SOUTHWEST REGION

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SUMMARY AND TRENDS

The region's minerals related production was significant and varied during 2005, including metals, coal, industrial minerals and aggregate. The two largest revenue producers are the **Myra Falls** metal mine and the **Quinsam** coal mine. Both these operations conducted exploration during 2006, and Myra Falls made mill improvements which resulted in improved recoveries and lower smelter penalties.

The industrial minerals and aggregate operations, taken together, generate revenue on an order of similar magnitude as the two big mines. Lower mainland cement plants of Lehigh Northwest Cement and Lafarge North America, as well as the Ash Grove plant in Seattle, represent important local markets for quarried materials, while the construction industry along North America's western seaboard requires large quantities of aggregate.

Myra Falls celebrated 40 years of operation in 2006. During its lifetime the mine has been a major contributor to the Campbell River region's economy, and it currently employs approximately 400 people. Present reserves could last another five years; however, ongoing exploration is designed to extend the mine life.

One of the more interesting mine development projects in the province, the **Orca** sand and gravel quarry on northern Vancouver island near Port McNeill, is making good progress as construction is on schedule and within budget. They expect to begin stockpiling inventory in December 2006 and make their first shipment within the first quarter of 2007. The company is constructing a shiploading facility on Broughton Strait capable of accommodating Panamax class freighters and it is targeting the California market. The operation is designed to be capable of producing and shipping six million tonnes per year for a projected lifespan of 25 years.

Total, regional exploration expenditures focusing on metals, coal and industrial minerals are expected to be close to 2005 levels (Figure 6.1). Both 2005 and 2006 spending were up dramatically from the preceding six years. Several projects remained active throughout December.

Two exploration projects are estimated to have spent in excess of $1 million in 2006 and a total of nine were in excess of $250 000. In 2005, three projects had budgets over $1 million and nine had more than $250 000.

An estimated 43 000 metres of exploration drilling was carried out in the Southwest Region in 2006, a decline from the previous year (Figure 6.2).

The Southwest Region has a long history of exploration and mining and it encompasses a wide variety of exploration targets. Despite its long history, many parts of the region remain underexplored reflecting a variety of factors, including rugged terrain, poor access and poorly known geology.

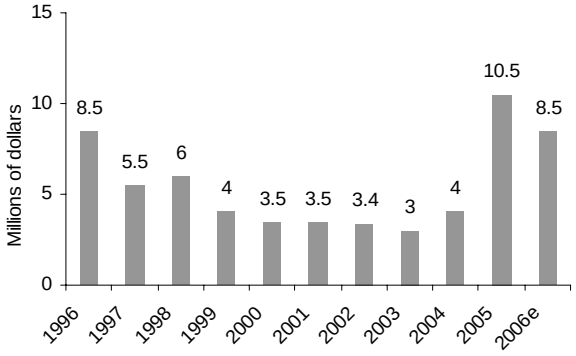

Figure 6.1. Annual exploration spending, in millions of dollars, Southwest Region.

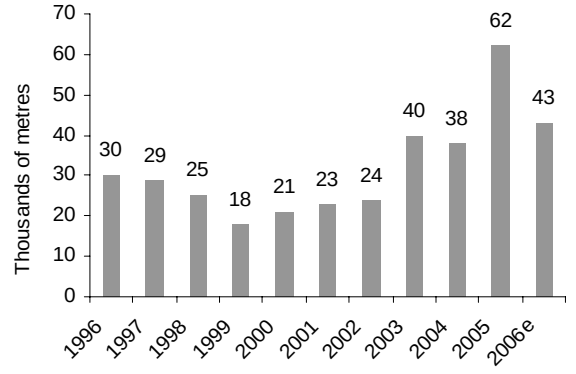

Figure 6.2. Annual exploration and development drilling, in thousands of metres, Southwest Region.

MINES AND QUARRIES

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

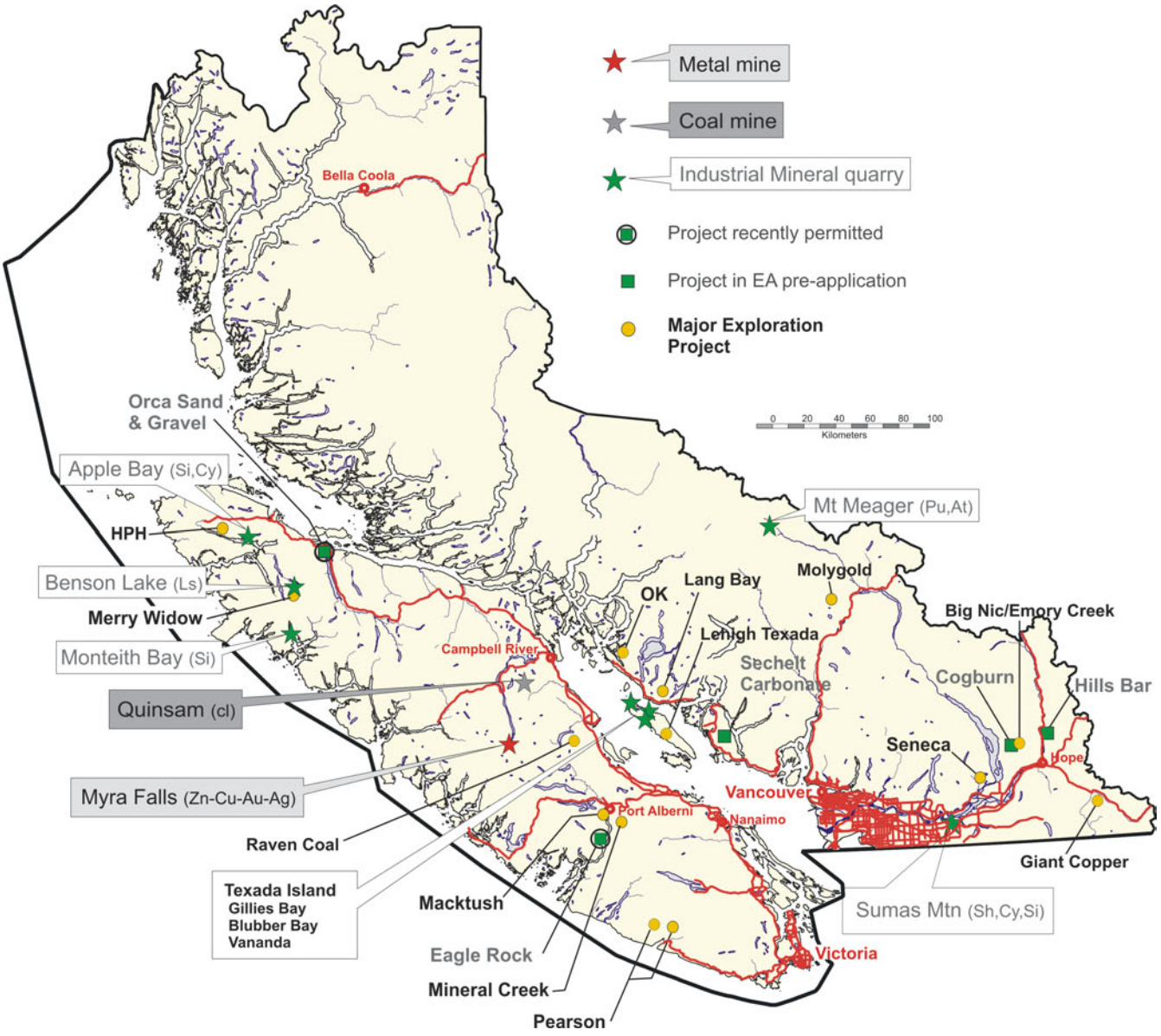

Figure 6.3. Mines, quarries and major exploration projects in Southwest British Columbia, 2006.

MINES

The first mill at the **Myra Falls** camp opened in 1966, making 2006 the fortieth year of operations. During those years approximately 26 million tonnes of ore have been mined from several volcanogenic massive sulphide deposits. Breakwater Resources Ltd assumed control of the operation in mid 2004; the mine is operated for Breakwater by its subsidiary, NVI Mining Ltd. Myra Falls currently operates two underground mines: the H-W mine and the Battle-Gap mine.

The **Myra Falls** mine, located in Strathcona Provincial Park just over 50 km southwest of Campbell River, milled 548 255 tonnes of ore in the first nine months of 2006, as compared to 685 694 for the same period in 2005. The 2006 production estimates as of September 25th were 750 000 tonnes of 5.9% zinc, 1.1% copper, 1.4 g/t gold and 42.9 g/t silver. Ventilation requirements are reported to have been the principal factor in holding back production improvements. A severe storm in mid November damaged a bridge on the road to the mine, necessitating a brief suspension of operations.

Mill upgrades during 2006 resulted in better zinc and copper recovery, lower zinc and lead penalties for copper concentrate, and production of a new lead concentrate. As well, a new gold circuit is improving recovery.

Proven and probable reserves as of December 31, 2005, were 6000 Mt at 6.4% Zn, 1.1% Cu, 1.3 g/t Au and 46 g/t Ag. Measured and indicated resources including the reserves are estimated at 8.6 Mt grading 7.8% Zn, 1.4% Cu, 64 g/t Ag and 1.8 g/t Au. Based on these figures, the mine could sustain production into 2011. However, exploration is in progress with the goal of significantly augmenting reserves. The company reassembled the Myra Falls exploration department early in 2006. The 2006-2007 program will include district scale exploration

TABLE 6.1. PRODUCING MINES AND QUARRIES, SOUTHWEST REGION, 2006

Mine / Quarry Operator	**Location / community**	**Commodities**	**Forecast production in 2006**	**Employment** person years	**Reserves as of January 1, 2005**
Myra Falls NVI Mining Ltd (Breakwater Resources Ltd)	Campbell River	Zn-Cu-Au-Ag	750 000 t of 5.9% Zn, 1.1% Cu, 1.4 g/t Au, 42.9 g/t Ag	~400	6000 Mt at 6.4% Zn, 1.1% Cu, 1.43g/t Au, 46 g/t Ag
Quinsam Quinsam Coal Corp (Hillsborough Resources Ltd)	Campbell River	Thermal & PCI coal	520 000 t clean coal	91	25.7 million tonnes (reserves and resources)
Apple Bay Electra Gold Ltd	Northern Van Island	Geyserite	120 000 t	6	5 million t
Benson Lake Imasco Minerals Inc	Northwest Van Island	Limestone	36 000 t	3	100+ years
Blubber Bay Ash Grove Cement Corp	Texada Island	Limestone aggregate, dolomitic lst	~600 000 t	14	
Gillies Bay Texada Quarrying Ltd (Lafarge Canada Inc)	Texada Island	Limestone, lst aggregate	5.6 million t	90	100+ years
Vananda Imperial Limestone Company Ltd	Texada Island	Limestone	255 000 t	8	50 years
Monteith Bay Lehigh Northwest Cement Ltd	Northwest Van Island	Geyserite	30 481 t	6	
Mount Meager Great Pacific Pumice Ltd	Pemberton	Pumice	20 000 cubic metres	3	100+ years
Sumas Mtn Clayburn Industries Ltd and cement manufacturer partners	Abbotsford	Clay, shale and sandstone	~ 500 000 t	10-20	~70 years

Note: Blubber Bay and Gillies Bay produce limestone for both industrial mineral applications and aggregates - other large aggregate only operations are not included in this table.

as well as expanding known ore bodies by completing 25 000 m of diamond drilling and 600 m of underground drifting to gain access to the Marshall East target.

Through compilation and review of historical and recent data, targets have emerged along the Marshall-Trumpeter trend, north of the highly productive Battle-Gap–HW trend and in the Marmot to the south.

The **Quinsam** coal mine, owned and operated by Hillsborough Resources Limited is located approximately 20 km southwest of Campbell River. It produces thermal coal, used mainly for cement manufacture. The mine commenced with surface operations in 1987, then moved operations underground in the 1990s. The operation uses mechanized, remote-controlled continuous miners in a retreat room and pillar method.

In 2006 the Quinsam mine produced approximately 3000 tpd of raw coal, resulting in annual production of 765 000 raw tonnes or 520 000 clean tonnes. Production has more than doubled since 2003 and a further increase in production is planned for 2007. The wash plant has a 250 tonne/hour capacity. As of December 31, 2005, the Quinsam mine had reserves and resources of 25.7 million tonnes. In 2005, Hillsborough embarked on a long term exploration project designed to significantly increase resources and reserves. The work extended into 2006. Drilling at the **Quinsam North** property led to 25 293 000 tonnes of measured and indicated coal resources and an inferred resource of 11 688 000 tonnes. When developed, this resource, located adjacent to the existing mine, could extend mine life significantly beyond the current 9 years (Figure 6.4).

QUARRIES

The **Gillies Bay** limestone and aggregate quarry of Texada Quarrying Ltd is expected to quarry more than 5.6 million tonnes in 2006 and ship well over 5 million. The bulk of its product feeds cement plants, such as the Lafarge and Lehigh plants in Richmond and Delta. However, a recently upgraded aggregate plant is capable of producing up to 1.5 million tonnes of limestone, volcanic rock and granite crushed aggregate. Former waste dumps, including those from past producing magnetite mines on the property, can be re-considered for use as aggregate stockpiles.

Among the quarry's assets is deep water ship-and-barge loading facility with a 4000 tonne/hour single quadrant ship-loader capable of loading a Panamax freighter in less than 24 hours. This facility has proved useful to other mines in the region such as Quinsam Coal, for re-loading material from barges into larger vessels for international transport. In 2006, Texada Quarrying acquired two Caterpillar 777 haul trucks and a Caterpillar 385 excavator, which will facilitate the selective separation of limestone for cement and dike material for aggregate purposes.

More than half of the Gillies Bay product shipped goes to Lower Mainland markets and roughly 40% to US markets in Washington, California and Hawaii.

Ash Grove Cement's **Blubber Bay** quarry is expected to ship approximately 600 000 tonnes in 2006. Limestone has been quarried at Blubber Bay continuously since 1907. Currently most is sold as aggregate; however, the quarry also produces a higher magnesium (16.75% MgO or more) dolomitic product for agricultural use.

Figure 6.4. Block faulting in the Comox Formation at Quinsam Mine.

Approximately 45 000 tonnes of this recently-developed dolomitic limestone product will be produced in 2006.

Imperial Limestone's Quarry at **Van Anda** will produce approximately 255 000 tonnes of limestone in 2006, mainly for use in the US construction market.

Clayburn Industries Ltd produces 500 000 tonnes of clay, shale conglomerate and sandstone annually from their **Sumas Mountain** quarry and most of the production feeds local cement plants. Approximately 35 000 tonnes per year of the highest grade clay, is used in the manufacture of facebrick and refractory products, such as firebrick and castables, which are marketed through Clayburn Refractories Ltd.

The **Apple Bay** geyserite quarry of Electra Gold will produce approximately 120 000 tonnes in 2006 for use at the Ash Grove cement plant in Seattle. A bulk sample is planned for the near future, which may result in a new customer and an increase in production.

Monteith Bay quarry, operated by a subsidiary of Lehigh Northwest Cement Limited, produced 30 481 tonnes of geyserite in 2006 to supply its cement plant in Delta. Geyserite is an opaline, hydrous silicon-dioxide commonly formed around hot springs and geysers. It finds application as a silica-rich additive in cement manufacture, among other uses.

Imasco Minerals Inc operates a limestone quarry at **Benson Lake**, producing a high brightness product with a variety of uses as an extender and filler for paper, plastics, rubber, adhesives, glazes and paints. Production is estimated at 36 000 tonnes in 2006.

Great Pacific Pumice Ltd expects to produce as much as 20 000 tonnes of pumice at its **Pum** deposit at **Mount Meager**. Pumice has construction applications including lightweight fill and concrete, agricultural applications and several potential industrial uses.

Sumas Clay Products Ltd operates a small clay quarry at Kilgard, and produces bricks at a plant first constructed in 1912. The company produces a line of products for regular clientele and also fills custom orders for brick and clay products (Figure 6.5).

Medical and cosmetic grade clays are quarried at the **DeCosmos** clay property on Hunter Island south of Bella Bella and the **Carrie Cove** quarry near Comox. The products are marketed by the Ironwood Clay Company Inc and Carrie Cove Cosmetics Inc, respectively. Production occurs on a small scale and is not necessary every year.

AGGREGATES

The aggregates industry is a significant contributor to the economy in the southwest. Demand remained strong throughout 2006 and quarries in the Southwest Region are estimated to have produced approximately 35 million tonnes of aggregate, worth over $200 million. Aggregate materials have a low unit value, and much of the ultimate value depends on its location either near a large market, such as BC's Lower Mainland, or near a ship or barge loading facility to service markets on North America's western seaboard. Several of Canada's top aggregate producers are located in southwestern British Columbia.

The **Sechelt** sand and gravel pit, of Construction Aggregates Ltd, is expected to produce approximately 4.8 million tonnes during 2006. According to *Aggregates and Roadbuilding Magazine* it was Canada's largest sand and gravel producer in 2005 by a wide margin. It was the second largest aggregate producer overall only to **Gillies Bay**, which produces crushed rock both for aggregate and cement manufacture. Several other operations in the Southwest Region produce in excess of a million tonnes of aggregate annually, whether sand, sand and gravel, crushed rock or a combination of these.

Producer's Pit in Metchosin, also a Construction Aggregates Ltd operation, has historically been a greater than 1 million tonne producer. It is expected to be depleted about the end of 2007 and Sechelt production is expected to increase to offset the difference.

Cox Station Quarry is operated by Mainland Sand and Gravel and is located on the Fraser River at Sumas Mountain. Recently, it has produced approximately 2 million tonnes per year of a crushed granite product, most of which is shipped by barge on the Fraser River. Three other large producers of crushed aggregate are found on Sumas Mountain: Highland quarry, Summit quarry (Lafarge Canada) and Western Rock quarry.

Four large sand, gravel and crushed aggregate producers are located in the **Bradner Road** area west of Abbotsford, and a number of large pits are located on the Fraser River's North Shore at Mission, Maple Ridge and Coquitlam. Three of the largest operations are located on **Pipeline Road** in Coquitlam.

Lafarge's **Earle Creek Pit** is another large (more than 1 million tonnes per year) sand and gravel pit located on the Sunshine Coast at Earl Creek on Skookumchuck narrows. The plant has a nominal production rate of 500

Figure 6.5. Sumas Clay Products (Photo by J. Pardy).

tonnes/hour. Similar to many of the other very large quarry and pit operations, it employs a conveyor barge loading system for efficient transport to coastal markets.

A portion of material shipped from Texada Island quarries consists of aggregate products. In total they produce 1-2 million tonnes annually, with the capacity to produce more.

There are numerous smaller sand and gravel pits throughout the Lower Mainland and Vancouver Island on both public and private lands, probably numbering over one thousand. Many of these are active only sporadically.

DIMENSION STONE/LANDSCAPING STONE

Quarrying of stone for construction and landscaping purposes is increasing in importance and takes place at a number of locations around Vancouver Island and the Lower Mainland.

Two quarries located along the Strait of Georgia have provided stone for historic landmark buildings in British Columbia. Both increased their production in 2006. Hardy Island Granite Quarries Ltd expects to produce approximately 6000 tonnes of granodiorite from its quarry on **Hardy Island** at the mouth of Jervis Inlet in 2006. Haddington Island Stone Works will produce approximately 1000 tonnes of rock from **Haddington Island** in Broughton Strait near Port McNeil. Hardy Island was reopened in 1999 and Haddington in 2004 (Figure 6.6).

Matrix Marble and Stone, located in Duncan, BC, mines three colours of marble at its quarries on Vancouver Island. The company produces value-added items such as countertops and bathroom fixtures.

Margranite Industry Ltd of Surrey, BC uses a small amount of local stone for its polished granite tiles and slabs. Robson Rose, Alpine Summer and Cascade are among the colours quarried locally. Most of Margranite's product is made from a variety of exotic imported stone.

Huckleberry Stone Supply Ltd quarries local basalt in the Whistler-Squamish area for construction and landscaping purposes from a number of small quarries; **Spumoni, Cabin, Freeman, Rubble** and **Huckleberry**. Production for 2006 is estimated at roughly 15 000 tonnes. Phyllite is also quarried in the Whistler area.

Several operators quarry slate in the Port Renfrew area on a small scale, including Van Isle Slate, K2 Stone Quarries and Island Stone and Landscape Supply Ltd. Uses are primarily landscaping and residential construction.

MINE DEVELOPMENT PROJECTS

Exploration and development of several significant aggregate and sand and gravel deposits is ongoing. In particular, **Orca Bay** sand and gravel, near Port McNeil on northern Vancouver Island is scheduled to begin production by the end of 2006. The operator, Polaris Minerals Corporation, projects first year sales of 1.4 million tonnes. It hopes to eventually ramp up production to over 6 million tonnes (7 million short tons) per year.

Polaris reports the **Orca** sand and gravel operation is on-schedule with construction and is within budget. They expect to begin stockpiling inventory in December 2006 and make their first shipment within the first quarter of 2007. The focus is on the California market. British Columbia's Lower Mainland and Hawaii are also mentioned as target markets. The operation is designed to be capable of producing and shipping six million tonnes per year and have a life of 25 years. Potential exists to increase reserves.

Key to the economic viability of the project will be their deep water ship loading facility capable of loading 70 000 tonne CSL International Panamax freighters. Other coastal BC quarries at Gillies Bay and Sechelt have demonstrated that similar logistics can be feasible.

The **Eagle Rock Quarry** project of Polaris Minerals Corp, located 15 km south of Port Alberni received its provincial environmental assessment certificate and mine permit for production of 6 million tonnes per year in 2003. The project has a large resource (686.9 million tonnes) of granite for construction aggregate. However a feasibility study is on-hold as the company focuses on its **Orca** sand and gravel project .

Pan Pacific Aggregates Ltd began the pre-application phase of environmental assessment with their **Sechelt Carbonate Project** late in 2005. The company is considering development of a 4-6 million tonne-per-year carbonate quarry with a 25-year lifespan on the Sechelt Peninsula.

The **Hills Bar Aggregate** project of Qualark Resources Inc entered the pre-application phase of environmental assessment in 2003 with a project description. No evidence of progress has been published since that time.

The **Cogburn** magnesium project remains in the pre-application phase of environmental assessment. Leader

Figure 6.6. The lions on the steps of the Vancouver Art Gallery were carved from Hardy Island Granite.

Mining announced the acquisition of additional land and an airborne geophysical survey of 234 line km over its Emory zone claims.

Benson Lake Magnetics Ltd is testing tailings and waste dumps at the **Coast Copper** and **Iron Crown** mines. The company anticipates operating a small magnetite processing plant at Benson Lake on Northern Vancouver Island. The product would be used for washing coal.

EXPLORATION HIGHLIGHTS

Major 2006 mineral exploration projects in the Southwest Region are listed in Table 6.2 and their locations are shown on Figure 6.3.

North Island

Lumina Resources' **Hushamu** (MINFILE 092L 240) project had little activity during 2006, but the 2005 discovery of porphyry style mineralization at the NW Expo prospect (95 metres of 0.17% Cu and 1.0 g/t Au), together with the presence of other known porphyry style targets within the Island Copper area suggest further work in 2007. Late in 2006, Western Copper Corporation succeeded in their effort to purchase all outstanding shares of Lumina.

The **Merry Widow** (MINFILE 092L 044, 045, 046) property of Grande Portage Resources Ltd had a successful drilling campaign during 2006, with a number of promising gold intersections and an expanded land position. A grid drilling program along the Old Sport Horizon is planned for 2007 in addition to testing more of the 3.5 km Merry Widow trend.

The Merry Widow property has two skarn deposits that were mined at three locations. The Merry Widow mine produced magnetite primarily from an open pit operation. Approximately 3.4 million tonnes of ore were mined and about 1.7 million tonnes of iron concentrate shipped. The Old Sport skarn horizon is located along a conformable contact between the Karmutsen volcanics and Quatsino limestone of the Vancouver Group and was mined at two locations. The Coast Copper and Benson Lake mines produced copper, magnetite, iron, gold, silver and cobalt from magnetite skarn, chalcopyrite and bornite veinlets, lenses and disseminations. Roughly 2.6 million tonnes of ore were mined, yielding approximately 91 million pounds of copper, more than 500 000 tonnes of iron, 377 000 ounces of silver and 124 000 ounces of gold.

The targets of current exploration are precious metal enriched skarn deposits. Historically reported gold grades were in the 1 to 2 g/t range, but intervals grading much higher were reported in the current program. For example, 6.51 g/t gold, 21.93 g/t silver and 1.38% copper over a 50.32-metre interval starting at 20 m in diamond-drill hole DDHMW-17.

Step out drilling at the Merry Widow pit is underway at the time of writing, with holes on the Raven zone. Weather permitting the Marten zone is next on the schedule.

New Livingstone Minerals Inc took a 900 tonne bulk sample from the **HPH** property (MINFILE 092L 069), located between Holberg and Port Hardy on northern Vancouver Island. The HPH prospect has been described as having zinc-rich skarn/manto mineralization, silicified limestone, sphalerite veins and magnetite-pyrite contact deposits.

Doublestar Resources undertook a significant mapping and rock geochemistry program on their **Century Limestone** project northwest of Gold River. Lehigh Northwest Materials Ltd conducted a seismic survey and drilled number of test holes and pits on an aggregate deposit at **Sayward**. Merit Mining Corp dug trenches on the **Virosa**, approximately 28 km south of Sayward.

Campbell River/Comox

In 2006 Compliance Energy Corp announced a $2.1 million dollar exploration program on its **Raven** (MINFILE 092F 333) project, consisting of a seismic survey and drilling. The Raven has a 2001 resource estimate of 38.5 million tonnes of metallurgical grade coal. A new resource estimate will be prepared on the basis of the 2006 work. Historically, the property produced 2 million tons of coking coal between 1949 and 1966. The focus of the 2005 exploration activity was the **Bear** (MINFILE 092F 313) project. It resulted in a non NI43-101 compliant resource update; further infill drilling is required to upgrade the Bear resource. The two deposits are approximately 12 km apart, and additional showings have been identified between them.

Port Alberni

Bitterroot Resources continued its **Mineral Creek** (MINFILE 092F 079, 331) project (approximately 10 km southeast of Port Alberni). It included a substantial drill program of 44 holes in the Lower Linda vein area and 22 to test the 900 zone, Gap fault and Mineral Creek fault. In total, approximately 2000 m were drilled during late 2005 and approximately 9000 m as of late November 2006. There were a number of significant gold intersections. At the time of writing, a drill rig is in place on the Big Southeaster property (approx 2 km south of Mineral Creek) for a planned 200 m, two-hole program designed to test a structurally controlled drill target. Bitterroot and Mineral Creek Ventures Inc plan bulk sampling on the Lower Linda and the 900 zone in early 2007.

TABLE 6.2. MAJOR EXPLORATION PROJECTS, SOUTHWEST REGION, 2006

Property	Operator	MINFILE (NTS)	Commodity	Target Type	Work Program
Big Nic / Emory Creek	Pacific Coast Nickel Corp	92HSW082,93	Ni-Cu-PGE	Magmatic	G,MG (2.4 km), AB (74.4 km)
Giant Copper	Imperial Metals Corporation	92HSW001,2, 27,161	Cu±Mo±Au	Porphyry	DD (1212 m)
HPH	New Livingstone Minerals Inc.	092L 069	Ag, Zn, Pb, Cu, Au, Mag	Skarn, Manto	TR, BU (900 t)
Lang Bay	Electra Gold Ltd	092F 137	Kaolinite, clay	Industrial Min.	DD (457 m)
Lehigh Texada	Lehigh Northwest Materials Ltd	092F 104	limestone	Industrial Min.	A, DD (2000 m)
Macktush	SYMC Resources Ltd	92F 012	Au-Ag-Cu±Mo	Vein, Porphyry	A, G, GC, DD (860 m)
Merry Widow	Grande Portage Resources Ltd	092L 044	Au-Ag-Cu± Co	Skarn	DD (~4500 m, in progress), AB, IP (8.85 km)
Mineral Creek	Bitterroot Resources Ltd	092F 079, 331	Au-Ag	Vein	DD (9000 m)
Molygold	TTM Resources Inc	092JW007,01 7,018	Cu-Mo	Porphyry	IP, GC, DD (2000 m)
Myra Falls mine	Breakwater Resources Ltd	92F 330, 071, 072, 073	Cu-Zn-Au-Ag-Pb	VMS	DD (~5000 m, in progress),
OK Copper-Moly	Goldrush Resources Ltd	92K 008, 057, 155	Cu-Mo	Porphyry	A, GC
Quinsam Coal mine	Quinsam Coal Corp (Hillsborough Resources Ltd)	092F 319	Thermal coal	Sedimentary	RD(800 m)
Raven Coal	Compliance Energy Corp.	092F 333	Metallurgical coal	Sedimentary	GP (21 km seismic), RD+DD (2850 m), BU (12 t)
Pearson (Reko, Bugaboo)	Emerald Fields Resource Corp	092C 022	PGE, Ni, Cu	Mag., skarn	G, AB-MG (1970 km)
Sechelt Carbonate	Pan Pacific Aggregates Ltd	092GNW031	Dolomite and other	Industrial Min.	AB-EM (740 km), G, GC, DD (9000 m)
Seneca	Carat Exploration Inc	092HSW013	Zn-Cu-Pb-Ag-Au	VMS	G, GC, AB(1080 km) DD (~3000 m, in progress)

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; 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)

SYMC Resources Ltd continued work on its **Macktush** (MINFILE 092F 012) property with mapping, prospecting and sampling and a drill program to follow up a 2005 airborne geophysical survey. Short holes tested the Fred vein system and drilling in the MC zone began. The company had drilled a total of 860 m in 2006 when the operation was suspended during a severe mid-November storm.

Drilling below trenching on the Fred veins has so far generally not returned results as encouraging as those obtained from chip samples at the surface. Other areas within this large property warranted further exploration with surface samples yielding multiple grams per tonne gold and more than one percent copper. For example, a representative chip sample graded 2.2% Cu, 1.19 g/t Au, 39 g/t Ag over 1.0 m at surface. Complete results of the 2006 drilling have not been released at the time of writing.

Port Renfrew

The **Pearson** (MINFILE 092C 022, 090, 091, 110, 146) project, operated by Emerald Fields Resources, was active again in 2006 with an airborne magnetic survey of 1970 line km and the acquisition of additional ground. The project is located approximately 14 km northeast of Port Renfrew.

The known mineral occurrences in the area are described as magnetite skarns; however, Emerald Fields has discovered some sulphide mineralization which has different characteristics. Commodities of current interest include copper, nickel and platinum group elements. The area has been mapped as underlain primarily by diorite of the Westcoast Crystalline Complex, but ultramafic rocks are also known in the area.

Also in the Port Renfrew area, Van Isle Slate has taken a bulk sample of about 150 tonnes slate from its **ATI** (MINFILE 092C 059) property for test marketing purposes. K2 Stone Quarries also markets products for landscaping and building which are quarried from rocks of the Leech River Complex.

Texada Island/Sunshine Coast

Activity continued on the **Sechelt Carbonate** (MINFILE 092GNW031) project of Pan Pacific Aggregates Plc, located approximately 15 km north of Sechelt. The company completed approximately 740 line km of airborne DIGHEM early in the year, followed by detailed geological mapping. By the end of the year the company plans to have drilled approximately 9000 m of NQ core. A new resource estimate is planned.

Exploration was substantially completed on Pan Pacific's **Southern Operation** (**Mineral Hill,** MINFILE 092GNW052, 053) area of the property in 2005. A permit to mine at that location has been in place since 1985. A biophysical baseline study is being conducted in aid of the company's plan to apply for a Large Producer permit. Pan Pacific acquired waterfront land to be considered for use as a ship loading facility.

On Texada Island, Lehigh Northwest Cement Ltd carried out a drill program on its **Lehigh South** (MINFILE 092F 104) limestone property in late 2006.

Eastfield Resources Ltd holds an option to earn a 100% interest in the **OK** (MINFILE 092K 008, 057, 155) porphyry copper project, which is located approximately 40 km north of Powell River. Prophecy Resources may earn up to 60% interest from Eastfield Resources by property payments and exploration expenditures. They conducted a surface program in May-June of 2006 consisting of road and drill pad construction, bedrock and soil sampling. Incorporating results of 2005 drilling, the new NI 43-101 compliant, inferred resource estimate is 86.8 million tonnes with average grades of 0.31% copper and 0.014% MoS_2 at a copper cut-off grade of 0.2%. The previous estimate (2005) was an inferred resource of 64.02 million tonnes with average grades of 0.34% copper and 0.016% MoS_2 at a 0.20% copper cut-off grade.

Electra Gold Ltd conducted a drilling program at the **Lang Bay Kaolin Project** (MINFILE 092F 137), following receipt of a mineral process engineering report. Markets for kaolin would include ceramics, paint, filler, fibreglass and cement feedstock products, depending on the specifications of the clay.

Pemberton

TTM resources continued exploration on its **Molygold** project west of Pemberton with a 2000 m, 15-hole drill program on the Road zone. Reconnaissance prospecting, mapping and geochemical sampling has also been carried out on the property. IP on the Breccia zone has identified two areas for follow up work in the coming year. Several new mineralized zones have been reported on the property in the course of the current project, in addition to those previously documented (MINFILE 092JW007, 017, 018).

Gold King Mining Inc did an IP survey on the **Gold King** (MINFILE 092JNE054) property north of Pemberton. To the southwest, near Whistler, Auramex Resource Corp reactivated their **Brandywine** (MINFILE 092JW001) property, beginning with some chip sampling and mapping. Drilling is planned.

Boston Bar/Harrison Lake

In January 2006 Northern Continental Resources terminated their option on the **Abo** (MINFILE 092HSW092) property near Harrison Lake. During the period of their option agreement (2002 to 2006) they spent an estimated $674 000 on the project. The property is presently wholly-owned by Copper Canyon Resources Ltd. Although work continued into December of 2005, no work has been reported on the Abo during 2006.

Pacific Coast Nickel Corp conducted airborne geophysics and ground magnetometer surveys in addition to geological mapping and prospecting on its Harrison Lake area projects **Big Nic**, **Emory Creek** and **Mount Parker-Mount McNair** (MINFILE 092HSW082, 093). Ground based magnetometer surveys were successful in locating and extending mineralization and identifying targets for follow-up on the Big Nic. At Emory Creek, a dunite-peridotite-pyroxenite ultramafic complex hosts sulphides of apparent magmatic origin. Airborne geophysics defined an area of interest at the Mount Parker-Mount McNair areas.

Saturn Minerals Inc, International Millennium Mining Corp and Sutcliffe Resources Ltd deferred major work on their claims in the Harrison Lake area in 2006. Some drill pads are prepared for a proposed 2007 program on the **Harrison Lake Massive Sulphide** (MINFILE 092HNW077) project, an International Millennium/Sutcliffe joint venture. Saturn hopes to drill its **Mascot** and **Gem** (MINFILE 092HNW001) properties in the coming year.

At the **Seneca** (MINFILE 092HSW013) property, west of Harrison Lake, Carat Exploration completed a December 2005 drill program early in 2006 and commissioned a 1080-line-km AeroTEM II airborne geophysical survey. The 2005-2006 holes intersected massive sulphide mineralization at the Seneca zone in the western portion of the property.

The Seneca deposit has been described as a zinc-lead-copper-silver Kuroko style massive sulphide body, explored since the 1920s. In 1962 a 260 tonne shipment sent to Britannia Mine graded 1.55% copper, 8.15% zinc, 154.28 g/t silver and 4.11 g/t gold. Similar values have been obtained in more recent Seneca zone drilling. A 2.6 m intercept graded 0.94% copper, 20.28% zinc, 100 g/t silver and 3.05 g/t gold in early 2006. The late 2006 4000 m drill program is designed to test a horizon correlative with the volcaniclastic unit of the Seneca zone.

Mosquito Consolidated Gold Mines Limited began work on the **Statlu Creek** aggregate project near Mission. The initial program consisted of a seismic survey, sonic drilling and sampling for placer gold.

The **Giant Copper** (MINFILE 092HSW001, 002, 027, 161) property of Imperial Metals Corporation is located approximately 35 km southeast of Hope. It was drilled in 2006 with the goal of testing the AM zone, a near-vertical mineralized breccia pipe, at depth. Complete results had not been received at the time of writing, but the company plans to continue exploration of the AM zone during 2007 (Figure 6.7).

The Giant Copper property hosts what appears to have been a strong hydrothermal system with copper-gold-silver-molybdenum mineralization and a vertical or subvertical breccia pipe having dimensions of approximately 200x300 m at surface and extending beyond depths of 550 m. The property, including the AM zone, has been explored since about 1930 with over 22 000 m of drilling and 6 km of underground workings.

Diamond-drill hole GCS06-01 intersected 296.7 m grading 0.53% copper, 13.44 g/t silver and molybdenum starting at a depth of 47.5 m.

There have been several historical reserve calculations. A goal of the present program is to update and increase the underground reserves at depth, based on the hypothesis that the breccia pipe could represent the deep root of a porphyry system. Postulated exploration analogues are the breccias of the Rio Blanco Cu Mo porphyry deposit in Chile.

Figure 6.7. A diamond drill rig at Giant Copper (Photo by S. Robertson).

OUTLOOK FOR 2007

The larger exploration projects of 2006 are expected to continue into 2007. Reactivation of other projects, such as Hushamu, and emergence of new exploration programs are anticipated. The following are among the projects with stated plans for 2007:

- Orca sand and gravel is to begin shipments of sand and gravel in early 2007;
- A bulk sample is planned at the Apple Bay quarry of Electra Gold Ltd;
- Drilling is ongoing at the Merry Widow property at the time of writing, and Grande Portage plans drilling along the Merry Widow trend and the Old Sport Horizon;
- Bitterroot Resources Ltd and Mineral Creek Ventures Inc expect to undertake underground bulk sampling of the Lower Linda vein and 900 zone on the Mineral Creek property in 2007;
- Western Copper is planning a 2007 program at Hushamu which is to include drilling at the NW Expo in March and completion of a pre-feasibility study by the end of the year;
- As of early December, a drill campaign remains underway at the Seneca property of Carat Exploration Inc;
- Compliance Energy Corporation has extended their option on the Raven coal property;
- Prophecy Resources Corp plans drilling to follow their surface exploration of the OK property in 2006;
- A major exploration campaign is underway at Myra Falls which will continue into 2007;

- Imperial Metals intends to continue exploration of the AM zone at their Giant Copper property in 2007;
- Doublestar Resources has been granted a permit for up to 4000 m of diamond drilling on the Century and BCD limestone properties.

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