

# KOOTENAY REGION

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## SUMMARY AND TRENDS

This has been a banner year for exploration and development in the Kootenay (southeast) Region of British Columbia. Roca Mining Inc's MAX molybdenum mine at Trout Lake began production and shipping in the fall of 2007. The MAX is the province's first new metal mine in a decade, and is the first metal mine to be operating in the Kootenays since the permanent closure of the Sullivan mine at Kimberley in late 2001.

Exploration expenditures in 2007 are projected to be about \$43 million, close to triple the level of the previous year (Figure 6.1). The portion of the total devoted to metals exploration was about 84%; the remainder was for coal (14%) and industrial minerals (2%).

An estimated 151 000 m of exploration drilling was carried out in the Kootenay Region in 2007, more than double the 2006 total (Figure 6.2). Of this total, 65% represented drilling for metals, 34% was for coal (not including mine in-pit drilling) and 1% for industrial minerals.

As in previous years, past-producing mines and camps were sites of active exploration. These included the Beaverdell, Rossland, Greenwood, Ymir, Lardeau, Salmo and Moyie areas. Several drilling programs continued into the late fall and some were still active at the time of writing. In combination with large workloads at analytical labs, this meant that for many programs assay results had not been received.

## OPERATING MINES AND QUARRIES

Current major producing mine and quarry locations in the Kootenay Region are shown on Figure 6.3 and basic data concerning these sites are listed in Table 6.1.

## METALS

Roca Mines Inc's brand-new **MAX** molybdenum mine (MINFILE 082KNW003 and 004) began production in October 2007 and began shipping concentrate in November. The MAX is an underground mine with a production rate of 500 tonnes per day on a campaigned basis, for an annual production rate of 72 000 tonnes. Its on-site concentrator has a 1000 tonnes-per-day capacity.

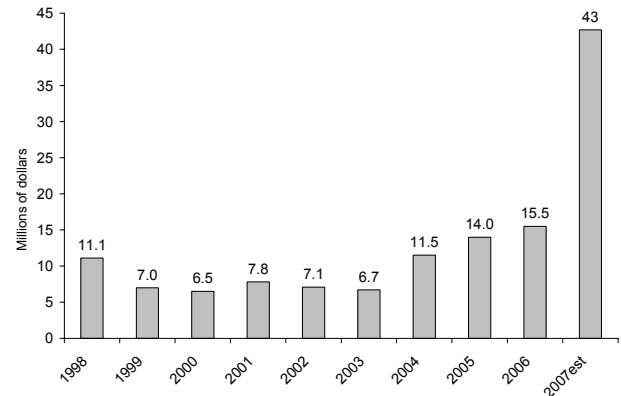


Figure 6.1 Annual exploration spending, in millions of dollars, Kootenay Region.

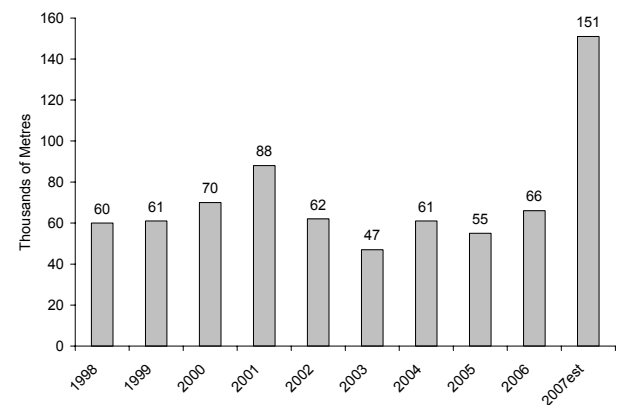


Figure 6.2. Annual exploration drilling, in thousands of metres, Kootenay Region. Note that prior to 2004 coal definition (in-pit) drilling at operating coal mines was included in the total.

The MAX molybdenum mine is near the community of Trout Lake. The project has been in construction throughout 2006 and 2007 after receiving its Small Mine permit in late 2005. Major accomplishments in 2007 included completion of the mill and tailings facilities, and significant underground development. A second adit, which will lower operating costs and improve ventilation, is under construction.

The MAX deposit contains measured and indicated resources of 42.9 million tonnes grading 0.20% MoS<sub>2</sub> using a 0.10% cut-off. The first phase of production will focus on a high-grade zone containing 280 000 tonnes (measured plus indicated) grading 1.95% MoS<sub>2</sub>.

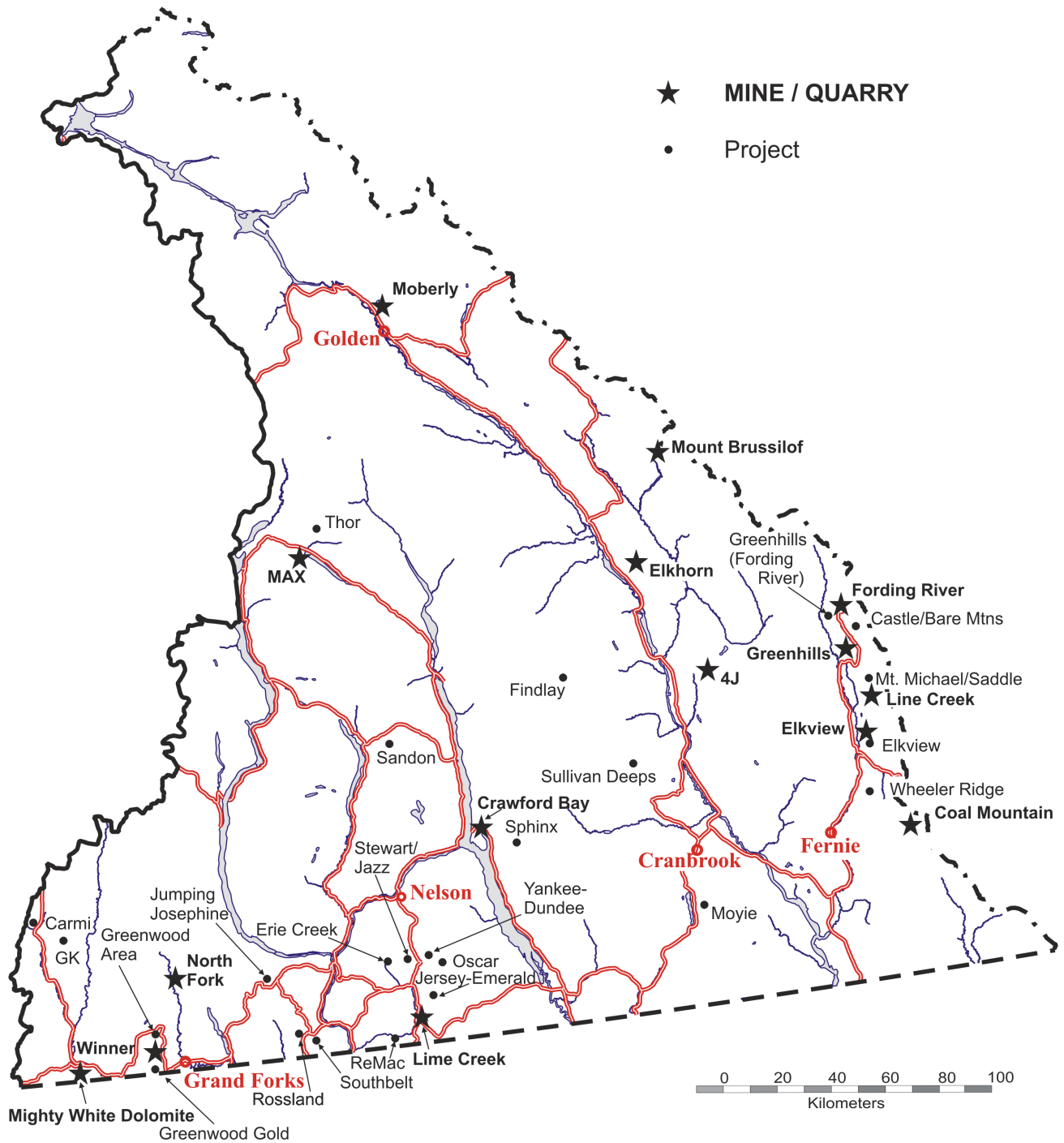


Figure 6.3. Mines, quarries and major exploration projects, Kootenay Region, 2007.

**TABLE 6.1. PRODUCING MINES AND QUARRIES, KOOTENAY REGION, 2007**

<b>Mine</b>	<b>Operator</b>	<b>Commodity</b>	<b>Employment</b>	<b>Forecast Production in 2007 (million tonnes)</b>	<b>Proven and Probable Reserves as of December 31, 2006 (million tonnes)</b>
<b>Coal</b>					
Coal Mountain	Elk Valley Coal Corporation	Metallurgical coal	185	2.16	26
Elkview	Elk Valley Coal Corporation	Metallurgical coal	760	5.08	239
Fording River	Elk Valley Coal Corporation	Metallurgical coal	919	7.90	227
Greenhills	Elk Valley Coal Corporation	Metallurgical coal	460	4.15	96
Line Creek	Elk Valley Coal Corporation	Metallurgical and thermal coal	345	2.30	17
<b>Industrial Minerals (selected)</b>					
4J	Georgia-Pacific Canada Inc	Gypsum	3	0.250	
Crawford Bay	Imasco Minerals Inc	Dolomite		0.055	
Elkhorn	CertainTeed Gypsum Canada	Gypsum	21	0.525	
Lime Creek	Imasco Minerals Inc	Limestone			
Moberly	HCA Mountain Minerals (Moberly) Ltd	Silica sand	16	0.100	
Mount Brussilof	Baymag Inc	Magnesite	24	0.100	
North Fork	Roxul (West) Inc	Monzonite (mineral wool)			
Rock Creek	Mighty White Dolomite Ltd	Dolomite			
Winner	Roxul (West) Inc	Gabbro (mineral wool)			
<b>Metals</b>					
MAX	Roca Mines Inc	Molybdenum			

Metasediments of the Lower Cambrian to Middle Devonian Lardeau Group at the MAX property are intruded by the Cretaceous Trout Lake stock. The deposit is a pipe-like quartz vein stockwork that extends from surface to a depth of at least 1000 ms, in which molybdenite occurs mainly along margins of veins. The vein stockwork is best developed in close proximity to the margins of the intrusive and its associated offshoots.

## **COAL**

Elk Valley Coal Corporation, the world's second-largest supplier of seaborne metallurgical coal, operates five large open pit coal mines in the Elk valley area.

Projected total 2007 coal production at the company's **Coal Mountain, Elkview, Line Creek, Greenhills and Fording River** operations is approximately 21.6 million tonnes of clean coal (predominantly metallurgical; see Table 6.1 for individual mine production and reserve statistics), up slightly from 2006. The mines employ 2670 people and make a huge contribution to the local, regional and provincial economies.

## **INDUSTRIAL MINERALS**

The Kootenay region continues to be an important source of a variety of industrial minerals, including magnesite, gypsum, silica, dolomite, limestone, tufa,

flagstone, slate, dimension stone, aggregate and slag.

Baymag Inc produces high-quality magnesite from its open pit mine near **Mount Brussilof** (MINFILE 082JNW001), northeast of Radium. Magnesite is transported by truck to Exshaw, Alberta, where the company has facilities for producing calcined and fused magnesia (MgO). Production in 2007 was projected to be approximately 100 000 tonnes.

There are two gypsum producers in the Kootenay region. CertainTeed Gypsum Canada operates the **Elkhorn** mine (MINFILE 082JSW021) east of Windermere, and Georgia-Pacific Canada Inc operates the **Four J** mine (MINFILE 082JSW009) southeast of Canal Flats. Production at the Elkhorn mine was projected to be approximately 525 000 tonnes for 2007. Production for the Four J mine was projected to be more than 250 000 tonnes.

Silica is produced from quartzite by HCA Mountain Minerals (Moberly) Ltd from the **Moberly** mine (MINFILE 082N 001) and plant, north of Golden. Mine production in 2007 was predicted to be 100 000 tonnes.

Imasco Minerals Inc produces a variety of crushed and ground rock products at its Creston Operations Plant at **Sirdar**; rock types include limestone, dolomite, granite and quartzite. Raw sources for these products include an underground dolomite mine at **Crawford Bay** (MINFILE 082FNE113), a limestone quarry at **Lime Creek** (MINFILE 082FSW307) east of Salmo, and a granite quarry at **Sirdar** (MINFILE 082FSE072). Production of dolomite at Crawford Bay was expected to be 55 000 tonnes in 2007.

Mighty White Dolomite Ltd produces a range of crushed and ground dolomite products from its quarry (MINFILE 082ESE200) and plant at **Rock Creek**.

The **Winner** gabbro quarry (MINFILE 082ESE265), west of Grand Forks, and the **North Fork** monzonite quarry, north of Grand Forks, both supply feed for the Roxul (West) Inc mineral wool (insulation) manufacturing plant in Grand Forks. Production at the North Fork quarry is winding down; it will be replaced by a talus quarry at Burrell Creek. A bulk sample from the Burrell Creek site, 10 km to the north, was collected for testing purposes this year.

## EXPLORATION HIGHLIGHTS

Major 2007 mineral and coal exploration projects in the Kootenay Region are listed in Table 6.2 and their locations are shown on Figure 6.3. Generally these major exploration programs involved expenditures in excess of \$500 000 on work that included mechanized ground disturbance, for example, drilling, trenching or bulk sampling. Except where otherwise indicated, the following information was derived from discussions with industry project staff, as well as company reports, presentations, press releases and Internet websites.

## EAST KOOTENAYS

Eagle Plains Resources Ltd, a Cranbrook-based junior company, carried out its third year of diamond drilling on the **Sphinx** molybdenum property (MINFILE 082FNE004, 094 and 095) near Gray Creek Pass, 45 km west of Kimberley. The Sphinx property is underlain by sedimentary strata of the upper part of the Purcell Supergroup, including the Dutch Creek and Mt. Nelson formations, which have been intruded by Cretaceous quartz monzonite. Pervasive alteration is developed in the sedimentary and intrusive rocks. Molybdenum (and associated tungsten) mineralization is hosted within quartz-pyrite stockwork veins and fractures within the alteration zone. An inferred resource of 62 million tonnes grading 0.058% MoS<sub>2</sub>, using a cut-off grade of 0.0167% MoS<sub>2</sub>, was estimated in 2006. The resource is open in two directions and at depth, and is being viewed as a bulk-tonnage target. Highlights of the 2007 drill campaign included 0.142% MoS<sub>2</sub> over 29.0 m, including 0.173% MoS<sub>2</sub> over 19.0 m and 0.469% MoS<sub>2</sub> over 3.0 m.

Stikine Gold Corporation's **Sullivan Deeps** project, one of the most exciting programs in the region over the past three years, continued into 2007. The third deep drillhole (known as SD3) targeting Sullivan-style sedex mineralization approximately 8 km north of Kimberley was collared in 2006 and completed this year. Unfortunately, SD3 also marks the conclusion of the project. The Sullivan Deeps project was targeting a postulated "sister deposit" to the Sullivan lead-zinc ore body (MINFILE 082FNE052) in the Aldridge Formation, Purcell Supergroup. The Sullivan horizon, the stratigraphic position of the Sullivan and some other known sedex occurrences in the East Kootenays, were successfully intersected in all three drillholes (at depths of 2736 m, 2365 m and 2659 m), and in all three cases the horizon was host to sulphide mineralization. Drillhole SD3 intersected 0.4 m of mainly pyrrhotite.

Eagle Plains Resources Ltd drilled the **Findlay** project (MINFILE 082KSE060, 081), 25 km west of Canal Flats. As with the Sullivan Deeps project, the target on the Findlay is sedex-style zinc-lead mineralization in the Aldridge Formation, Purcell Supergroup. In contrast with the Sullivan mine deposit, known mineralization on the Findlay property appears to occur in the upper member of the Aldridge Formation.

Also in the East Kootenays, the St. Eugene Mining Corporation drilled its **Moyie** property 25 km south of Cranbrook. The target is Coeur d'Alene-style vein-hosted zinc-lead-silver mineralization in the lower Purcell Supergroup, associated with southeast-trending structures, including the St. Eugene break that appears to have controlled the deposition of the **St. Eugene** mine (MINFILE 082GSW025) and other occurrences on the property. Mineralization potentially coincides with the intersection of this type of structure with north-south trending synrift faults (associated with sub-basins in the Aldridge Formation). Drill results in 2007 from the

**TABLE 6.2. MAJOR EXPLORATION PROJECTS, KOOTENAY REGION, 2007**

Property	Operator	MINFILE	NTS	Commodity	Target Type	Work program	Metres of drilling (estimated in some cases)
Carmi	Hi Ho Silver Resources Ltd	082ENW036	82E/11E	Mo	porphyry	G, 3D-IP, DD	4700
Castle Mountain/Bare Mountain	Elk Valley Coal Corporation	082JSE006, 008	82J/02W	coal	sedimentary	A, RC	16 106
Elkview	Elk Valley Coal Corporation	082GNE013, 016, 017	82G/15W	coal	sedimentary	RC	5448
Erie Creek	Jasper Mining Corporation	082FSW213, 226, 301	82F/6W	Au, Mo, W, Cu, Pb, Zn	porphyry, polymetallic vein, skarn	GC, DD	4138
Findlay	Eagle Plains Resources Ltd	082KSE060, 081	82K/01E	Zn, Pb	sedex	G, DD	2962
GK	Bitterroot Resources Ltd	082ESE175, 217, 252, 256	82E/7W	Au	vein	TR, DD	6064
Greenhills (Fording River)	Elk Valley Coal Corporation	082JSE010	82J/02W	coal	sedimentary	RC	16 641
Greenwood Area properties	Kettle River Resources Ltd	082ESE020, 062	82E/2E	Au, Ag, Cu	epithermal vein, mesothermal vein, skarn	G, MG, GC, TR, DD	1485
Greenwood Gold	Merit Mining Corp	082ESE032, 033, 041, 042	82E/2E	Au, Cu	mesothermal vein/polymetallic vein	DD	3786
Jersey-Emerald	Sultan Minerals Inc	082FSW009, 010, 011, 218	82F/03E	Mo, W, Zn, Pb	porphyry (Mo) skarn (W) stratabound (Zn-Pb)	DD	9750
Jumping Josephine (JJ)	Astral Mining Corp	082ESE083-087	82F/5W	Au	intrusion-related	DD	7727
MAX	Roca Mines Inc	082KNW003, 004	82K/12E	Mo	porphyry	DD	4800
Moyie	St. Eugene Mining Corporation	82GSW023, 025, 030	82G/5W	Pb, Zn, Ag	polymetallic vein	DD	4332
Mt. Michael/Saddle	Elk Valley Coal Corporation	082GNE022, 082JSE002	82G/15W, 82J/2W	coal	sedimentary	A, RC	9583
Oscar	Dajin Resources Corp	082FSW012, 022, 255	82F/3E, 82F/6E	Zn, Pb	stratabound, oxide	GC, DD	2700
ReMac	ReMac Zinc Corp	082FSW024, 026, 219	82F/3W	Zn, Pb	stratabound, oxide	DD	6500
Rossland	West High Yield (W.H.Y.) Resources Ltd	082FSW119, 116, 117	82F/4W	Au, Ni, Mg	mesothermal vein, ultramafic	DD	6160
Sandon	Klondike Silver Corp	082FNW043, 050	82F/14W	Ag, Pb, Zn	polymetallic vein	G, GC, GP, TR	0
Southbelt	Vangold Resources Ltd	082FSW123, 145, 146	82F/4W	Ag, Au, Pb, Zn, Cu	polymetallic vein	GC, DD	1524
Sphinx	Eagle Plains Resources Ltd	082FNE004, 094, 095	82F/10E	Mo, W	porphyry	DD	2344
Stewart/Jazz	Emgold Mining Corporation	082FSW229, 251, 277, 311	82F/06W	Mo, W, Au, Pb, Zn, Ag	porphyry, skarn, polymetallic vein	TR, DD	3350
Sullivan Deeps	Stikine Gold Corporation	-	82F/16E	Zn, Pb, Ag	sedex	DD	1517
Thor	Taranis Resources Inc	082KNW030, 031, 060, 061, 062	82K/11W	Au, Ag, Cu, Pb, Zn	polymetallic vein	G, TR, MG, VLF, DD	3562
Wheeler Ridge	Elk Valley Coal Corporation	-	82G/10W	Coal	sedimentary	A, RC, BU	4645
Yankee – Dundee	Dundee Mines Ltd	082FSW067, 068	82F/06E	Au	mesothermal vein	DD, AB-EM, AB-MG	2000

**Work Program Abbreviations:**

A = access; trail, road construction on claims; AB-EM = airborne electromagnetics; AB-MG = airborne magnetics; AB-RD = airborne radiometrics; BU (X tonnes) = bulk sample (weight in tonnes if known); CD = condemnation drilling; CQ = coal quality testing; CT = carbonization test (coal); DD (Xm) = diamond drilling totaling X metres; EN = environmental baseline studies/monitoring, remediation work; FS = feasibility studies; G = geology, mapping, etc; GC = geochemical sampling (rock, soil, silt, etc); GD = geotech drilling; GP = geophysics (general); IP = Induced Polarization; 3D-IP; MG = magnetics; MK = marketing-primarily for industrial mineral products; MS = metallurgical studies; OB = overburden drilling; OP-BU = open-pit bulk sample; P = prospecting; PD = percussion drilling; PF = pre-feasibility studies; PP = Pilot plant, R = reclamation; RC = reverse circulation drilling; TR = trenching, UG (X m) = X metres of underground development; UG-BU = underground bulk sample; UT = UTEM; VLF; WT = washability test (coal)

**Society Girl** target area (MINFILE 082GSW030) included 4.45% Zn, 8.56% Pb, and 85 g/t Ag over a true width of 3.4 m.

Companies exploring for gold in the Cranbrook area in 2007 included Ruby Red Resources Inc and Klondike Gold Corp. Klondike Gold also continued to drill for sedex mineralization in the Aldridge Formation on some of its East Kootenay properties.

### ***EAST KOOTENAY COALFIELDS***

Exploration in the coal-bearing Jurassic-Cretaceous strata of the Mist Mountain Formation (collectively known as the East Kootenay coalfields where they occur in British Columbia) in 2007 was carried out exclusively by Elk Valley Coal Corporation. Their work contributed significantly to the overall exploration totals in southeast BC. Not including in-pit drilling at Elk Valley Coal's five mines, coal exploration expenditures totalled over \$6.3 million and the exploration drilling totalled over 52 000 m. Four of the five mines carried out major exploration programs in 2007, all aimed at establishing reserves outside of the active pits.

Beginning in the south, Coal Mountain Operations continued to assess the potential of the **Wheeler Ridge** area in the Crowsnest Coalfield, roughly 19 km northeast of Fernie and immediately south of Parcel 73 of the Dominion Coal Block (MINFILE 082GNE008). This site is not structurally contiguous with Coal Mountain and is approximately 18 km distant. Surface-mineable coal at Wheeler Ridge is of higher volatile-matter content than current typical products from Elk Valley's mines. Part of the focus of the 2007 work was testing the potential of large-diameter core and reverse-circulation drilling for low-cost collection of bulk samples.

Elkview Operations carried out rotary-drilling programs in the **Baldy Ridge** (MINFILE 082GNE016) and **Natal Ridge** (MINFILE 082GNE013) areas, both within their current permitted area.

The other major coal exploration programs were in the Elk valley coalfield. Line Creek Operations drilled on **Mt. Michael** (MINFILE 082GNE022) and the **Saddle** property (MINFILE 082JSE002), approximately 3 km and 6 km, respectively, north along strike from the active mine area, and roughly 9 km southeast of Elkford. Surface-mineable coal-bearing strata at both target areas are on the east limb of the Alexander Creek syncline, dip moderately to the west, and are separated by the west-dipping Ewin Pass thrust fault.

Fording River Operations drilled on both **Castle Mountain** (MINFILE 082JSE008) and **Bare Mountain** (MINFILE 082JSE006), 5 and 10 km, respectively, south of and along strike from active pits on Eagle Mountain (MINFILE 082FSE009), and roughly 10 km northeast of Elkford. Coal-bearing strata at these locations are preserved in the Alexander Creek syncline.

Fording River Operations also drilled on the **Greenhills** (MINFILE 082JSE010) portion of their property, which is north of and on strike with Elk Valley Coal's Greenhills Operations within the Greenhills syncline. This program is targeting areas of potential economic coal below previous open pits.

### ***WEST KOOTENAYS***

The **Jersey-Emerald** project 10 km south of Salmo was the site of extensive drilling by Sultan Minerals Inc. The underground **Jersey** lead-zinc and **Emerald** tungsten mines (MINFILE 082FSW009, 010, 011 and 218) closed in 1973. Exploration by Sultan over the past few years has focused on molybdenum and tungsten, and work expanded to include zinc and lead in 2007.

Drilling in 2007 was designed to test the East Emerald tungsten zone, the East Dodger tungsten zone and the Dodger molybdenum zone, as well as extensions to the Jersey zinc-lead deposit. A preliminary scoping study to determine economic parameters for a mining plan (tungsten only) was completed in May. Engineering and environmental-baseline studies are also underway throughout the property.

Sultan Minerals personnel were aware of six unmined tungsten targets reported by operator Placer Dome at the time of the closure of the Emerald mine. These targets occur as broad linear bands trending for more than 1500 m to the north and south of the old mine workings. In addition, another target referred to as the East Emerald tungsten zone, associated with a unit referred to historically as the 'lower skarn horizon', was identified by Sultan Minerals from historic mine plans and drill logs. This new zone lies between the Invincible and Dodger tungsten zones, and has been shown to extend more than 1100 m in length and up to 300 m down dip. Combined measured and indicated resources of 2.51 million tonnes at 0.37% W (at a 0.15% cut-off grade) in the Emerald mine were calculated in November 2006.

Molybdenum-bearing, granitic intrusion-hosted quartz stockworks lie beneath the old tungsten mine workings in the East Dodger mine area. The recently-discovered Dodger molybdenum zone has an inferred resource of 481 000 tonnes at 0.103% MoS<sub>2</sub> (at a 0.05% cut-off grade).

Stratabound zinc-lead mineralization in the Jersey mine is associated with Paleozoic carbonates near the south end of the Kootenay Arc. A previously unknown extension of the zinc-lead mineralization was found this year; this extension encompasses over 400 m of strike length.

Carbonate-hosted zinc-lead mineralization in the Kootenay Arc was also the target for drilling done by the ReMac Zinc Corporation on its **ReMac** project east of Trail (Figure 6.4). The company's holdings include the past-producing **Reeves-McDonald** (MINFILE 082FSW026) and **Annex** (MINFILE 082FSW219) mines,



Figure 6.4. Drilling on the ReMac property, ReMac Zinc Corp.

and the 2007 objective was to expand the resource potential on the property and to identify zones to investigate for possible future underground exploration. Both sulphide and oxide mineralization types are known to occur.

Dajin Resources Corp undertook a drilling program on the **Oscar** property, which includes the **Oxide** (MINFILE 082FSW022) and the **Jackpot** (MINFILE 082FSW012) occurrences, 5.5 km east of Ymir. The target on the Oscar property is carbonate-hosted zinc-lead mineralization in the Kootenay Arc, and, as with the ReMac, both sulphide and oxide forms of mineralization are known to occur.

Extensive underground drilling by Roca Mines Inc at the new **MAX** molybdenum mine was successful in extending the depth of observed mineralization by at least 200 m below the known resource (see previous property description).

The **Thor** property of Taranis Resources Inc, which is about 7 km northeast of Trout Lake in the Lardeau area, includes several past producers of base and precious metals, including the **True Fissure** (MINFILE 082KNW030) and **Great Northern** (MINFILE 082KNW061). Ground-based geophysical surveys, trenching and drilling focused on a mineralized unit which extends for over 1.4 km. Polymetallic (silver, lead, zinc, gold and copper) veins are within the Broadview Formation (Lardeau Group) in the north part of the

Kootenay Arc. Drill results include 5.07% Zn, 4.07% Pb, 0.26% Cu, 1.59 g/t Au and 296.12 g/t Ag over 1.95 m.

Drilling on the large **Jumping Josephine** (or JJ) property, 22 km west of Castlegar and just north of Highway 3, by Astral Mining Corporation, targeted three areas of known gold mineralization: **JJ Main zone** and **Bonanza Pass**, both recent discoveries, and the **Albion-Dubrovnik** (MINFILE 082ESE086) area in the Granville Mountain mining camp. The main focus, as in 2006, was on the JJ Main zone. Gold-bearing quartz stockworks initially uncovered by trenching in 2006 were the main drilling target in the JJ Main zone, but drillholes also tested the potential for a porphyry system at depth. Mineralization in the JJ Main zone consists of quartz stockworks, vein-breccias and sheeted veins associated with a northeast-trending shear zone in mid-Jurassic Nelson-suite intrusions. Eocene intrusions were a possible source of the gold. Geology, geophysics and geochemistry suggest that the host structure may extend for over 3 km. Drill assay results in 2007 included 12.44 g/t Au over 8 m, including 26.9 g/t over 3 m.

Klondike Silver Corporation continued to progress with its **Sandon** project in the Slocan Silver Camp, 10 km east of New Denver. Work in 2007 focused on rehabilitation of underground workings at the **Wonderful** (MINFILE 082FNW043) and **Silvana** (MINFILE 082FNW050) mines, underground development, and refurbishing of the Silvana mill at Sandon town-site. Ongoing surface geophysical and geochemical surveys continued over portions of the company's Slocan-area holdings. In the process of upgrading the underground workings, the company has encountered vein-style mineralization, some of which had been previously developed. The company has begun to produce some of these veins and process them at the Silvana mill. Vein-hosted mineral occurrences in the Sandon area are hosted by sheared and brecciated argillite and slate of the Triassic Slocan Group which are intruded by granodiorite and quartz monzonite dikes.

On the **Yankee-Dundee** property in the Ymir area, 11 km northeast of Salmo, Dundee Mines Ltd is focusing on high-grade gold-quartz veins in the Ymir Group. Its holdings include the past producers **Yankee Girl** (MINFILE 082FSW068) and **Dundee** (MINFILE 082FSW067); extensions and components of the vein systems at these locales are being targeted. Drilling results in 2007 included 6.01 g/t Au over 1.54 m (before ending in old workings).

Jasper Mining Corporation carried out soil sampling and diamond drilling its multi-element **Erie Creek** project (MINFILE 082FSW213, 226, 301), approximately 12 km northwest of Salmo. Jurassic Rosslund Group rocks on the property are intruded by the Middle to Late Jurassic Nelson intrusions, locally known as the Erie Creek stock. The company is pursuing a porphyry model for mineralization, which appears to be borne out by metal zonation. At the **Hattie** occurrence (MINFILE 082FSW226), for example, an inner quartz-molybdenum

plus scheelite zone is surrounded by a chalcopyrite zone, a pyrite-pyrrhotite zone and an outer sphalerite-galena zone.

Emgold Mining Corporation's **Stewart/Jazz** property, 9 km north of Salmo, is host to molybdenum, tungsten and gold mineralization. Gold appears in part to be related to the Silver King intrusive, which is prospective on Sultan Minerals' Kena property (MINFILE 082FSW237) adjacent to the north. The **Stewart** molybdenum zone (MINFILE 082FSW229) is related to breccia phases in intrusive rocks, while tungsten at the **Arrow** zone (MINFILE 082FSW311) is associated with skarn zones adjacent to granitic dikes and sills. Shear-hosted vein mineralization, including sphalerite and galena, near the margins of a granitic stock characterize the **Free Silver** zone (MINFILE 082FSW277).

## **BOUNDARY DISTRICT**

Merit Mining Corp made major advancements on its **Greenwood Gold Project**, 13 km west of Grand Forks, in 2007. The company has been dewatering and rehabilitating the underground workings on the **Lexington-Grenoble** gold-copper deposit (MINFILE 082ESE041), in preparation for extraction of a 10 000-tonne bulk sample (Figure 6.5). Construction is underway on a 200 tonnes-per-day mill (the 'Greenwood' mill). The mill and tailings facilities will be capable of processing the bulk sample, as well as mined ore should the project advance to production. An application for a Small Mine permit was submitted to the Ministry of Energy, Mines and Petroleum Resources in late 2007; Merit Mining hopes to be in production by 2008.

A preliminary economic assessment was made earlier this year, and diamond drilling was carried out on the Lexington-Grenoble and the adjacent **Golden Crown** (MINFILE 082ESE032, 033). Lexington-Grenoble deposit resources include 297 000 tonnes combined measured and indicated resources, containing 8.36 g/t Au



Figure 6.5. The Lexington portal and surface facilities on the Greenwood Gold Project, Merit Mining Corp.

and 1.35% Cu at a cut-off grade of 6.0 g/t Au equivalent. The project resource base was increased by 164% in 2007 with completion of a resource estimate on the adjacent Lone Star deposit in Washington State.

The Lexington-Grenoble deposit is hosted by an altered package of dacitic to andesitic tuffs. Mineralization, which is believed to have been emplaced during development of the Republic graben, is hosted by sub-parallel lenses of disseminated to narrow veins of pyrite, chalcopyrite and quartz (with or without native gold) within tuffs adjacent to a fault contact with serpentinite.

In the same area, Kettle River Resources Ltd was active on a few fronts within its **Greenwood Area** holdings, which encompass many known mineral deposits and occurrences, including the past-producing **Phoenix** (MINFILE 082ESE020) and **Emma** (MINFILE 082ESE062) mines. Notably, trenching and diamond drilling in 2007 on the **Minnie Moore** property, northeast of the Emma, focused on a new discovery within a limestone-hosted, epithermal siliceous breccia zone. Elevated gold and silver values were found in grab and trench samples.

At the **Carmi** molybdenum property (MINFILE 082ENW036), 11 km northwest of Beaverdell, Hi Ho Silver Resources Inc worked to expand the known mineralized zones and confirm previously-reported grades. Ground-based geophysical surveys and trenching, along with two diamond-drilling programs, were carried out on the Lake Zone and E Zone. The Carmi property contains a porphyry-style molybdenum occurrence with copper, silver and gold. Molybdenite, along with pyrite, magnetite, chalcopyrite and minor bornite, occurs mainly within two sheared and brecciated zones in gneissic granodiorite, quartz diorite and diorite of the Jurassic Nelson intrusive suite (Assessment Report 28874). Recent drill results include 139.31 m of 0.128% MoS<sub>2</sub> in drillhole 07-192.

On the **GK** property (MINFILE 082ESE175), 11 km east of Beaverdell, Bitterroot Resources Ltd carried out trenching and drilling programs on the Bluejay and Hornet zones. Gold mineralization on the GK property is related to a high-level magmatic-hydrothermal system, and is closely associated with a suite of Tertiary alkalic intrusions (Assessment Report 28179). Mineralization consists of sulphide-enriched vein-breccia and stockwork containing pyrite, arsenopyrite, quartz and carbonate. One set of trench samples yielded 50.0 m grading 22.1 g/t Au.

West High Yield (W.H.Y.) Resources Ltd carried out a third major phase of diamond drilling on its **Rosland** project on the western outskirts of the town of Rosland. Past producers of gold on the company's property include the **Midnight**, **OK** and **IXL** (MINFILE 082FSW119, 116 and 117). Gold mineralization is associated with ultramafic contacts and a regional tectonic boundary, and consists of gold-bearing quartz-carbonate veins as



opposed to the more typical Rossland-style base metal sulphide-rich veins. Nickel, cobalt and magnesium associated with the Ivanhoe Ridge ultramafic body are also being evaluated and early results are encouraging.

In the same camp, Vangold Resources Ltd drilled its **Southbelt** property in 2007. The property includes the so-called Rossland South Belt veins, immediately south of the town of Rossland, including the **Mayflower** (MINFILE 082FSW146), **Bluebird** (MINFILE 082FSW145) and **Homestake** (MINFILE 082FSW123). The objective is to demonstrate continuity of known veins through previously-unexplored areas, and initial results appear positive. Known polymetallic (silver, gold, lead, zinc, copper) veins on the property are hosted by Jurassic Rossland Group rocks.

## **OUTLOOK FOR 2008**

Next year will see the first full year of production from Roca Mines' MAX molybdenum mine.

Results from bulk sampling at Merit Mining's Greenwood Gold Project are anticipated, along with the processing of the Small Mine permit application.

There is every reason to believe that exploration and development activities will continue at high levels in the Kootenays. Past-producing camps and mine sites will continue to attract attention, as new technology and ideas are applied to areas of known mineralization. Continuing major projects should include the Jersey-Emerald, Jumping Josephine, Southbelt, Thor, ReMac, and several others. Other projects which didn't meet the definition criteria in 2007 should advance to "major project" status in 2008.

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