

KOOTENAY REGION

By David Grieve, PGeo
Regional Geologist, Cranbrook

SUMMARY AND TRENDS

2005 was a good year for mineral and coal exploration in southeastern British Columbia. Exploration expenditures increased by 22% over 2004. Major programs focused on molybdenum, coal, sedex-style lead-zinc, or gold, reflecting strong prices for these commodities.

The highlight of 2005 was the application for, and approval of, a Small Mine permit for the MAX molybdenum project near Trout Lake, following a major underground rehabilitation and diamond drilling program (see below). Other major projects included ambitious drilling programs on the Jersey-Emerald and Sphinx molybdenum prospects.

The second deep diamond-drill hole on the Sullivan Deeps project near Kimberley was completed; as with hole SD1 in 2004, SD2 successfully intersected the Sullivan stratigraphic horizon which hosts the prolific sedex Sullivan Mine (past producer). Four other deep drillholes in the East Kootenays successfully intersected the same target horizon; three of these represented the deepening of drillholes begun in 2004.

Coal exploration drilling occurred at several localities, including properties such as Lodgepole, Burnt Ridge and Castle/Bare Mountains, that are not within current operations areas.

Another large diamond drilling program on the Greenwood Gold project led to extension of the Grenoble deposit, and a decision to begin to assess the feasibility of production.

Exploration expenditures in 2005 are projected to be about \$14 million, a 22% increase over the previous year (Figure 5.1). The portion of this total devoted to metals exploration was about 61%; the remainder was for coal (37%) and industrial minerals (2%).

An estimated 55 000 metres of exploration drilling was carried out in the Kootenay region in 2005, a decline from the previous year (Figure 5.2). Of this total, 55% was drilling for metals, 43% for coal (not including in-pit drilling) and 2% for industrial minerals.

There were approximately 23 major exploration programs in the Kootenays in 2005 (defined as programs with greater than \$100 000 in expenditures with ground disturbance), down from 29 in 2004.

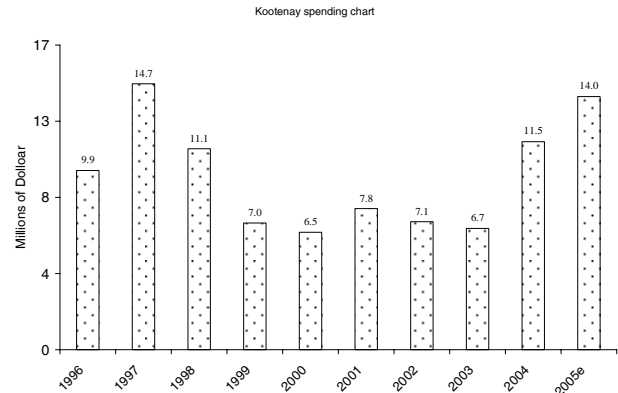


Figure 5.1. Annual exploration spending, in millions of dollars, Kootenay Region.

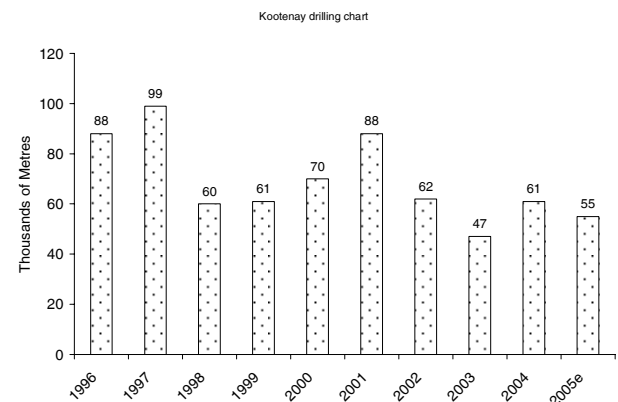


Figure 5.2. Annual exploration drilling, in thousands of metres, Kootenay Region. Note that prior to 2004 coal mine definition (in-pit) drilling was included in the total.

OPERATING MINES AND QUARRIES

Current major producing mines and quarries in the Kootenay Region are shown on Figure 5.3 and Table 5.1.

METALS

There were no metal mines operating in the Kootenay Region in 2005.

COAL

Elk Valley Coal Corporation, the world's second-largest supplier of seaborne metallurgical coal, operates

- ★ MINE / QUARRY
- Exploration Project
- City / Town

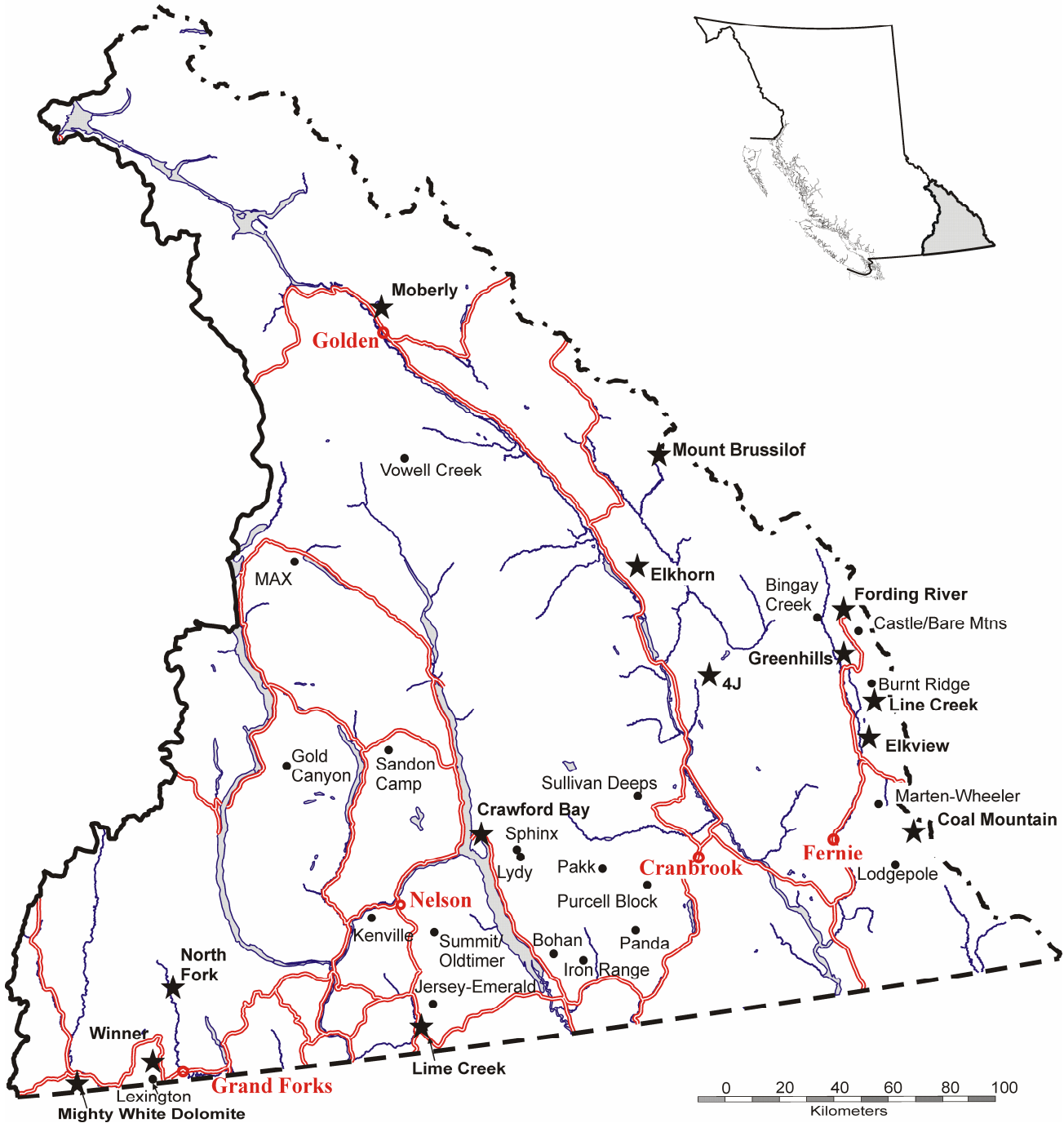


Figure 5.3. Mines, quarries and major exploration projects, Kootenay Region, 2005.

TABLE 5.1. PRODUCING MINES AND QUARRIES, KOOTENAY REGION, 2005

Mine	Operator	Deposit Type / Commodity	Forecast Production in 2004 (tonnes or kilograms)	No. of employees	Proven and Probable Reserves (at Dec. 31, 2004)	Reference for Reserves
Coal						
Coal Mountain	Elk Valley Coal Corporation	Metallurgical coal	2 350 000 t	178	28 000 000 t	W. Fleming
Elkview	Elk Valley Coal Corporation	Metallurgical coal	6 000 000 t	737	249 000 000 t	W. Fleming
Fording River	Elk Valley Coal Corporation	Metallurgical coal	9 300 000 t	898	257 000 000 t	W. Fleming
Greenhills	Elk Valley Coal Corporation	Metallurgical coal	5 100 000 t	463	98 000 000 t	W. Fleming
Line Creek	Elk Valley Coal Corporation	Metallurgical and thermal coal	2 500 000 t (including 300 000 t thermal)	280	20 000 000 t	W. Fleming
Industrial Minerals						
4J	Georgia-Pacific Canada Inc	Gypsum		8 to 10		
Crawford Bay	Imasco Minerals Inc	Dolomite				
Elkhorn	BPB Canada Inc	Gypsum		21		
Lime Creek	Imasco Minerals Inc	Limestone				
Moberly	Heemskirk Canada	Silica sand		11		
Mount Brussilof	Baymag Inc	Magnesite		25		
North Fork	Roxul (West) Inc	Monzonite (mineral wool)				
Rock Creek	Mighty White Dolomite Ltd	Dolomite		13		
Winner	Roxul (West) Inc	Diorite (mineral wool)				

five large open pit coal mines in the Elk valley area (see Figure 5.3). Coal mines again benefited from strong international markets and favourable prices in 2005. Projected total coal production at the company's **Coal Mountain**, **Elkview**, **Line Creek** (Figure 5.4), **Greenhills** (Figure 5.5) and **Fording River** operations is 25.25 million tonnes of clean coal (Table 5.1). This volume is predominantly metallurgical coal.



Figure 5.4. The Line Creek Mine.

INDUSTRIAL MINERALS

The Kootenay region continues to be an important source of a variety of industrial minerals, including magnesite, gypsum, silica, dolomite, limestone, graphite, tufa, flagstone, slate, dimension stone and aggregate. Highlights of this production follow (*also see* Table 5.1 and Figure 5.3).

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 2005 was projected to be approximately 180 000 tonnes.



Figure 5.5. The Greenhills Mine, looking northwest.

There are two gypsum producers in the Kootenay region. BPB Canada Inc 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 550 000 tonnes for 2004. Production for the Four J mine was projected to be between 250 000 and 300 000 tonnes.

Silica is produced by HCA Mountain Minerals (Moberly) Ltd from the **Moberly** mine (MINFILE 082N001) and plant, north of Golden. 2005 production was predicted to be 65 000 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).

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** diorite quarry (MINFILE 082ESE265; Figure 5.6), west of Grand Forks, and the **North Fork** syenite-monzonite quarry, north of Grand Forks, both ship to the Roxul (West) Inc mineral wool manufacturing plant in Grand Forks.

Crystal Graphite Corporation produces and ships high-purity flake graphite from its **Black Crystal** property (MINFILE 082FNW260) and mill west of the Slocan valley.



Figure 5.6. The Winner diorite quarry near Grand Forks, which provides feed for the Roxul (West) Inc rock wool plant in Grand Forks. The drill in the background is preparing for a blast.

EXPLORATION HIGHLIGHTS

Major 2005 mineral and coal exploration projects in the Kootenay Region are listed in Table 5.2. These 23 major exploration programs (shown in Figure 5.3) each

involved expenditures in excess of \$100 000 on work that included ground disturbance, for example, drilling (surface or underground), trenching or bulk sampling. Most of the following information was extracted from company press releases and Internet websites, as well as from discussions with company project geologists.

EAST KOOTENAYS

The second phase of Stikine Gold Corporation's Sullivan Deeps project continued into 2005. Following the success of the first phase, highlighted by the intersection of the target Sullivan horizon with associated sedex-style mineralization in drillhole SD1, the company stepped out approximately 1.3 km to the northeast to drill SD2 in 2005. Again the company was successful in intersecting the Sullivan horizon, but the results were not as positive.

The **Sullivan Deeps** project is targeting a postulated "sister deposit" to the Sullivan ore body (MINFILE 082FNE052), which sustained the Sullivan Mine and the town of Kimberley for over 90 years, until its permanent closure in late 2001. Deep drilling to the north of the Sullivan, and north of the Kimberley normal fault, dates back to the 1970's. In the mid-1990s Cominco drilled 4 km northwest of the Sullivan, penetrating to appropriate depth, but the Sullivan horizon was faulted out. However, a down-hole geophysical survey indicated the presence of a large conductor in close proximity to the bottom of the hole. Stikine Gold's first deep hole, SD1 in 2004, was sited at the same location as the last Cominco drillhole, and was oriented to intersect the geophysical anomaly. SD1 intersected bands of massive and laminated zinc- and lead-bearing sulphides, reminiscent of the Sullivan deposit, at the Sullivan horizon and at a drill depth of 2736 metres. A follow-up geophysical survey suggested that the 10.5-metre zone containing the sedex-style mineralization was potentially on the edge of a large new deposit. Drillhole SD2, in 2005, was sited to be nearer the centre of this projected deposit. The Sullivan horizon, and presumably the geophysical target, were intersected at a drill depth of 2365 metres in SD2. The target turned out to consist of a 0.8-metre interval of laminated and semi-massive and brecciated sulphides mainly composed of pyrrhotite (source: Stikine Gold news release). This is believed to be analogous to the barren sulphide sheet found to the east of the Sullivan Mine.

Despite this disappointing result, evaluation of all the available information suggests that the central part of the target at the Sullivan Deeps project may not have been drill-tested. The company is proposing to drill a third hole in 2006 (SD3), to test the idea that the centre of the hypothetical deposit lies to the north of SD1 and west of SD2.

Both the Sullivan deposit and the Sullivan Deeps target are within a fault-bounded Middle Proterozoic structural sub-basin within the Aldridge Formation (Purcell Supergroup). Similar basins in the Aldridge

TABLE 5.2. MAJOR EXPLORATION PROJECTS, KOOTENAY REGION, 2005

Property	Operator	MINFILE	NTS	Commodity	Deposit Type	Work done	Metres of drilling (estimated in some cases)	Riding
Bingay Creek	Hillsborough Resources Ltd	082JSE011	82J/02W	coal	sedimentary	RC EN	1371	East Kootenay
Bohan	Eagle Plains Resources Ltd	082FSE125	82F/07E	Pb, Zn, Ag	manto; sedex	G, GC DD	220	Nelson-Creston
Burnt Ridge	Elk Valley Coal	082JSE001	82G/15W	coal	sedimentary	RC A	4496	East Kootenay
Castle Mountain/Bare Mountain	Elk Valley Coal	082JSE006, 008	82J/02W	coal	sedimentary	RC A	4858	East Kootenay
Fording River (Mt. Turnbull) Gold Canyon	Elk Valley Coal	082JSE012	82J/02W	coal	sedimentary	RC	2278	East Kootenay
	Columbia Yukon Explorations Inc	-	82F/13W	Au, Ag, Pb	polymetallic skarn	A, TR DD	571	Nelson-Creston
Iron Range	Eagle Plains Resources Ltd	082FSE014-028	82F/01W	Pb, Zn, Ag Cu, Au	sedex IOCG	G, GC DD	945	Nelson-Creston
Jersey-Emerald	Sultan Minerals Inc	082FSW009, 010, 011, 218	82F/03E	Mo, W	porphyry (Mo)	DD	2500	Nelson-Creston
Kenville	Gold Standard Resources	082FSW086	82F/06W	Au, Cu, Ag	porphyry/mesothermal vein	GC TR	0	Nelson-Creston
Lexington	Merit Mining Corp	082ESE041, 042	82E/02E	Au, Cu	mesothermal vein/ polymetallic vein	DD IP, MG	3195	West Kootenay-Boundary
Line Creek (MSA West Extension) Lodgepole	Elk Valley Coal	082GNE020	82G/15W	coal	sedimentary	RC	7640	East Kootenay
	Cline Mining Corporation	082GSE028	82G/07	coal	sedimentary	FS, EN DD	1205	East Kootenay
Lydy	Jasper Mining Corporation	082FNE166	82F/10E	Mo	porphyry (Mo)	DD GC	1166	
Marten-Wheeler	Elk Valley Coal	082GNE006	82G10/W	coal	sedimentary	A	0	East Kootenay
MAX	Roca Mines Inc	082KNW003, 004	82K/12E	Mo	porphyry	FS, EN DD	3101	Nelson-Creston
Pakk	Golden Chalice Resources/Klondike Gold Corporation	082FNE115, 117	82F/08E	Zn, Pb, Ag	sedex	DD	706	East Kootenay
Panda	Klondike Gold Corporation	082FSE110	82F/08E	Zn, Pb, Ag	sedex	DD	1732	East Kootenay
Purcell Block	Ruby Red Resources	082FSE116	82F/08E	Au	vein	P, G, GC VLF DD	227	East Kootenay
Sandon Camp	Klondike Silver Corporation	082FNW043	82F/14W	Ag, Pb, Zn	polymetallic vein	GC, TR DD	676	West Kootenay-Boundary
Sphinx	Eagle Plains Resources Ltd	082FNE004, 094, 095	82F/10E	Mo, W	porphyry Mo	G, GC, A DD	3330	
Sullivan Deeps	Stikine Gold Corporation	-	82F/16E	Zn, Pb, Ag	sedex	DD	2750	Columbia River-Revelstoke
Summit/Oldtimer	Auramex Resource Corp	082FSW081, 313	82F/06E	Au	polymetallic vein	DD	2306	West Kootenay-Boundary
Vowell Creek	Jasper Mining Corporation	082KNE009	82K/15W	Ag, Pb, Zn, Au, graphite	polymetallic vein; sedex	DD AB- MG, AB- EM	1224	Columbia River-Revelstoke

Formation have been found throughout the Purcell Basin, and for several years these have been sites of major and junior-company efforts to find Sullivan-style mineralization at the Sullivan horizon. In 2005, as in previous years, this work was carried on by Klondike Gold Corporation and Eagle Plains Resources Ltd.

Klondike Gold (and/or Golden Chalice Resources Inc) drilled at four locations in 2005, searching at all of them for deep Sullivan-style targets. On the **Pakk** property (MINFILE 082FNE115, 117; Figure 5.7), approximately 30 km southwest of Kimberley, Golden Chalice extended a drillhole commenced in 2004 for an additional 706 metres (for a total depth of 1778 metres). The site is believed to coincide with a structural sub-basin, and the results of the 2004/05 drilling provide confirmation. Specifically, the Sullivan horizon is anomalously thick at this site, and it is underlain by a thick succession of pebble fragmental; both of these characteristics are reminiscent of the Sullivan ore body itself. The Sullivan horizon was found to contain contorted and altered sediments with some fragmentation, along with widespread pyrrhotite and minor sphalerite (source: Klondike Gold news release).



Figure 5.7. Drilling on the Pakk property.

Further west in the **Panda** sub-basin (MINFILE 082FSE110), Klondike Gold Corporation extended a diamond-drill hole begun in 2004 to Sullivan time. As with two earlier drillholes in the same basin, this drillhole intersected an anomalously thick Sullivan horizon and fragmentals. The 70-metre-thick Sullivan horizon (intersected at approximately 1200 metres) contained visible lead and zinc sulphides, and, when taken in context with previous drilling in the same basin, the 2005 Panda hole is suggestive of possible sedex-style mineralization to the south (source: Klondike Gold news release).

Klondike Gold then moved south within the Panda sub-basin to a location known as the **Irishman** (tabulated with the Panda in Table 5.2), to drill another deep hole to Sullivan time. This site is near the south end of the sub-basin and is adjacent to the northeast-trending Moyie Fault. Sullivan horizon was intersected at approximately

1400 metres. As predicted, the thickness of the Sullivan horizon, and the amount of sulphide minerals, were greater than in the Panda drillhole. The Sullivan horizon is underlain by a 30-metre thick fragmental unit.

Eagle Plains Resources Ltd drilled on its **Iron Range** (MINFILE 082FSE014 to 28) and **Bohan** (includes MINFILE 082FSE125) properties near Creston in 2005. There are two targets on the Iron Range property, iron oxide copper-gold (IOCG) associated with the Iron Range Fault, and sedex lead-zinc associated with the Sullivan horizon. Four diamond-drill holes were drilled this year, for a total of 945 metres. Two drillholes tested an alteration zone on the east flank of the Iron Range system, and results are reminiscent of a Sullivan-type conduit. Characteristics include fragmental textures and presence of tourmalinite. Two other holes tested a soil geochemical anomaly on the west flank of the system. One of these holes appears to have intersected the Sullivan horizon. Overall, 2005 drilling results appear to confirm the existence of a sub-basin at Sullivan time.

At the Bohan property, the target is sedex or manto-style mineralization within younger formations of the Purcell Supergroup. Significant base-metal soil geochemical anomalies drove the 2005 drilling program which consisted of further geochemical sampling and one diamond-drill hole (source: Eagle Plains news releases).

Eagle Plains Resources Ltd also carried out a major diamond drilling program on its **Sphinx** molybdenum property (MINFILE 082FNE004, 94, 95; Figure 5.8) 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. Molybdenum (and associated tungsten) mineralization is associated with the intrusive contacts, and occurs as disseminations and within quartz-pyrite stockwork veins hosted by both sedimentary and intrusive rocks (source: Eagle Plains Resources news release). Drill data to date outline a 400 by 1000 metre mineralized area that is open to the west and to depth. Best results were obtained in drillhole 12, which included 185 metres grading 0.074% MoS₂, including 11 metres grading 0.172%, and which ended in mineralization. A 47-metre interval in hole 2 averaged 0.167% MoS₂, which included a 7-metre interval containing 0.514%. A total of 3333 metres, in 14 drillholes, was drilled.

The **Lydy** molybdenum property is adjacent to the Sphinx and has similar geology. Jasper Mining Corporation carried out a soil sampling and diamond drilling program on the Lydy in 2005; this included 1166 metres of drilling in 6 holes.



Figure 5.8. Drilling on the Sphinx property.

At the **Vowell Creek** property, south of Golden in the Purcell Mountains, Jasper Mining Corporation carried out air-borne geophysics and follow-up diamond drilling. The Vowell Creek property is underlain by sediments of the Hadrynian Horsethief Creek Group and includes the Ruth Vermont mine (past-producer, MINFILE 082KNE009). Mineralization in the area is mainly associated with polymetallic veins, and typically includes base and precious metals. Two geophysical anomalies (low resistivity) were drilled, for a total of 1224 metres in 8 holes. The anomalies unexpectedly turned out to be due to the presence of graphite. Graphite was found to occupy two trends, and is observed to occur within zones up to 30 cm in true thickness (source: Jasper Mining news release). The company is now re-evaluating the Vowell Creek property for its graphite potential in addition to its base and precious metal potential.

Ruby Red Resources carried out exploration for gold on a number of properties in the Cranbrook area. A group of properties to the west of Cranbrook, including the **Zeus** and **Eddy**, is collectively referred to as the “Purcell block” of claims (includes MINFILE 082FSE116). Gold is found in quartz veins, and is associated with shear zones and faults. Host rocks are formations of the Purcell Supergroup. Work in 2005 included 227 metres of drilling in 10 holes.

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) again contributed greatly to the overall exploration figures in the southeast. Not including in-pit drilling at Elk Valley Coal Corporation’s five active metallurgical coal mines, exploration expenditures totalled \$5.1 million and the total amount of rotary and diamond drilling totalled 23 400 metres. Three of the five operations carried out major exploration programs, most on sites that don’t currently contribute to mine resource figures (that is, they are located at some distance from current operations areas). In addition, Cline Mining Corporation began their evaluation of the Lodgepole coal property and work on the Bingay Creek deposit by Hillsborough Resources Limited was extended. Some of the major programs, as previously defined, are discussed here in order from south to north, with an emphasis on the new potential resource areas.

The **Lodgepole** coal property (082GSE028) is located southeast of Fernie in the southern part of the Crowsnest coalfield (Fernie Basin). It comprises a dip-slope in Mist Mountain Formation (Figure 5.9), wherein two major seams (numbers 1 and 2, near the base of the section) and several minor seams are exposed near the surface. Cline Mining Corporation carried out a 15-hole fill-in diamond drilling program in 2005, for a total of 1205 metres, to confirm resources and quality of low-volatile PCI and metallurgical coal on the property. Cline also began baseline environmental monitoring and engineering/feasibility studies in anticipation of a potential Environmental Assessment certification application in the near future.



Figure 5.9. Lodgepole coal property, looking north. Strata dip to the left (west) in a dip-slope setting.

Burnt Ridge (MINFILE 082JSE001) is north of Elk Valley Coal’s Line Creek Operations. Elk Valley Coal carried out a large rotary drilling program (4496 metres) on a portion of the property referred to as Burnt Ridge North. Coal-bearing strata at this location are on the west

limb of the Alexander Creek syncline in the Elk Valley coalfield. If economic, resources on Burnt Ridge South and North will probably be accessed from, and contribute to, Line Creek Operations.

Bare Mountain and Castle Mountain (MINFILE 082JSE006 and 008) are south of Elk Valley Coal's Fording River Operations. Bare Mountain is on the east limb of the Alexander Creek syncline, while Castle Mountain (Figure 5.10) contains the synclinal axis and both limbs (although the exploration focus to date has been on the west limb). Elk Valley Coal carried out rotary drilling programs at both locations, for a combined total of 4858 metres.



Figure 5.10. View to the east of Castle Mountain from the Greenhills Mine, looking across the Fording River valley. Fording River Mine is off the left (north) edge of the photograph.

The **Bingay Creek** coal property (MINFILE 082JSE011) is north of Elkford and west of the Greenhills syncline in the Elk Valley coalfield. Coal-bearing strata are contained in a tight, asymmetric syncline in close proximity to and east of the Bourgeau thrust fault. Hillsborough began evaluation of the property in 2004, and a second rotary drilling program was carried out in 2005 (1370 metres in 8 holes). Drilling was intended to upgrade and expand resource calculations of metallurgical coal. An application for a Small Mine permit was submitted and later withdrawn.

WEST KOOTENAYS

In November 2005 a permit for a small mine was granted by the provincial government to FortyTwo Metals Inc, a wholly-owned subsidiary of Roca Mines Inc, for the MAX molybdenum project. The permit allows for development of an underground mine and onsite concentrator. Initial development will entail a "campaign" 500 tonne per day operation, with total annual production of up to 72 000 tonnes.

The **MAX** property (MINFILE 082KNW003 and 004) is near the community of Trout Lake, south of Revelstoke, and used to be referred to as the Trout Lake

molybdenum prospect. Extensive underground development (Figure 5.11) for advanced exploration occurred in the late 1970s and early 1980s. Recent work by Roca Mines Inc has included rehabilitation of underground workings and underground infill diamond drilling (3101 metres). A 2004 resource assessment calculated 1.01 million tonnes measured resources grading 1.01% MoS₂ at a cut-off grade of 0.50% MoS₂; this estimate was used in developing the 500-tonne-per-day mining scenario.

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 metres, in which molybdenite occurs mainly along margins of veins (source: Roca Mines report). The vein stockwork is best developed in close proximity the margins of the intrusive and its associated offshoots.



Figure 5.11. Portal at the MAX molybdenum property.

Sultan Minerals Inc has held the **Jersey-Emerald** property (MINFILE 082FSW009, 10, 11 and 218) near Salmo, which includes past producers of lead-zinc and tungsten, for more than ten years, but the exploration program in 2005 was the first focused on molybdenum. Molybdenum had been noted in mine records, and was known to occur in underground workings, historic drill core and surface showings. It appears to be closely associated with tungsten. Sultan carried out a 12-hole underground diamond drilling program (1445 metres), in order to test a 300 metre-long zone of molybdenum exposures seen in the East Dodger section of the Jersey-Emerald Tungsten mine. Molybdenum mineralization was found in all 12 drillholes. It typically occurs within a network of molybdenite-bearing quartz veins hosted within a Cretaceous granite body (source: Sultan Minerals news release). The best results were in drillhole 2, which contained 0.22% MoS₂ over its entire 58.5 metre length, and included a 1.1-metre interval near the bottom of the hole which assayed 5.19% MoS₂. The overall results suggest the molybdenum-rich zone extends approximately 300 metres in a north-south dimension, 120 metres east-west and to a depth of 90 metres; the zone remains open

to the north, south, west and at depth. A surface diamond drilling program was started late in the year.

Auramex Resource Corp carried out a diamond drilling program on its **Summit/Oldtimer** property (082FSW081 and 313) in the Ymir Camp. Gold in the Summit/Oldtimer property area is associated with quartz veins in close proximity to the contact between Ymir Group metasediments (Triassic and earlier) and intrusives of the Nelson Plutonic series (middle Jurassic). Veins in the Ymir camp trend northeasterly, and are described as being variably mineralized with auriferous pyrite, galena, sphalerite and chalcopyrite. Showings on the Summit/Oldtimer property are probably from one (or possibly more) vein(s) exposed over 3.8 km of strike length. The 2005 program (Figure 5.12) consisted of over 2300 metres of drilling in 24 holes. All of the drillholes intersected the Oldtimer mineralized structure over widths from 1.2 metres to 11.9 metres, with a central quartz vein core from 0.2 to 11.9 metres in thickness. The best mineralized sequences include 1.1 metres grading 5.76 g/t Au (drillhole 05-22), 1.0 metres grading 8.06 g/t Au (drillhole 05-05) and 2.8 metres grading 5.0 g/t (drillhole 05-07; source: Auramex news release).



Figure 5.12. Drilling on the Summit/Oldtimer property.

Klondike Gold Corporation, and a new related company, Klondike Silver Corporation, have been acquiring ground in the Sandon silver-lead-zinc camp, and carrying out exploration, over the past several years. Work in 2005 included soil geochemistry, diamond drilling (676 metres) and trenching on the **Wonderful** property (082FNW043), one of several past-producers on

lands held by the company. The objective is to apply modern exploration techniques to geologically-favourable areas with deep overburden. Mineable mineralization would be run through the company's Silvana mill at Sandon town-site (Figure 5.13). The Wonderful occurrence is hosted by argillite and slate of the Slocan Group intruded by granodiorite and quartz monzonite dikes. Mineralization occurs in a sheared and mineralized fracture, with brecciated zones of galena, sphalerite and country rock with siderite (source Klondike Gold news release).



Figure 5.13. The Silvana mill in the Sandon Camp.

Columbia Yukon Explorations Inc carried out a trenching and diamond drilling program (571 metres total) on its **Gold Canyon** property near Burton. Gold and silver mineralization at this location is related to strongly altered (including skarn alteration) metasediments and metavolcanics of the Slocan Group, in close proximity to intrusive contacts. Massive sulphide mineralization appears to be in a skarn and/or replacement setting, and gold is correlated with pyrite, pyrrotite and arsenopyrite. A newly discovered coincident geophysical and geochemical anomaly was the target in 2005. Significant drill intersections of anomalous gold and silver, in part corresponding to the geophysical anomalies, were noted (source Columbia Yukon news release).

BOUNDARY DISTRICT

There were numerous mineral exploration programs in the Midway-Greenwood, Grand Forks and Rossland areas in 2005. The most significant (and only "major") program was Merit Mining Corp's geophysics and drilling (3195 metres) program on its gold-copper **Lexington** property (MINFILE 082ESE041 and 042). The Lexington property is part of the company's Greenwood Gold project. Recent work has focused on the Grenoble deposit (Figure 5.14), specifically on extending it to the southeast. Drilling in 2005 was successful in extending the deposit for 40 metres to 520 metres overall, and it remains open along strike in this direction.

The **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 (source: Merit Mining Corp release). Current resources in the Grenoble deposit (based on 2004 drilling results) include 329 400 tonnes indicated with 8.3 g/t gold and 1.3% copper, at a cut-off grade of 6 g/t gold equivalent.

Merit Mining Corp has approval for removal of a 10 000-tonne bulk sample from the Grenoble deposit, as well as conditional approval to construct a 200-tonne per day concentrator, to process the sample, on the nearby Zip property. In late November, the company announced its intention to begin to assess the feasibility of developing the Greenwood Gold project to production, beginning with the exercising of its existing permits.



Figure 5.14. Grenoble portal on the Lexington property.

OUTLOOK FOR 2006

There is much to look forward to in 2006 in the way of exploration and development in the Kootenays. The granting of a Small Mine permit in 2005 to Roca Mines' MAX molybdenum project means that the project could potentially be proceeding toward production in 2006. Merit Mining's Greenwood Gold Project could also potentially be advancing toward production.

The Rossland Camp will likely receive significant attention in 2006 from several companies, for both its molybdenum and gold potential. There should also be follow-up programs to some of the other 2005 molybdenum drilling projects in the region, including Sultan Minerals' Jersey-Emerald and Eagle Plains' Sphinx projects.

On the Sullivan (sedex) front, Stikine Gold's third drillhole on the Sullivan Deeps project, if it is drilled in 2006 as proposed, will be of significant importance.

Similarly, any follow-up work on Klondike Gold's Pakk or Panda projects will be observed with interest.

Activity in the East Kootenay coalfields will be at a high level again. Highlights may include an Environmental Assessment application for Cline Mining's Lodgepole project.

At a more grass-roots level, follow-up and new programs by several junior exploration companies, including Jasper Mining Corporation, Ruby Red Resources, Kootenay Gold Inc, Cream Minerals Ltd and Eagle Plains Resources Ltd, each of which holds several claim blocks and is actively pursuing various targets in the region, should add significantly to the level of exploration and our knowledge of the mineral potential by the end of 2006.

ACKNOWLEDGMENTS

This report is made possible by the many exploration and mine company staff and consultants who provide access to mines, exploration sites, drill-core and data, and who so generously share their information and knowledge.