

**2009 Assessment Report for a
Prospecting, Geology and Geochemistry
Program**

August, 2009

**BC Geological Survey
Assessment Report
31094**

On the

Kennedy River Property

Alberni Mining Division

**BCGS 092F013, 092F014
NTS 092F03W**

**UTM Zone 10N 5448800N 324875E
49° 10' N 125° 25' W**

**For
G4G Resources Ltd.**

**Report written by
Jacques Houle, P.Eng.**

September 11, 2009



Contents

	Page
Introduction	
Property location, access and physiography	3
Property definition, owner, operator, geology and history	3
List of claims and work completed	7
Technical data, interpretation, conclusions and recommendations	9
Author's Qualifications	11
References	11
Tables:	
Table 1 – Legacy Mineral Claims & Status as of Sept. 11, 2009	4
Table 2 – ARIS Reports for work filed on the area of the Property	5
Table 3 – Highlights of 2009 Rock Sampling Results	9
Table 4 – Proposed Work Program for the Kennedy River Property	10
Figures:	
Mineral Tenure (MTO) – 1:50,000 scale	Figure 1
Infrastructure (MapPlace) - 1:50,000 scale	Figure 2
Geology (MapPlace BCGS 2005) – 1:20,000 scale	Figure 3
Aeromagnetics (MapPlace) – 1:20,000 scale	Figure 4
RGS Gold, Copper and ARIS (MapPlace) – 1:20,000 scale	Figure 5
2009 Rock Sample Locations – 1:10,000 scale	Figure 6
2009 Mapping and Sampling from Tommy Area – 1:500 scale	Figure 7
Appendices:	
2009 Rock Sample Locations and Site Descriptions	Appendix 1
2009 Rock Sample Descriptions	Appendix 2
2009 Rock Sample Geochemistry	Appendix 3
Acme Certificate of Analysis VAN09003835	Appendix 4
Acme Methods and Specifications for Groups 6, 7AX	Appendix 5
Surface Title Searches for Property Area	Appendix 6
Landholder Notices issued for Property Area	Appendix 7
BC Minister of Mines Annual Reports for Property Area	Appendix 8
BC MINFILE Reports & I02 Mineral Deposit Profile for Area	Appendix 9
2009 Cost Report for Assessment Work Program	Appendix 10
Mineral Titles Online Statement of Work Event 4332074	Appendix 11
ARIS Title Page for 2009 Assessment Report	Appendix 12

Introduction

Property location, access and physiography

The Kennedy River Property claims are located in the Alberni Mining Division, central Vancouver Island, BC, Canada. The Property is approximately 50 kilometres west of Port Alberni, B.C. and is centred at latitude 49°10' North, longitude 125°25' West, or UTM Zone 10N, 324875E, 5448800N in NTS map sheet 092F03W.

BC Provincial Highway 4 traverses the centre of the Property, following the eastern bank of the Kennedy River, and providing access to the coastal communities of Ucluelet and Tofino from Port Alberni. The Kennedy River can be traversed locally by small boats during periods of low water levels, but is generally un-navigable with steep banks.

The eastern half of the property is accessible directly from Highway 4, with a series of old overgrown roads which generally follow west-flowing creek valleys providing rough foot trails to the southeast portion of the Property. There are also two new gravel roads in the northeast portion of the Property built to provide limited access to a run-of-river power infrastructure currently under construction along Canoe Creek. These new roads will be gated near the highway once construction is completed.

The western half of the property is accessible via a good gravel road west from the 4-laned section of Highway 4 with a new bridge across the Kennedy River located 2 kilometres south of the Property. The gravel road deteriorates northwards but does lead to the southwest corner of the Property, where it has been washed out. Old overgrown and/or decommissioned roads provide rough foot trails to the southwest portion of the Property. The northwest portion of the Property is not readily accessible by road or trail.

The topography of the Kennedy River Property is typically steep and rugged with elevations ranging from 25 metres along the river valley to 1000 metres along the flanks of several surrounding peaks, many of which appear to have been glacial nunataks. The west side of the Kennedy River valley in the area of Property contains swampy meadows separated by rocky knolls. The eastern half of the property is covered by first growth coniferous forest; the western is covered by second growth forest including extensive clear-cut areas, with regeneration consisting of alders, willows and salal, making access difficult and slow, particularly in the Shack MINFILE area where access roads have been willfully destroyed so as to obliterate almost all evidence of historic exploration work.

The area of the Kennedy River Property is temperate rainforest, with heavy rain in the autumn to spring period, warm dry summers, and snow at higher elevations in the winter. Relatively mild coastal climate generally allows year round fieldwork to be carried out.

Property definition, owner, operator, geology and history

The property owner and operator is G4G Resources Ltd., formerly known as SYMC Resources Ltd. prior to 2008. See Figures 1 and 2 for mineral tenure and infrastructure maps of the property at 1:50,000 scale. The property covers approximately 1200

hectares and consists of four contiguous legacy mineral claims, with details and status listed in Table 1 below:

Table 1 - Legacy Mineral Claims and Status as of September 11, 2009:

Tenure No.	Tenure Type	Claim Name	Owner Client# (% interest)	Map No.	Good To Date	Status	Area (ha.)
200097	Mineral	TOMMY	130750 (100%)	092F	2010/sep/15	GOOD	400
200101	Mineral	GOLDEN GATE	130750 (100%)	092F	2010/sep/15	GOOD	150
302615	Mineral	LUKE	130750 (100%)	092F	2010/sep/15	GOOD	200
347567	Mineral	LUKE #2	130750 (100%)	092F	2010/sep/15	GOOD	450
Totals		4 Claims					1200

The Property is mainly underlain by volcanic rocks the Triassic Karmutsen Formation, but also straddles a major northwest-trending structural zone which has uplifted and exposed older marbleized limestone in contact with the nose of a large granodiorite body of the Jurassic Island Plutonic suite, intruding from the southeast. (see Figure 3). This interpretation is supported by regional aeromagnetic surveys (see Figure 4). Smaller intrusive dykes of quartz feldspar porphyry and felsite intrude all rocks in the area, and may belong to either the Eocene Mt. Washington Plutonic suite, or the Jurassic Island Plutonic suite. The Property is located entirely in the Wrangellian Terrane.

The following geology legend lists rocks found in the Kennedy River Property on Central Vancouver Island, taken from the BCGS 2005 Geology layer in BC MapPlace, which applies to Figure 3:

EOCENE TO OLIGOCENE

Mt. Washington Plutonic Suite

EOIM quartz dioritic intrusive rocks

EARLY JURASSIC TO MIDDLE JURASSIC

Island Plutonic Suite

EMJlgd granodioritic intrusive rocks

LOWER JURASSIC

Bonanza Group

LJBca calc-alkaline volcanic rocks

MIDDLE TO UPPER TRIASSIC

Vancouver Group

Karmutsen Formation

uTrVK pillow basalt and breccia

muTrVs undivided sedimentary rocks

Figure 5 shows BC RGS (Regional Geochemistry Survey) data for Gold and Copper, as well as BC ARIS (Assessment Report) numbers for the area of the Kennedy River Property, from BC MapPlace. Gold bearing quartz-sulphide veins have been the main focus of attention in the area of the Kennedy River Property. Excerpts from B.C. Minister of Mines Annual Reports for those occurrences are also included for convenience in Appendix 8. Copies of B.C. MINFILE capsule geology reports for

occurrences in the immediate area of the Kennedy River Property are included for convenience in Appendix 9. A summary of the history of previous work is as follows, taken primarily from BC Minister of Mines Annual Reports and BC Assessment (ARIS) Reports with relevant ARIS reports listed in Table 2 below:

Table 2 – ARIS Reports publicly available as of September 11, 2009

Report #	Year	Author	Owner/Operator	Work Program / MINFILE #
5112	1974	Kinneard, G.	Kinneard, G.	Prospecting / 092F044, -049
9606	1981	Ejtel, W.	Ejtel, W.	Prospecting / 092F033
11940	1983	Vincent, J.S.	Rich Lode Gold Corporation	Geology, Prospecting and Geochemistry / 092F045, -050, -096, -099
12047	1984	Seed, K.J.	Rich Lode Gold Corporation	Prospecting / 092F045, -050, -096, -099
12767	1984	Spilsbury, T.W.	International Phoenix Energy Corp. / Teck Explorations Ltd.	Geology, Geochemistry, Electromagnetic and Magnetic Ground Geophysical Surveys / 092F033, -047, -048, -480
14279	1985	Spilsbury, T.W., Folk, P.G., Lovang, G.	International Phoenix Energy Corp. / Teck Explorations Ltd.	Trenching, Geochemistry / 092F033, -047, -048, -480
15935	1987	Henneberry, R. T.	Nationwide Gold Mines Corporation	Geology, Geochemistry, and Electromagnetic and Magnetic Ground Geophysical Surveys / 092F045, -046, -052, -096
16145	1987	Groves, W.D.	Lampman, J.S.	Geology and Geochemistry / 092F-050, -099
16474	1987	Potter, R.	International Coast Minerals / Kerr Addison Mines Limited	Geology, and Diamond Drilling / 092F033, -047, -048, -480
16729	1987	Potter, R.	International Coast Minerals / Kerr Addison Mines Limited	Geology and Diamond Drilling 092F033, -047, -048, -480
18693	1989	Pawliuk, D.J.	Golden Spinnaker Minerals Corp. & Nationwide Gold Mines Corp.	Geology, Diamond Drilling, and Electromagnetic, Magnetic and I.P. Ground Geophysical Surveys / 092F045, -096

The first documented mining activity in the Kennedy River area was in 1899, on the **Rose Marie** occurrence MINFILE 092F032, located immediately south of the Kennedy River Property along the east side of Highway 4. In 1900, 9 tonnes of ore were mined from open cuts of a quartz-sulphide vein on the Rose Marie and shipped to the Crofton smelter, yielding average grades of 100 g/t gold and 214 g/t silver. By 1914, a 133

metre adit had been driven along a quartz-sulphide vein, but no further production was documented from the occurrence.

The first documented exploration activity on the area presently covered by claims of the Kennedy River Property was in 1901, on the **Grant** occurrence MINFILE 092F048, now located on mineral claim 200097. Three gold-bearing quartz veins were discovered and exposed with in a deep open cut and a shallow shaft, and an arrastra was built to generate power from the steep west-flowing creek, but no production was documented. In 1903 on the **Bear** occurrence MINFILE 092F044, now located on mineral claim 347567, gold-bearing quartz veins were discovered and prospected.

In 1914, gold was discovered in multiple gold-bearing quartz stringers hosted by a porphyry body at the **Bessie B.** occurrence MINFILE 092F050, now located on mineral claim 302615. A 15 metre adit and a 5 metre winze were driven along one of the quartz stringers. Also in 1914 on the **Bear** occurrence, a 75 metre adit was driven in a westerly direction along a gold-bearing quartz-sulphide vein hosted by a contact zone between diorite and altered porphyry. In the same year, a silver-copper bearing quartz vein was discovered at the **Ruth** occurrence MINFILE 092F049, now located near the boundary of mineral claims 302615 and 347567. On the **Olympic** occurrence MINFILE 092F046, located immediately north of the Kennedy River Property on the west side of the Kennedy River, a gold-bearing quartz vein was also discovered in 1914.

In 1924, on the **Grant** occurrence, sampling of a 1.2 metre thick quartz-sulphide vein in a 2.4 metre deep trench yielded values of 45 g/t gold, 24 g/t silver and 1.6% copper. Also in 1924, gold-bearing quartz-sulphide veins were discovered on the **Bluebird** occurrence MINFILE 092F051, located immediately north of the Kennedy River Property along the west side of the Kennedy River

In 1927, on the **Jo Jo** occurrence MINFILE 092F047, now located on mineral claim 200097, a quartz-sulphide vein was discovered and exposed in open cuts. Also in 1927, on the **Gold Queen** occurrence, now located on mineral claim 347567, a quartz-sulphide vein was discovered over a strike length of 300 metres, variable in thickness and with gold values obtained occasionally along its length.

In 1933-1935, on the **Tommy** occurrence MINFILE 092F033, now located on mineral claim 200097, several gold-bearing quartz-sulphide veins hosted by a volcanic breccia were discovered and exposed by open cuts. A 50 metre adit was driven to intersect and follow one of these veins, and in 1934 a 4 tonne bulk sample from one of the veins yielded average grades of 7.8 g/t gold, 16 g/t silver and 0.28% copper.

In 1974, owner G. Kinneard completed prospecting on mineral claims covering the **Bear** and **Ruth** occurrences, now located on mineral claim 347567 (ARIS 5112).

In 1980-1981, extensive systematic sampling and schematic mapping of blasted open cuts was completed by owner W. Ejtel on the **Tommy**, **Grant** and **Jo Jo** occurrences, now located on mineral claim 200097 (ARIS 9606).

In 1983, a large group of mineral claims in the Kennedy Lake area was acquired by Rich Lode Gold Corporation, who completed reconnaissance geology, sampling and geochemistry (ARIS 11940). Their claims covered the **Bessie B.**, **Esther** MINFILE 092F099, and **VRL-10** MINFILE 092F480 occurrences. In 1984 at the Esther

occurrence, sampling of a 2 cm. quartz-sulphide vein yielded values of up to 101 g/t gold and 36 g/t silver (ARIS 12047).

In 1984, W. Ejtzel expanded his claims around the **Tommy, Grant and Jo Jo** occurrences to cover the **VRL-10** occurrence, optioned them to International Phoenix Energy Corporation, who in turn optioned them to Teck Explorations Limited. Teck completed systematic, grid-based geological mapping, soil geochemistry and ground magnetic and electromagnetic surveys, trench mapping and sampling, and stream sediment geochemistry (ARIS 12767). In 1985, Teck completed follow-up trench sampling and prospecting work on the Tommy property (ARIS 14279).

In 1987, Nationwide Gold Mines Corporation acquired mineral claims on the **Olympic, Blue Bird and Gold Queen** occurrences, and completed systematic, grid-based geological mapping, soil geochemistry and ground magnetic and electromagnetic surveys. The **Shack** MINFILE 092F045 and **TB** MINFILE 092F099 occurrences were discovered (ARIS 15935). Also in 1987, stream sediment geochemistry was completed on the western portion (west of Kennedy River) of J.S. Lampman's Esther claim covering the **Esther** and **Bessie B.** occurrences (ARIS 16145).

In 1987, Kerr Addison Mines Limited acquired by option a large property position in the Kennedy Lake area from International Coast Minerals Corp., including the Tommy property covering the **Tommy, Grant, Jo Jo** and **VRL-10** occurrences. Kerr Addison completed systematic grid-based geological mapping, trench sampling, and 1656 metres of diamond drilling in 8 drill holes (ARIS 16474, 16279). Although no significant intercepts were achieved, it should be noted that NQ size core was drilled and 1 metre core samples were routinely used, resulting in very high ratios of core sample sizes to assay sub-sample sizes, resulting in extremely non-homogenous samples due to the very narrow veins in the drill core, and therefore possibly understated gold values.

In 1988-89, Golden Spinnaker Minerals Corporation and Nationwide Gold Mines Corporation conducted a joint exploration program on the **Shack** occurrence which straddled the boundary between their respective mineral claims. Systematic and detailed geological mapping, ground geophysical surveys (magnetics, electromagnetics, and induced polarization), 908 metres of diamond drilling in 17 holes, and 282 metres of rotary hammer drilling in 2 holes were completed (ARIS 18693). Several significant intercepts were achieved, including one diamond drill hole which yielded 41 g/t gold, 102 g/t silver and 1.27% copper over 0.59 metres. A mineral resource was estimated for the Shack Vein, based on an arithmetic average of vein samples from surface trenches and drill core, but it should be noted that the resource estimate does not meet modern NI-43-101 and CIM guidelines.

List of claims and work completed

From August 17 to 20, 2009 the author completed a field exploration program on behalf of G4G Resources Ltd, with prospector David McLelland and field assistant Adrian Houle. The field program consisted prospecting and rock sampling by the 3 person team using all terrain vehicles and a 4x4 truck along roads where possible, but mainly traversed on foot along old overgrown roads, working from a motor home parked just off a gravel road south of the Property. During that period, a total of 10 rock samples were taken from selected mineralized exposures of bedrock on the Kennedy River Property,

either by the author or by Mr. McLelland. Sample locations and microscopic descriptions of reference specimens appear in Appendices 1 and 2 respectively, with sample locations shown in Figure 6, and a detailed map of GPS locations and sample locations for the Tommy MINFILE 092F033 area shown in Figure 7.

A summary log of activities completed during the field program is as follows:

Monday, August 17, 2009:

- Mobilize crew and equipment from Nanaimo and Qualicum Beach to Kennedy River Property area, set up field base, drive to Canoe Creek power project site and inspect new road to water intake site, mainly on mineral claim 200097

Tuesday, August 18, 2009:

- Traverse by ATV to southern boundary of mineral claim 302615, and on foot along old overgrown or washed out roads on that claim; take samples 813951 to 813954 from mineralized intrusive outcrops near the Bessie B. occurrence on mineral claim 302615
- Return by truck to Canoe Creek power project site and inspect new road to power house site and all other old overgrown roads along the east side of Highway 4 on mineral claim 200097

Wednesday, August 19, 2009:

- Traverse by ATV to southern boundary of mineral claim 302615, and on foot along old roads and off-road along ridge attempting unsuccessfully to relocate old workings of the Shack occurrence; take sample 813955 from mineralized vein in an old trenched outcrop on the ridge near the northern boundary of mineral claim 302615 near the Shack occurrence

Thursday, August 20, 2009:

- Traverse by truck and by foot along old overgrown and washed out roads to old workings of the Tommy occurrence on mineral claim 200097; take samples 813956 and 813504 from mineralized veins in old trenches, sample 813501 from a mineralized vein in Adit Creek, and take samples 813502 and 813503 from the main vein exposed in the Tommy Adit, as well as geological mapping the adit.
- Demobilize crew and equipment back to Qualicum Beach and Nanaimo.

All rock samples taken by the author or Mr. McLelland are described as select grab samples, and were taken to help characterize the mineralization at each location, but should not be considered representative of that mineralization. At each sample site, rock samples were taken in duplicate, and one from each of the 10 sample pairs which the author cut with a rock saw, and inspected and described using a binocular microscope; and the other 10 sample pairs were shipped to Acme Analytical Laboratories Ltd. in Vancouver on August 24, 2009 for 36 element Group 7AX ICP analysis plus Group 6 gold fire assay.

As part of undertaking any field exploration program in B.C., it is mandated by government to notify in advance any owners of other tenures which overlap the mineral claims to be explored. Title searches to determine such owners were conducted by the author in early August, 2009 and notices issued by mail to any relevant tenure holders on August 10, 2009, copies of which appear in Appendices 6 and 7 respectively.

Technical Data, Interpretation and Conclusions

The geochemistry results for rock samples were received from Acme on September 10 in report VAN09003835. The analytical results merged with sample numbers appear in Appendix 3, the analytical certificates in Appendix 4, and the Methods and Specifications in Appendix 5. These results show that the only significant gold values obtained during the work program were from the two select grab samples of the main vein exposed in the Tommy Adit, those being 32.71 g/t and 10.6 g/t gold (Au) in samples 813502 and 813503, respectively. Interestingly, both these samples also contained elevated values of silver (Ag), copper (Cu), lead (Pb), zinc (Zn), cobalt (Co), and bismuth (Bi), as well as in major elements iron (Fe) and sulphur (S); and sample 813502 also contained an elevated value in tungsten (W). Two of the other veins sampled in the Tommy area (samples 813501 and 813504) yielded elevated metal values in only copper, zinc, cobalt, as well as in major elements calcium (Ca), iron and sulphur. None of the other samples taken across the property yielded significantly elevated metal values. Table 3 shows selected highlights of 2009 rock sampling results from the Kennedy River Property, as follows:

Table 3 – Highlights of 2009 Rock Sampling Results

Rocks				6	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX
				Au	Ag	Cu	Pb	Zn	Co	Bi	W	Ca	Fe	S
Sample#	Eastings	Northing	Elev.	G/T	Ppm	ppm	ppm	ppm	Ppm	ppm	ppm	%	%	%
813501	325355	5448756	94	0.02	2.2	949.2	18.3	667	60.4	12.7	2.3	2.72	6.26	2.28
813502	325379	5448735	109	32.71	42.8	6332.1	473.4	917	134.9	489.2	70.3	1.79	11.08	6.78
813503	325384	5448738	109	10.6	28.9	9037.8	164.2	617	72	175.8	2.6	1.89	8.9	5.87
813504	325323	5448668	128	0.15	3.4	1555.2	40.8	224	63	8.4	1.2	4.59	14.57	4.21
813951	323136	5448239	162	0.16	<0.5	17.9	2.7	72	20.5	0.9	<0.5	0.61	5.09	<0.05
813952	323652	5448784	77	<0.01	<0.5	37.1	8.6	124	15.5	<0.5	<0.5	3.16	2.73	0.19
813953	323836	5448673	60	0.11	<0.5	300.4	2.7	45	13.7	0.6	<0.5	5.64	4.44	1.99
813954	323834	5448628	65	<0.01	<0.5	94.4	7	79	33.1	<0.5	<0.5	4.83	4.83	2.59
813955	323776	5448988	133	<0.01	<0.5	11.7	1.6	31	5	<0.5	<0.5	0.22	1.75	0.09
813956	325323	5448845	97	<0.01	<0.5	17.1	1.1	26	5	<0.5	<0.5	0.04	1.25	<0.05

The geological setting and geochemistry results suggest that the Main Vein of the Tommy occurrence at least may represent a shear vein sub-type (ie. Pogo, Alaska) of a plutonic-related gold deposit, as described in the BC/Yukon Mineral Deposit Profile I02 which appears in Appendix 9. In the author's opinion, this mineral deposit profile is more appropriate and economically significant than either Cu-Ag quartz veins or Polymetallic veins Ag-Pb-Zn-Au profiles which the documented mineral occurrences on the Property are allocated in BC MINFILE. Unfortunately, none of the other major vein occurrences on the Property were located and sampled during the 2009 work program, which could help to confirm this possibility. Such additional GPS-guided prospecting and follow-up work is warranted on the Property, since a Pogo type gold deposit is clearly an economic mineral deposit type, which had not been discovered or recognized when exploration was last conducted on the Kennedy River Property. Focused work at the Tommy occurrence is also warranted, including detailed geological mapping and drilling in the immediate area of the Tommy Adit, designed to delineate and establish an indicated mineral resource estimate for the Main Vein. GIS compilation of historical data for the entire Kennedy River Property is also warranted, particularly for the trenching and drilling data on the Shack occurrence, some of which may be utilized to establish an indicated resource for the Shack/Shack 2 Vein. A First Nations' archaeology study and a baseline environmental sampling program are also recommended. Table 4 below shows a proposed work program, with all-up costs by work type, for the Kennedy River Property:

Table 4 – Proposed Work Program for the Kennedy River Property:

Item	Units	Unit Cost	Scheduling	Program Cost
GIS Compilation	50 days – 1 specialist	\$750/day	Winter	\$ 37,500
Archaeology	20 days – 1 specialist	\$750/day	Spring/Summer	\$ 15,000
Environmental	20 days - 2 specialists	\$750/day	4 seasons	\$ 30,000
Prospecting	20 days for 4 people	\$3,000/day	Spring/Summer	\$ 60,000
Road Rehab	15 kilometres	\$2,500/km	Summer/Fall	\$ 37,500
Trench/Map/Sample	20 days	\$5,000/day	Summer/Fall	\$100,000
Diamond Drilling	1000 metres	\$200/metre	Fall	\$200,000
Reports	30 days	\$667/day	Winter	\$20,000
Totals				\$500,000

Additional work programs may be recommended conditional upon results.

Respectfully submitted by:

Jacques Houle, P.Eng.



Author's Qualifications

I, Jacques Houle, P.Eng. Do hereby certify that:

I am currently self-employed as a consulting geologist by:
Jacques Houle, P.Eng. Mineral Exploration Consulting
6552 Peregrine Road, Nanaimo, British Columbia, Canada V9V 1P8

I graduated with a Bachelor's of Applied Science degree in Geological Engineering with specialization in Mineral Exploration from the University of Toronto in 1978.

I am a member in good standing with the Association of Professional Engineers and Geoscientists of British Columbia, the Society of Economic Geologists, the Association for Mineral Exploration British Columbia, and the Vancouver Island Exploration Group; I am also a member of the Technical Advisory Committee for Geoscience B.C., and of the advisory committee for the Earth Science Department of Vancouver Island University.

I have worked as a geologist for 31 years since graduating from university, including 5 years as a mine geologist in underground gold and silver mines, 15 years as an exploration manager, 3 years as a government geologist and 6 years as a mineral exploration consultant.

I had never worked on the Kennedy River Property before, and I am independent of G4G Resources Ltd., who owns the Property.

References

B. C. Ministry of Energy, Mines and Petroleum Resources websites:

Annual Reports

<http://www.empr.gov.bc.ca/Mining/Geoscience/PublicationsCatalogue/AnnualReports/Pages/default.aspx>

ARIS

<http://www.em.gov.bc.ca/Mining/Geolsurv/Aris/default.htm>

MapPlace

<http://www.empr.gov.bc.ca/Mining/Geoscience/MapPlace/MainMaps/Pages/default.aspx>

MINFILE

<http://www.em.gov.bc.ca/Mining/Geolsurv/Minfile/>

MTO

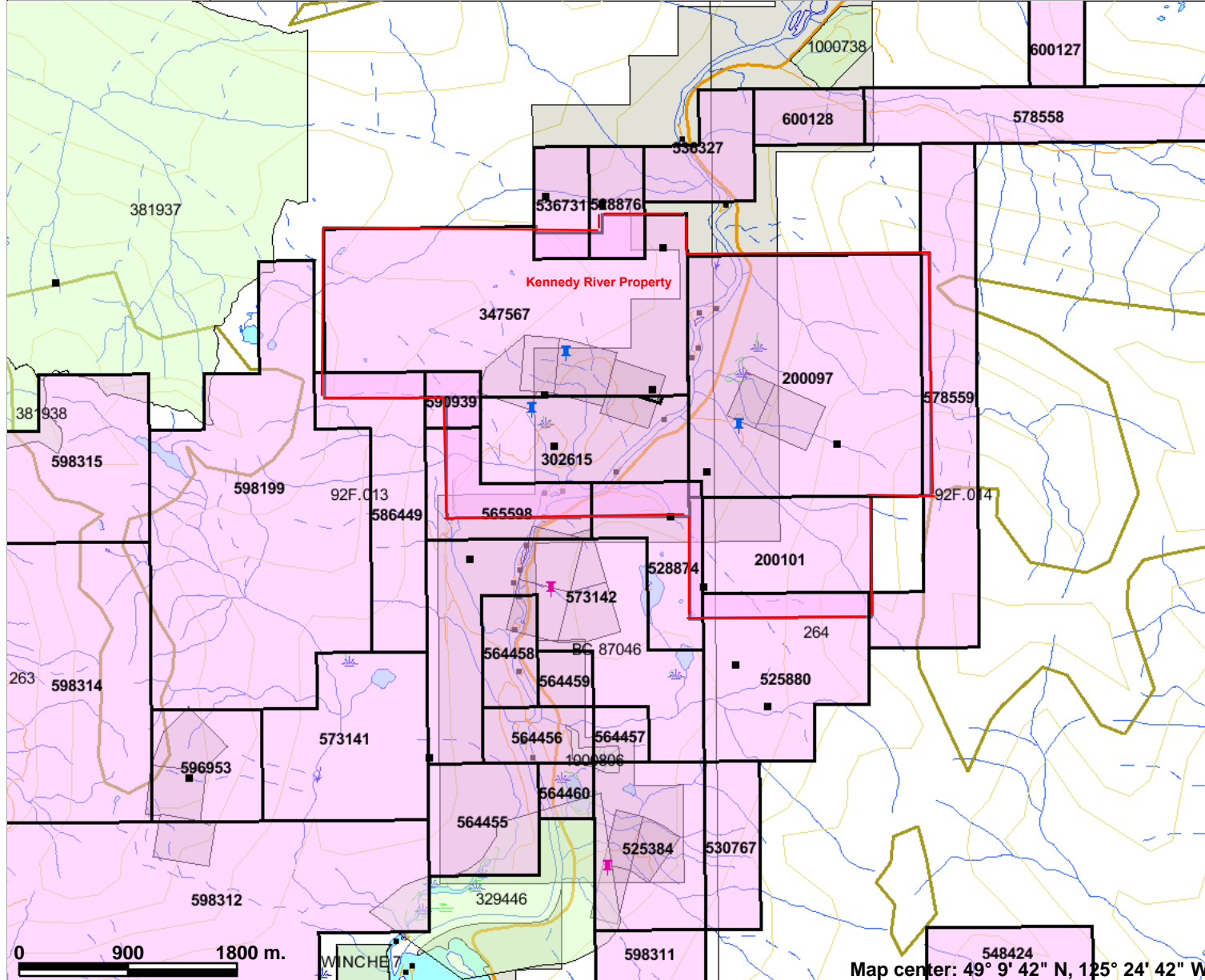
<https://www.mtonline.gov.bc.ca/mtov/home.do>

B.C. Integrated Land and Resource Registry website:

ILRR

[https://logon.gov.bc.ca/clp/cgi/capBceid/logon.cgi?flags=1111:1,8&TARGET=\\$SM\\$http%3a%2f%2faardvark%2egov%2ebc%2eca%2fnetapps%2filrr%2f](https://logon.gov.bc.ca/clp/cgi/capBceid/logon.cgi?flags=1111:1,8&TARGET=SMhttp%3a%2f%2faardvark%2egov%2ebc%2eca%2fnetapps%2filrr%2f)

Kennedy River MTO



Legend

- MINFILE Status**
- x Producer
 - x Past Producer
 - x Developed Prospect
 - All others
- Mineral Tenure (current)**
- Indian Reserves
 - National Parks
 - Conservancy Areas
 - Parks
- Mineral Reserves (current)**
- Mineral Claim
 - Mineral Lease
 - Placer Claim Designation
 - Placer Lease Designation
 - No Staking Reserve
 - Conditional Reserve
 - Release Required Reserve
 - Surface Restriction
 - Recreation Area
 - Others
 - Survey Parcels
 - BCGS Grid
- Contours (1:250K)**
- Contour - Index
 - Contour - Intermediate
 - Area of Exclusion
 - Area of Indefinite Contours
- Transportation - Points (TRIM)**
- ⊙ Helipad
- Transportation - Lines (TRIM)**
- Airfield

0 900 1800 m.

Map center: 49° 9' 42" N, 125° 24' 42" W

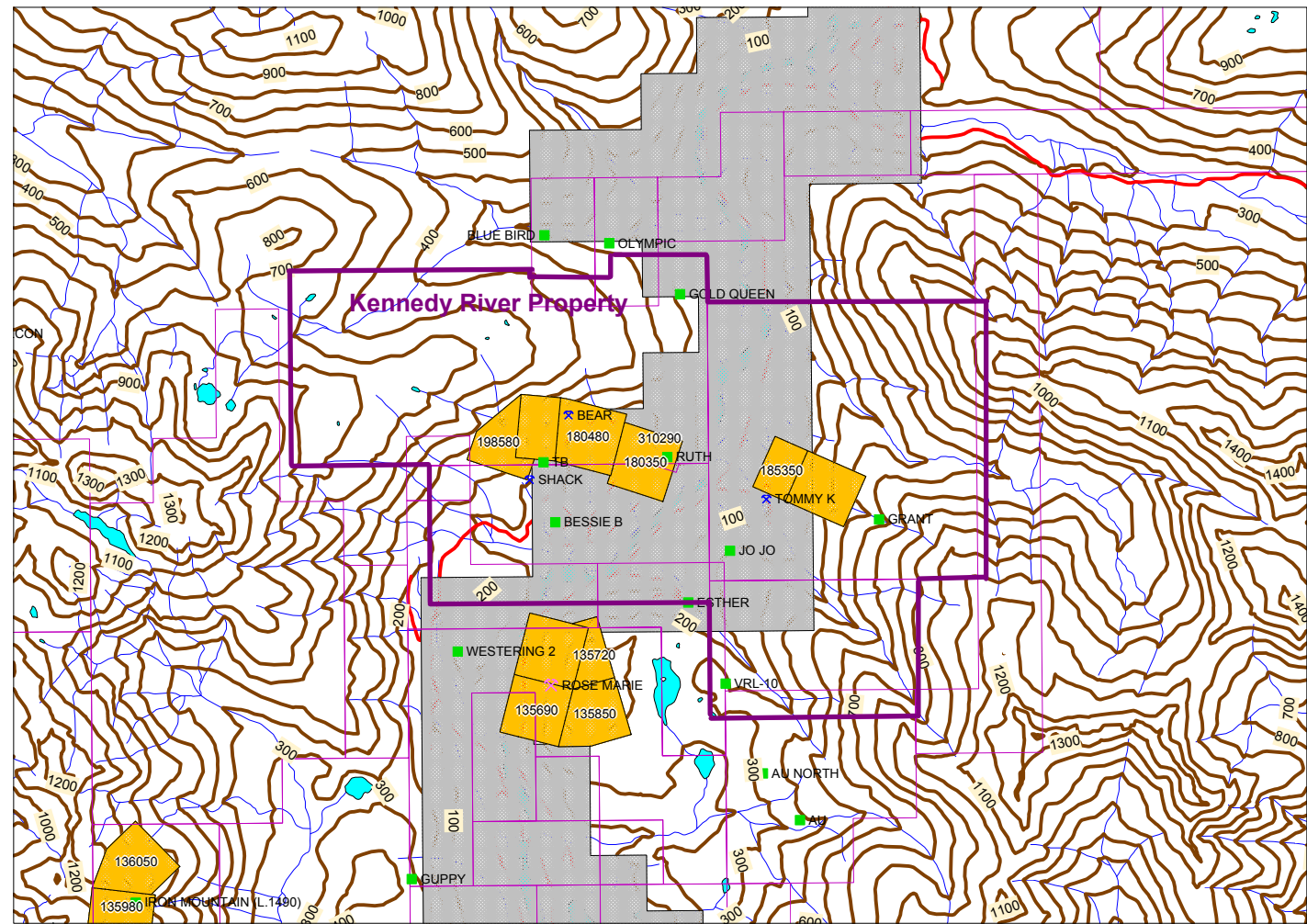
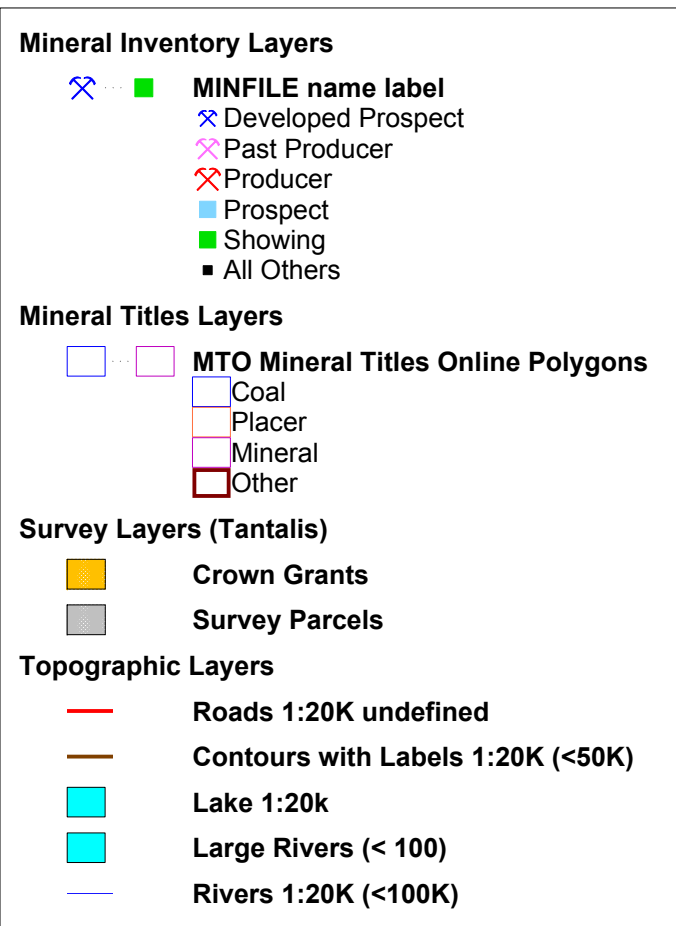


Scale: 1:50,000

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Figure 1

Kennedy River Property Infrastructure



SCALE 1 : 50,000

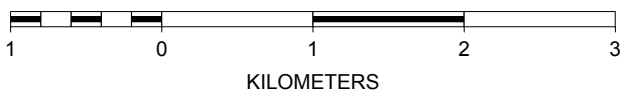
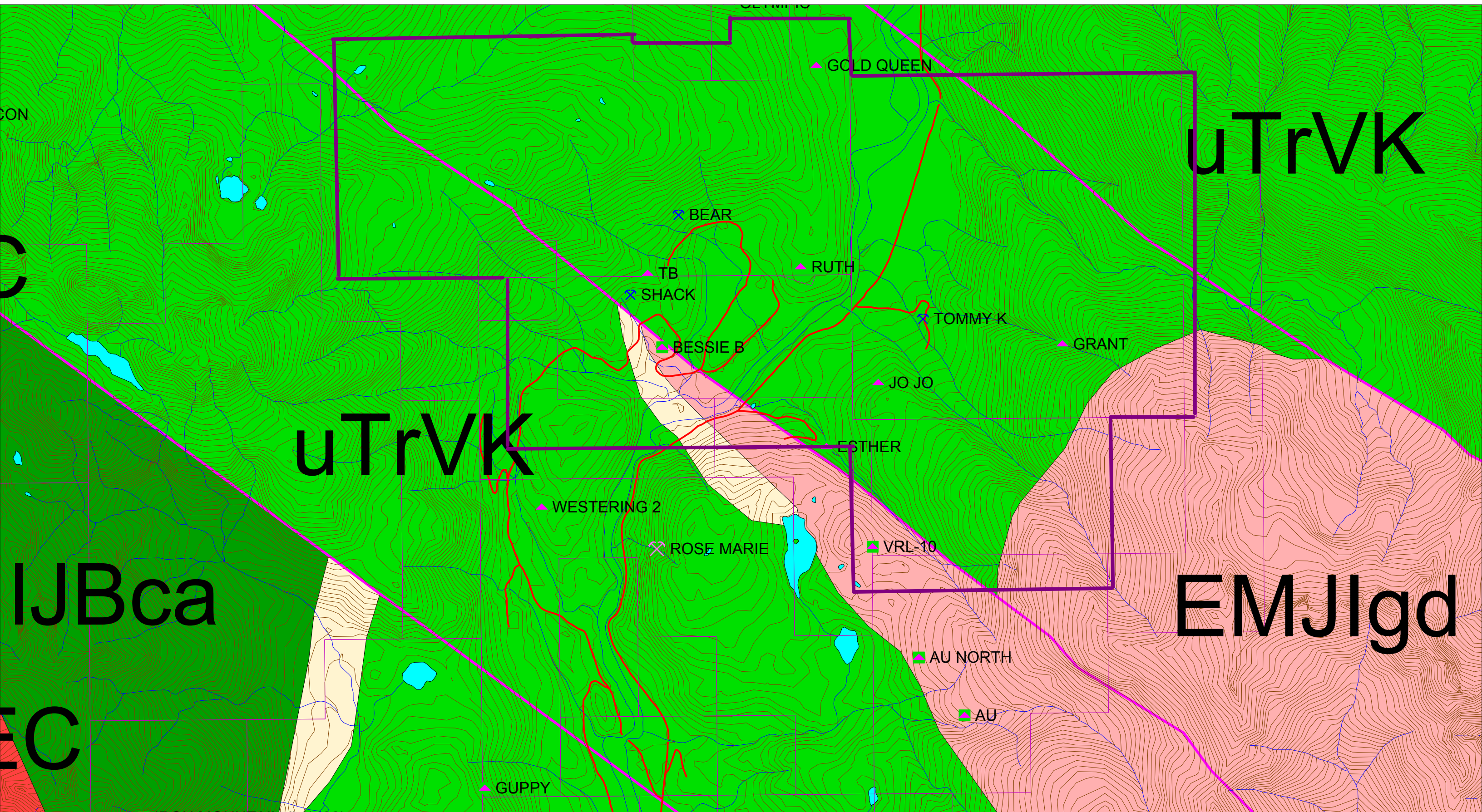


Figure 2



Kennedy River Geology



SCALE 1 : 20,000

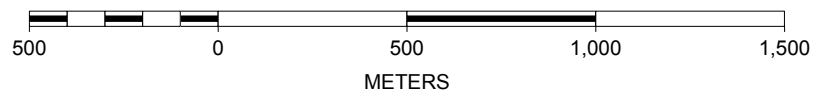
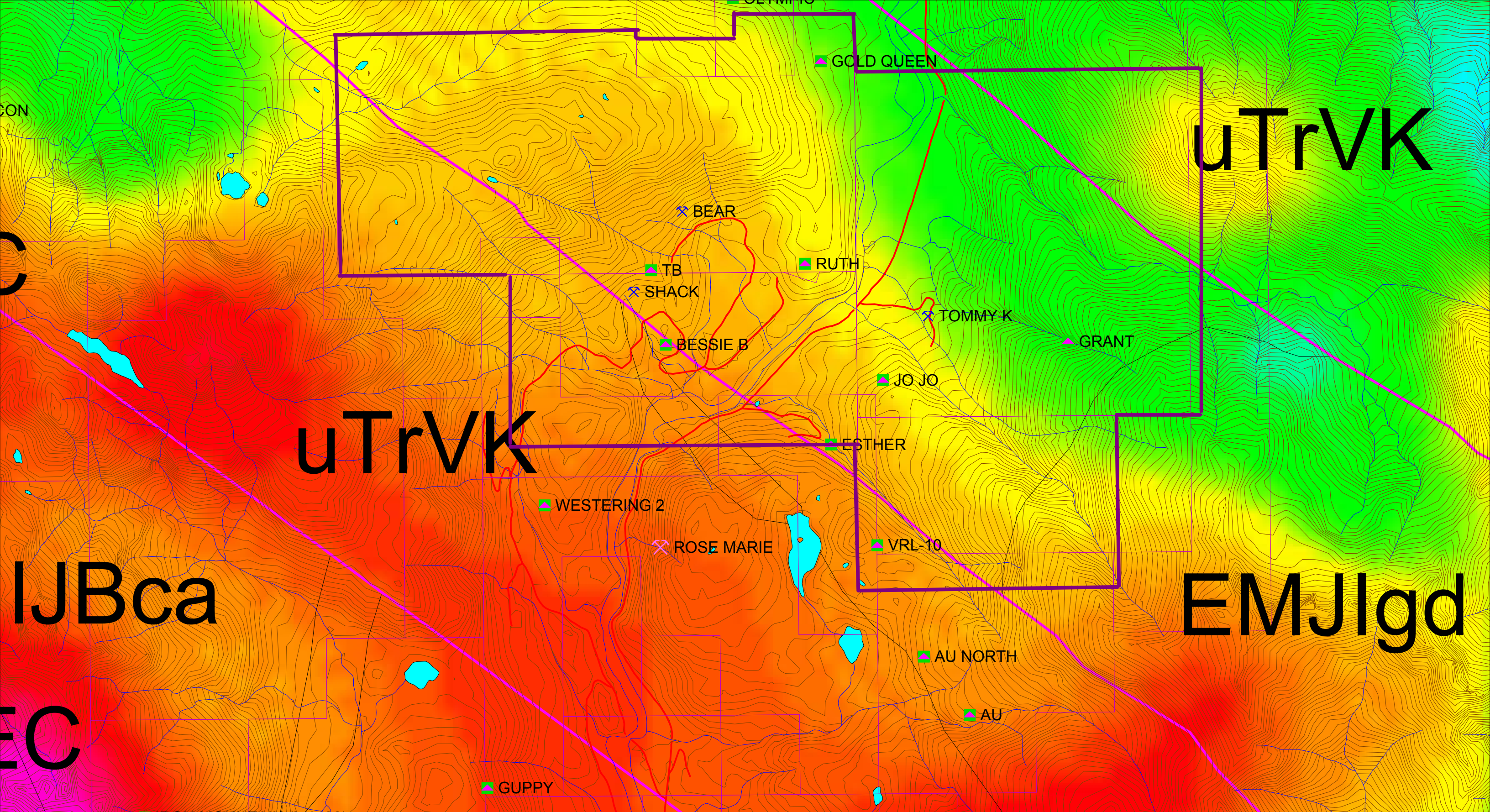


Figure 3



Kennedy River Aeromagnetics



SCALE 1 : 20,000

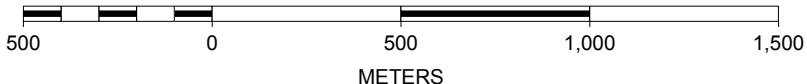
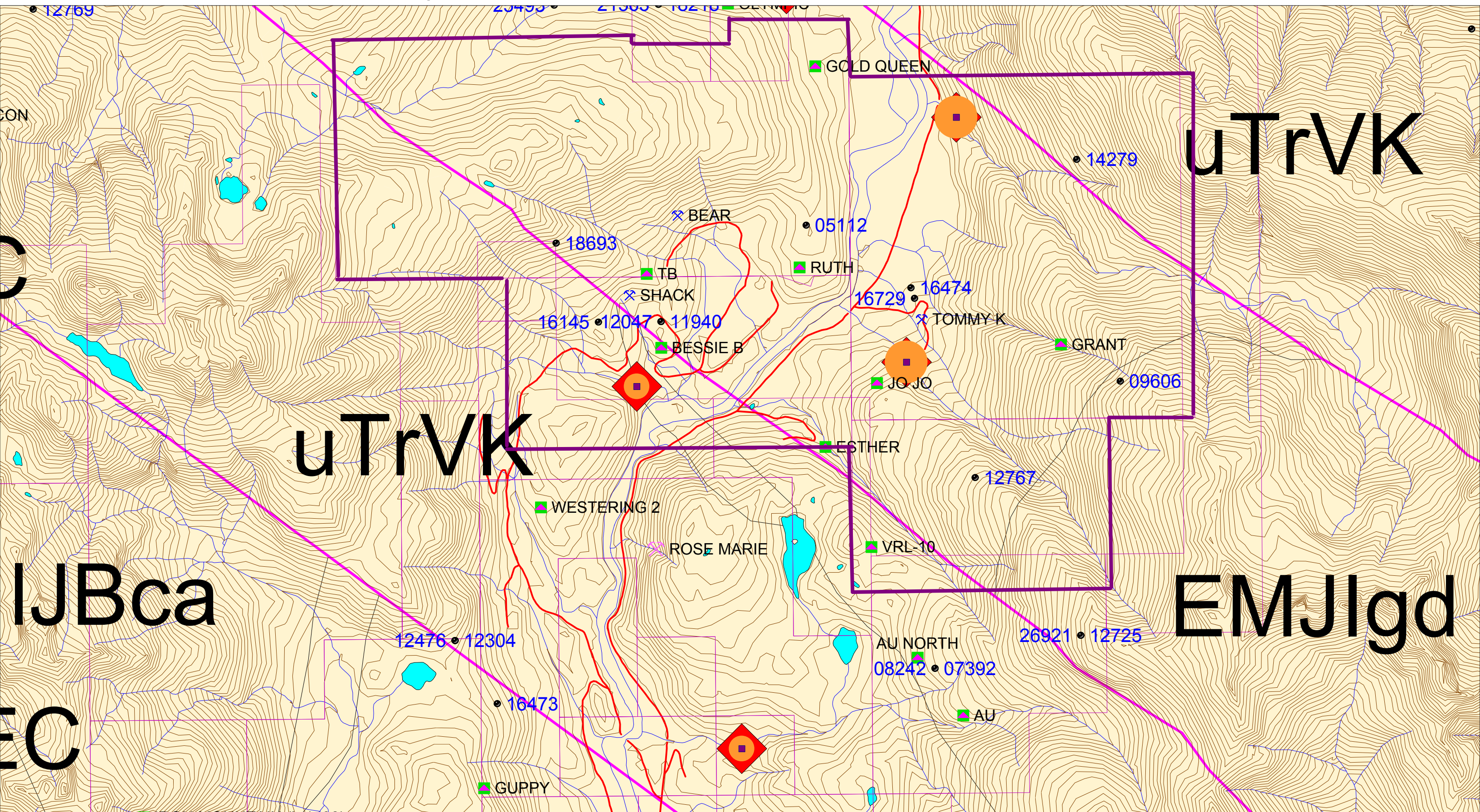


Figure 4



Kennedy River RGS Au & Cu & ARIS Reports



SCALE 1 : 20,000

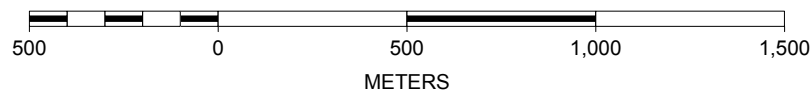


Figure 5

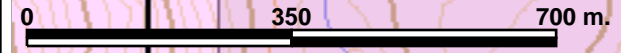
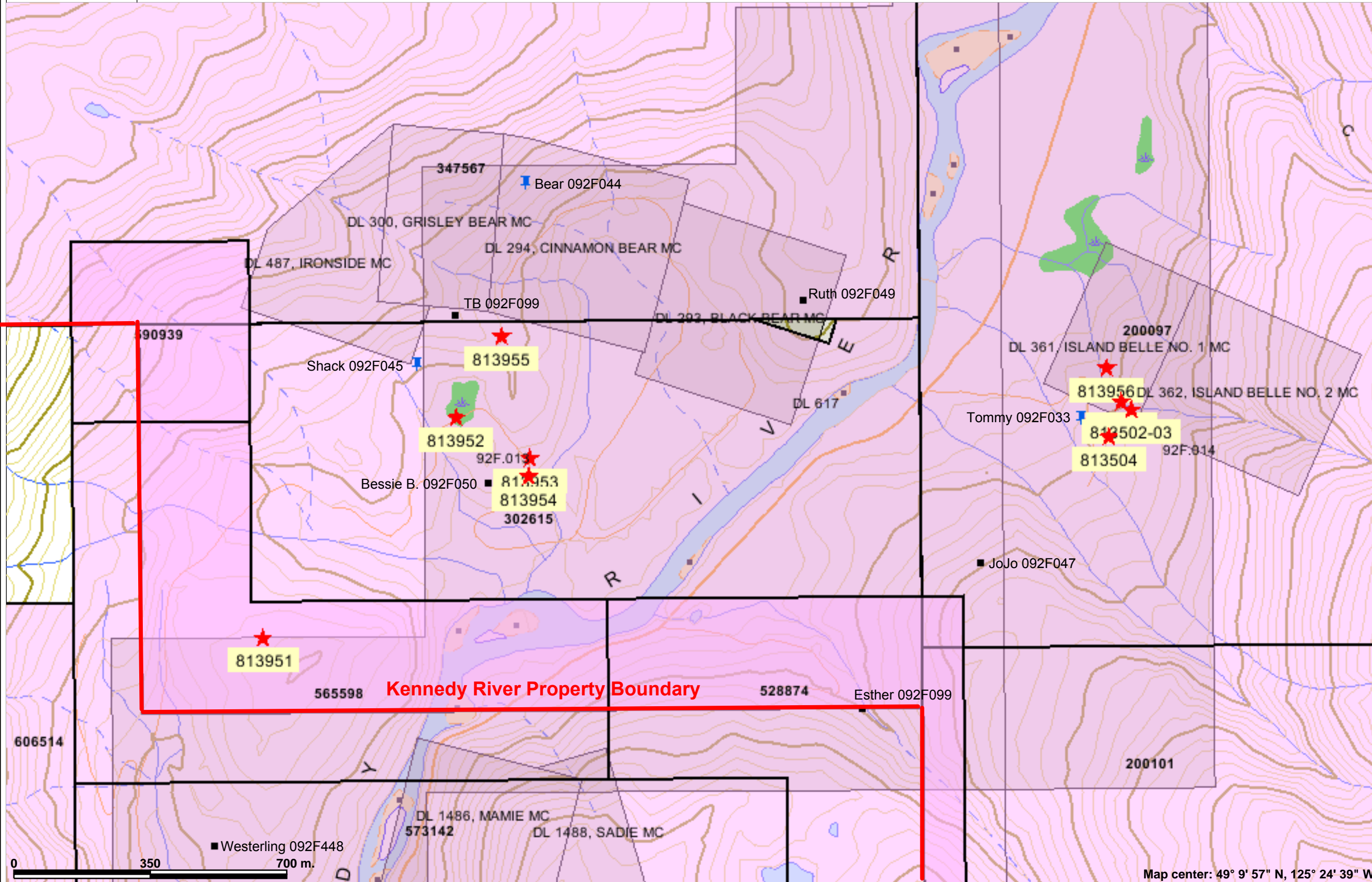


Kennedy River 2009 Rock Samples



Legend

- MINFILE Status**
 - ★ Producer
 - ★ Past Producer
 - ★ Developed Prospect
 - All others
- Indian Reserves
- National Parks
- Conservancy Areas
- Parks
- Mineral Tenure (current)
- Mineral Claim
- Mineral Lease
- Mineral Reserves (current)
- Placer Claim Designation
- Placer Lease Designation
- No Staking Reserve
- Conditional Reserve
- Release Required Reserve
- Surface Restriction
- Recreation Area
- Others
- Integrated Cadastral Fabric
- Crown Land Leases
 - Crown Land Lease - Application
 - Crown Land Lease - Tenure
- Survey Parcels
- BCGS Grid
- Contours (TRIM)
 - Contour - Index
 - Contour - Index.Indefinite
 - Contour - Index.Depression
 - Contour - Index.Depression Indefinite
 - Contour - Intermediate
 - Contour - Intermediate.Indefinite
 - Contour - Intermediate.Depression
 - Contour - Intermediate.Depression Indefinite
- Area of Exclusion
- Area of Indefinite Contours
- Annotation (1:20K)
 - Transportation - Points (TRIM)
 - Helipad
 - Transportation - Lines (TRIM)
 - Airfield
 - Airport
 - Airstrip
 - Airport.Abandoned
 - Ferry Route
 - Road (Gravel Undivided) - 1 Lane
 - Road (Gravel Undivided) - 2 Lanes
 - Road (Gravel Undivided) - U/C - 1 Lane
 - Road (Gravel Undivided) - U/C - 2 Lanes
 - Road (Paved Divided) - Not Elevated



Map center: 49° 9' 57" N, 125° 24' 39" W

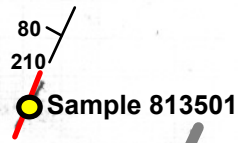
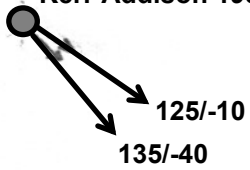


This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Figure 6

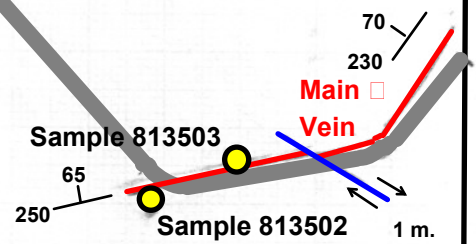
5448800 N

Kerr Addison 1984 DDH Collars



Tommy Adit

5448750 N



5448700 N

323400 E

323300 E



323350 E

Figure 7
 G4G Resources Ltd.
 Kennedy River Property
 Tommy MINFILE 092F033
 2009 Mapping & Sampling
 1:500 Scale - UTM NAD83
 by Jacques Houle, P.Eng

2009 Sample Locations for Kennedy River Project

Sample #	Date	Sampler	Property	Location	Details	UTM Zone	Easting	Northing	Elevation
813951	18-Aug-09	D.McLelland	Kennedy R	Along N. side of newer logging road trending 054 west of north end of accessible roa	1 m. Rep. Chip of Silicified intrusive stockwork exposed over 25 m.	10N	323136	5448239	162
813952	18-Aug-09	D.McLelland	Kennedy R	Bessie B. MINFILE area - flat-topped outcrop along north side of newer road	Select outcrop grab of 10 m. circular flat-topped intrusive with 10% dissem. Sulphides and Qtz. Str's @ 045/90 &	10N	323652	5448784	77
813953	18-Aug-09	D.McLelland	Kennedy R	Bessie B. MINFILE area - east side of old road semi-contiguous to 813954	Select outcrop grab of silicified intrusive with 15% dissem. Sulphides over ~25m. with foliation/shearing @ 055/90	10N	323836	5448673	60
813954	18-Aug-09	D.McLelland	Kennedy R	Bessie B. MINFILE area - east side of old road semi-contiguous to 813953	Select outcrop grab of silicified intrusive with 20% dissem. Sulphides over ~25m. with foliation/shearing @ 055/80	10N	323834	5448628	65
813955	19-Aug-09	D.McLelland	Kennedy R	Shack MINFILE area - along N-S ridge from very old trench in old growth forest	Select outcrop grab of 20 cm. thick rusty zone with 50% quartz vein 50% mineralized intrusive @ 045/90	10N	323776	5448988	133
813956	20-Aug-09	D.McLelland	Kennedy R	Tommy MINFILE area - old trench	Select outcrop grab of 0.12 m. thick quartz vein @ 350/70 in mafic volcanics with quartz stockwork in footwall	10N	325323	5448845	97
813501	20-Aug-09	J. Houle	Kennedy R	Tommy MINFILE area - Adit Creek bed (dry)	Sal. o/c grab of 0.03 m. thick qtz-sulph. vein @ 210/80 w/ 5% Py, Cpy in mafic volc's w/ intrusive finger in shear @	10N	325355	5448756	94
813502	20-Aug-09	D.McLelland	Kennedy R	Tommy MINFILE adit - S. nb near rail @ 20 m. from portal; 5 m. west of 813503	Select grab of 0.08 m. thick quartz-sulphide vein @ 250/65 in mafic volcanics (Main Vein) - GPS calculated from	10N	325379	5448735	109
813503	20-Aug-09	D.McLelland	Kennedy R	Tommy MINFILE adit - N. nb near rail @ 25 m. from portal; 5 m. east of 813502	Select grab of 0.12 m. thick quartz-sulphide vein @ 240/70 in mafic volcanics (Main Vein) - GPS calculated from	10N	325384	5448738	109
813504	20-Aug-09	D.McLelland	Kennedy R	Tommy MINFILE area - old trench	Select outcrop grab of 0.05 m. thick quartz-sulphide vein @ 200/080 in mafic volcanics	10N	325323	5448668	128

Appendix 2

2009 Rock Sample Descriptions

Appendix 3

2009 Rock Sample Geochemistry

Geochemistry

Report #	Sample #	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Au**	Au	Sample
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	GM/T	kg
VAN09003835	813501	0.6	949.2	18.3	667	2.2	41	60.4	661	6.26	<5	<0.5	<0.5	24	15.8	<0.5	12.7	84	2.72	0.025	1.1	41.3	1.26	36	0.222	1.58	<0.01	0.05	2.3	<0.05	8.3	<0.5	2.28	5	4		0.02	1.27
VAN09003835	813502	0.7	6332.1	473.4	917	42.8	25.9	134.9	632	11.08	28	<0.5	<0.5	16	19.6	1.1	489.2	37	1.79	0.03	0.8	24	0.77	42	0.016	1.16	<0.01	0.1	70.3	0.06	3.7	<0.5	6.78	<5	6		32.71	1.76
VAN09003835	813503	0.6	9037.8	164.2	617	28.9	18.7	72	473	8.9	<5	<0.5	<0.5	12	12.9	0.6	175.8	13	1.89	0.013	<0.5	16.1	0.17	15	0.009	0.3	<0.01	0.03	2.6	0.05	1.6	<0.5	5.87	<5	3		10.6	2.28
VAN09003835	813504	0.6	1555.2	40.8	224	3.4	51.3	63	1595	14.57	5	<0.5	<0.5	20	2.1	<0.5	8.4	146	4.59	0.051	2.2	61.2	2.06	71	0.089	3.4	<0.01	0.15	1.2	<0.05	11.4	<0.5	4.21	11	2		0.15	1.3
VAN09003835	813951	<0.5	17.9	2.7	72	<0.5	24.5	20.5	548	5.09	<5	<0.5	0.9	28	<0.5	<0.5	0.9	26	0.61	0.04	5.5	9.4	1.11	37	0.075	2.05	0.02	0.23	<0.5	<0.05	5	<0.5	<0.05	5	<2		0.16	2.31
VAN09003835	813952	<0.5	37.1	8.6	124	<0.5	12.7	15.5	629	2.73	<5	<0.5	0.8	236	0.9	0.6	<0.5	65	3.16	0.087	3.9	21.5	0.93	71	0.216	4.86	0.51	0.07	<0.5	<0.05	4.3	<0.5	0.19	10	<2		<0.01	0.77
VAN09003835	813953	1.1	300.4	2.7	45	<0.5	74	13.7	526	4.44	<5	<0.5	0.6	376	<0.5	<0.5	0.6	85	5.64	0.14	6.3	154.1	1	52	0.254	5.49	0.19	<0.01	<0.5	<0.05	9.2	<0.5	1.99	12	5		0.11	1.02
VAN09003835	813954	1.2	94.4	7	79	<0.5	100.1	33.1	382	4.83	17	<0.5	0.9	269	<0.5	0.7	<0.5	64	4.83	0.149	7.9	102.5	0.61	127	0.279	4.61	0.21	0.05	<0.5	<0.05	7	<0.5	2.59	13	2		<0.01	1.18
VAN09003835	813955	<0.5	11.7	1.6	31	<0.5	3.1	5	360	1.75	<5	0.7	3.4	<5	<0.5	<0.5	<0.5	<10	0.22	0.046	5.8	11.8	0.37	79	0.043	0.82	0.02	0.28	<0.5	<0.05	1.6	<0.5	0.09	<5	<2		<0.01	2.18
VAN09003835	813956	<0.5	17.1	1.1	26	<0.5	8.8	5	582	1.25	<5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	23	0.04	0.007	<0.5	21.6	0.37	14	0.02	0.61	<0.01	0.03	<0.5	<0.05	2.2	<0.5	<0.05	<5	2		<0.01	2.26

Appendix 4

Acme Certificate of Analysis VAN09003835



1020 Cordova St. East Vancouver BC V6A 4A3 Canada
Phone (604) 253-3158 Fax (604) 253-1716

Acme Analytical Laboratories (Vancouver) Ltd.

www.acmelab.com

Client: Houle, Jacques
6552 Peregrine Road
Nanaimo BC V9V 1P8 Canada

Submitted By: Jacques Houle
Receiving Lab: Canada-Vancouver
Received: August 25, 2009
Report Date: September 10, 2009
Page: 1 of 2

CERTIFICATE OF ANALYSIS

VAN09003835.1

CLIENT JOB INFORMATION

Project: None Given
Shipment ID:
P.O. Number
Number of Samples: 10

SAMPLE DISPOSAL

DISP-PLP Dispose of Pulp After 90 days
DISP-RJT Dispose of Reject After 90 days

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

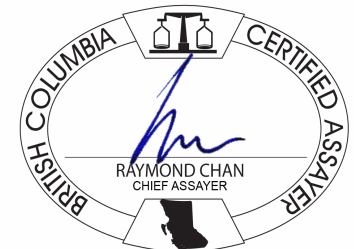
Invoice To: Houle, Jacques
6552 Peregrine Road
Nanaimo BC V9V 1P8
Canada

CC:

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
R200	10	Crush, split and pulverize rock to 200 mesh			VAN
G6	10	Fire Assay fusion Au by ICP-ES	30	Completed	VAN
7AX	10	1:1:1 Aqua Regia digestion ICP-ES/ICP-MS analysis	1	Completed	VAN

ADDITIONAL COMMENTS



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only.
** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Acme Analytical Laboratories (Vancouver) Ltd.
 1020 Cordova St. East Vancouver BC V6A 4A3 Canada
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Houle, Jacques**
 6552 Peregrine Road
 Nanaimo BC V9V 1P8 Canada

Project: None Given
 Report Date: September 10, 2009

Page: 2 of 2 Part 1

CERTIFICATE OF ANALYSIS

VAN09003835.1

Method	WGHT	G6	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	gm/mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.5	0.5	0.5	5	0.5	0.5	0.5	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01	
813501	Rock	1.27	0.02	0.6	949.2	18.3	667	2.2	41.0	60.4	661	6.26	<5	<0.5	<0.5	24	15.8	<0.5	12.7	84	2.72
813502	Rock	1.76	32.71	0.7	6332	473.4	917	42.8	25.9	134.9	632	11.08	28	<0.5	<0.5	16	19.6	1.1	489.2	37	1.79
813503	Rock	2.28	10.60	0.6	9038	164.2	617	28.9	18.7	72.0	473	8.90	<5	<0.5	<0.5	12	12.9	0.6	175.8	13	1.89
813504	Rock	1.30	0.15	0.6	1555	40.8	224	3.4	51.3	63.0	1595	14.57	5	<0.5	<0.5	20	2.1	<0.5	8.4	146	4.59
813951	Rock	2.31	0.16	<0.5	17.9	2.7	72	<0.5	24.5	20.5	548	5.09	<5	<0.5	0.9	26	<0.5	<0.5	0.9	26	0.61
813952	Rock	0.77	<0.01	<0.5	37.1	8.6	124	<0.5	12.7	15.5	629	2.73	<5	<0.5	0.8	236	0.9	0.6	<0.5	65	3.16
813953	Rock	1.02	0.11	1.1	300.4	2.7	45	<0.5	74.0	13.7	526	4.44	<5	<0.5	0.6	376	<0.5	<0.5	0.6	85	5.64
813954	Rock	1.18	<0.01	1.2	94.4	7.0	79	<0.5	100.1	33.1	382	4.83	17	<0.5	0.9	269	<0.5	0.7	<0.5	64	4.83
813955	Rock	2.18	<0.01	<0.5	11.7	1.6	31	<0.5	3.1	5.0	360	1.75	<5	0.7	3.4	<5	<0.5	<0.5	<0.5	<10	0.22
813956	Rock	2.26	<0.01	<0.5	17.1	1.1	26	<0.5	8.8	5.0	582	1.25	<5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	23	0.04



Acme Analytical Laboratories (Vancouver) Ltd.
 1020 Cordova St. East Vancouver BC V6A 4A3 Canada
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Houle, Jacques**
 6552 Peregrine Road
 Nanaimo BC V9V 1P8 Canada

Project: None Given
 Report Date: September 10, 2009

Page: 2 of 2 Part 2

CERTIFICATE OF ANALYSIS

VAN09003835.1

Method	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	
Analyte	P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.001	0.5	0.5	0.01	5	0.001	0.01	0.01	0.01	0.5	0.05	0.5	0.5	0.05	5	2	
813501	Rock	0.025	1.1	41.3	1.26	36	0.222	1.58	<0.01	0.05	2.3	<0.05	8.3	<0.5	2.28	5	4
813502	Rock	0.030	0.8	24.0	0.77	42	0.016	1.16	<0.01	0.10	70.3	0.06	3.7	<0.5	6.78	<5	6
813503	Rock	0.013	<0.5	16.1	0.17	15	0.009	0.30	<0.01	0.03	2.6	0.05	1.6	<0.5	5.87	<5	3
813504	Rock	0.051	2.2	61.2	2.06	71	0.089	3.40	<0.01	0.15	1.2	<0.05	11.4	<0.5	4.21	11	2
813951	Rock	0.040	5.5	9.4	1.11	37	0.075	2.05	0.02	0.23	<0.5	<0.05	5.0	<0.5	<0.05	5	<2
813952	Rock	0.087	3.9	21.5	0.93	71	0.216	4.86	0.51	0.07	<0.5	<0.05	4.3	<0.5	0.19	10	<2
813953	Rock	0.140	6.3	154.1	1.00	52	0.254	5.49	0.19	<0.01	<0.5	<0.05	9.2	<0.5	1.99	12	5
813954	Rock	0.149	7.9	102.5	0.61	127	0.279	4.61	0.21	0.05	<0.5	<0.05	7.0	<0.5	2.59	13	2
813955	Rock	0.046	5.8	11.8	0.37	79	0.043	0.82	0.02	0.28	<0.5	<0.05	1.6	<0.5	0.09	<5	<2
813956	Rock	0.007	<0.5	21.6	0.37	14	0.020	0.61	<0.01	0.03	<0.5	<0.05	2.2	<0.5	<0.05	<5	2



Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada

Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Houle, Jacques**
6552 Peregrine Road
Nanaimo BC V9V 1P8 Canada

Project: None Given

Report Date: September 10, 2009

Page: 1 of 1 Part 1

QUALITY CONTROL REPORT

VAN09003835.1

Method	WGHT	G6	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	
Analyte	Wgt	Au	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Th	Sr	Cd	Sb	Bi	V	Ca	
Unit	kg	gm/mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	
MDL	0.01	0.01	0.5	0.5	0.5	5	0.5	0.5	0.5	5	0.01	5	0.5	0.5	5	0.5	0.5	0.5	10	0.01	
Pulp Duplicates																					
813504	Rock	1.30	0.15	0.6	1555	40.8	224	3.4	51.3	63.0	1595	14.57	5	<0.5	<0.5	20	2.1	<0.5	8.4	146	4.59
REP 813504	QC			0.6	1563	47.5	242	4.0	54.6	68.4	1587	14.62	<5	<0.5	<0.5	20	1.8	<0.5	9.2	147	4.71
813954	Rock	1.18	<0.01	1.2	94.4	7.0	79	<0.5	100.1	33.1	382	4.83	17	<0.5	0.9	269	<0.5	0.7	<0.5	64	4.83
REP 813954	QC		<0.01																		
Reference Materials																					
STD OXH55	Standard		1.27																		
STD OXH55	Standard		1.28																		
STD OXK69	Standard		3.63																		
STD OXK69	Standard		3.44																		
STD SF-3A	Standard			306.7	7669	8490	10691	52.2	3422	182.0	4163	7.70	45	3.1	2.6	53	46.9	8.2	4.5	104	2.59
STD OXH55 Expected			1.282																		
STD OXK69 Expected			3.583																		
STD SF-3A Expected				308	7705	9625	10628	54	3365	183	4247	7.91	46	3.3	2.8	50	45	10	4.6	102	2.59
BLK	Blank		<0.01																		
BLK	Blank		<0.01																		
BLK	Blank		<0.01																		
BLK	Blank		<0.01																		
BLK	Blank			<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<5	<0.01	<5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<10	<0.01
Prep Wash																					
G1	Prep Blank	<0.01	0.01	<0.5	11.3	3.8	69	<0.5	4.0	4.6	611	2.06	<5	2.2	6.1	59	<0.5	<0.5	<0.5	39	0.56
G1	Prep Blank	<0.01	<0.01	<0.5	2.2	4.0	60	<0.5	4.7	4.7	602	2.00	<5	2.4	6.9	55	<0.5	<0.5	<0.5	39	0.54



Acme Analytical Laboratories (Vancouver) Ltd.

1020 Cordova St. East Vancouver BC V6A 4A3 Canada
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Houle, Jacques**
 6552 Peregrine Road
 Nanaimo BC V9V 1P8 Canada

Project: None Given
 Report Date: September 10, 2009

Page: 1 of 1 Part 2

QUALITY CONTROL REPORT

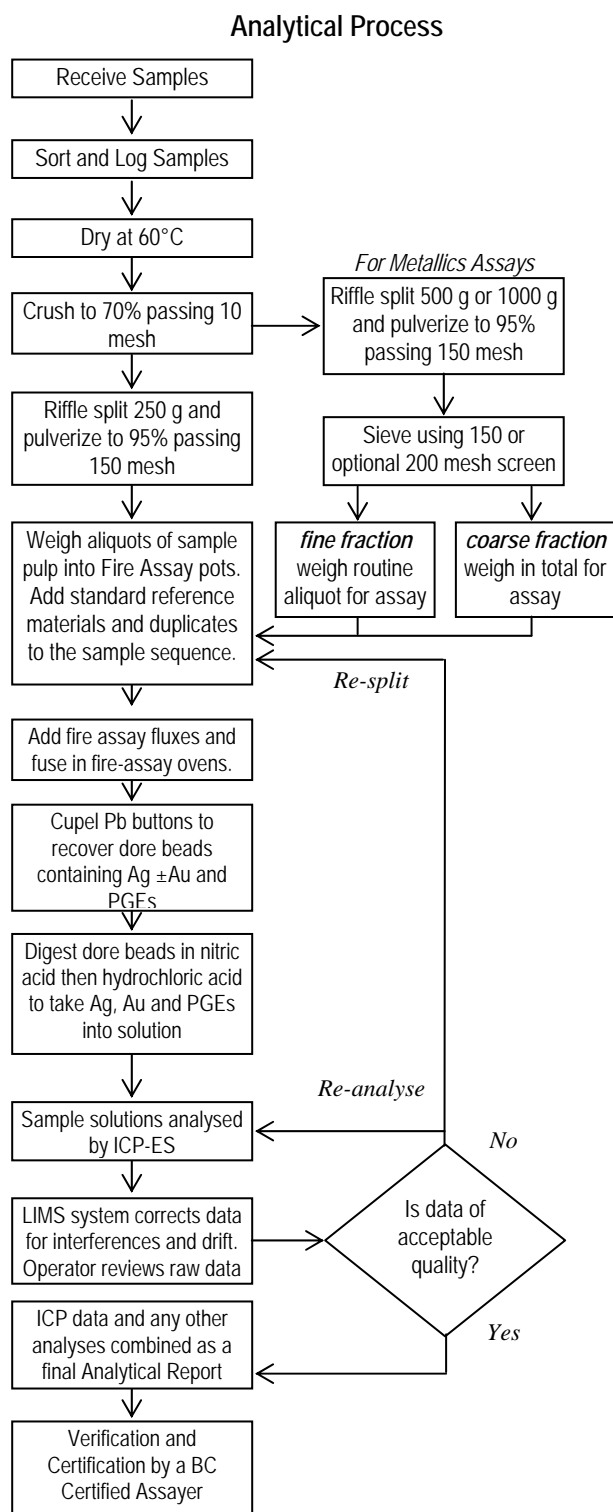
VAN09003835.1

Method		7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	7AX	
Analyte		P	La	Cr	Mg	Ba	Ti	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se
Unit		%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm
MDL		0.001	0.5	0.5	0.01	5	0.001	0.01	0.01	0.01	0.5	0.05	0.5	0.5	0.05	5	2
Pulp Duplicates																	
813504	Rock	0.051	2.2	61.2	2.06	71	0.089	3.40	<0.01	0.15	1.2	<0.05	11.4	<0.5	4.21	11	2
REP 813504	QC	0.048	2.4	65.8	2.11	73	0.096	3.46	<0.01	0.15	1.0	<0.05	12.0	<0.5	4.28	13	6
813954	Rock	0.149	7.9	102.5	0.61	127	0.279	4.61	0.21	0.05	<0.5	<0.05	7.0	<0.5	2.59	13	2
REP 813954	QC																
Reference Materials																	
STD OXH55	Standard																
STD OXH55	Standard																
STD OXK69	Standard																
STD OXK69	Standard																
STD SF-3A	Standard	0.054	8.8	176.0	4.26	258	0.114	1.02	0.48	0.99	3.2	0.41	3.1	2.7	4.99	<5	13
STD OXH55 Expected																	
STD OXK69 Expected																	
STD SF-3A Expected		0.054	8.3	167	4.27	260	0.117	1	0.47	0.99	3.2	0.6	3	2.7	4.2	0	10
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank																
BLK	Blank	<0.001	<0.5	<0.5	<0.01	<5	<0.001	<0.01	<0.01	<0.01	<0.5	<0.05	<0.5	<0.5	<0.05	<5	<2
Prep Wash																	
G1	Prep Blank	0.086	14.0	10.3	0.56	216	0.172	0.98	0.09	0.56	<0.5	<0.05	2.4	<0.5	<0.05	5	2
G1	Prep Blank	0.090	14.5	8.4	0.54	212	0.165	0.95	0.08	0.57	<0.5	<0.05	2.4	<0.5	<0.05	6	<2

Appendix 5

Acme Methods and Specifications for Groups 6, 7AX

METHODS AND SPECIFICATIONS FOR ANALYTICAL PACKAGE GROUP 6 – PRECIOUS METALS ASSAY



Comments

Sample Preparation

Rock and drill core are jaw crushed to 70% passing 10 mesh (2 mm), a 250 g riffle split is then pulverized to 95% passing 150 mesh (100 μ m) in a mild-steel ring-and-puck mill. One assay ton aliquots (29.2 g) are weighed into fire assay crucibles. Option for 2 assay-ton aliquots is available on request. Smaller aliquots of $\frac{1}{4}$ or $\frac{1}{2}$ assay ton may be required with difficult ore matrices.

Metallics Assay: A 500 g reject split (or optional 1000 g) is pulverized to 95% passing 150 mesh. Screening the pulp gives a fine and coarse fraction (containing any coarse gold) for assaying.

Sample Digestion

The sample aliquot is custom blended with fire assay fluxes, PbO litharge and a Ag inquant. Firing the charge at 1050°C liberates Au, Ag \pm PGEs that report to the molten Pb-metal phase. After cooling the Pb button is recovered placed in a cupel and fired at 950°C to render a Ag \pm Au \pm PGEs dore bead. The bead is weighed and parted (i.e. leached in 1 mL of hot HNO₃) to dissolve Ag leaving a Au sponge. Adding 10 mL of HCl dissolves the Au \pm PGE sponge.

Sample Analysis

Solutions are analysed for Ag, Au, Pt and Pd on a Jarrel-Ash Atomcomp model 975 ICP emission spectrometer. Au in excess of 30 g/t forms a large sponge that can be weighed (gravimetric finish). Ag in excess of 100 g/t is reported from the fire assay, otherwise a separate split is digested in aqua regia and analysed by ICP-ES (Group 7AR).

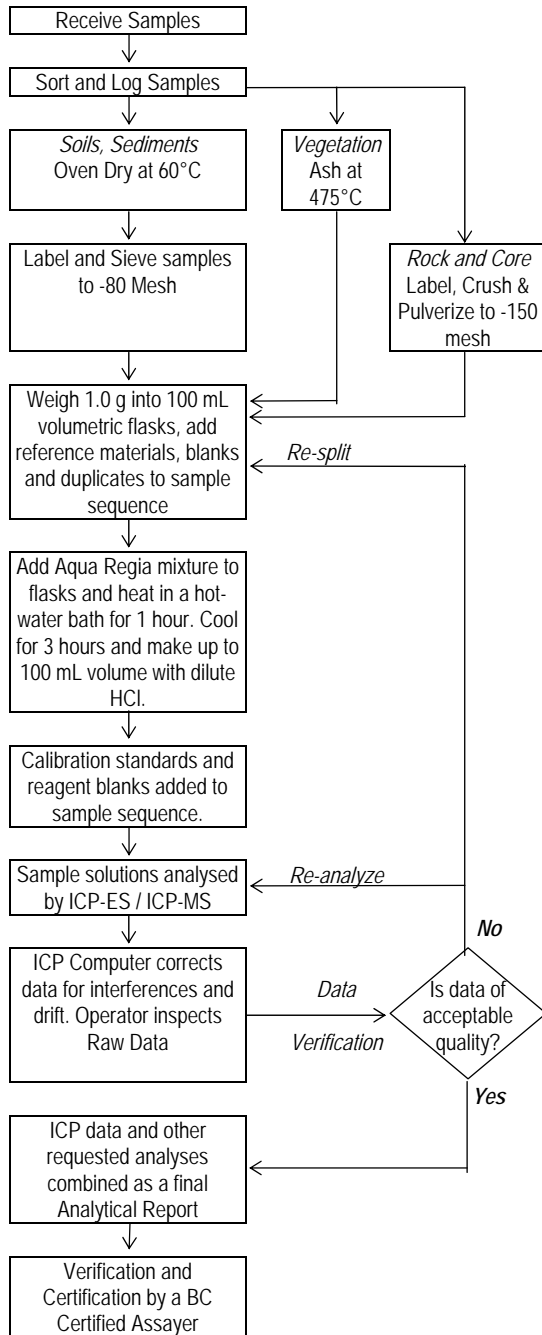
Metallics Assay: The coarse fraction is assayed in total. An aliquot of the fine fraction is assayed. Results report the total Au in the coarse fraction, the fine-fraction Au concentration and a weighted average Au concentration for the entire sample.

Quality Control and Data Verification

An Analytical Batch (1 page) comprises 34 samples. QA/QC protocol incorporates a sample-prep blank (G-1) as the first sample carried through all stages of preparation to analysis, a pulp duplicate to monitor analytical precision, a -10 mesh rejects duplicate to monitor sub-sampling variation (drill core only), two reagent blanks to measure background and aliquots of Rocklabs Certified Reference Materials like SL20 to monitor accuracy. Raw and final data undergo a final verification by a British Columbia Certified Assayer who signs the Analytical Report before it is released to the client.

METHODS AND SPECIFICATIONS FOR ANALYTICAL PACKAGE GROUP 7AX – MULTI-ELEMENT ASSAY BY ICP-ES • AQUA REGIA DIGEST

Analytical Process



Comments

Sample Preparation

Assaying is warranted for representative well-mineralized samples (eg. Cu > 1%). Samples are dried at 60°C. Soil, sediment and moss mats (after pounding) are sieved to -80 mesh (-177 µm). Vegetation is dried (60°C) and pulverized or ashed (475°C). Rock and drill core is jaw crushed to 70% passing 10 mesh (2 mm), a 250 g aliquot is riffle split and pulverized to 95% passing 150 mesh (100 µm) in a mild-steel ring-and-puck mill. Aliquots of 1.000 ± 0.002 g are weighed into 100 mL volumetric flasks. Acme's QA/QC protocol requires one pulp duplicate to monitor analytical precision and a blanks and aliquot of in-house reference material STD SF-2a to monitor accuracy in each batch of 36 samples. Trench and drill core programs will also include a pulp made from a 2nd crushed fraction split (rejects duplicate) to measure method precision.

Sample Digestion

30 mL of Aqua Regia, a 2:2:2 mixture of ACS grade concentrated HCl, concentrated HNO₃ and de-mineralised H₂O, is added to each sample. Samples are digested for one hour in a hot water bath (>95°C). After cooling for 3 hrs, solutions are made up to volume (100 mL) with dilute (5%) HCl. Very high-grade samples may require a 1 g to 250 mL or 0.25 g to 250 mL sample/solution ratio for accurate determination. Acme's QA/QC protocol requires simultaneous digestion of two reagent blanks inserted in each batch.

Sample Analysis

Solutions are aspirated into a Spectro Ciros Vision ICP atomic-emission spectrometer followed by analysis by Perkin Elmer Elan 6000 or 9000 ICP Mass spectrometer analysed for a 35 element package comprising: Ag, Al, As, Ba, Bi, Ca, Cd, Ce, Co, Cr, Cu, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Se, Sr, Th, Ti, Tl, U, V, W and Zn. Very high grade samples may require a 0.4 g to 100 mL or 0.25 g to 250 mL sample to solution ratio for accurate determination.

Data Evaluation

Raw and final data undergoes a final verification by a British Columbia Certified Assayer who then signs the Analytical Report before it is released to the client.

Appendix 6

2009 Surface Title Searches for Kennedy River Property Area



[B.C. Home](#)

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".

 **LOGOFF**

Tantalis GATOR

[Back to Main Search Menu](#)

Interest Address

Search Criteria: Disposition ID: 861105 Interest Parcel ID:181613, Tenure History: On

WESTCOAST WILD ADVENTURES LTD.

PO BOX 107
Ucluelet, BC
V0R3A0
CANADA
(250) 7267715



[B.C. Home](#)

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".

 [LOGOFF](#)

Tantalis GATOR

[Back to Main Search Menu](#)

Interest Address

Search Criteria: Disposition ID: 835587 Interest Parcel ID:147034, Tenure History: On

VANCOUVER ISLAND GUIDE OUTFITTERS INC.

PO BOX 1062 STN A

Port Alberni, BC

V9Y7L9

CANADA

(250) 7241533

[B.C. Home](#)

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".

[LOGOFF](#)

Tantalis GATOR

[Back to Main Search Menu](#)

Interest Details

Search Criteria: Effective DATE: 04/01/2004, Tenure History: On

District Lots 500; 927; 930; those parts of District Lots 501; 879; 882; unsurveyed parcel or tract of Crown land lying in the vicinity of Nahmint Mountain; together with unsurveyed Crown foreshore or land covered by water being part of the beds of Nahmint River, Gracie Creek and various Unnamed Creeks; all within Clayoquot District, shown outlined as Site 1 on sketch below, containing.....hectares, more or less

That part of District Lot 617, and those parts of the surfaces of District Lots 293, 294, 300, 361, 362, 487, 1486, 1487, 1488, 1489 surveyed as the claim(s) known as Black Bear, Cinnamon Bear, Grissley Bear, Island Belle No. 1, Island Belle No. 2, Ironside, Mamie, Maggie, Sadie, Rose mineral claims, respectively; unsurveyed Crown land lying adjacent to District Lot 617; together with unsurveyed Crown foreshore or land covered by water being part of the beds of Kennedy River, Boulder Creek, Canoe Creek, Cats Ears Creek and various Unnamed Creeks; all within Clayoquot District, shown outlined as Site 2 on sketch below, containing.....hectares, more or less

That part of District Lot 627; unsurveyed Crown land lying in the vicinity of Bulson Creek; together with unsurveyed Crown foreshore or land covered by water being part of the beds of Bulson Creek and various Unnamed Creeks;

[Images](#)

Crown GRANT: No Images Available

all within Clayoquot District, shown outlined as Site 3 on sketch below, containing.....hectares, more or less

That part of District Lot 650, and those parts of District Lots 453, 454, 1903 surveyed as the claim(s) known as Hope, Faith, Bell No. 2 mineral claims, respectively; unsurveyed Crown lands lying adjacent to District Lot 650; together with unsurveyed Crown foreshore or land covered by water being part of the beds of Elsul Creek, Tranquil Creek and various Unnamed Creeks; all within Clayoquot District, shown outlined as Site 4 on sketch below, containing.....hectares, more or less

That part of District Lot 624A; together with unsurveyed Crown foreshore or land covered by water being part of the bed of Unnamed Creek; all within Clayoquot District, shown outlined as Site 5 on sketch below, containing.....hectares, more or less

Interest Information

File #:	1412399	Type:	Licence
Document #:	111239	Subtype:	Licence Of Occupation
OIC/Ministry Order #:		Purpose:	Commercial Recreation
Status:	Active	Subpurpose:	Guided Nature Viewing
Status Reason:	Disposition In Good Standing	Region:	Vi - Land Mgmt - Vancouver Island Service Region
Total Area(Ha):	5275.15 / Calculated Automatically	Location:	West Coast Vancouver Island
Received Date:	31-Oct-2003		
Effective Date:	01-Apr-2004		
Expiry Date:	01-Apr-2014		

Crown Grant Covenants

Timber Value:
Timber Deferment: Unknown
Surface/Under: Unknown
Resources:
Restrictions:

Interest Holders

[VANCOUVER ISLAND GUIDE OUTFITTERS INC.](#)

Land Controls

Indian Reserve: Eelseuklis

Ecological Reserve:

Provincial Park:

National Park:

Administrative Areas

Agricultural Land Reserve:

Assessment Area:

Electoral District:

Land District:

Clayoquot District ,Clayoquot District ,Clayoquot District ,Clayoquot District

Land Management Region:

Land Title District:

Municipality:

Regional District:

School District:

[Notes](#)

[Primary Survey Parcels](#)

Tantalis ID: 835587


[B.C. Home](#)

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".

Tantalis GATOR

[Back to Main Search Menu](#)

Interest Details

Search Criteria: Effective DATE: 11/01/2008, Tenure History: On

That part of District Lot 617 and unsurveyed Crown land lying in the vicinity of Kennedy River; together with unsurveyed Crown foreshore or land covered by water being part of the beds of Canoe Creek and tributaries, all within Clayquot District, containing 118 hectares, more or less

Images

Crown GRANT: No Images Available

Interest Information

File #: 1412927

Document #: 113004

OIC/Ministry Order #:

Status: Active

Status Reason: Disposition In Good Standing

Area (Ha) / Method: 118 / Calculated Automatically, Estimated

Received Date: 17-Nov-2006

Effective Date: 01-Nov-2008

Expiry Date: 01-Nov-2018

Type: Licence

Subtype: Licence Of Occupation

Purpose: Waterpower

Subpurpose: General Area

Region: Vi - Land Mgmt - Vancouver Island Service Region

Location: Canoe Creek

Crown Grant Covenants

Timber Value:

Timber Deferment: Unknown

Surface/Under: Unknown

Resources:

Restrictions:

Interest Holders

[BARKLEY PROJECT GROUP LIMITED](#)

Land Controls

Indian Reserve:
Ecological Reserve:
Provincial Park:
National Park:

Administrative Areas

Agricultural Land Reserve:
Assessment Area: Central Vancouver Island
Electoral District: Alberni
Land District: Clayoquot District
Land Management Region: Vancouver Island
Land Title District: Victoria
Municipality:
Regional District: Alberni-Clayoquot
School District: Alberni

[Notes](#)

[Primary Survey Parcels](#)

Tantalis ID: 861913



[B.C. Home](#)

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".

 [LOGOFF](#)

Tantalis GATOR

[Back to Main Search Menu](#)

Interest Address

Search Criteria: Disposition ID: 804856 Interest Parcel ID:107036, Tenure History: On

FISHERIES AND OCEANS CANADA

4166B DEPARTURE BAY RD

Nanaimo, BC

V9T4B7

CANADA

7567005



B.C. Home

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".

Tantalis GATOR

[Back to Main Search Menu](#)

Query Results: Consolidated Parcel Encumbrance Report

Search Criteria: Primary PIN: 310290, Tenure History: On

Date Created: 10-Aug-2009

Created By: GATOR

Pin Id: 310290

Tenure History: On

Primary Parcel

<u>PIN</u>	<u>Subdiv</u>	<u>RoW</u>	<u>Legal Description</u>	<u>Area (Ha)</u>	<u>Status</u>	<u>Confirmed</u>	<u>LT Office</u>
310290			DISTRICT LOT 617, CLAYOQUOT DISTRICT	1246.4	Active	09-Nov-1970	

Interest Summary

<u>PIN</u>	<u>Tantalis ID</u>	<u>File #</u>	<u>Document #</u>	<u>Interest</u>	<u>Sur/Under</u>	<u>Effective Date</u>	<u>Location</u>	<u>Status</u>	<u>Area (Ha)</u>
310290	861913	1412927	113004	Licence		01-Nov-2008	CANOE CREEK	Active	118
310290	861913	1412927	113004	Licence		01-Nov-2008	CANOE CREEK	Active	420.03
310290	870057	1413113		A/Licence		27-Feb-2008	WINCHIE CREEK	Active	600.85
310290	861105	1412908	112866	Licence		01-Jan-2008	KENNEDY RIVER	Active	7.1
310290	861105	1412908	112866	Licence		01-Jan-2008	KENNEDY RIVER	Active	7.02
310290	861105	1412908	112866	Licence		01-Jan-2008	KENNEDY RIVER	Active	44.38
310290	866704	1413047		A/Permit		24-Sep-2007	CANOE CREEK	Active	33

310290 866704	1413047	A/Permit	24-Sep-2007	CANOE CREEK	Active	.72
310290 835587	1412399 111239	Licence	01-Apr-2004	WEST COAST VANCOUVER ISLAND	Active	1197
310290 804856	1409312 010067	Reserve/Notation	20-Feb-2002	KENNEDY RIVER	Active	49.7
310290 161536	1407643 930024	Reserve/Notation	28-Jun-1993	KENNEDY RIVER	Active	7.5
310290 161537	1407643	A/Reserve/Notation	23-Mar-1993	KENNEDY RIVER	Inactive	8.91
310290 160551	1407015 920053	Reserve/Notation	18-Nov-1992	KENNEDY RIVER	Active	25.2
310290 160552	1407015	A/Reserve/Notation	01-Nov-1991	KENNEDY RIVER	Inactive	25.2
310290 157461	1405279 891040	Reserve/Notation	06-Mar-1989	CANOE CREEK	Inactive	1.65
310290 157462	1405279	A/Reserve/Notation	15-Nov-1988	CANOE CREEK	Inactive	1.65
310290 149819	1401519 871012	Reserve/Notation	10-Mar-1987	PORT ALBERNI	Active	1.04
310290 149820	1401519	A/Reserve/Notation	23-Oct-1985	PORT ALBERNI	Inactive	1.04
310290 149559	1401374 85140	Reserve/Notation	30-Aug-1985	KERR CREEK	Inactive	1.07
310290 138274	1401374 85-240	Reserve/Notation	30-Aug-1985	UNKNOWN	Inactive	0



B.C. Home

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".



Tantalis GATOR

[Back to Main Search Menu](#)

Query Results: Consolidated Parcel Encumbrance Report

Search Criteria: Primary PIN: 198580, Tenure History: On

Date Created: 02-Jun-2009

Created By: GATOR

Pin Id: 198580

Tenure History: On

Primary Parcel

<u>PIN</u>	<u>Subdiv</u>	<u>RoW</u>	<u>Legal Description</u>	<u>Area (Ha)</u>	<u>Status</u>	<u>Confirmed</u>	<u>LT Office</u>
198580			DISTRICT LOT 487, BEING IRONSIDE MINERAL CLAIM, CLAYOQUOT DISTRICT	14.2	Active	03-Sep-1903	

Interest Summary

<u>PIN</u>	<u>Tantalis ID</u>	<u>File #</u>	<u>Document #</u>	<u>Interest</u>	<u>Sur/Under</u>	<u>Effective Date</u>	<u>Location</u>	<u>Status</u>	<u>Area (Ha)</u>
198580	870057	1413113		A/Licence		27-Feb-2008	WINCHIE CREEK	Active	600.85
198580	835587	1412399	111239	Licence		01-Apr-2004	WEST COAST VANCOUVER ISLAND	Active	1197
198580	1034			Reversion	U	01-Nov-1948		Absolute	0
198580	100871	0130444	9250/663	Crown Grant	U	30-Sep-1938	CLAYOQUOT	Active	14.18
198580	1033			Reversion	U	01-Nov-1920		Absolute	0
198580	76568	0000000	4666/221	Crown Grant	U	01-Sep-1908	CLAYOQUOT	Inactive	14.23



B.C. Home

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".



Tantalis GATOR

[Back to Main Search Menu](#)

Query Results: Consolidated Parcel Encumbrance Report

Search Criteria: Primary PIN: 185480, Tenure History: On

Date Created: 02-Jun-2009

Created By: GATOR

Pin Id: 185480

Tenure History: On

Primary Parcel

<u>PIN</u>	<u>Subdiv</u>	<u>RoW</u>	<u>Legal Description</u>	<u>Area (Ha)</u>	<u>Status</u>	<u>Confirmed</u>	<u>LT Office</u>
185480			DISTRICT LOT 362, BEING ISLAND BELLE NO. 2 MINERAL CLAIM, CLAYOQUOT DISTRICT	20.9	Active	18-Jan-1906	

Interest Summary

<u>PIN</u>	<u>Tantalis ID</u>	<u>File #</u>	<u>Document #</u>	<u>Interest Sur/Under</u>	<u>Effective Date</u>	<u>Location</u>	<u>Status</u>	<u>Area (Ha)</u>
185480	861913	1412927	113004	Licence	01-Nov-2008	CANOE CREEK	Active	420.03
185480	835587	1412399	111239	Licence	01-Apr-2004	WEST COAST VANCOUVER ISLAND	Active	1197



B.C. Home

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".



Tantalis GATOR

[Back to Main Search Menu](#)

Query Results: Consolidated Parcel Encumbrance Report

Search Criteria: Primary PIN: 185350, Tenure History: On

Date Created: 02-Jun-2009

Created By: GATOR

Pin Id: 185350

Tenure History: On

Primary Parcel

<u>PIN</u>	<u>Subdiv</u>	<u>RoW</u>	<u>Legal Description</u>	<u>Area (Ha)</u>	<u>Status</u>	<u>Confirmed</u>	<u>LT Office</u>
185350			DISTRICT LOT 361, BEING ISLAND BELLE NO. 1 MINERAL CLAIM, CLAYOQUOT DISTRICT	11.7	Active	18-Jan-1906	

Interest Summary

<u>PIN</u>	<u>Tantalis ID</u>	<u>File #</u>	<u>Document #</u>	<u>Interest</u>	<u>Sur/Under</u>	<u>Effective Date</u>	<u>Location</u>	<u>Status</u>	<u>Area (Ha)</u>
185350	861913	1412927	113004	Licence		01-Nov-2008	CANOE CREEK	Active	420.03
185350	835587	1412399	111239	Licence		01-Apr-2004	WEST COAST VANCOUVER ISLAND	Active	1197



B.C. Home

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".



Tantalis GATOR

[Back to Main Search Menu](#)

Query Results: Consolidated Parcel Encumbrance Report

Search Criteria: Primary PIN: 181000, Tenure History: On

Date Created: 02-Jun-2009

Created By: GATOR

Pin Id: 181000

Tenure History: On

Primary Parcel

<u>PIN</u>	<u>Subdiv</u>	<u>RoW</u>	<u>Legal Description</u>	<u>Area (Ha)</u>	<u>Status</u>	<u>Confirmed</u>	<u>LT Office</u>
181000			DISTRICT LOT 300, BEING GRISLEY BEAR MINERAL CLAIM, CLAYOQUOT DISTRICT.	13	Active	02-Nov-1905	

Interest Summary

<u>PIN</u>	<u>Tantalis ID</u>	<u>File #</u>	<u>Document #</u>	<u>Interest</u>	<u>Sur/Under</u>	<u>Effective Date</u>	<u>Location</u>	<u>Status</u>	<u>Area (Ha)</u>
181000	870057	1413113		A/Licence		27-Feb-2008	WINCHIE CREEK	Active	600.85
181000	835587	1412399	111239	Licence		01-Apr-2004	WEST COAST VANCOUVER ISLAND	Active	1197
181000	917			Reversion	U	06-Nov-1950		Absolute	0
181000	97676	0115798	9809/669	Crown Grant	U	03-Apr-1939	CLAYOQUOT	Inactive	13.03
181000	916			Reversion	U	27-Dec-1918		Absolute	0
181000	76920	0000000	4885/236	Crown Grant	U	30-Jul-1909	CLAYOQUOT	Inactive	13.03



B.C. Home

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".



Tantalis GATOR

[Back to Main Search Menu](#)

Query Results: Consolidated Parcel Encumbrance Report

Search Criteria: Primary PIN: 180480, Tenure History: On

Date Created: 02-Jun-2009

Created By: GATOR

Pin Id: 180480

Tenure History: On

Primary Parcel

<u>PIN</u>	<u>Subdiv</u>	<u>RoW</u>	<u>Legal Description</u>	<u>Area (Ha)</u>	<u>Status</u>	<u>Confirmed</u>	<u>LT Office</u>
180480			DISTRICT LOT 294, BEING CINNAMON BEAR MINERAL CLAIM, CLAYOQUOT DISTRICT.	20.5	Active	02-Nov-1905	

Interest Summary

<u>PIN</u>	<u>Tantalis ID</u>	<u>File #</u>	<u>Document #</u>	<u>Interest</u>	<u>Sur/Under</u>	<u>Effective Date</u>	<u>Location</u>	<u>Status</u>	<u>Area (Ha)</u>
180480	870057	1413113		A/Licence		27-Feb-2008	WINCHIE CREEK	Active	600.85
180480	835587	1412399	111239	Licence		01-Apr-2004	WEST COAST VANCOUVER ISLAND	Active	1197
180480	910			Reversion	U	01-Nov-1948		Absolute	0
180480	91602	0081247	9249/663	Crown Grant	U	30-Sep-1938	CLAYOQUOT	Inactive	20.48
180480	909			Reversion	U	07-Dec-1925		Absolute	0
180480	76879	0000000	4855/236	Crown Grant	U	24-Jun-1909	CLAYOQUOT	Inactive	20.48



B.C. Home

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".



Tantalis GATOR

[Back to Main Search Menu](#)

Query Results: Consolidated Parcel Encumbrance Report

Search Criteria: Primary PIN: 180350, Tenure History: On

Date Created: 02-Jun-2009

Created By: GATOR

Pin Id: 180350

Tenure History: On

Primary Parcel

<u>PIN</u>	<u>Subdiv</u>	<u>RoW</u>	<u>Legal Description</u>	<u>Area (Ha)</u>	<u>Status</u>	<u>Confirmed</u>	<u>LT Office</u>
180350			DISTRICT LOT 293, BEING BLACK BEAR MINERAL CLAIM, CLAYOQUOT DISTRICT.	19.5	Active	02-Nov-1905	

Interest Summary

<u>PIN</u>	<u>Tantalis ID</u>	<u>File #</u>	<u>Document #</u>	<u>Interest</u>	<u>Sur/Under</u>	<u>Effective Date</u>	<u>Location</u>	<u>Status</u>	<u>Area (Ha)</u>
180350	870057	1413113		A/Licence		27-Feb-2008	WINCHIE CREEK	Active	600.85
180350	835587	1412399	111239	Licence		01-Apr-2004	WEST COAST VANCOUVER ISLAND	Active	1197
180350	908			Reversion	U	01-Nov-1948		Absolute	0
180350	91601	0081246	9248/663	Crown Grant	U	30-Sep-1938	CLAYOQUOT	Inactive	19.47
180350	907			Reversion	U	07-Dec-1925		Absolute	0
180350	76878	0000000	4854/236	Crown Grant	U	24-Jun-1909	CLAYOQUOT	Inactive	19.47



[B.C. Home](#)

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".

 [LOGOFF](#)

Tantalis GATOR

[Back to Main Search Menu](#)

Interest Address

Search Criteria: Disposition ID: 870057 Interest Parcel ID:183593, Tenure History: On

BARKLEY PROJECT GROUP LIMITED

6451B PORTSMOUTH RD

Nanaimo, BC

V9V1A3

CANADA

(250) 3902627


[B.C. Home](#)

Logged On As: JACQUES HOULE (jhoule) of "HOULE, JACQUES R".



Tantalis GATOR

[Back to Main Search Menu](#)

Interest Details

Search Criteria: Effective DATE: 02/27/2008, Tenure History: On

That part of the surface of District Lot 293, Being Black Bear Mineral Claim, that parcel or tract of unsurveyed Crown land lying in the vicinity of Kennedy River, and those parts of the surfaces of District Lots 294, 300, 487 surveyed as the claim(s) known as Cinnamon Bear, Grisley Bear and Ironside Mineral Claims, respectively, and that part of District Lot 617; together with unsurveyed Crown foreshore or land covered by water being part of the beds of Kennedy River, Winchie Creek and various unnamed creeks, all within Clayoquot District, shown outlined as Sites 1 and 2 on sketch below, containing.....hectares, more or less

Images

Crown GRANT: No Images Available

Interest Information

File #:	1413113	Type:	Licence
Document #:		Subtype:	Licence Of Occupation
OIC/Ministry Order #:		Purpose:	Waterpower
Status:	Active	Subpurpose:	General Area
Status Reason:	Accepted	Region:	Vi - Land Mgmt - Vancouver Island Service Region
Area (Ha) / Method:	600.85 / Calculated Automatically	Location:	Winchie Creek
Received Date:	27-Feb-2008		
Effective Date:	27-Feb-2008		
Expiry Date:			

Crown Grant Covenants

Interest Holders

Timber Value:

Timber Deferment: Unknown

Surface/Under: Unknown

Resources:

Restrictions:

Land Controls

Indian Reserve:

Ecological Reserve:

Provincial Park:

National Park:

BARKLEY PROJECT GROUP LIMITED

Administrative Areas

Agricultural Land Reserve:

Assessment Area: Central Vancouver Island

Electoral District: Alberni

Land District: Clayoquot District

Land Management Region:

Land Title District:

Municipality:

Regional District: Alberni-Clayoquot

School District: Alberni

[Primary Survey Parcels](#)

Tantalis ID: 870057

Appendix 7

2009 Landholder Notices issued for Kennedy River Property Area

NOTICE TEMPLATE
SECTION 19 (1) OF THE MINERAL TENURE ACT

To: Vancouver Island Guide Outfitters Inc.
(print name(s) of registered landowner(s) or Crown Land Lessee(s))

Address: PO Box 1062 STN A
Port Alberni, B.C. V9Y 7L9
(250) 724-1533

registered holder of the following surface rights: PIN 310290 Tantalus ID 1412399 West Coast Vancouver
Island Licence of Occupation

(description of land parcel (can include civic address, or legal description, or Parcel Identifier Number or Crown land lease descriptors))

I, Jacques Houle, P.Eng.
(print name)

of G4G Resources Ltd.
(company name (if applicable))

Address or contact information: Suite 1003 - 409 Granville Street
Vancouver, B.C. V6C 1T2

I am providing Notice that I, or my authorized representative, intend to enter: _____
Mineral Tenures 200097, 200101, 302615, and 347567

(describe area of entry as accurately as possible, or attach an illustrative picture or map)

the aforementioned land parcel to carry out a mining activity between the dates of August 17, 2009
and August 21, 2009. There will be approximately 3 persons on site and the work
will consist of the following mining activities: GPS guided prospecting, rock and stream sediment sampling


(describe in detail work to be done, attach description and or diagram if required for clarity)

The person who will be onsite and in charge of the mining activity is: Jacques Houle, P.Eng.
(print name)

of G4G Resources Ltd.
(company name (if applicable))

and may be contacted at: (250) 390-3930 or jhoule06@shaw.ca

(provide any two of the following: telephone or facsimile number, mailing or email address)


Signature

August 10, 2009
Date

DO NOT SEND THIS FORM TO THE MINERAL TITLES BRANCH
KEEP A COPY OF THIS FORM FOR YOUR OWN RECORDS

Note: THIS IS NOT A REQUEST FOR CONSENT TO ENTER THE PROPERTY.

A free miner or mineral title holder has the right to enter upon and use the surface of private land for the exploration and development or production of minerals or placer minerals, and the business of mining subject to the provisions in the *Mineral Tenure Act*, *Mines Act*, and/or *Mining Rights of Way Act*. A free miner or mineral title holder is required to provide notice in accordance with the *Mineral Tenure Act* and is liable to compensate the owner of a surface area for loss or damage caused by the entry, occupation or use of that area.

For further information on the legislation and other materials pertaining to this Notice, please go to:

http://www.em.gov.bc.ca/mining/titles/Land_Owner_Notice.htm

or contact the Mineral Titles Branch at mineral.titles@gov.bc.ca or 1-866-616-4999

NOTICE TEMPLATE
SECTION 19 (1) OF THE MINERAL TENURE ACT

To: Barkley Project Group Limited
(print name(s) of registered landowner(s) or Crown Land Lessee(s))

Address: 6451B Portsmouth Road
Nanaimo, B.C. V9V 1A3
(250) 390-2627

registered holder of the following surface rights: PIN 310290 Tantalus ID 861913 (Canoe Creek) and
870057 (Winchie Creek) Licences of Occupation

(description of land parcel (can include civic address, or legal description, or Parcel Identifier Number or Crown land lease descriptors))

I, Jacques Houle, P.Eng.
(print name)

of G4G Resources Ltd.
(company name (if applicable))

Address or contact information: Suite 1003 - 409 Granville Street
Vancouver, B.C. V6C 1T2

I am providing Notice that I, or my authorized representative, intend to enter: _____
Mineral Tenures 200097, 200101, 302615, and 347567

(describe area of entry as accurately as possible, or attach an illustrative picture or map)

the aforementioned land parcel to carry out a mining activity between the dates of August 17, 2009
and August 21, 2009. There will be approximately 3 persons on site and the work
will consist of the following mining activities: GPS guided prospecting, rock and stream sediment sampling

(describe in detail work to be done, attach description and or diagram if required for clarity)


The person who will be onsite and in charge of the mining activity is: Jacques Houle, P.Eng.

(print name)

of G4G Resources Ltd.
(company name (if applicable))

and may be contacted at: (250) 390-3930 or jhoule06@shaw.ca

(provide any two of the following: telephone or facsimile number, mailing or email address)


Signature

August 10, 2009

Date

DO NOT SEND THIS FORM TO THE MINERAL TITLES BRANCH
KEEP A COPY OF THIS FORM FOR YOUR OWN RECORDS

Note: THIS IS NOT A REQUEST FOR CONSENT TO ENTER THE PROPERTY.

A free miner or mineral title holder has the right to enter upon and use the surface of private land for the exploration and development or production of minerals or placer minerals, and the business of mining subject to the provisions in the *Mineral Tenure Act, Mines Act, and/or Mining Rights of Way Act*. A free miner or mineral title holder is required to provide notice in accordance with the *Mineral Tenure Act* and is liable to compensate the owner of a surface area for loss or damage caused by the entry, occupation or use of that area.

For further information on the legislation and other materials pertaining to this Notice, please go to:

http://www.em.gov.bc.ca/mining/titles/Land_Owner_Notice.htm

or contact the Mineral Titles Branch at mineral.titles@gov.bc.ca or 1-866-616-4999

NOTICE TEMPLATE
SECTION 19 (1) OF THE MINERAL TENURE ACT

To: Westcoast Wild Adventures Ltd.
(print name(s) of registered landowner(s) or Crown Land Lessee(s))

Address: PO Box 107
Ucluelet, B.C. VOR 2A0
(250) 726-7715

registered holder of the following surface rights: PIN 310290 Tantalus ID 1412908 (Kennedy River)
Licence of Occupation

(description of land parcel (can include civic address, or legal description, or Parcel Identifier Number or Crown land leas descriptors))

I, Jacques Houle, P.Eng.
(print name)

of G4G Resources Ltd.
(company name (if applicable))

Address or contact information: Suite 1003 - 409 Granville Street
Vancouver, B.C. V6C 1T2

I am providing Notice that I, or my authorized representative, intend to enter: _____
Mineral Tenures 200097, 200101, 302615, and 347567

(describe area of entry as accurately as possible, or attach an illustrative picture or map)

the aforementioned land parcel to carry out a mining activity between the dates of August 17, 2009
and August 21, 2009. There will be approximately 3 persons on site and the work
will consist of the following mining activities: GPS guided prospecting, rock and stream sediment sampling


(describe in detail work to be done, attach description and or diagram if required for clarity)

The person who will be onsite and in charge of the mining activity is: Jacques Houle, P.Eng.
(print name)

of G4G Resources Ltd.
(company name (if applicable))

and may be contacted at: (250) 390-3930 or jhoule06@shaw.ca

(provide any two of the following: telephone or facsimile number, mailing or email address)


Signature

August 10, 2009
Date

DO NOT SEND THIS FORM TO THE MINERAL TITLES BRANCH
KEEP A COPY OF THIS FORM FOR YOUR OWN RECORDS

Note: THIS IS NOT A REQUEST FOR CONSENT TO ENTER THE PROPERTY.

A free miner or mineral title holder has the right to enter upon and use the surface of private land for the exploration and development or production of minerals or placer minerals, and the business of mining subject to the provisions in the *Mineral Tenure Act, Mines Act, and/or Mining Rights of Way Act*. A free miner or mineral title holder is required to provide notice in accordance with the *Mineral Tenure Act* and is liable to compensate the owner of a surface area for loss or damage caused by the entry, occupation or use of that area.

For further information on the legislation and other materials pertaining to this Notice, please go to:

http://www.em.gov.bc.ca/mining/titles/Land_Owner_Notice.htm

or contact the Mineral Titles Branch at mineral.titles@gov.bc.ca or 1-866-616-4999

Appendix 8

**BC Minister of Mines Annual Report Excerpts for Kennedy River Property
Area**

north-east wall of the dyke has disappeared in the south-west wall of the adit. In the immediate vicinity of the fissure the serpentine has been bleached from its original purple colour to a very light grey. A second serpentine dyke that is only 6 inches wide cuts the andesite a few feet south of the portal. This dyke, strike south 50 degrees east, dip 83 degrees north-east, is a continuation of one that outcrops lower down the creek that flows past the portal of both the upper and lower adits. In some places these occurrences of serpentine possess very dense selvages where in contact with the greenstone; this, in addition to their dyke-like habit, supports the view that the serpentine on the *Leora* represents dykes that have been serpentized.

The old shaft is 40 feet north-west of the lower adit and at the same elevation. The new shaft is 100 feet north-west from this adit and is 50 feet above it, and has evidently been sunk to intersect the hanging-wall of the vein as exposed in the lower adit.

The *Tommy K.* group includes the following mineral claims: *Hidden Tommy K. Treasure, Tommy K., Kennedy, Young Pat, Waterfall, Big Boy,* and *Dorothy*. They were staked in 1933 and 1934 and are owned by a private company, the Kennedy Lake Gold Mines, Limited, of which T. O. MacKay, 1214 Broad Street, Victoria, is secretary. The workings and camp are about 4 miles up Kennedy (Elk) river from its mouth and a quarter of a mile east from the river. A good foot-trail leads from the *Leora* to the *Tommy K.* The group covers an area that is characterized by steep wooded slopes and low rock bluffs. An intermittent creek follows a canyonous course interrupted by waterfalls from the upper workings to the camp, from which it flows along a gentle gradient to Kennedy river.

Narrow, tight fractures in andesite breccia have been filled by quartz accompanied by small amounts of calcite, pyrite, chalcopyrite, and pyrrhotite. The breccia has been cut by altered quartz-dyabase dykes and a few less altered aplite dykes.

The surface workings consist of open-cuts and trenches on several different veins. At a place 1,400 feet up the creek from the camp and 480 feet above it in elevation, an open-cut has been blasted in the south wall of the canyon on the so-called *Hidden Treasure* vein. This vein has been exposed for 15 feet in the floor of the cut and for approximately 100 feet up the rock bluff. The average width of the vein is 6 inches, but the habit is lens-like. The vein-filling is quartz, carbonate, and small amounts of disseminated pyrite. Mineralization has resulted in the lenticular filling of one major and several minor fractures by quartz, grey calcite, a little pyrite and chalcopyrite. The zone strikes south 30 degrees east and dips 75 degrees north-east. The minerals occur in lenses that vary in width from 1 to 8 inches and in narrow veinlets that vary from $\frac{1}{16}$ to 1 inch in width. A sample taken across 8 inches of quartz showing a little chalcopyrite and pyrite assayed: Gold, 1.20 oz. per ton; silver, 0.20 oz. per ton. The rock formation is an andesite breccia that consists of very angular light-green fragments up to 3 inches in maximum diameter, set in a fine-grained dark-green chloritic matrix.

A trench that is approximately 1,200 feet west from the *Hidden Treasure* vein and 150 feet east from the blacksmith-shop shows a narrow vein that strikes north 60 degrees east and dips 64 degrees north-west over 17 feet of exposed length. The vein is 2 to 3 inches wide and consists of ribbon-quartz, with a little pyrite, chalcopyrite, and pyrrhotite filling a parallel walled fracture in andesite breccia. On the foot-wall there is $\frac{1}{2}$ to 1 inch of gouge, but the hanging-wall is a clean slip surface. A bulk sample across 3 inches of vein-matter in the north-east end of the trench assayed: Gold, 0.48 oz. per ton; silver, 1.4 oz. per ton. A rock-cut has been started at a place 50 feet north-westerly down the slope from the last trench, the objective of which is to intersect the vein at a greater depth.

There are surface showings on the property of several small, frozen quartz-calcite veinlets that vary from 1 to 2 inches in width and contain small amounts of pyrite, chalcopyrite, and pyrrhotite. With the exception of two showings up the creek that strike east, these all strike in a north-easterly direction. Beneath the large falls in the creek a strong fissure, strike east, contains 2 inches of bluish gouge, but no mineralization is now evident. A composite sample was taken of three small veins from $\frac{1}{2}$ to 2 inches wide that may be the continuation of the 2- to 3-inch vein described above. This sample contained quartz with small amounts of pyrite, chalcopyrite, and pyrrhotite, and assayed: Gold, 0.48 oz. per ton; silver, 1.4 oz. per ton.

TABLE XVI.—METALLIFEROUS MINES SHIPPING IN 1934—Continued.

Mine or Group.	Location of Mine or Mill.	Owner or Agent.	RATED DAILY CAPACITY.		Oper-ating at.	Date of First Operation.	Process.	Character of Ore.
			1933.	1934.				
O.K.	O.K. mountain.	O.K. Leasing Syndicate, Rossland.			Tons.			Gold, silver.
Silverline	Rossland	Af. O. Fried, Rossland.						Gold, silver.
Springle Creek	Trail Creek.	T. H. Sargeant, Trail.						Gold, silver.
Velvet	Rossland	Velvet Gold Mining Co., Seattle.	50		50	1934	Concentration	Gold, silver.
Rossland	Rossland	Leasers from Cons. M. & S. Co. of Canada, Trail				§	Concentration	Gold, silver, copper.
Yancouver Island	China creek	Yancouver Island Gold Mines, Ltd., Vancouver						Gold, silver.
Vidette	Savona	Vidette Gold Mines, Ltd., Vancouver	40		35	Dec., 1933	Flotation.	Gold, silver.
Danzig	Nootka sound.	Danzig Mines, Ltd., Nootka						Gold, silver.
Golden Peak	Ceepeece.	Albert Bloom, Ceepeece						Gold, silver.
Kennedy Lake	Kennedy Lake	Kennedy Lake Gold Mines, Ltd., Victoria						Gold, silver.
Privateer	Zetallos river	A. Bivd and Partners, Ceepeece.						Gold, silver.
Grange	Kelly creek	Grange Mines, Ltd., Vancouver	60		50	Jan., 1934	Amalgamation; flotation.	Gold, silver.
Taylor-Windfall	Taseko lake	Taylor Windfall Gold Mining Co., Ltd., Vancouver	5		5	August, 1934	Amalgamation; flotation.	Gold, silver.
Bralorne	Cadwallader creek.	Bralorne Mines Ltd., Vancouver	225		450	Feb., 1932	Amalgamation; flotation.	Gold, silver.
Goldside	Taylor basin	Goldside Mines, Ltd., Vancouver	50-75		60	Dec., 1934	Amalgamation; flotation	Gold, silver.
Minto	Bridge River	Minto Gold Mines, Ltd., Vancouver	400		410	Feb., 1928	Cyanidation (first mill in 1900)	Gold, silver.
Pioneer	Cadwallader creek.	Pioneer Gold Mines of B.C., Ltd., Vancouver			40	Nov., 1934	Amalgamation; flotation.	Gold, silver.
Wayside	Bridge River	Wayside Consolidated Gold Mines, Ltd., Vancouver						Gold, silver.
Hercules	Phillips arm	Hercules Cons. M.S. & P. Co., Ltd., Vancouver						Gold, silver.
Hayden Bay	Hayden bay	Hayden Bay Gold Mines, Ltd., Vancouver						Gold, silver.
Ashloo	Squamish	Ashloo Gold Mining Syndicate, Vancouver						Gold, silver.
Britannia	Britannia Beach	Britannia M. & S. Co., Ltd., Britannia Beach	6,500		4,600	Jan., 1923	Flotation	Copper, gold, silver.
Dawson	Jessica	Dawson Cons. Gold Mines, Ltd.	25		*		Amalgamation; flotation	Gold, silver.

* Idle at present. § 100-ton mill at Tadanac (Trail) reconditioned to handle Rossland ores shipped by leasers.

Some years ago there was a great deal of prospecting done in this Division around the many inlets which make the country exceptionally accessible as far as they go. From the heads of the inlets back into the range little is known, as it will require trails to make this attractive to prospectors.

Many small gold-bearing quartz veins have been at least partially prospected, but apparently without success, in so far as production is concerned. The only property that has been equipped and reached the producing stage was the *Indian Chief* on Sidney inlet, a low-grade copper property operated at the time by the Tidewater Copper Company, but idle since 1923 and now dismantled.

KENNEDY LAKE AND RIVER SECTION.

This is an interesting-looking section for the reason that the rock formation and ore occurrences are different from the basic Vancouver volcanics, which is the predominating rock formation on the island. This section contains a lighter-coloured rock, more siliceous, and porphyritic in appearance, in which occur fissures filled with gold-bearing pyritized quartz veins. Several of these veins were sufficiently attractive many years ago to warrant the installation of small plants, but apparently the gold values were not continuous enough to support operations.

The *Leora*, a mile up Kennedy river from Kennedy lake, and the *Rose Marie*, 3 miles up, were both worked in 1900, but abandoned after a year or two of operating. Since then there has been little or no prospecting in any of this area and consequently only a small portion of the section has received any attention.

V. Dolmage, of the Geological Survey of Canada, is of the opinion that the gold in the Wreck Bay placers had its origin in these small quartz veins.

I think the higher ground, farther up Kennedy river, would well repay prospecting and it should therefore be made accessible by the continuation of the trail up Kennedy river and through to the Taylor river, which empties into Sproat lake. (*See also* Sproat Lake section.)

The Sutton Lumber Company, owning extensive timber tracts in this section, has been running a reconnaissance survey round Kennedy lake to ascertain the feasibility of raising the lake-level about 100 feet for logging purposes. This would back the lake up Kennedy river for a distance of between 4 and 5 miles.

The section is now reached by launch from Tofino to the Clayoquot cannery, then up the rapids at the mouth of Kennedy river for about 500 yards. This channel has been cleared of boulders and is not difficult to navigate. From there up Kennedy river to the lake is about 3 miles, to the head of the lake is another 12 miles, and a small boat can be taken about 3 miles up Kennedy river to the rapids, altogether a very pleasant trip of a few hours in a boat with a kicker.

There are two mineral claims in this group—the *Jo Jo* and *Jo Jo No. 1*—owned by W. Spittal, of Tofino, and W. S. Dixon. The claims are situated less than a mile above the old *Rose Marie* camp on the east side of Kennedy river, or about $3\frac{1}{2}$ miles from Kennedy lake. The formation consists of belts of volcanics and sedimentaries. At 575 feet elevation several open-cuts have disclosed a quartz vein striking N. 40° E. (mag.) and dipping slightly to the west with the slope of the hill. The quartz is well mineralized with pyrrhotite, pyrite, and some sphalerite and chalcopyrite, with here and there a trace of galena. The vein, which is about 2 feet wide, is well defined and has been traced on the surface for several hundred feet and altogether has a very favourable appearance. The chalcopyrite appears to be associated with the pyrrhotite and sphalerite and the galena with the pyrite; the whole when concentrated would probably be 8 into 1. A sample across the best-looking ore was, however, very disappointing, giving no gold or silver values and only small percentages of zinc and copper.

There are four claims in this group, now owned by A. Watson and associates, of Port Alberni, and situated on the east side of Kennedy river, about 3 miles up from its mouth. This property was operated in 1899, when a 4-stamp mill, boiler, tables, and compressor were installed and, I understand, worked for a couple of seasons. Ore for the mill was obtained by trenching along the vein-croppings about 1,000 feet above and sent down by aerial tramway. Later a tunnel was driven 350 feet on the vein 400 feet below the croppings, but, though the vein is very well defined and maintains its width throughout, the values were apparently unsatisfactory. I took a sample across 18 inches of slightly mineralized quartz in the face of the tunnel, which assayed: Gold, \$1.60 to the ton; silver, 1 oz. to the ton. There are evidences that the tunnel has been thoroughly sampled.

The veins in this section are so uniform in width and continuity that average values of \$12 to \$15 to the ton would make profitable small properties.

These claims, owned by W. Spittal, of Tofino, are situated about 6½ miles up Kennedy river on its west side. There is a cabin on the claims a short distance from the river, but it has been badly damaged by a falling tree. It is at the 140-foot contour, which shows the slight grade up the Kennedy river in that distance. The general rock formation is a fine-grained, schistose greenstone, indicating a broad shear-zone in the volcanic rocks. Conforming with the strike of the schists is a quartz vein varying in width up to 10 feet in places, but averaging probably between 2 and 3 feet. This vein is mineralized in spots. It has been traced for over 1,000 feet from the first cropping on the top of a knoll on the left side of a trail at 450 feet elevation. The vein crops going north along the bed and sides of a creek which crosses it just beyond the first cropping. The surface exposures show little mineralization except in one place on the east side of the creek, but here the vein has pinched down to seams of iron sulphides, from which the owner claims to have had assays of \$50 to the ton in gold. Farther up the creek on the north side the vein stands up perpendicularly and is apparently about 10 feet wide and a little work done here might show up to advantage. The vein here strikes east-west.

The vein should be exposed south of the first cropping and drifted on a short distance, and if any encouragement is obtained a greater depth could then be had by crosscutting from the creek below the falls. A crosscut of 100 feet would gain approximately 200 feet depth under the lowest cropping. A serviceable water-power could be developed from the falls.

The vein shows continuity, a little mineralization and values in places, and is therefore probably worth some surface exploration in the hope of finding ore indications worth development.

Other properties in this section which I have not examined, but which may be of interest to the reader, and references to Annual Reports are as follows: *Wonder*, 1918, 1921, 1923; *O.K.*, 1918; *Northern Crown*, 1918; *Grant*, 1923.

TOFINO SECTION.

This property, formerly *White* group, is now owned by W. Walton, of Tofino. There are four claims in the group—*Alpha*, *Norman*, *Omega*, and *Douglas*—situated 2 miles up Tofino creek, which empties into tide-water at the head of Tofino inlet. There is a fair foot-trail from the beach to the cabin at 675 feet elevation. The showings are above the cabin at an elevation of 825 feet. The general country-rock is the Vancouver volcanics, within which is a belt, apparently about 50 feet wide, of metamorphosed rocks, containing mainly garnetite and epidote. This contact-belt strikes east-west (mag.), dips slightly north, and is mineralized with disseminated and bunches of chalcopyrite. Just above the cabin the vein, or belt, is eroded to form a narrow canyon, at the head of which the only ore in place is found. A short tunnel a little lower down at 800 feet elevation in the hanging-wall of the bluff shows no mineral, and another at the foot of the canyon into the hanging-wall country-rock has likewise exposed no mineral. Both these tunnels are useless pieces of work.

The interesting feature of the property is the quantity and quality of the float-ore found in the rock-slide which has accumulated at the foot of the canyon. Some 500 sacks of chalcopyrite that will assay well over 10 per cent. copper has been sorted out and stored in a small building at the cabin. Judging from the size of some of the boulders of solid ore, the vein must have been several feet in width.

There are small patches of ore in the face of the canyon, but nothing to suggest the amount of ore showing in the slide. In fact, if it were not for the float-ore the property would not be at all attractive. The ore-shoot may have been at the foot of the canyon, but that would be hard to explore because of the accumulation of slide-rock. The property is well worth very close prospecting.

There are three old properties in this section—*Orow* (1916 Annual Report), *Jumbo* (1916), and *Bounce* (1916)—to which the reader is referred.

BEDWELL SOUND SECTION.

I did not have time this year to examine any claims in this section and therefore can only refer you to properties described in former reports.

be replaced with ore, but the other branch of the dyke, the one that is exposed in the face of the open-cut, maintains continuity for a distance of about 60 feet to a point near the blacksmith-shop close to the discovery post of the *Hakadato* and 100 feet across from the main open-cut work already referred to.

The rock exposed between the main open-cut work first described and the last mentioned is made up of garnet, epidote, and limestone, and in some places where trenching has been done there is evidence of quite heavy mineralization.

The chief reason why but little underground work has been done on this property is because of the difficulty of obtaining dynamite, which is not carried on the regular Coast steamer, the "Princess Maquinna," and the only means of securing any explosives in any of the camps on the west coast is by getting it shipped on fishing-boats or launches.

All of the work described is done in a precipitous mountainous area at the head of a torrential stream locally known as Ubedam creek, which flows into the head of Tasis canal about a mile westerly from the mouth of the Tasis river.

The banks of Ubedam creek are very precipitous and about 100 feet high; consequently they are quite difficult to prospect, but Poole has found outcroppings of copper ore in some places in the bed and bank of the creek. Apparently in places it flows along the line of strike of the mineral-zone, the rock having been eroded out to the depth mentioned.

Transportation facilities for the *Star of the West* are excellent, because the group extends from deep water on Tasis canal and is located one claim wide for a distance of 6,000 feet, the *Hakadato* being the farthest from the sea, the workings thereon being at an elevation of 1,500 feet above the sea.

On Muchalat arm of Nootka sound and on Gold river, which empties into that arm, prospectors were working during 1925 and a few claims were staked, but only a limited amount of prospecting-work was done, which was insufficient to determine many material facts relative to the discoveries. In the Nootka Sound section there is a very extensive and unexplored territory at the headwaters of the East and West forks of Gold river around Muchalat lake and the headwaters of Elk river, which flows north-easterly into Upper Campbell lake, near the centre of Vancouver island, and the north-westerly boundary of Strathcona Park.

In the same mountainous section is the source of the Nimpkish river, which flows north-westerly into Nimpkish lake and from there into Johnstone strait on the east coast of Vancouver island. This section is occupied by the most precipitous range of mountains on Vancouver island, in which occur peaks reaching an elevation of about 8,000 feet.

A few old-time prospectors have penetrated these mountains in search of mineral-deposits, but so far as is known none have crossed Vancouver island, either by following up Gold river and down Elk river or by following up Gold river to the summit and down Nimpkish river.

W. Poole has done more prospecting in the Nootka Sound section during the past fifteen or eighteen years than any other man, but so far has failed to discover any occurrences of mineral, except the *Star of the West* group, that he considered worth while recording when the difficulties of overcoming the handicap of lack of transportation facilities were considered. But one man's efforts in such an enormous unexplored area are futile unless a discovery is made by accident. The only method for prospecting this area would be by travelling up Gold river to the summit and down Elk river or the Nimpkish. By adopting such a course the prospector would be crossing the geologic formations in that portion of the island practically at right angles to the strike of the rocks, except down the headwaters of the Nimpkish river, which for several miles flows parallel to the general strike of the formation.

KENNEDY LAKE SECTION.

There has been considerable prospecting in the mountains adjacent to the Kennedy (Elk) river during 1925, where some of the old claims were further prospected and work recorded by William Spittal, an old-time prospector, for himself and associates. On these claims there occur gold-bearing quartz veins typical of that section of Vancouver island, but as only the annual assessment-work has been done, and that only for a few years past, this is hardly sufficient to determine any material data as to the future possibilities of the prospects. The veins generally are narrow, sometimes, though, reaching a width of from 2 to 3 feet and carrying more than \$10 in gold to the ton, as is the case on the *Rose* group (formerly the *Rose Marie*), described in

the Annual Reports for 1899, 1913, and 1916, work on which was suspended in 1900 by the owners, the Rose Marie Mines, Limited, a British syndicate heavily interested in South African mines. Later, after a rock and snow slide destroyed the concentrating-mill, compressor plant, and other machinery, the property was allowed to go to tax sale and acquired by Clarence Dawley, of Clayoquot, and Anthony Watson, of Port Alberni, who are not financially able to install new machinery, so keep the taxes paid up in the hope of selling. It is mentioned in this report because it appears to be such a property as a man with some capital and thorough knowledge of mining and milling methods could operate on a paying basis.

TOFINO INLET SECTION.

White. William N. Walton, who is associated with D. McMillan, of Victoria, has continued some further prospecting-work on the *White* group, about 1½ miles up Tofino (Deer) creek from the head of Tofino inlet and about 800 feet elevation. This property was quite fully described in the Annual Reports for 1919 and 1921. The work done recently has confirmed the theory expressed when the group was staked that the source of the high-grade copper-ore outcroppings, which cover about an acre or more on a bench or terrace on the mountain-side where work has been done, would be found by systematically prospecting a wide shear-zone that occurs in the country-rock, which Mr. Walton is doing.

Owing to the low price of copper none of the prospects on the west coast of Vancouver island has been attractive to capitalists for the past few years, but there are several other mineral claims in this and other sections of the Clayoquot Division on which the showings are so good as to indicate potential values as working-mines after a reasonable amount of capital has been expended on further development-work.

No matter how industriously a prospector may work on his annual assessments, he cannot make much showing unless he is possessed of a few thousand dollars of capital; therefore as conditions are not materially changed it is deemed unnecessary to repeat descriptions of such work from year to year.

HESQUIAT LAKE SECTION.

Hesquoit. Owing to the zinc content in some ore found near the southerly shore of Hesquoit lake this section has been receiving attention from prospectors during 1925, resulting in staking and recording the *Hesquoit No. 1*, *Hesquoit No. 2*, *Hesquoit No. 3*, and *Hesquoit No. 4* claims, known as the *Hesquoit* group, by A. L. Smith, of Alberni, and associates.

These claims cover a portion of practically the same ground as the old *Brown Jug* group, described in the Annual Report for 1916. It may be interesting to refer to the assays of the samples taken at that examination, which were as follows:—

A sample taken from a small dump at the portal of an adit assayed: Gold, 0.08 oz.; silver, 1.6 oz. to the ton; copper, 1 per cent.; zinc, 10.4 per cent.

A sample taken across 5 feet near the face of an open-cut 21 feet long assayed: Gold, 0.12 oz.; silver, 5.4 oz. to the ton; copper, 1.7 per cent.; zinc, 6 per cent.

A selected sample taken from the dump at the same open-cut assayed: Gold, 0.62 oz.; silver, 8 oz. to the ton; copper, 3.5 per cent.; zinc, 12 per cent.

The presence of zinc in the ore was a great handicap when the old claims were held, and that, added to poor transportation facilities, was mainly responsible for the abandonment of the *Brown Jug* group after considerable prospecting had been done. Under present conditions with regard to zinc and the perfection of the oil-flotation method of concentration, it may prove to be worth while to further prospect systematically these ore-deposits, as the transportation of concentrates could be done with much less difficulty and expense than transporting ore.

SIDNEY INLET SECTION.

Indian Chief. In the Annual Reports for 1917, 1918, 1920, 1922, and 1923 this group of claims, owned and operated by the Tidewater Copper Company, was very fully described. There has been no resumption of operations at the property since they were suspended in the late fall of 1923, but during 1925 the assets of the company were sold and bought in by the debenture-holders. What the future plans of the purchasers are has not been made public, but it is hoped that operations will be resumed at an early date.

winter of 1922-23, while the high water in Bedwell river flooded the main trail, which is about 13 miles long, and carried away portions of the plank road constructed for about 1½ miles from the mouth of the river. The damage was so extensive and expensive to repair that operations were not resumed during 1923. There are no other properties being worked near the river, although several mineral claims located some years back are still in good standing.

Mining operations in this Division during 1923 have been confined to those conducted by the Tidewater Copper Company, Limited, on Sidney inlet, and to prospecting-work. The most important prospecting-work has been done by Lachland Grant, Anthony Watson, William Spittal, J. B. Woodworth, and others near the head of Kennedy lake and on Kennedy river, also by William Poole, A. Park, and others near the head of Tahsis canal.

The production from the Clayoquot Mining Division during 1923 has been very satisfactory when it is considered that it all came from the property of the Tidewater Copper Company.

Considerable disappointment has been felt recently owing to the fact that active mining operations were not resumed on the *Black Prince* group on Sidney inlet, adjoining the *Indian Chief* group of the Tidewater Copper Company, and also that nothing was done towards resuming work on the *Ptarmigan* group, owned by the Ptarmigan Mines, Limited, London, England. But as access to the last-named property is gained by way of the same wagon-road and trail up the Bedwell river for a distance of 13 miles as are used to reach the *You* group, which was destroyed as above mentioned, the delays in resuming operations are excusable, if for no other reason than the lack of transportation facilities. The cost for repairing the road and trail, which would amount to several thousand dollars, would naturally deter any one from considering work on the claims.

Kennedy Lake section comprises an area extending from the outlet of Kennedy lake into Kennedy river easterly to the head of the eastern arm of the lake and up the upper Kennedy river for a distance of about 6 miles, which is about the limit to which prospecting-work has been done adjoining that river. The prospectors are urging that a trail be constructed farther up the river to what is known as the "Big Bend," and from there cross to the Taylor river to connect with the trail at the head of Taylor arm and Sproat lake, by which a virgin section of country of about 5 miles in width would be opened to prospectors. No action has yet been taken in this matter nor have any prospectors been engaged in exploring that vicinity.

The Kennedy Lake section, especially that portion in the vicinity of the head of the lake and its junction with Kennedy river, has been chiefly noticeable in the past because of several discoveries of gold-bearing quartz veins, most of which were made twenty-five years ago when a concentrating-mill was erected on the *Rose Marie* group, situated about 3 miles up Kennedy river.

The old work on the *Rose Marie* group was done under the management of the late Barclay Bonthron, who represented English capital. Operations were closed down at the time of the South African War and the group of claims was kept in good standing by Mr. Bonthron for some years; in fact, until the destruction of the mill occurred during the extremely heavy snowfall in the winter of 1915-16, when most of the machinery was so seriously damaged that it was reduced to scrap.

Later the *Rose Marie* group was acquired by Anthony Watson, of Alberni, and Clarence Dawley, of Clayoquot. The claims were restaked and renamed the *Rose Group*, which comprises the *Rose*, *Maggie*, *Marie*, and *Sadie* mineral claims. The property was examined and reported on by D. G. Forbes, M.E., in the Annual Report for 1913, and by myself in the Annual Report for 1916, at which latter date the face of the adit, which had been extended since Mr. Forbes's examination, was sampled, and assayed: Gold, 0.6 oz.; silver, 0.2 oz. to the ton; copper, trace. The sample was an average across 16 inches. From 1916 to July, 1923, when I again examined the property no further work had been done in extending the main adit. It was recently reported that the property was being acquired by J. B. Woodworth, of Thorley Park, Vancouver, and associates, who intend to continue the development-work in the near future.

The topography of the mountain in which the *Rose* quartz vein occurs is rather unusual, as where the mountain has been cut through by the Kennedy river the face is quite precipitous and the quartz vein has been exposed by nature for a vertical height of approximately 1,500 feet. In referring to this section of the Clayoquot Mining Division, Victor Dolmage, in the Summary Report, 1920, Part A, Geological Survey of Canada, in his report entitled "West Coast of Vancouver Island between Barkley and Quatsino Sounds," calls attention to the fact that these

gold-bearing quartz veins constitute a type of mineral-deposit which is different from any previously described in connection with the west coast, and, although they have not yet proven to be of commercial importance, they do in places show good gold values and may with further prospecting turn out to be valuable.

So far as the last paragraph is concerned, it should be noted that the gold-bearing quartz veins referred to by myself as occurring on the Taylor river, China creek, and Granite creek, in the Alberni Mining Division, and also the quartz veins on the *Della* and *You* groups in the vicinity of the *Big Interior* and *Ptarmigan* groups of mineral claims, are not included in any of the Geological Survey Reports, but that all of these quartz veins are apparently similar occurrences to those referred to by Dr. Dolmage.

KENNEDY LAKE SECTION.

This group contains the *Wanderer* and *L. Grant* mineral claims, situated near the head of Kennedy lake. The group is owned by Lachland A. Grant and associates, of Tofino. In 1923 I made an examination of the extension of the development-work that had been done since my examination in 1921. As the group was reported on in the Annual Reports for 1918, page 262. and 1921, page 213, it is only necessary here to refer to the results of the extension of the work.

The ore occurs in this property in a gold-bearing quartz vein which shows great persistence for several hundred feet along its strike, S. 40° W. (mag.). Unfortunately the recent work, a continuation of the lower adit, instead of showing any increased width in the vein, which had averaged about 5 inches in width in the previous workings, only showed a width of 2 inches in the present face of the adit.

The values obtained from samples from the old workings had varied from: Gold, 0.10 oz.; silver, 0.4 oz. to the ton, to: Gold, 1.86 oz.; silver, 0.8 oz. to the ton; copper, 15 per cent. No samples were taken from the more recent work as the vein had pinched down from 5 inches to 2 inches.

Discouraging as this work seems to be, I am still inclined to think that there is a possibility that further prospecting is warranted owing to the persistence of the vein along the strike and the values carried by the quartz, coupled with the fact that work has demonstrated that the vein not only maintains continuity along its strike, but also vertically, since the quartz vein can be traced down the precipitous mountain-side for about 200 feet below the outcropping, from which several specimens have been taken, in which the gold was visible to the naked eye.

This group contains the *James Grant* and *Lachland Grant* mineral claims, owned by Lachland Grant, of Tofino, and Anthony Watson, of Port Alberni. The group is located on Kennedy river, about 3 miles above where it flows into Kennedy lake.

Transportation.—The group is at present reached by launch from Tofino village to the Clayoquot Cannery on Tofino arm; thence by canoe up the rapids on lower Kennedy river to the outlet of Kennedy lake, and from thence by launch to the mouth of upper Kennedy river, and from there by trail about 5 miles long to the southerly bank of an unnamed creek, a tributary of the Kennedy river. From the last point to the outcrop of the main vein there is a stiff climb of about 500 feet up the mountain-side near the creek, as the creek-bed cannot be travelled owing to its being in a very deep canyon.

Geology.—The rock formations on the *Grant* group belong to the Vancouver group of volcanics, in a shear-zone in which occurs a system of very persistent quartz veins. The most persistent of these is exposed in the bed of the creek referred to, and strikes nearly east, while another strikes N. 20° E. and should form a junction with the vein in the creek-bed, but the banks are so precipitous, forming a canyon about 200 feet deep, that it has not been possible to determine the point of junction or to prospect in the creek-bed near where the junction should occur.

There is apparently quite a wide shear-zone in the country-rock, the shearing movement having been so violent that near the quartz veins the structure of the country-rock approaches a schist. The walls of the veins, which dip almost vertical, are slickensided, and usually there is gouge material between the vein-filler and the walls.

Ore-deposits.—Gold-bearing quartz float was found on this mountain-side and in the bed of the unnamed creek, about twenty years ago, by Lachland Grant and W. N. Kenyon on a claim staked by Kenyon, which is now called the *James Grant* of the *Grant* group and is owned by

Anthony Watson. Kenyon constructed an arrastra, the ruins of which can be seen to-day, about 300 feet vertically above the main Kennedy River trail and about 1,500 feet easterly from the main trail, and started work on a quartz vein 4 feet wide, with strike of N. 20° E. (mag.) and dip vertical. After operating the arrastra for some months on the *James Grant* it was found that the proportion of the ore which was free-milling was too small to give satisfactory returns from treatment in the arrastra.

The workings from which the ore was taken and milled in the arrastra were a deep open-cut and shallow shaft on the vein known as the cross-lead. A sample taken from an open-cut where this quartz vein is 4 feet wide, and from the face of the cut about 8 feet deep, assayed: Gold, 1.30 oz.; silver, 0.70 oz. to the ton; copper, 1.6 per cent.

There is a considerable flow of water in the creek, the bed of which is a series of precipitous falls and sampling the vein is quite a difficult proposition, so much so that I was only able to obtain two samples, one of which, across 18 inches, assayed: Gold, 0.34 oz.; silver, 1.2 oz. to the ton; copper, trace. The second sample, taken from the same fissure 2 feet wide and about 150 feet farther up the creek and nearly 100 feet higher elevation, assayed: Gold, 0.30 oz.; silver, 0.2 oz. to the ton; copper, trace.

This group contains the *Blue Bird* and *Blue Jay*, the former being owned **Blue Bird Group.** by Miss Winifred Dixon and the latter by William Spittal, both of Tofino.

The group is located about 5 miles up Kennedy river from the mouth and on the west side.

Ore-deposits.—The ore-deposits on the *Blue Bird* group occur as lenticular veins in a wide shear-zone which in places is upwards of 40 feet wide. The main vein in the shear-zone where exposed on the *Blue Bird* can be traced on to the adjoining *Blue Jay*, occurring between schistose walls dipping vertically, conformable with the shearing-planes in the zone.

The vein is principally quartz and the mineralization consists of chalcopyrite and iron pyrite, with some arsenopyrite. A sample taken from an open-cut in a steep bank of an unnamed creek assayed: Gold, 0.06 oz.; silver, 1 oz. to the ton; copper, 0.7 per cent. Another sample, taken from apparently the same schistose shear-zone and possibly from the same quartz vein as the first-mentioned sample was taken, but from a point about 1,200 feet farther up the creek, assayed: Gold, 0.30 oz.; silver, 0.1 oz. to the ton; copper, trace.

William Spittal, who has done all the work on the claims, has also built a cabin on a bench near the river.

While samples can be taken from the quartz veins in the vicinity of the Kennedy river carrying fair values, it is a serious question whether under the present conditions ore that carries values averaging less than \$10 a ton "run of mine" can be mined and treated successfully.

North-westerly from the Kennedy River section there is practically nothing known by white men of the interior of the island for a distance of approximately 100 miles, or to the vicinity of the streams and lakes that flow into Quatsino sound; the average width of this unexplored area is approximately 20 miles. This region may be described as very mountainous, some of the peaks as viewed from either coast having elevations 6,000 feet and over.

Quite a large area of this unexplored section is included within the boundaries of the Clayoquot Mining Division, and the western fringe has been prospected to some extent at and near the headwaters of the Clayoquot river, which empties into the Clayoquot arm of Kennedy lake; Tofino creek, which empties into the head of Tofino inlet; Tranquil creek, which empties into Tranquil arm of Tofino inlet; Bedwell river, which empties into Bedwell sound; Sidney inlet; Hesquoit lake; Gold river, which empties into Muchalat arm of Nootka sound; Tahsis river, which empties into the head of Tahsis canal; Zeballos river, which empties into the head of Zeballos arm, Nootka sound; Tahsish river, which empties into Tahsish arm of Kyuquot sound; and Kokshittle river, which empties into the head of Kokshittle arm of Kyuquot sound. The prospecting in these sections has not been very thorough, except at Sidney inlet, where the Tidewater Copper Company, Limited, has been operating the *Indian Chief* mine, and the head of Tahsis canal, where William Poole has been prospecting and developing the *Star of the West* group of mineral claims.

There has been no detailed geological survey of the area just referred to, but the west coast line north-westerly from the Alberni canal was examined during 1917, 1918, 1919, and 1920 by Victor Dolmage, of the Geological Survey, but his examinations only included the vicinity of

Quatsino sound. His reports are found in the Summary Reports, Geological Survey, for the years mentioned, and are very thorough so far as the country adjacent to the coast-line is concerned.

The easterly coast-line of Vancouver island has not been examined in detail by any member of the Geological Survey north-westerly from Comox harbour since the examination made by the late Dr. Dawson in 1885, and so far as I can learn the interior from the easterly coast-line north-westerly from Comox harbour to the vicinity of Port Hardy, near the north-westerly end of Vancouver island, is practically an unexplored country.

NOOTKA SOUND SECTION.

This group contains the *Hakadato*, *Wolverine*, and *Star of the West* mineral claims, situated on the westerly side at the head of Tahsis canal. The property is owned by William Poole and T. T. Gardhouse, of Nootka. The *Star of the West* claim is about 1,600 feet from the shore of the canal. The space between the shore and the claim was staked as the *Tahsis* in the name of J. E. Leckie, of Vancouver, in April, 1923, but no prospecting-work had been done on it when I examined the claim in July last.

The head of Tahsis canal is about 4 miles northerly from Tahsis narrows, which connects the canal with Esperanza inlet and the open Pacific ocean and forms the northern boundary of Nootka island.

Geology.—The geologic formations in the vicinity of Nootka sound are described generally by Victor Dolmage in Summary Report, 1920, Part A, "West Coast of Vancouver Island between Barkley and Quatsino Sounds," Geological Survey of Canada.

In his report Dolmage does not describe the geology along Tahsis canal in detail, except in referring to the marble-quarries in Deserted creek. He considers the Vancouver group as being the oldest geologic formation and generally the most widely distributed. It is observable along the Tahsis canal that on the easterly side there extends a lofty range of mountains made up almost entirely of crystalline limestone, with numerous igneous dykes as intrusions, that are so prominent that they can be seen from boats on the canal. It appears as though the canal marked the line of contact between this limestone and the Vancouver volcanics which predominate on Nootka island along the westerly side of the canal.

The limestone-belt crosses the canal and extends in a westerly direction from near the head, with the contact between it and the volcanic rocks of the Vancouver group on both its northerly side as well as on the southerly side occurring on the *Star of the West* group.

Ore-deposits.—The occurrences of ore on the *Star of the West* group belong to the contact-metamorphic type of ore-bodies, but do not occur exactly at the contact of limestone and igneous rocks. The ore-outcroppings were first found on the *Star of the West* about 125 feet westerly from the No. 1 post, where the occurrence is about 6 feet wide and is exposed along the westerly strike for some considerable distance, as is demonstrated by the series of open-cuts, in addition to a 12-foot prospecting-hole, in which the ore occurs apparently as a replacement of limestone which is very much altered and broken up. The dip of the ore-body is 85° towards the north and the outcropping occurs at an elevation of about 450 feet above sea-level. A general sample taken from the prospect-hole assayed: Gold, 0.24 oz.; silver, 1 oz. to the ton; copper, 9 per cent.; zinc, 14 per cent.

The mineralization of the ore deposit is chalcopyrite, associated with some pyrite, pyrrhotite, a little galena, and zinc-blende. The gangue in which this ore occurs is quartz and calcite.

Up to the time of my visit no outcroppings of ore had been discovered on the *Wolverine* mineral claim, which adjoins the *Star of the West* on the westerly side, but after crossing the *Wolverine* and passing the No. 1 post on the adjoining *Hakadato* claim, 600 feet westerly from the No. 1 post and near the location-line, the outcroppings of an ore-deposit have been exposed at an elevation of about 1,500 feet above sea-level. The continuity of this ore-body has been traced by open-cutting for about 135 feet, chiefly in a bluff made up for the most part of garnetite with intrusive igneous dykes, one very prominent dyke, being about 18 inches wide in the face of a long crosscut. This dyke divides the ore-body as exposed into two parts, each being about 30 inches wide, practically at right angles to the strike of the ore-body. A general sample from the face of the open-cut, but not an average of the entire ore-body, assayed: Gold, 0.16 oz.; silver, 1.5 oz. to the ton; copper, 16 per cent.

The mineralization of this ore-body is chalcopyrite, associated with some pyrite, pyrrhotite, occasional crystals of galena, but no zinc-blende visible to the eye. In this characteristic the ore on the *Hakadato* mineral claim appears to vary from that on the *Star of the West*.

noticeable, and the fact that at the contacts between these and the granodiorite intrusives there occurs more or less mineralization. The stratified rocks are schists, quartzites, argillites, and limestones. The mineralization is made up chiefly of chalcopyrite and iron pyrite, occurring in a siliceous gangue. Sometimes, as on the *Della* group, there occur fissures in the igneous rock filled with gold-bearing quartz veins, but this characteristic appears to be unusual, and to the writer's knowledge is only found as a rare occurrence.

CLAYOQUOT MINING DIVISION.

The Clayoquot Mining Division, for the purpose of this report, has been divided into the following sections: Tofino section, comprising Kennedy Lake and Deer Creek subsections; Central West Coast section, subdivided into Bedwell Sound, Ahousat, Sidney Inlet, and Nootka Sound subsections.

Despite the fact that the Clayoquot Mining Division was formerly much prospected, as it was quite a popular resort for prospectors about twenty years ago, it cannot be claimed that the Division has been much more than scratched over, and there are excellent opportunities for prospecting parties to explore the mountains at the heads of creeks which flow into the several inlets and arms of the sea. Transportation in the Clayoquot Mining Division is quite easy, as there are so many miles of inside protected waters where small boats or canoes can be used, as well as Kennedy lake, one of the largest lakes on Vancouver island.

The Clayoquot Mining Division probably still contains a greater area of unexplored territory than any other of the Mining Divisions on Vancouver island, except that portion of the Nanaimo Mining Division in which is situated Strathcona Park. The highest range of mountains on the island, which forms the watershed between the streams that flow to the easterly coast and those that flow towards the westerly, also forms the dividing line between the Clayoquot and Nanaimo Mining Divisions and is the backbone of the island.

The geologic conditions in this range of mountains are somewhat similar to those in the Coast range so far as known at present, being made up of masses of eruptive rock, mainly granodiorite, with some broad bands of stratified rocks which have been intruded by the eruptives. The contacts of these bands of stratified rocks with the granodiorite are more or less mineralized, with copper minerals, usually chalcopyrite, predominating.

TOFINO SECTION.

Kennedy Lake Subsection.

The Kennedy Lake subsection of the Clayoquot Mining Division contains some of the earliest discoveries of lode minerals, especially gold, that were made on Vancouver island. As far back as 1899 a concentrating plant was installed on the *Rose Marie* mine, now known as the *Rose* group, by the late Barclay Bonthrone for an English syndicate. This property is located on Elk river, near the head of Kennedy lake, and was described by the writer in the Report for 1916, since which time it has been idle.

Several other mineral claims have been located near the *Rose*, on which fissure-veins filled with gold-bearing quartz occur. A small mill was operated some years back on the *Leora* claim, which was also described in the Report mentioned.

There is no doubt but that the vicinity of Elk river would be found to be a good section to prospect, provided transportation facilities for hauling ore and supplies were opened up between that river and Taylor river, which flows into Sproat lake, in the Alberni Mining Division. At the present time the prospects on Elk river, of which there are several, are handicapped to a greater extent than many other sections on the west coast of Vancouver island, because of lack of good transportation facilities.

The present route to reach Elk river is by steamer from Victoria to Clayoquot sound; launch from there to the mouth of Kennedy river; canoe or small boat up the rapids to Kennedy lake; boat up the lake to the mouth of Elk river; canoe up the river about two miles; then trail to the prospects. At some seasons a canoe can be taken about four miles farther up the river, but during high water or very low water it is not advisable to attempt to take a canoe farther than the first two miles.

During the summer of 1918 the writer attempted to make a thorough examination of all the prospects on Elk river, but on account of the extremely low water was unable to take a canoe up, and found the old trail impassable, so was compelled to abandon the trip.

apparently of quartz carrying pyrite, the latter not exceeding 1 per cent. of ore. The return obtained is, however, above the average value of the ore in the mine."

The writer took a cold-blooded average across 16 inches, the width of the vein at the face of the adit, in June, 1916, which assayed: Gold, 0.06 oz.; silver, 1.2 oz.; copper, trace.

This mineral claim is on the east side of Elk river, about two miles above

Leora. its mouth. The claim is owned by D. W. Hanbury and associates, of Victoria.

During 1914 and 1915 the property was operated by W. W. Gibson, of Victoria, who erected a small quartz-mill, designed similar to the type known as the "Chilean" mill, in which he treated a considerable tonnage of free-milling quartz, and is reported to have saved about \$9 in gold to the ton.

When the writer visited the property in June, 1916, all work was suspended, and there was no one in charge. The mill and camp buildings had been wrecked by the weight of snow during the previous winter. The workings consist of a shaft, an adit 350 feet long, and a winze. The shaft was full of water, and, although the drift-adit was examined, but little material information could be obtained, because all of the workable ore that could be found had been stoped, both from above and below the adit level, from the portal to the winze, 120 feet from the portal. The winze was full of water, as well as the underhand stope. The country-rock is diabase and is very much altered and sheared. In places the shearing action has been so great that the rock is almost a schist. A quartz vein occurs filling a fissure that is very persistent. The width of the vein varies from 12 to 18 inches for the length it has been stoped, but it maintains its continuity for about 225 feet longer, or to the face of the adit. The width of the vein beyond the winze is much narrower than from the portal of the adit to the winze, and no attempt has been made to carry stoping beyond that point. The walls of the vein are well defined, and there is a narrow seam of gouge between the wall-rock and the quartz. The strike is nearly true east and dip about 50 degrees to the north.

The *Leora* claim was examined by D. G. Forbes, M.E., in 1913, whose report was published in the Minister of Mines' Report for that year. Forbes reported that a sample taken from near the winze assayed "1.4 oz. in gold to the ton." The mineralization consists of iron pyrites and arsenopyrite in a gangue of quartz and calcite.

Other Mineral Claims.—There are several mineral claims located within a few miles of the mouth of Elk river, farther up the river than the *Rose* group, to which trails were built some years ago when prospecting-work was being carried on.

At the time the writer visited this section, in the beginning of July, 1916, these trails were so thoroughly obliterated by the excessive growth of underbrush and downed timber that several weeks' time and a force of four or five men would have been required to clear out the trails, so that they could be travelled, and, as no work has been done on any of the claims since they were examined by D. G. Forbes, M.E., in 1913, the writer did not consider he would be justified in incurring the expense necessary to enable him to reach them. The following extracts are made from the report of Mr. Forbes, published in the Minister of Mines' Report for 1913:—

"*Bessie B.*—The *Bessie B.* mineral claim is situated a quarter of a mile west of Elk river and two miles and a half from Kennedy lake, and at an elevation of 175 feet above the lake. No defined ledge has been found on this property, but some work has been done on a diabase dyke, in porphyry, bearing S. 45° W. (mag.), which contains some small quartz stringers from which good assay values in gold have been obtained.

"The principal exposure is in a bluff some 50 feet high, in which the quartz stringers can be seen in the dyke, dipping from 75 to 80 degrees to the north-west. It appeared to the writer that these occurrences were due to cooling cracks in the dyke, which had since been filled with quartz.

"An open-cut has been put in some 50 feet in length on one of these stringers, a tunnel driven 15 feet, and at the time of my visit, June, 1913, a winze had been sunk 16 feet, and was still being continued in the hope that the stringers exposed above would come together and form a quartz of workable size.

"*Bear Group.*—The *Bear* group of mineral claims is situated at an elevation of 500 feet above Kennedy lake, and half a mile west from Elk river and three miles and a half from its mouth. The group, which consists of three claims, *Black Bear*, *Cinnamon Bear*, and *Grizzly Bear*, is owned by W. Wilson, Jno. Irving, and Spidal.

"The principal development-work has been done on the *Cinnamon Bear* claim, a tunnel being driven 246 feet on a strong quartz ledge 3 to 4 feet wide; strike S. 60° W. (mag.), dipping 45 to 50 degrees to the north-west. The gangue is quartz, feldspar, and calcite, and the mineralization pyrite and arsenopyrite. The best ore is said to be 1 foot wide on the foot-wall. The diorite foot-wall and porphyry hanging-wall can be traced on the surface for 400 feet. The hanging-wall is soft, decomposed vein-matter, in which the tunnel has been driven. The tunnel is in an unsafe condition, the soft material in the hanging-wall having 'winded' and several falls taken place. An average sample of the ore assayed 0.10 oz. gold.

"*Ruth*.—The *Ruth* mineral claim is situated about 1,800 feet south-east from the *Bear* group at an elevation above Kennedy lake of 600 feet, and shows a quartz vein 18 inches to 2 feet in width, exposed for about 100 feet on the surface; a small diabase dyke accompanies the ledge on the foot-wall; the hanging-wall is porphyry. Limestone occurs from 6 to 10 feet to the eastward of the ledge; no development-work has been done. Strike N. 30° E. (mag.); dip 75 degrees to the south-east. The gangue is quartz and the mineralization pyrite and chalcopyrite. An average sample assayed: Gold, trace; silver, 2.8 oz.; copper, 1.9 per cent.

"*Olympic*.—The *Olympic* and *Titanic* mineral claims are situated half a mile west from Elk river and four miles from Kennedy lake, at an elevation of from 350 to 450 feet. A quartz ledge shows up in these claims, having a strike N. 78° E. and dipping to the north-west. No development-work has been done; the outcrop shows a little pyrite and chalcopyrite. The claims are intersected by a creek running in a deep canyon, and, owing to high water, it was not possible to visit the other outcroppings of this ledge. From an exposure farther up the creek a sample over a width of 20 feet is said to have yielded \$20 in gold. A sample taken on the *Olympic* claim assayed 0.03 oz. a ton in gold.

"All the claims visited were situated at comparatively low elevations within easy reach of Elk river, and, as far as could be ascertained, very little prospecting has been done, and no claims located higher up the mountains, which rise on both sides of Elk river to a height of 3,000 to 4,000 feet.

"The ledges have all been located on or near diabase porphyry, their strike being approximately, in most cases, about N. 45° E. (mag.).

"This belt appeared to be about two miles in width, bounded by limestone, and striking in about the same direction, and it appeared to the writer to be a section of country that is well worth further attention from the prospector."

This group consists of eighteen full-sized and fractional Crown-granted

B.C. Wonder. mineral claims, owned by General James M. Ashton, of Tacoma, Wash., U.S.A.

The claims are located in a block comprising a surface area of 633 acres on Tranquil creek, which flows into Tofino Inlet north from and nearly opposite to the Brewster Cannery. The writer visited the *B.C. Wonder* group of mineral claims in the early part of July, 1916, after General Ashton had sent three men on to the property to clear out the trails and mine-workings, on which no active operations have been carried on since about 1903. These men also had instructions to assist in the examination by guiding the writer to the various showings and openings; consequently he was not handicapped as Mr. Forbes had been in 1913, when he (Forbes) was unable to find all of the workings in the absence of any guide acquainted with the property.

A mill and terminal site comprising about 75 acres of Crown-granted land, located at the head of Tranquil arm of Tofino sound, is also owned by General Ashton, and is the starting-point of the main trail leading to the various claims. Surveys have been made for a main line aerial tramway 12,800 feet long to connect the terminal with the *Gen. James M.* mineral claim, also for branch tramways to the *American Wonder* and *Iron Duke* claims.

After leaving the beach terminal a wide belt of igneous rock is traversed to a point about midway on the *Iron Duke* claim, where a contact occurs between the igneous rock and crystalline limestone. This contact appears to extend across several claims in a north-westerly direction to that boundary of the *B.C. Wonder* group, and in a south-easterly direction across the divide between Tranquil and Deer creeks. The ore so far found on the *B.C. Wonder* group occurs on this contact as isolated lenses of undetermined extent.

The principal showings of ore occur on the *Iron Duke*, *American Wonder*, and *Gen. James M.* claims, on which all of the work has been done.

wharf-sites for shipping facilities. Since 1896 this part of Vancouver island has been a popular section for prospectors to explore, but up to the present time there has only been one property (the *Indian Chief* group, on Sidney inlet) that has ranked as a producer on a commercial scale. There are several reasons for this condition, foremost among which is lack of systematic development-work. There are many Crown-granted mineral claims in the Clayoquot Mining Division that were located years ago, and on which were discovered outcroppings and lenticular bodies of copper-bearing ore of good grade, which have lain idle since the Crown grants were issued. In some cases on account of the lack of sufficient capital to carry on the development-work necessary to determine extent of ore-bodies, and also because of the cost of installing the shipping facilities.

The high price of copper since 1915 has caused a revival in the lode-mining industry, which has resulted in causing the reopening of the workings on some of these old locations, and has also been responsible for the visits of several mining engineers, who have been making examinations and in some cases bonding groups of mineral claims for their principals.

The contact-metamorphic replacement type of ore-deposits prevails almost universally in the Clayoquot Mining Division, except in the neighbourhood of the mouth of the Elk river, which flows into Kennedy lake, at the head of the North-east arm, where there are some well-defined fissure-veins filled with gold-bearing quartz.

The most prominent illustration of this quartz-vein type of ore-deposits is found on the *Rose* group of mineral claims, containing the *Rose*, *Maggie*, *Marie*, and *Sadie*, owned by Anthony Watson, of Port Alberni, and associates. The property is reached by steamer which sails four times each month from Victoria to Clayoquot settlement, on Stubbs Island, the headquarters for the Gold Commissioner and Mining Recorder; thence by launch to the mouth of the Kennedy river, which flows into Tofino Inlet near the Brewster Cannery; from there up the Kennedy river and through the rapids by canoe into Kennedy lake; then up the lake to the head of the North-east arm, and on to the rapids in the Elk river, about three miles from its mouth.

Kennedy lake is navigable for light-draught steamers and scows, as is also Kennedy river except through the rapids. The harbour at the cannery affords most excellent anchorage for fairly deep-draught vessels; consequently the transportation facilities from the *Rose* group are good, except through the Kennedy rapids, a distance of about 500 yards, around which a surface tramway can easily be built with a grade of about 20 feet in that distance.

The *Rose* group is located on a portion of the ground located in 1897 as the *Rose Marie* group of eight mineral claims, on which a concentrator plant was erected in 1898, and worked for about two years by the Rose Marie Mines, Limited, but later the title was allowed to lapse and the present locations were made. The heavy snows of the winter of 1915-16 ruined the concentrator and camp buildings, as well as the machinery.

The mine-workings consist of open-cuts and an adit driven about 400 feet long in the direction of the line of strike of a well-defined fissure vein, varying from 15 inches to 2 feet in width in diabase rock, with a slight porphyritic structure, at an elevation of nearly 1,000 feet above sea-level. The strike of the vein is N. 70° E. and dip about 60 degrees N. 20° W. The open-cuts are about 200 feet higher elevation than the adit; they are made along the outcroppings, and the ore mined from them was treated in the concentrating-mill in 1899. The outcrop of the vein can be traced by the open-cut and outcroppings beyond that work for a distance of approximately 1,000 feet. There is approximately 200 tons of ore on the dump at the entrance to the adit.

The quartz vein is banded and mineralized with iron pyrites and some arsenopyrite. The oxidized quartz pans a fair prospect in free gold, and the vein-matter has the appearance of forming an ideal ore for treatment by concentration. The values in the ore vary very considerably, as is usual with gold-bearing quartz ores.

Herbert Carmichael, who made an examination in 1899, and whose report was published in the Minister of Mines' Report for that year, states that the ore carries about \$12 in gold to the ton.

D. G. Forbes, M.E., who examined the property in 1913, and whose report was published in the Minister of Mines' Report for the year, obtained a sample from the then face of the adit that assayed 1.5 oz. in gold to the ton, but states: "The sample was a fair average sample taken in the face of the tunnel at the time of my visit. It showed no visible free gold, consisting

found, but it is probable that the values are rather irregular; no stoping has been done on this level. The lower tunnel, at an elevation of 375 feet, has been driven 210 feet on the ledge and is still being continued although at the time of my visit there was no ore in the face. However as the 475-foot tunnel showed ore for a much greater distance into the mountain, it is hoped that it will again be found in the 375-foot tunnel. At 125 feet in on this level a stope has been started, and ore is being broken, hand-sorted, and sent to the smelter.

In this tunnel, at about 130 feet from the portal, a cross-course with a clay gouge has been followed a considerable distance into the foot-wall, but so far, without results. A sample of ore, sorted ready for shipment, assayed: Gold, 0.40 oz.; silver, 6.4 oz.; copper, 7.1 per cent.

The *Leora* group of mineral claims, owned by Hanbury & Bowes, of
Leora. Victoria, is situated on the east bank of Elk river, about two miles from Kennedy lake. This lake is situated two miles south of Tofino inlet, Clayoquot sound. The principal development-work consists of a tunnel 340 feet long, situated about 1,000 feet from the river; this tunnel has been driven on a small ledge, from 6 to 12 inches wide, with diabase walls, striking N. 72° E. and dipping at an angle of 55 degrees to the north-west, exposed in the creek near the portal of the tunnel. At 117 feet in the tunnel a winze has been sunk on the ledge, in which it is said that better values and a wider ledge were found. This winze was full of water, and I was unable to inspect it. A small shipment has been made from this winze which yielded a return of over \$100 per ton.

Very little ore was visible after passing the winze in this tunnel, although the wall is well defined, dipping from 45 to 55 degrees to the north-west. It appeared to the writer that it is possible that the ledge had been left in the hanging-wall at some point near the winze, and that it might be found by excavating in the hanging-wall at the face of the drift.

The country-rock appeared to be much shattered, very heavy movement having taken place along the strike of the ledge. Mineralization consisted of pyrite, arsenopyrite, and the gangue of quartz and calcite. A sample taken near the winze assayed 1.4 oz. gold to the ton.

The *Bessie B.* mineral claim is situated a quarter of a mile west of Elk
Bessie B. river and two miles and a half from Kennedy lake, and at an elevation of 175 feet above the lake. No defined ledge has been found on this property, but some work has been done on a diabase dyke, in porphyry, bearing S. 45° W. (mag.), which contains some small quartz stringers from which good assay values in gold have been obtained.

The principal exposure is in a bluff some 50 feet high, in which the quartz stringers can be seen in the dyke, dipping from 75 to 80 degrees to the north-west. It appeared to the writer that these occurrences were due to cooling cracks in the dyke, which had since been filled with quartz.

An open-cut has been put in some 50 feet in length on one of these stringers, a tunnel driven 15 feet, and at the time of my visit, June, 1913, a winze had been sunk 16 feet, and was still being continued in the hope that the stringers exposed above would come together and form a body of quartz of workable size.

The *Rose Marie* group of mineral claims, including the *Rose*, *Maggie*,
Rose Marie. *Marie*, and *Sadie*, is owned by Messrs. Watson and others. The lower camp on Elk river is situated three miles from Kennedy lake, at an elevation of 50 feet above sea-level.

The claims are located on a small quartz vein, from 15 to 18 inches in width, on the east side of Elk river. The vein strikes N. 34° E. (mag.) and dips from 64 to 68 degrees to the north-west. The vein is located in porphyritic diabase and contains pyrite, with traces of arsenopyrite.

On the top of the first bench, 1,000 feet above the river, some prospecting-work has been done by open-cuts; the ledge in places showing a width of 2 feet.

The principal development-work consists of a tunnel driven on the ledge at an elevation of 695 feet above Kennedy lake. This tunnel has been driven for 438 feet N. 34° E. (mag.), the ledge varying in width from 15 to 18 inches of kindly-looking mineralized ribbon quartz. A sample taken from the face of this tunnel assayed 1.50 oz. gold to the ton. I was able to pan some free gold from the oxidized ore on the dump.

The sample mentioned above was a fair average sample taken in the face of the tunnel at the time of my visit. It showed no visible free gold, consisting apparently of quartz carrying pyrite, the latter not exceeding 1 per cent. of the ore. The return obtained is, however, above the average value of the ore in the mine.

The ore is amenable to ordinary "free-milling" and cyanide treatment, and could be worked on the spot, more than sufficient water-power being available for all purposes. The mine is not large enough to stand expensive company management, but there is no reason why it should not have a successful future if worked economically as a small enterprise.

The *Bear* group of mineral claims is situated at an elevation of 500 feet above Kennedy lake, and half a mile west from Elk river and three miles and a half from its mouth. The group, which consists of three claims, *Black Bear*, *Cinnamon Bear*, and *Grizzly Bear*, is owned by W. Wilson, Jno. Irving, and Spidal.

The principal development-work has been done on the *Cinnamon Bear* claim, a tunnel being driven 246 feet on a strong quartz ledge 3 to 4 feet wide; strike S. 60° W. (mag.) dipping 45 to 50 degrees to the north-west. The gangue is quartz, feldspar, and calcite, and the mineralization pyrite and arsenopyrite. The best ore is said to be 1 foot wide on the foot-wall. The diorite foot-wall and porphyry hanging-wall can be traced on the surface for 400 feet. The hanging-wall is soft, decomposed vein-matter, in which the tunnel has been driven. The tunnel is in an unsafe condition, the soft material in the hanging-wall having "winded" and several falls taken place. An average sample of the ore assayed 0.10 oz. gold.

The *Ruth* mineral claim is situated about 1,800 feet south-east from the *Bear* group at an elevation above Kennedy lake of 600 feet, and shows a quartz vein 18 inches to 2 feet in width, exposed for about 100 feet on the surface; a small diabase dyke accompanies the ledge on the foot-wall; the hanging-wall is porphyry. Limestone occurs from 6 to 10 feet to the eastward of the ledge; no development-work has been done. Strike N. 30° E. (mag.); dip 75 degrees to the south-east. The gangue is quartz and the mineralization pyrite and chalcopyrite. An average sample assayed: Gold, trace; silver, 2.8 oz.; copper, 1.9 per cent.

The *Olympic* and *Titanic* mineral claims are situated half a mile west from Elk river and four miles from Kennedy lake, at an elevation of from 350 to 450 feet. A quartz ledge shows up in these claims, having a strike N. 73° E. and dipping to the north-west. No development-work has been done; the outcrop shows a little pyrite and chalcopyrite. The claims are intersected by a creek running in a deep canyon, and, owing to high water, it was not possible to visit the other outcroppings of this ledge. From an exposure farther up the creek a sample over a width of 20 feet is said to have yielded \$20 in gold. A sample taken on the *Olympic* claim assayed 0.03 oz. a ton in gold.

All the claims visited were situated at comparatively low elevations within easy reach of Elk river, and, as far as could be ascertained, very little prospecting has been done, and no claims located higher up the mountains, which rise on both sides of Elk river to a height of 3,000 to 4,000 feet.

The ledges have all been located on or near diabase dykes which cut through a diabase-porphry, their strike being approximately, in most cases, about N. 45° E. (mag.).

This belt appeared to be about two miles in width, bounded by limestone, and striking in about the same direction, and it appeared to the writer to be a section of country that is well worth further attention from the prospector.

After leaving Kennedy lake district a visit was paid to Deer river, at the head of Tofino inlet, and half a day was spent looking for trails to the *Jumbo* mine and other claims. As nothing could be found, we left for Tranquil creek in the afternoon. On June 24th a start was made early in the morning up the trail to visit General Ashton's claims. Included in the group are *General James M., Faith, Leviathan No. 1 and No. 2,* and the *Leviathan Fraction.*

At an elevation of 2,025 feet above sea-level, and about four miles from it, a small blow-out of pyrrhotite and chalcopryite was located; about 7 tons of ore had been broken, but there appeared to be no more in place. A short tunnel had been driven across the diabase country-rock, but no more ore was located. The remainder of the day was spent searching for other workings, but, as nothing was found, a return was made at dark to the sea.

ALBERNI MINING DIVISION.

JOHN KIRKUP, GOLD COMMISSIONER.

I have the honour to submit the annual report on mining in the Alberni Mining Division during the year ending December 31st, 1913.

Although practically no mining was done in the district the past year, the Ptarmigan Mines, an English company, which has taken over the property known as the *Big Interior* group, has expended quite a large sum of money on road-making to permit of machinery being taken to the property, and it is quite probable that during the coming season a large amount of development-work will be done on this property, and possibly some shipments of ore may be made.

With the exception of the work mentioned, little or nothing has been done, but the annual assessment-work on a number of claims as shown in the accompanying statistics.

OFFICE STATISTICS—ALBERNI MINING DIVISION.

Placer claims recorded	4
Mineral claims recorded	23
Certificates of work	47
Bills of sale, etc., recorded	4
Free miners' certificates (individual)	72
" " (special)	2

Revenue.

Free miners' certificates	\$ 107 75
Mining receipts, general	1,431 30
	\$1,539 05

Payments in lieu of assessment-work was made on the following: *Island Belle Nos. 1 and 2, Iron King, Pete, Ivanhoe, Double Standard, Gordon, Hollinger, Rose, Mamie, Maggie, Sadie.*

CLAYOQUOT MINING DIVISION.

NOTES BY H. CARMICHAEL, PROVINCIAL ASSAYER.

Rose Marie Group. This group of mineral claims is situated on the left bank of Elk river about four miles from the mouth. The property was reported on by the Provincial Assayer in 1899. A quartz vein outcrops on the steep mountain-side, but is covered at the bottom by an extensive rock-slide; the vein, which shows from 15 to 24 inches wide on the surface, had been prospected by the original owners by a series of open-cuts extending to the top of the mountain, at an elevation of 1,000 feet, and on to the top for 100 or 200 feet; these owners also erected a small crushing plant and concentrator.

Owing to a dispute as to title, and other reasons, the property lay for a long time without further development, but recently other parties started a tunnel several hundred feet up the mountain, where the vein showed the best ore.

This tunnel has been driven directly into the hillside on the strike of the vein for a distance of 307 feet; the vein is clearly defined throughout the entire length and has an average width of 18 inches.

The mineralization is pyrite and arsenopyrite, with a few specks of chalcopyrite showing here and there. A sample taken recently by a mining engineer, and said to represent a fair average of the ore in the tunnel, gave a value of \$12 a ton, nearly all in gold.

Leora Mineral Claim. Owned by Hanbury & Bowes, Victoria. This property is situated on the left bank of the Elk river about two miles from the mouth; the mine cabin is 300 or 400 yards back from the river. The mountains rise abruptly from the narrow valley of Elk river; at many points the slopes are precipitous. A small creek flowing into Elk river has exposed a quartz vein a foot wide mineralized with arsenical pyrites. To prospect this vein a tunnel has been driven 210 feet east (magnetic) following the strike of the vein, which runs into the mountain-side. The tunnel, for some distance, is in a shattered zone of diabase showing much slicken-siding and with a calcite filling, carrying a little arsenical pyrites along a well-defined hanging-wall.

At 75 feet from the tunnel portal a winze has been sunk 40 feet at an incline of 60 degrees. At the bottom of the winze there is 60 feet of drifting on the vein, which swells at one point to 2 feet wide, but at the face is only 6 inches.

After passing the winze there is no distinct quartz vein, but there is a distinct parting on the hanging-wall side. This may be the hanging-wall of the fissure or only a parting in the filling. The face shows pyrite and arsenopyrite, principally in calcite, with a little quartz and slicken-sided country-rock. The principal value is in gold; 8 tons of the best ore gave a smelter return of \$110.

The *Belvidere* and *Annex* claims, on Bear river, owned by A. E. Waterhouse, Alberni, were surveyed during the year.

One hundred dollars each, in lieu of assessment work, was paid on the *Island Belle No. 1* and *Island Belle No. 2*, situated at Elk river, and *Ivanhoe* and *Double Standard*, on Nootka sound, all owned by W. Wilson, Victoria.

Certificates of improvements were issued as follows: *Keiser* mineral claim, Elk river, to James Dunsmuir; *Cinnamon Bear* and *Grizzly Bear*, Elk river, to John Irving and E. Sundvall; *Black Bear*, Elk river, to John Irving; *Stormont*, *Glengarry*, and *Texas*, Head bay, Nootka sound, to James Dunsmuir and C. Dawley; *Ormond*, *Ormond No. 2*, *Ormond No. 2 Fract.*, and *Ormond No. 3*, on Flores island, to T. T. Gardhouse and J. Beck.

OFFICE STATISTICS—CLATOQUOT MINING DIVISION.

Free miner's certificates issued.....	27
Mineral claims recorded.....	21
Certificates of work recorded.....	37
Transfers, options, etc., recorded.....	16
Certificates of improvements recorded.....	11

Revenue.

Free miner's certificates.....	\$127 25
Mining receipts, general.....	621 40
Total.....	\$748 65

QUATSINO MINING DIVISION.

REPORT OF O. A. SHERBERG, MINING RECORDER.

I have the honour to submit my annual report of the mining operations in the Quatsino Mining Division for the year ending December 31st, 1909.

The mining situation in this Division remains practically unchanged since my report of last year.

The Crown-granted properties, held by companies, are lying idle, and the miners holding claims have not the means to push development work beyond the necessary annual assessment.

Certificates of improvements have been applied for on thirty mineral claims, situated on West arm of Quatsino sound, owned by James A. Moore, of Seattle, Wash.

The coal claims situated on the West arm of Quatsino sound and owned by the Quatsino Coal Syndicate, have been worked with a few men since the latter part of September.

OFFICE STATISTICS—QUATSINO MINING DIVISION.

Free miner's certificates.....	23
Mineral claims recorded.....	39
Certificates of work recorded.....	61
Bills of sale, powers of attorney, etc., recorded.....	33

Revenue.

Free miner's certificates.....	\$110 00
Mining receipts.....	388 90
Total.....	\$498 90

CLAYOQUOT MINING DIVISION.

REPORT OF W. T. DAWLEY, MINING RECORDER.

I have the honour to submit my annual report of the mining operations in the Clayoquot Mining Division for the year ending December 31st, 1903.

As compared with other years, there has been a large falling off in work, only a few of the properties having had more than their annual assessment work done.

Among the promising prospects in the district are the following :—

ELK RIVER AND KENNEDY LAKE.

The *Rose Marie Group*, owned by the Boseco Mines, Ltd., of Vancouver, has had, during the greater part of the year, further work done on its claims, viz., *Rose Marie No. 1, 2, 3, 4, 5, 6, 7 and 8*. This is a free-milling property, with a concentrator plant and good buildings erected on the ground.

The *Grizzly and Cinnamon Bear*, on Elk river, a little above the *Rose Marie Group*, are owned by John Irving, of Victoria, and C. Sundvall and A. Spittall, of Clayoquot. These claims were located in July, 1902, and work was commenced on them some months afterward, five certificates of work having been issued in favour of each location.

The *Edith Group* comprises three claims on Elk river, the property of T. Stockham and L. Grant, both of Clayoquot. Development work was performed on this group last spring and summer, with very promising results, over 100 feet of tunnelling, besides other development work, having been done.

The *Ironsides*, the property of G. I. Dunn, is a comparatively new find and from work done the showing is most satisfactory.

Other properties in the Elk river vicinity are the *Leora Group* and *Island Belle*, owned by J. Irving and W. Wilson, of Victoria; the *O. K. Group*, owned by T. G. Norgar, of Clayoquot; the *Post Group*, owned by W. H. Porter and W. Kershaw, of Clayoquot, and the *Clinax* and *Victoria*, owned by Paul and Antone Wollan, of Clayoquot.

BEAR RIVER.

The British Pacific Gold Property Co., Ltd., of Victoria, owns the *Seattle Group*, on Bear river, and has had men employed working and developing it for the best part of the year.

The *Corona* and *Belvidere Groups* are the property of Messrs. Hovelaque & Waterhouse, of New Alberni, and from year to year their assessment work has been done.

On the *Big Interior*, owned by Messrs. J. A. Drinkwater and Frederick Nichol, there is a large body of ore, but owing to its distance inland it has not received the attention and notice that it would have had if situated nearer to the sea coast.

SIDNEY INLET.

The *Indian Chief Group* is owned by the Dewdney Canadian Syndicate, and is a copper proposition. There are some tons of ore on the dump, and a large wharf was built during the year ready for shipping ore out in the early part of 1904.

The *Prince Group*, owned by a Scotch syndicate (Dr. T. R. Marshall, Mgr.), consists of eight claims, which are all Crown-granted. No work was done during the year, but it is understood that operations will be resumed during 1904.

Messrs. J. A. Jones, J. McInnis and J. Beck have promising properties close to and adjoining the two above-mentioned groups.

The Pacific Steel Company has continued development work on the Copper Island and Sarita iron properties.

On the *Linnet Group*, situated near Uchucklesit harbour, and owned by James Wilkinson, an outcrop about 40 feet wide, traceable for some 300 feet, has been discovered.

OFFICE STATISTICS—ALBERNI MINING DIVISION.

Free miners' certificates issued.....	88
Mineral claims recorded.....	64
Certificates of work issued.....	124
Certificates of improvements issued.....	21
Bills of sale, bonds, etc., recorded.....	45

Revenue.

Free miners' certificates.....	\$ 452 25
Mining receipts, general.....	1,380 40
Mineral tax.....	150 04
	<hr/>
	\$1,982 69

* CLAYOQUOT MINING DIVISION.

REPORT OF W. T. DAWLEY, MINING RECORDER.

I have the honour to submit my report of mining operations in the Clayoquot Mining Division during the year 1902.

By an Order in Council dated October, 1902, the West Coast Vancouver Island Mining Division was divided into the Clayoquot and Quatsino Mining Divisions. The following is the official description of the new Clayoquot Division:—

“Commencing at Amphitrite point; thence northerly, along height of land separating drainage area of those streams emptying into Pacific ocean north of such point from drainage area of those streams emptying into Barkley sound, following such height of land to a point where it intersects the height of land separating drainage area of those streams emptying into Pacific ocean on west from drainage area of streams emptying into Straits of Georgia on east; thence north-westerly along such divide to a point west of Conuma (or Woss) lake; thence south-westerly, on the height of land separating the streams draining into Kyuquot sound on the north from those draining into Esperanza inlet on the south, to Tatchu point; thence by Pacific ocean, including all Coast islands, to point of commencement.”

Mining operations during 1902 have not been as bright as they were in previous years, the only actual development work having been done at Quatsino sound, on the Yreka Copper Co.'s claims in the part of the Division now included in the Quatsino Mining Division.

In August last, Messrs. Frank and Hicks recorded some 13 claims in the Quatsino District for themselves and Mr. Henry Croft, of Victoria, but, so far, have done no work on them.

ELK RIVER AND KENNEDY LAKE.

Work has been carried on steadily throughout the year on the *Rose Marie Marie Group*, owned by the Boseco Mines, Ltd., of Vancouver. The claims, 8 in number, are named respectively *Rose Marie No. 1 to No. 8* and the

* Formerly, with the Quatsino Mining Division, known as the West Coast Vancouver Island Mining Division.

ore is a free-milling quartz. The values in gold are holding well, and the leads are widening with depth. It is rumoured that in the spring the Company will put on a larger force of men and use the stamp-mill which was erected on the property some years ago by the previous owners. Owing to litigation, work on this property had been at a standstill for some time.

The *Grizzly Bear* and *Cinnamon Bear* were located last July by Messrs. Spittall and Sundvall, of Clayoquot, who transferred an interest to Capt. John Irving, of Victoria. These claims have a continuous lead of gold-bearing quartz and the values are being well maintained as development proceeds. About 8 men are now working on these properties.

From the *Leora* claim, owned by Messrs. Kenyon, Grant and Russell, also on Elk river, 10 tons of quartz were shipped, in September last, to the Crofton smelter and gave a return of a little over \$40 to the ton.

Mr. T. G. Norgar owns some very promising claims in this District, and on the *Edith Group* of 3 claims, owned by Mr. Lachlan Grant, of Clayoquot, there are good showings of free-milling quartz.

At Ahousat fine showings of iron and copper ore are to be found on Matilda creek, a number of claims in this section being owned by Messrs. Watson, Sullivan and Ringland, by Messrs. Gardhouse and Beck, and by Messrs. Irving, Dawley and Poole. The annual assessment work has been performed on all these properties.

At Nootka large exposures of iron ore have been located and recorded on the Tahsis arm and at Head bay, Nootka sound. The claims are owned by Messrs. Hauger and Netherby, and Dawley, Grant and Poole. As these are practically new locations, little work has been done upon them outside the required assessment work.

BEAR RIVER.

This District has received a good deal of attention. The *Seattle Group* of claims has had a considerable amount of labour and money expended on it, work having been again resumed upon these properties after the lapse of considerable time. The group is owned by The British Pacific Gold Property Co., of Victoria.

In September last an ore-body, which is reported to be of very considerable extent, was located at the head of Bear river by Messrs. Drinkwater and Nichols, who have been prospecting in the vicinity for a number of years. The nature of the ore has not yet been determined, and owing to the lateness of the season the locators have only been able to cut a rough trail through, being prevented by the early heavy fall of snow this autumn from doing any work. As soon as the snow melts a thorough examination will be made.

On the *Belvide* and *Corona Group*, owned by Messrs. Waterhouse, Hovelaque and Von Brendel, of Alberni, assessment work has been steadily carried on for the last five years.

At Sydney inlet, Dr. T. R. Marshall has been carrying on development on the *Prince Nos. 1, 2, 3, 4, 5, 6, 7 and 8* claims nearly the whole year. The ore is a high-grade copper, but I understand from Dr. Marshall that he has now closed down work until he can get machinery installed. These properties are all Crown-granted.

The *Indian Chief Group* of five claims, on Sydney inlet, is owned by the Dewdney Canadian Syndicate. Work has been done from time to time during the year and a couple of hundred tons of ore are on the dump ready for shipment.

Messrs. J. W. Jones and J. McInnis are locators of the *Mountain Lion* and *Sahara* claims, which adjoin the *Indian Chief Group*.

At Deer creek, the *Hettie Green Group*, owned by Messrs. Thomson and Ward, of Alberni, has had extensive work done on it. The ore is yellow copper.

WEST COAST VANCOUVER ISLAND MINING DIVISION.

REPORT OF W. T. DAWLEY, MINING RECORDER.

I have the honour to submit my report of mining operations in the West Coast V. I. Mining Division during the year 1901.

The *Prince Group*, situate about 30 miles from Clayoquot, on Sidney inlet, is in charge of Dr. T. R. Marshall, and development work has been carried on continually during the year 1901, with satisfactory results.

The *Indian Chief Group*, in the same vicinity, is owned by the Dewdney Canadian Syndicate, Ltd., and much development work has been done, a road having been built through the property and continued on to the *Prince Group*. Application has been made for Crown grants.

TROUT RIVER.

The *Good Hope Group* is owned by the Helga Gold and Copper Co., and a large amount of development work has been done. A tunnel is now being run for 100 feet to tap the lode. Fine specimens of ore, of a very high grade, have been discovered. The property is situated about seven miles from Clayoquot, near the salt water.

DISAPPOINTMENT INLET.

The *Kalopa* claim is owned by Messrs. Jacobsen *et al.* A tunnel has been driven 100 feet, showing the lode the whole distance. The property has been bonded.

TRANQUIL CREEK.

A group of 18 claims, all Crown-granted, and owned by Gen. J. Ashton, of Tacoma, is situate about 30 miles from Clayoquot, and is considered a very valuable property.

DEER CREEK.

The *Hettie Green Group*, owned by James Thompson, of Alberni, is a very promising property. The ore consists of yellow copper and bornite.

Considerable development work has been done at Quatsino, Kyoquot, Hesquot and Nootka.

KENNEDY LAKE.

Several properties are being developed in this neighbourhood. W. N. Kenyon owns a group of four claims through which run three separate veins. These have been stripped and are shown to be continuous. The ore is free-milling, and an arrastra, to be run by water power, is under construction and will be put in operation in the spring.

WRECK BAY.

The black sand placer deposits at Wreck bay were worked during the year, but the season was bad owing to the heavy rains and seas, the surf coming up the beach to where sluicing was being carried on and greatly interfering with the operations. However, notwithstanding all drawbacks, some \$9,950 were recovered.

Twenty-two men were at work during the season, from April 1st to September 30th. Mining was then suspended and 800 yards of new flume were built.

NOTE BY PROVINCIAL MINERALOGIST.—The following report on the West Coast V. I. Division is contributed by Mr. Chester F. Lee, M. E. :—

“The mining boom of a couple of years ago has been succeeded by a marked depression in the West Coast of Vancouver Island Mining Division. This is the result of a widely expressed opinion that the west coast of Vancouver Island is merely a country of prospects.

This group consists of the *Rose Marie Nos. 1, 2, 3, 4, and 5*, and is owned by the Rose Marie Mines, Limited; head office, Vancouver; Barclay Bonthrone, manager. The property is situated on the eastern slope of Elk River, some little distance above the point where that river flows into Kennedy Lake, which, in turn, empties itself by Kennedy River into Tofino Inlet on the south-east side.

Deep-draught vessels can safely enter the mouth of Kennedy River, but can proceed no further, as a series of rapids, extending for some 500 yards and having a total fall of 9 feet at high water, renders it difficult, even with the highest tide, to pole a canoe up-stream against the current.

Kennedy River, from these rapids up to the lake, a distance of some 4 miles, is comparatively deep and tranquil, and is navigable for boats carrying freight, as also is Kennedy Lake for its full length of 14 miles. The width of the latter is 5 miles.

Elk River, which flows into the arm at the head of Kennedy Lake, is navigable, for canoes only, as far up as *Rose Marie Group*.

The mountain, upon the side of which the property is situated, rises abruptly above the water for some thousand feet, and, about half way up this slope, there outcrops a quartz vein, of from 15 to 24 inches average width, exhibiting a banded structure, and having well-defined walls standing out clearly and distinctly against the bluff. This vein has been traced up the side of the hill and, for a distance of over 100 feet, across the more level summit. It has, in places, a width of 3 feet.

Such development as had taken place, at the time of my visit, was confined to surface stoping and open cuts, no underground work having been done.

The quartz in the lode is mineralized with iron pyrites, occurring in streaks or bands parallel with the walls of the vein. These pyrites carry very fair gold values of about \$12 to the ton of ore. It is the intention of the owners to concentrate the ore, experiments having shown that 12 tons will yield about 1 ton of concentrates. These concentrates will then be shipped, in flat boats, down the rivers and lake to Tofino Inlet, and from thence, by steamer, to a smelter.

A concentrator building had been erected on the river bank, and, at the time of my visit, the machinery was being placed in position. This consists of one 7 by 12 Dodge Crusher, two Tremain Steam Stamps (small size), and one Wilfley Table. It was also intended to put in a second Wilfley Table and a classifier.

The motive power will be supplied by a small engine, while a 50 horse-power boiler, now on the ground, and which will be followed later by a second, will provide steam for the stamps and pumps, and also for a 2-drill Rand Air Compressor.

DEER CREEK.

The *Jumbo* and *Barney* are adjoining mineral claims owned by the *Jumbo & Barney Jumbo Mining Syndicate*; N. Campbell, agent, Clayoquot. A shaft has been sunk on these claims to a depth of 42 feet upon an irregular ore chute, which, from the surface showing, would be about 25 feet wide.

What appears to be the hanging wall has been followed down, and is fairly distinct but "frozen." The vein-matter is a lime feldspar, which is considerably mixed, in places, with the country rock, and is fairly well mineralized, in parts, with bornite and copper pyrites, the former giving place to the latter as depth is attained. At a distance of 30 feet down, a cross-cut has been started to drift to the footwall, and, although in 8 feet from the shaft, it is still penetrating the vein-matter, and has not yet reached the objective point. The gangue in this

TABLE XXII.—MINING COMPANIES EMPLOYING AN AVERAGE OF TEN OR MORE MEN DURING 1939.

Shipping Mines.

Name of Mine or Company.	DAYS OPERATING.		TONNAGE.		AVERAGE NUMBER OF MEN.	
	Mine.	Mill.	Mined.	Milled.	Mine.	Mill.
Polaris-Taku Mining Co., Ltd.	363	364	69,045	68,968	119	7
Big Missouri (Buena Vista Mining Co., Ltd.)	334	303	202,321	202,321	89	26
Silbak Premier Mines, Ltd.	311	311	169,164	169,164	305	26
Surf Inlet Consolidated Gold Mines, Ltd.	364	351	32,321	27,264	75	8
Porcher Island Mines, Ltd.*	.....	.....	6,600	6,600	15	3
Cariboo Gold Quartz Mining Co., Ltd.	313	365	110,208	110,208	290	13
Cariboo Hudson Gold Mines, Ltd.*	.....	.....	10,500	10,500	60	8
Island Mountain Mines Co., Ltd.	365	365	46,209	46,209	119	9
Quesnelle Quartz Mining Co., Ltd.*	.....	.....	2,250	2,250	15	3
Windpass Gold Mining Co., Ltd.†	97	212	.....	11,750	15	2
Brooklyn (W. E. McArthur)	327	327	17,236	17,236	11	.....
Highland Bell, Ltd.	296	.....	6,706	.....	34	.....
Canty Gold Mines, Ltd.	.....	.....	.....	.....	25	.....
Fairview Amalgamated Gold Mines, Ltd.	270	150	15,500	15,000	7	3
Gold Standard (Fairview) Mining Co., Ltd.*	.....	.....	765	100	8	2
Hedley Mascot Gold Mines, Ltd.	336	361	68,590	67,572	69	18
Kelowna Exploration Co., Ltd. (Nickel Plate)	334	365	90,251	90,204	112	57
Monashee Development Co., Ltd.	177	55	1,566	1,566	18	1
Osoyoos Mines of Canada, Ltd.	365	365	45,962	45,962	49	11
Granby Cons. Mining, Smelting & Power Co., Ltd.	362	362	1,451,491	1,450,352	406	218
Red Buck Mines, Ltd.*	.....	.....	.....	680	8	2
Highland Surprise Gold Mines, Ltd.	357	.....	197	.....	10	.....
Cons. M. & S. of Canada, Ltd. (Sullivan)	365	365	2,097,124	2,091,064	757	272
Arlington (R. O. Oscarson)	304	.....	783	.....	11	.....
Daylight Gold Mines, Ltd.	224	.....	200	.....	11	.....
Gold Belt Mining Co., Ltd.	363	361	57,838	57,838	81	9
Granite-Poorman (Livingstone Mining Co., Ltd.)	279	.....	1,296	.....	10	.....
Kootenay Belle Gold Mines, Ltd.	365	365	52,666	52,666	139	11
Relief-Arlington Mines, Ltd.	365	365	51,700	31,498	94	28
Reno Gold Mines, Ltd.	365	157	16,085	16,421	75	14
Sheep Creek Gold Mines, Ltd.	336	361	55,558	55,558	83	9
Ymir Consolidated Gold Mines, Ltd.	356	210	9,595	8,345	22	2
Ymir-Yankee Girl Gold Mines, Ltd.	365	365	47,317	47,218	69	13
Molly Hughes (Slocan Idaho Mines Corp.)	365	.....	191	.....	18	.....
Rossland Properties (C. M. & S.)	.....	.....	9,434	.....	80	.....
Havilah Gold Mines, Ltd.	255	.....	1,039	.....	18	.....
Vidette Gold Mines, Ltd.	365	365	6,449	6,522	56	4
Central Zeballos Gold Mines, Ltd.	359	.....	14	.....	30	.....
Mount Zeballos Gold Mines, Ltd.	365	137	8,321	6,337	49	3
Privateer Mine, Ltd.	334	363	33,262	26,820	87	13
Rey Oro Mine, Ltd.*	.....	.....	3,368	3,368	10	5
Spud Valley Gold Mines, Ltd.	365	365	35,607	20,950	70	10
White Star Mine, Ltd.	360	.....	358	.....	12	.....
Bralorne Mines, Ltd.	365	365	184,922	184,922	356	22
Pioneer Gold Mines of B.C., Ltd.†	239	284	103,738	88,009	188	25
Britannia Mining & Smelting Co., Ltd.	365	340	2,112,784	2,112,784	1,133	100

Non-shipping Mines.

Anvox Exploration (C. M. & S.)	210	.....	.....	.....	14	.....
Snowshoe Gold Mines, Ltd.	365	.....	.....	.....	11	.....
Cons. Nicola Goldfields, Ltd.	365	.....	.....	.....	30	.....
Alpine Gold, Ltd.	254	.....	.....	.....	19	.....
Silver Ridge Mining Co., Ltd.	304	.....	.....	.....	10	.....
Muskateer Mines, Ltd.	158	.....	.....	.....	10	.....
Kennedy Lake Gold Mines, Ltd.	365	.....	.....	.....	15	.....
B.R.X. (1935) Consolidated Mines, Ltd.	243	.....	.....	.....	14	.....
Gem Gold Mines, Ltd.	300	.....	.....	.....	10	.....

* Estimated; no official return received.

† Clean-up operations; lessees.

‡ Labour strike at mine, October, 1939, to March, 1940.

Appendix 9

**BC MINFILE Capsule Geology Reports and I02 Mineral Deposit Profile
for Kennedy River Property Area**



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) | [ARIS Home page](#) | [MINFILE Search page](#) | [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 448

[XML Extract/Inventory Report](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 07-Mar-88
Last Edit: 01-Jan-01

by Larry Jones(LDJ)
by BC Geological Survey (BCGS)

SUMMARY

[Summary Help](#)

Name	WESTERING 2, NORTH	NMI	
Status	Showing	Mining Division	Alberni
Latitude	49° 09' 24" N	BCGS Map	092F013
Longitude	125° 25' 40" W	NTS Map	092F03W
Commodities	Gold	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5447710
Capsule Geology	The area is underlain by massive fine-grained andesitic flows of the Upper Triassic Karmutsen Formation (Vancouver Group), and dacite lapilli tuff, probably of Tertiary age. Northeast striking, steeply dipping joints are widespread and are frequently dilated and infilled with auriferous quartz veinlets. The veinlets dip steeply and vary from 0.1 to 10 centimetres wide. Individual veins comprise coarsely crystalline quartz, about 10 per cent calcite and up to 2 per cent sulphides, which include pyrrhotite, pyrite, chalcopyrite, arsenopyrite and sphalerite.	Easting	322991
	At the North zone, northeast striking quartz veins making up to 1 per cent of the rock volume, occur over a 200 metre width and 400 metre length in dacite lapilli tuff. Eight composite samples of vein material assayed from 0.53 to 18.4 grams per tonne gold (Assessment Report 16473). One hundred sixty metres to the north (Esther claim), several quartz veins contained gold values. One sample of vein material over 3 metres assayed 29.0 grams per tonne gold (Assessment Report 16473).	Deposit Types	I06 : Cu+/-Ag quartz veins
Bibliography	EMPR ASS RPT * 16473 GSC MAP 17-1968 GSC OF 463 GSC P 68-50	Terrane	Wrangell

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 099

[XML Extract/Inventory Report](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 04-Dec-89
Last Edit: 01-Jan-01

by Garry J. Payie(GJP)
by BC Geological Survey (BCGS)

SUMMARY

[Summary Help](#)

Name	ESTHER	NMI	
Status	Showing	Mining Division	Alberni
Latitude	49° 09' 35" N	BCGS Map	092F013
Longitude	125° 24' 18" W	NTS Map	092F03W
Commodities	Gold, Silver, Zinc, Copper, Lead	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5447996
Capsule Geology	Upper Triassic basalts and andesites of the Karmutsen Formation, Vancouver Group are intruded by quartz diorite to granodiorite of the Early to Middle Jurassic Island Intrusions and Tertiary dacitic dykes of the Eocene Tofino Intrusive Suite. The rocks are cut by northwest trending faults which typically show intense shearing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.	Easting	324663
		Deposit Types	I06 : Cu+/-Ag quartz veins
		Terrane	Wrangell

The showings consist of a series of sulphide-bearing quartz veinlets which occupy northeasterly trending fractures in Karmutsen volcanics. Over a distance of about 70 metres there are approximately 60 quartz veinlets ranging in thickness from 0.5 to 8 centimetres. The veinlets consist of coarse, milky-white, commonly drusy quartz hosting pyrite, pyrrhotite, sphalerite and chalcopryrite. The veinlets also carry fragments of wallrock, as well as accessory chlorite and carbonate. The wallrock around larger veins shows a sheared and siliceous envelope. The veinlets persist laterally for over 100 metres where they are obscured by overburden.

A continuous 1 metre sample of volcanic rock, containing a 0.6 metre wide quartz vein, assayed 1.30 grams per tonne gold and 4.46 grams per tonne silver (Assessment Report 11940). A sample of a fracture containing vuggy quartz with minor chalcopryrite and galena contained 101.49 grams per tonne gold and 36.34 grams per tonne silver (Assessment Report 12047).

Bibliography

EMPR ASS RPT *[11940](#), *[12047](#), [16145](#)
EMPR BULL 55
EMPR EXPL 1983-201,202

EMPR FIELDWORK 1988, pp. 61-74

GSC MAP 17-1968; 1386A

GSC OF 463

GSC P 68-50; 72-44

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks,
Unpublished Ph.D. Thesis, Carleton University

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 096

[XML Extract/Inventory Report](#)

New Window

File Created: 30-Nov-89 by Garry J. Payie(GJP)
 Last Edit: 01-Jan-01 by BC Geological Survey (BCGS)

SUMMARY

[Summary Help](#)

<p>Name TB, CAPTAIN HOOK, GIANT BEAR</p> <p>Status Showing</p> <p>Latitude 49° 10' 08" N</p> <p>Longitude 125° 25' 09" W</p> <p>Commodities Gold, Silver, Copper</p> <p>Tectonic Belt Insular</p> <p>Capsule Geology</p>	<p>NMI Mining Division Alberni</p> <p>BCGS Map 092F013</p> <p>NTS Map 092F03W</p> <p>UTM 10 (NAD 83)</p> <p>Northing 5449048</p> <p>Easting 323663</p> <p>Deposit Types Terrane Wrangell</p> <p>Karmutsen Formation volcanics and Quatsino Formation limestones of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The volcanic rocks consist of andesitic to basaltic flows, tuffs and volcanoclastics. West-northwest trending fault/ shear zones of Tertiary age cut the rocks.</p> <p>The TB vein is emplaced in a footwall splay of the Mine fault that cuts Quatsino limestone at and/or adjacent to its contact with Karmutsen andesites. The 15 to 50 centimetre wide vein strikes 084 degrees and dips 70 degrees to the north. It has been traced along strike for a total of 38 metres.</p> <p>The limestone host, well brecciated and weakly silicified, has an additional 20 to 40 centimetre wide silicified and chloritized halo about the vein. The vein is mineralized with clots and masses of pyrite, chalcopyrite and bornite. A 0.15 metre assayed a high gold value of 18.55 grams per tonne with 9.94 grams per tonne silver. Another 0.25 metre sample contained a high silver value of 547.89 grams per tonne with 0.86 grams per tonne gold (Henneberry, 1987).</p> <p>Andesite and felsic rock have locally been altered to garnet- magnetite-diopside skarn. The skarns are most pervasive near faults and along the margin of limestone beds. They locally contain epi- dote, pyrite, chalcopyrite, pyrrhotite, hematite, malachite, azurite and quartz veinlets. Magnetite occurs as crystals, irregular masses and as bands up to 0.20 metres wide.</p>
---	---

Skarn mineralization occurs about 25 metres to the southwest of the western limit of the TB vein and about 15 metres north of the eastern end. A sample from the southwestern skarn contained 2.33 grams per tonne gold, 9.60 grams per tonne silver and 2.78 per cent copper across 43 centimetres. A selected sample from the northern skarn assayed 1.44 grams per tonne gold, 40.46 grams per tonne silver and 10.53 per cent copper (Assessment Report 18693).

Bibliography

EMPR ASS RPT [15395](#), *[18693](#)

EMPR BULL 55

EMPR EXPL 1987-C143

EMPR FIELDWORK 1988, pp. 61-74

EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia; New Releases, International Coast Minerals Corp.: Nov.10, 1987, June 20, 1988 (see 92F 044, Bear file for these reports))

GSC MAP 17-1968; 1386A

GSC OF 463

GSC P 68-50; 72-44

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 052

[XML Extract](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 24-Jul-85
Last Edit: 05-Jan-88

by BC Geological Survey (BCGS)
by Larry Jones(LDJ)

SUMMARY

[Summary Help](#)

Name	GOLD QUEEN	NMI	
Status	Showing	Mining Division	Alberni
Latitude	49° 10' 47" N	BCGS Map	092F013
Longitude	125° 24' 20" W	NTS Map	092F03W
Commodities	Gold	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5450221
Capsule Geology	Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcanoclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.		
	A 300-metre shear zone contains a 1-metre wide quartz vein with pyrite within the volcanics. A value of 48 grams per tonne gold was reported (Assessment Report 15935).		
Bibliography	EMPR AR *1927-344 EMPR ASS RPT * 15935 GSC MAP 17-1968; 1386A GSC OF 463 GSC P 68-50; 72-44 Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143		

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 050

[XML Extract](#)

New Window

File Created: 24-Jul-85 by BC Geological Survey (BCGS)
 Last Edit: 07-Dec-89 by Garry J. Payie(GJP)

SUMMARY [Summary Help](#)

Name	BESSIE B	NMI	
Status	Showing	Mining Division	Alberni
Latitude	49° 09' 54" N	BCGS Map	092F013
Longitude	125° 25' 05" W	NTS Map	092F03W
Commodities	Gold	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5448613
Capsule	Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Plutonic Suite consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcani- clastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.		
Geology			
	Steep northwest dipping quartz veins, with gold values, occur in a diabase dyke hosted in porphyry, with a 70 degree strike.		
Bibliography	EMPR AR *1913-278; 1916-329 EMPR BULL 55 EMPR FIELDWORK 1988, pp. 61-74 GSC MAP 17-1968; 1386A GSC OF 463 GSC P 68-50; 72-44 Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University		

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 049

[XML Extract/Inventory Report](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 24-Jul-85
Last Edit: 07-Feb-89

by BC Geological Survey (BCGS)
by Garry J. Payie(GJP)

SUMMARY

[Summary Help](#)

Name	RUTH	NMI	
Status	Showing	Mining Division	Alberni
Latitude	49° 10' 09" N	BCGS Map	092F013
Longitude	125° 24' 25" W	NTS Map	092F03W
Commodities	Silver, Copper	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5449051
Capsule Geology	Karmutsen Formation volcanics and Quatsino Formation limestones of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Plutonic Suite consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcanoclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.		
Bibliography	EMPR AR *1913-29; 1916-330 GSC MAP 17-1968; 1386A GSC OF 463 GSC P 68-50; 72-44		
	A 0.5 metre wide quartz vein, exposed for 30 metres on surface, contains pyrite and chalcopyrite. The 55 degree striking, 75 degree southeast dipping vein occurs in porphyry. A small diabase dyke accompanies the vein on the hangingwall and limestone outcrops within 3 metres. A sample assayed 1.9 per cent copper, 96 grams per tonne silver and trace gold (Minister of Mines Annual Report 1913).		
	I06 : Cu+/-Ag quartz veins Plutonic Rocks, Wrangell		

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 048

[XML Extract/Inventory Report](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 24-Jul-85
Last Edit: 03-Dec-89

by BC Geological Survey (BCGS)
by Garry J. Payie(GJP)

SUMMARY

[Summary Help](#)

Name	GRANT, DOME, TOMMY	NMI	
Status	Showing	Mining Division	Alberni
Latitude	49° 09' 54" N	BCGS Map	092F014
Longitude	125° 23' 10" W	NTS Map	092F03W
Commodities	Gold, Silver, Copper	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5448539
Capsule Geology	Upper Triassic andesites and andesitic breccia and tuffs of the Karmutsen Formation, Vancouver Group are intruded by granodiorite of the Early to Middle Jurassic Island Intrusions and Tertiary dacitic dykes. The rocks are cut by northwest trending faults which typically show intense shearing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.	Easting	326058
		Deposit Types	I06 : Cu+/-Ag quartz veins
		Terrane	Wrangell

The Dome vein is hosted in well brecciated andesitic volcanics, within a wide shear zone which appears to be a splay off the Canoe Creek fault. The vein strike is approximately 095 degrees. The ore mineralogy is not reported.

One sample taken across 46 centimetres assayed 11.66 grams per tonne gold, 41.14 grams per tonne silver and a trace of copper. Another sample contained 44.57 grams per tonne gold, 24.00 grams per tonne silver and 1.6 per cent copper (Minister of Mines Annual Report 1923). See also the Tommy K (092F 033) for further information.

Bibliography

EMPR AR 1901-1098; *1923-245
EMPR ASS RPT [9606](#), [12767](#), [14279](#), [16474](#), [16729](#)
EMPR BULL 20, part V, p. 26; 55
EMPR EXPL 1981-71; 1984-159-160; 1985-145; 1987-C141; 1988-C84
EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia (located in 92F 044, Bear file))

GSC MAP 17-1968, 1386A
GSC OF 463

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 047

[XML Extract](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 24-Jul-85
Last Edit: 04-Dec-89

by BC Geological Survey (BCGS)
by Garry J. Payie(GJP)

SUMMARY

[Summary Help](#)

Name	JO JO	NMI	
Status	Showing	Mining Division	Alberni
Latitude	49° 09' 47" N	BCGS Map	092F013
Longitude	125° 24' 03" W	NTS Map	092F03W
Commodities	Copper, Zinc, Lead	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5448357
Capsule Geology	Upper Triassic andesites and andesitic breccia and tuffs of the Karmutsen Formation, Vancouver Group are intruded by quartz diorite to granodiorite of the Early to Middle Jurassic Island Plutonic Suite and Tertiary dacitic dykes. The rocks are cut by northwest trending faults which typically show intense shearing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.	Easting	324978
		Deposit Types	I06 : Cu+/-Ag quartz veins
		Terrane	Wrangell, Plutonic Rocks
Bibliography	<p>A quartz vein, about 60 centimetres wide, strikes 040 degrees through volcanics, sediments and granodiorite; one report gives a 065 degree strike. The quartz is mineralized with pyrrhotite, pyrite, and lesser amounts of chalcopyrite, sphalerite, and traces of galena. The vein has been traced on surface for "several hundred feet". A sample across some of the best looking ore contained only small percentages of zinc and copper; gold and silver were absent (Minister of Mines Annual Report 1927). The vein shares some characteristics with the VRL-10 vein (092F 480).</p> <p>EMPR AR *1927-343 EMPR BULL *1, p. 133; 55 GSC MAP 17-1968; 1386A GSC MEM *204, p. 28 GSC OF 463 GSC P 68-50, p. 38</p>		

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 045

[XML Extract/Inventory Report](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 24-Jul-85
Last Edit: 30-Nov-89

by BC Geological Survey (BCGS)
by Garry J. Payie(GJP)

SUMMARY

[Summary Help](#)

Name	SHACK, CAPTAIN HOOK, GIANT BEAR	NMI	
Status	Developed Prospect	Mining Division	Alberni
Latitude	49° 10' 04" N	BCGS Map	092F013
Longitude	125° 25' 14" W	NTS Map	092F03W
Commodities	Gold, Silver, Copper, Zinc	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5448928
Capsule Geology	Karmutsen Formation volcanics and Quatsino Formation limestones of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcanoclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.	Easting	323557
		Deposit Types	I06 : Cu+/-Ag quartz veins
		Terrane	Wrangell
	<p>The Shack vein is emplaced along a northeast trending fault which is probably a splay of the Mine Fault. The vein, hosted by andesite, averages 40 centimetres in width and extends for 160 metres along strike (053 degrees), dipping 60 to 67 degrees to the northwest.</p> <p>Diamond drill intersects of the vein from 1988 contain 2 to 3 per cent pyrite, pyrrhotite, chalcopyrite and sphalerite. The wall- rocks are silicified, kaolinized and pyritized. The eight diamond drill holes that tested the vein gave a weighted average of 15.57 grams per tonne gold and 89.14 grams per tonne silver across an estimated true width of 44 centimetres (Assessment Report 18693).</p> <p>A preliminary ore reserve estimate for the Shack vein has been calculated based on surface sampling and diamond drilling. The deposit contains from 37,920 to 42,015 metric tonnes of probable or possible ore grading from 19.20 to 24.03 grams per tonne gold (Assessment Report 18693). The vein has been tested to a depth of 122 metres where it remains open. It also remains open along strike at both ends.</p>		
Bibliography	EMPR ASS RPT 15395 , * 18693 EMPR BULL 55		

EMPR EXPL 1987-C143
EMPR FIELDWORK 1988, pp. 61-74
EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia; New Releases, International Coast Minerals Corp.: Nov.10, 1987, *June 20, 1988 (see 92F 044, Bear file for these reports))
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
GCNL *#38, 1989
N MINER Dec.19, 1988
WWW http://www.infomine.com/index/properties/KENNEDY_RIVER.html
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 044

[XML Extract/Inventory Report](#)

New Window

File Created: 24-Jul-85 by BC Geological Survey (BCGS)
 Last Edit: 05-Jan-88 by Larry Jones(LDJ)

SUMMARY

[Summary Help](#)

Name	BEAR, GRIZZLY BEAR (L.300), CINNAMON BEAR (L.294), BLACK BEAR (L.293)	NMI Mining Division	Alberni
Status	Developed Prospect	BCGS Map	092F013
Latitude	49° 10' 19" N	NTS Map	092F03W
Longitude	125° 25' 00" W	UTM	10 (NAD 83)
Commodities	Gold, Silver, Zinc, Copper	Northing	5449382
Tectonic Belt	Insular	Easting	323856
Capsule Geology	Karmutsen Formation volcanics of the Upper Triassic Vancouver Group are intruded by the Early to Middle Jurassic Island Intrusions consisting of granodiorite to quartz diorite. The Karmutsen rocks consist of andesitic to basaltic flows, tuffs and volcanoclastics. West-northwest trending fault/shear zones of Tertiary age cut the rocks.		

The Bear shear zone is an east trending 30 metre wide hanging wall splay fault which forms the contact between andesite and quartz diorite. Within the shear zone the volcanics are intensely brecciated and locally silicified. Clay and chlorite form the alteration assemblage within the shear zone halo in quartz diorite. Chloritization and silicification mark the intrusive within the shear itself.

The Subway adit, driven into quartz diorite on the Cinnamon Bear Crown grant (Lot 294), follows the 85 degree striking, 50 degree northwest dipping Footwall quartz vein along the footwall of the shear zone. The vein, pinching and swelling from 50 to 300 centimetres in width, contains pyrite, arsenopyrite, pyrrhotite, sphalerite and gold. A 70-centimetre chip sample across the vein assayed 17.5 grams per tonne gold and 10.3 grams per tonne silver (Assessment Report 11940). Four hanging wall splays occur over a strike length of 27 metres which averaged 10.66 grams per tonne gold over a 1 metre width (Henneberry, 1987).

The Black vein occurs on the hanging wall of the Bear shear zone, 75 metres west of the adit. The vein is up to 3 metres wide and locally contains massive pyrrhotite and black sphalerite with lesser chalcopyrite and pyrite. Wallrock alteration within the quartz diorite host consists of

a 50 to 100 centimetre halo of chlorite and argillic bleaching. A 4.37 tonne bulk sample assayed 9.6 grams per tonne gold (Henneberry, 1987).

A zone of quartz veinlets and stringers (Stockwork showing) outcrops 250 metres east of the adit.

Probable and possible reserves are estimated at 160,000 tonnes grading 17.4 grams per tonne gold. This includes reserves from the adjacent Shack vein (092F 045) and Elite vein (092F 051) occurrences (George Cross News Letter No.38, 1989).

Bibliography

EMPR AR 1902-232; 1903-192; 1909-148; *1913-279; 1916-329
EMPR ASS RPT [5112](#), [11940](#)
EMPR BULL 55
EMPR EXPL 1986-A71; 1988-B63
EMPR FIELDWORK 1988, pp. 61-74
EMPR MAP 65 (1989)
EMPR Mineral Potential Map 1992-1
EMPR OF 1992-1
EMPR PF (*Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia; Article on the Bear property, The Westerly News, Ucluelet, B.C., September 30, 1987; *Prospectus: International Coast Minerals Corporation, Nov.7, 1987; News Releases, International Coast Minerals Corporation: Aug.26, Nov.10, Dec.10, 1987; March 3, 30, June 20, Aug.10, 1988; Palka, J. (1989): Executive Summary of the Kennedy River Gold Camp, International Coast Minerals Corporation; Photos & negatives, 1989, 1995; Orthophoto map and maps - various, (c. 1989); Memos (7), geological/project updates, 1985 to 1988; BC Exploration Review 1994 info.; District Geologist notes, (c. 1985); Groves, W.D. (1985): Examination of Bear Group Property, First Coast Minerals Corporation; Goldsmith, L.B. (1986): Review of Exploration Data, United Bear and United Tommy Mineral Claim Groups, International Coast Minerals Corp.; Henneberry, R.T. (1987): Geological and Economic Potential of the Bear Project, International Coast Minerals Corporation)
GSC MAP 17-1968; 1386A
GSC OF 463
GSC P 68-50; 72-44
GCNL #65,#66,#67,#154,#158,#183,#203,#228, 1988; #38, 1989
N MINER April 11, Nov.21, Dec.19, 1988
PR REL ICM Corporation, Jan.27, 1987; International Coast Minerals Corporation, Feb.13, Mar.30, 1988
WWW http://www.infomine.com/index/properties/KENNEDY_RIVER.html
Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University
Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 033

[XML Extract/Production Report/Inventory Report](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 24-Jul-85
Last Edit: 23-Jan-89

by BC Geological Survey (BCGS)
by Garry J. Payie(GJP)

SUMMARY

[Summary Help](#)

Name	TOMMY K, KENNEDY LAKE GOLD	NMI	
Status	Developed Prospect	Mining Division	Alberni
Latitude	49° 09' 59" N	BCGS Map	092F014
Longitude	125° 23' 50" W	NTS Map	092F03W
Commodities	Gold, Silver, Copper, Lead, Zinc	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5448719
Capsule Geology	Upper Triassic andesites and andesitic breccia and tuffs of the Karmutsen Formation, Vancouver Group are intruded by granodiorite of the Early to Middle Jurassic Island Intrusions and Tertiary dacitic dykes. The rocks are cut by northwest trending faults which typically show intense shearing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.	Easting	325253
		Deposit Types	I06 : Cu+/-Ag quartz veins I05 : Polymetallic veins Ag-Pb-Zn+/-Au
		Terrane	Wrangell

A 1400 by 200 metre zone of narrow planar quartz veinlets trends northeast through andesitic breccias and flows near the contact with granitic intrusives. The veinlets dip steeply and vary from 0.1 to 10 centimetres thick. Individual veins comprise coarsely crystalline quartz, about 10 per cent calcite and up to 2 per cent sulphides, which include pyrrhotite, pyrite, chalcopyrite, arsenopyrite, sphalerite and galena. The veins are locally silicified.

The Adit vein strikes 55 to 75 degrees for 70 metres, dips north and is up to 0.8 metres thick. A 15 centimetre sample of a vein (possibly the old Hidden Treasure vein), about 150 metres east of the adit, assayed 66.9 grams per tonne gold, 154 grams per tonne silver and 4.19 per cent copper (Assessment Report 9606). A 5-metre sample from a nearby trench assayed 4.2 grams per tonne gold (Assessment Report 12767).

The deposit was worked in 1934 and produced 31 grams of gold, 62 grams of silver and 11 kilograms of copper from a total of 4 tonnes mined (Mineral Policy data).

- Bibliography**
- EMPR AR 1934-A28; *1935-F48; 1939-42
 - EMPR ASS RPT [9606](#), [11940](#), *[12767](#), *[14279](#), *[16474](#), *[16729](#)
 - EMPR BC METAL MM00111
 - EMPR BULL 20, part V, p. 26; 55
 - EMPR EXPL 1981-71; 1984-159-160; 1985-145; 1987-C141; 1988-C84
 - EMPR INDEX 3-216
 - EMPR PF (Report by P. Eastwood (see 092F 032, Rose Marie); *Henneberry, R.T. (1987): Economic Potential of the Kennedy River Gold Camp, Vancouver Island, British Columbia (located in 92F 044, Bear file); Thin section analysis and assay result, 1983; District Geologist field notes, assay notes and results, 1983; Palka, J. (1989): Kennedy River Gold Camp, Executive Summary for International Coast Minerals Corporation; Drummond, A.D. (1984): Report on the United Tommy Group for International Phoenix Energy Corporation)
 - GSC MAP 17-1968, 1386A
 - GSC MEM 204, p. 28
 - GSC OF 463
 - GSC P 68-50, p. 38
 - GCNL #111, 1985; #131,1988
 - N MINER Nov.17, 1986
 - WIN Jan., 1987
 - Hudson, R. (1997): A Field Guide to Gold, Gemstone & Mineral Sites of British Columbia, Vol. 1: Vancouver Island, p. 143

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) | [ARIS Home page](#) | [MINFILE Search page](#) | [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 032

[XML Extract/Production Report](#)

New Window

File Created: 24-Jul-85
 Last Edit: 05-Dec-89

by BC Geological Survey (BCGS)
 by Garry J. Payie(GJP)

SUMMARY

[Summary Help](#)

Name	ROSE MARIE, ROSE (L.1489), MAMIE (L.1486), MAGGIE (L.1487), SADIE (L.1488)	NMI Mining Division	Alberni
Status	Past Producer	BCGS Map	092F013
Latitude	49° 09' 16" N	NTS Map	092F03W
Longitude	125° 25' 07" W	UTM	10 (NAD 83)
Commodities	Gold, Silver, Zinc, Copper	Northing	5447441
Tectonic Belt	Insular	Easting	323652
		Deposit Types	I06 : Cu+/-Ag quartz veins
		Terrane	Wrangell

Capsule Geology Upper Triassic basalts and andesites of the Karmutsen Formation, Vancouver Group are intruded by quartz diorite to granodiorite of the Jurassic Island Intrusions and Tertiary dacitic dykes. The rocks are cut by northwest trending faults which typically show intense shear- ing and local sericitization, silicification and pyritization over widths of 0.5 to 2 metres.

A banded quartz vein strikes 070 degrees and dips about 60 degrees northwest through porphyritic diabase or green andesite. The vein varies in width from 38 to 60 centimetres. The quartz is vari- ably reported to be mineralized with pyrite and one or more other sulphides from among sphalerite, chalcopyrite, arsenopyrite, pyrrhotite and galena.

Over 100 metres of drifting on the vein took place from 1899 to 1900. Nine tonnes of ore treated on site in a 4-stamp mill produced 902 grams of gold and 1,928 grams of silver (Mineral Policy data).

Bibliography

EMPR AR *1899-787, *1912-195, *1913-278, *1916-328, 1918-261, 1925-272
 EMPR BULL *1, 1932, p.134; 55
 EMPR FIELDWORK 1988, pp. 61-74
 EMPR PF (Report on Kennedy Lake Properties, compiled by P. Eastwood)
 GSC MAP 17-1968, 1386A

GSC MEM *204, p. 27

GSC OF 463

GSC P 68-50, p. 38; 72-44

Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks,
Unpublished Ph.D. Thesis, Carleton University

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



MINFILE Inventory Detail Report
BC Geological Survey
Ministry of Energy, Mines & Petroleum Resources

MINFILE Number: 092F 099 Name: ESTHER Status: Showing

Ore Zone/ Year/Report On	Tonnage/ Category	Commodity	Grade	Reference/ Comments
SAMPLE		Silver	4.4600 g/t	One metre chip sample.
	Assay/analysis	Gold	1.3000 g/t	Assessment Report 11940.
1983 N	Chip			



MINFILE Inventory Detail Report
BC Geological Survey
Ministry of Energy, Mines & Petroleum Resources

MINFILE Number: 092F 096 Name: TB Status: Showing

Ore Zone/ Year/Report On	Tonnage/ Category	Commodity	Grade	Reference/ Comments
TB VEIN		Silver	9.9400 g/t	Taken across 15 centimetres of TB vein.
	Assay/analysis	Gold	18.5500 g/t	Assessment Report 18693.
1988 N	Chip			



MINFILE Inventory Detail Report
BC Geological Survey
Ministry of Energy, Mines & Petroleum Resources

MINFILE Number: 092F 049 Name: RUTH Status: Showing

Ore Zone/ Year/Report On	Tonnage/ Category	Commodity	Grade	Reference/ Comments
VEIN		Silver	96.0000 g/t	Sample from vein also contained trace gold.
	Assay/analysis	Copper	1.9000 %	Minister of Mines Annual Report, 1913-279.
1913	N	Rock		

MINFILE Number: 092F 048	Name: GRANT	Status: Showing
---------------------------------	--------------------	------------------------

Ore Zone/ Year/Report On	Tonnage/ Category	Commodity	Grade	Reference/ Comments
VEIN		Silver	41.1400 g/t	Taken across 46 centimetres of the vein currently called the Dome vein. Minister of Mines Annual Report 1923, page 245.
	Assay/analysis	Gold	11.6600 g/t	
1923 N	Chip			



MINFILE Inventory Detail Report
BC Geological Survey
Ministry of Energy, Mines & Petroleum Resources

MINFILE Number: 092F 045 **Name:** SHACK **Status:** Developed Prospect

Ore Zone/ Year/Report On	Tonnage/ Category	Commodity	Grade	Reference/ Comments
SHACK 1988 Y	37,920 t Combined	Gold	19.2000 g/t	From 37,920 to 42,015 tonnes probably or possible ore grading from 19.20 to 24.03 grams per tonne gold. Assessment Report 18693.



MINFILE Inventory Detail Report
BC Geological Survey
Ministry of Energy, Mines & Petroleum Resources

MINFILE Number: 092F 044 **Name:** BEAR **Status:** Developed Prospect

Ore Zone/ Year/Report On	Tonnage/ Category	Commodity	Grade	Reference/ Comments
BEAR 1989 Y	160 kt Combined	Gold	17.4000 g/t	Probable and possible reserves including reserves from the adjacent Shack vein (094F 045) and Elite vein (092F 051) occurrences. George Cross News Letter No.38, 1989.

MINFILE Number: 092F 033	Name: TOMMY K	Status: Developed Prospect
---------------------------------	----------------------	-----------------------------------

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1934	4	0	Silver	62	
			Gold	31	
			Copper		11

Summary Totals

MINFILE Number: 092F 033	Name: TOMMY K	Status: Developed Prospect
---------------------------------	----------------------	-----------------------------------

	Metric	Imperial
Mined	4 tonnes	4 tons
Milled	0 tonnes	0 tons

Recovery:

Silver	62 grams	2 ounces
Gold	31 grams	1 ounces
Copper	11 kilograms	24 pounds

Comments:



MINFILE Inventory Detail Report
BC Geological Survey
Ministry of Energy, Mines & Petroleum Resources

MINFILE Number: 092F 033 **Name:** TOMMY K **Status:** Developed Prospect

Ore Zone/ Year/Report On	Tonnage/ Category	Commodity	Grade	Reference/ Comments
VEIN		Silver	154.0000 g/t	A 0.15-metre sample.
	Assay/analysis	Gold	66.9000 g/t	Assessment Report 9606.
1980 N	Chip	Copper	4.1900 %	



MINFILE Production Detail Report
 BC Geological Survey
 Ministry of Energy, Mines & Petroleum Resources

MINFILE Number: 092F 032	Name: ROSE MARIE	Status: Past Producer
---------------------------------	-------------------------	------------------------------

Production Year	Tonnes Mined	Tonnes Milled	Commodity	Grams Recovered	Kilograms Recovered
1900	9	0	Silver	1,928	
			Gold	902	

Summary Totals

MINFILE Number: 092F 032	Name: ROSE MARIE	Status: Past Producer
---------------------------------	-------------------------	------------------------------

	Metric	Imperial
Mined	9 tonnes	9 tons
Milled	0 tonnes	0 tons

Recovery:

Silver	1,928 grams	62 ounces
Gold	902 grams	29 ounces

Comments:



[News](#) | [The Premier Online](#) | [Ministries & Organizations](#) | [Job Opportunities](#) | [Main Index](#)

[MINFILE Home page](#) [ARIS Home page](#) [MINFILE Search page](#) [Property File Search](#)

MINFILE Record Summary

MINFILE No 092F 480

[XML Extract/Inventory Report](#)

Print Preview

PDF

-- SELECT REPORT --

New Window

File Created: 05-Dec-89
Last Edit: 01-Jan-01

by Garry J. Payie(GJP)
by BC Geological Survey (BCGS)

SUMMARY

[Summary Help](#)

Name	VRL-10	NMI	
Status	Showing	Mining Division	Alberni
Latitude	49° 09' 16" N	BCGS Map	092F013
Longitude	125° 24' 05" W	NTS Map	092F03W
Commodities	Silver, Gold, Zinc, Copper	UTM	10 (NAD 83)
Tectonic Belt	Insular	Northing	5447401
Capsule Geology	Upper Triassic basalts and andesites of the Karmutsen Formation, Vancouver Group are intruded by quartz diorite to granodiorite of the Early to Middle Jurassic Island Plutonic Suite. The rocks are cut by northwest trending faults which typically show intense shearing and local pyritization, sericitization and silicification over widths of 0.5 to 2 metres.	Easting	324907
		Deposit Types	I06 : Cu+/-Ag quartz veins
		Terrane	Wrangell
Bibliography	<p>EMPR ASS RPT *11940 EMPR BULL 55 EMPR EXPL 1983-201 GSC MAP 17-1968; 1386A GSC OF 463 GSC P 68-50; 72-44 Carson, D.J.T. (1968): Metallogenic Study of Vancouver Island With Emphasis on the Relationships of Mineral Deposits to Plutonic Rocks, Unpublished Ph.D. Thesis, Carleton University</p>		

[COPYRIGHT](#) | [DISCLAIMER](#) | [PRIVACY](#) | [ACCESSIBILITY](#)



PLUTONIC-RELATED AU QUARTZ VEINS & VEINLETS L02

by David V. Lefebure¹ and Craig Hart²
Refer to preface for general references and formatting significance.
May 30, 2005

IDENTIFICATION

SYNONYMS: Intrusion-related gold systems, gold porphyries, plutonic-related gold quartz veins. Plutonic-related gold, Au-lithophile element deposits, Fort Knox-type Au, high arsenic and/or bismuth plutonic-related mesothermal gold deposits, intrusion-hosted gold vein and brittle shear zone deposits.

COMMODITIES (BYPRODUCTS): Au (Ag, W).

EXAMPLES: (Yukon): Dublin Gulch (106D 025), Clear Creek (115P 014), Scheelite Dome (115P 003), Brewery Creek (116B 160);
(British Columbia - *Canada/International*): Cam Gloria? (082M266), Ridge Zone, Rozan Property (082FSW179); *Fort Knox, Cleary Hill (Alaska, USA), Mokrsko (Czech Republic), Timbarra (New South Wales, Australia).*

GEOLOGICAL CHARACTERISTICS

CAPSULE DESCRIPTION: Gold mineralization hosted by millimetre to metre-wide quartz veins hosted by equigranular to porphyritic granitic intrusions and adjacent hornfelsed country rock. The veins form parallel arrays (sheeted) and less typically, weakly developed stockworks; the density of the veins and veinlets is a critical element for defining ore. Native gold occurs associated with minor pyrite, arsenopyrite, pyrrhotite, scheelite and bismuth and telluride minerals.

TECTONIC SETTINGS: Most commonly found in continental margin sedimentary assemblages where intruded by plutons behind continental margin arcs. Typically developed late in orogeny or post-collisional settings.

DEPOSITIONAL ENVIRONMENT / GEOLOGICAL SETTING: Veins form in tensional fractures and shears within, and near, the apices of small (<3 km²) granitoid intrusions at depths of 3-8 kilometres.

AGE OF MINERALIZATION: Any age, although they are best known (preserved?) in Paleozoic to Mesozoic rocks. Cenozoic deposits generally not yet exposed by erosion. Deposits in Alaska and the Yukon are Cretaceous age. Central Asian and European deposits are Carboniferous.

HOST/ASSOCIATED ROCK TYPES: The host rocks are granitic intrusions and variably metamorphosed sedimentary rocks. Associated volcanic rocks are rare. The granitoid rocks are lithologically variable, but typically granodiorite, quartz monzonite to granite. Most intrusions have some degree of lithological variation that appear as multiple phases that can include monzonite, monzogranite, albite granites, alkali syenite and syenite. The more differentiated phases commonly contain feldspar and quartz and less than

¹ British Columbia Geological Survey, Victoria, BC, Canada

² Yukon Geological Survey, Whitehorse, YT, Canada

5% mafic minerals. Some deposits have abundant associated dykes, including lamprophyres, pegmatites, aplites and phases that have been fractionated from the main intrusion. Medium-to coarse-grained intrusions are commonly equigranular, but can contain megacrysts of potassium feldspar or porphyritic phenocrysts of quartz, plagioclase, or biotite. Biotite is common, hornblende is only locally observed, pyroxene is rare, and muscovite and tourmaline is common in more highly fractionated phases, aplites or pegmatites. The intrusions have a reduced primary oxidation state. Evidence of fluid saturation, such asmiarolitic cavities, locally up to several centimetres, can be common; some intrusions exhibit much larger ones. Many of the granitoid intrusions have contact metamorphic aureoles that extend up to several km from the intrusion and can be much larger than the surface exposure of the intrusion. The stocks generally intrude variably metamorphosed sedimentary rocks (sandstone, shale, carbonate), however, some cut sequences which include metavolcanic rocks. In some cases the deposits are hosted by relatively high-grade metamorphic rocks including orthogneiss that may reflect the emplacement of the intrusions and veins at greater depths.

DEPOSIT FORM: Mineralization can be divided into intrusion-related, epizonal and shear-veins. Intrusion-related mineralization typically occurs widespread sheeted vein arrays. The arrays typically consist of numerous sheeted, or less commonly stockwork, veinlets and veins that form zones that are 10's of metres wide, and continuous for several 10's of metres. The veins are commonly hairline to centimetres wide, while some veins may be up to tens of metres thick. Epizonal mineralization is typically less focused, and may be disseminated, or occur as replacements. The thicker shear-veins veins are typically in fault zones outside of the pluton. The sheeted and stockwork zones extend up to a kilometre in the greatest dimension, while individual veins can be traced for more than a kilometre in exceptional cases.

TEXTURE/STRUCTURE: The sheeted veins are planar and often parallel to regional structures. The veins are generally extensional with no offset of walls, although some vein systems may also include shear-hosted veins. The veins may have minor vugs and drusy quartz. While most veins and structures are steeply dipping, shallowly dipping pegmatite and quartz bodies occur in some deposits, particularly those in the plutonic apices.

ORE MINERALOGY [Principal and *subordinate*]: Sulphide minerals are generally less than 3% and can be less than 1%. A number of deposits/intrusions have late and/or peripheral arsenopyrite, stibnite or galena veins. Native gold, sometimes visible, occurs with associated minor pyrite, arsenopyrite, loellingite, pyrrhotite, variable amounts of scheelite or more rarely wolframite, and sometimes *molybdenite, bismuthinite, native bismuth, maldonite, tellurobismuthinite, bismite, tellurides, tetradymite, galena and chalcopyrite*. Epizonal veins are arsenopyrite-pyrite rich and lack associated Bi, Te and W minerals. The thicker, solitary veins typically contain higher percentages (<20%) of sulphide minerals. Generally, sulphide mineral content is higher in veins hosted in the country-rocks.

GANGUE MINERALOGY [Principal and *subordinate*]: Quartz is the dominant gangue mineral with associated minor *sericite, alkali feldspar, biotite, calcite and tourmaline*. In some deposits the quartz veins grade into pegmatite dykes along strike - a relationship that has been referred to as vein-dykes or pegmatite veins. The pegmatites in some deposits can carry significant amounts of gold or scheelite, although they do not usually constitute ore. Many "veins" may lack gangue and are simply sulphide mineral coatings on fracture surfaces.

ALTERATION MINERALOGY: These deposits are characterized by relatively restricted alteration zones which are most obvious as narrow alteration selvages along the veins. The alteration generally consists of the same non-sulphide minerals as occur in the veins, typically albite, potassium feldspar, biotite, sericite, carbonate (dolomite) and minor pyrite. Pervasive alteration, dominated by sericite, only occurs in association with the best ore zones. The wall rocks surrounding the granitoid intrusions are typically hornfelsed and if carbonaceous, contain disseminated pyrrhotite. Alteration appears to be more extensive with shallow depths of emplacement or greater distances from the intrusion. Epizonal deposits may have clay alteration minerals.

WEATHERING: The quartz veins resist weathering and can form linear knobs. Since alteration zones are frequently weak and the veins often contain only minor sulphide minerals, associated gossans or colour anomalies are rare. However, oxidized sulphide-rich epizonal mineralization may yield gossans.

GENETIC MODELS: The veins are genetically related to proximal granitoid intrusions, which explains their association with tungsten, bismuth and other lithophile elements, and the transitional relationships with pegmatites seen in some deposits. Mineralization likely formed from late stage fluids that accumulated in late-stage melts of differentiating granitic intrusions at depths of 2 to 8 km below the surface. These fluids typically contain elevated PCO_2 and have lower salinities which enable them to transport gold and/or tungsten and only limited amounts of base metals. At some point following sufficient differentiation to concentrate anomalous concentrations of elements, such as Au and W, the fluids are released along fractures that developed in response to regional stresses and faults that accommodated pluton emplacement. Locally fluids infiltrate permeable or reactive rock units to form replacement mineralization or skarns. Stockwork mineralization is not common, but may have higher grades due to increased vein density. The deeper vein systems had little or no meteoric water input. In most deposits there are several other styles of mineralization, such as skarns and distal sulphide-rich veins that can be related to the same granitic intrusions but have different metallogenic signatures as they formed from rapidly evolving fluids. These characteristics are typical of an intrusion-centred mineralizing system, but are not characteristic of the shear-veins that do not show any metallogenic zonation or associated deposit types. The epizonal deposits may have evidence vectoring towards a higher-temperature zone, but typically form outside of the steep thermal gradients that are proximal to a cooling pluton.

ORE CONTROLS: The mineralization is strongly structurally controlled and spatially related to highly differentiated granitoid intrusion. Mineralization is commonly hosted by, or close to, the most evolved phase of the intrusion (differentiation index greater than 80).

ASSOCIATED DEPOSIT TYPES: W and Au skarns (K05, K04), W veins (I12), stibnite-gold veins (I09), Au-quartz veins (I01), disseminated gold sediment-hosted deposits (E03) and possibly polymetallic veins (I05). The veins commonly erode to produce nearby placer deposits (C01, C02).

COMMENTS: Differentiated reduced granites also host Sn greisens, but these may indicate too much fractionation to be a good gold mineralizer. Porphyry deposits, which may have associated tungsten mineralization and stibnite-base metal-gold veins are typically associated with oxidized magmas. Epizonal deposits, such as the Donlin Creek and Brewery Creek deposits have characteristics that include high sulphidation epithermal deposits. These granites are emplaced at relatively shallow depths (less than 2 kilometres) and can occur in the same regions as W-Au veins.

EXPLORATION GUIDES

GEOCHEMICAL SIGNATURE: Placer gold in creeks draining plutons or hornfels is the best geochemical indicator. Analysis of heavy mineral or silt samples for W, Au, As and Bi is particularly effective. Elevated values of Au-W-Bi-As \pm (Sn-Sb-Ag-Mo-Cu-Pb-Te-Zn) can be found in stream sediments, soils and rocks. Distal Sb and proximal Bi is a common association in the Yukon deposits.

GEOPHYSICAL SIGNATURE: Aeromagnetic data may be entirely flat as reduced granites have no magnetic signature. If the country rocks are reducing (e.g. carbonaceous), aeromagnetic signatures may produce "donut" anomalies with high magnetic values associated with pyrrhotite in the contact metamorphic zone fringing a non-magnetic intrusion.

OTHER EXPLORATION GUIDES: The number of deposits correlates inversely with the surface exposure of the related granitoid intrusion because stocks and batholiths with considerable erosion are generally less prospective. Evidence of highly differentiated granites and fluid-phase separation, such as pegmatites, aplites, unidirectional solidification textures (USTs) and leucocratic phases, indicates prospective settings. Lamprophyres indicate regions of high extension and potentially good structural sites for mineralization.

Gold, wolframite, and scheelite in stream gravels and placer deposits are excellent guides. The associated deposit types (e.g. skarns) can also assist in identifying prospective areas.

ECONOMIC FACTORS

TYPICAL GRADE AND TONNAGE: The bulk mineable, intrusion-hosted low grade sheeted vein deposits contain tens to hundreds of million tonnes of ~ 0.8 to 1.4 g/t Au. The epizonal deposits have slightly higher grades, 2-5 g/t Au and the shear veins have from high grade deposits contain hundreds of thousands to millions of tonnes grading ~10 to 35 g/t Au. Gold to silver ratios are typically less than 1. Some gold-producing veins have produced W when it was deemed a strategic metal or it reached unusually high commodity prices.

Intrusion-related

Fort Knox, Alaska - 143.5 M tonnes grading 0.82 g/t Au (cutoff of 0.39 g/t)

Dublin Gulch (Eagle Zone), Yukon - 100 Mt grading 1.2 g/t Au

Epizonal

Brewery Creek, Yukon - 13 Mt of 1.44 g/t Au

Donlin Creek, Alaska

Shear-veins

Pogo, Alaska - 9.05 Mt grading 17.83 g/t Au (cutoff of 3.43 g/t)

Ryan Lode, Alaska

Cleery Hill - ~1.36 Mt grading better than 34 g/t Au

ECONOMIC LIMITATIONS: The Fort Knox deposit has a low strip ratio and the ore is oxidized to the depths of drilling (greater than 300 m). A carbon-in-leach gold absorption with conventional carbon stripping process is used to recover the gold. The refractory nature of the arsenic-rich mineralization below the oxidation zone could render an otherwise attractive deposit sub-economic. Intrusion-hosted deposits may have a high work index.

IMPORTANCE: These deposits represent a potentially important gold resource which is found in regions that have seen limited gold exploration in recent years. A number of deposits are now known that contain more than a 100 tonnes of gold. In virtually all regions the production of gold from placers related to these deposits has far exceeded the lode gold production.

ACKNOWLEDGEMENTS: This deposit profile draws heavily from presentations and related articles by Jim Lang, John Thompson, Jim Mortensen and Tim Baker summarizing research completed by the Mineral Deposits Research Unit of the University of British Columbia, Dan McCoy of Placer Dome and Moira Smith of Teck Exploration. Mike Cathro kindly reviewed the profile and provided constructive comments.

SELECTED BIBLIOGRAPHY

Bakke, A., 1995. The Fort Knox 'porphyry' gold deposit - structurally controlled stockwork and shear quartz vein, sulphide-poor mineralization hosted by a Late Cretaceous pluton, east-central Alaska; in *Porphyry Deposits of the Northwestern Cordillera, Canadian Institute of Mining, Metallurgy and Petroleum*, Special Volume 46, pages 795 -802.

Diment, R., 1996. Brewery Creek Gold Deposit. In: Yukon Exploration and Geology 1995, Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 57-66.

Emond, D.S., 1992. Petrology and geochemistry of tin and tungsten mineralized plutons, McQuesten River region, Central Yukon. In: Yukon Geology, Volume 3, Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 167-195.

Emond, D.S. and Lynch, T., 1992. Geology, mineralogy and geochemistry of tin and tungsten mineralized veins, breccias and skarns, McQuesten River Region (115P (North) and 115M/13), Yukon. In: Yukon Geology,

Volume 3, Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 133-159.

- Flanigan, B., Freeman, C., McCoy, D., Newberry, R., Hart, C., 2000. Exploration models for mid and Late Cretaceous intrusion-related gold deposits in Alaska and the Yukon Territory, Canada. *In: Geology & Ore Deposits 2000: The Great Basin & Beyond*. Reno-Sparks, Nevada, p. 591-614.
- Goldfarb, R., Hart, C., Miller, M, Miller, L., Farmer, G.L. and Groves, D., 2000. The Tintina Gold Belt: A global perspective. *In: The Tintina Gold Belt: Concepts, Exploration and Discoveries, British Columbia and Yukon Chamber of Mines, Special Volume 2, p. 5-34.***
- Hart, C.J.R., Baker, T. and Burke, M., 2000. New exploration concepts for country-rock hosted, Intrusion-Related Gold Systems, Tintina Gold Belt in Yukon. *In: The Tintina Gold Belt: Concepts, Exploration and Discoveries, British Columbia and Yukon Chamber of Mines, Special Volume 2, p. 145-172.***
- Hart, C.J.R., McCoy, D.T., Goldfarb, R.J., Smith, M., Roberts, P., Hulstein, R., Bakke, A.A. and Bundtzen, T.K., 2002. Geology, Exploration and Discovery in the Tintina Gold Province, Alaska and Yukon, Society of Economic Geologists Special Volume 9, p. 241-274.**
- Hitchins, A.C. and Orsich, C.N., 1995. The Eagle Zone gold-tungsten sheeted vein porphyry deposit and related mineralization, Dublin Gulch, Yukon Territory. *In: Porphyry Deposits of the Northwestern Cordillera, The Canadian Institute of Mining, Metallurgy and Petroleum, Special Volume 46, pages 803 -810.*
- Hollister, V.F., 1992. On a proposed plutonic porphyry gold deposit model; *Nonrenewable Resources*, Volume 1, pages 293-302.
- Lang, J.R., Baker, T., Hart, C.J.R., and Mortensen, J.K., 2000. An exploration model for Intrusion-related gold systems. Society of Economic Geologists Newsletter, no. 40, p. 1-15.
- Lang, J.R., Baker, T., 2001. Intrusion-related gold systems: the present level of understanding, *Mineralium Deposita*, Vol: 36: p. 477-489.
- Maloof, T., Baker, T. and Thompson, J., 2001. The Dublin Gulch intrusion-hosted gold deposit, Tombstone plutonic suite, Yukon Territory, Canada, *Mineralium Deposita*, vol. 36, 583-593.**
- Marsh E.E., Goldfarb R.J., Hart C.J.R. and Johnson, C.A., 2003. Geology and geochemistry of the Clear Creek intrusion-related gold occurrences, Tintina Gold Province, Yukon, Canada. *Canadian Journal of Earth Sciences*, vol. 40, p. 681-699.
- McCoy, D., Newberry, R.J., Layer, P., DiMarchi, J.J., Bakke, A., Masterman, J.S. and Minehane, D.L., 1997. Plutonic-related gold deposits of Interior Alaska, *Economic Geology*, Monograph 9, pages 191-241.
- Newberry, R.J., Burns, L.E., Swanson, S.E. and Smith, T.E., 1990. Comparative petrologic evolution of the Sn and W granites of the Fairbanks-Circle area, Interior Alaska; *in* Stein, H.J. and Hannah, J.L., Editors, Ore-bearing Granite Systems; Petrogenesis and Mineralizing Processes, *Geological Society of America*, Special Paper 246, pages 121-142.
- Poulsen, K.H., Mortensen, J.K. and Murphy, D.C., 1997. Styles of intrusion-related gold mineralization in the Dawson-Mayo area, Yukon Territory. *In: Current Research 1997-A, Geological Survey of Canada, p. 1-10.***
- Smith, M., Thompson, J.F.H., Sillitoe, R.H., Baker, T., Lang, J.R. and Mortensen, J.K., 1999. Intrusion-related gold deposits associated with tungsten-tin provinces, *Mineralium Deposita*, Vol. 34, Issue 4, pp. 323-334.