



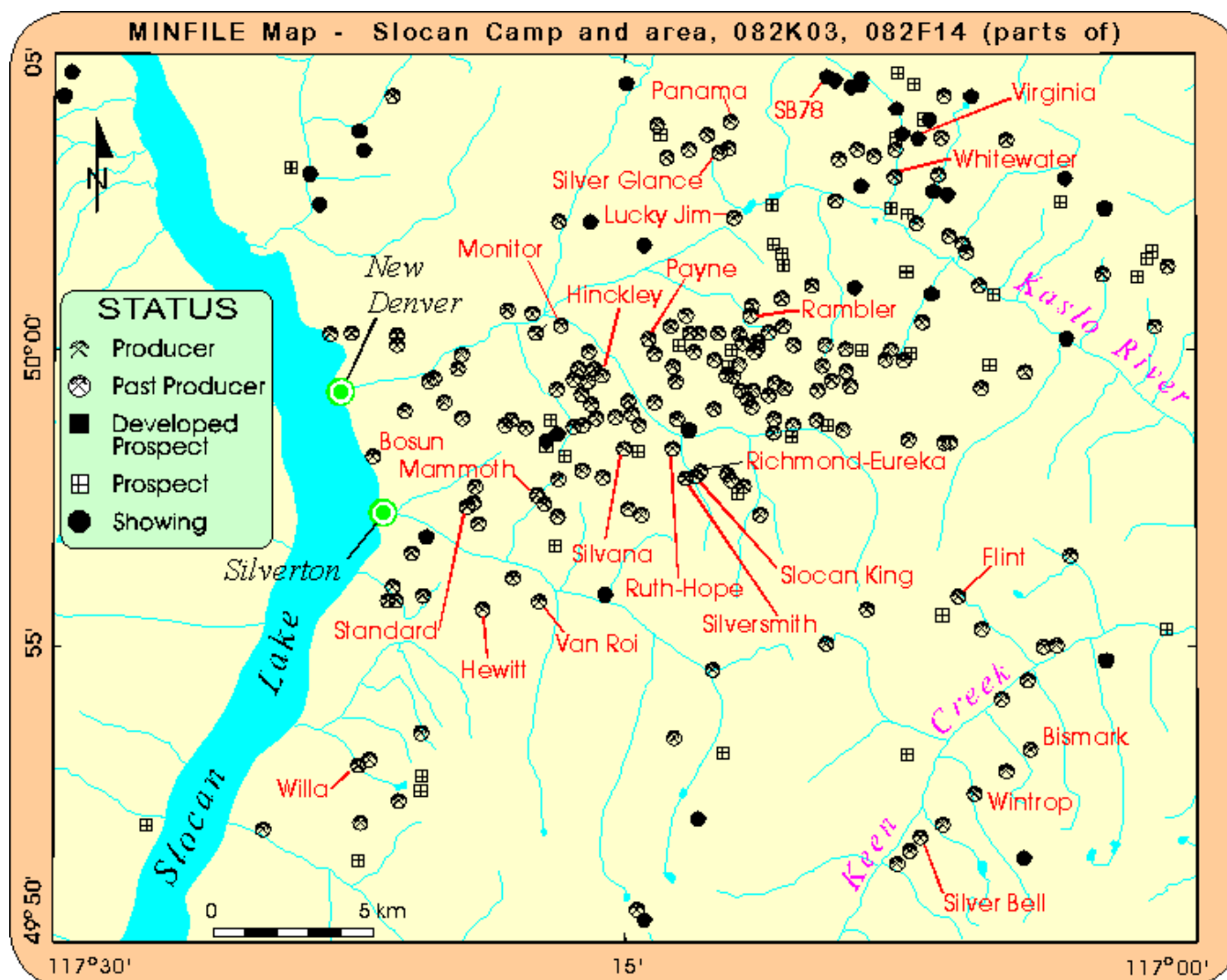
By: B.N. Church (P.Eng.) and L.D. Jones (P.Geo.), 1997

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Abstract

The Slocan map area of southeastern British Columbia contains 271 documented mineral occurrences, including 125 in the Slocan City area and 123 in the Slocan Camp area. The area is within the Selkirk Mountains and includes the communities of New Denver, Silverton, and Slocan City on the shores of Slocan Lake (Figure 1).

Figure 1: Mineral Occurrences of the Slocan Camp and Area (082K03, 082F14)



Mining History

The Slocan area is one of the oldest mining camps in the province which flourished after the turn of the century and has continued to produce intermittently ever since. The history in the West Kootenays dates back to the 1820s when the Bluebell deposit (082FNE043), near Riondel on Kootenay Lake was discovered. Active exploration began around 1865. In 1883, Thomas Hammil located the Lulu and Spring claims (082FNE148) at Ainsworth. In the late 1880's, Jim Brennan, a prospector working west of Ainsworth, collected some high grade silver samples which sparked considerable interest in this new and virtually unexplored area. After initial interest at Sandon, prospectors extended their range of exploration to the south and west, discovering several deposits containing appreciable gold on Memphis Creek and locating the Dayton claim (082FNW173) in 1893 near Slocan City.

During this period, the sustained mining activity throughout the Slocan area provided the incentive for the Canadian Pacific Railway to extend their line south and east from Nakusp to Kaslo and Cody in 1895, and connect Slocan City with the Nelson line in 1897. In 1895, crude ore from 35 properties was shipped to smelters at Trail and Nelson and the Slocan Mining Camp became one of the most productive in the province. Peak production in the Slocan was attained in 1918.

Geological Setting

The geology of the Slocan area (082FNW) comprises diverse lithological elements belonging to several tectonic terranes. On a regional scale, the Slocan Mining Camp is within the Kootenay Arc which lies between the Precambrian Purcell anticlinorium on the east and the Monashee and Valhalla metamorphic complexes to the west and northwest. The Kootenay arc is a 400-kilometre long curving belt of Cambrian to Mesozoic sedimentary, volcanic, and metamorphic rocks trending northeast for 160 kilometres across Washington state into British Columbia, then north along Kootenay Lake and northwest into the Revelstoke area.

In the Kootenay Lake area, the arc succession comprises the Hamill, Lardeau, Milford, Kaslo, Slocan and Rossland groups. The Hamill and Lardeau constitute the early Paleozoic pericratonic Kootenay terrane; the Milford and Kaslo belong to the accreted late Paleozoic Slide Mountain terrane. The Hamill is mostly quartzite; the Lardeau has a lower calcareous section overlain by a thick succession of schists and quartzites with lenticular masses of volcanic rock. The Milford and Kaslo groups are late Paleozoic oceanic assemblages that include phyllites, thinly bedded calc-silicate metasedimentary rocks, chert beds, basic volcanic rocks, and serpentinites.

The Mesozoic stratigraphic units constitute the Quesnel terrane, which lies along the western side and within the curvature of the Kootenay arc. The Rossland Group volcanic rocks and the Slocan Group argillites, slates, and limestones are important units in this terrane and contain significant mineral deposits such as found in the Slocan silver-lead-zinc camp.

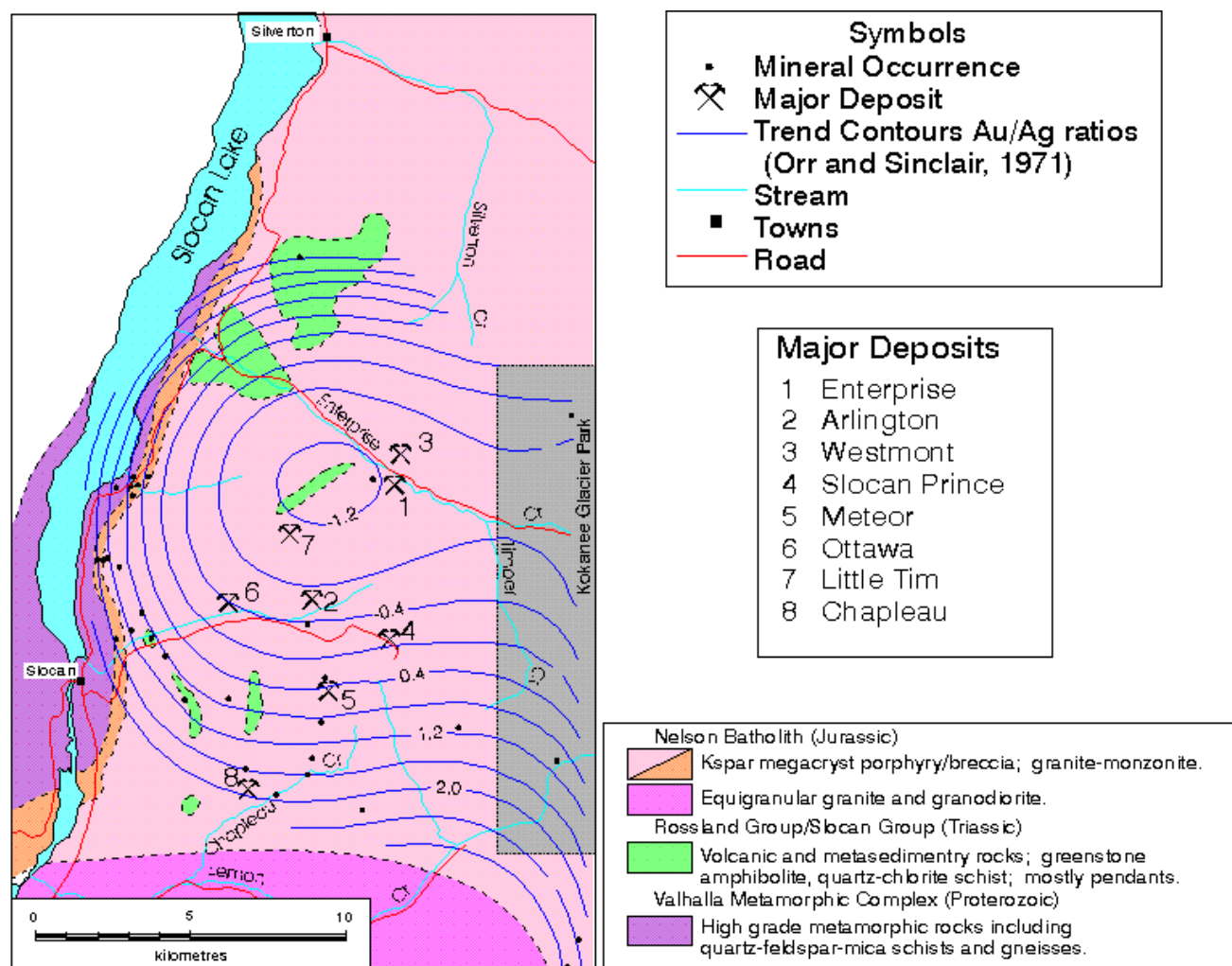
Granitic plutons, including several small batholiths, many stocks, and sill-like masses, interrupt the continuity of the older deformed stratigraphic succession throughout the Kootenay Arc. These are predominantly granite and granodiorite although the compositions range widely. The Nelson plutonic rocks are generally considered to be Upper Jurassic or Lower Cretaceous. The Nelson batholith and many of the granitic stocks have local zones of intense deformation around their margins. On the northwestern edge of the Nelson batholith older structures are buckled downward within 1 kilometre or so of exposed granitic rock. Regional structures are deflected into near parallelism with the margins of the intrusion.

Small Tertiary intrusions are common in the southern part of the arc and west of it. These include stocks of fresh granite and augite-biotite syenite and monzonite. All the rocks are cut by lamprophyre dikes, which follow fractures, faults, or prominent foliation planes, and range from small

discontinuous masses to bodies a few tens of metres wide and a few thousand metres long. The lamprophyres are dark greenish grey or brownish rocks commonly with subhedral phenocrysts of biotite, feldspar, hornblende, or augite. These dikes are undeformed and mainly Tertiary age.

The Slocan Lake fault is a 100-kilometre long, east-dipping, linear detachment structure exposed above the east shore of Slocan Lake. In the hanging wall immediately above the fault, Nelson batholith granitic rocks are brecciated, fractured, and hydrothermally altered (Figure 2). Prolonged movement in the crushed contact zone of the batholith likely sustained paths for hydrothermal solutions (Figure 2).

Figure 2: Geology of Slocan Mining Camp



Mineralization and Deposits

In the Slocan map area, silver-lead-zinc ores predominate and can be characterized as gold-silver or silver-gold with minor lead-zinc mineralization. Predominantly precious metal deposits are simple white quartz veins with few sulphide minerals. The ore minerals are mainly galena and sphalerite with small amounts of pyrite, chalcopyrite, and pyrrhotite. Silver is the most important commodity, occurring in argentiferous tetrahedrite, less commonly as native silver, and sporadically in argentite, polybasite, ruby silver, stephanite, and electrum. Gold is present in small quantities and rarely seen as native gold or electrum. Quartz is the predominant gangue mineral, but carbonate minerals such as siderite, calcite, and/or dolomite are significant in some deposits. Fluorite and barite are less common. The deposits are characterized by open-space fillings, with minor evidence of replacement. In a few

deposits, where replacement of wall rock has been extensive, carbonate gangue is relatively abundant.

In many cases, the Nelson batholith and related plutons in the southern part of the Kootenay arc appear to be incidental to the mineralization process. Early workers regarded these granitic rocks as the singular magmatic - hydrothermal source of lead-zinc mineralization. However, recent studies suggest a more complicated genesis. Detailed lead isotope investigations indicate that the lead of the Kootenay arc ores went through several stages of redistribution, beginning with the introduction of uranium and thorium in the upper crust 1700 million years ago (Sinclair, 1964).

The mineralizing process began at time of the intrusion of the Nelson batholith and continued during cooling, resulting in the development of veins within the batholith. Cairnes (1934) recognized several types of veins, the most common of which are the so-called "wet ore" composed of massive galena-sphalerite with some siderite, quartz or calcite gangue, such as found at the Enterprise mine, and "dry ore" comprising veins of quartz with galena, sphalerite and tetrahedite, characterized by high silver values, such as found at the Little Tim, Meteor and Ottawa mines. The "dry ores" are mostly confined to the Nelson intrusion.

The Ag-Pb-Zn vein and replacement deposits of the Slocan area are thought to be genetically related to the Nelson batholith. According to Orr and Sinclair (1971) Au/Ag ratio data show high silver values in ores of the Nelson granite at the centre of the camp and relatively high gold values in ores from the distal parts of the porphyry and outer boundaries of the camp between Mount Aylwin and Slocan City (Figure 2). The veins also appear to be related to the Slocan Lake fault at the western boundary of the batholith.

Slocan is one of the areas in British Columbia where small-scale mining remained viable for many years because of the richness of the ores. In the Slocan City area, more than half of the 125 occurrences were mineral producers, and 13 mines produced more than 1 million grams of silver. The Ottawa (082FNW155), Enterprise (082FNW148), Arlington (082FNW152) and Molly Gibson (082FNW121) mines have each produced more than 30 million grams of silver plus significant amounts of lead and zinc. The first comprehensive descriptions of the mineral deposits of the region were by Cairnes (1934), Maconachie (1940), Little (1960) and Brown and Logan (1989). Descriptions of some of the significant past producers are in the Appendix.

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Appendix

The following synoptic descriptions of the principal mineral deposit in the Slocan City area (arranged alphabetically) are based on MINFILE reports and visits in 1997 to the principal mines.

Arlington (082FNW152; Lat/Long: 49 47 24 N 117 21 41 W):

The Arlington property comprises the Arlington (Lot 3648), Burlington No. 2, and Stephanite Crown granted claims and fractions on the north slope of the valley, near the confluence of Speculator and Springer creeks, 8 kilometres east-northeast of Slocan. Access to the property from the Slocan highway is via the Springer Creek road.

The Arlington mine was worked extensively from 1899 through 1903, then intermittently until 1979. In 1969 and 1970, Arlington Silver Mines Ltd. stoped and shipped ore, which was mainly salvaged from the old workings; they also explored, by diamond drilling, what appears to be the northern extension of the vein system. The mine was developed by eight adits over a vertical range of about 200 metres. In the early years, the bulk of the ore was taken from the fifth to seventh levels and from the original discovery at surface near the shaft. In the latter years, underground work was confined to the lowest two levels.

Production between 1897 and 1979 totalled 20,592 tonnes, yielding 31,429,872 grams of silver,

861,487 kilograms of lead, 118,863 kilograms of zinc, 743 grams of gold, 834 kilograms of copper, and 46 kilograms of cadmium. In 1962, 576 tonnes was used as a silica flux.

The Arlington lode is a mineralized crushed zone, about 20 metres wide, in coarse-grained hornblende granite or granodiorite of the Nelson batholith; the zone contains basic monzonite inclusions. The zone includes a number of parallel fissures and maintains a uniform strike of 040 degrees, dipping 60 to 70 degrees southeast. The shear zone is chloritic to talcose altered. The ore is largely replacement of the country rock, occurring as scattered breccia lenses on continuous fractures. The chief ore minerals are galena and sphalerite, with associated disseminated pyrite, chalcopyrite, stephanite, tetrahedrite, and native silver.

Bluebell (082FNE043; Lat/Long: 49 45 45 N 116 51 40 W):

The Bluebell occurrence consists of three main zones approximately 500 metres apart along strike of the Lower Cambrian Badshot Formation (Lardeau Group) marble: 1) the comfort zone at the north end of Rionel Peninsula; 2) the Bluebell zone in the centre; and the 3) the Kootenay Chief at the south end. The zones are localized along steep cross fractures that trend west-northwesterly and dip 80 to 90 degrees north. Within the zones are tabular ore shoots that are transverse to bedding and plunge westward, following the intersection of the fractures with the marbles. The ore occurs as replacements along steep cross fractures in the marbles. Bedding planes and minor structures tend to localize the mineralization. The ore consists of galena, sphalerite, pyrrhotite, pyrite, arsenopyrite, and chalcopyrite. Gangue includes carbonate minerals, and coarse-grained quartz and knebelite. Oxidation of the deposit has occurred to depths well below lake level.

Chapleau (L. 4963) (082FNW130; Lat/Long: 49 44 00 N 117 23 30 W):

The Chapleau property comprises the Chapleau and Chapleau Consolidated fraction and several other Crown granted claims centred 6 kilometres southeast of Slocan City. The Chapleau mine may be reached by a short access road, about 1.5 kilometres long, connected to the main road at a point about 13 kilometres from the Slocan highway.

Chapleau was one of the first properties in Lemon Creek area to receive attention. In 1896 the initial shipment of ore yielded 435 grams of gold and 11,788 grams of silver. Until 1900 development was rapid and an aerial tramway and stamp mill were erected. However, in 1904 the mine was closed as a result of decreasing value of the ore and difficulties were encountered because of faulting of the vein. Until 1941 ore was shipped intermittently by lessees. In 1946 and 1947 the workings were rehabilitated and a new road was constructed to the property, but there were no shipments of ore. Intermittent production from 1896 to 1941 totalled 297 tonnes, yielding 407,604 grams of silver and 29,455 grams of gold.

The country rock is porphyritic Nelson quartz monzonite bounded a short distance to the north and northwest by a large pendant and other inclusions of argillaceous quartzite. These rocks are cut by small dikes of fine grained granite, pegmatite, and aplite. The phenocrysts of orthoclase and microcline in the porphyritic granite are up to a centimetre long. In the pegmatite dikes, large feldspar phenocrysts (up to 7 centimetres long) have long axes aligned parallel to dike walls. Some pegmatites contain small crystals of garnet and magnetite but no mica or ferromagnesian minerals.

The vein strikes 110 degrees and dips 25 degrees northeast. Its width ranges from 7 centimetres to 0.6 metres and widths up to 1.2 metres have been reported. The gangue is quartz, locally as drusy cavity fills. Pyrite is the most abundant metallic mineral followed by sphalerite and galena. Minor chalcopyrite, free gold, and ruby silver (?) have been reported.

Dayton (082FNW173; Lat/Long: 49 46 30 N 117 25 24 W):

The Dayton property is near the mouth of Dayton Creek, 3 kilometres east-northeast of Slocan, at an elevation of 1035 metres. Access is from the Slocan highway via the Springer Creek road.

The Dayton claim (Lot 2419) is underlain by coarse-grained, porphyritic Nelson granite. The workings consist of a crosscut adit that intersects two vein structures. Drifting on the principal structure explores a fault fissure system that strikes 160 degrees and dips 35 degrees northeast. This system contains lenses of quartz up to 46 centimetres wide, mineralized with pyrite, some galena, argentite, and tetrahedrite. A second quartz vein, 15 metres farther on at the face of the crosscut, strikes 025 degrees and dips 55 degrees southeast. This vein is 1.8 metres wide and contains some coarse pyrite cubes.

Intermittent production from 1903 to 1935, totalled 17 tonnes, yielding 12,224 grams of silver, 93 grams of gold, and 1006 kilograms of lead.

Enterprise (082FNW148; Lat/Long: 49 49 18 N 117 19 30 W):

The Enterprise mine is second only to the Ottawa mine in the quantity and total value of ore produced in the Slocan City mining camp. The property consists of the Enterprise (Lot 1014), Slocan Queen, Rainbow, Iron Horse, Sunset, Millsite, Montezuma, and Sunrise Crown granted claims and fractions. The mine is on the south side of the valley (elevation ~ 670 metres) near the confluence of Enterprise and Neepawa creeks, 11 kilometres northeast of Slocan. Access to the mine from the Slocan highway is via the Enterprise Creek road.

The main vein was discovered in 1894 and mined by Enterprise (B.C.) Mines Co. Ltd. until 1901 and then by lessees. In 1928 the property was purchased by Yankee Girl Consolidated Mines Ltd., which was obliged to close operations in 1930. From 1941 to 1943, the property was leased, during which time the mine tailings and dump were re-worked. In 1944 Western Exploration Co. Ltd. purchased the property, operating it until 1953. Intermittent production from a number of mining and salvage operations continued until 1977. Production from the property began in 1896 and 11,067 tonnes of ore were mined by 1977, yielding 32,676,718 grams of silver, 1674 tonnes of lead, 1068 tonnes of zinc, 2041 grams of gold, 445 kilograms of cadmium, and 149 kilograms of copper.

The Enterprise lode was developed by nine adits, several intermediate levels, and two shafts. One shaft was sunk on the lode about 15 metres above and 90 metres southwest of the uppermost adit. The other shaft was sunk from a point about 10 metres below and a short distance northeast of the lowest adit. The difference in elevation between the collar of the upper shaft and the bottom of the lower shaft is about 335 metres.

The rock underlying the property is a light coloured, coarse-grained porphyritic granite of the Nelson batholith. More basic phases of the batholith, found locally in the mine workings, form irregular bodies of varying size that appear to be either digested inclusions or differentiates of the granitic magma. The Nelson rocks are cut by a few small, hornblende porphyry and olivine-pyroxene lamprophyre dikes. Some of these dikes cut across the Enterprise lode whereas others are pre-mineral and disrupted by the same faults that cut the vein.

The main vein, averaging less than 0.3 metre wide, is continuous for more than 600 metres, striking 050 degrees, dipping 60 to 85 degrees southeast. At the upper levels of the mine, the vein is filled with varying proportions of quartz and ore minerals, especially galena and tetrahedrite. At the lower levels, siderite and other carbonate gangue minerals are more abundant than quartz, and sphalerite is the predominant ore mineral. Most of the silver is considered to be contained in tetrahedrite and ruby silver.

The vein is interrupted by a major fault zone, 6 to 9 metres wide, and several minor faults. The fault

zone intersects the vein nearly at right angles, about midway between the two shafts. It strikes 160 degrees and dips 90 to 75 degrees northeast. The vein has an apparent sinistral displacement of about 30 metres.

Aside from the extensive developments on the main Enterprise lode, work was done on a second lode outcropping 115 metres to the west. In 1927, it was drifted on for about 45 metres. It is a wide shear zone composed mostly of brecciated granitic rock partly cemented by quartz gangue with some calcite. It strikes 040 degrees and dips 70 southeast. In character and width, this lode resembles a vein at the Arlington mine (082FNW152), which may be on part of a continuous structure. It seems that both lodes at the Enterprise mine and those on adjoining properties are within a single, wide zone of shearing and brecciation, and that to the southwest this zone passes through the Arlington, Speculator (082FNW151) and intervening properties.

Little Tim (082FNW157; Lat/Long: 49 48 24 N 117 22 00 W):

The Little Tim mine is east of Ottawa Hill at the head of Little Tim Creek (elevation ~2070 metres), 8 kilometres northeast of Slocan. Access is from the Slocan highway via the Springer Creek logging road system on the Memphis Creek - Ottawa Hill branch leading to the Little Tim Creek mine road.

The Little Tim claim was staked in 1918 and worked intermittently until 1947 by the owner. Hardex Mines Ltd. held an option on the property from 1951 to 1953, during which considerable drifting and diamond drilling were done. Several individuals have held leases since the early 1950s and all shipments from the property consisted of hand-sorted ore. Approximately 300 metres of drifts, crosscuts, and raises were developed in the original mine and, by 1981, a total of 339 metres of new drifts and crosscuts were added. Intermittent production from 1905 to 1984 resulted in 5116 tonnes, yielding 1,366,013 grams of silver, 11 grams of gold, 26,339 kilograms of lead, 8536 kilograms of zinc, and 171 kilograms of copper.

The property is underlain by coarse-grained porphyritic granite (quartz monzonite) of the Nelson batholith. These rocks are cut by two, nearly parallel fissure vein lodes, on which considerable work has been done. The lodes are 90 metres apart and strike 055 to 070 degrees northeast, and dip 45 to 70 degrees southeast.

The mine, located just southwest and downslope from an unnamed summit, includes a shaft and three adits on the northwest lode, and three adits and an intermediate level on the southeast lode. At an elevation of approximately 2040 metres, the shaft is the lowest working. The shaft is reported to have followed a vein to a depth of about 15 metres. The vein, about 0.3 metre wide, consists of vuggy quartz containing disseminated, galena, sphalerite, pyrite, and tetrahedrite. The same vein is heavily stoped to a point about 90 metres above the shaft. On the southeast lode, the main adit is 75 metres long and follows an unmineralized fissure. The orebody on this level, about 8 metres long, was stoped through to an intermediate level 12 metres above, where the ore was exposed for a length of 15 metres and widths ranging from 10 to 30 centimetres. This ore forms a streak of nearly solid galena, sphalerite, conspicuous tetrahedrite, and a little chalcopyrite. The gangue is principally quartz, but some calcite and barite are also present. Some of the quartz appears to be chalcedonic. The veins are commonly flanked by a chloritic alteration envelope up to 1.2 metres wide that grades into relatively unaltered granite.

Meteor (L. 2893) (082FNW137; Lat/Long: 49 45 36 N 117 21 18 W):

The Meteor property, comprising the Meteor (Lot 2893), Ottawa and Cultus claims and fractions, is at the head of Tobin Creek on the northwesterly slope of the divide between Lemon and Springer creeks, 8 kilometres east of Slocan. Access to the property from the Slocan highway is via the Lemon Creek and Chapleau Creek roads.

The Meteor Crown-granted claim was staked in 1895. The initial production of ore, amounting to about 70 tonnes, was shipped in 1897 and yielded 1182 grams of gold and 466,500 grams of silver. Since then, mining continued intermittently, until 1967, achieving greatest production of 1715 tonnes of ore in 1964. Total production from the Meteor mine is 2659 tonnes of ore yielding 4,724,994 grams of silver, 13,177 grams of gold, and a small amount of lead and zinc.

The rocks underlying the property are a light coloured, coarse-grained granite porphyry phase of the Nelson batholith. The granite is sheared and altered near the mine workings and cut by felsic and basic dikes. Faults, shears and joints are oriented north and north-northeast with moderate to steep dips.

The workings of the Meteor mine consist of six adits that intersect a 5 to 50-centimetre wide vein that strikes 105 degrees and dips 35 degrees north. Vein mineralization is associated with the sheared upper contact of a 3-metre wide dike and narrow off-shoot fissures.

The vein is largely quartz carrying some sphalerite, galena, tetrahedrite, stephanite, argentite, and native silver. Pyrite and chalcopyrite are also present and associated with significant gold values. The dike, containing up to 2 per cent disseminated pyrite, is pervasively sericitized near the vein. Both the vein and dike are dislocated by faults that show down-dip movement to the south.

Scheelite was discovered on the Nos. 2 and 4 levels as small solitary lens-shaped bodies on the Meteor vein, and on No. 6 level as disseminated grains in the granitic host rocks in a well-developed fracture system striking 105 degrees dipping 35 degrees northerly and 140 degrees, dipping 80 degrees northeast. Molybdenite was also discovered in a fragment of quartz stockwork hosted by sericitized granite from the Meteor mine dump.

Molly Gibson (082FNW121; Lat/Long: 49 44 24 N 117 8 55 W):

The Molly Gibson vein follows a northwest-striking joint set in potassium-feldspar porphyritic granite. Workings explored two veins (Florence and Aspen) that strike 145 degrees and dip 75 degrees. Ore shoots plunge to the southeast at about 45 degrees. Wallrock alteration includes pervasive propylitic, argillic, and locally hematite alteration. Vein mineralization comprises galena, sphalerite, arsenopyrite, pyrite, and chalcopyrite in a gangue of brecciated manganese rock, siderite, and quartz. Vein textures and mineralogy suggest several stages of brecciation and mineralization.

Ottawa (082FNW155; Lat/Long: 49 47 06 N 117 23 42 W):

The Ottawa mine is centred on a group of about 20 Crown-granted claims and fractions, on the north slope the Springer Creek valley (elevation ~1500 metres), 5 kilometres northeast of Slocan. Access to the mine site is from the Slocan highway via the Springer Creek road.

The history of the Ottawa mine dates back to 1896 when the Ottawa claim (Lot 4968) was located. However, it was not until 1902 that major development work was attempted. The production of high-grade silver-lead ore followed in 1903 and continued steadily through 1909. In 1913, the mine was purchased by Consolidated Mining and Smelting Company Ltd., and in 1920 a 50-ton per day mill was constructed. In 1935, the property was obtained by the Ottawa Silver Mining and Milling Co. Ltd. who, in 1937, built a 100-ton per day flotation plant. Much of the work after 1938 was done under lease or option. In 1950 and 1951, options were held by Violamac Mines (B.C.) Ltd. and then by Harrison Drilling and Exploration Co. Ltd. Total recorded production between 1903 and 1984 amounts to 26,476 tonnes mined, yielding 55,940,682 grams of silver, 982 grams of gold, 360,085 kilograms of lead, 12,774 kilograms of zinc, and 793 kilograms of copper.

The property is developed on nine levels, five of which are serviced by adits driven at vertical intervals of about 30 metres. These workings explored a broad breccia zone in coarse-grained, porphyritic Nelson quartz monzonite cut by felsite and lamprophyre dikes. The zone trends nearly

north and dips easterly from 25 to 45 degrees. The zone comprises two well-defined lodes known as the West or Noble and East or Ottawa veins. Mining at the surface and underground indicates that these lodes are not exactly parallel, but approach each other towards the south and may join. At the No. 5 level, the lodes are about 10 metres apart. Most of the work was done on the East lode, which is 0.6 to 6 metres wide and composed of brecciated granite, gouge, and vein material. The latter was stoped in places across widths of up to 2.4 metres. The West lode is locally up to 15 metres wide and was reported to have produced good ore in the uppermost workings. On No. 8 level, the stoped vein on the West lode, strikes 025 to 040 degrees and dips 20 degrees southeast. The vein is up to 0.3 metres wide and is bounded by a sharply defined gouge-filled zone along the footwall and an irregular hanging wall. The East lode on the No. 8 level is composed of about 1 metre of gouge and breccia cemented by quartz. It strikes 170 degrees and dips 30 to 40 degrees east.

The ore minerals are mainly a mixture of galena, pyrite, sphalerite, with minor chalcopyrite, native silver, argentite, and tetrahedrite disseminations in quartz gangue. In some high-grade ore, barite was reported to be the predominant gangue mineral. Beryl (aquamarine) in fragments of pink pegmatitic host rock has been found on the Ottawa mine dump.

Slocan Prince (L. 582) (082FNW140; Lat/Long: 49 46 42 N 117 19 48 W):

The Slocan Prince property, comprising the Slocan Prince (Lot 582), Two Friends (Lot 1020), Black Prince (Lot 584), Bank of England (Lot 2214) and Moonraker (Lot 8939) Crown-granted claims and fractions, is at the head of Crusader Creek, 10 kilometres east of Slocan. Access to the property from the Slocan highway is via the Lemon Creek and Crusader Creek roads.

This property was among the first staked in the Slocan City mining division and much work was done on it before 1900. The first production was from the Two Friends claim in 1896, consisting of 36 tonnes of ore averaging 10,000 grams per tonne silver and 50 per cent lead. The Slocan Prince and Black Prince had greater output, especially in the years 1901, 1905 and 1906, when ore shipments from these claims ranged to several hundred tonnes. Total ore production from the property up to 1970 amounts to 1754 tonnes containing 7,045,304 g of silver, 128,781 kilograms of lead, and 11,852 kilograms of zinc.

The property is underlain by coarse-grained, porphyritic phases of the Nelson batholith. Granite and monzonite are the most common rocks but locally more basic phases are present. These granitic rocks are cut by a few acid and basic dikes and many shear zones, along which mineralization has occurred.

The workings comprise seven or more crosscut adits driven northerly to northwesterly and distributed from west to east across the claim group. The workings develop, principally, two fissure-vein systems referred to as the North and South lodes. The North lode outcrops on both the Bank of England and the Two Friends claims and has been traced for about 450 metres in an easterly direction, almost parallel to the north and south boundaries of these claims. The north lode is intersected by two adits on the Bank of England claim and, farther east, by two or three adits on the Two Friends claim. The lode strikes 060 to 070 degrees and dips steeply northwest. In the Bank of England workings, the mineralization is about 0.5 metre wide, nearly continuous for about a hundred metres, and consists of quartz with calcite carrying galena, sphalerite, and probably, high-grade silver minerals. The lode intersects and slightly displaces a small basic dike. The Two Friends adits are about 135 metres east of the Bank of England workings by the west boundary of the claim. These adits are crosscuts to the North lode, which is 1 to 3 metres wide and contains a well-defined galena-sphalerite rich ore body, varying in width from a narrow streak to 35 centimetres.

The South lode is exposed in the workings on the easterly claims of the group. A crosscut adit driven 130 metres on the Slocan Prince claim intersects this lode, which strikes 020 to 030 degrees and dips

60° northwest. The lode, which is about 6 metres wide, has been drifted on for more than 120 metres. The ore occurs on both walls but mainly along the footwall. A second adit on Black Prince ground is a crosscut for 39 metres, beyond which it follows the lode for about 120 metres. The lode is a strongly crushed zone as much as 10 metres wide. Abundant quartz partly cements and replaces the crushed rock and forms veins in places. Ore minerals occur both as disseminations and concentrations included in and associated with quartz, siderite, and lesser calcite. These minerals include argentiferous galena, sphalerite, tetrahedrite, pyrite, native silver, and possibly other silver-rich minerals. No appreciable gold occurs in the ore.

Westmont (L. 8929) (082FNW145; Lat/Long: 49 49 42 N 117 19 36 W):

The Westmont property, comprising the Westmont (Lot 8929), Eastmont (Lot 8924), Oddfellow, White Cloud, Lily G., Yankee Girl, and Clipper Crown-granted claims and fractions, is on the north slope of the Enterprise Creek valley, 12.5 kilometres northeast of Slocan. Access to the property is from the Slocan highway via the main Enterprise Creek road. The 0.8 kilometre road between the main road and the mine was reopened in 1958 and a bridge was constructed over Westmont Creek.

Development work on the Westmont property began in the 1890s although production started in 1907 and continued until 1914. Subsequent mining until 1971, mainly by lessees, was intermittent. The mine workings consist of at least four adits, east of Westmont Creek, ranging in elevation from 150 to 400 metres above the main road along Enterprise Creek. In 1958, the No. 4 adit was retimbered from the entry to the intersection of the main vein, a distance of 60 metres. At this time caved ground was cleared west of the intersection, for about 300 metres, to provide sufficient access to the bottom of the old stope area to re-establish natural ventilation. East of the intersection, 30 metres of drifting was done on the main vein and about 400 tonnes of ore was removed from the stope above the drift. Production from the mine to 1980 totals 3211 tonnes of ore that yielded 11,084,830 grams of silver, 2058 grams of gold, 199,781 kilograms of lead, 65,920 kilograms of zinc, 54 kilograms of copper, and 68 kilograms of cadmium.

The property is underlain chiefly by coarse-grained, porphyritic Nelson monzonite. The granite is cut by basic dikes along which later faulting occurred. Faults follow two principal directions, one striking northeast and steeply dipping, the other striking northwest and dipping steeply northeast.

The main lode, as exposed in the lower No. 3 and No. 4 adits, is mostly a steeply dipping fault zone that strikes northeast. However, at about 120 metres from the portal of these two adits, the lode swings to a more easterly strike and dips 70 degrees north. The lode is up to 2.4 metres wide, with an average of 1.2 metres. It is composed of brecciated rock partly cemented by quartz, which also forms veins and lenses 0.5 metre or more thick. The quartz is banded and also shows comb structure. It carries disseminations, pockets, and streaks of galena, sphalerite, pyrite, tetrahedrite, ruby silver, and native silver intimately associated with one another in varying proportions. The richest ore was found between No. 2 and No. 3 levels. In some places high silver is associated with galena but elsewhere combinations of tetrahedrite, sphalerite, and native silver yielded the best silver values.