

Assessment Report for the

Sanca Creek Property

Nelson Mining Division

N. T. S. 82 F/7

Latitude: 49° 25' N, Longitude: 116° 43' W

for

Jondon JV Investments Inc.

128 Scarboro Avenue S.W.

Calgary, Alberta

T3C 2H1

**GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT**

Submitted by:

Richard T. Walker

of

Dynamic Exploration Ltd.

656 Brookview Crescent

Cranbrook, B.C.

VIC 4R5

September 7th, 2004

SUMMARY

The Sanca Creek property is located on the east side of Kootenay Lake and overlies the northern contact of the Sanca Stock / Mount Skelly Pluton with metamorphosed Proterozoic sedimentary host. The three phase intrusive complex consists of fine- to coarse-grained granites correlated to the Cretaceous Bayonne Magmatic Suite. The granite has local iron-stained veins with variable amounts of iron sulphide, predominantly as pyrite. The veins appear to occupy apparent discontinuous brittle shear zones which trend essentially north-south ($\pm 20^\circ$).

Sedimentary strata are present along Akokli Creek at the northern contact with the Sanca Stock / Mount Skelly Pluton and as a pendant located at the mouth of Sanca Creek. The sediments are strongly iron stained and metamorphosed. The strata, as mapped, have been correlated to Proterozoic sediments ranging from the Purcell Supergroup (middle Creston Formation) to the Windermere Supergroup (Horse Thief Creek Group).

A number of Minfile occurrences are present within, or immediately adjacent to, the Sanca Creek property, including the Country Girl, Gold Basin, Vancouver, Iolanthe, Lakeview, Royal, Sarah 2nd, Government and Valparaiso. Mineralization, as described, consists of sulphides hosted by generally north-south trending faults, fractures and/or veins. The best described are located on the Valparaiso Crown Grant, which trend onto the surrounding Government claims. This vein system consists of the Valparaiso and Sarah 2nd veins, which are sub-parallel to one another and have been discontinuously exposed over approximately 1,500 m.

Mineralization is described as consisting of variable quantities of sulphides, including pyrite, arsenopyrite, sphalerite, galena, chalcopyrite, occurring with wolframite in a quartz gangue. High grade values have been documented in arsenic, silver, gold, tungsten \pm lead \pm zinc. The veins appear to be well developed, hosted within granite of the Sanca Stock and trending approximately $015^\circ/35^\circ$.

Continued effort was made to locate several MINFILE occurrences reported within, and immediately adjacent to, the claim boundaries. The well documented workings on the German Basin, Government and Valparaiso Crown Grants were previously located and examined, as were exposures which probably belong to the Sarah and/or Sarah 2nd. Considerable effort has been made by the author over the previous ten years to find other reported occurrences, but have been largely unsuccessful to date. The Lakeview occurrence may be represented by an adit located alongside the highway near Kuskanook (well south of the described location in MINFILE), while the Country Girl was probably flooded when the Kootenay River was dammed at Nelson to create Kootenay Lake. Similarly, the Iolanthe occurrence was probably flooded or has been lost due to residential development along the lakeshore. Future effort will be made to locate the Royal, Vancouver and Lost Mine occurrences.

In an effort to identify possible locations for MINFILE occurrences, a digital Landsat image covering the Kootenay Lake area was purchased and orthorectified for use as a base for GIS applications. Preliminary field work utilizing the Landsat image was undertaken in late August, 2004 and will be included in a subsequent Assessment Report.

Recent work on mineralization associated with intrusions has resulted in the Intrusion-Related Gold (IRG) Model. Examples include numerous examples in Alaska (i.e. Fort Knox, Pogo) and continue southeastward through the Tintina Gold Belt. Several occurrences in B.C. have been examined in a preliminary manner to evaluate Intrusion-Related Gold potential, including the Baldy Batholith and the Mt. Skelley Pluton. With reference to this model, elevated As, Bi, Sb, W are considered as "pathfinder" elements for potential IRG deposits. In this context, the locally moderately to highly anomalous Bi (≤ 344 ppm) and W (≤ 7100 ppm), associated with high grade arsenic (1.02%) and gold (14.4 g/t, or 0.42 oz/t) in mineralized veins within a granitic intrusion is of potential interest. Furthermore, the Sanca Stock and Mount Skelly Pluton are of Cretaceous age with a prominent magnetic halo, both features characteristic of many occurrences along the Tintina Gold Belt. Several locations, including many of the documented MINFILE occurrences, may be compatible with an IRG-type model, particularly those associated with the northwestern lobe (Sanca Stock) of the exposed granitic phases.

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INTRODUCTION

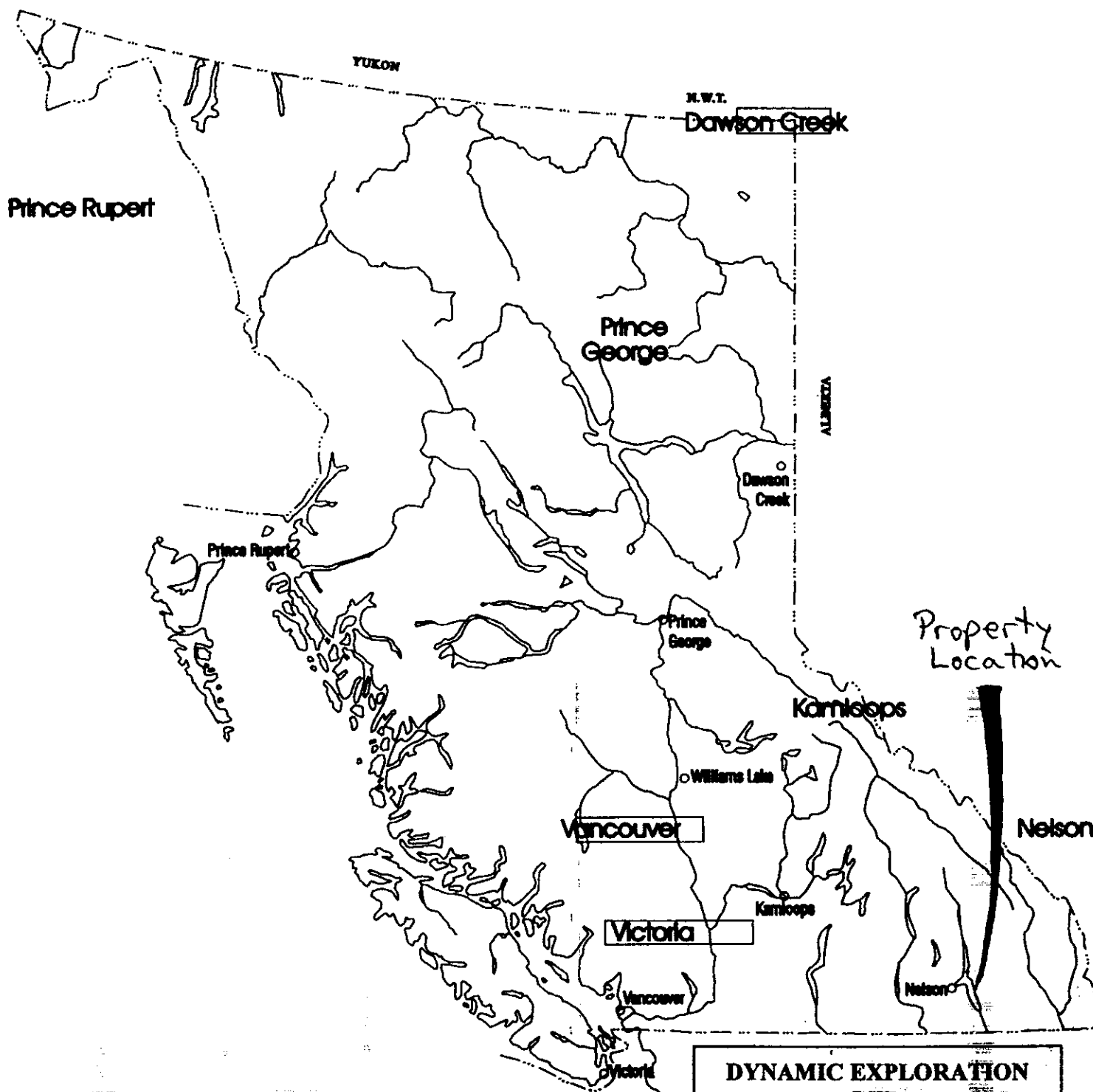
The Sanca Creek property is located on the east side of Kootenay Lake (Fig. 1 and 2) and overlies the northern contact of the Sanca Stock / Mount Skelly Pluton (Fig. 3) with metamorphosed Proterozoic sedimentary host. The three phase intrusive complex (Logan and Mann 2000) consists of fine- to coarse-grained granites correlated to the Cretaceous Bayonne Magmatic Suite. Near contacts with sedimentary strata, the granite appears to be both finer grained and perhaps more mafic, having a darker colour. In addition, there are more xenoliths of (an) earlier phase(s) of intrusive material and rounded sedimentary inclusions, ranging from several centimetres to several tens of metres in long dimension. Phenocrysts of alkali feldspar are present, ranging in size from less than a centimetre to approximately 2 centimetres in diameter, within a matrix of plagioclase feldspar, quartz and biotite \pm hornblende. The granite has local iron-stained veins with variable amounts of iron sulphide, predominantly as pyrite. The veins appear to occupy apparent discontinuous brittle shear zones which trend essentially north-south ($\pm 20^\circ$).

Sedimentary strata have been mapped along Akokli Creek at the northern contact with the Sanca Stock / Mount Skelly Pluton and as a pendant located at the mouth of Sanca Creek (Logan and Mann 2000). The sediments are strongly iron stained and metamorphosed. The strata, as mapped, have been correlated to Proterozoic sediments ranging from the Purcell Supergroup (middle Creston Formation) to the Windermere Supergroup (Horseshoe Creek Group).

A number of Minfile occurrences are present within or immediately adjacent to the Sanca property (Fig. 3), including the Country Girl, Gold Basin, Vancouver, Iolanthe, Lakeview, Royal, Sarah 2nd, Government and Valparaiso (see descriptions in Appendix D). Mineralization, as described, consists of sulphides hosted by generally north-south trending faults, fractures and/or veins. The best described are located in surface and underground workings on the Valparaiso Crown Grant, which trend onto the adjacent Government Crown Grant and are completely surrounded by claims comprising the Sanca Creek property. This vein system consists of the Valparaiso and Sarah 2nd veins, which are sub-parallel to one another and have been discontinuously exposed over approximately 1,500 m. Other veins may be present, including two airphoto linears reported between the Valparaiso and Sarah veins, and mineralization reported on the Royal MINFILE occurrence.

Mineralization is described as consisting of variable quantities of sulphides, including pyrite, arsenopyrite, sphalerite, galena, chalcopyrite, occurring with wolframite in a quartz gangue. High grade values have been documented in arsenic, silver, gold, tungsten \pm lead \pm zinc. The veins appear to be well developed, hosted within granite of the Sanca Stock and trending approximately $015^\circ/35^\circ$.

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**DYNAMIC EXPLORATION
LTD**

**SANCA CREEK PROPERTY
PROPERTY LOCATION MAP**

**Scale
1:8,000,000**

Figure 1

INVERMERE

Duncan
Lake

DYNAMIC EXPLORATION
LTD

SANCA CREEK PROPERTY

PROPERTY LOCATION MAP

Scale
1:1,250,000

Figure 2

NEW
DENVER

KASLO

SILVERTON

Slocan

Kootenay
Lake

Lake

KIMBERLY

CAN

CRANBROOK

Property
Location

NELSON

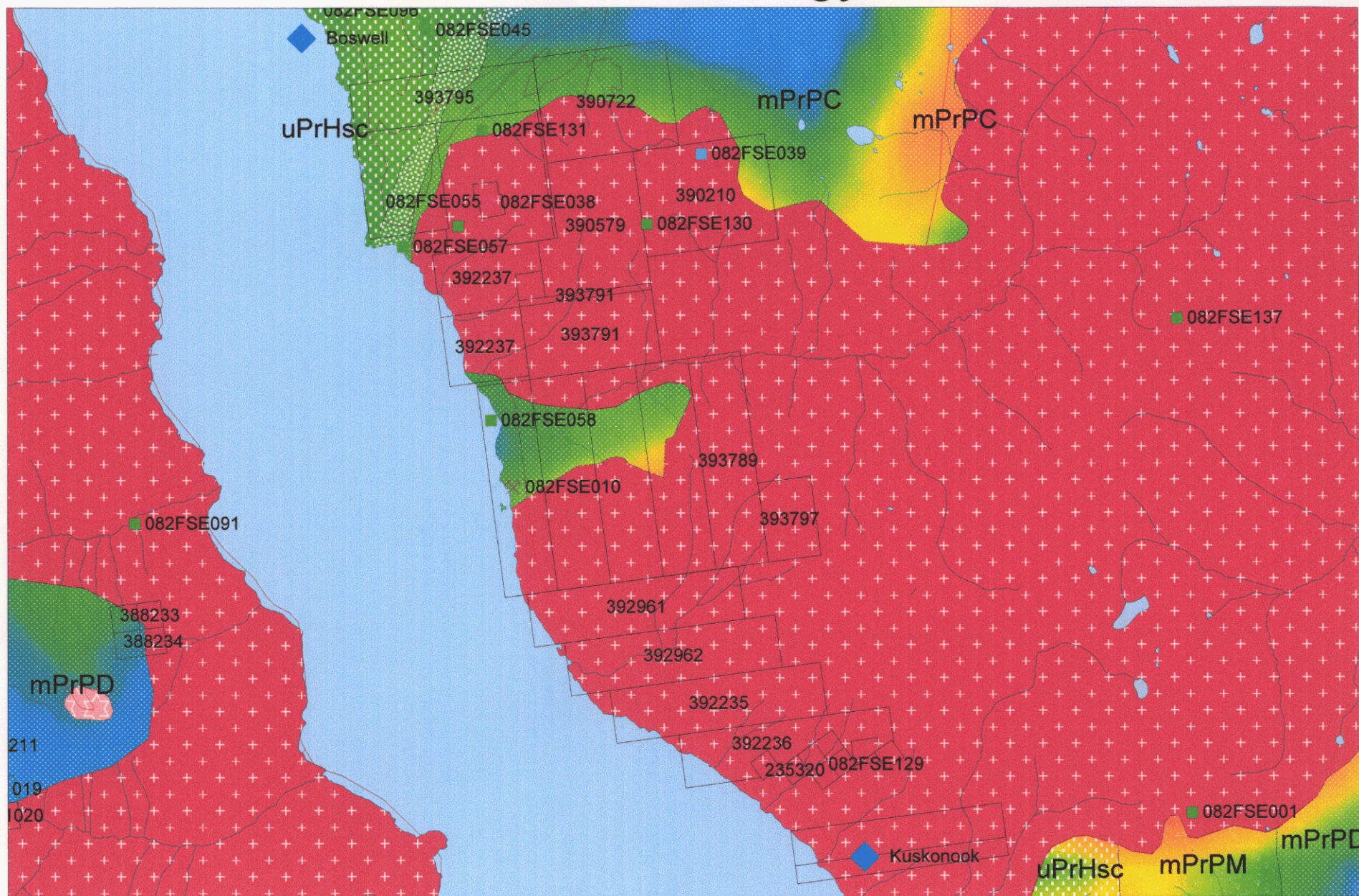
CASTLEGAR

CRESTON

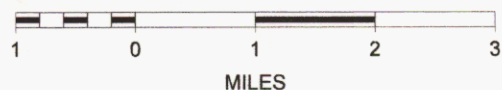
MOYI

IDAHO (USA)

BCGS Geology



SCALE 1 : 101,792



Kuskanook (well south of the described location in MINFILE), while the Country Girl was probably flooded when the Kootenay River was dammed at Nelson to create Kootenay Lake. Similarly, the Iolanthe occurrence was probably flooded or has been lost due to residential development along the lakeshore. Future effort will be made to locate the Royal, Vancouver and Lost Mine occurrences.

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LOCATION AND ACCESS

The property is located along the east side of Kootenay Lake (Fig. 1 and 2), approximately 40 kilometres north of Creston, BC. The property is comprised to two separate claim blocks which, together, extends from the community of Kuskanook (Fig. 3), north to Akokli Creek. The centre of the claim group lies at approximate coordinates 49° 25' N latitude and 116° 43' W longitude on N.T.S. mapsheet 82 F/7E in the Nelson Mining Division.

The claims can be accessed by four wheel drive vehicle along existing logging roads from Highway 3A, north of Kuskanook and south of Boswell (Fig. 4 and 5). Overgrown logging roads at mid- to upper elevations can be utilized to access the Valparaiso vein system from a logging road along the south side of Akokli Creek immediately east of Columbia Point. The lower logging road also ties into a system of logging road at higher elevations on the south side of Akokli Creek, east of the Valparaiso workings, to provide access to German Basin. Well developed and maintained logging roads are present on both sides of Sanca Creek and provide ready access for two wheel drive vehicles along Sanca Creek and the western portion of claims south of Sanca Creek. Many of the logging roads to higher elevations north of Sanca Creek are in poor to moderate condition for four wheel drives vehicles, but can still be utilized by ATV's (i.e. to access workings of the Vancouver MINFILE occurrence).

PHYSIOGRAPHY AND CLIMATE

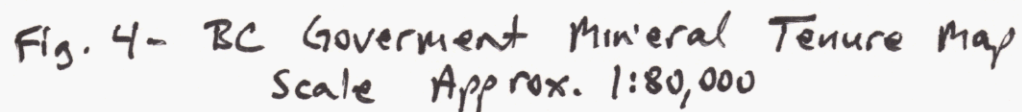
The topography of the claims consists of steep slopes at lower to middle elevations (Fig. 4 and 5) with low to moderate relief at higher elevations. Ridges, however, consist of very steep slopes and belts of cliffs between drainages. Topography ranges from 540 metres along Kootenay Lake to 2,420 metres north of Sanca Creek.

Vegetation at mid- to upper elevations along west- and south-facing slopes consists of moderately open coniferous forest cover with sparse to moderate undergrowth. At lower elevations, and along the north-facing slopes of Sanca and Akokli Creeks, denser forest cover accompanied by dense undergrowth is present. Undergrowth consists of shrub willows, slide alder and Devil's Club.

The claims are located on the east side of Kootenay Lake and are therefore subject to greater precipitation than slightly farther east. High altitude snow may persist into late June, particularly in north-facing exposures. The lower and middle elevation portions of the property can conceivably be worked from mid-May to late October.

CLAIM STATUS

The Sanca Creek property consists of 9 4-post mineral claims (Fig. 4 and 5), staked in accordance with existing government claim location regulations. All claim information was verified using the BC Government's Mineral Title website and is current as of this writing. The property comprises 161



units and encompasses a total area of approximately 4,025 ha (9,946 acres).

Significant claim data are summarized below:

<u>Tenure Number</u>	<u>Claim Name</u>	<u>Anniversary Date</u>	<u>Units</u>
390210	JONDON 1	2004.10.13	20
390579	JONDON 2	2004.10.13	20
390722	JONDON 12	2004.10.30	20
392235	SPARKY 9	2005.03.01	16
392236	SPARKY 10	2005.03.03	16
392237	SPARKY 12	2005.03.02	20
393791	SPARKY 3	2005.06.07	15
393795	SPARKY 15	2005.06.09	14
393796	SPARKY 16	2005.06.06	<u>20</u>
Total			161

The claim locations on the Government's Mineral Tenure Maps have not been accurately plotted, despite previous submission of differential GPS data for all claim posts. Therefore, the claims have been accurately plotted, using differential GPS data, on Figure 4, with reference to the Landsat image and geology (from Logan and Mann 2000).

HISTORY

The following historical synopsis for the area has been derived from Minister of Mines Annual Reports for the respective years and from Assessment Reports (as referenced):

- 1898** A claim was staked on the Imperial / Sarah vein (MINFILE # 82FSE055) (Morgan 1986).
- 1900** "... considerable amount of work was done by the Valparaiso Gold Mines ..." on the Government, Valparaiso, Florence and North Rand claims, including a 200 foot cross-cut on the Valparaiso, feet east to the vein.
- 1919** "A 130 foot x-cut was driven to the Imperial vein" (Morgan 1986)
- 1926** Associated Mining and Milling Co. Ltd undertook a program which consisted of cleaning out and reactivating old workings. In addition, a number of claims were acquired to cover the vein traversing the Government, Valparaiso, Florence and North Rand claims. In the Minister of Mines Annual Report (1926) the following description was made: "... (chip?) sample across 2 feet of quartz and oxidized material at the intersection of the vein in the crosscut assayed: Gold, 1.04 oz. to the ton; silver, 4.2 oz. to the ton ... (a) sample across a 6-inch band of

quartz heavily impregnated with iron sulphides on the footwall side of the vein in the open-cut just above the tunnel assayed: Gold, 0.24 oz. to the ton, silver 2.1 oz. to the ton. Another sample across the 3 1/2 feet adjoining the last sample on the hanging-wall side gave: Gold, 0.06 oz. to the ton; silver, 1.4 oz. to the ton."

- 1927** "The Associated Mining and Milling Company, Limited held "...three Crown - granted and twenty-one other mineral claims, but in addition, about sixty claims have been located in the vicinity of Ginol Landing during the last two years by officials, employees and others connected with the company." A number of grab samples, taken the previous year from small piles of ore outside two open-cuts, assayed 0.58 oz/t gold, 0.6 oz/t silver and 0.47 oz./t gold and 16.2 oz/t silver.

In addition, a "... crosscut was driven approximately 230 feet east into the hillside, intersecting the vein approximately 125 below surface, with drifts extending along the vein to the north and south. The width of the vein averages six feet in the north drift, consisting of variably iron stained and locally decomposed granite. Approximately 30 feet along the north drift, a raise extends upward for approximately 66 feet. A number of samples were taken, ..." with the best returning an analysis of 0.41 oz./t Au and 1.4 oz./t Ag over 6 feet in the north drift, 24 feet from the cross-cut.

"The only other underground working in which the Valparaiso vein is exposed is the "Lost Mine" tunnel, several thousand feet distant from the Valparaiso tunnel towards the northern extension of the vein-outcrop. This tunnel is driven about 120 feet along the vein, which is mostly inaccessible for lagging. In this tunnel a sample across 40 inches of decomposed granitic ledge-matter and quartz, all more or less stained with iron oxide, assayed: Gold, 0.02 oz. to the ton; silver, 0. 8 oz. to the ton."

Minor work completed on the Sarah 2nd vein, sub-parallel and approximately 700 feet vertically above the Valparaiso vein, in which "... some old tunnels and open-cuts develop the Sarah 2nd vein for a length of about 400 feet". Gangue reportedly consists of "... quartz, rusty and honeycombed in places, mineralized irregularly with a little sparsely disseminated pyrite and galena and occasionally with copper-carbonate stains. At one point a little wolframite was noted associated with pyrite and galena. A number of samples returned up to 0.6% Pb, 0.04 oz./t Au and 2.7 oz./t Ag, at least one of which was associated with 2.52% tungstic oxide.

- 1928** The "... properties of Associated Mining and Milling Company, Limited and United Lode Mining Company, Limited were transferred to the Sanca Mines, Limited. Work has been concentrated on the zinc-lead and copper showings on the Iolanthe ... where a new camp has been established and a small compressor installed. New work here includes about 100 feet of crosscut tunnel. Other work done includes reconditioning of old workings and assessment-work on the numerous claims constituting the properties".

1929 "A limited amount of development has been done ... chiefly concentrated on the Iolanthe vein ... In this vicinity an elaborate headquarters camp at the lakeshore includes some twelve frame and log buildings. Accommodation has also been provided at individual properties and considerable trail work has been done".

1932 Sanca Mines, Limited "... carried out some construction, including a double-track pole chute operated by hoist connecting the southerly workings on the Valparaiso vein with a new orebin at the main road. On the bench above the road and at the foot of the mountain a 3,000-foot light steel-lined chute connects with a "mill", which includes a pulmac crusher, riffle-boxes, classifier, Wilfley-type table, and gas-engine; the whole constituting an example of original "home-made mechanism."

The Lakeview claim(s) " ... optioned with plans for installation of a compressor and excavation of a 300 foot crosscut tunnel for an initial program. Work to this date included a 30-foot vertical shaft on a vein containing massive lead-zinc sulphide ore..."

1933 323 tons of gold and silver ore were reportedly produced from the Sanca property and an additional 127 tons of gold and silver ore from the Vancouver claim(s).

Following corporate reorganization of Sanca Mines Ltd ... work commenced on the Valparaiso

... and car-load lots were shipped at intervals between July and December, 1933, the total amount being ... 322(.7245) dry tons. (The average grade was 0.334 oz/ton Au and 3.285 oz/t Ag) ... The ore contains about 58.5 per cent. silica."

A crosscut tunnel was driven 252 feet on the Lakeview from a location 90 feet north and 90 feet vertically below the collar of the 30-foot shaft previously excavated. The tunnel " ... develops a northerlystriking vein-zone, dipping steeply to the east, in calcareous sediments. In the drift near the shaft lenses of massive ore about 12 inches wide, composed of mixed lead, zinc, and iron sulphides, are exposed on the foot-wall side. Going towards the hanging-wall there is 2.5 feet of waste and then from 18 to 24 inches of scattered sulphide mineralization containing streaks of massive sphalerite".

The crosscut tunnel was driven ... almost perpendicular to the vein, into siliceous sediments followed by calcareous rock. Two well defined mineralized fissures were "... encountered at 22 feet and 18 feet back from the face. The first mentioned contains up to 4 inches in width of disseminated fine-grained galena and the other one contains similar mineralization, up to 2 feet wide, with some concentration of the lead sulphide along the western cleavage. No sphalerite is in evidence ... Selected material (from an iron sulphide bearing fracture) ... assayed: Gold, 0.04 oz. per ton; silver, 2.6 oz. per ton. ... Samples of selected ore from the first fissure cut by (the) tunnel assayed: Gold, trace; silver, 15 oz. per ton; lead, 28 per cent.; zinc, trace; and selected ore from the second fissure assayed: Gold, trace; silver, 18 oz. per

ton; lead, 34 per cent.; zinc, trace. ... Selected ore from this working (additional drifting) assayed: Gold, 0.07 oz. per ton, silver, 14.96 oz. per ton.; lead, 44.3 per cent.; zinc, 19.9 per cent.; and Gold, 0.02 oz. per ton; silver, 5.38 oz. per ton; lead, 9.6 per cent.; zinc, 53.2 per cent."

- 1953** Under the terms of a second option on the Lakeview, the "... lower adit level and a connecting raise to the upper level were rehabilitated. The south drift on the upper level was extended about 70 feet, and lead-zinc ore was sorted from an underhand stope in this section and trammed to a bin near the portal of the lower adit. Approximately 100 tons of this ore was milled ... but returns were much lower than anticipated, and the option agreement was terminated ...". No results were reported.

The Valparaiso tunnel is located approximately 1,000 feet north of the Government workings and the persistent quartz vein between these two workings was open pitted and sampled. "Extensive stripping was also done to the south of the Government workings. The tungsten mineralization was identified as wolframite, and sampling of the vein between the Government and Valparaiso workings ... indicated a surface oreshoot 200 feet long and 5 to 6 feet wide.

The Valparaiso tunnel was cleaned out and retimbered, and both north and south drifts were opened up. Wolframite mineralization is evident in both drifts, and a 1,000-pound sample from the south drift responded well to preliminary metallurgical testing ..."

- 1954** Valparaiso (Akokli Tungsten Mine Ltd.) - "Development work comprised 680 feet of drifting, 100 feet of crosscutting, 40 feet of test pitting, and 1,500 feet of long-hole drilling with sectional drill steel. The south Valparaiso drift was extended a total distance of 785 feet to a point midway between the Valparaiso adit and the old shaft on the Government claim ... This drift exposed a continuous quartz vein, ranging from 0.5 feet to 6 feet wide. The wider sections were found to occur at points where a series of narrow diagonal quartz veins intersected the main vein. The final 125 feet of drift disclosed a uniform 6-foot-wide quartz vein containing appreciable visible wolframite. Throughout this length the hangingwall side of the vein was composed of a 14-inch band of heavy sulphides reported to contain good values in lead and silver. The crosscutting and test drilling revealed the existence of a series of wolframite-bearing quartz veins en echelon with the main vein.

Additional surface work was completed, including construction of a 50-ton pilot-mill building, compressor-house, and new headframe for the Government shaft. In addition, "... West Kootenay Power and Light Company erected 1 mile of transmission-line to deliver electric power to the mine where an Ingersoll-Rand 90-B compressor and a General Electric 100-horsepower induction motor were installed".

- 1955** Valparaiso (Akokli Tungsten Mine Ltd.) - "Development work has been confined chiefly to the examination of the Valparaiso-Government vein, outcrops of which have been traced along the mountainside for several thousand feet. ... (The) inclined shaft on the Government

claim was reopened to a depth of 130 feet. It was enlarged to dimensions of 9 feet by 14 feet and contains a manway and hoisting compartment. The north drift was begun 80 feet below the shaft collar and was driven a distance of 433 feet. ... At a point 280 feet north of the shaft a raise was driven up the vein footwall a distance of 80 feet to the surface. Five hundred feet of exploratory long-hole drilling was done from various points along the drift. A total of 1,300 tons of ore was mined.

A truss-constructed mill building was built in five levels ... (The mill) operated intermittently and 553 tons of ore was treated, from which 11,200 pounds of concentrates was produced. The wolframite concentrate requires retreatment to remove magnetite, and the pyrite concentrate requires retreatment to remove wolframite".

- 1956** Surface work commenced on the Hope claims, consisting of initial construction of a four wheel drive access road, and development work which "... included the stripping of the vein, excavation of an open-cut, and construction of the road and trail.

Four samples assayed as follows:

Sample No.	Location	Width	Gold	Silver	Lead	Zinc
		Ft.	Oz.	Oz. per Ton	Per Cent	Per Cent
1	Oxidized material in open-cut	Grab	Trace	5.2	9.8	26.4
2	Middle of open-face cut	2.3	Trace	11.3	19.0	18.7
3	40 feet north of open-cut face	2.0	Trace	5.8	11.4	17.9
4	65 feet north of open-cut face	1.5	Nil	6.0	9.7	7.211

- 1957** Bluemont Mines Ltd. completed a program on the Lakeview property. "... The No. 2 level south drift was extended a distance of 50 feet to a total length of 680 feet. Two hundred feet of diamond drilling was done in three holes."

The access road was completed on the Hope property, while a small crew "... extended the surface stripping and drove 80 feet of drift on the vein. Twelve and one-half tons of ore was shipped to the Bunker Hill smelter at Kellogg, Idaho". No results reported.

- 1982** Skyhawk Explorations Inc. completed a brief, two day program Sanca # 5 property, immediately south of Sanca Creek and partially covered the Lakeview Crown Grant. The program consisted of prospecting along Sanca Creek. No samples were submitted for analysis.

- 1984** D.R. Morgan (1986) "The claims surrounding the Valparaiso and Government Crown Grants came open and were staked

- 1986** D.R. Morgan - An initial 2 day program was completed on the GOV 5 claim, comprised of geological mapping and a simple road location survey.
- 1988** IMCO Resources Ltd. undertook a drill program in an attempted to provide additional information on the sub-surface location, orientation and grade of the vein previously identified on the Valparaiso and Government Crown Granted claims. The first two holes were unsuccessfully drilled with a rotary drill and a subsequent series of three holes were attempted with a percussion drill. All holes were prematurely abandoned as a result of poor drilling conditions and/or caving problems, with none intersecting the target vein system.

Igna Engineering and Consulting Ltd. completed an extensive program on behalf of Dobrana Resources Ltd. which included geological mapping, geochemical (480 soil samples) and geophysical (ground magnetometer and VLF) work on a grid established on the southern slopes of Mt. Sherman ... (The) geophysical work program was concentrated on the Totem Gold claim group. Field examination of the German Basin workings was undertaken as part of the program, with various open cuts and trenches re-visited ...

"Two moderate strength conductors were mapped in the western part of the surveyed area and both correspond to the magnetic high and mineralized structures. The conductors strike southeast and may indicate mineralization localized within shears similar to mineralization occurring on the Valparaiso/Government property. ... " The conductors apparently coincide with a "... trenched shear near the northwest end and also with a moderately significant silver, lead and zinc anomalies in the soils ...

Coincidental soil, VLF and magnetic total field anomalies in the northwest and south central part of the surveyed area are probably caused by underlying mineralized structures" (Borovic 1988a).

Igna Engineering and Consulting Ltd. completed a similar program on behalf of Forbes Resources Ltd. on the Hope of Discovery property. A total of 227 soil samples and 17 rock samples were taken, together with a ground geophysical program including magnetic and VLF methods.

Rock samples were taken from within an adit on the claims and from the brecciated shear zone. The samples from within the adit returned very anomalous high grade results up to 0.014 oz/st gold, 35.38 oz/st silver, 71.20% lead and 28.81% zinc from hand picked grab samples of quartz vein material. Analysis of the samples from the brecciated shear zone returned substantially lower values, ranging up to 0.008 oz/st gold, 0.86 oz/st silver, 0.038% lead and 0.010% zinc.

"Geophysical studies have revealed the presence of northerly trending electromagnetic conductors attributable to silver, lead, zinc, gold and copper mineralization. Magnetic survey suggests areas of alteration and possible presence of anomalous concentrations of minerals

within shear zones parallel and coincidental with Val Fault shear.

Soil geochemistry results show an area anomalous in silver, lead, zinc, copper and gold in the vicinity of the north trending magnetic anomaly and electromagnetic conductor in the area of the Hope of Discovery workings" (Borovic 1988b).

- 1989** Igna Engineering and Consulting Ltd. continued work on the Totem Gold property on behalf of Dobrana Resources Ltd., consisting of 1:10,000 scale geological mapping and a geophysical VLF-EM survey on the central and northern part of the property.

The program identified an "... area beginning at the northwestern end of the property where a northwest-southeast trending moderately strong VLF anomaly is located. The anomalies are about 1000 m long (sic.) (Borovic 1989a)", featuring the presence of strong silicification, brecciation and sulphide mineralization associated with a shear zone.

Igna Engineering and Consulting Ltd. again completed a similar program on the Hope of Discovery claims for Forbes Resources Ltd., consisting of 1: 10,000 scale geological mapping and a geophysical VLF-EM survey on the southern part of the property.

Two separate areas were identified as a result of the two programs completed on the property:

1) an "... area surrounding the Creek showing which features high magnetic north-south trending anomaly and coincidental VLF conductor ..." (Borovic 1989b) and the presence of strong silicification, brecciation and sulphide mineralization associated with a shear zone, and

2) a high grade silver (\pm lead \pm zinc \pm copper \pm gold) mineralized area surrounding the north-south striking Hope of Discovery workings and associated with shearing, silicification, brecciation and strong hydrothermal alteration.

Under terms of an option agreement, company engineers for Little Bear Resources Ltd. examined and sampled exposures of the Government-Valparaiso and the upper Sarah vein systems to confirm previous reports of the grade of mineralization. Samples taken off claims on the Government Crown Grant (L. 4908) were not documented, however, samples taken further south on the same vein system on the Gov 5 claim and on the Sarah vein system were documented. The results documented in the report are all low grade values, ranging up to 0.10 oz/t gold, 1.69 oz/t silver, 0.21% Cu, >1% Pb, 0.46% Zn and 0.05% W. In addition, a limited VLF-EM orientation survey was undertaken late in the season to evaluate the response of the vein system to both the Annapolis and Maine transmitters. The response of the vein system was poor.

- 1990** D.R. Morgan undertook geological mapping on the GOV 3 - 5 claims, the Government Crown Grant (L. 4908) and the upper Sarah vein. No geological map accompanies the

report, however, rough hip chain and compass survey locations are provided for posts on Crown Grants (L. 4907, 4908 and 3907), rotary and percussion drill collars and other geographic features.

- 1994** Igna Engineering and Consulting Ltd. completed a brief VLF-EM geophysical survey for Dobrana Resources Ltd. comprised of a total of 4.1 kilometres along two snow covered roads using the Seattle transmitter. The surveyed area was located south of the area surveyed in 1989 and produced similar results, namely:

"The geology of this area is very consistent, granitic rocks being predominant. Because of this, the EM results were quite constant and showed little that would be considered anomalous. No crossovers were discovered, dip angles lying in the negative virtually throughout" (Borovic 1994a).

Igna Engineering and Consulting Ltd. completed a similar program for Dobrana Resources Ltd. on the Hope of Discovery claims. Of note is the fact that the program was completed for Dobrana Resources Ltd. rather than Forbes Resources Ltd. suggesting the possibility of an option agreement not mentioned in the body of the report.

The program consisted of a 3.1 kilometre VLF-EM survey along roads oriented east-west using the Seattle transmitter. "The complex geological structure of this area is well expressed in crossovers Two crossovers were mapped ... (which) probably reflect geological structures and/or some underground water flow in the area"(Borovic 1994b). On the basis of the results, additional survey lines, with closer station spacings, were recommended to the south of the 1994 survey.

A total of 162 mineral claim units were staked on behalf of Sanca Gold Corporation with a grid subsequently established on the property. A total of 30 man days expended traversing the property, sampling old pits and evaluating the property. Fourteen rock samples are documented in the report, with assay results ranging up to 1.75 oz/t gold, 23.2 oz/t silver and 5.0% W. Samples locations are only broadly indicated on a 1:31,680 scale mineral title map and no sample descriptions were provided.

- 1997** The Rusk Gold and German Gold claims were staked on behalf of Sanca Gold Corporation on the east boundary of the property, adjoining and overlapping the Cripple Creek claims, bringing the total number of mineral claim units to 174. A limited field program was completed consisting of 30 test pits (0.5 cu. M), excavated using hand tools and subsequently backfilled. No locations for the test pits was recorded.
- 1998** Limited work was undertaken by the author on behalf of Sanca Gold Corporation, comprised of 32 rock samples, largely taken to facilitate evaluation of geochemical background levels for the granitic phases. A series of veins were located and sampled (RW-SC-98-14), as well as limited sampling of the Valparaiso / Government, which returned moderately highly

anomalous As, Fe, Mn, Pb and Zn. Anomalous silver and gold values were also documented from these occurrences. A compilation and summary of previous work was included in the work program.

REGIONAL GEOLOGY

STRATIGRAPHY

Sedimentary strata exposed along, and east of, Kootenay Lake include both Purcell and Windermere Supergroup successions, extending from the lower Aldridge Formation in the Goat River drainage (to the southeast) stratigraphically upward into Lower Paleozoic Lardeau Group sediments of the Index Formation exposed at Pilot Bay. Structurally, this stratigraphic package lies on the western limb of the Purcell Anticlinorium.

Strata mapped in the immediate vicinity of the Sanca claim block (Fig. 4) extend from the middle Creston Formation of the Helikian Purcell Supergroup to strata correlated to the middle of the Hadrynian Horsethief Creek Group. However, as there is a possibility of stratigraphically lower middle to upper Aldridge and lower Creston formation strata occurring in the sub-surface within, and to the north of, Akokli Creek (Ransom, pers. comm. 2001), descriptions of these units have been included due to their possible importance for hosting mineralization and/or providing a suitable source for remobilized mineralization.

Helikian

Purcell Supergroup

The following description of strata belonging to the Purcell Supergroup has been slightly modified from Aitken and McMechan (1991).

"Basal division

The lower unit consists of rusty-weathering, laminated, thin-bedded, very fine grained quartzite, argillaceous quartzite and siltite ..., with minor black argillite partings.

The middle unit is characterized by thin to thick beds of fine grained quartzite and argillaceous quartzite that are interbedded with laminated and ripple crosslaminated siltite and laminated dark argillite. The sandstones are interpreted as A-E turbidites of the Bouma model, and are more proximal than those of the lower unit. The middle Aldridge contains remarkable, thin, marker units that provide the only means of chronocorrelation within the Aldridge ... Formation. These units, consisting of parallel-laminated, dark grey carbonaceous and pale grey non-carbonaceous siltite,

contain sequences of laminae that can be matched, lamina for lamina, over distances approaching 300 km ... In the Purcell Mountains the lower two divisions of the Aldridge Formation include abundant meta-diorite and meta-quartz diorite sills of the Moyie Intrusions.

The upper unit consists of thin-bedded, rusty-weathering, dark and medium grey argillite, with thin, parallel, pale grey siltite and dark grey carbonaceous laminae, and lesser laminated siltite and argillite. Minor thin- to thick-bedded quartzite occurs locally. Towards the top, siltite becomes more abundant, laminae become discontinuous, and syneresis (shrinkage) cracks and scour-and-fill structures appear, the first signs of a gradual transition to shallow-water deposits of the overlying Creston Formation. Dolomite and dolomitic siltite occur locally.

Lower division

The lower division of the Purcell (Belt) Supergroup consists mainly of clastic sediments laid down in shallow water. These strata gradationally overlie basinal or platformal strata of the basal unit and underlie relatively carbonate-rich strata of the middle unit. In the Purcell Mountains ... they belong to the Creston Formation and the lower part of the Kitchener Formation ... (note: correlated to the lower portion of the Coppery Creek Group in the Kootenay Lake area).

The Creston Formation (920-2350 m) consists of green, grey and purple siltite and argillite and lesser quartz arenite. Sun cracks, ripple marked surfaces and rip-up debris layers are abundant locally. Three main units are recognized: lower and upper units comprising graded siltite-argillite couplets and a middle unit characterized by laterally continuous thin beds of coarse grained siltite and very fine grained sandstone. Sun cracks occur on siltite-argillite couplets and at the top of quartz arenite lenses ... and are generally absent at the base of the formation. Lenses of fine- to coarse-grained quartz arenite occur in the upper part of the lower unit and in the middle and upper units. ...

In the Purcell Mountains ..., coarse grained siltite of the middle unit occurs as extensive, parallel-bedded sheets. Except for grading at the top, they are internally structureless. Parallel laminations occur locally, and the bases are sharp

Middle carbonate division

A distinctive carbonate unit comprises the middle division of the Purcell (Belt) Supergroup. To the east, in the Rocky and eastern Purcell mountains, the middle division consists of the well known Kitchener Formation. In the west the middle carbonate division consists of the more basinal facies of the thick, lower subdivision of the Coppery Creek Group. The "... thick (1400 m) lower unit consists of dolomite interbedded with green, grey or black phyllite which grades upward to silvery and green phyllite, siltite and some carbonate" (Aitken and McMechan 1991).

Upper division

The strata comprising the Van Creek, Sheppard, Gateway and Roosville formations of the Rocky and eastern Purcell Mountains pass laterally "... into a succession of grey and green siltite, argillite and phyllite, quartzite, argillaceous dolomite and dolomite" (Aitken and McMechan 1991). The volcanic (Nicol Creek) and red quartzite marker (Phillips) units thin and disappear to the west, making subdivision of the upper division impractical. Therefore, the upper two units of the 'Coppery Creek' and 'La France Creek groups' are interpreted to comprise the upper division along the western Purcell Mountains.

The upper two divisions of the Coppery Creek group consists of a middle unit approximately 200 m thick comprised of thinly laminated black phyllite and grey siltite. The upper unit consists of silvery phyllite, calcareous dark grey phyllite and dolomite, with a sequence of interbedded dolomite and quartzite at the top..." and is approximately 300 metres thick (Aitken and McMechan 1991).

The 'La France Creek group' of the western Purcell is approximately 1000 m thick, comprised of intensely deformed and metamorphosed sediments dominated by siltite, quartzite and phyllite. The group has been subdivided into "... a lower unit consisting of thinly interbedded black phyllite and grey siltite and an upper unit of grey siltite and quartzite with black phyllite and carbonate-bearing siltite and phyllite near the top" (Aitken and McMechan 1991). The 'La France Creek group' gradationally overlies the upper unit of the 'Coppery Creek group'.

In most areas, strata of the 'La France Creek group' grade into thicker-bedded quartzite at the base of the Mount Nelson Formation. ... The Mount Nelson Formation consists of a cliff-forming, basal unit of white, grey or green orthoquartzite with rare argillaceous laminae and partings, overlain by brownish red to grey weathering impure carbonate interbedded with black, purple or red argillite and grey siltite. Stromatolites and lenses or nodules of chert occur locally within the carbonate unit. The basal orthoquartzite, up to 70 m thick, thins gradually to the south. ... Interbeds of green, black or red argillite are common within the upper quartzite unit, and green and black argillite and siltite form the top of the preserved formation. The carbonate unit is thicker in western exposures, where it is overlain by interbedded black phyllite and grey siltite. Cream-weathering, dark-coloured dolomite and brown-weathering, white dolomite, locally interbedded with black phyllite, occur at the top of the formation as preserved. Mud cracks in argillite, ripple marks in quartzite and solution-breccias in dolomite are locally common in both areas ...

The Mount Nelson Formation, whose maximum preserved thickness is about 1000 m ..., is unconformably overlain by conglomerate of the Toby Formation of the Upper Proterozoic Windermere Supergroup. Evidence for small-scale, pre-Toby block faulting is found locally ... Regionally, the unconformity cuts out progressively older Purcell strata southward, along the western Purcell Mountains "(Aitken and McMechan 1991).

Hadrynian

Windermere Supergroup

The following synopsis of the Windermere Supergroup has been taken from (Gabrielse and Campbell 1991):

"In its type area the Windermere Supergroup unconformably overlies strata of the Purcell Supergroup along the west limb and northward plunging nose of the Purcell Anticlinorium ... (The Windermere Supergroup) ranges in thickness from a few metres to 500 m and is characterized by extreme variability in composition, grain size and sorting. Typically the Toby (Formation) is a polymictic conglomerate containing pebbles, cobbles and boulders of mainly dolostone, quartzite and slate derived from underlying Purcell rocks. ... Clasts, from a fraction of a centimetre to more than a metre in length, are generally angular to subangular but well rounded varieties occur. ... Sandstone and argillite containing dropstones are most abundant in the upper part of the Toby (Formation). Interbedded with the conglomerate are units of argillite, slate and graded and massive sandstones as much as 50 m thick. Vesicular andesitic volcanics locally form the matrix of the conglomerate and elsewhere occur as cobbles in the conglomerate ...

The Toby Formation is generally less than several tens of metres thick from east of the north end of Kootenay Lake to west of the south end of Kootenay Lake. ... The Horsethief Creek Group ... conformably overlies the Toby Formation and consist of great thicknesses of slate, argillite and phyllite with lesser amounts of quartzite, greywacke, pebble conglomerate and limestone. In a general way, east of Kootenay Lake the lower part of the Horsethief Creek Group consists dominantly of argillite and slate with some limestone, the middle part is characterized by quartzite, grit and pebble conglomerate and the upper part in its eastern and southeastern limits contains much purple and red slate and siltstone with very minor limestone.

Distinctive pebble conglomerate contains pebbles of white vein quartz, feldspar, chert, quartzite, opalescent blue quartz, dolostone and slate. Irregular lenses of pebble conglomerate interfinger with quartzite or grit beds and locally occur as channel fill in finer grained clastic rocks. Graded beds are common in sequences containing pebble conglomerate and crossbedding is locally conspicuous in quartzite. North and east of Kootenay Lake total thicknesses of the Horsethief Creek Group increase from about 1000 m near the Rocky Mountain Trench to more than 3000 m farther west".

Mid-Cretaceous

A number of granitoid intrusions have been identified along the Kootenay Arc, the Jurassic Nelson Granitic Suite and the Jurassic to Cretaceous Bayonne Granitic Suite. As the Nelson Granitic Suite is locally restricted to the west side of Kootenay Lake, no further mention will be made of this suite.

The Bayonne Granitic Suite include intrusions interpreted to be of Jurassic age, but only Cretaceous age intrusions have been identified locally on the east side of Kootenay Lake.

"Typical and best-studied of these (mid-Cretaceous plutons) is the White Creek Batholith (Reesor 1958). This is a roughly oval body that intrudes Proterozoic sediments of the Purcell Supergroup along the Hall Lake fault system. The batholith has a rim of biotite granodiorite which grades inwards to hornblende-biotite granodiorite and K-feldspar megacrystic biotite granite. A core of muscovite-biotite leucogranite both grades into and intrudes the outer units. Foliation in the pluton parallels the outer contact and is independent of internal compositional boundaries. The pluton disrupts structures in the surrounding strata, and a strong secondary foliation has been superimposed on the sediments. Mineral assemblages in the contact aureole suggest the pluton was emplaced at a depth of about 15 km" (Woodsworth et al. 1991).

Three of the Cretaceous age granitic stocks on the east side of Kootenay Lake were age dated as part of a study by Höy (1993), as follows:

Mineral Analyzed	Location Latitude Longitude	Date (Ma)
Kiakho Lakes stock		
Hornblende	49° 29' 30" 115° 54' 45"	122 ± 4
Reade Lake stock		
Hornblende	49° 36' 40" 115° 50' 50"	143 ± 6
Hornblende	49° 36' 55" 115° 49' 00"	116 ± 4
Hornblende	49° 38' 45" 115° 45' 05"	103 ± 4
Estella stock		
Biotite	49° 46' 15" 115° 36' 20"	115 ± 4

In addition, with respect to the White Creek Batholith, "... a Rb-Sr whole rock isochron indicates

emplacement at about 111 Ma ... (Furthermore, on) ... the basis of U-Pb dates on zircons from the Kaniksu Batholith and more precise K-Ar and Rb-Sr dates from other plutons in the area, (it was) ... concluded that most (mid-Cretaceous) plutons were emplaced between 115 and 90 Ma" (Woodsworth et al. 1991).

STRUCTURE

The following discussion of structure has been modified from Pope (1990), and although determined for the Toby-Horsethief Creek area west of Invermere it is believed to apply to the area along the west side of Kootenay Lake.

Four major phases of deformation have been identified in the Toby Creek area, Helikian-Devonian extension (D_1), Jurassic-Paleocene contraction (D_2 - D_3) and Eocene extension (D_4).

The first phase of deformation resulted in unconformities at the base of the Dutch Creek and Mount Nelson Formations (D_{1a}) and the unconformity at the base of the Windermere Supergroup (D_{1b}). Thinning of Paleozoic strata onto the Windermere High is interpreted to reflect the effects of D_{1c} deformation together with the development of small fault-bounded sub-basins.

The Goat River orogeny is structurally evident in the southern Purcell Mountains as doubly plunging folds and large scale block faulting associated with the Purcell basin (Brown et al. 1993, Höy 1993). It has been interpreted to have occurred prior to deposition of the Late Proterozoic Windermere Supergroup and to be recorded in the coarse conglomerates of the Toby Formation, a result of deposition adjacent to active faults scarps (Höy, Lis and Price 1976). Extensional tectonism during the Late Proterozoic and early Paleozoic resulted in continental rifting and development of the North American miogeocline.

Contraction during the Columbian (D_2) and Laramide (100-70 Ma) (D_3) orogenies resulted in a series of northeast vergent thrust faults and the development of a regional foliation (S_1). Contraction during D_2 and D_3 produced east-vergent imbricate thrust faults and west vergent backthrusts. Complex faults and associated broad to relatively tight folds developed during this time period. The Purcell Thrust was active at this time, transporting strata of the north to northeast plunging Purcell anticlinorium eastward on west dipping imbricate thrust faults that extend into cratonic basement. Many of these faults were subsequently reactivated during the fourth phase (D_4) of deformation. High angle brittle faults are also a result of D_4 .

LOCAL GEOLOGY

STRATIGRAPHY

Proterozoic (Helikian)

Purcell Supergroup

The following descriptions of the Aldridge and Creston formations have been modified from Brown et al. (1993), based on work in the area between Creston and Yahk, centred on the Goat River drainage, located approximately 30 km southeast of Sanca Creek.

Aldridge Formation

Middle Aldridge

The middle Aldridge "... comprises a thick sequence of fine clastic rocks, dominantly planar-bedded, fine-grained quartzofeldspathic wacke to arenite, with lesser siltstone and mudstone ... at least 3000 metres ... (thick).

Typically, the middle Aldridge consists of rusty brown weathering quartzofeldspathic wacke beds, 0.2 to 1.0 metre thick separated by thinner intervals (typically 0.05 - 0.3 m) of siltstone. Both thicker and thinner sandstone beds are less common. The sandstone beds are even, planar and laterally continuous, massive to indistinctly graded, locally with coarse (<1 - 2 cm) dark and pale grey laminae. ...

... Siltstone intervals may include fine-grained wacke to mudstone, and are generally parallel laminated, sometimes with pale and dark grey laminae. ... Some sequences lack fine siltstone intervals and form thick sandstone units separated only by bedding planes, suggesting that fine material was either eroded or not deposited. ...

The upper part of the middle Aldridge is characterized by thinner wacke beds (0.05 - 0.5 m thick) which are more widely separated within grey to dark grey, thin-bedded to laminated siltstone and mudstone. Thin-bedded, argillaceous siltstone-dominated sequences in this part of the section can be easily interpreted as upper Aldridge in areas lacking good exposure. ... This distinct interbedded wacke and dark grey siltstone grades upward over about 100 metres into the upper Aldridge" (Brown et al. 1993).

Upper Aldridge

The upper Aldridge Formation is estimated to be between 400 and 500 m thick in the Goat River area and approximately 300 m thick further north. It is distinguished from the underlying middle Aldridge

by its rusty dark brown weathering, grey to dark grey, platy to fissile, thin and parallel-bedded to laminated siltstone and silty mudstone couplets. In addition, intervals of coarser wacke beds become thinner and more widely separated than equivalent lithologies in the middle Aldridge.

The upper contact with the Creston Formation is also gradational and has been placed at the first appearance of pale green colours, shrinkage (syneresis) cracks and other shallow-water sedimentary characteristic of the overlying Creston Formation. In addition, a massive, thick bedded siltstone or wacke occurs at the base of the Creston Formation in the Goat River area.

Creston Formation

Lower Creston

The lower Creston Formation is between 650 and 1000 metres in the Goat River area and consists of thin-bedded, laminated siltstone, argillite and lesser fine-grained quartz wacke. Strata of the predominantly argillaceous lower Creston Formation can be distinguished from the Aldridge Formation by a combination of colour, bedforms and sedimentary structures. Lower Creston rocks are generally waxy pale green to olive, with tan weathered surfaces, although pale grey and mauve to purple siltstone and argillite are common. The most characteristic and diagnostic sedimentary structures are syneresis (shrinkage) cracks and the occurrence of both asymmetric and symmetric ripples. Syneresis cracks are commonly developed in argillaceous beds, generally consist of one to four irregular cracks up to a few centimetres long. Ripples have wavelengths ranging between 3 and 10 centimetres with amplitudes of 3 to 10 millimetres. Ripple crests, where exposed, are commonly sinuous.

Middle Creston

The middle Creston overlies the lower Creston across a gradational contact and is between 900 and 3100 metres thick. The middle quartzitic member consists of thin to medium, and less commonly thick-bedded, laminated quartz arenite to quartz wacke, siltstone and mudstone. In contrast to the lower Creston, strata of the middle Creston is typically characterized by mauve to purplish quartzitic sequences interbedded with greenish sediments. Light grey to white medium-grained quartz arenite intervals with commonly concordant but locally discordant mauve colour laminations or rings are distinctive. Sandstone beds in the middle Creston are generally cleaner and more quartz-rich than those of the Aldridge Formation. Bedding is planar to wavy with planar and trough crosslaminations, scour and fill, and graded fining-upward sequences common. Sedimentary structures are abundant, including load casts, ball-and-pillow structures and ripples. In contrast to the lower Creston, dessication cracks (mudcracks), interpreted to indicate subaerial exposure have been recognized. Mud-chip breccia horizons with dark grey to brick-red mudstone fragments contained within medium-grained white quartz arenite are common. The bases of these beds are planar with rippled tops.

Upper Creston

The upper Creston Formation lies in gradational contact with the middle Creston. The upper siltite and arelite member is less than 300 m thick and comprises green siltstone, light and dark, thinly laminated argillite and siltstone and purple argillite.

"Narrow beds, pods, and lenses of calcareous rocks occur in the upper part of the formation. These are more numerous towards the top of the Creston, and where they are abundant the strata are considered to belong to the overlying Kitchener-Siyeh" (Rice 1941), or the lower carbonate member of the Coppery Creek group to the west.

The overlying Coppery Creek group consists of three sub-divisions (Reesor 1996), subsequently overlain by the La France Creek group. The descriptions provided in Regional Geology are the most detailed currently available to the author and will not, therefore, be reproduced here.

Mount Nelson Formation (summarized from Pope 1990)

The contact with the overlying Mount Nelson Formation is always very sharp with an abrupt change in facies and sedimentary characteristics evident across the contact, which is interpreted as a paraconformity. The Mount Nelson Formation is approximately 1300 metres thick, consisting of thick, well-bedded white orthoquartzite, buff weathering dolomites and purple weathering dolomites and argillites.

The Mount Nelson Formation has been subdivided into distinct members in the Toby-Horsethief Creek area, as follows:

- a) lower quartzite, a useful 50 to 150 metre thick marker horizon consisting of white, well-sorted, fine- to medium-grained pure quartz arenites,
- b) lower main dolomite - an approximately 400 metre thick sequence which conformably overlies and is gradational with the lower quartzite, comprised of cryptalgal to stromatolitic laminated, pale grey weathering dolomites with interbedded carbonaceous argillites capped by a cream-coloured stromatolitic, crystalline cherty-dolomite unit approximately 20 metres thick overlain in sharp contact by,
- c) the middle quartzite - an apple green coloured sequence consisting of massive, fine- to coarse-grained quartz arenites, impure sandstones and argillites having A-B to A-E Bouma sequences evident,
- d) orange dolomite sequence - approximately 180 metres thick consisting of varicoloured buff weathering dolomitic siltstones, argillites and impure sandstones underlying bright orange-buff weathering silty and sandy crystalline dolomites with abundant cryptalgal and stromatolitic laminations and intercalated chert.

- e) white markers conformably overlie the orange dolomite and are up to 70 metres thick. The white markers consist of cream, buff and silver-grey dolomites with purple, green and buff dolomitic mudstones and local interbeds of pure white magnesite up to 1 metre thick,
- f) purple sequence - gradationally overlies the white markers, consisting of purple weathering dolomitic sandstones and siltstones which grade upward into purple weathering argillite. Mudchip breccias and monomict pebble conglomerates are interbedded with siltstones and argillites and the sequence is overlain by a pebble to boulder conglomerate with a purple weathering sandy argillitic matrix in sharp contact with the purple shales. The pebble to boulder conglomerate is the interpreted locus of an intraformational unconformity with a thickness between 2 and 10 metres thick,
- g) upper middle dolomite - approximately 80 metres thick and similar to the lower main dolomite. It is distinguished by abundant algal allochems which are typically replaced by black chert,
- h) upper quartzite - a distinctive cliff-forming unit consisting of white quartzites more than 260 metres thick (equivalent to the upper Mount Nelson Quartzite (Atkinson 1975)). The upper quartzite consists of well sorted medium- to coarse-grained, essentially pure arenites. They are distinguished from the lower quartzite on the basis of massive bedding and poorly preserved sedimentary structures.
- i) upper dolomite - the uppermost unit in the Belt-Purcell exposed below the Windermere unconformity. The upper dolomite is gradational with the underlying quartzite over 10 metres consisting of interbedded purple argillite, quartzite and dolomite. The upper dolomite is comprised of pale to dark grey dolomite interbedded with quartz and dolomite pebble conglomerates with dolomitic quartz sands.

Proterozoic (Hadrynian)

Windermere Supergroup (summarized from Pope 1990)

The Windermere Supergroup varies in thickness in the Toby Creek area, from 80 metres to over 3 kilometres and is in sharp contact with the underlying Belt-Purcell Supergroup across an unconformity with considerable topography, interpreted as a result of a local basement high, the "Windermere High". The Windermere Supergroup was deposited above this unconformity and consists of a basal conglomeratic unit, the Toby Formation, and the overlying argillite and pebble conglomerate dominated Horsethief Creek Formation.

Toby Formation

The Toby Formation is the basal unit of the Windermere Supergroup and overlies different levels of the Belt-Purcell stratigraphy in the separate fault panels, interpreted to indicate active faulting during sedimentation (Pope 1990). Four distinct facies, have been identified in the Toby Creek area but their

stratigraphic position relative to one another is uncertain due to rapid lateral facies changes.

The Toby Formation consists of:

- a) a basal boulder breccia lithofacies consisting of monomict clast-supported boulder breccias.
- b) a diamictite lithofacies - the most commonly developed facies consisting of rounded quartzite and subangular dolomite boulders (derived from the immediately underlying Mount Nelson Formation) in a sandy argillite matrix.
- c) a sparse clast diamictite lithofacies consisting of graded fine to coarse-grained, poorly sorted arenites and argillites with a minor component of rounded quartzite pebbles or cobbles.
- d) a siltstone-argillite lithofacies which comprises the bulk of, and is the dominant lithology in, the upper portion of the Toby Formation, consisting of well-sorted and graded fine quartz arenites and argillites which typically exhibit complete Bouma sequences.

In the Kootenay Lake "... area it occurs in an almost continuous belt from the head of St. Mary River to Columbia Point on Kootenay Lake. The southern extension is cut off by granite (of the Mount Skelly Pluton) ... It overlies the Mount Nelson unconformably except for a short stretch near Columbia Point where it rests on Dutch Creek ...

At Columbia Point the Toby has been considerably metamorphosed and consists of 3-inch cobbles of quartz and quartzite in a matrix of green, hornblende gneiss..." (Rice 1941).

Horsethief Creek Group

The Toby Formation is gradational into the overlying Horsethief Creek Formation, in which five lithofacies have been identified. These lithofacies define a rudimentary stratigraphy of facies within the Horsethief Creek Formation as individual lithological units are inconsistent due to rapid lateral thickness and facies variations.

The lithofacies identified in the Horsethief Creek Formation are as follows:

- a) siltstone-argillite - dominant in the lower half of the Horsethief Creek Formation and separate the remaining lithofacies, throughout the formation. This lithofacies consists of thick sequences of thin bedded, graded siltstone and argillite and finely laminated black, green and grey argillite.
- b) black carbonate - an easily traced marker used to identify and map the base of the Horsethief Creek Formation consisting of thin bedded, dark grey to black limestone with variable quartz sand and silt in a calcitic matrix and thin calcareous quartz-arenite beds.

- c) dolomite - buff weathering dolomite, up to 30 metres thick, dolomite pebble-conglomerate beds and dolomite supported quartzite occur throughout the Horsethief Creek Formation.
- d) quartz feldspar arenites and pebble conglomerates - consist of pebble conglomerates comprised of grain-supported crystalline quartz and quartz feldspar grains with variable red jasper, green to grey argillite, quartzite and dolomite clasts in a quartz, feldspar, carbonate, sericite and chlorite matrix. Clasts are generally 1 to 2 centimetres in diameter but may exceed 10 centimetres in length. Quartz feldspar arenite beds are similar to the pebble conglomerates but have a greater proportion of matrix and are generally poorly sorted.
- e) red and varicoloured argillites - are present at the top of the Horsethief Creek Formation and consist of variably coloured argillites with interbedded pink carbonate, and varicoloured impure arenites.

"In the vicinity of the (Mesozoic) granitic bodies the Horsethief Creek is altered to a quartz-mica schist with incipient cordierite, andalusite, and, in places, felt-like patches of sillimanite. All diagnostic characteristics of the unaltered formation disappear. This is particularly true around the northern end of the Bayonne batholith on the west side of Kootenay Lake. For a distance of several miles from the contact of this body the series, in most places, is unrecognizable and its identity is only inferred from the general stratigraphy and structure ..." (Rice 1941).

Cretaceous

The Bayonne Magmatic Suite is a composite batholith comprised of a number of smaller Jurassic to Cretaceous age granitoid stocks and plutons which extends from near the International Boundary across Kootenay Lake. On the east side of the Kootenay Lake, the Bayonne Granitic Suite locally includes the Mount Skelly Pluton, a biotite (hornblende) monzogranite with megacrysts of potassium feldspar (Reesor 1996). Rice (1941) grouped these granitoids under the broad heading of the Bayonne Batholith, as described below.

Bayonne Batholith (Rice 1941)

"The Bayonne batholith varies in composition from a granite to a calcic granodiorite; the average composition is that of a fairly alkaline granodiorite ... Much of the rock has an equigranular texture, but a porphyritic phase occurs in many places, at some of which phenocrysts of potash feldspar 2 or 3 inches long are present.

The potash feldspar may be orthoclase or microcline and in some specimens both occur. The plagioclase is oligoclase, generally well twinned and frequently in zoned crystals. Dark brown biotite is the only ferromagnesian mineral abundant, but grains of hornblende occur in rare instances. The usual accessories are present. Sericite and epidote are the commonest secondary minerals, but neither occur in significant

amounts except where the rock has been altered.

A marked feature of the Bayonne batholith is its highly variable nature. This is observable not only in the range of composition but in the appearance of the rock. Coarse-grained and fine-grained, porphyritic and non-porphyritic, pink and light or dark grey phases may occur in a single exposure, in some places in streaks and patches ... Masses of pegmatite and dykes of pegmatite and aplite occur everywhere. Some of the pegmatite dykes are over 100 feet wide. A few large crystals of blue-green beryl, pink garnet, magnetite, and a little black tourmaline were seen in these pegmatites.

Large inclusions of granitized sediments are locally abundant ... These inclusions vary in size from a foot to some hundreds of feet. Alteration is severe, but the sedimentary nature of the original rock is, in most cases, still recognizable and the boundary between the granite and the inclusion is generally fairly sharp. Other inclusions or xenoliths (sic.) from a few inches to a foot long also occur, which can readily be distinguished from the first type mentioned. They parallel one another, are darker coloured, their original texture and composition has been more or less completely altered, they are fairly uniform in size, and they usually grade imperceptibly into the granite. They are more widely distributed, indeed very few exposures of any size were examined that did not contain some of these xenoliths (sic.), and in places they are extremely abundant. The xenoliths (sic.) are often most common in the porphyritic phases and scarcer in the non-porphyritic phases of the granite

Two samples from the Mount Skelly Pluton were described by Rice (1941), as follows:

5. Granite (126", Leucoadamellite). Locality: Columbia Point. Light-coloured, medium- to coarse-grained, biotite granite.
8. Granodiorite (227", Adarnellite). Locality: road south of Sanca Creek. Pinkish grey, coarse-grained, porphyritic, biotite granite."

STRUCTURE

The structure of the Sanca Creek area is dominated by its position on the western flank of the Purcell Anticlinorium, a north plunging fold of regional significance. This major structure has been complicated slightly by the presence of a number of regional and local faults, discussed below with reference to the Kootenay Lake mapsheet of Reesor (1996). An early folding event has been proposed for early structures interpreted to have developed in the Late Proterozoic during the Goat River Orogeny.

The prominent faults in the Sanca Creek area are interpreted to be predominantly the result of the Laramide orogeny, characterized by east-verging, west-dipping thrust faults. The Purcell

anticlinorium is allochthonous with respect to North American cratonic basement, having been transported northeastward in the hanging wall of the Purcell Thrust.

The major fault system of the area is the St. Mary / Hall Lake fault system, interpreted to be a long-lived fault initiated in the Late Proterozoic as a growth fault and periodically active at least into the Laramide orogeny. Eastward directed movement across the St. Mary / Hall Lake fault resulted in steeply dipping strata on the western limb of the Purcell Anticlinorium being juxtaposed against relatively shallowly to moderately dipping strata closer to the hinge axis. Significant dip offset is indicated across the fault as east of Sanca Creek Proterozoic lower Creston strata has been juxtaposed against early Paleozoic Cambrian Eager Formation strata.

Later thrust faults are evident in the hanging wall of the St. Mary / Hall Lake fault as a result of mapping in sedimentary strata north of Akokli Creek. The Redding Creek fault is locally significant fault (possibly equivalent to the Corn Creek Fault south of the Mount Skelly Pluton). It is a west-dipping, east verging thrust fault which juxtaposes middle Creston strata against the lower member of the Coppery Creek group. A number of smaller faults are indicated in sedimentary strata north of Akokli Creek, all of which appear to have minor dip (and probably strike-slip) movement. All of the faults in the hanging wall of the St. Mary / Hall Lake fault are interpreted to be older than the Mount Skelly Pluton as all are truncated at the contact of the pluton. However, relatively minor movement along these faults may have resulted in the mineralized vein systems documented and/or postulated on the Sanca Creek property.

PROPERTY GEOLOGY

The geology of the Sanca Creek property (Fig 4) is dominated by the Mount Skelly Pluton, which underlies approximately 70% or more of the area covered by the claims. Recently there has been limited mapping undertaken on the pluton as part of a regional study of the Bayonne Magmatic Belt (Logan 2002), with local sampling and mapping of the Mount Skelly Pluton and Sanca Stock (Lett et al. 2000, Logan and Mann 2000). Only minor geological mapping has been completed in localized areas on the Valparaiso / Government Crown Grants and a portion of the north side of Sanca Creek.

Mount Skelly Pluton / Sanca Stock

A brief examination of lithologies comprising the Mount Skelly Pluton has been completed in the course of work completed on the property to date. The dominant lithology observed on the property, noted in the vicinity of the Valparaiso - Government workings and on both sides of Sanca Creek is that of a biotite granite. In areas proximal to the mapped contact between the pluton and host sediments, the grain size is slightly reduced to that of a medium- to coarse-grained granite. At low to middle elevations along the eastern portion of Sanca Creek, the granite assumes a porphyritic texture due to the presence of megacrystic alkali feldspar phenocrysts. Individual, equant crystals of white to pinkish alkali feldspar phenocrysts up to 2 cm in diameter were noted in a finer grained

matrix of medium- to coarse-grained white plagioclase and biotite \pm hornblende. Xenoliths are rare to absent at deeper levels within the pluton, becoming more abundant and larger both at higher elevations and along Sanca Creek to the west. Xenoliths are predominantly sedimentary, however, inclusions of finer grained, more mafic granite were noted and may have been derived from an earlier phase of the intrusion or a separate, deeper intrusion altogether.

Recent mapping and geochronology by Logan and Mann (2000) have resolved the granite exposures of the Sanca Creek area into three separate phases, specifically, the Mount Skelly Pluton and the Sanca Stock. The Mount Skelly Pluton is further sub-divided into:

- 1) Granite - "Fine to medium grained, equigranular biotite monzogranite. Minor aphanitic, leucocratic phases and dikes", and
- 2) Granodiorite - "Coarse grained biotite-hornblende granodiorite. Common euhedral megacrystic potassium feldspar and mafic (hornblende-biotite-titanite-rich) inclusions. Biotite, K-Ar dates of 97.1 to 98.7 Ma

The younger Sanca Stock is described as a "Medium to coarse grained biotite granodiorite. Characteristic coarse, sub-rounded violet to grey quartz crystal aggregates. Biotite, K-Ar dates of 78.9 to 80.9 Ma".

Therefore, the granites of the Sanca Creek area (Fig. 4) can be differentiated into three phases, the older Mount Skelly Pluton (at 97.1 to 98.7 Ma) and the younger Sanca Creek Stock (at 78.9 to 80.9 Ma). The only MINFILE occurrence documented within the older Mount Skelly Pluton is the ELMO (82FSE 137), comprised of "Multiple narrow, sheeted veinlets/fracture fillings of quartz-muscovite, molybdenum, scheelite and rare chalcopyrite. The veinlets occur in groups of up to 3-10 per meter ...". The remainder of the documented MINFILE occurrences are located within or immediately adjacent to the younger Sanca Stock.

Sediments

Highly altered sediments are present north of the contact in Akokli Creek (Fig. 4) and within an interpreted pendant at the western end of Sanca Creek. The sediments can still be recognized due to the distinctly bedded nature and compositional contrasts between beds, however, they are locally strongly iron-stained and deeply weathered. Local occurrences of highly anomalous lead + zinc \pm copper were noted in hand sample, consistent with reported Minfile occurrences described on and in the vicinity of the property, as summarized below:

Mineral Showings / Workings (Fig. 3)

The following descriptions have modified from Rice (1941) and Minfile descriptions:

Lakeshore Group (082FSE010)

The Lakeshore mine is beside the main highway along the east side of Kootenay Lake about one-half mile south of Sanca Creek. The occurrence is located within a small roof pendant of much altered sediments at the northern termination of the Bayonne Batholith. Near the south edge of this roof pendant the sediments have been deformed by a zone of fracturing running roughly north at right angles to the contact.

About 300 feet from the granite a shaft has been sunk on this zone, beside the main highway. Below the road, 50 to 100 feet vertically below the collar of the shaft, a crosscut adit has been driven that cuts the fracture zone some 50 feet north of the bottom of the shaft and with which it is connected by a drift along the zone. Short sub-level drifts have been driven north and south off the shaft from about half-way down it.

Lenses of galena, sphalerite, and a little chalcopyrite and pyrite lie within a fracture zone from 10 to 20 feet wide. The fracture is associated with a porphyry dyke, with mineralization most frequently occurring as replacements of the dyke. Post-mineral faulting has shattered these lenses, and in places dragged out ore along the zone. The largest lens is near the collar of the shaft, where massive sulphides occur over a width of 3 to 4 feet and for about 20 feet both horizontally and vertically. In the sub-level drifts lenses are smaller and discontinuous. In the drift on the lowest level ore is confined to two narrow veinlets on the two walls of the fracture zone.

Valparaiso Group (082FSE038)

The Valporaiso group is located on the east side of Kootenay Lake directly above Columbia Point. The principal deposit is a persistent, quartz-filled fissure in a lobe of the Bayonne Batholith near its contact with the sediments. Nowhere has the vein been traced into the sediments. It strikes roughly north and dips east about 45 degrees. It has been traced nearly continuously for 1,500 to 2,000 feet and varies in width from 1 to 25 feet. The average width is probably between 3 and 5 feet. It is mineralized with pyrite, arsenopyrite, chalcopyrite, sphalerite, and galena, but only the two former are abundant. The main value is in gold. Sulphides are everywhere scattered through the quartz, but occur principally in bands of almost solid sulphides from a few inches to a foot in width.

A shaft at the south end of the line of workings is in fair condition. For approximately 100 feet, it follows a quartz vein from 2 to 3 feet wide. About 600 feet north of this shaft is another cave shaft. The vein between the two is exposed by open-cuts. It is up to 5 feet wide, but beyond some pyrite and much limonite stain no metallic minerals were seen. For about another 600 feet the vein is exposed in a series of closely spaced open-cuts. It is from 1 to 5 feet wide and carries streaks of sulphides from a few inches to a foot in width. At the north end of this series a deep open-cut has been excavated in a wide part of the vein and exposes a band of solid arsenopyrite and pyrite from 6 to 8 inches wide.

Below this open-cut an adit crosscut has been driven for about 180 feet to intersect the vein. From the face of this crosscut a drift about 120 feet long has been driven north along the vein and one about 80 feet long south. The fracture in the north drift is about 3 feet wide and is partly occupied by a 2-foot quartz vein carrying 6 to 8 inches of solid pyrite and arsenopyrite. There is no diminution in the size or sulphide content of the vein in the face. The south drift is in barren looking material until the near the face. A foot or two before the face the vein is well mineralized, as if the beginning of another ore-shoot. Briefly in 200 feet of drift on the vein a little over 120 feet is well mineralized and 80 feet is low grade or barren.

To the north of these showings strong, mineralized fractures are exposed in a number of open-cuts and two short adits. These are too widely separated to determine if they all belong to a single vein. The quartz is much leached and stained and not much sulphide was seen. Other parallel veins are reported.

The work was completed to develop and expose mineralization within a persistent, quartz-filled vein system along the western edge of the Mount Skelly Pluton, south of Akokli Creek and near the contact with host sediments. The vein(s) strike roughly north, dip approximately 45° east and has reportedly been traced nearly continuously for up to 600 metres along strike with variable width, ranging between 0.3 to 8 metres thick. The average width of the vein is reported to be between 1 and 1.5 metres, containing pyrite, arsenopyrite, chalcopyrite, sphalerite and galena. Highly anomalous values in gold have been reported, together with silver and tungsten.

Gold Basin Group (082FSE039)

The property lies in German Basin on the south side of Akokli Creek at an elevation of 7,000 feet. The deposit consists of a quartz vein, exposed in the east wall of the cirque below the ridge crest, in the same granitic body as the Valporaiso, close to its contact with the sediments. It strikes roughly north and, near the surface, dips about 30 degrees west. The workings consist of a long adit driven from a point just above the floor of the basin, and a shorter adit higher up the vein. Several raises have been driven from these adits through to the surface. In addition to the underground workings, a line of open-cuts expose the vein on the surface for about 300 feet.

The vein in the open-cuts occupies a strong fracture in the granite and is from 3 to 8 feet wide. It apparently dies out where the fracture passes from the granite to the sediments. The quartz is milky white and contains scattered galena, pyrite, and chalcopyrite. Some orange-yellow scheelite (calcium tungstate) was seen. Gold is reported associated with the sulphides.

Hope of Discovery Claims (082FSE044)

A lower tunnel was driven for approximately 140 feet along a quartz vein ranging from 2½ to 4 feet wide and "... mineralized with irregular disseminations, stringers, and bunches of pyrite and chalcopyrite and stains of copper carbonates". An upper tunnel is located approximately 40 to 50 feet above the lower tunnel and is approximately 35 feet in length. It was driven into the same quartz vein which is up to 4 feet wide and contains similar mineralization. "Grab samples from small piles of selected material derived from these workings assayed ..." up to 0.02 o.p.t. Au, 1.1 o.p.t. Ag and

4.21% Cu.

"The main mineral occurrence is at an elevation of 5,000 feet on the steep south slope of the mountain and is a galena-bearing quartz vein ranging in width from 1 inch to 2.3 feet over an exposed length of 200 feet. The vein strikes north 12 degrees west and dips 77 degrees east, and is in folded, thinly bedded white limestone of the Dutch Creek formation. At the upper or north end the vein pinches to a fracture, and at this point the white limestone merges with a less thinly bedded zone of blue-grey limestone. Galena occurs in bands and pockets within the quartz and in minor concentrations in the bedding planes of the limestone adjacent to the vein. Minor scattered disseminations of galena are in the blue-grey limestone beyond the end of the vein" (Minister of Mines Report 1956).

Copper Canyon (082FSE045)

Reports of "ore" have been made from this occurrence, consisting of copper sulphides in a quartz gangue taken from a vein. Minor workings reportedly include two tunnels and several open cuts on the vein. These occurrences lie off the property, north of Akokli Creek

Sarah 2nd (082FSE055)

The Sarah 2nd vein parallels the Valparaiso vein and is located approximately 200 metres higher. Old workings exposed the vein which consisted of rusty, locally honeycombed, quartz with irregular disseminated pyrite and galena mineralization with minor copper carbonate staining. Wolframite was also noted.

Country Girl (082 FSE057)

An old tunnel is described, driven a short distance east along a silicified fractured zone in granite. Sparsely disseminated pyrite, zinc-blend (sphalerite) and galena is described, associated with quartz and apparently, in places, altering the host granite.

A showing is described from just below water-level (now probably deep underwater), comprised of quartz (4 feet wide) containing disseminated galena. A sample of this showing, taken from a small pile of ore, assayed: 0.03 oz/t gold, 2.3 oz./t silver, 11.2% lead and 0.8% zinc. Another north-striking quartz vein was identified along the lakeshore to the south, between 18 and 24 inches wide comprised of irregular disseminations of galena.

Iolanthe Group (082FSE058)

Workings near lakeshore consisted of two shallow shafts and minor trenching in south-east striking, east dipping quartzose mica-schist, talc-schist and quartzite. Pyrite-, sphalerite- and galena-bearing quartz stringers and veinlets are oriented parallel to the foliation in the metamorphosed sediments. A grab sample from a small pile of ore associated with the strongest mineralization in the vicinity assayed 0.04 oz/t gold, 5.5 oz/t silver, 3.4% lead and 16.5% zinc.

Royal (082FSE060)

The Royal group is located south of the Valparaiso-Government workings, between 850 and 1,350 feet vertically above the lake. At an elevation of approximately "... 1,350 feet above the lake, an open-cut exposes a short section of oxidized vein ..." between 2 and 2.5 feet wide. An average sample of this north striking, east dipping vein material assayed trace gold, 0.3 oz/t silver, 1.1 % lead and 0.7 % zinc. A tunnel is located "... a short distance southerly along the outcrop and at a slightly lower elevation ..." and was driven approximately 170 feet without intersecting any ore with no vein observed in the face.

A few hundred feet south and approximately 350 feet lower, "... a short length of flat-lying quartz vein..." is exposed, locally well mineralized with galena. A (chip?) sample across 18 inches of the strongest observed mineralization assayed 0.02 oz/t gold, 4.1 oz/t silver, 38.9 % lead and 0.6 % zinc. A small sample of hand picked galena assayed 0.04 oz/t gold, 19.8 oz/t silver, 76.5 % lead and 7 % zinc.

A few hundred feet farther south and approximately 150 below the above samples, short segments of quartz vein were observed in two open-cuts, with sparsely disseminated galena. A (chip?) sample across 18 inches in the southernmost open-cut assayed 0.01 oz/t gold, 1.4 oz/t silver, 1.1 % lead and 0.6 % zinc.

2004 PROGRAM

To facilitate future work on the Sanca property, a full scene Landsat image (P043r26_5t871011fn) was purchased in digital form covering the southern half of Kootenay Lake. The digital image was subsequently orthorectified by Fons Decker and supplied to Jondon JV Investments Inc. on a CD-ROM.

The image is intended for use as a base for mapping in a GIS (Geographic Information Systems) environment. Preliminary work has been done to date using Manifold GIS software to prepare a suitable map, however, due to the lack of a plotter, acquisition of a hard copy has been difficult. For the purposes of this report, the data was compiled within Arcview 9.0 and subsequently plotted.

Geological data (Massey et. al., 2003) were downloaded from the provincial government web-site:

<http://www.em.gov.bc.ca/Mining/Geolsurv/Publications/catalog/bcgeolmap.htm> for NM11.

MINFILE data were downloaded from the B.C. government's MINFILE web-site and subsequently compiled into a database for the purposes of plotting.

MINFILE Occurrences

To date, the author has confirmed the location of workings associated with the following MINFILE occurrences (Fig. 3):

	Easting	Northing
German Basin	524074	5474326
Government	519880	5473634
Valparaiso	519848	5474047

Continued effort was made to locate the Country Girl, Iolanthe and Lakeview occurrences. On April 1st, the author visited the property to check access conditions and to make another attempt to locate the Lakeview occurrence (082FSE010). Although no workings were found in the vicinity of the Lakeview MINFILE occurrence at 519844 E, 5468405 N, an adit was noted at the side of the highway at 520572 E, 5465453 N. This adit does not coincide with a known MINFILE occurrence, with the Lakeview and the Jansen (082FSE129) being the only occurrences documented in the area.

After considerable effort over the years to locate these occurrences, the author must now conclude that they have been lost. The Lakeview was probably buried during construction of the highway or development of residential properties along Kootenay Lake, while the Country Girl and Iolanthe are probably under surface of Kootenay Lake.

DISCUSSION

The Landsat image was orthorectified with reference to the World Geodetic 1984 (WGS84) datum and plotted for the purposes of this report using ArcGIS 9.0. The image and attached databases are being utilized for field purposes using the Manifold GIS package. The author was unable to export the images generated and utilized within Manifold to ArcGIS 9.0 and so the hard copy plots accompanying this report are not representative of those utilized in the field.

Figure 6 represents the combination of the orthorectified Landsat image as the base map, with geology from Massey et al. (2003) and MINFILE data for southeast BC derived from the Ministry of Energy and Mines MINFILE web-site. The MINFILE data consists of two databases, one comprised of all MINFILE occurrences on 082 F and G, and the second comprised of the Past Producers (in red).

In addition, the geology has been colour coded (as indicated in the accompanying Legend) for the predominantly sedimentary Proterozoic Purcell Supergroup (Aldridge, Creston and Kitchener Formations) and the overlying Windermere Supergroup (Toby and Mount Nelson Formations), as well as the intrusive lithologies (Cretaceous and Jurassic age granites).

From the combined data, it can be seen that the northwest lobe of the Bayonne Batholith, comprised of the Sanca Stock, has a higher proportion of MINFILE occurrences relative to the slightly older, and larger, Mt. Skelly Stock (as differentiated in the Detailed property image). Furthermore, the base of the Windermere Supergroup, comprised of the Toby and Mount Nelson Formations are regionally reactive, with a number of MINFILE occurrences evident, extending from the northern contact of the Sanca Stock north toward the Fry Creek Batholith. Also evident on the maps is the relative abundance of MINFILE occurrences localized at the intrusive contact of the Sanca Stock with the basal Windermere succession.

The detailed plot (Figure 7) has been enlarged a little too much to be of much use in that the resulting plot has become highly pixelated. With a resolution of approximately 40 m, a scale of 1:20,000 does not appear to be practical.

Continued work with the databases will continue. This report documents the preliminary work with the orthorectified Landsat image and subsequent results are expected to be more satisfactory.

The images were utilized to assist decisions regarding a limited 2004 field program, commencing in late August 2004, which will be reported in a later report.

CONCLUSIONS

The program completed to date on the Sanca Creek property was intended to develop a strong foundation on which to build upon in subsequent programs. Detailed 1:20,000 TRIM maps have been utilized to provide an accurate base map on which to compile data. As a result, the base map and subsequent overlays (Figure 7) are intended to guide subsequent exploration of the property.

The preliminary deposit type under consideration in this program is that of a low tonnage, high grade vein type deposit. Minfile data reported for the area appear to consist of a number of vein-type occurrences with elevated to potentially ore grade base \pm precious metal values. Furthermore, many of the reported occurrences may be on-strike equivalents of one another, allowing potential to develop one or more seemingly unrelated occurrences into larger, perhaps economically feasible deposits. In the course of the 1997-98 program, a suite of potential pathfinder elements was identified, proposed to be utilized in subsequent soil geochemical surveys. The validity of the potential pathfinders will have to be verified for soils, as they have been identified on the basis of rock samples. However, a comparison of mineralized rock samples relative to preliminary background values strongly suggests that soils may be a powerful tool with which to undertake preliminary evaluation of the large area encompassed by the claims.

Additional work is strongly recommended on the Sanca Creek property to evaluate the possibility of one or more north-south, moderately to steeply east dipping, mineralized vein systems. There may be at least two present, identified on the basis of work completed to date: (1) the Valparaiso - Government and its possible on-strike equivalents (including the Lakeview, Iolanthe, Hope and Copper Canyon) and (2) the German Basin - former Vancouver Crown Grant. Localized surface soil geochemical surveys could very rapidly and inexpensively determine the validity of this hypothesis utilizing a number of soil lines oriented perpendicular to the projected surface trace of the vein systems. The strong response of the vein system in Ag, As, Au, Bi, Cu, Fe, Mn, Pb, Sb, W and/or Zn, may allow delineation of the vein systems along strike, if present.

Other possible commodities identified on, or adjacent to, the property include tungsten and molybdenum, both of which may be associated with granitoid intrusions. Work completed previously to the immediate east of the property identified low grade, but anomalous molybdenum and high grade assays have been returned for tungsten from samples taken on the Sanca property. Molybdenum, based on limited previous work, is associated with the older Mount Skelly Pluton (former JAIM and ELMO claims). Further work is proposed to continue evaluation of molybdenum as a possible commodity of interest on the property.

Several vein-type mineralized occurrences have been identified and/or documented within the granitic host rocks of the Sanca Stock and the Mount Skelly Pluton. These may be polymetallic veins, and therefore having low tonnage - high grade potential. Alternatively, they may be veins consistent with an Intrusion-Related Gold model and part of a high tonnage - low grade system with local high grade to bonanza grade gold veins.

Geochemical data compiled to date, taken together, may be indicative of potential for an intrusion-related gold deposit, particularly with regard to the association of anomalous arsenic, bismuth, antimony and tungsten with gold, as documented for the property. It is interesting to conjecture on the possible size of the system, given the documented presence of the various MINFILE occurrences, spatially associated with the Sanca Stock (Fig. 3). Mineralized, and apparently sheeted, veins and veinlets at approximate UTM coordinates 525807 E, 5471353 N (1600 m) might be interpreted as having a structural position close to the base of a potentially mineralized system as would the Royal, Sarah and Valparasio - Government MINFILE occurrences (1200 - 1500 m). The German Basin occurrence would then be located at a structurally higher location (2000 m), close to the erosional upper limits of the current exposure. All of these MINFILE occurrences are located around the periphery of the Sanca Stock. This may be an indication of localization of mineralization in the outer shell of the original intrusive body, in which case the mineralized upper carapace has been eroded away. Alternatively, the MINFILE occurrences may represent several of the higher grade veins and veinlets localized within a much larger, low grade mineralized system. If this is the case, there is up to 900 metres of vertical exposure (from the Valparaiso - Government at 1200 m to the uppermost elevations of the exposed Sanca Stock at 2100 m) to evaluate, having an approximate areal extent of 20 km².

The presence of a relatively large number of documented MINFILE occurrences spatially associated with the youngest intrusive phase is interpreted to indicate the intrusion of a volatile-rich magma into a regionally reactive stratigraphy (i.e. the uppermost Purcell Supergroup). Therefore, the author believes there is considerable potential to identify additional mineral occurrences in the adjacent host strata of the uppermost Purcell Supergroup, particularly the Mount Nelson Formation. There are a relatively high proportion of MINFILE occurrences localized within or immediately adjacent to the Mount Nelson Formation along its exposure within the regionally significant Moyie Anticline, particularly proximal to intrusions (i.e. the Cretaceous Horsethief Creek Batholith). Additional work should be undertaken to locate and evaluate the Hope of Discovery and Copper Canyon MINFILE occurrences north of Akokli Creek. In addition, exploration along the mapped trace of the Mount Nelson Formation should be undertaken as well.

RECOMMENDATIONS

Regional

- 1) Complete compilation of all ground data, including soil geochemistry and geophysics on, and immediately adjacent to, the Sanca Creek property to assist in subsequent decisions regarding exploration on the property;
- 2) Evaluate available air photos for the property in an attempt to identify linear features, particularly any trending essentially north-south ($\pm 20^\circ$), which might reflect mineralized veins and/or fractures on the property. In addition, air photo interpretation may assist in qualitatively evaluating the possibility that many of the Minfile occurrences documented on the property are, in fact, separate exposures along one or more vein systems, thereby establishing a larger possible resource if grade is continuous;
- 3) The existing road system on the claims should be driven and prospected, specifically for mineralized veins and/or fracture systems;
- 4) Soil samples should be taken along the road system throughout the Mount Skelly Pluton and Sanca Creek Stock so as to: 1) provide background values with which to assess potentially anomalous geochemical values, 2) identify potentially anomalous locations for subsequent detailed follow-up, and 3) provide a cost effective methodology for evaluating the potential for high tonnage mineralization (i.e. molybdenum and/or gold);
- 5) Silt samples should be taken from all drainages sourced from within both the Mount Skelly Pluton and Sanca Creek Stock to provide a means of potentially anomalous drainages for subsequent follow-up;
- 6) Continue efforts to locate and examine all MINFILE occurrences within, and immediately adjacent to, the Sanca Creek property to evaluate the possibility they are on-strike equivalents of the vein system(s) currently identified on the property;
- 7) Additional claims should be considered for acquisition to cover: 1) the entirety of the exposed Sanca Stock, and 2) the MINFILE occurrences immediately north of Akokli Creek (Hope of Discovery and Copper Canyon) as well as the regionally reactive Mount Nelson Formation;

Detailed

- 8) The former Vancouver Crown Grant has strong potential for vein type mineralization. Anomalous soil geochemical results on the former Vancouver Crown Grant may represent the on-strike equivalent of the German Basin vein. Any old workings reported should be accessed, evaluated and sampled.

The area within and around the former Vancouver Crown Grant should be prospected and mapped, specifically looking for evidence of the shear proposed by Borovic (1989b), coupled with the VLF geophysical anomalies. Additional testing of ground geophysical methods should be considered, particularly VLF to identify possible mineralized veins, once again oriented perpendicular to, and across, the projected surface trace of the veins;

- 9) Undertake localized soil geochemical surveys across the on-strike extensions of the Valparaiso - Government and German Basin vein systems, as determined by the surface trace of structure contoured projections. Soils should be analyzed by ICP technique and data subsequently evaluated for some or all of the following elements, anomalous Ag, As, Au, Bi, Cu, Fe, Mn, Pb, Sb, W and/or Zn.
- 10) Examine the former Hope of Discovery and Copper Canyon MINFILE occurrences need to be located and sampled to evaluate the possibility they represent the on-strike equivalents of the Valparaiso-Government vein system;
- 11) Acquisition of the Valparaiso - Government Crown Grants should be **considered** as they represent a potential asset in the form of relatively extensive underground workings on a well documented mineralized vein. Alternatively, they must also be considered a possible liability given the high levels of arsenic documented through sampling successive generations of exploration.

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APPENDIX A

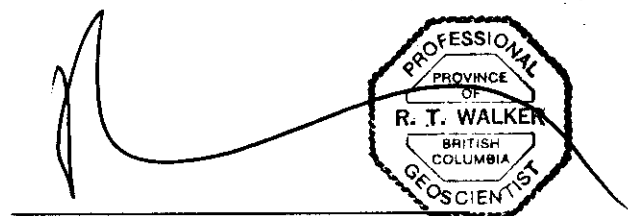
STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Richard T. Walker, of 656 Brookview Crescent, Cranbrook, B.C., hereby certify that:

- 1) I am a graduate of the University of Calgary of Calgary, Alberta, having obtained a Bachelors of Science in 1986,
- 2) I obtained a Masters of Geology at the University of Calgary of Calgary, Alberta in 1989;
- 3) I am a member in good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia;
- 4) I am a Fellow of the Geological Association of Canada;
- 5) I am a consulting geologist and Principle of Dynamic Exploration Ltd. with offices at 656 Brookview Crescent, Cranbrook, British Columbia;
- 6) I am the author of this report which is based on limited preliminary work undertaken on a digital Landsat image acquired for the project between March 15 and 31, 2004;
- 7) I have no interest, direct or indirect, in Jondon J.V. Investments Inc.; in any of their projects or properties nor do I expect to receive any such interest.
- 8) I hereby grant my permission to Jondon J.V. Investments Inc. to use this report, or any portion of it, for any legal purposes normal to the business of the firm, provided the excerpts used do not materially deviate from the intent of this report as set out in the whole.

Dated at Cranbrook, British Columbia this 7th day of September, 2004.

A handwritten signature in black ink, appearing to be 'R. T. Walker', is written over a circular professional seal. The seal is for the 'PROFESSIONAL PROVINCE OF BRITISH COLUMBIA' and identifies 'R. T. WALKER' as a 'GEOSCIENTIST'.

Richard T. Walker, P.Geo, F.G.A.C.

APPENDIX B

STATEMENT OF EXPENDITURES

STATEMENT OF EXPENDITURES

The following expenses were incurred on behalf of the Sanca Creek project between October 31, 2003 and March 31, 2004.

PERSONNEL

R.T. Walker, P.Geo. - 1.0 days at \$500 / day	\$ 500.00
Giuliano Tamburino - 1 day at \$200 / day	<u>\$ 200.00</u>
	\$ 700.00

EQUIPMENT RENTAL

4 Wheel Drive Vehicles - Truck - 1.0 days at \$75 / day	<u>\$ 75.00</u>
	\$ 75.00

MISCELLANEOUS

Accommodation (Cranbrook)	\$ 100.00
Fuel	\$ 150.00
Digital Landsat image and orthorectification	<u>\$ 2,900.00</u>
	\$ 3,150.00

REPORT WRITING / PREPARATION

R. T. Walker, P.Geo.: 2.0 days x \$500.00/day	\$ 1,000.00
Reproduction	<u>\$ 150.00</u>
	\$ 1,150.00

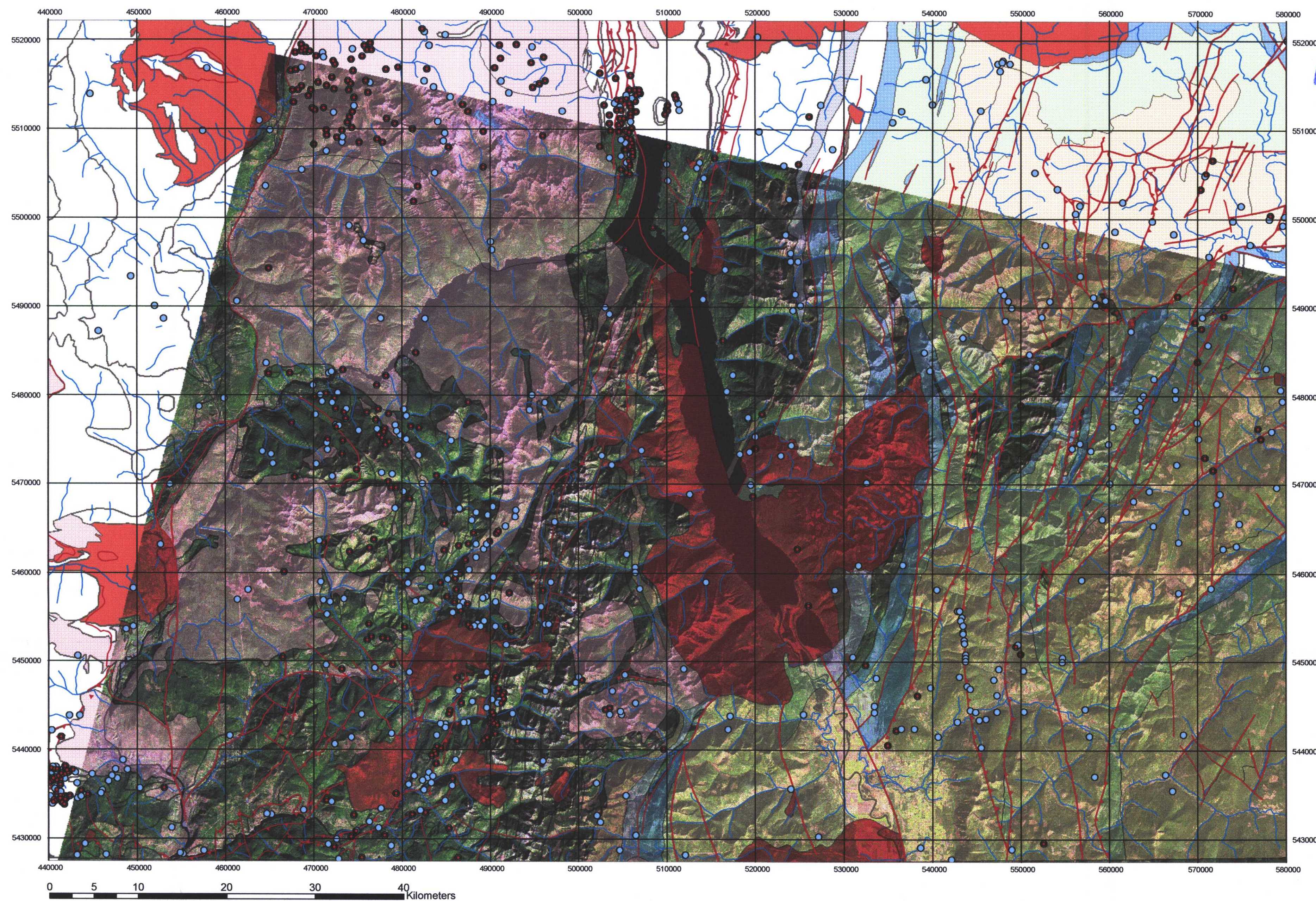
Total: **\$ 5,075.00**

SE British Columbia Geology

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT



27.493



LEGEND

- Past Producers
- MINFILE Occurences
- Fault
- Normal Fault
- Thrust Fault
- Rivers

Intrusion

- Toby Creek Formation
- Mount Nelson
- Kitchener
- Jurassic Intrusion
- Horsethief Creek
- Cretaceous Intrusion
- Creston Formation
- Aldridge Formation

