYPE: B06 Fireclay
E07 Sedimentary kaolin

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Smoky	Undefined Formation	

LITHOLOGY: Clay
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

Bedrock geology consists of Upper Cretaceous Smoky Group marine shales.

Tough black to grey clay occurs in a river bank east from the town of Pouce Coupe. The clay bloats easily and may have potential for lightweight aggregate.

BIBLIOGRAPHY

EMPR IND MIN FILE (Clay and Shale Occurrences in BC (in Ministry Library))
EMPR PF (*Mineral occurrence input form)
GSC MAP 19-1961; 2669
GSC OF 286

DATE CODED: 1989/06/28 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1989/06/28 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 003**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT PALSSON**, BAKER CREEK, SUKUNKA RIVER

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P04W
BC MAP:
LATITUDE: 55 08 34 N
LONGITUDE: 121 52 47 W
ELEVATION: 765 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: South zone, on the southeast side of the Sukunka River, just east of its confluence with Baker Creek, 64 kilometres south-southwest of Chetwynd (Industrial Mineral File - MacLeod, 1988).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6111253
EASTING: 571406

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Carbonate
ASSOCIATED: Dolomite Pyrobitumen
MINERALIZATION AGE: Mississippian

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Tabular
MODIFIER: Folded
DIMENSION: 260 x 100 Metres STRIKE/DIP: TREND/PLUNGE:
COMMENTS: South zone

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mississippian	Rundle	Undefined Formation	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Dolomitic Wacke

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America

PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: SOUTH REPORT ON: Y

CATEGORY: Indicated YEAR: 1988
QUANTITY: 1700000 Tonnes

COMMODITY	GRADE	
Limestone	54.3600	Per cent

COMMENTS: Grade given for CaO.
REFERENCE: Industrial Mineral File - MacLeod, W.A. (1988).

ORE ZONE: NORTH REPORT ON: Y

CATEGORY: Indicated YEAR: 1988
QUANTITY: 440000 Tonnes

COMMODITY	GRADE	
Limestone	54.4200	Per cent

COMMENTS: Grade given for CaO.
REFERENCE: Industrial Mineral File - MacLeod, W.A. (1988).

CAPSULE GEOLOGY

The Mount Palsson occurrence is situated on the southeast side of the Sukunka River, just east of its confluence with Baker Creek, 64 kilometres south-southwest of Chetwynd.

The deposit lies within a bed of limestone of the Mississippian Rundle Group underlain by shaly carbonates of the Lower Mississippian Banff Formation and overlain by siltstone and shale of the Triassic Sulphur Mountain Formation (Spray River Group). The limestone outcrops as a narrow northwestward trending band along the east limb of an overturned syncline. Locally, the limestone is warped into a pair of closely-spaced anticlines trending west-northwest.

The deposit is comprised of a chemical grade limestone member

CAPSULE GEOLOGY

that passes upward into an overlying impure limestone member. The chemical grade member consists of white speckled micrite and brown to grey-brown, very fine-grained, slightly dolomitic wackestone. The impure member consists of brown-grey to grey, fine to coarse-grained, silty, dolomitic wackestone with minor dolomitic micrite. Veins of white calcite are present in both units. Pyrobitumen is commonly displayed on fractured surfaces.

Two zones of reserves have been defined in the chemical grade limestone member along the crest of each of the two anticlines. The two zones are separated by an 80 to 90 metre wide band of impure limestone preserved along the intervening syncline. Indicated and inferred reserves (in tonnes) with average grades (in per cent) are given as follows (Industrial Mineral File - W.A. MacLeod, 1988):

Zone	Reserves	CaO	MgO	SiO2	Al2O3	Fe2O3
South	1,700,000	54.36	0.67	0.37	0.26	0.01
North	440,000	54.42	0.73	0.48	0.27	trace

The South zone outcrops along the crest of the southern anticline over a length of 260 metres with a width of between 80 and 100 metres. The North zone outcrops for up to 160 metres along the crest of the northern anticline with a width of up to 100 metres.

The deposit was initially evaluated by Westmin Resources in 1983 as a source of agricultural lime for the Peace River area. The property was optioned by Westmin to Knox Western Capital Inc. of Calgary, Alberta. Knox Western Capital carried out detailed mapping and sampling in 1988 in order to determine the quantity and suitability of the limestone available for use in pulp mills.

BIBLIOGRAPHY

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EMPR PF (Westmin Resources Annual Report 1982; Notice of Quarry Opening, Westmin Resources 1984; *MacLeod, W.A. (1989): Geological Report on the Westmin Lease No. 802015, Mount Palsson Area)
GSC MAP 19-1961; 2669
GSC OF 286

DATE CODED: 1986/03/14 CODED BY: ZDH FIELD CHECK: Y
DATE REVISED: 1989/12/07 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093P 004**

NATIONAL MINERAL INVENTORY:

NAME(S): **ROCKY CREEK**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P04W 093P05W
BC MAP:
LATITUDE: 55 15 00 N
LONGITUDE: 121 45 05 W
ELEVATION: 1295 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6123322
EASTING: 579372

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Jurassic-Cretaceous	Minnes	Beattie Peaks	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Claystone
Conglomerate

HOSTROCK COMMENTS: Most economic coal seams occur in the Lower Gething Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Hart Ranges

CAPSULE GEOLOGY

Coal seams occur in the Lower Gething Formation (320 to 345 metres thick) of the Bullhead Group which consists of sandstones, siltstones, mudstones and minor conglomerate. Nine coal zones occur predominantly in the middle third of the Lower Gething Formation. These are from oldest to youngest, the Lake Cadomin, Bumpy, Meadow, Unnamed Zone, Grizzly, Pump and B Lower and Upper. Of these the B varies from 0.8 to 2.54 metres thick and has resource potential in the north and south, while an associated C zone 2.65 to 3.13 metres thick, is also important in the south. The Pump, 2.89 metres thick and the Grizzly averaging 1.69 to 4.85 metres thick are the only other significant seams to the north of Rocky Creek. The B zones are regionally extensive, while the Pump, Grizzly and Cadomin in the east decrease in thickness to the east.

Coal also occurs in the Juro-Cretaceous Beattie Peaks Formation and the Bickford Formation (Minnes Group). In the latter, several thin (up to 1 metre) seams occur in addition to two seams in the Mount Merrick area which are each approximately 2 metres thick. They dip 40 to 60 degrees southwest and cannot be traced into less disturbed areas.

The structure consists of a series of northwest trending tight, isoclinal folds of the Merrick syncline in the southwest and more gentle folds including the Rocky Creek synclinorium in the northeast. The folded strata are faulted by at least four major thrust faults.

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EMPR Coal in British Columbia (1976)
EMPR BULL 52
EMPR P *1981-3; 1986-3, pp. 18,19
EMPR OF 1987-6,7
EMPR EXPL 1985-A32

BIBLIOGRAPHY

EMPR FIELDWORK 1977, p. 60; 1978, pp. 78-83,86; 1981, pp. 244-258; 1984, pp. 251-277; 1986, pp. 373-382; 1987, pp. 451-470; 1988, pp. 565-576; 1990, pp. 407-414
EMPR COALFILE
EMPR PF (093P General - Mathews, W.H. (1950,1952,1954,1955): Various reports on the Peace River District; Map of Dawson Creek area showing leases, wells and seismic surveys; General surficial and bedrock geology maps)
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239
GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/22 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 005**

NATIONAL MINERAL INVENTORY:

NAME(S): **PINE PASS**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P05W 093P12W
BC MAP:
LATITUDE: 55 29 00 N
LONGITUDE: 121 59 05 W
ELEVATION: 1189 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Centre of Pan Oceans/Norcens 1979 licenses, south of Pine River.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6149047
EASTING: 564162

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: A series of northwest trending folds plunging northwest are cut by some northwest trending, southwest dipping thrust faults.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Shale
Carbonaceous Shale

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP:
GRADE: LVol Bituminous

INVENTORY

ORE ZONE: PINE PASS
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1986
QUANTITY: 27000000 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: Inferred underground reserves are between 27 and 60 million tonnes of low volatile bituminous coal.
REFERENCE: Coal Assessment Reports 586, 587.

CAPSULE GEOLOGY

The main economic seam, seam E occurs in the Lower Cretaceous Gething Formation (Bullhead Group) interbedded with sandstone, shale, carbonaceous shale, conglomerate and thinner coal seams. Seam E is 2.0 to 4.9 metres thick, laterally persistent and consists of low volatile bituminous coal suitable for thermal use. Several additional coal seams and zones occur in the Gething Formation, however these are thinner and tend to contain many shale partings and splits. The seams lie within the top 250 metres of the Gething Formation and apart from seams E and F, vary considerably in thickness and character across the section.

The structure consists of a series of northwest trending, northwest plunging anticlines and synclines which are cut by some northwest trending, southwest dipping thrust faults. The west side of the property is bounded by a major fault which thrusts Cadomin Formation and older strata on top of the Gething Formation. The eastern side of the property is also thrust faulted. The central part of the property is tightly folded.

A broader anticline occurs to the east, where the Hasler mine (093O 009) is situated, but is faulted on the south and east end of the structure.

Inferred underground reserves are between 27 and 60 million

CAPSULE GEOLOGY

tonnes of low volatile bituminous coal with suitable thermal characteristics and less than 6 per cent raw ash, 14,000-15,000 BTU and sulphur generally less than 0.5 per cent.

BIBLIOGRAPHY

EMPR COAL ASS RPT 581, 582, 583, 584, 585, *586, *587, 588, 589, 590, 591, 592
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EMPR PF (093P General - Mathews, W.H. (1950,1952,1954,1955): Various reports on the Peace River District; Map of Dawson Creek area showing leases, wells and seismic surveys; General surficial and bedrock geology maps)
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2269

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 006**

NATIONAL MINERAL INVENTORY:

NAME(S): **WEST BRAZION**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P05W
BC MAP:
LATITUDE: 55 22 00 N
LONGITUDE: 121 57 50 W
ELEVATION: 1356 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6136084
EASTING: 565671

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Beds dip less than 10 degrees to the east-southeast in the north and dip north-northwest in the south.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Carbonaceous Mudstone
Sandstone
Siltstone
Mudstone
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
GRADE: MVol Bituminous

CAPSULE GEOLOGY

Four main coal seams, the Discovery seam and A, B, and C seams, occur in the Lower Cretaceous Gething Formation (Bullhead Group) interbedded with carbonaceous mudstone, sandstone, siltstone, mudstone and minor conglomerate. The structure consists of a series of northwest trending folds to the west of the property. These are cut by an east-southeast trending, north dipping thrust fault. In the centre and east of the property strata dips gently (less than 10 degrees) to the east-southeast (in the north) and dips to the north-northwest (in the south).

The Discovery seam is approximately 4 metres thick, and is clean, bright and blocky, with a number of mudstone partings. Seam A is approximately 0.77 metres thick, and is clean, bright, and blocky. Seam B is approximately 1.84 metres thick with similar characteristics. Seam C is approximately 1.23 metres thick, semi-bright to bright with thin high-ash bands (the seam has approximately 33.7 per cent ash).

The coal is medium volatile bituminous with generally low ash (8.91 to 14.24 per cent dried basis, 33.7 per cent in seam C) and high calorific value. Volatile matter ranges from 19.57 per cent to 25.04 per cent dried basis, fixed carbon 46.72 per cent to 70.16 per cent, and sulphur 0.26 per cent to 0.56 per cent dried basis.

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GCNL #89(May 9), 2000

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 007**

NATIONAL MINERAL INVENTORY:

NAME(S): **BURNT RIVER**, BRULE, BURNT RIVER (WEST ZONE), BRAZION, WESTERN CANADIAN COAL

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P05W
BC MAP:
LATITUDE: 55 23 12 N
LONGITUDE: 121 49 12 W
ELEVATION: 945 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6138441
EASTING: 574752

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Bentonite Mudstone
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP:
GRADE: Semi-Anthracite

INVENTORY

ORE ZONE: BURNT RIVER
REPORT ON: Y

CATEGORY: Combined
YEAR: 1981
QUANTITY: 23808000 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: Drill ind., inf. and potential res. for the Big Seams, middle seams and seismic seams as well as marker seams in excess of 1 metre thick.
REFERENCE: MDAP - Stage I Report, Burnt River Coal Project, January 1981.

CAPSULE GEOLOGY

The Lower Cretaceous Gething Formation (Bullhead Group) is the main coal-bearing unit at Burnt River and is up to 400 metres thick and consists of interbedded sandstones, siltstones, mudstones, bentonites and semi-anthracite low volatile, low sulphur and high heat value coal. The sediments are generally fine-grained and carbonaceous with some crossbedding and soft sediment deformation structures. The lithologies exhibit extreme thickening and thinning over short distances, and abundant facies changes.

Nine main coal seams occur in the Middle and Upper Gething Formation. They are designated from oldest to youngest: Marker A, A-A, B, Lower seam, Upper seam, Marker C, D, Seam 60 and Marker E. These vary in thickness from 0.5 to 1.5 metres for markers and 0.5 to 11.0 metres for seams. All markers have carbonaceous mudstone, floor and roof, and are predominantly of interest as marker horizons.

The Lower seam is the most consistent with respect to extent and quality. It varies in thickness from 2 to 11 metres and is on average 3.2 metres and 6.2 metres thick in the south and north of the main reserve area respectively. The seam shows no rock partings except at the southern edge of the property where it is thin with a mineable rock parting. Average ash content is 6.9 per cent, volatile

CAPSULE GEOLOGY

matter is 13.2 per cent, fixed carbon is 79.0 per cent, inherent moisture is 0.9 per cent, sulphur is 0.40 per cent, calorific content of 7910 calories per gram and average thickness of 4.15 metres.

The Upper seam averages 3.2 to 2.8 metres in width and is usually split by a 30 to 60-centimetre shale parting in the north of the deposit. The seam thins and pinches out to the north. The seam is thick and clean in the south where ash levels are 4 to 5 per cent on three metre intercepts. Ash levels increase to 8 to 12 per cent in the north on thinner seams. Average ash is 8.1 per cent, inherent moisture is 0.8 per cent, volatile matter is 13.2 per cent, fixed carbon is 77.9 per cent, sulphur is 0.41 per cent and calorific value of 7800 calories per gram.

The majority of Seam 60 reserves are in the southwest where quality and thickness are consistent. The seam thins and is cleaner to the north. It contains two major high ash zones (25 to 40 per cent ash) and minor rock partings. The lower high ash zone splits the seam in the north. Average seam analysis across 5.87 metres thickness returned 0.8 per cent inherent moisture, 11.2 per cent ash, 16.1 per cent volatile matter, 71.9 per cent fixed carbon, 0.32 per cent sulphur, and calorific content of 7550 calories per gram.

The structure consists of a series of tight folds and numerous faults. The folds are asymmetrical with northwest trending axes that plunge to the north or south. Coal seams may have undergone ductile deformation along fold axes. The main reserve area (Brule deposit), is dominated by folds trending northwest and several west dipping thrust faults.

Two regional faults cut the property, the Mount Chamberlain fault in the southwest and the Bullmoose thrust fault east of the Blind Creek syncline. Between these faults the property is transected by several southwest dipping thrust faults dipping 10 to 40 degrees, which repeat the Lower Gething and Bernot formations across the property.

Drill indicated, inferred and potential reserves for the Big Seams, middle seams and seismic seams as well as marker seams in excess of 1 metre thick are 23,808,000 tonnes; the overall stripping ratio for the reserves is 5.6 cubic metres of overburden per tonne of run-of-mine coal assuming an ultimate pit highwall angle of 45 degrees (Mine Development Assessment Process - Stage I Report, Burnt River Coal Project, January 1981).

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www http://www.westerncoal.com

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 008**

NATIONAL MINERAL INVENTORY:

NAME(S): **BURNT RIVER (EAST ZONE)**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P05E
BC MAP:
LATITUDE: 55 20 00 N
LONGITUDE: 121 40 05 W
ELEVATION: 1086 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6132693
EASTING: 584492

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

Coal seams occur in the Lower Cretaceous Upper and Lower Gething Formation interbedded with sandstone, siltstone, mudstone and minor conglomerate. The Bird, Skeeter and Chamberlain seams of the Upper Gething Formation have pinched out and thinned respectively in a northerly direction from the Sukunka area to the south.

Several coal zones occur in the Lower Gething Formation, the B zone (in the upper 60 metres of the Lower Gething Formation), having the most potential. The B zone is divided in two by approximately 25 metres of sediments. The lower coal unit contains 1 to 2 metres of coal, while the upper unit contains 3 to 6 metres of coal over 4 to 10 metres of strata. Coal zones C to H are carbonaceous horizons which develop locally into coal sections of minor thickness and poor quality.

Structurally the area is divided by the northwest trending Bullmoose thrust fault into tightly folded Lower Cretaceous Fort St. John strata in the east, and a series of stacked Gething Formation thrust plates in the west. The thrust faults are northwest trending, southwest dipping and contain a series of tight northwest trending asymmetrical folds.

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GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669

DATE CODED: 1986/03/03 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 009**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUKUNKA RIVER**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P05E
BC MAP:
LATITUDE: 55 18 00 N
LONGITUDE: 121 38 50 W
ELEVATION: 1066 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6129010
EASTING: 585886

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Lower Cretaceous	Fort St. John	Gates	

LITHOLOGY: Sandstone
Siltstone
Carbonaceous Mudstone

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
COMMENTS: Metallurgical coal.

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: SUKUNKA RIVER
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1978
QUANTITY: 7000000 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: Surface coal reserve recoverable at a ratio of 7 cubic yards of overburden per ton of coal.
REFERENCE: Coal Assessment Report 677, page 2.

CAPSULE GEOLOGY

Potentially mineable coal seams occur in the Lower and Upper Gething Formation and the Gates Formation of the Bullhead and Fort St. John groups respectively. Coal was also encountered in the Juro-Cretaceous Minnes Group however thicknesses do not appear to be significant.

The Lower Gething Formation contains up to 4 seams of potential commercial thickness varying from 0.6 to 6.1 metres of which the middle seam is the thickest at 6.1 metres. These coals contain carbonaceous shale bands and have a fairly high inherent ash content. The Upper Gething Formation also contains four main seams; the Bird A and B, 2.4 and 3.9 metres thick respectively, Skeeter, 2.4 metres thick and Chamberlain, 3.0 metres thick. The Gething Formation has an average thickness of 472 metres and consists of an interbedded sequence of sandstone, siltstone, carbonaceous mudstone and coal.

The Moosebar Formation (Fort St. John Group) is 122 metres thick and consists of greenish siltstone and shales and separates the Gething Formation from the Gates Formation. The Gates Formation is approximately 289 metres thick and consists of massive, fine-grained sandstone with interbedded shale, siltstone and four main coal seams, the A seam (1.5 metres), the B seam (5.1 metres), the C seam (4.5 metres) and the D seam (1.5 metres).

The sulphur content of the coals in the entire area is less than 0.4 per cent. Ash content is variable, however in a represent-

CAPSULE GEOLOGY

ative sample, ash content is 20.2 per cent with values as low as 8 per cent and 4 per cent for better parts of the seams.

The structure of the area consists of asymmetrical, northwest trending folds with numerous southwesterly dipping thrust faults. The most northeasterly mapped thrust is thought to be the local "Sole" fault. Other splays from it converge at depth. The "Sole" fault dips are steeper to the northeast than to the southwest. The Nuisance fault is the main fault along the Sukunka River to the northwest.

Surface coal reserve recoverable at a ratio of 7 cubic yards of overburden per ton of coal total 7 million tonnes (Coal Assessment Report 677, page 2).

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GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669
GSC OF 286
CIM March 1974, pp. 142-147

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 010**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUKUNKA NORTH**

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P05W
BC MAP:
LATITUDE: 55 17 40 N
LONGITUDE: 121 48 05 W
ELEVATION: 1310 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Location is the approximate centre of the property. Associated with the Sukunka North is the Sukunka (093P 011).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6128212
EASTING: 576109

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
COMMENTS: Synclinorium axis trends northwest. The beds dip between 5 and 20 degrees to the west.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Lower Cretaceous	Bullhead	Cadomin	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Carbonaceous Mudstone
Conglomerate

HOSTROCK COMMENTS: Economic coal seams are restricted to the Lower Gething Formation, minor coal occurs in the Juro-Cretaceous upper Minnes Group.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP:
GRADE:
COMMENTS: Thermal coal.

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

Four main coal intervals occur in the Lower Cretaceous Lower Gething Formation of the Bullhead Group. The lowest 30 to 35 metres above the Cadomin Formation (Bullhead Group) averages coal 1.5 metres in thickness with a maximum of 2.2 metres in the southwest and thins towards the northwest and southeast. The second zone, 115 to 120 metres above the Cadomin Formation, or Grizzly seam, may total 10 to 12 metres thick, however individual intervals are normally less than 4 metres. Thickness appears to vary laterally with occasional washouts. The Pump zone lies 30 to 35 metres above the Grizzly seam and varies in thickness from 4 to 6 metres, of which approximately 3 metres is coal. Variations in thickness and lithological characteristics are common in this zone. The topmost coal zone "B", 215 to 220 metres above the Cadomin Formation, contains an upper and lower component. The total coal thickness (1.5 to 2.5 metres) is separated by 10 to 12 metres of mudstone. The Gething Formation in the area is divisible into three parts with a total thickness of 400 to 450 metres.

The Lower Gething Formation is composed of sandstones, siltstones, mudstones, carbonaceous mudstones, the principal coal zones and conglomerates. The overlying Middle Gething Formation contains distinctive brackish/marine very fine-grained sandstone/ siltstone and calcareous mudstone. The Upper Gething Formation is 8 metres thick and comprises calcareous sandstones and thin mudstones, and only occurs in isolated areas as a result of erosion.

The Sukunka North block is a synclinorium whose axis trends northwest and which is faulted by several thrust faults. A major thrust fault separates the area into a northern half incorporating the Gates Formation (Fort St. John Group) and younger strata, while

CAPSULE GEOLOGY

the southern segment is underlain by the Gething Formation and older strata. Fault throw is at least 350 metres. Other west dipping thrust faults occur with throws of 10 to 60 metres.

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DATE CODED: 1986/02/10 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/23 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 011**

NATIONAL MINERAL INVENTORY:

NAME(S): **SUKUNKA**, MOUNT JILG, MOUNT MERRICK, TRIANGLE, SUKUNKA NORTH

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P04W
BC MAP:
LATITUDE: 55 14 10 N
LONGITUDE: 121 52 05 W
ELEVATION: 1150 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property, west of the Sukunka River, between Sukunka River and Burnt River.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6121650
EASTING: 571981

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Jurassic

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Northwest trending folds and mainly southwest dipping thrust faults.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Minnes	Bickford	
Jurassic-Cretaceous	Minnes	Beattie Peaks	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Carbonaceous Shale

HOSTROCK COMMENTS: Coal also occurs in the Gething Formation (Bullhead Group).

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Hart Ranges
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

Coal seams occur in the Juro-Cretaceous Minnes Group and Lower Cretaceous Gething Formation (Bullhead Group) consisting of sandstone, siltstone, mudstone and carbonaceous shale. Minnes Group coal occurs in the Bickford Formation and consists of two seams, the Merrick and Rusty, each on average 2 metres thick within 30 metres of the Cadomin Formation (Bullhead Group) base. The seams are laterally extensive over considerable distances (in the Merrick block) but deteriorate and thin out across the depositional strike (within the Jilg/Triangle regions) and in the Beattie Peaks Formation (Minnes Group). The latter are generally thin and uneconomic, with the exception of the Hill seam which is over 2.5 metres thick and occurs within an isolated high terrain.

The Gething Formation coal occurs in two coal zones, each 3 to 4 metres thick. Gething Formation strata is present quite extensively in the Sukunka North block, however within the Jilg, Triangle and Merrick blocks the Gething Formation sediments are confined to small tight folds and only the lowermost strata, containing at most 2 seams 0.5-1.5 metres thick in the Merrick block, are preserved.

The structure consists of northwest trending folds and thrust faults. The Jilg block is dominated by tight folds and a northeast dipping thrust fault to the west. A fold in the westernmost area of the Merrick block is overturned. Farther northeast, dips are to the southwest followed by a southwest dipping thrust fault, a large syncline and steeply dipping folds. The Triangle block contains a central broad syncline with a series of tight folds to the southwest and numerous southwest dipping thrust faults both in the southwest and northeast.

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DATE CODED: 1986/03/03 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 012**

NATIONAL MINERAL INVENTORY: 093P3,4 Col1

NAME(S): **BULLMOOSE (CHAMBERLAIN)**, CHAMBERLAIN, BIRD, SKEETER

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P04E
BC MAP:
LATITUDE: 55 10 00 N
LONGITUDE: 121 36 05 W
ELEVATION: 1508 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6114231
EASTING: 589093

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Lower Cretaceous	Fort St. John	Gates	

LITHOLOGY: Sandstone
Shale
Siltstone
Conglomerate

HOSTROCK COMMENTS: Coal seams are mainly in the Gething Formation, however the Gates Foramtion contains several reasonably thick seams.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Hart Ranges
RELATIONSHIP:
GRADE:

INVENTORY

ORE ZONE: TOTAL
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1979
QUANTITY: 180000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Potential reserves in the Bird, Lower Chamberlain & Upper Chamberlain seams calculated to set mining, geological and coal prep. parameters.
REFERENCE: MDAP-Stage II submission, Sukunka Coal Project, Vol.1, Nov. 1979, p.7.

CAPSULE GEOLOGY

Three Lower Cretaceous Gething Formation (Bullhead Group) coal seams, the Chamberlain, Skeeter and Bird occur in the area in addition to the Lower Cretaceous Gates Formation (Fort St. John Group) seams, all of which occur in a sequence of sandstone, shale, siltstone and conglomerate.

The Chamberlain seam is 0.2 to 6.7 metres thick and decreases in thickness from north to south and also includes a shaly parting 2.5 to 15.2 centimetres thick south of the northern edge of the property. To the south the seam splits and may contain several shale partings. The Skeeter seam is shaly and thin, 0.3 to 2.1 metres, with an average of approximately 0.9 metres. The Bird seam is widely distributed in mineable thicknesses of 0.3 to 5.8 metres over much of the property. It includes rock bands and splits to the south up to 5 splits. In the Chamberlain area it consists of 3 splits with an aggregate thickness of 11.0 metres, a third of which consists of shale bands.

The Gates Formation seams in the Chamberlain area all include large amounts of shaly partings and bands, except for the B seam which

CAPSULE GEOLOGY

is generally clean. Its thickness varies from 0.76 metres to 2.65 metres. The Gates Formation seams generally thicken to the West and South Fork areas (093P 001).

Average volatile matter and ash percentages in washed Chamberlain coal are 22.77 per cent and 6.29 per cent respectively. The Bird seam and the Chamberlain seam show good coking qualities. The Bird seam samples have an average 0.50 per cent sulphur after washing but may retain up to 2.06 per cent sulphur, of which nearly 50 per cent is in the organic form. Limited sampling of the Gates Formation B seam demonstrated volatile matter and ash contents of 28.15 and 7.07 per cent respectively.

The structure in the Chamberlain area consists of a northwest trending syncline/anticline pair, with a major regional syncline to the east. The southwest dipping northwest trending Chamberlain thrust fault cuts the southwest limb of the minor syncline to the west.

Potential reserves in the Bird, Lower Chamberlain and Upper Chamberlain seams calculated to set mining, geological and coal preparation parametres are 180 million tonnes; the Chamberlain seam reserves may, in part, be duplicated in the Sukunka (Bullmoose) deposit (093P 014).

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EMPR P *1981-3; 1986-3, pp. 18,19
EMPR PF (093P General - Mathews, W.H. (1950,1952,1954,1955): Various reports on the Peace River District; Map of Dawson Creek area showing leases, wells and seismic surveys; General surficial and bedrock geology maps; Preliminary Feasibility Report on Townsite Community Development (1977))
GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
WWW http://www.teckcominco.com/operations/bull/bull.html
http://www.infomine.com/index/properties/BULLMOOSE_MINE.html

DATE CODED: 1986/02/03 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 013**

NATIONAL MINERAL INVENTORY:

NAME(S): **WINDFALL**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093P04E 093P04W
BC MAP:
LATITUDE: 55 10 00 N
LONGITUDE: 121 45 05 W
ELEVATION: 792 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6114050
EASTING: 579538

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: Faulted northwest trending, moderately folded synclinorium. Faults also trend northwest and dip to the southwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Jurassic-Cretaceous	Minnes	Bickford	

LITHOLOGY: Sandstone
Siltstone
Carbonaceous Mudstone

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP:
PHYSIOGRAPHIC AREA: Hart Ranges
GRADE:

CAPSULE GEOLOGY

Coal seams 0.04 metres to 1.49 metres thick occur in the Juro-Cretaceous Upper and Lower Bickford Formation (Minnes Group) interbedded with sandstones, siltstones and carbonaceous mudstones. Four seams were intersected in drill holes RDH 81-01 and 81-07 to depths greater than 122.74 metres and 59.23 metres respectively. Many of the exposed seams which were trenched contain clastic partings and are dull.

The structure consists of a faulted, northwest trending moderately folded synclinorium. The faults also trend northwest and dip southwest and include the normal Merrick fault in the southwest, the Windfall fault in the centre of the property and two thrust faults in the southeast. A major thrust fault to the west of the property places Triassic sediments adjacent to Lower Cretaceous strata.

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GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63

BIBLIOGRAPHY

GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669

DATE CODED: 1986/02/03
DATE REVISED: 1989/06/26

CODED BY: EVFK
REVISED BY: GO

FIELD CHECK: N
FIELD CHECK: N

MINFILE NUMBER: **093P 014** NATIONAL MINERAL INVENTORY: 093P3,4 Col1

NAME(S): **SUKUNKA (BULLMOOSE)**, SUKUNKA, BULLMOOSE (SUKUNKA), BRAMEDA RESOURCES, COALITION MINING, CHAMBERLAIN, SKEETER

STATUS: Past Producer Underground MINING DIVISION: Liard
REGIONS: British Columbia
NTS MAP: 093P04E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 11 00 N NORTHING: 6116195
LONGITUDE: 121 31 05 W EASTING: 594361
ELEVATION: 1508 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Property location is south and east of the Sukunka River and extends south into the Bullmoose property (093P 001) (excluding the Gates Formation coal seams) to Bullmoose Creek.

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted
COMMENTS: Northwest trending gentle folds with a broad major syncline are cut by a series of northwest trending, southwest dipping thrust faults.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Cretaceous	Fort St. John	Gates	

LITHOLOGY: Sandstone
Siltstone
Claystone
Carbonaceous Mudstone
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: MVol Bituminous
LVol Bituminous
COMMENTS: Coal is medium volatile bituminous to low volatile bituminous in rank.

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Indicated YEAR: 1977
QUANTITY: 183000000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Chamberlain seam-170 mt; Skeeter seam-13 mt. The Chamberlain seam may in part be duplicated in the Bullmoose (Chamberlain) (093P 012).
REFERENCE: MDAP-Sukunka-Bullmoose, Stage I Environmental Study,Vol.1,Nov./77,p.3.

CAPSULE GEOLOGY

Coking coal of low to medium volatile bituminous rank occurs in the Lower-Upper Cretaceous Gates Formation (Fort St. John Group) which is 180 metres thick, and the Lower Cretaceous Lower and Upper Gething Formation (Bullhead Group), 180 and 60 metres thick respectively, interbedded with sandstone, siltstone, claystone and carbonaceous mudstone.

Five seams, A to E, vary from less than 0.5 metres to 4 metres in thickness and occur in the Gates Formation. The Upper Gething Formation contains the Bird seam, 0.5 to 3.0 metres thick, the Skeeter seam, 1.5 to 2.5 metres thick and the Chamberlain seam, 1.5 to 4.5 metres thick. The Lower Gething Formation contains the "middle coals" which appear to be thinner and generally uneconomic.

CAPSULE GEOLOGY

The most persistent coal seam in the Gething Formation is the Chamberlain seam. It varies in total seam thickness from 1.37 to 8.30 metres with thickest sections in the southeast Sukunka area and northeast Bullmoose area. The seam splits to the southwest and southeast. Where the seam is split the upper bed is generally thin and of poor quality.

The Skeeter seam is potentially of economic value in the northern part of the Sukunka area. It is a composite seam with dirt bands near the roof and in the lower half. The seam has a total thickness of 1.2 to 4.0 metres and deteriorates and thins to the south. In the north the main bed is 1.2 to 2.1 metres thick and is separated by up to 1.37 metres of carbonaceous siltstone from the bottom bed which is 0.15 to 0.91 metres thick.

The Bird seam, although not considered economic in the Sukunka area, varies up to 2.74 metres thick in the Bullmoose area. It splits towards the south.

The structure consists of a series of gentle northwest trending folds with a main broad syncline. The strata are cut by a series of northwest trending, southwest dipping thrust faults. The northern part of the Sukunka property appears to be more intensely faulted than in the south or in the Bullmoose area.

Raw coal of the Chamberlain seam contains on average 5.5 per cent ash, with specific gravity of 1.60 containing on average 21.9 per cent volatile matter, 4.1 per cent ash, 0.37 per cent total sulphur and 0.024 per cent phosphorous, with a calorific value of 14,740 BTU per pound.

At the Sukunka (Bullmoose) property, total reserves are 183 million tonnes coal. The Chamberlain seam hosts 170 million tonnes and the Skeeter seam, 13 million tonnes. The Chamberlain seam reserves may, in part, be duplicated in the Bullmoose (Chamberlain) deposit (093P 012) (Mine Development Assessment Process - Sukunka-Bullmoose Stage I Environmental Study, Volume 1-Text, November 1977, page 3).

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EMPR EXPL *1975-E226,E227; 1977-E272,E273; 1978-E309; 1979-357,358; 1980-560,566,567; 1982-18
EMPR FIELDWORK 1977, p. 60; 1978, p. 86; 1981, pp. 244-258; 1984, pp. 251-277; 1986, pp. 369-382; 1987, pp. 451-470; 1988, pp. 565-576; 1991, pp. 405-417
EMPR GEM *1969-423-425; *1970-525,526; 1971-498,499,501,502; 1972-640, 641; 1973-586; *1974-423,424
EMPR MAP 65 (1989)
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EMPR P *1981-3; 1986-3, pp. 18,19
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GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
CIM 77, pp. 142-147
WWW http://www.teckcominco.com/operations/bull/bull.html
http://www.infomine.com/index/properties/BULLMOOSE_MINE.html

DATE CODED: 1986/02/03 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 015**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT SPIEKER**, MT SPIEKER, EAST BULLMOOSE, WOLVERINE, WESTERN CANADIAN COAL

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P03W
BC MAP:
LATITUDE: 55 07 45 N
LONGITUDE: 121 22 55 W
ELEVATION: 1905 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Just east of Mount Spieker summit.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6110360
EASTING: 603167

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted
COMMENTS: A large anticlinal box fold is adjacent to and east of a broad concentrically folded syncline; both trend northwest.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Fort St. John	Gates	
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP:
GRADE: MVol Bituminous

INVENTORY

ORE ZONE: MT SPIEKER
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1982
QUANTITY: 5500000 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: An in situ speculative resource if the second area (not drilled) is not structurally complex.
REFERENCE: Coal Assessment Report 559, page 8.

CAPSULE GEOLOGY

The Lower-Upper Cretaceous Gates Formation (Fort St. John Group) is 170 metres thick and contains four major medium volatile bituminous coal seams interbedded with sandstone, siltstone, mudstone and conglomerate. The total average thickness of seams A, B, C and D is 13 metres and they occur towards the base of the formation. Seam B is 2.5 to 6.0 metres thick and is of economic thickness throughout the Mount Spieker property while seam A (0.8 to 1.4 metres thick), seam C (0.5 to 4.2 metres thick) and seam D (0.8 to 3.5 metres thick) are important in isolated areas. Two smaller coal seams A-B and C2, are developed towards the northwest. Seams C and D contain several rock partings (0.1 to 0.3 metres thick in seam D). In the raw coal, average ash percentage varies from 13.79 (seam A) to 31.19 (seam D), volatile matter from 19.54 (seam C) to 23.02 per cent (seam B), fixed carbon from 45.22 (seam D) to 62.62 per cent (seam B), and sulphur from 0.38 (seam D) to 0.95 per cent (seam A).

In the Lower Cretaceous Gething Formation (Bullhead Group), only the uppermost Bird seam is of economic thickness in the Mount Spieker

CAPSULE GEOLOGY

area. The seam is separated into the upper Bird seam with an average true thickness of 3.5 metres and the lower Bird seam with an average true thickness of 1.75 metres, separated by 2.5 metres of strata. In the raw coal, these seams contain 10 per cent ash and 20 per cent volatile matter and are low volatile bituminous rank. Sulphur content in the upper Bird seam raw coal can be as high as 2.33 per cent cleaning to 1.8 per cent, while contents are 0.8 per cent in the cleaned lower Bird seam.

The structure consists of a large anticlinal box fold adjacent to the east of a broad concentrically folded main syncline. Both trend northwest and are cut by several northwest trending, southwest dipping thrust faults.

An in situ speculative resource is 5.5 million tonnes coal, if the second area (not drilled) is not structurally complex (Coal Assessment Report 559, page 8).

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GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
GCNL #89(May 9), 2000

DATE CODED: 1986/02/03 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/26 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 016**

NATIONAL MINERAL INVENTORY:

NAME(S): **SWAN LAKE**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093P09E
BC MAP:
LATITUDE: 55 30 10 N
LONGITUDE: 120 01 05 W
ELEVATION: 723 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: South end of Swan Lake, 25 kilometres south of the town of Pouce Coupe (Geological Survey of Canada Memoir 259, page 149).

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6154783
EASTING: 688328

COMMODITIES: Marl

MINERALS
SIGNIFICANT: Carbonate
COMMENTS: Calcium carbonate
MINERALIZATION AGE: Unknown

DEPOSIT
CHARACTER: Unconsolidated
CLASSIFICATION: Evaporite Industrial Min.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Smoky	Undefined Formation	

LITHOLOGY: Marl
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Alberta Plateau

CAPSULE GEOLOGY

Bedrock geology consists of Upper Cretaceous Smoky Group marine shales.
Freshwater marl of excellent quality occurs at the south end of Swan Lake and is about 0.30 metres thick and covers the lake bottom where the water is shallow.

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GSC MAP 19-1961; 2669
GSC OF 286
GSC MEM *259, p. 149

DATE CODED: 1989/06/28 CODED BY: GO FIELD CHECK: N
DATE REVISED: 1989/06/28 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 017**

NATIONAL MINERAL INVENTORY:

NAME(S): **MOUNT REESOR**

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093P03W
BC MAP:
LATITUDE: 55 04 00 N
LONGITUDE: 121 26 20 W
ELEVATION: 1722 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of the property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6103324
EASTING: 599692

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded Faulted
COMMENTS: A series of nine northwest trending folds are cut by two northwest trending, southwest dipping thrust faults.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	
Lower Cretaceous	Fort St. John	Gates	

LITHOLOGY: Sandstone
Shale
Siltstone
Conglomerate

HOSTROCK COMMENTS: Coal also occurs in the Gates Formation but much of the section has been eroded leaving insufficient coal to be a significant reserve.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Hart Ranges
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

The main coal seams occur in the Lower Cretaceous Upper Gething Formation (Bullhead Group) interbedded with sandstone, shale, siltstone and minor conglomerate. One of the seams is 2 metres thick. No seams thicker than 1.5 metres were found in the Lower Gething Formation and most were one metre thick or less.

Coal also occurs in the Lower Cretaceous Gates Formation (Fort St. John Group), however the small erosional slice does not contain enough coal to constitute a significant reserve. Two coal seams approximately 1 metre thick were found in the Juro-Cretaceous Upper Minnes Group.

The structure consists of a series of nine northwest trending and northwest plunging folds. The main fold being the Reesor syncline is located close to the centre of the property. Two north west trending, southwest dipping thrust faults cut the strata north and south of the Reesor syncline.

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reports on the Peace River District; Map of Dawson Creek area showing leases, wells and seismic surveys; General surficial and bedrock geology maps)
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/27 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 018**

NATIONAL MINERAL INVENTORY:

NAME(S): **WOLVERINE**, DU PONT (WOLVERINE)

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093P03E
BC MAP:
LATITUDE: 55 02 38 N
LONGITUDE: 121 08 30 W
ELEVATION: 1318 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6101254
EASTING: 618738

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Fort St. John	Gates	

LITHOLOGY: Sandstone
Siltstone
Shale
Conglomerate
Coal

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
RELATIONSHIP:
GRADE:

CAPSULE GEOLOGY

The Lower-Upper Cretaceous Gates Formation (Fort St. John Group) is 300 metres thick and contains four thick seams equivalent to the D, E, G and J seams of the Quintette area (093P 019, 020). These are interbedded with sandstone, siltstone and shale and occur towards the base of the Gates Formation. Fewer thin seams occur in the Upper Gates Formation.

At the Wolverine occurrence, seam D is 2.93 metres thick of which 1.77 metres is coal. The seam contains 49.6 per cent ash total, of which 25.0 per cent is in the coal. Seam E is 5.34 metres thick of which 4.20 metres is coal and contains 33 per cent ash total, of which 19.0 per cent is in the coal. Seam G is 2.0 metres thick of which 1.42 metres is coal and contains 47.3 per cent ash total, of which 16.0 per cent is in the coal. Seam J is 3.55 metres thick of which 3.2 metres is coal and contains 18.6 per cent ash total, of which 9.6 per cent is in the coal.

The structure consists of a series of broad to tighter northwest trending folds, dominated by an anticline in the north. Folds appear to be tighter towards the south. The folds are cut by northwest trending, southwest dipping thrust faults. A normal strike fault may be present in the southeast extremity of the property.

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EMPR COALFILE
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/27 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 019** NATIONAL MINERAL INVENTORY:

NAME(S): **QUINTETTE**, MESA, MESA EXTENSION, SHERIFF, MCCONKEY, DEPUTY

STATUS: Past Producer Open Pit MINING DIVISION: Liard
REGIONS: British Columbia
NTS MAP: 093P03E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 01 40 N NORTHING: 6099371
LONGITUDE: 121 11 45 W EASTING: 615324
ELEVATION: 1676 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Includes production from Skikano (093I 010) and Babcock (093I 011).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted
COMMENTS: A series of northwest trending open folds are cut by northwest trending thrust faults.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Fort St. John	Gates	

LITHOLOGY: Sandstone
Shale
Siltstone
Conglomerate
Coal

HOSTROCK COMMENTS: Coal seams are primarily in the Middle Gates Formation (D, E, G and J seams).

GEOLOGICAL SETTING
TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: MVol Bituminous

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Proven YEAR: 1998
QUANTITY: 18000000 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: Mineable reserves in Babcock (093I 011), Mesa and Mesa Extension at the end of 1998.
REFERENCE: Exploration in BC 1998, page 37.

CAPSULE GEOLOGY

The Lower-Upper Cretaceous Middle Gates Formation (Fort St. John Group) consisting of sandstone, shale, siltstone, conglomerate and coal has been folded into a series of northwest trending open folds with associated low angle thrust faults. Major regional thrusts, the Mesa and Sheriff faults, locally displace the Gates Formation over the Hulcross Formation (Fort St. John Group).

The four main coal seams in the McConkey pit are D, E, G and J seams. Seam D, the uppermost, contains a few sporadically developed thin shale partings and basal coal splits and thins to the southeast and is not considered economic. Seam E and F, 8.4 metres thick, contains many sporadic shale partings and has a consistently developed split, E4, 1.8 to 4.4 metres below the main seam. The G seam, 0.9 metres thick, contains a rock parting and coal split in the upper portion in the southeast. Seam J, 8.9 metres thick, is well-developed and contains a few distinct shale partings in the southeast and represents the main target in the McConkey pit. These seams are

CAPSULE GEOLOGY

restricted to the Middle Gates Formation.

The coal-bearing sequence is capped to the northwest and in the south central areas by up to 40 metres of Lower Cretaceous "Babcock Member" conglomerate and conglomeratic sandstones.

Reserves of clean metallurgical coal are 22.8 million tonnes; undeveloped (geologic) reserves of product coal are 140 million tonnes (The Coal Association of Canada 1993 Directory, page 19).

The Quintette mine, operated by Quintette Coal Limited, had a difficult year and expects to ship 3.8 million tonnes, down from the planned 4.3 million tonnes. Exploration expenditures, estimated at 1 million dollars, were focused on developing reserves for beyond 1998 on Babcock Mountain (093I 011) (35 drillholes) and in the Mesa Extension area (35 drillholes) (Information Circular 1996-1, page 9).

Clean coal reserves, of 12 million tonnes, are contained mainly in the Shikano pit (093I 010). Exploration in 1995 identified two areas, Mesa Extension and mining along contour at Babcock (093I 011), that would add approximately 19 million tonnes of clean coal to the reserve total (Schroeter, T. and Lane, R., personal communication, 1996).

Reserves within existing pits were estimated at 27.7 million tonnes. Teck advanced the development of the Babcock pit. This will provide a fourth working area and increase coal production in 1997 by about 500,000 tonnes. Reserves at Babcock are 12 million tonnes; Mesa Extension contains 7 million tonnes (T. Schroeter, personal communication, 1997).

Production in 1998 is estimated at 3 million tonnes of clean metallurgical coal. Approximately one-third of that total was produced from the Little and Big Windy developments at Mount Babcock (093I 011). Reserves in the Shikano (093I 010), Wolverine (093P 020) and Deputy pits were exhausted during the year. The remaining mineable reserves are contained in the Babcock, Mesa and Mesa Extension areas. Clean coal reserves, at the end of 1998, are an estimated 18 million tonnes. The Babcock development is expected to produce 2 million tonnes of clean coal per annum for the next five years. The balance of 1 million tonnes per year will come from Mesa and Mesa Extension. A planned exploration program consisting of percussion and large-diameter core drilling, together with bulk sampling, on the Window area at Babcock, was postponed indefinitely.

In February 2000, Teck announced plans to close the mine in August 2000, ahead of a planned closure of March 2003. The mine closed on August 17, 2000 (Information Circular 2001-1, page 6).

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EMPR FIELDWORK 1977, p. 60; 1978, p. 86; 1981, pp. 244-258; 1984, pp. 251-277; 1986, pp. 369-382; 1987, pp. 451-470; 1988, pp. 565-576; 1991, pp. 397-417
EMPR GEM 1971-500,501; 1972-639,640; 1973-585; 1974-424,425
EMPR INF CIRC 1993-13; 1995-9, p. 9; 1996-1, p. 9; 1997-1, p. 11; 1998-1, p. 12; 2001-1, pp. 6, 8, 10
EMPR IR 1984-5; 1986-1, p. 104
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EMPR OF 1987-6,7; 1990-33; 1992-1; 1994-1
EMPR P *1981-3; 1986-3, pp. 18-22
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GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
GCNL #11 (Jan.16), #66(April 3), 1998
N MINER Oct.1, 1990; Feb 23, 1998; Apr.12, June 28, 1999; Mar.13, 2000
Teck Corporation 1996, 1997 Annual Reports

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WWW http://www.teckcominco.com/operations/;
http://www.infomine.com/index/

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/27 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 020**

NATIONAL MINERAL INVENTORY:

NAME(S): **QUINTETTE (FRAME)**, WOLVERINE (FRAME), FRAME

STATUS: Past Producer Open Pit
REGIONS: British Columbia
NTS MAP: 093P03E
BC MAP:
LATITUDE: 55 00 30 N
LONGITUDE: 121 13 05 W
ELEVATION: 1554 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Approximate centre of deposit.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6097171
EASTING: 613958

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Cretaceous

DEPOSIT
CHARACTER: Stratabound Massive
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Tabular
MODIFIER: Folded Faulted
COMMENTS: A northwest plunging syncline outcrops on the eastern side of Frame Mountain at 1883 metres elevation.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Fort St. John	Gates	

LITHOLOGY: Sandstone
Siltstone
Mudstone
Conglomerate
Coal

HOSTROCK COMMENTS: The main coal seams are within the Middle Gates Formation.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: GRADE: MVol Bituminous
COMMENTS: Medium volatile bituminous coking coal.

CAPSULE GEOLOGY

The main coal seams within the Frame pit are the D, E, F, G and J seams which consist of medium volatile bituminous coking coal. The Lower-Upper Cretaceous Middle Gates Formation (Fort St. John Group) in which this coal-bearing sequence occurs, consists of interbedded sandstones, siltstones, mudstones and conglomerates. The Lower Cretaceous "Babcock Member" of sandstone/conglomerate overlies the Middle Gates Formation.

Seam D, 2.14 to 2.97 metres thick, is the uppermost seam and has a shale roof with sporadically developed coal splits. The seam contains minor shale partings and is consistent throughout the pit. The roof transition and the middle portion of the E seam consists of a series of coal splits and shale partings of variable thickness. Two mining sections, E1 and E2, have been identified 1.12 and 2.44 metres thick respectively, or 4.29 metres thick where there are no major splits. The upper seam E1 contains a high ash content and is separated from E2 by 75 centimetres of carbonaceous claystone. Seam F, 1.49 to 2.71 metres thick, is separated into F1 and F2. While F2 is persistent throughout the pit, F1 is locally developed and contains many partings. Seam G has two clearly developed coal splits, Upper or G1, 0.73 to 0.66 metres thick, and Lower or G2, 2.47 to 3.03 metres thick. The upper and lower roof and floor sections of G2 contain minor coal splits as does the parting. Seam J contains three main coal splits, Top, 0.66 to 1.13 metres thick, Middle, 0.94 to 1.03 metres thick, and Lower, 2.08 to 2.85 metres thick. Each of the splits is very clean however variable thicknesses of shale and minor coal splits separate them.

The structure of the pit consists of one major feature, the Mast syncline, which is asymmetrical with a northerly axial plunge of approximately 14 degrees which flattens to the north. The northeast

CAPSULE GEOLOGY

limb dips uniformly at 40 to 50 degrees with maximum displacements of up to 40 metres associated with steeply dipping reverse faults. The southwest limb is homoclinal in the upper section with dips increasing from approximately 15 degrees in the southeast to 30 degrees in the northwest. Towards the northwest the dips in the lower part of the limb gradually increase up to 60 to 65 degrees. This disparity between upper and lower sections of the limb resulted in a thrust fault, with increases in throw up to approximately 50 metres in the northwest.

See Quintette (093P 019) for production statistics. The Wolverine pit began producing in 1985 and reserves were exhausted in 1998.

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GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669
GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
WWW http://www.teckcominco.com/operations/; http://www.infomine.com/index/

DATE CODED: 1986/02/12 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/27 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 021**

NATIONAL MINERAL INVENTORY:

NAME(S): **WAPITI**, KISKATINAW, IRIS LAKE

STATUS: Developed Prospect
REGIONS: British Columbia
NTS MAP: 093P02E
BC MAP:
LATITUDE: 55 08 30 N
LONGITUDE: 120 34 35 W
ELEVATION: 1028 Metres
LOCATION ACCURACY: Within 1 KM
COMMENTS: Approximate centre of property.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6113238
EASTING: 654472

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE: Upper Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary
TYPE: A04 Bituminous coal
SHAPE: Irregular
MODIFIER: Folded
COMMENTS: Series of northwest trending, southeast plunging open folds with some associated small scale subsidiary folding. Overall regional dip is to the northeast.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Upper Cretaceous	Wapiti	Undefined Formation	

LITHOLOGY: Sandstone
Siltstone
Carbonaceous Mudstone
Conglomerate

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional
RELATIONSHIP:
COMMENTS: Coal is high volatile bituminous "C" rank.

PHYSIOGRAPHIC AREA: Alberta Plateau
GRADE: HVol Bituminous

INVENTORY

ORE ZONE: WAPITI
REPORT ON: Y

CATEGORY: Inferred
YEAR: 1980
QUANTITY: 11900000 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: Area No.6 immediately north of the proposed mining area has 1.9 mt inferred; area No.9 to the south, has 10 mt inferred.
REFERENCE: Coal Assessment Report 685.

ORE ZONE: WAPITI
REPORT ON: Y

CATEGORY: Indicated
YEAR: 1980
QUANTITY: 45418973 Tonnes

COMMODITY	GRADE	
Coal	100.0000	Per cent

COMMENTS: In-place coal determined at an overall surface mineable ratio of 11.5:1.
REFERENCE: Coal Assessment Report 685.

CAPSULE GEOLOGY

Three coal seams, seams No. 1, 2 and 3, occur in the Upper Cretaceous Wapiti Group which is up to 460 metres thick and consists of interbedded sandstone, siltstone, mudstone and conglomerate, deposited in a deltaic environment.

Seam No. 1, the most persistent coal seam, lies directly above the "Chungo Member" sandstone at the base of the Wapiti Group. Its maximum thickness is slightly over 2.0 metres in the northwest part of the Kiskatinaw block and it thins to the east, north and south,

CAPSULE GEOLOGY

while being eroded away updip to the west. The seam contains a clastic parting in the upper middle part and varies in thickness from 0.10 metres to 1.7 metres. The average ash content of the seam is high (29.0 per cent dried basis). The coal rank is high volatile bituminous "C" and decreases to sub-bituminous "A" in oxidized samples.

Clean coal of +100 mesh floats at specific gravity of 1.50 from adit 1 and contains 11.4 per cent ash, 33.9 per cent volatile matter, 54.7 per cent fixed carbon and 0.53 per cent sulphur with a calorific content of 11,674 BTU per pound. Seams No. 2 and 3 are discontinuous and thin, maximum thickness 0.42 metres and 1.19 metres respectively.

The structure consists of a series of northwest trending, southeast plunging open folds with some associated small scale subsidiary folding. The overall regional dip is to the northeast. Two high angle thrust faults occur in the Kiskatinaw block with throws approximately 100 metres and 500 metres respectively.

In-place coal determined at an overall surface mineable ratio of 11.5:1 totals 45,418,973 tonnes. Area No.6 immediately north of the proposed mining area has 1.9 million tonnes inferred; area No.9 to the south of the proposed mining area has 10 million tonnes inferred (Coal Assessment Report 685).

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GSC OF 286
GSC P 60-16; 61-10; 69-1A, pp. 244,245; 70-1A, pp. 238,239; *89-4, pp. 1-29,50,51,58-63
GSC BULL 132; 152; 219; 250; 259; 328
GSC MAP 19-1961; 2669

DATE CODED: 1986/02/03 CODED BY: EVFK FIELD CHECK: N
DATE REVISED: 1989/06/27 REVISED BY: GO FIELD CHECK: N

MINFILE NUMBER: **093P 022**

NATIONAL MINERAL INVENTORY:

NAME(S): **MT. PALSSON**

STATUS: Showing
REGIONS: British Columbia
NTS MAP: 093P04W
BC MAP:
LATITUDE: 55 05 55 N
LONGITUDE: 121 47 25 W
ELEVATION: 1675 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Located on the southeastern flank of Mount Palsson.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6106433
EASTING: 577192

COMMODITIES: Phosphate

MINERALS
SIGNIFICANT: Fluorapatite
ASSOCIATED: Quartz Calcite
MINERALIZATION AGE: Lower Triassic

DEPOSIT
CHARACTER: Stratabound Concordant
CLASSIFICATION: Sedimentary Syngenetic Industrial Min.
TYPE: F07 Upwelling-type phosphate
SHAPE: Regular
COMMENTS: Shallow west dipping limb of synclinal fold; overturned along strike.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Triassic	Spray River	Sulphur Mountain	

LITHOLOGY: Siltstone
Phosphorite

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Ancestral North America
PHYSIOGRAPHIC AREA: Hart Ranges

INVENTORY

ORE ZONE: SAMPLE
REPORT ON: N

CATEGORY: Assay/analysis
YEAR: 1987
SAMPLE TYPE: Grab

COMMODITY	GRADE	
Phosphate	24.8500	Per cent

COMMENTS: Phosphate is P2O5
REFERENCE: S. Butrenchuk, personal communication, 1987.

CAPSULE GEOLOGY

Phosphorite is exposed in talus near the base of the Whistler member of the Lower Triassic Sulphur Mountain Formation, Spray River Group. The phosphorite bed is estimated to be 1.0 metre or less thick with a quartz-calcite matrix. Host lithologies are fine siltstones and weakly calcareous siltstones.

Phosphate occurs as fluorapatite. A grab sample from this locality contained 24.85 per cent phosphate (Fieldwork 1987).

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DATE CODED: 1987/07/09
DATE REVISED: 1989/06/27
CODED BY: SSB
REVISED BY: GO
FIELD CHECK: Y
FIELD CHECK: N

MINFILE NUMBER: **093P 023** NATIONAL MINERAL INVENTORY:

NAME(S): **PRIME LIME & MARBLE**, BAKER CREEK, SUKUNKA RIVER

STATUS: Past Producer Open Pit MINING DIVISION: Liard
REGIONS: British Columbia
NTS MAP: 093P04W UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 09 09 N NORTHING: 6112295
LONGITUDE: 121 55 07 W EASTING: 568911
ELEVATION: 762 Metres
LOCATION ACCURACY: Within 5 KM
COMMENTS: Quarry on the west side of Sukunka River (NTS Map 093P/04).

COMMODITIES: Limestone

MINERALS
SIGNIFICANT: Calcite
MINERALIZATION AGE: Mississippian

DEPOSIT
CHARACTER: Stratiform Massive
CLASSIFICATION: Sedimentary Industrial Min.
TYPE: R09 Limestone
SHAPE: Regular
MODIFIER: Folded
DIMENSION: 330 x 45 Metres STRIKE/DIP: 170/80W TREND/PLUNGE:
COMMENTS: Deposit strikes between 160 to 180 degrees and dips 75 to 85 degrees west.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Mississippian	Rundle	Undefined Formation	

DATING METHOD: Fossil

LITHOLOGY: Limestone
Shaly Carbonate
Siltstone
Shale

GEOLOGICAL SETTING
TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Hart Ranges
TERRANE: Ancestral North America

INVENTORY

ORE ZONE: PRIME LIME & MARBLE REPORT ON: Y

CATEGORY: Unclassified YEAR: 1986
QUANTITY: 100000000 Tonnes

COMMODITY	GRADE	
Limestone	99.0000	Per cent

COMMENTS: The grade is based on 1986 drilling.
REFERENCE: George Cross News Letter No.122, 1986.

CAPSULE GEOLOGY

The Prime Lime and Marble quarry is located on the northwest side of the Sukunka River, 2 kilometres north-northwest of its confluence with Baker Creek, 64 kilometres south-southwest of Chetwynd.

The quarry lies within a bed of limestone of the Mississippian Rundle Group underlain by shaly carbonates of the Mississippian Banff Formation and overlain by siltstone and shale of the Triassic Sulphur Mountain Formation.

The limestone outcrops as a narrow northwestward trending band along the west limb of an overturned syncline. At the quarry, thickly bedded, homogeneous limestone, striking 160 to 180 degrees and dipping 75 to 85 degrees west, outcrops for 330 metres along the crest of a "hogback" ridge, with a minimum width of 45 metres. The limestone is overlain and underlain by less homogeneous thinly bedded limestone.

The deposit is comprised of fine grained (0.2 to 0.5 millimetre), light to dark brownish grey, massive but highly fractured limestone. Four, 5-metre long, chip samples taken in succession across a 20-metre section averaged 52.8 per cent CaO (94.3 per cent CaCO3), 0.29 per cent MgO, less than 0.5 per cent SiO2,

CAPSULE GEOLOGY

0.096 per cent Al2O3, 0.058 per cent Fe2O3, less than 0.01 per cent Na20, 0.020 per cent K2O, less than 0.0004 per cent manganese, 0.00741 per cent PO4 and 0.01442 per cent titanium (Industrial Mineral File - J.D. Curry, 1983). A sample of crushed and screened limestone taken from a stockpile assayed 55.7 per cent CaO, 0.58 per cent MgO, 0.98 per cent SiO2, 0.30 per cent Al2O3, less than 0.07 per cent Fe2O3, 0.004 per cent MnO, 0.02 per cent TiO2 and 43.36 per cent ignition loss (Geological Fieldwork 1985, p. 239). Subsequent drilling in 1986, encountered limestone averaging 55.5 per cent CaO (99 per cent CaCO3). Reserves are estimated in excess of 100 million tonnes (George Cross Newsletter #123, 1986).

The deposit was quarried to produce limestone for agricultural purposes by Prime Lime and Marble Co. Ltd. during 1984 and 1985. Peace River Lime acquired the quarry in 1986, but failed to place the deposit into production. Northern Lime and Fertilizer Co. Ltd. of Vancouver is planning to be begin quarrying operations in the spring of 1992. The company intends to supply limestone to pulp mills in northern Alberta and to agricultural markets in northern Alberta and northeastern B.C.

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EMPR PF (*Curry, J.D. (1983): Notice of Opening of Quarries by Prime Lime & Marble Ltd.)
GSC MAP 19-1961; 2669
GSC OF 286
GCNL #123, 1986

DATE CODED: 1989/08/28 CODED BY: PSF FIELD CHECK: N
DATE REVISED: 1989/12/01 REVISED BY: PSF FIELD CHECK: N

MINFILE NUMBER: **093P 024** NATIONAL MINERAL INVENTORY:

NAME(S): **HASLER**, HASLER CREEK, DISCOVERY, GOODRICH, QUARTER

STATUS: Past Producer Open Pit Underground MINING DIVISION: Liard
REGIONS: British Columbia
NTS MAP: 093P12W 093O09E UTM ZONE: 10 (NAD 83)
BC MAP:
LATITUDE: 55 30 31 N NORTHING: 6151854
LONGITUDE: 121 59 26 W EASTING: 563752
ELEVATION: 915 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Adit in the Discovery seam above Hasler Creek (Geological Survey of Canada Paper 44-7).

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
COMMENTS: Alternating bright and dull bands within the coal beds.
MINERALIZATION AGE: Lower Cretaceous

DEPOSIT
CHARACTER: Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel
TYPE: A04 Bituminous coal
SHAPE: Regular
MODIFIER: Folded Faulted
COMMENTS: Coal outcrops on the east limb of the northwest trending Pine River Anticline; seams are, on average, 1.2 to 1.8 metres thick.

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Lower Cretaceous	Bullhead	Gething	

LITHOLOGY: Coal
Shale
Siltstone
Sandstone

HOSTROCK COMMENTS: The Discovery seam lies 48 metres below the top of the Gething Formation and varies in thickness from 2 to 6 metres.

GEOLOGICAL SETTING
TECTONIC BELT: Foreland PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North
TERRANE: Overlap Assemblage
METAMORPHIC TYPE: Regional RELATIONSHIP: Post-mineralization GRADE: LVol Bituminous
MVol Bituminous
COMMENTS: Lower Cretaceous Blairmore clastic wedge overlap assemblage.

INVENTORY

ORE ZONE: TOTAL REPORT ON: Y

CATEGORY: Inferred YEAR: 1955
QUANTITY: 7872000 Tonnes

COMMODITY	GRADE
Coal	100.0000 Per cent

COMMENTS: Reserves are fault bound, limited to a depth of 300 metres and have a minimum mining width of 1.2 metres.
REFERENCE: Bulletin 36.

CAPSULE GEOLOGY

The Hasler Creek mine is underlain by the Pine Creek anticline, 7 kilometres east northeast of the town of Mackenzie.

The mine area lies from about 900 metres northwest of Hasler Creek to about 3000 metres southeast. Bedding dips from 10 to 45 degrees on the southwest limb and 50 to 80 degrees on the northeast. Two minor folds parallel the Pine River anticline and all three are cut by three reverse faults striking northwest and dipping steeply to the east.

Three coal seams intersected by drilling and exposed in trenches are within 75 metres of the top of the Lower Cretaceous Gething Formation. The Discovery seam averages 1.8 metres thick , and the Goodrich and Quarter seams average 1.2 metres thick. Analysis of a 200 ton bulk sample showed the coal contains 3.5 per cent ash, 0.5

CAPSULE GEOLOGY

percent sulphur and 74.1 per cent fixed carbon. The sample was described as good coking coal.

Drill inferred reserves with a minimum mining thickness of 1.2 metres are estimated at approximately 8 million short tons (Bulletin 36).

BIBLIOGRAPHY

EMPR AR 1944-88,127-128; 1945-139,*175-176; 1946-249
EMPR BULL *36, 52
EMPR COAL ASS RPT 841 (Report on Tests on Hasler Creek Coal - B.C. Dept.of Railways, 1949)
EMPR FIELDWORK 1991, pp. 433-440
EMPR MAP 33
GSC MAP 2669
GSC MEM 259
GSC OF 286
GSC P 44-7
GCNL #187, 1968

DATE CODED: 1991/03/18 CODED BY: GKK FIELD CHECK: N
DATE REVISED: 1991/03/18 REVISED BY: GKK FIELD CHECK: N

MINFILE NUMBER: **093P 025**

NATIONAL MINERAL INVENTORY:

NAME(S): **PERRY CREEK COAL**, WOLVERINE

STATUS: Prospect
REGIONS: British Columbia
NTS MAP: 093P03E
BC MAP:
LATITUDE: 55 05 10 N
LONGITUDE: 121 14 43 W
ELEVATION: 980 Metres
LOCATION ACCURACY: Within 500M
COMMENTS: Location is the 2002 Notice of Work UTM coordinates.

MINING DIVISION: Liard
UTM ZONE: 10 (NAD 83)
NORTHING: 6105783
EASTING: 612001

COMMODITIES: Coal

MINERALS
SIGNIFICANT: Coal
MINERALIZATION AGE:

DEPOSIT
CHARACTER: Layered Stratiform
CLASSIFICATION: Sedimentary Fossil Fuel

HOST ROCK
DOMINANT HOSTROCK: Sedimentary

STRATIGRAPHIC AGE	GROUP	FORMATION	IGNEOUS/METAMORPHIC/OTHER
Cretaceous	Fort St. John	Gates	

LITHOLOGY: Coarse Grained Clastic Sediment/Sedimentary

GEOLOGICAL SETTING
TECTONIC BELT: Foreland
TERRANE: Overlap Assemblage

PHYSIOGRAPHIC AREA: Rocky Mountain Foothills-North

CAPSULE GEOLOGY

Perry Creek Coal is located approximately 7.5 kilometres northwest of Tumbler Ridge and is accessed by driving 15 kilometres along the Wolverine Forest Service Road off Highway 29.

Western Canadian Coal Corp is working to demonstrate recoverable open-pit resources for its Perry Creek deposit, the first of three deposits to be developed as part of the Wolverine Coal project. The company started a bulk sample program project in 2002. By February 2003, 58 drillholes totalling 7649 metres had been completed on the Perry Creek prospect. Birtley Coal & Industrial Minerals Testing completed washability and analytical work on the J seam bulk sample and reports: ash content (dry basis -- db) -- 8.2 per cent; volatile matter content (db) -- 22.9 per cent; sulphur content -- 0.44 per cent; free swelling index (FSI) -- per cent; and Gieseler fluidity -- 106 dial divisions per minute. The product yields from the raw bulk sample were 93.6-per-cent yield (air-dried moisture basis).

BIBLIOGRAPHY

PR REL Western Canadian Coal Corp., Dec.9, 2002; Feb.13, 2003
WWW http://www.westerncoal.com/

DATE CODED: 2003/04/23 CODED BY: ICLW FIELD CHECK: N
DATE REVISED: 2003/04/24 REVISED BY: ICLW FIELD CHECK: N

MINFILE PRODUCTION REPORT

GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **093L 001** NAME: **EQUITY SILVER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1994	44,000	51,400	Silver	24,509,353	
			Gold	210,228	
			Copper		825,652
1993	414,963	420,363	Silver	61,620,777	
			Gold	682,006	
			Copper		2,863,074
1992	1,473,000	2,607,500	Silver	87,994,946	
			Gold	1,165,404	
			Copper		3,798,007
1991	2,168,600	3,312,800	Silver	156,372,325	
			Gold	1,619,496	
			Copper		4,302,192
1990	3,612,900	3,145,900	Silver	251,928,862	
			Gold	2,156,808	
			Copper		6,763,960
1989	3,320,300	3,114,000	Silver	213,698,179	
			Gold	1,775,573	
			Copper		6,565,900
1988	3,937,196	3,228,212	Silver	183,393,471	
			Gold	1,490,479	
			Copper		6,879,299
1987	4,841,950	3,610,050	Silver	156,079,319	
			Gold	1,221,310	
			Copper		6,014,368
1986	2,650,917	2,958,700	Silver	165,280,641	
			Gold	1,271,386	
			Copper		7,426,937
1985	2,844,972	2,058,700	Silver	135,170,858	
			Gold	922,840	
			Copper		8,389,459
1984	2,164,683	2,089,710	Silver	180,133,000	
			Gold	978,983	
			Copper		10,990,901
1983	2,438,552	2,179,740	Silver	152,684,000	
			Gold	835,816	
			Copper		7,346,833
1982	1,876,029	1,939,546	Silver	274,986,398	
			Gold	959,106	
			Copper		7,633,814
1981	2,023,087	1,909,871	Silver	175,628,426	
			Gold	512,274	
			Copper		4,285,854

SUMMARY TOTALS: 093L 001 NAME: **EQUITY SILVER**

	Metric		Imperial	
Mined:	33,811,149	tonnes	37,270,412	tons
Milled:	32,626,492	tonnes	35,964,551	tons
Recovery:				
Silver:	2,219,480,555	grams	71,357,853	ounces
Gold:	15,801,709	grams	508,036	ounces
Copper:	84,086,250	kilograms	185,378,397	pounds

Comments:

1994: Mine closed January 1994.
1992: Copper/silver concentrate 38,823 tonnes.

MINFILE NUMBER: **093L 002** NAME: **SILVER QUEEN** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1973	53,502	89,156	Silver	9,379,825	
			Gold	59,500	
			Cadmium		9,126
			Copper		246,653
			Lead		535,787
			Zinc		3,908,800
1972	128,120	101,520	Silver	4,268,078	
			Gold	38,692	
			Cadmium		6,645
			Copper		158,356
			Lead		165,999
			Zinc		1,140,883

SUMMARY TOTALS: 093L 002 NAME: **SILVER QUEEN**

	Metric		Imperial	
Mined:	181,622	tonnes	200,204	tons
Milled:	190,676	tonnes	210,184	tons
Recovery:				
Silver:	13,647,903	grams	438,790	ounces
Gold:	98,192	grams	3,157	ounces
Cadmium:	15,771	kilograms	34,769	pounds
Copper:	405,009	kilograms	892,892	pounds
Lead:	701,786	kilograms	1,547,173	pounds
Zinc:	5,049,683	kilograms	11,132,642	pounds

MINFILE NUMBER: **093L 015** NAME: **GOLDEN EAGLE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1980		31	Silver	17,262	
			Lead		648
			Zinc		48
1978			Silver	10,404	
			Gold	9	
			Lead		317
			Zinc		140
1943	9		Silver	56,390	
			Gold	93	
			Lead		889
1941	58		Silver	376,315	
			Gold	218	
			Lead		9,020
			Zinc		6,114
1940	15		Silver	106,621	
			Gold	124	
			Copper		23
			Lead		526
1938	1		Silver	9,082	
1934	15		Silver	102,329	
			Gold	62	
			Lead		2,653
			Zinc		1,648

SUMMARY TOTALS: 093L 015 NAME: **GOLDEN EAGLE**

	Metric		Imperial	
Mined:	98	tonnes	108	tons
Milled:	31	tonnes	34	tons
Recovery:				
Silver:	678,403	grams	21,811	ounces
Gold:	506	grams	16	ounces
Copper:	23	kilograms	51	pounds
Lead:	14,053	kilograms	30,982	pounds
Zinc:	7,950	kilograms	17,527	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **093L 016** NAME: **SILVER CUP** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1938	5		Silver	3,484	
			Lead		1,632
			Zinc		578

SUMMARY TOTALS: 093L 016 NAME: **SILVER CUP**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:		tonnes		tons
Recovery:				
Silver:	3,484	grams	112	ounces
Lead:	1,632	kilograms	3,598	pounds
Zinc:	578	kilograms	1,274	pounds

MINFILE NUMBER: **093L 018** NAME: **TOPLEY RICHFIELD** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1953	32	32	Silver	16,205	
			Gold	31	
			Lead		8,079
			Zinc		3,982
1941	3	3	Silver	1,991	
			Lead		1,290
			Zinc		321
1939	1	1	Silver	902	
1938	7	7	Silver	7,900	
			Lead		163
			Zinc		58

SUMMARY TOTALS: 093L 018 NAME: **TOPLEY RICHFIELD**

	Metric		Imperial	
Mined:	43	tonnes	47	tons
Milled:	43	tonnes	47	tons
Recovery:				
Silver:	26,998	grams	868	ounces
Gold:	31	grams	1	ounces
Lead:	9,532	kilograms	21,014	pounds
Zinc:	4,361	kilograms	9,614	pounds

Comments:

1939: Actual tonnage mined was 0.41 tonnes.

MINFILE NUMBER: **093L 022** NAME: **DOME MOUNTAIN (FORKS)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1951	3	3	Silver	373	
			Gold	187	
			Lead		54
			Zinc		151
1940	2	2	Silver	218	
			Gold	187	

SUMMARY TOTALS: 093L 022 NAME: **DOME MOUNTAIN (FORKS)**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:	5	tonnes	6	tons
Recovery:				
Silver:	591	grams	19	ounces
Gold:	374	grams	12	ounces
Lead:	54	kilograms	119	pounds
Zinc:	151	kilograms	333	pounds

MINFILE NUMBER: **093L 023** NAME: **FREE GOLD (DOME MOUNTAIN)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1982		4,717	Silver	13,424	
			Gold	7,572	
			Lead		1,204
			Zinc		6,114
1981		597	Silver	6,610	
			Gold	4,093	
			Lead		645
			Zinc		792

SUMMARY TOTALS: 093L 023 NAME: **FREE GOLD (DOME MOUNTAIN)**

	Metric		Imperial	
Mined:		tonnes		tons
Milled:	5,314	tonnes	5,858	tons
Recovery:				
Silver:	20,034	grams	644	ounces
Gold:	11,665	grams	375	ounces
Lead:	1,849	kilograms	4,076	pounds
Zinc:	6,906	kilograms	15,225	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **093L 026** NAME: **COPPER CROWN (L.6472)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	1		Silver	41	
			Copper		
1938	2		Silver	71	
			Copper		

SUMMARY TOTALS: 093L 026 NAME: **COPPER CROWN (L.6472)**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:		tonnes		tons
Recovery:				
Silver:	112	grams	4	ounces
Copper:	0	kilograms		pounds

MINFILE NUMBER: **093L 030** NAME: **LAKEVIEW** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	14		Silver	1,400	
			Copper		1,523
1915	34		Silver	6,718	
			Copper		10,473

SUMMARY TOTALS: 093L 030 NAME: **LAKEVIEW**

	Metric		Imperial	
Mined:	48	tonnes	53	tons
Milled:		tonnes		tons
Recovery:				
Silver:	8,118	grams	261	ounces
Copper:	11,996	kilograms	26,447	pounds

MINFILE NUMBER: **093L 041** NAME: **KING (HUNTER BASIN)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1962	25		Silver	283,366	
			Gold	8,160	
			Copper		1,647
1941	225		Silver	185,063	
			Gold	6,501	
			Copper		34,656
1940	6		Silver	3,888	
			Gold	218	
			Copper		936
1915	37		Silver	681,166	
			Gold	684	
			Copper		7,117

SUMMARY TOTALS: 093L 041 NAME: **KING (HUNTER BASIN)**

	Metric		Imperial	
Mined:	293	tonnes	323	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,153,483	grams	37,085	ounces
Gold:	15,563	grams	500	ounces
Copper:	44,356	kilograms	97,788	pounds

Comments:

1941: Combined ore from King & Rainbow (093L 044) for 1941
1940: Combined ore from King & Rainbow (093L 044) for 1940
1915: Combined ore from King & Rainbow (093L 044) for 1915

MINFILE NUMBER: **093L 043** NAME: **COLORADO** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1914	38		Silver	155,515	
			Copper		2,722

SUMMARY TOTALS: 093L 043 NAME: **COLORADO**

	Metric		Imperial	
Mined:	38	tonnes	42	tons
Milled:		tonnes		tons
Recovery:				
Silver:	155,515	grams	5,000	ounces
Copper:	2,722	kilograms	6,001	pounds

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **093L 044** NAME: **RAINBOW (HUNTER BASIN)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1941	225		Silver	185,063	
			Gold	6,501	
			Copper		34,656
1940	6		Silver	3,888	
			Gold	218	
			Copper		936
1915	37		Silver	68,116	
			Gold	684	
			Copper		7,117

SUMMARY TOTALS: 093L 044 NAME: **RAINBOW (HUNTER BASIN)**

	Metric		Imperial	
Mined:	268	tonnes	295	tons
Milled:		tonnes		tons
Recovery:				
Silver:	257,067	grams	8,265	ounces
Gold:	7,403	grams	238	ounces
Copper:	42,709	kilograms	94,157	pounds

Comments:

1941: Combined ore from Rainbow & King (093L 041) for 1941
1940: Combined ore from Rainbow & King (093L 041) for 1940
1915: Combined ore from Rainbow & King (093L 041) for 1915

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
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MINFILE NUMBER: **093L 063** NAME: **SANTA MARIA** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	217		Silver	69,422	
			Copper		33,203

SUMMARY TOTALS: 093L 063 NAME: **SANTA MARIA**

	Metric		Imperial	
Mined:	217	tonnes	239	tons
Milled:		tonnes		tons
Recovery:				
Silver:	69,422	grams	2,232	ounces
Copper:	33,203	kilograms	73,200	pounds

MINFILE NUMBER: **093L 085** NAME: **STOCK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1919	4		Silver	995	
			Copper		1,130
1917	7		Silver	1,835	
			Gold	31	
			Copper		1,802

SUMMARY TOTALS: 093L 085 NAME: **STOCK**

	Metric		Imperial	
Mined:	11	tonnes	12	tons
Milled:		tonnes		tons
Recovery:				
Silver:	2,830	grams	91	ounces
Gold:	31	grams	1	ounces
Copper:	2,932	kilograms	6,464	pounds

MINFILE NUMBER: **093L 088** NAME: **DUTHIE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1988	1,000	1,000	Silver	82,897	
			Gold	1,269	
			Lead		5,996
			Zinc		6,241
1986	500	1,000	Silver	462,857	
			Lead		20,000
			Zinc		25,000
1985	242	242	Silver	895,859	
			Gold	1,482	
			Cadmium		28
			Lead		32,670
			Zinc		37,642
1984	100	100	Silver	534,000	
1983	386	386	Silver	867,134	
			Gold	1,489	
			Lead		32,303
			Zinc		27,284
1947	1	1	Silver	1,617	
			Lead		367
			Zinc		90
1942	65	65	Silver	334,513	
			Gold	467	
			Lead		27,251
			Zinc		7,253
1941	194	194	Silver	958,626	
			Gold	1,524	
			Lead		54,394
			Zinc		31,416
1940	220	220	Silver	1,351,767	
			Gold	1,617	
			Lead		64,911
			Zinc		38,113
1939	20	20	Silver	118,938	
			Gold	124	
			Lead		7,119
			Zinc		1,118
1930	2,337	2,337	Silver	2,049,439	
			Gold	2,924	
			Lead		106,033
			Zinc		93,837
1929	9,407	9,407	Silver	5,931,746	
			Gold	6,283	
			Lead		257,160
			Zinc		236,474
1928	13,590	13,590	Silver	10,137,712	
			Gold	10,077	
			Lead		373,239
			Zinc		388,288
1927	3,773	3,494	Silver	5,505,604	
			Gold	4,852	
			Lead		189,905
			Zinc		139,845
1926	1,522	1,522	Silver	7,624,341	
			Gold	8,802	
			Lead		308,006
			Zinc		268,576
1925	691	691	Silver	2,595,203	
			Gold	3,701	
			Lead		99,501
1924	1,528	1,528	Silver	8,162,765	
			Gold	9,673	
			Lead		342,260
1923	243	243	Silver	1,599,005	
			Gold	1,306	
			Lead		55,646

SUMMARY TOTALS: 093L 088 NAME: **DUTHIE**

	Metric	Imperial
Mined:	35,819 tonnes	39,484 tons
Milled:	36,040 tonnes	39,727 tons

Recovery:

MINFILE NUMBER: **093L 088** NAME: **DUTHIE** STATUS: Past Producer

Silver:	49,214,023	grams	1,582,265	ounces
Gold:	55,590	grams	1,787	ounces
Cadmium:	28	kilograms	62	pounds
Lead:	1,976,761	kilograms	4,358,011	pounds
Zinc:	1,301,177	kilograms	2,868,603	pounds

Comments:

1988: Custom ore. Operated by Bishop Resources Development Ltd.
1986: Recovery based on grade (Mining in BC 1986-1987, p. 57).
1984: Recovery based on grade (Information Circular 1985-1, p. 17).
1927: Includes 279 tonnes crude.
1923: Operated by J. Duthie Mines Ltd.

MINFILE NUMBER: **093L 089** NAME: **DOME** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1980	518	518	Silver	1,004,580	
			Gold	1,586	
			Copper		1,236
			Lead		29,683
			Zinc		32,026
1979	94	94	Silver	344,693	
			Gold	118	
			Lead		8,008
			Zinc		9,279
1954	13,330	13,330	Silver	950,290	
			Gold	17,169	
			Cadmium		4,696
			Copper		7,006
			Lead		721,037
			Zinc		679,871
1953	25,001	24,199	Silver	4,665,139	
			Gold	32,254	
			Cadmium		6,148
			Copper		11,834
			Lead		846,863
			Zinc		993,546

SUMMARY TOTALS: 093L 089 NAME: **DOME**

	Metric		Imperial	
Mined:	38,943	tonnes	42,927	tons
Milled:	38,141	tonnes	42,043	tons
Recovery:				
Silver:	6,964,702	grams	223,920	ounces
Gold:	51,127	grams	1,644	ounces
Cadmium:	10,844	kilograms	23,907	pounds
Copper:	20,076	kilograms	44,260	pounds
Lead:	1,605,591	kilograms	3,539,721	pounds
Zinc:	1,714,722	kilograms	3,780,314	pounds

Comments:

1979: Operated by P. Kindrat.
1954: Operated by Sil-Van Consolidated Mining and Milling Co. Ltd.
1953: Operated by Sil-Van Consolidated Mining and Milling Co. Ltd.

MINFILE NUMBER: **093L 090** NAME: **CORONADO (L.1155)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	10		Silver	21,150	
			Gold	62	
			Lead		4,313
			Zinc		1,480
1939	42		Silver	75,176	
			Gold	311	
			Lead		15,015
			Zinc		5,667
1915	71		Silver	132,405	
			Gold	902	
			Lead		23,667
1905	5		Silver	13,810	
			Lead		2,495

SUMMARY TOTALS: 093L 090 NAME: **CORONADO (L.1155)**

	Metric		Imperial	
Mined:	128	tonnes	141	tons
Milled:		tonnes		tons
Recovery:				
Silver:	242,541	grams	7,798	ounces
Gold:	1,275	grams	41	ounces
Lead:	45,490	kilograms	100,288	pounds
Zinc:	7,147	kilograms	15,756	pounds

Comments:

1905: CORONADA and HOME RUN

MINFILE NUMBER: **093L 093** NAME: **VICTORY** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1939	8		Silver	8,491	
			Gold	124	
1938	1		Silver	1,462	
			Lead		267
			Zinc		109
1925	11		Silver	12,099	
			Gold	62	
			Lead		2,717
			Zinc		1,669
1919	13		Silver	11,321	
			Gold	187	
			Lead		2,502
1915	16		Silver	31,352	
			Gold	187	
			Lead		10,124
1914	4		Silver	12,441	
			Lead		1,451

SUMMARY TOTALS: 093L 093 NAME: **VICTORY**

	Metric		Imperial	
Mined:	53	tonnes	58	tons
Milled:		tonnes		tons
Recovery:				
Silver:	77,166	grams	2,481	ounces
Gold:	560	grams	18	ounces
Lead:	17,061	kilograms	37,613	pounds
Zinc:	1,778	kilograms	3,920	pounds

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MINFILE NUMBER: **093L 097** NAME: **SILVER LAKE (L.7239)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1913	2		Silver	5,412	
			Copper		834

SUMMARY TOTALS: 093L 097 NAME: **SILVER LAKE (L.7239)**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons
Recovery:				
Silver:	5,412	grams	174	ounces
Copper:	834	kilograms	1,839	pounds

MINFILE NUMBER: **093L 098** NAME: **IRON VAULT (L.5754)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1964	1		Silver	3,235	
			Lead		663
			Zinc		71

SUMMARY TOTALS: 093L 098 NAME: **IRON VAULT (L.5754)**

	Metric		Imperial	
Mined:	1	tonnes	1	tons
Milled:		tonnes		tons
Recovery:				
Silver:	3,235	grams	104	ounces
Lead:	663	kilograms	1,462	pounds
Zinc:	71	kilograms	157	pounds

MINFILE NUMBER: **093L 107** NAME: **GLACIER GULCH (NORTH SIDE)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1939	28		Gold	1,306	
1938	16		Gold	1,586	
1937	26		Silver	35,146	
			Gold	124	
			Lead		2,400
			Zinc		6,053
1935	34		Silver	1,182	
			Gold	1,742	
1934	37		Silver	124	
			Gold	1,928	
1933	24		Silver	467	
			Gold	2,550	

SUMMARY TOTALS: 093L 107 NAME: **GLACIER GULCH (NORTH SIDE)**

	Metric		Imperial	
Mined:	165	tonnes	182	tons
Milled:		tonnes		tons
Recovery:				
Silver:	36,919	grams	1,187	ounces
Gold:	9,236	grams	297	ounces
Lead:	2,400	kilograms	5,291	pounds
Zinc:	6,053	kilograms	13,345	pounds

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MINFILE NUMBER: **093L 113** NAME: **VANCOUVER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1935	23		Silver	1,275	
			Lead		370
			Zinc		116

SUMMARY TOTALS: 093L 113 NAME: **VANCOUVER**

	Metric		Imperial	
Mined:	23	tonnes	25	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,275	grams	41	ounces
Lead:	370	kilograms	816	pounds
Zinc:	116	kilograms	256	pounds

MINFILE NUMBER: **093L 116** NAME: **EMPIRE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1914	3		Silver	20,030	
			Lead		699

SUMMARY TOTALS: 093L 116 NAME: **EMPIRE**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:		tonnes		tons
Recovery:				
Silver:	20,030	grams	644	ounces
Lead:	699	kilograms	1,541	pounds

MINFILE NUMBER: **093L 117** NAME: **MIDNIGHT** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1982		17	Silver	85,286	
			Gold	156	
			Lead		3,597
			Zinc		2,724
1981		22	Silver	111,753	
			Gold	156	
			Copper		280
			Lead		6,480
			Zinc		2,584
1938	3		Silver	5,412	
			Gold	31	
			Lead		235
			Zinc		307

SUMMARY TOTALS: 093L 117 NAME: **MIDNIGHT**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:	39	tonnes	43	tons
Recovery:				
Silver:	202,451	grams	6,509	ounces
Gold:	343	grams	11	ounces
Copper:	280	kilograms	617	pounds
Lead:	10,312	kilograms	22,734	pounds
Zinc:	5,615	kilograms	12,379	pounds

MINFILE NUMBER: **093L 122** NAME: **CANADIAN CITIZEN (L.7171)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1962	24		Silver	11,539	
			Gold	373	
			Copper		1,647

SUMMARY TOTALS: 093L 122 NAME: **CANADIAN CITIZEN (L.7171)**

	Metric		Imperial	
Mined:	24	tonnes	26	tons
Milled:		tonnes		tons
Recovery:				
Silver:	11,539	grams	371	ounces
Gold:	373	grams	12	ounces
Copper:	1,647	kilograms	3,631	pounds

MINFILE NUMBER: **093L 125** NAME: **SILVER PICK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1938	5		Silver	64,601	
			Gold	124	
			Copper		521
			Lead		133
			Zinc		327
1936	9		Silver	101,707	
			Gold	218	
			Lead		287
			Zinc		509
1927	9		Silver	42,922	
			Gold	124	
			Copper		365

SUMMARY TOTALS: 093L 125 NAME: **SILVER PICK**

	Metric		Imperial	
Mined:	23	tonnes	25	tons
Milled:		tonnes		tons
Recovery:				
Silver:	209,230	grams	6,727	ounces
Gold:	466	grams	15	ounces
Copper:	886	kilograms	1,953	pounds
Lead:	420	kilograms	926	pounds
Zinc:	836	kilograms	1,843	pounds

MINFILE NUMBER: **093L 127** NAME: **CRONIN** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1974	544	544	Silver	113,557	
			Gold	93	
			Cadmium		308
			Copper		956
			Lead		23,212
			Zinc		39,314
1973	2,994	1,814	Silver	252,712	
			Gold	342	
			Cadmium		509
			Copper		1,346
			Lead		42,062
			Zinc		49,530
1972	907	635	Silver	275,728	
			Gold	311	
			Cadmium		557
			Lead		44,946
			Zinc		47,642
1971	907	907	Silver	364,869	
			Gold	435	
			Cadmium		855
			Lead		49,183
			Zinc		72,321
1970	1,584	1,584	Silver	367,015	
			Gold	840	
			Cadmium		650
			Lead		50,508
			Zinc		53,243
1969	272	272	Silver	77,291	
			Gold	62	
			Cadmium		155
			Lead		13,866
			Zinc		15,579
1967	680	680	Silver	145,407	
			Gold	187	
			Cadmium		495
			Lead		33,595
			Zinc		47,523
1966	907	907	Silver	312,430	
			Gold	218	
			Cadmium		1,040
			Lead		50,315
			Zinc		80,396
1965	703	703	Silver	379,892	
			Gold	156	
			Cadmium		1,167
			Lead		63,472
			Zinc		88,967
1964	454	454	Silver	170,227	
			Gold	249	
			Cadmium		476
			Lead		27,649
			Zinc		41,592
1963	328	328	Silver	108,798	
			Gold	218	
			Cadmium		255
			Lead		14,037
			Zinc		18,809
1961	1,102	1,102	Silver	360,266	
			Gold	467	
			Cadmium		625
			Lead		53,054
			Zinc		48,364
1960	921	921	Silver	281,607	
			Gold	498	
			Cadmium		430
			Lead		41,603
			Zinc		34,474
1959	907	907	Silver	302,197	
			Gold	342	
			Cadmium		440
			Lead		49,013
			Zinc		36,910
1958	112	112	Silver	191,874	

MINFILE NUMBER: **093L 127** NAME: **CRONIN** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1958	112	112	Gold	187	
			Lead		31,969
			Zinc		30,909
1957	5,368	5,368	Silver	2,072,237	
			Gold	1,959	
			Cadmium		4,891
			Copper		8,092
			Lead		317,033
			Zinc		384,805
1956	3,810	3,810	Silver	1,436,554	
			Gold	1,244	
			Cadmium		3,457
			Lead		294,727
			Zinc		275,443
1952	3,184	3,184	Silver	740,998	
			Gold	871	
			Cadmium		1,702
			Lead		121,867
			Zinc		128,133
1951	55	55	Silver	62,486	
			Gold	93	
			Lead		12,789
			Zinc		16,162
1929	27	27	Silver	21,368	
			Lead		6,214
			Zinc		7,765
1917	72	72	Silver	132,405	
			Lead		26,064

SUMMARY TOTALS: 093L 127 NAME: **CRONIN**

	Metric		Imperial	
Mined:	25,838	tonnes	28,482	tons
Milled:	24,386	tonnes	26,881	tons
Recovery:				
Silver:	8,169,918	grams	262,669	ounces
Gold:	8,772	grams	282	ounces
Cadmium:	18,012	kilograms	39,710	pounds
Copper:	10,394	kilograms	22,915	pounds
Lead:	1,367,178	kilograms	3,014,111	pounds
Zinc:	1,517,881	kilograms	3,346,354	pounds

MINFILE NUMBER: **093L 128** NAME: **HYLAND BASIN** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	4		Silver	25,629	
			Gold	124	
			Lead		904
1935	6		Silver	59,251	
			Gold	218	
			Lead		2,492
			Zinc		397

SUMMARY TOTALS: 093L 128 NAME: **HYLAND BASIN**

	Metric		Imperial	
Mined:	10	tonnes	11	tons
Milled:		tonnes		tons
Recovery:				
Silver:	84,880	grams	2,729	ounces
Gold:	342	grams	11	ounces
Lead:	3,396	kilograms	7,487	pounds
Zinc:	397	kilograms	875	pounds

MINFILE NUMBER: **093L 131** NAME: **DRIFT** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1927	5		Silver	8,367	
			Copper		175
1918	9		Silver	62,206	
			Copper		1,814
1917	9		Silver	62,206	
			Copper		2,722

SUMMARY TOTALS: 093L 131 NAME: **DRIFT**

	Metric		Imperial	
Mined:	23	tonnes	25	tons
Milled:		tonnes		tons
Recovery:				
Silver:	132,779	grams	4,269	ounces
Copper:	4,711	kilograms	10,386	pounds

Comments:

1918: This could be duplication.
1917: This could be duplication.

MINFILE NUMBER: **093L 132** NAME: **DRIFTWOOD (L.6776)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1937	9		Silver	21,928	
			Gold	93	
			Copper		109
			Lead		327
			Zinc		245

SUMMARY TOTALS: 093L 132 NAME: **DRIFTWOOD (L.6776)**

	Metric		Imperial	
Mined:	9	tonnes	10	tons
Milled:		tonnes		tons
Recovery:				
Silver:	21,928	grams	705	ounces
Gold:	93	grams	3	ounces
Copper:	109	kilograms	240	pounds
Lead:	327	kilograms	721	pounds
Zinc:	245	kilograms	540	pounds

MINFILE NUMBER: **093L 134** NAME: **REISETER 4** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1970	19		Antimony		6,302

SUMMARY TOTALS: 093L 134 NAME: **REISETER 4**

	Metric		Imperial	
Mined:	19	tonnes	21	tons
Milled:		tonnes		tons

Recovery:

Antimony:	6,302	kilograms	13,894	pounds

Comments:

1970: About 19 tonnes of hand-sorted ore

MINFILE NUMBER: **093L 146** NAME: **GRANISLE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1982	1,822,625	1,880,953	Silver	1,707,084	
			Gold	135,570	
			Copper		6,433,439
1981	3,217,860	3,832,538	Silver	3,249,878	
			Gold	284,534	
			Copper		11,763,221
			Molybdenum		6,582
1980	3,192,404	3,936,725	Silver	4,075,675	
			Gold	387,083	
			Copper		13,258,799
1979	4,716,418	4,382,882	Silver	5,338,725	
			Gold	497,624	
			Copper		17,326,860
1978	4,621,464	4,549,265	Silver	4,819,410	
			Gold	467,571	
			Copper		14,851,373
1977	4,491,792	4,474,119	Silver	5,990,904	
			Gold	559,761	
			Copper		17,404,635
1976	3,932,981	4,008,222	Silver	4,549,902	
			Gold	408,227	
			Copper		14,672,658
1975	4,539,402	4,475,103	Silver	4,982,701	
			Gold	552,140	
			Copper		17,034,399
1974	4,409,485	3,967,166	Silver	6,503,140	
			Gold	617,799	
			Copper		18,435,360
1973	4,186,331	4,123,228	Silver	5,488,062	
			Gold	518,674	
			Copper		17,946,632
1972	2,330,740	2,301,641	Silver	3,788,656	
			Gold	380,514	
			Copper		11,298,797
1971	2,093,529	2,099,833	Silver	3,173,128	
			Gold	326,861	
			Copper		10,581,017
1970	2,177,266	2,171,028	Silver	3,274,337	
			Gold	345,648	
			Copper		10,338,154
1969	2,148,174	2,113,600	Silver	4,299,026	
			Gold	445,986	
			Copper		11,288,131
1968	2,023,202	2,023,202	Silver	3,261,523	
			Gold	368,664	
			Copper		9,846,895
1967	2,158,237	1,795,469	Silver	4,895,706	
			Gold	492,049	
			Copper		10,864,841
1966	211,241	186,543	Silver	354,668	
			Gold	44,011	
			Copper		954,244

SUMMARY TOTALS: 093L 146 NAME: **GRANISLE**

	Metric		Imperial	
Mined:	52,273,151	tonnes	57,621,285	tons
Milled:	52,321,517	tonnes	57,674,599	tons
Recovery:				
Silver:	69,752,525	grams	2,242,593	ounces
Gold:	6,832,716	grams	219,677	ounces
Copper:	214,299,455	kilograms	472,449,293	pounds
Molybdenum:	6,582	kilograms	14,511	pounds

Comments:

1982: Operations suspended in June 1982.

MINFILE NUMBER: **093L 152** NAME: **PINE CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	15,289		Coal		15,288,800
1944	20,326		Coal		20,326,100

SUMMARY TOTALS: 093L 152 NAME: **PINE CREEK**

	Metric		Imperial	
Mined:	35,615	tonnes	39,259	tons
Milled:		tonnes		tons

Recovery:

Coal:	35,614,900	kilograms	78,517,392	pounds

Comments:

1945: Betty mine closed in 1945.
1944: Betty mine.

MINFILE NUMBER: **093L 156** NAME: **TELKWA COAL** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1985	232	232	Coal		232,000
1984	139	139	Coal		7,000
1983	80	80	Coal		6,000
1982	275	275	Coal		275,000
1981	15,000	15,000	Coal		15,000,000
1980	160	160	Coal		160,000
1979	225	225	Coal		225,000
1978	308	308	Coal		272,000
1977	285	285	Coal		231,000
1976	265	265	Coal		214,000
1975	318	318	Coal		318,000
1974	393	393	Coal		242,916
1973	272	272	Coal		243,126
1972	432	432	Coal		431,820
1970	2,189	2,189	Coal		2,189,040
1969	8,596	8,596	Coal		8,595,600
1968	12,152	12,152	Coal		12,151,740
1967	11,782	11,782	Coal		11,781,600
1966	10,864	10,864	Coal		10,863,540
1965	5,352	5,352	Coal		5,352,400
1964	6,133	6,133	Coal		6,133,480
1963	5,085	5,085	Coal		5,084,770
1962	5,400	5,400	Coal		5,399,600
1961	5,229	5,229	Coal		5,229,000
1960	4,914	4,914	Coal		4,914,220
1959	5,011	5,011	Coal		5,011,300
1958	4,747	4,747	Coal		4,747,300
1957	4,528	4,528	Coal		4,527,760
1956	7,759	7,759	Coal		7,759,153
1955	28,540	28,540	Coal		28,540,040
1954	33,178	33,178	Coal		33,177,570
1953	38,225	38,225	Coal		38,225,150
1952	33,842	33,842	Coal		33,841,600
1951	25,126	25,126	Coal		25,126,300
1950	11,397	11,397	Coal		11,396,960
1949	10,324	10,324	Coal		10,323,760
1948	10,116	10,116	Coal		10,116,020
1947	9,776	9,776	Coal		9,775,950
1946	10,877	10,877	Coal		10,877,300
1945	10,731	10,731	Coal		10,730,990
1944	13,007	13,007	Coal		13,006,800

SUMMARY TOTALS: 093L 156 NAME: **TELKWA COAL**

	Metric		Imperial	
Mined:	353,264	tonnes	389,407	tons
Milled:	353,264	tonnes	389,407	tons
Recovery:				
Coal:	352,736,805	kilograms	777,651,321	pounds

Comments:

1985: Raw thermal coal.
1984: Thermal coal.
1982: Thermal coal.
1981: 15,000,000 kg of fine coal dust screened.
1980: Thermal coal.
1979: Thermal coal.
1966: Underground (3071 tonnes) and strip (7793 tonnes).

MINFILE NUMBER: **093L 201** NAME: **SILVER KING** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1927	6		Silver	20,528	
			Gold	62	
			Copper		107
			Lead		315
			Zinc		348
1917	6		Silver	21,337	
			Lead		3,175

SUMMARY TOTALS: 093L 201 NAME: **SILVER KING**

	Metric		Imperial	
Mined:	12	tonnes	13	tons
Milled:		tonnes		tons
Recovery:				
Silver:	41,865	grams	1,346	ounces
Gold:	62	grams	2	ounces
Copper:	107	kilograms	236	pounds
Lead:	3,490	kilograms	7,694	pounds
Zinc:	348	kilograms	767	pounds

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MINFILE NUMBER: **093L 231** NAME: **SILVER LAKE 2 (L.7240)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	5		Silver	36,079	
			Gold	62	
			Lead		1,817

SUMMARY TOTALS: 093L 231 NAME: **SILVER LAKE 2 (L.7240)**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:		tonnes		tons
Recovery:				
Silver:	36,079	grams	1,160	ounces
Gold:	62	grams	2	ounces
Lead:	1,817	kilograms	4,006	pounds

MINFILE NUMBER: **093L 276** NAME: **DOME MOUNTAIN** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1992	27,685	27,685	Gold	275,260	
1991	3,205	3,205	Silver	136,982	
			Gold	86,179	

SUMMARY TOTALS: 093L 276 NAME: **DOME MOUNTAIN**

	Metric		Imperial	
Mined:	30,890	tonnes	34,050	tons
Milled:	30,890	tonnes	34,050	tons
Recovery:				
Silver:	136,982	grams	4,404	ounces
Gold:	361,439	grams	11,621	ounces

Comments:

1992: Information Circular 1994-1, page 8.
1991: George Cross News Letter No.6 (January 9), 1992

MINFILE NUMBER: **093M 001** NAME: **BELL** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1992	931,192	1,099,336	Silver	881,784	
			Gold	248,206	
			Copper		6,089,137
1991	4,734,132	4,871,475	Silver	3,616,966	
			Gold	1,021,771	
			Copper		25,557,139
1990	4,878,601	5,422,912	Silver	3,197,799	
			Gold	901,397	
			Copper		21,349,508
1989	6,119,763	5,535,766	Silver	2,856,556	
			Gold	780,107	
			Copper		18,506,138
1988	5,482,693	5,367,338	Silver	3,161,606	
			Gold	871,364	
			Copper		22,632,003
1987	5,388,921	5,409,541	Silver	3,856,147	
			Gold	892,514	
			Copper		23,396,427
1986	5,761,215	5,333,126	Silver	3,793,100	
			Gold	745,426	
			Copper		21,433,848
1985	1,859,969	1,587,760	Silver	998,982	
			Gold	175,766	
			Copper		5,326,924
1982	3,353,856	3,374,530	Silver	2,039,424	
			Gold	376,134	
			Copper		10,849,825
1981	5,520,508	5,429,531	Silver	2,835,020	
			Gold	1,010,459	
			Copper		22,648,730
1980	5,162,167	5,011,943	Silver	2,259,450	
			Gold	848,347	
			Copper		17,532,042
1979	4,831,942	5,073,909	Silver	1,661,368	
			Gold	656,601	
			Copper		13,136,524
1978	4,080,296	4,470,070	Silver	2,210,148	
			Gold	763,299	
			Copper		17,144,917
1977	4,231,876	4,409,135	Silver	2,066,888	
			Gold	714,280	
			Copper		15,890,606
1976	1,544,895	1,925,246	Silver	823,265	
			Gold	295,292	
			Copper		6,651,253
1975	4,480,660	4,335,049	Silver	2,061,227	
			Gold	739,069	
			Copper		16,466,056
1974	4,161,273	4,083,215	Gold	958,937	
			Copper		20,033,963
1973	3,802,836	3,729,711	Gold	774,091	
			Copper		17,248,440
1972	819,293	696,052	Gold	112,904	
			Copper		2,902,059

SUMMARY TOTALS: 093M 001 NAME: **BELL**

	Metric		Imperial	
Mined:	77,146,088	tonnes	85,039,005	tons
Milled:	77,165,645	tonnes	85,060,562	tons
Recovery:				
Silver:	38,319,730	grams	1,232,006	ounces
Gold:	12,885,964	grams	414,293	ounces
Copper:	304,795,539	kilograms	671,958,951	pounds

Comments:

1992: Copper concentrates 21,452 t. Closed end of June 1992.
1985: Re-opened in September 1985.
1982: Operations suspended in 1982.

MINFILE NUMBER: **093M 015** NAME: **FRENCH PEAK** STATUS: Developed Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1974	30	30	Silver	161,643	
			Gold	62	
			Copper		1,250
			Lead		5,293
			Zinc		719
1965	20	20	Silver	197,380	
			Gold	62	
			Lead		3,346
1964	2	2	Silver	29,392	
			Lead		301
			Zinc		35

SUMMARY TOTALS: 093M 015 NAME: **FRENCH PEAK**

	Metric		Imperial	
Mined:	52	tonnes	57	tons
Milled:	52	tonnes	57	tons
Recovery:				
Silver:	388,415	grams	12,488	ounces
Gold:	124	grams	4	ounces
Copper:	1,250	kilograms	2,756	pounds
Lead:	8,940	kilograms	19,709	pounds
Zinc:	754	kilograms	1,662	pounds

MINFILE NUMBER: **093M 021** NAME: **VIRGINIA SILVER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1976	189	189	Silver	485,767	
			Gold	317	
			Lead		7,145
			Zinc		6,240
1975	60	60	Silver	212,185	
			Gold	84	
			Lead		2,612

SUMMARY TOTALS: 093M 021 NAME: **VIRGINIA SILVER**

	Metric		Imperial	
Mined:	249	tonnes	274	tons
Milled:	249	tonnes	274	tons
Recovery:				
Silver:	697,952	grams	22,440	ounces
Gold:	401	grams	13	ounces
Lead:	9,757	kilograms	21,510	pounds
Zinc:	6,240	kilograms	13,757	pounds

MINFILE NUMBER: **093M 038** NAME: **SILVERTON** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1981		143	Silver	250,655	
			Gold	415	
			Lead		9,168
			Zinc		13,066

SUMMARY TOTALS: 093M 038 NAME: **SILVERTON**

	Metric		Imperial	
Mined:		tonnes		tons
Milled:	143	tonnes	158	tons
Recovery:				
Silver:	250,655	grams	8,059	ounces
Gold:	415	grams	13	ounces
Lead:	9,168	kilograms	20,212	pounds
Zinc:	13,066	kilograms	28,806	pounds

MINFILE NUMBER: **093M 040** NAME: **SILVER CUP** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1979	181		Silver	22,985	
			Lead		2,790
			Zinc		2,374
1978	26		Silver	13,377	
			Lead		1,642
			Zinc		2,356
1937			Silver	1,400	
			Lead		88
			Zinc		109
1930			Silver	214,797	
			Gold	31	
			Lead		11,678
			Zinc		9,755
1929	5,194	5,180	Silver	2,034,136	
			Gold	373	
			Lead		123,207
			Zinc		88,939
1928	232		Silver	500,012	
			Gold	156	
			Lead		30,796
			Zinc		20,685
1927	25		Silver	84,476	
			Lead		4,979
			Zinc		2,743
1925	91		Silver	170,289	
			Lead		12,495
1916	36		Silver	124,412	
			Lead		18,144
1915	64		Silver	278,123	
			Lead		18,701
1914	21		Silver	103,169	
			Lead		5,899

SUMMARY TOTALS: 093M 040 NAME: **SILVER CUP**

	Metric		Imperial	
Mined:	5,870	tonnes	6,471	tons
Milled:	5,180	tonnes	5,710	tons
Recovery:				
Silver:	3,547,176	grams	114,044	ounces
Gold:	560	grams	18	ounces
Lead:	230,419	kilograms	507,987	pounds
Zinc:	126,961	kilograms	279,901	pounds

MINFILE NUMBER: **093M 043** NAME: **SUNRISE (L. 595)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1980	191	191	Silver	31,850	
			Gold	6,656	
			Copper		229
			Lead		3,376
			Zinc		4,030
1979	181	181	Silver	22,985	
			Lead		2,790
			Zinc		2,374
1978	26	26	Silver	19,377	
			Lead		1,642
			Zinc		2,356
1975	40	40	Silver	45,597	
			Lead		4,867
			Zinc		4,908
1970	22	22	Silver	16,236	
			Lead		1,090
			Zinc		1,788
1915	67	67	Silver	257,160	
			Lead		29,989

SUMMARY TOTALS: 093M 043 NAME: **SUNRISE (L. 595)**

	Metric		Imperial	
Mined:	527	tonnes	581	tons
Milled:	527	tonnes	581	tons
Recovery:				
Silver:	393,205	grams	12,642	ounces
Gold:	6,656	grams	214	ounces
Copper:	229	kilograms	505	pounds
Lead:	43,754	kilograms	96,461	pounds
Zinc:	15,456	kilograms	34,075	pounds

Comments:

1980: Crude ore.
1978: Crude ore.
1975: Crude ore.

MINFILE NUMBER: **093M 047** NAME: **AMERICAN BOY** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1955	19		Silver	48,738	
			Gold	31	
			Lead		3,570
			Zinc		3,403
1918	230		Silver	115,019	
			Gold	311	
			Lead		5,761
			Zinc		7,140
1916	25		Silver	87,088	
			Lead		10,160
1915	12		Silver	37,168	
			Lead		2,689
1914	41		Silver	143,198	
			Gold	93	
			Lead		11,450
1913	21		Silver	63,886	
			Gold	93	
			Lead		4,602

SUMMARY TOTALS: 093M 047 NAME: **AMERICAN BOY**

	Metric		Imperial	
Mined:	348	tonnes	384	tons
Milled:		tonnes		tons
Recovery:				
Silver:	495,097	grams	15,918	ounces
Gold:	528	grams	17	ounces
Lead:	38,232	kilograms	84,287	pounds
Zinc:	10,543	kilograms	23,243	pounds

MINFILE NUMBER: **093M 049** NAME: **SILVER STANDARD (L. 2262)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1989	23	23	Silver	54,091	
			Lead		5,152
			Zinc		1,315
1988	23	23	Silver	54,091	
			Lead		5,152
			Zinc		1,315
1985	175	175	Silver	429,005	
			Gold	441	
			Lead		9,930
			Zinc		9,932
1984	280	280	Silver	681,473	
			Gold	1,145	
			Lead		30,016
			Zinc		22,279
1983	133	133	Silver	215,485	
			Gold	323	
			Lead		7,302
			Zinc		7,336
1982	571	571	Silver	1,105,418	
			Gold	2,146	
			Cadmium		76
			Lead		41,039
			Zinc		45,334
1981	424	424	Silver	853,940	
			Gold	1,010	
			Lead		26,896
			Zinc		26,965
1979	93	93	Silver	114,243	
			Gold	233	
			Lead		5,348
			Zinc		5,627
1978	57	57	Silver	78,286	
			Gold	187	
			Copper		138
			Lead		2,811
			Zinc		4,016
1977	148	148	Silver	236,725	
			Gold	560	
			Copper		484
			Lead		11,541
			Zinc		15,681
1976	152	152	Silver	255,791	
			Gold	746	
			Copper		245
			Lead		8,842
			Zinc		12,759
1975	133	133	Silver	189,386	
			Gold	218	
			Lead		4,352
			Zinc		4,523
1974	209	209	Silver	307,267	
			Gold	622	
			Lead		4,150
			Zinc		10,055
1973	111	111	Silver	213,647	
			Gold	373	
			Lead		6,911
			Zinc		5,322
1971	363	236	Silver	387,543	
			Gold	591	
			Cadmium		42
			Copper		207
			Lead		11,880
			Zinc		9,918
1970	862	441	Silver	263,007	
			Gold	529	
			Cadmium		123
			Copper		544
			Lead		6,501
			Zinc		9,985
1969	953	802	Silver	866,623	
			Gold	1,369	

MINFILE NUMBER: **093M 049** NAME: **SILVER STANDARD (L. 2262)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1969	953	802	Cadmium		78
			Lead		27,408
			Zinc		24,054
1968	690	538	Silver	841,087	
			Gold	1,555	
			Cadmium		101
			Lead		20,242
			Zinc		22,422
1967	368	368	Silver	510,556	
			Gold	995	
			Lead		16,739
			Zinc		13,996
1965	85	85	Silver	268,326	
			Gold	467	
			Lead		10,335
			Zinc		15,319
1963	24	24	Silver	74,803	
			Gold	156	
			Lead		1,795
			Zinc		7,031
1962	47	47	Silver	246,709	
			Gold	280	
			Lead		5,809
			Zinc		4,166
1960	34	34	Silver	161,984	
			Gold	187	
			Copper		334
			Lead		5,181
			Zinc		5,582
1959	16	16	Silver	138,377	
			Gold	156	
			Cadmium		36
			Copper		197
			Lead		5,195
			Zinc		6,297
1958	4,576	4,576	Silver	5,547,127	
			Gold	8,305	
			Cadmium		7,605
			Copper		8,091
			Lead		223,184
			Zinc		483,399
1957	19,738	19,738	Silver	23,177,178	
			Gold	33,218	
			Cadmium		9,790
			Copper		39,700
			Lead		1,481,680
			Zinc		914,358
1956	12,485	12,485	Silver	16,963,576	
			Gold	24,945	
			Cadmium		9,573
			Copper		28,414
			Lead		594,057
			Zinc		753,906
1955	12,392	9,115	Silver	11,265,382	
			Gold	19,968	
			Cadmium		8,754
			Copper		22,142
			Lead		409,126
			Zinc		697,555
1954	19,394	19,394	Silver	29,764,700	
			Gold	65,161	
			Cadmium		22,657
			Copper		62,367
			Lead		960,478
			Zinc		1,662,845
1953	28,569	19,558	Silver	27,095,845	
			Gold	56,017	
			Cadmium		18,115
			Copper		39,787
			Lead		787,317
			Zinc		1,445,664
1952	18,169	18,954	Silver	28,230,514	
			Gold	54,430	

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MINFILE NUMBER: **093M 049** NAME: **SILVER STANDARD (L. 2262)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1952	18,169	18,954	Cadmium		21,310
			Lead		743,220
			Zinc		1,519,990
1951	18,922	18,922	Silver	27,123,433	
			Gold	47,152	
			Cadmium		19,049
			Lead		837,302
			Zinc		1,350,560
1950	26,963	7,818	Silver	27,912,454	
			Gold	60,900	
			Cadmium		20,171
			Lead		790,063
			Zinc		1,559,896
1949	20,895	15,890	Silver	11,784,553	
			Gold	39,408	
			Cadmium		8,259
			Lead		273,947
			Zinc		789,164
1948	3,972	3,214	Silver	1,448,125	
			Gold	6,065	
			Cadmium		1,028
			Lead		28,488
			Zinc		115,880
1922	816	816	Silver	628,001	
			Gold	1,400	
			Lead		14,052
			Zinc		9,558
1921	26	26	Silver	113,246	
			Gold	249	
			Lead		2,236
			Zinc		5,244
1920	3,629	3,629	Silver	3,204,231	
			Gold	6,780	
			Lead		85,950
			Zinc		205,709
1919	2,908	2,908	Silver	2,220,536	
			Gold	4,292	
			Lead		79,351
			Zinc		101,849
1918	3,175	3,175	Silver	1,932,149	
			Gold	4,417	
			Lead		50,289
			Zinc		134,885
1917	609	609	Silver	1,884,220	
			Gold	4,386	
			Lead		55,856
			Zinc		165,151
1916	780	780	Silver	2,713,426	
			Gold	3,919	
			Lead		46,531
			Zinc		76,483
1915	140	140	Silver	830,419	
			Gold	1,275	
			Lead		24,892
1914	668	668	Silver	3,792,824	
			Gold	6,221	
			Lead		127,927
1913	256	256	Silver	1,208,009	
			Gold	1,835	
			Lead		61,213

SUMMARY TOTALS: 093M 049 NAME: **SILVER STANDARD (L. 2262)**

	Metric		Imperial	
Mined:	205,056	tonnes	226,036	tons
Milled:	167,794	tonnes	184,961	tons
Recovery:				
Silver:	237,387,811	grams	7,632,184	ounces
Gold:	464,632	grams	14,938	ounces
Cadmium:	146,767	kilograms	323,566	pounds
Copper:	202,650	kilograms	446,767	pounds
Lead:	7,957,686	kilograms	17,543,690	pounds
Zinc:	12,283,325	kilograms	27,080,089	pounds

MINFILE NUMBER: **093M 049** NAME: **SILVER STANDARD (L. 2262)** STATUS: Past Producer

Comments:
Comments:

1989: Custom ore.
1988: Custom ore.

MINFILE NUMBER: **093M 051** NAME: **MOHAWK (L. 5048)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1929	49		Silver	226,803	
			Gold	31	
			Lead		7,246
			Zinc		11,733
1928	63		Silver	257,844	
			Gold	62	
			Lead		10,456
			Zinc		11,667
1925	16		Silver	32,720	
1913	41		Silver	160,958	
			Lead		5,336

SUMMARY TOTALS: 093M 051 NAME: **MOHAWK (L. 5048)**

	Metric		Imperial	
Mined:	169	tonnes	186	tons
Milled:		tonnes		tons
Recovery:				
Silver:	678,325	grams	21,809	ounces
Gold:	93	grams	3	ounces
Lead:	23,038	kilograms	50,790	pounds
Zinc:	23,400	kilograms	51,588	pounds

Comments:

1925: Mohawk 1925-1929.
1913: Omineca (Erie).

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MINFILE NUMBER: **093M 057** NAME: **BLACK PRINCE (L. 2411)** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1915	19		Silver	120,338	
			Lead		619

SUMMARY TOTALS: 093M 057 NAME: **BLACK PRINCE (L. 2411)**

	Metric		Imperial	
Mined:	19	tonnes	21	tons
Milled:		tonnes		tons
Recovery:				
Silver:	120,338	grams	3,869	ounces
Lead:	619	kilograms	1,365	pounds

MINFILE NUMBER: **093M 067** NAME: **RED ROSE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1954	26,888	26,888	Silver	11,758	
			Gold	9,324	
			Copper		17,024
			Tungsten		229,077
1953	36,463	33,967	Silver	15,048	
			Gold	9,975	
			Copper		9,428
			Tungsten		254,669
1952	26,484	26,484	Tungsten		184,696
1943	16,222	16,222	Tungsten		229,540
1942	7,316	7,267	Tungsten		79,469

SUMMARY TOTALS: 093M 067 NAME: **RED ROSE**

	Metric		Imperial	
Mined:	113,373	tonnes	124,972	tons
Milled:	110,828	tonnes	122,167	tons
Recovery:				
Silver:	26,806	grams	862	ounces
Gold:	19,299	grams	620	ounces
Copper:	26,452	kilograms	58,317	pounds
Tungsten:	977,451	kilograms	2,154,910	pounds

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MINFILE NUMBER: **093M 070** NAME: **HIGHLAND BOY (L.1000)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	68		Silver	1,089	
			Gold	124	
			Copper		4,760

SUMMARY TOTALS: 093M 070 NAME: **HIGHLAND BOY (L.1000)**

	Metric		Imperial	
Mined:	68	tonnes	75	tons
Milled:		tonnes		tons
Recovery:				
Silver:	1,089	grams	35	ounces
Gold:	124	grams	4	ounces
Copper:	4,760	kilograms	10,494	pounds

MINFILE NUMBER: **093M 071** NAME: **ROCHER DEBOULE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1929	65	65	Silver	101,876	
			Gold	343	
			Copper		2,776
1918	2,888	2,888	Silver	556,947	
			Gold	28,524	
			Copper		288,430
1917	2,882	2,882	Silver	184,683	
			Gold	15,630	
			Copper		206,329
1916	15,202	15,202	Silver	573,782	
			Gold	40,570	
			Copper		795,262
1915	15,420	15,420	Silver	750,492	
			Gold	48,609	
			Copper		1,264,636

SUMMARY TOTALS: 093M 071 NAME: **ROCHER DEBOULE**

	Metric		Imperial	
Mined:	36,457	tonnes	40,187	tons
Milled:	36,457	tonnes	40,187	tons
Recovery:				
Silver:	2,167,780	grams	69,696	ounces
Gold:	133,676	grams	4,298	ounces
Copper:	2,557,433	kilograms	5,638,173	pounds

MINFILE NUMBER: **093M 072** NAME: **VICTORIA (L. 3303)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	7	7	Gold	467	
1928	21	21	Arsenic		7,710
			Gold	4,541	
			Cobalt		785
1926	23	23	Gold	2,333	

SUMMARY TOTALS: 093M 072 NAME: **VICTORIA (L. 3303)**

	Metric		Imperial	
Mined:	51	tonnes	56	tons
Milled:	51	tonnes	56	tons
Recovery:				
Arsenic:	7,710	kilograms	16,998	pounds
Gold:	7,341	grams	236	ounces
Cobalt:	785	kilograms	1,731	pounds

MINFILE NUMBER: **093M 073** NAME: **CAP** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1917	26		Silver	7,838	
			Gold	93	
			Copper		1,531

SUMMARY TOTALS: 093M 073 NAME: **CAP**

	Metric		Imperial	
Mined:	26	tonnes	29	tons
Milled:		tonnes		tons
Recovery:				
Silver:	7,838	grams	252	ounces
Gold:	93	grams	3	ounces
Copper:	1,531	kilograms	3,375	pounds

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MINFILE NUMBER: **093M 076** NAME: **SILVER BELL** STATUS: Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1915	9		Silver	34,213	
			Lead		6,350

SUMMARY TOTALS: 093M 076 NAME: **SILVER BELL**

	Metric		Imperial	
Mined:	9	tonnes	10	tons
Milled:		tonnes		tons
Recovery:				
Silver:	34,213	grams	1,100	ounces
Lead:	6,350	kilograms	13,999	pounds

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MINFILE NUMBER: **093N 008** NAME: **BRALORNE TAKLA** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1944	9,804	9,804	Mercury		56,225
1943	504	402	Mercury		3,689

SUMMARY TOTALS: 093N 008 NAME: **BRALORNE TAKLA**

	Metric		Imperial	
Mined:	10,308	tonnes	11,363	tons
Milled:	10,206	tonnes	11,250	tons
Recovery:				
Mercury:	59,914	kilograms	132,088	pounds

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MINFILE NUMBER: **093N 043** NAME: **KWANIKA CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1963	4		Jade/Nephrite		4,000
1940	1		Gold	3,438	

SUMMARY TOTALS: 093N 043 NAME: **KWANIKA CREEK**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:		tonnes		tons
Recovery:				
Gold:	3,438	grams	111	ounces
Jade/Nephrite:	4,000	kilograms	8,818	pounds

Comments:
1963: Seven boulders from Kwanika Creek (Annual Report 1963, page 151).
1940: Geological Survey of Canada Memoir 252, page 143; unknown tonnage.

MINFILE NUMBER: **093N 044** NAME: **VITAL CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	1		Gold	9,112	
1935	1		Gold	14,461	
1930	1		Gold	2,457	
1900	1		Gold	27,275	
1890	1		Gold	89,817	

SUMMARY TOTALS: 093N 044 NAME: **VITAL CREEK**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:		tonnes		tons

Recovery:

Gold:	143,122	grams	4,601	ounces

Comments:

1940: Production for 1936-1940; unknown tonnage (Bulletin 28, page 46).
1935: Production for 1931-1935; unknown tonnage (Bulletin 28, page 46).
1930: Production for 1926-1930; unknown tonnage (Bulletin 28, page 46).
1900: Production for 1986-1900; unknown tonnage (Bulletin 28, page 46).
1890: Production for 1876-1890; unknown tonnage (Bulletin 28, page 46).

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
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MINFILE NUMBER: **093N 045** NAME: **QUARTZITE (QUARTZ) CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	622	
1940	1		Gold	8,865	
1935	1		Gold	4,043	

SUMMARY TOTALS: 093N 045 NAME: **QUARTZITE (QUARTZ) CREEK**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:		tonnes		tons
Recovery:				
Gold:	13,530	grams	435	ounces

Comments:

1945: Production for 1941-1945 (Bulletin 28, page 45).
1940: Production for 1936-1940; unknown tonnage (Bulletin 28, page 45).
1935: Production is for the period 1931 to 1935; unknown tonnage.

MINFILE NUMBER: **093N 046** NAME: **HARRISON CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1949	1		Gold	7,216	

SUMMARY TOTALS: 093N 046 NAME: **HARRISON CREEK**

	Metric		Imperial	
Mined:	1	tonnes	1	tons
Milled:		tonnes		tons

Recovery:

Gold:	7,216	grams	232	ounces

Comments:

1949: Pre 1950 production; unknown tonnage (GSC Memoir 252, page 140).

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MINFILE NUMBER: **093N 047** NAME: **TOM CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	51,445	
1910	1		Gold	17,822	
1900	1		Gold	5,443	

SUMMARY TOTALS: 093N 047 NAME: **TOM CREEK**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:		tonnes		tons

Recovery:

Gold:	74,710	grams	2,402	ounces

Comments:

1945: Production for 1931-1945; unknown tonnage (Bulletin 28, page 46).
1910: Production for 1906-1910; unknown tonnage (Bulletin 28, page 46).
1900: Production for 1896-1900; unknown tonnage (Bulletin 28, page 46).

MINFILE PRODUCTION REPORT
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MINFILE NUMBER: **093N 048** NAME: **ALICE CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	187	
1940	1		Gold	2,333	

SUMMARY TOTALS: 093N 048 NAME: **ALICE CREEK**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons

Recovery:

Gold:	2,520	grams	81	ounces

Comments:

1945: Production for 1941-1945; unknown tonnage (Bulletin 28, page 44).
1940: Production for 1936-1940; unknown tonnage (Bulletin 28, page 44).

MINFILE PRODUCTION REPORT
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MINFILE NUMBER: **093N 050** NAME: **SILVER-KENNY CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1982	1		Gold	22,395	
1949	1		Gold	19,968	

SUMMARY TOTALS: 093N 050 NAME: **SILVER-KENNY CREEK**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons

Recovery:

Gold:	42,363	grams	1,362	ounces

Comments:

1982: Production for 1979-1982; unknown tonnage (GSC Mem. 252, p. 141).
1949: Production for 1931-1949; unknown tonnage (GSC Mem. 252, p. 141).

MINFILE PRODUCTION REPORT
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MINFILE NUMBER: **093N 052** NAME: **TWENTY MILE CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	2,084	

SUMMARY TOTALS: 093N 052 NAME: **TWENTY MILE CREEK**

	Metric		Imperial	
Mined:	1	tonnes	1	tons
Milled:		tonnes		tons

Recovery:

Gold:	2,084	grams	67	ounces

Comments:

1945: Production for 1941-1945 (Bulletin 28, page 46); unknown tonnage.

MINFILE NUMBER: **093N 055** NAME: **GERMANSEN RIVER SOUTH** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	438,310	
1900	1		Gold	871	
1890	1		Gold	76,670	

SUMMARY TOTALS: 093N 055 NAME: **GERMANSEN RIVER SOUTH**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:		tonnes		tons

Recovery:

Gold:	515,851	grams	16,585	ounces

Comments:

1945: Production for 1931-1945; tonnage unknown (Bulletin 28, page 44).
1900: Production for 1896-1900; unknown tonnage (Bulletin 28, page 44).
1890: Production for 1876-1890; unknown tonnage (Bulletin 28, page 44).

MINFILE PRODUCTION REPORT
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MINFILE NUMBER: **093N 056** NAME: **SLATE CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	95,332	
1885	1		Gold	5,008	

SUMMARY TOTALS: 093N 056 NAME: **SLATE CREEK**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons
Recovery:				
Gold:	100,340	grams	3,226	ounces

Comments:
1945: Production for 1931-1945; unknown tonnage (Bulletin 28, page 46).
1885: Production for 1881-1885; unknown tonnage (Bulletin 28, page 46).

MINFILE NUMBER: **093N 058** NAME: **BLACKJACK GULCH** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	1,866	
1940	1		Gold	4,758	
1935	1		Gold	1,586	
1930	1		Gold	995	
1885	1		Gold	16,701	

SUMMARY TOTALS: 093N 058 NAME: **BLACKJACK GULCH**

	Metric		Imperial	
Mined:	5	tonnes	6	tons
Milled:		tonnes		tons
Recovery:				
Gold:	25,906	grams	833	ounces

Comments:

1945: Production for 1941-1945; unknown tonnage (Bulletin 28, page 44).
1940: Production for 1936-1940; unknown tonnage (Bulletin 28, page 44).
1935: Production for 1931-1935; unknown tonnage (Bulletin 28, page 44).
1930: Production for 1926-1930; unknown tonnage (Bulletin 28, page 44).
1885: Production for 1874-1885; unknown tonnage (Bulletin 28, page 44).

MINFILE NUMBER: **093N 060** NAME: **LOST CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	840	
1940	1		Gold	7,527	
1885	1		Gold	3,017	

SUMMARY TOTALS: 093N 060 NAME: **LOST CREEK**

	Metric		Imperial	
Mined:	3	tonnes	3	tons
Milled:		tonnes		tons
Recovery:				
Gold:	11,384	grams	366	ounces

Comments:

1945: Production from 1941-1945; unknown tonnage (Bulletin 28, page 45).
1940: Production for 1936-1940; unknown tonnage (Bulletin 28, page 45).
1885: Production for 1880-1885; unknown tonnage (Bulletin 28, page 45).

MINFILE NUMBER: **093N 061** NAME: **MANSON RIVER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	1		Gold	8,709	
1940	1		Gold	27,775	
1935	1		Gold	7,962	
1910	1		Gold	17,045	
1905	1		Gold	11,104	
1900	1		Gold	5,443	
1890	1		Gold	279,994	

SUMMARY TOTALS: 093N 061 NAME: **MANSON RIVER**

	Metric		Imperial	
Mined:	7	tonnes	8	tons
Milled:		tonnes		tons

Recovery:

Gold:	358,032	grams	11,511	ounces

Comments:

1945: Production for 1941-1945; unknown tonnage (Bulletin 28, page 45).
1940: Production for 1936-1945; unknown tonnage (Bulletin 28, page 45).
1935: Production for 1931-1935; unknown tonnage (Bulletin 28, page 45).
1910: Production for 1906-1910; unknown tonnage (Bulletin 28, page 45).
1905: Production for 1901-1905; unknown tonnage (Bulletin 28, page 45).
1900: Production for 1896-1900; unknown tonnage (Bulletin 28, page 45).
1890: Production for 1874-1890; unknown tonnage (Bulletin 28, page 45).

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MINFILE NUMBER: **093N 064** NAME: **VITAL** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1963	4		Jade/Nephrite		3,538

SUMMARY TOTALS: 093N 064 NAME: **VITAL**

	Metric		Imperial	
Mined:	4	tonnes	4	tons
Milled:		tonnes		tons

Recovery:

Jade/Nephrite:	3,538	kilograms	7,800	pounds

Comments:

1963: Three boulders (2267, 907 and 363 kilograms) (Annual Report 1963).

MINFILE PRODUCTION REPORT
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MINFILE NUMBER: **093N 088** NAME: **BOULDER CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	1		Gold	3,421	

SUMMARY TOTALS: 093N 088 NAME: **BOULDER CREEK**

	Metric		Imperial	
Mined:	1	tonnes	1	tons
Milled:		tonnes		tons

Recovery:

Gold:	3,421	grams	110	ounces

Comments:

1940: Production for 1936-1940; unknown tonnage (Bulletin 28, page 44).

MINFILE PRODUCTION REPORT
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MINFILE NUMBER: **093N 156** NAME: **JADE AND OGDEN CREEKS** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1970	45		Jade/Nephrite		45,350
1969	18		Jade/Nephrite		18,140
1968	51		Jade/Nephrite		50,792

SUMMARY TOTALS: 093N 156 NAME: **JADE AND OGDEN CREEKS**

	Metric		Imperial	
Mined:	114	tonnes	126	tons
Milled:		tonnes		tons
Recovery:				
Jade/Nephrite:	114,282	kilograms	251,949	pounds

Comments:

1970: Production reported from a bedrock serpentinite source.
1969: Production reported to be from one nephrite boulder.
1968: Production reported to be from nephrite boulders.

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MINFILE NUMBER: **093N 157** NAME: **LEE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1988	22		Jade/Nephrite		22,000
1971	140		Jade/Nephrite		140,000

SUMMARY TOTALS: 093N 157 NAME: **LEE**

	Metric		Imperial	
Mined:	162	tonnes	179	tons
Milled:		tonnes		tons

Recovery:

Jade/Nephrite:	162,000	kilograms	357,149	pounds

Comments:

1988: From Mining in British Columbia 1988, page 87.
1971: Production estimated at 90-140 tonnes (National Mineral Inventory)

MINFILE NUMBER: **093N 165** NAME: **OGDEN MOUNTAIN** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1992	20		Jade/Nephrite		20,000
1991	40		Jade/Nephrite		40,000
1990	60		Jade/Nephrite		60,000
1989	200		Jade/Nephrite		200,000
1988	200		Jade/Nephrite		200,000
1987	115		Jade/Nephrite		115,000
1986	100		Jade/Nephrite		100,000
1985	408		Jade/Nephrite		408,000
1976	81		Jade/Nephrite		81,000
1972	20		Jade/Nephrite		20,000
1971	127		Jade/Nephrite		127,000
1970	47		Jade/Nephrite		47,000
1969	25		Jade/Nephrite		25,000
1968	12		Jade/Nephrite		12,000
1967	1		Jade/Nephrite		1,000

SUMMARY TOTALS: 093N 165 NAME: **OGDEN MOUNTAIN**

	Metric		Imperial	
Mined:	1,456	tonnes	1,605	tons
Milled:		tonnes		tons
Recovery:				
Jade/Nephrite:	1,456,000	kilograms	3,209,930	pounds

Comments:

1992: See comments for 1989 and 1990.
1990: Actual tonnages mined are greater than recovered for 1989-1992.
1989: Recovered jade for 1989-1992 (Kirk Makepeace of Jade West, 1993).
1985: Production for the period 1977-1985.

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MINFILE NUMBER: **093O 003** NAME: **BILL CUST'S BAR** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	1		Gold	3,110	
1935	1		Gold	3,110	

SUMMARY TOTALS: 093O 003 NAME: **BILL CUST'S BAR**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons
Recovery:				
Gold:	6,220	grams	200	ounces

Comments:

1940: Production from the Parsnip River Between 1936 and 1940.
1935: 100 ounces recovered from Parsnip River between 1931 and 1935

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MINFILE NUMBER: **093O 004** NAME: **NATION RIVER BAR** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	1		Gold	2,830	
1935	1		Gold	2,768	

SUMMARY TOTALS: 093O 004 NAME: **NATION RIVER BAR**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons
Recovery:				
Gold:	5,598	grams	180	ounces

Comments:

1940: Production from the Nation River between 1936 and 1940.
1935: Production from the Nation River between 1931 and 1935.

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MINFILE NUMBER: **093O 005** NAME: **RAINBOW CREEK** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1935	1		Gold	1,431	

SUMMARY TOTALS: 093O 005 NAME: **RAINBOW CREEK**

	Metric		Imperial	
Mined:	1	tonnes	1	tons
Milled:		tonnes		tons

Recovery:

Gold:	1,431	grams	46	ounces

Comments:

1935: Production from Rainbow Creek between 1931 and 1935.

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MINFILE NUMBER: **093O 008** NAME: **WILLOW CREEK** STATUS: Developed Prospect

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
2002	84,376		Coal		84,376
2001	36,000		Coal		36,000

SUMMARY TOTALS: 093O 008 NAME: **WILLOW CREEK**

	Metric		Imperial	
Mined:	120,376	tonnes	132,692	tons
Milled:		tonnes		tons
Recovery:				
Coal:	120,376	kilograms	265,384	pounds

MINFILE NUMBER: **093O 030** NAME: **KING GETHING** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1964	45		Coal		45,360
1963	1,040		Coal		1,039,600
1962	1,260		Coal		1,260,080
1961	1,871		Coal		1,870,600
1960	1,945		Coal		1,945,000
1959	2,798		Coal		2,798,760
1958	2,097		Coal		2,097,400
1957	1,686		Coal		1,685,550
1956	1,394		Coal		1,394,340
1955	940		Coal		939,840
1954	2,362		Coal		2,362,310
1953	2,235		Coal		2,235,300
1952	1,305		Coal		1,304,500
1951	1,371		Coal		1,370,760
1950	6,910		Coal		6,910,030
1949	5,630		Coal		5,630,000
1948	4,972		Coal		4,972,280
1947	3,886		Coal		3,886,200
1946	1,659		Coal		1,659,130
1945	3,448		Coal		3,448,300
1944	1,355		Coal		1,355,340

SUMMARY TOTALS: 093O 030 NAME: **KING GETHING**

	Metric		Imperial	
Mined:	50,209	tonnes	55,346	tons
Milled:		tonnes		tons
Recovery:				
Coal:	50,210,680	kilograms	110,695,570	pounds

Comments:

1964: Mine closed in 1964 due to failing markets.
1951: King Gething.
1950: Peace River (5109 tonnes) and King Gething (1801 tonnes).
1949: Peace River (4373 tonnes) and King Gething (1257 tonnes).
1948: Peace River (4059 tonnes) and King Gething (914 tonnes).
1947: Peace River (3419 tonnes) and King Gething (467 tonnes).
1946: Peace River (1354 tonnes) and King Gething (305 tonnes).
1945: Peace River (2625 tonnes) and King Gething (823 tonnes).
1944: Peace River (780 tonnes) and King Gething (575 tonnes).

MINFILE NUMBER: **093O 039** NAME: **MCKENZIE LIMESTONE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1989	25,500		Limestone		25,500,000
1988	7,500		Limestone		7,500,000

SUMMARY TOTALS: 093O 039 NAME: **MCKENZIE LIMESTONE**

	Metric		Imperial	
Mined:	33,000	tonnes	36,376	tons
Milled:		tonnes		tons
Recovery:				
Limestone:	33,000,000	kilograms	72,752,526	pounds

Comments:
1989: Pers. commun. in 1989 with Karston Nielsen. Figures approx.
1988: Pers. commun. in 1989 with Karston Nielsen. Figures approx.

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MINFILE NUMBER: **093O 045** NAME: **PARSNIP RIVER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1940	1		Gold	3,110	
1935	1		Gold	3,110	

SUMMARY TOTALS: 093O 045 NAME: **PARSNIP RIVER**

	Metric		Imperial	
Mined:	2	tonnes	2	tons
Milled:		tonnes		tons
Recovery:				
Gold:	6,220	grams	200	ounces

Comments:

1940: Production from Parsnip River between 1936 and 1940.
1935: Production from the Parsnip River between 1931 and 1935.

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MINFILE NUMBER: **093P 001** NAME: **BULLMOOSE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
2002	136,500	136,500	Coal		1,552,000,000
2001	2,621,000	1,894,000	Coal		1,894,000,000
2000	2,196,000	1,416,000	Coal		1,416,000,000
1999	1,954,000	1,225,000	Coal		1,225,000,000
1998	2,697,000	1,787,000	Coal		1,787,000,000
1997	3,150,780	2,778,001	Coal		1,891,344,000
1996	3,156,133	2,831,780	Coal		1,922,325,000
1995	2,592,700	2,600,200	Coal		1,860,300,000
1994	2,662,000	2,729,000	Coal		1,870,000,000
1993	2,372,000	2,486,000	Coal		1,795,000,000
1992	2,129,000	2,087,000	Coal		1,593,000,000
1991	2,242,000	2,179,000	Coal		1,620,000,000
1990	2,332,533	2,332,533	Coal		1,535,494,000
1989	2,160,000	2,160,000	Coal		1,618,791,000
1988	2,224,700	2,224,700	Coal		1,718,684,000
1987	2,338,200	2,338,200	Coal		1,700,168,000
1986	2,950,000	2,950,000	Coal		1,787,054,000
1985	3,159,000	3,159,000	Coal		2,167,618,000
1984	2,586,000	2,586,000	Coal		1,785,811,000
1983	265,699	265,699	Coal		206,291,000

SUMMARY TOTALS: 093P 001 NAME: **BULLMOOSE**

	Metric		Imperial	
Mined:	45,925,245	tonnes	50,623,917	tons
Milled:	42,165,613	tonnes	46,479,632	tons

Recovery:

Coal:	32,945,880,000	kilograms	72,633,211,857	pounds

Comments:

2002: Jan.- Sept. 2002.
2000: Coal milled is clean coal production.
1999: Coal milled is clean coal production.
1998: Estimated.
1997: Metallurgical coal-1,862,029,000 kg; Thermal coal-29,315,000 kg.
1996: Metallurgical coal-1,868,675,000 kg; Thermal coal-53,650,000 kg.
1995: Metallurgical coal.
1994: Metallurgical coal.
1993: Metallurgical coal.
1992: Metallurgical coal.
1991: Metallurgical coal.
1990: Metallurgical coal.
1989: Metallurgical coal-1,563,982,000 kg; Thermal coal-54,809,000 kg.
1988: Metallurgical coal-1,658,915,000 kg; Thermal coal-59,769,000 kg.
1987: Metallurgical coal.
1986: Metallurgical coal-1,777,054,000 kg; Thermal coal-10,000,000 kg.
1985: Metallurgical coal-2,098,000,000 kg; Thermal coal-69,618,000 kg.
1984: Metallurgical coal-1,719,031,000 kg; Thermal coal-66,780,000 kg.
1983: Metallurgical coal.

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MINFILE NUMBER: **093P 014** NAME: **SUKUNKA (BULLMOOSE)** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1975	37,384	37,384	Coal		37,384,000
1973	32,674	32,674	Coal		32,674,000
1972	12,000	12,000	Coal		12,000,000

SUMMARY TOTALS: 093P 014 NAME: **SUKUNKA (BULLMOOSE)**

	Metric		Imperial	
Mined:	82,058	tonnes	90,453	tons
Milled:	82,058	tonnes	90,453	tons
Recovery:				
Coal:	82,058,000	kilograms	180,906,872	pounds

Comments:

1973: Coal stockpiled.
1972: Metallurgical coal for washing and coking tests.

MINFILE NUMBER: **093P 019** NAME: **QUINTETTE** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
2000	1,300,000	1,300,000	Coal		1,300,000,000
1999	2,900,000	2,900,000	Coal		2,900,000,000
1998	7,000,000	6,214,000	Coal		2,882,000,000
1997	9,147,131	7,085,034	Coal		4,022,889,000
1996	9,850,817	6,984,112	Coal		3,473,887,000
1995	7,388,800	7,418,700	Coal		3,735,200,000
1994	7,732,000	7,806,000	Coal		4,126,000,000
1993	7,938,000	7,845,000	Coal		4,178,000,000
1992	8,404,000	8,418,000	Coal		4,322,000,000
1991	8,792,000	8,572,000	Coal		4,681,000,000
1990	9,619,808	9,619,808	Coal		4,668,639,000
1989	8,692,042	8,692,042	Coal		4,260,911,000
1988	8,730,875	8,730,875	Coal		4,600,592,000
1987	8,987,447	8,987,447	Coal		4,461,289,000
1986	11,185,488	11,185,488	Coal		5,306,477,000
1985	8,928,530	8,928,530	Coal		5,538,990,000
1984	7,109,749	7,109,749	Coal		3,559,934,000
1983	1,437,883	1,437,883	Coal		81,651,000

SUMMARY TOTALS: 093P 019 NAME: **QUINTETTE**

	Metric		Imperial	
Mined:	135,144,570	tonnes	148,971,387	tons
Milled:	129,234,668	tonnes	142,456,835	tons
Recovery:				
Coal:	68,099,459,000	kilograms	150,133,565,499	pounds

Comments:

2000: The mine closed in August 2000.
1998: Estimated.
1997: Metallurgical coal.
1996: Metallurgical coal.
1995: Metallurgical coal.
1994: Metallurgical coal.
1993: Metallurgical coal.
1992: Metallurgical coal.
1991: Metallurgical coal.
1990: Metallurgical coal.
1989: Metallurgical coal.
1988: Metallurgical coal-4,550,192,000 kg; Thermal coal-50,400,000 kg.
1987: Metallurgical coal-4,452,252,000 kg; Thermal coal-9,037,000 kg.
1986: Metallurgical coal-5,201,422,000 kg; Thermal coal-105,055,000 kg.
1985: Metallurgical coal-4,925,746,000 kg; Thermal coal-613,244,000 kg.
1984: Metallurgical coal-2,856,603,000 kg; Thermal coal-703,331,000 kg.
1983: Metallurgical coal-42,001,000 kg; Thermal coal-39,650,000 kg.

MINFILE PRODUCTION REPORT
GEOLOGICAL SURVEY BRANCH
ENERGY AND MINERALS DIVISION

MINFILE NUMBER: **093P 024** NAME: **HASLER** STATUS: Past Producer

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1945	3,206		Coal		3,206,500
1944	789		Coal		789,400
1941	590		Coal		590,000

SUMMARY TOTALS: 093P 024 NAME: **HASLER**

	Metric		Imperial	
Mined:	4,585	tonnes	5,054	tons
Milled:		tonnes		tons

Recovery:

Coal:	4,585,900	kilograms	10,110,176	pounds

Comments:

1941: Coal was mined from an adit and open-cut benches. GSC Paper 44-7