

**GEOCHEMICAL AND GEOLOGICAL REPORT**

**ON THE**

**HEN PROPERTY  
(Hen 5-19 mineral claims)**

**CARIBOO MINING DIVISION**

**NTS 093A007**

**FOR**

**HAPPY CREEK MINERALS LTD.**

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**By**

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**April 2005**

## Table of Contents

1.	Location and Access .....	3
2.	Physiography.....	3
3.	Claim Status .....	3
4.	History .....	4
5.	Regional Geology.....	8
6.	Property Geology .....	9
7.	Rock Sampling .....	10
8.	Stream Silt Sampling.....	10
9.	Discussion .....	11
10.	Conclusions.....	12
11.	Recommendations .....	13
11.1	Proposed Budget.....	14
12.	References .....	15
13.	Statement of Costs.....	16
14.	Statement of Qualifications .....	17
15.	Tables.....	19
16.	Figures .....	20
	1) Property Location	
	2) Claim Location	
	3) Regional Geology	
	4) 2004 Rock and Silt Location	
	5) Property Geology and Compilation	

Appendix 1 Assay Certificates

## Summary

The Hen property is located about 10 kilometres southeast of the Boss Mt. molybdenum Mine, 75 kilometres northeast of 100 Mile House in South Central British Columbia. Excellent access and infrastructure is in place, and the property covers several under-explored gold showings originally discovered between 1992-1996.

Trenching returned 3.98 g/t gold over 2.1 metres and up to 9.0g/t gold in large boulders; limited drilling between 1994-1996 traced the structure to over 250 metres depth returning widespread anomalies of gold and values up to 2.08g/t gold over 0.8 metres, and 0.86 g/t gold over 8 metres. Since then, additional showings were discovered along a 4 kilometre eastward trend; the Chick, Dyke and Ledge zones have returned rock and soil geochemical anomalies of gold, silver, copper, arsenic, antimony and locally mercury. The Hen, Dike and Ledge prospects, over 4 kilometres apart returned rocks containing 1.31 g/t gold, 2 metres of 1.27g/t gold and float samples up to 1.67 g/t gold, respectively. A limited soil geochemical survey between the Ledge and Hen grids, followed by drill testing of these prospects is recommended.

The Anomaly Creek zone is situated in the western portion of the property. An historical silt sample returned 1280 ppb gold, and was investigated by reconnaissance prospecting, geological mapping rock and silt sampling in 2004. This area is underlain by a 4 kilometre long portion of the north trending contact between the Takomkane Batholith, granodiorite to diorite in composition, and Nicola Group flow, breccia and tuff, basalt-andesite in composition, to the east. A strong north trending structure cuts the contact zone, 200-500 metres in width, and is largely covered by swamp. In the northwest corner of the swamp, a small, poorly exposed outcrop of propylitic altered diorite returned 2774 ppm copper, 28 ppb gold. Approximately 250 metres southwest, a rock sample returned 1202 ppm arsenic, 22.5 ppb gold, 23.9 ppm antimony in a silicified diorite breccia, and appears similar in nature to the Hen-Ledge system. East of the swamp outcrop of quartz sericite-pyrite altered volcanic rocks occurs, and silt samples in Anomaly creek contain anomalous gold and copper. At this time, the best potential for a porphyry copper-gold system appears to be along the covered intrusive-volcanic contact and a magnetic and induced polarization geophysical survey and soil geochemistry is recommended.

## 1. Location and Access

The property is situated approximately 75 kilometers northeast of 100 Mile House, in the south Cariboo, British Columbia on NTS map sheet 093A007 (Figure 1). The property is easily accessed via paved and gravel logging roads. The HEN claims are bisected by a hydro transmission line which provided power to the former Boss Mountain molybdenum mine and currently supplies electricity to the community of Hendrix Lake about 15 kilometers to the north. Access from highway 97 is via the Canim-Hendrix road to Eagle Creek bridge thence 27 kilometers via the Hendrix Lake (6000) road to the 6300 road. This road provides good access to the central and eastern portions of the property. Access to the Anomaly Creek area leaves the 6000 road near 15 kilometer. It is called the 615 road and is taken west-northwest approximately 9 kilometers to the edge of the Hen property. The road continues northwesterly through the western edge of the property.

## 2. Physiography

The area lies within the Quesnel Highlands physiographic region and is situated in the western portion of the Interior Wet Belt bio climatic zone. Elevations range between 3500 to +5500 feet. The area is covered by dense mature stands of spruce, balsam, cedar, and pine with abundant ground cover including alder, willow, devil's club, and buck brush. Several logging clear cuts occur in the area and all but the most recent have been replanted with varying degrees of success. The clear cuts commonly are overgrown by fireweed which later in the season reaches heights of up to 6 feet and can seriously impede examination of these areas during late summer.

## 3. Claim Status

The Hen property is composed of both metric and two-post claims totaling 69 units which were originally located in 1993 (Figure 2, Table 1). The property is owned by Ridley and Blann and is currently under option to Happy Creek Minerals Ltd who can earn 100% of the property by spending a minimum of \$50,000.00 on the property in 2005. In addition, the Ledge1 and Skarn 1-4 mineral claims adjoin to the east and are part of the current

property however no work was performed and not reported here. This report is to satisfy assessment requirements on the HEN 5-19 claims which was filed online February 4, 2005.

Table 1  
Mineral Tenure

Claim Name	Tenure #	Units	**Expiry Date**
Hen 5	315715	20	2006/FEB/05
Hen 6	315716	8	2006/FEB/05
Hen 7	315717	10	2006/FEB/05
Hen 8	315718	20	2006/FEB/05
Hen 9	315719	1	2006/FEB/05
Hen 10	315720	1	2006/FEB/05
Hen 11	315721	1	2006/FEB/05
Hen 12	315722	1	2006/FEB/05
Hen 13	315723	1	2006/FEB/05
Hen 14	315724	1	2006/FEB/05
Hen 15	315725	1	2006/FEB/05
Hen 16	315726	1	2006/FEB/05
Hen 17	315727	1	2006/FEB/05
Hen 18	315728	1	2006/FEB/05
Hen 19	315729	1	2006/FEB/05

\*\* pending assessment report approval\*\*

#### 4. History

The earliest recorded mineral claims in the area are located on the DL group at the eastern edge of the property west of Deception creek. The BC Dept. of Mines Annual Report for 1886 simply state that two locations had been made on Deception creek above Mahood Lake. No documentation as to collaring the adit or blasting of the numerous trenches and open-cuts on the DL 5 claim has been found (A.R. #22460, #23201). Apparently the workings were "lost" for a hundred years because it wasn't until

1987 when exploration began again around the old workings (A.R. #17646). Although the Boss Mt. mine was a profitable venture for its owners very little exploration work has ever been recorded in the area away from the mine.

In 1982, the BOSS claim, comprising twenty units was located by D.R. MacQuarrie to cover an anomalous stream sediment sample with values of 75 ppm arsenic and 1.2 ppm antimony draining the west side of Hendrix creek (BCRGS-5-1981). A preliminary stream and soil sampling survey conducted by A and M. Exploration Ltd., revealed highly anomalous gold values of up to 1280 ppb in the main drainage (A.R. #11910). In addition, several spot soil anomalies with values up to 60 ppb gold, 310 ppm copper, and 278 ppm zinc were found. Sampling was grid based with lines at 200 meter intervals and sample stations every 100 meters along the lines.

The Rec and LK claims, comprising 14 units, were located in June and July, 1987, by E. Scholtes to cover an adit and several trenches and open-cuts comprising the historic Deception Ledge prospect (A.R. #17646). Durfeld Geological Management Ltd. was contracted to perform a limited program of rock sampling and geological mapping. This work returned values up to 620 grams/ton silver, 3.23 grams/ton gold, 5.2% lead and 444 ppm antimony from material lying on the adit dump. No further work was done and the claims were allowed to lapse.

In July 1991, the DL 1-8 two post mineral claims were located by D.W. Ridley to cover the historic Deception Ledge prospect and a length of the canyon which was interpreted to be a westerly trending fault (A.R. #22460). A limited prospecting program consisting of rock sampling the adit and various trenches and open-cuts were performed. This work failed to confirm the high lead and silver values encountered previously however it did reveal substantial gold values associated with the adit vein. A chip sample across one meter of well weathered quartz vein immediately above the adit returned 42,906 ppb gold and the adjacent 1.7 meters of quartz vein returned 1178 ppb gold. This represents a weighted average of 0.75 ounce/ton gold across 2.7 meters.

Regional prospecting by Ridley in 1992 located a mineralized float train coming out of the road right of way near three kilometer on the 6300 forestry road above Hendrix creek. The float was found to contain up to 3.2% arsenic and 5678 ppb gold. The HEN 1-4 two post mineral claims were located to cover these showings. In February 1993 the HEN 5-19 mineral claims were staked and the original four units were included in the

new block. The HEN and DL claims were optioned to Pioneer Metals Corporation in 1993 and they operated the property until late fall 1996.

In 1993 Pioneer carried out a program of reconnaissance soil and rock sampling, prospecting, and limited mechanized trenching which was restricted to the road right of way. Although this program failed to locate the source of the mineralized float boulders it provided encouragement for the next year's work program. During 1994 Pioneer concentrated its efforts around the area of the HEN float. This work resulted in the collection and subsequent analysis of 1,375 soil samples on grid lines oriented east-west and north-south, 142 rock, and 12 silt samples. Four trenches were excavated by machine of which Trench B and a portion of Trench D partially cut across the mineralized zone. In Trench B, a rock chip sample across a poorly exposed portion of calcite-quartz-arsenopyrite-pyrrhotite returned 2.1 meters containing 3.98 gram\ton gold, and remains open.

Two diamond drill holes were laid out and drilled from the north end of Trench B at 160 degrees azimuth through the zone of interest. Both holes were drilled from the same setup. Hen 94-1 was drilled at -45 degrees for 157.3 meters and Hen 94-2 was drilled at -70degrees for 41.8 meters. The collar location is at 1994 grid coordinates L52+68N;45+30E and an elevation of 1,357 meters. Approximately 40% of the core was split and sent for analysis. Both holes intersected the down dip extension of the mineralized zone trenched on surface. Where drilled, the zone had horse tailed and was manifested by a number of sub-parallel calcite-quartz stringers and veins up to 10 cm. wide every 5 or 10 cm. The zone averaged 0.046 gram\ton over 12.4 meters in Hen 94-1 and 0.096 gram\ton gold over 15.3 meters in Hen 94-2. The sections contain approximately 2% pyrrhotite and very minor arsenopyrite.

Hen 94-1 intersected another zone 10 meters in core length, whose surface projection would outcrop beyond the area trenched. This zone is characterized by calcite-quartz stringers, pyrrhotite to 5%, and arsenopyrite to 2%. Eight meters of this zone averaged 0.86 gram\ton gold, within a 157.3 meter fault zone in hole 94-2 (A.R. #23770).

Pioneer Metals Corp. completed two diamond drill holes in the area of the HEN main showing between late-May and mid -June, 1996. Drill sites and targets were laid out by D. Dunn, geologist for Pioneer Metals Corp., who also logged and sampled the resultant

core. Drill site selection was affected by topography. The first hole was drilled towards the north at -50 degrees, and appeared to be subparallel the mineralized zone.

Drill-hole HEN 96-3 was collared at 1994 soil grid co-ordinates 44+32E; 51+60N, and situated at the bottom or south end of Trench B and beside the main 6300 logging road. The hole was drilled at an azimuth of  $015^{\circ}/-45^{\circ}$ , for a total length of 316.5 meters. Approximately 30% of this core was split. Two zones of anomalous gold values were intersected in this hole. They may represent a down dip extension of the zone exposed at surface and lie up to 200 meters below the bottom of the 1994 drilling (#23770). The first zone returned 455 ppb gold across 2 meters between 227.4 and 229.4 meters. This consisted of diopside-calcite-epidote-pyrrhotite altered andesite agglomerate containing minor to trace chalcopyrite and arsenopyrite. The second zone returned 2.08 gram/ton gold across 0.8 meters between 272.3 and 273.1 meters. This was similar to the first zone except it contained more quartz and a calcite vein 10 cm in width containing abundant arsenopyrite. This zone remains open, and is almost identical with that exposed in the floor of Trench B, approximately 230 meters above this intersection

The second hole, HEN 96-4, was collared at 1994 soil grid co-ordinates 48+32E; 51+75N, and was targeted at a zone of weakly anomalous gold values encountered in Trench D and remain open as the trench was lost due to deep overburden and artesian water. The hole was drilled at an azimuth of  $195^{\circ}/-45^{\circ}$ , for a total depth of 153.4 meters. Approximately 30% of the drill core was split. One zone of diopside altered andesite agglomerate between 48.4 and 49.2 meters contained 225 ppb gold and 355 ppm arsenic. No samples were taken up-hole for over 5 meters and the next down-hole sample was over 13 meters below this zone. The lower portion of the hole contained over 10% granodiorite dykes likely related to the Hendrix stock (AR # 25056). Pioneer dropped its option later in 1996 and the claims reverted to Ridley.

In May 1997, Ridley received funding from the BC Prospectors Assistance Program (Ref. No. 97\98 P67) for grassroots exploration of the entire 135 unit property. This program consisted of prospecting, geological mapping, and reconnaissance-scale soil sampling on widely spaced north-south lines as well as close examination of several new logging roads occurring throughout the property. Results included the discovery of two new gold showings and led to understanding of a possible gold skarn model for the property (A.R.25575).



In May 1998, another Prospectors Assistance Grant was received for further exploration on the property. The Ledge grid, consisting of 10 line-kilometers, was established to cover anomalous zones found in late 1997. The 1998 work program consisted of detailed prospecting, soil and rock sampling, and an EDA geophysical survey. This work identified three significant zones on the Ledge grid (PAG #98/99 P51). In November 1998 an option was signed with TNR/Ivory Oil joint venture encompassing the Ledge 1 and Skarn 1-4 mineral claims.

In December 1998 TNR/Ivory personnel elected to drill two holes in the high magnetic anomaly located in a swamp on the southwest portion of the Ledge grid. The holes were collared from the 6300 road and were situated about 150 meters north of the highest magnetic readings. The drill results were deemed unsatisfactory and TNR/Ivory dropped the option early in 1999. It is noted that the best gold result (32 ppb gold) occurs in the first sample at the top of drill hole 1998-1.

The property lay dormant until the 2004 field season when Ridley and Blann conducted stream sediment and rock sampling coupled with preliminary geological mapping of the Anomaly creek area, west of the Ledge, Dike and Hen prospects. This work was conducted between May 27 2004 and January 20, 2005 and is the subject of this report.

## 5. Regional Geology

The Hen property is located, near the eastern side of Quesnell Terrane, in the South Cariboo, British Columbia (Figure 3). The Oldest rocks occur east of the Hen property and are Snowshoe Group, comprised of quartz mica schist, calc silicates and gneiss, Paleozoic in age. The Redfern Ultramafic complex occurs at higher elevations to the east and is Permian-Mississippian in age. These rocks lie east of the Eureka Thrust, a west dipping continental scale thrust fault between Paleozoic rocks and the Upper Triassic-Lower Jurassic Nicola Group island arc. The Nicola Group island arc assemblage is comprised of basal basaltic flow, black phyllite and minor carbonates, overlain by minor sediment, and dominantly flow, breccia and tuff of predominantly basalt to andesite composition; these rocks are cut by stocks, dikes and sills of monzonite to diorite and pyroxenite composition, and coeval with the Nicola Group volcanic rocks.

Stocks, dikes and sills of quartz monzonite to granite composition cut Nicola Group and older rocks and are Cretaceous in age; these rocks are spatially associated with dikes of rhyolite porphyry, tungsten and molybdenite at the Boss Mountain Mine (Soregaroli, 1976), and the Deception stock, located approximately 15 kilometres east.

Volcanic rocks of basalt to rhyolite composition cut and overlie previous lithology, are Eocene to Miocene in age, and occur predominantly to the west of the Hen property.

Alkaline, olivine and peridot bearing basalt dike, flow, and minor tuff cut all previous units and are Pleistocene to Recent in age. Glacial till and glacio-fluvial, lacustrine deposits are over 30 metres in thickness locally.

## 6. Property Geology

The Hen property is underlain by massive, crowded augite, pyroxine porphyry basalt flow, agglomerate and locally inter-bedded finer grained sediment of the Nicola Group. These rocks occur in contact with a stock of granodiorite to diorite composition to the south, and in the hanging wall side of the Eureka Thrust to the east. To the west, in the Anomaly Creek area, volcanic rocks occur in contact with the Takomkane batholith of granodiorite composition. A dominant west-northwesterly trending structure cuts the Ledge and Hen prospects a distance of approximately 4 kilometres, possibly related to spatial proximity with a zone of finer grained volcanic and sedimentary rocks. At the Hen and Ledge prospects, a stock of granodiorite to diorite composition imparts chlorite, some wollastonite, and local red-brown garnet in the volcanic-sedimentary rocks and contains trace to 1% pyrite, pyrrhotite, arsenopyrite, and trace chalcopyrite, and associated gold values. Gold occurs with variable concentrations of copper, arsenic, and antimony. On the Ledge grid, a combined copper, gold, arsenic soil geochemical anomaly occurs over 500 metres by 500 metres in dimension, and float rock samples on surface returned up to 1670 ppb gold.

In the Anomaly creek area, Nicola Group basalt-andesite flow, tuff and breccia occur in a northerly trending contact with diorite and granodiorite to the west. Volcanic rocks appear hornfelsed, and are cut by faults and fractures trending northwest, north and northeast. Quartz-sericite-epidote-carbonate veins, and locally k-feldspar quartz veins occur in proximity with granodiorite and diorite. Trace to 5% pyrite, pyrrhotite, and trace

chalcopyrite and arsenopyrite occur locally in fractures of the volcanic and intrusive rocks. Recessive areas are covered by till and prevent bedrock observation.

## 7. Rock Sampling

Twenty-two rock samples were collected and submitted for analysis during the 2004 work program. Most of the sampling was directed in the western portion of the property, near Anomaly Creek. Sample locations are provided in Figure 4, geology and compilation map in Figure 5, sample descriptions in Table 2 and assay certificates in Appendix 1.

A new copper showing was discovered near the Anomaly creek access road in a new logging clear-cut. The showing is poorly exposed and consists of angular sub crop rubble of chlorite-epidote altered diorite with fine grained, disseminated bornite, chalcopyrite. Sample 151670 returned 2774 ppm copper and 28 ppb gold. Volcanic rocks in the vicinity contain geochemically anomalous copper, gold and locally arsenic. A silicified volcanic breccia contains pyrite pyrrhotite veins and returned 22.5 ppb gold, 1203 ppm arsenic and 23.9 ppm antimony (04DB-H-1).

The Dike showing is zone of strong hornfelsed and calc silicate altered volcanic, volcanic sediments in contact with a diorite dike. Rocks are sheared, altered to quartz sericite pyrite and contain 2010 ppb gold, 115 ppm arsenic over a 2 metres and remains open.

## 8. Stream Silt Sampling

Eighteen stream sediment samples were collected and submitted for analysis during the 2004 work program. Sample locations are plotted on Figure 4, results in Table 3, and assay certificates in Appendix 1. Samples were obtained from active portions of streams encountered during prospecting and mapping traverses.

Three streams draining the south-central portion of the Hen 5 claim returned between 4.6 to 9.3 ppm Mo, 3511 to 12192 ppm Mn, 5.6 to 12.4% Fe, 144 to 449 ppm As, 0.4 to 0.9 ppm Sb, 264 to 447 ppm Ba, 0.3 to 0.6 ppm Ag, and 47 to 60 ppm Cu. The highest copper value of 182 ppm was obtained from a stream northwest of the Hen 17 claim

(Hen04DS-2). Sample 04DB-H-6 returned 310 ppm arsenic, 183 ppb mercury, and 442 ppm barium near the south side of the property.

## 9. Discussion

The Hen property is underlain by Nicola Group volcanic rocks of dominantly basaltic andesite composition, and lesser finer grained volcanic sediments and carbonate. Granodiorite of the Takomkane Batholith occurs in the western portion of the property and a granodiorite-diorite stock occurs along the southern boundary of the property. Strong biotite hornfels and locally calc silicate alteration occurs. Regional and property scale faults cut these rocks, with quartz sericite-carbonate veins and associated wall rock alteration and contain variable concentrations of pyrite, pyrrhotite, arsenopyrite, and possibly stibnite. The Hen, Dike and Ledge prospects have returned rock samples containing over 1.0 g/t gold, and anomalous arsenic, antimony, and locally copper in soil occur over a distance of approximately 4 kilometres, and suggests a potentially strong magmatic-hydrothermal gold system .

In 2004, chalcopyrite and bornite was discovered in propylitic altered volcanic rocks and returned up to 2774 ppm copper, 28 ppb gold in the Anomaly creek area. Recessive, glacial till covered areas limit bedrock observation around this small exposure. Sheared, quartz sericite-pyrite and locally epidote k-feldspar altered granodiorite and monzonite dikes are in part exposed along a new road over a distance of 3 kilometres along the western side of the Hen property. These rocks occur adjacent a swamp and till covered area 200-500 metres in width, and subparallel with the intrusive contact. Volcanic rocks exposed on the east side of the swamp are moderate to strongly fractured, and contain variable concentrations of pyrite and pyrrhotite, and low gold and copper values.

Rock sample 04DB-H-1 returned 1202 ppm arsenic, 22.5 ppb gold, 23.9 ppm antimony in a silicified diorite breccia and silt sample 04DB-H-5 returned 449.9 ppm arsenic, 447.7 ppm barium and 9.3 ppm molybdenum. In contrast to the copper-gold bearing diorite, the geology, alteration and gold with specific trace elements suggest a locally reduced, low sulphidation style hydrothermal gold system similar to the Hen and Ledge areas occurs.

## 10. Conclusions

The Hen property is located approximately 15 kilometres south of the Boss Mt. molybdenum mine, approximately 75 kilometres northwest of the town of 100 Mile House, in the south Cariboo, British Columbia. The property has undergone several periods of activity since discovery of a rock containing 3.2% arsenic and 5678 ppb gold at the Hen prospect in 1992.

The property is underlain by Nicola Group rocks of basaltic andesite composition, Upper Triassic, Lower Jurassic in age, and locally finer grained volcanic sediments, and phyllite to the east of the property. These rocks are cut by a diorite intrusion along the south side of the property and impart a strong biotite hornfels, calc silicate alteration, and pyrite-pyrrhotite, arsenopyrite, and trace copper occur in fractures and replacement of quartz sericite carbonate altered wall rocks.

Geology, geophysical and geochemical surveys over the Ledge and Hen grids, and outcrop at the Dike showings suggest a strong west-northwesterly structure occurs in proximity to a volcanic-sedimentary contact, within 500 metres of the diorite stock to the south. An appreciable number of float and outcrop samples contain over 1.0 g/t gold, and anomalous arsenic, antimony and locally copper in soil occur over a 4 kilometre distance, and suggest a large scale possibly low sulphidation magmatic-hydrothermal style gold system occurs, and has potential for an economic gold deposit. Similar style alteration, gold, and trace elements occur locally to the west at Anomaly creek.

The Anomaly prospect occurs along a 4 kilometre north trending contact between basaltic andesite flow, tuff and breccia and granodiorite and diorite to the west. Dikes of monzonite composition occur locally. Chlorite epidote, quartz sericite pyrite, and locally quartz –k-feldspar alteration occurs in spatial proximity to this contact, however, a covered area, between 200 and 500 metres in width prevents direct observation of the contact zone. A new showing of poorly exposed sub crop containing 2774 ppm copper, 28 ppb gold in a propylitic altered diorite occurs near the edge of a swamp and the assumed intrusive-volcanic contact. The geology, propylitic alteration, presence of copper-gold and low arsenic suggests a porphyry source, possibly a different style from the Hen-Ledge areas to the east. In addition a number of stream silt samples returned

multi-element anomalies in the south side of the property, and in Anomaly creek itself, which historically returned up to 1280 ppb gold, and 300 ppm copper.

## 11. Recommendations

The Hen property contains geology alteration and significant gold and copper values associated with a widespread hydrothermal system in proximity with intrusions of diorite composition. Several areas of the property require further exploration by reconnaissance prospecting, grid and soil geochemistry, induced polarization, surveys, and the Ledge, Dike and Hen prospects are ready for drill testing.

- 1) Detailed mapping, prospecting, rock sampling of known mineralized zones including the new showings described in this report
- 2) Recon-scale soil sampling and EDA or induced polarization geophysical surveys in the Anomaly creek area, and connect the 1994 Hen grid with the 1998 Ledge grid to the east. Line spacing of 200 meters with 50 meter sample stations are adequate for an initial examination.
- 3) Re-log and sample portions of drill core obtained by past operators.
- 4) Machine trenching of significant anomalous zones found by this program as well as the Hen, Dyke, Chick, Ledge, and southeast skarn showings to the east.
- 5) A small drill program of 6-8 short holes in the most promising zones encountered on the property.

Respectfully Submitted

David E. Blann, P.Eng., and D.W. Ridley

## 11.1 Proposed Budget

Wages	Days	\$/day	Total
Prospecting	20	\$300	\$6,000
Geology	15	\$500	\$7,500
Field Assistant	20	\$200	\$4,000
	55		
	#		
Geochemistry	samples	\$/sample	
Rock	250	\$25	\$6,250
soil	500	\$18	\$9,000
	# days	\$/day	
Transportation	20	\$100	\$2,000
	total days	\$/day	
Accommodations	55	\$65	\$3,575
	metres	\$/metre	
Diamond Drilling	750	\$100	\$75,000
Geophysical Surveys			\$15,000
Report			\$3,000
			\$131,325
		Contingency @ 10%	\$13,133
		Management/ Overhead @ 12%	\$14,446
		Total	\$158,903

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### 13. Statement of Costs

Wages	# days	\$/day	Totals
D. Blann, P.Eng	7	500	\$3,500.00
D. Ridley, Prospector	7	275	\$1,925.00
			\$5,425.00
 <u>Disbursements</u>			
Truck	7	100	\$700.00
Room/Board	14	60	\$840.00
Communications	14	2	\$28.00
Field Supplies			\$50.00
Analyses			
Assays rocks	22	22.5	\$495.00
silts	18	18.5	\$333.00
Petrographics	3	125	\$375.00
PIMA			
Reproductions			\$250.00
Report			\$1,500.00
			\$4,571.00
			Wages and
			Disbursements
			\$9,996.00
			12% on Wages and
			Disbursements
			\$1,199.52
			\$11,195.52
			GST @ 7%
			\$783.69
			\$11,979.21

#### **14. Statement of Qualifications**

I, David E. Blann, P.Eng., of Squamish, British Columbia, do hereby certify:

That I am a Professional Engineer registered in the Province of British Columbia.

That I am a graduate in Geological Engineering from the Montana College of Mineral Science and Technology, Butte, Montana, 1987.

That I am a graduate in Mining Engineering Technology from the B.C. Institute of Technology, 1984.

That I have been actively engaged in the mining and mineral exploration industry since 1984, and conclusions and recommendations within this report are based on regional and property fieldwork conducted between 1991 and 2004.

Dated in Squamish, B.C., April 8, 2005

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David E Blann, P.Eng.

**Statement of Qualifications**

I, David Wayne Ridley, PO Box 77, Eagle Creek, BC, V0K 1L0, do hereby certify:

- 1) I completed the "Mineral Exploration for Prospectors" course hosted by the BC Ministry of Mines at Mesachie Lake, BC in 1984.
- 2) I completed the short course entitled "Petrology for Prospectors" held in Smithers, BC and hosted by the Smithers Exploration Group in 1990 and 1994.
- 3) I attended several short courses hosted by the Kamloops Exploration Group during the Keg convention and include "Intrusion-related Gold" (1999) "Massive Sulphides" (2001) and "Metallogeny of Volcanic Arcs" (1998).
- 4) I have prospected independently since 1982 and have been employed as a contract prospector by various exploration companies in BC, Alaska, and Yukon Territory since 1984
- .
- 5) I participated in the 2004 work program
- 6) I currently own a beneficial interest in the property.

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D. Ridley  
Feb. 10, 2005

Sample ID	Easting	Northing	Elev	EPE Description	Chip(m)	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au ppb	Sb ppm	Bi ppm	Ba ppm
C151773	658314	5769229	1573	13 Hen-grab of rusty hnf float 10 kg	0.0	1.7	94.4	5.2	89	0.2	6.8	<.5	0.2	0.1	30
C 151774	658215	5767692	1603	5 Grab subcrop/ till lots of rusty boulders Basaltc Volc Bx, up to 10% py-po, tr aspy?.Hnf fg sediments	0.0	6.0	102.2	10.5	188	0.3	54.4	<.5	2.3	0.1	44
C 151775	657416	5766741	1453	6 Dike show grab of subcrop/outcrop VBx, Hnf, py 1-3% +/- calc-sil, banded seds frct, FeOx	0.0	1.0	98.4	1.9	38	0.1	6.3	0.7	0.4	0.1	330
151757	657375	5766718	1439	10 Dike showgrab 2X3 metre area py-po diss and with sl chl-ep-ca vns, leuco FpD dike	2.0	4.0	162.0	12.0	16	0.9	115.0	2010.0	<.5	<.5	80
C 151786	652485	5768724	1160	7 Hnf seds, fp basalt, frctd py 2%	0.0	4.0	130.3	2.7	74	0.5	<.5	2.2	0.1	0.1	88
C 151787	653222	5764922	1387	11 Hnf seds, fp basalt, frctd py 2%	50.0	0.8	130.2	10.7	80	0.3	108.8	15.7	0.9	<.1	55
C 151788	653332	5764665	1367	7 rusty shear zone in volcanics	2.0	5.9	108.0	202.7	298	0.2	87.2	4.7	2.2	0.1	150
151789	654288	5764084	1361	8 Rock, 1-2%po,py+/- tr cp, alb vns Bslt Bx		1.5	228.3	1.8	55	0.2	0.9	3.9	0.1	0.1	135
151790	654422	5764308	1395	5 Rock, Hnf Metaseds, po-py vnlt		1.4	86.3	0.4	12	<.1	0.7	0.9	0.1	0.1	49
151791	653704	5764087	1347	4 Rock float Hnf Px Bslt, wk qtz vns po,py		0.2	169.3	0.9	32	0.1	2.9	2.2	0.1	<.1	118
151792	653698	5764097	1346	4 Rock float tour bx, tr cp+ py		0.5	479.1	3.1	48	0.2	2.4	21.0	0.1	0.1	72
151793	653692	5764097	1346	4 Rock float seds, fg dike		0.3	122.5	1.0	63	0.1	3.0	2.3	0.1	0.1	129
151794	653766	5763601	1344	4 Rock o/c grab py, po q vns in px bslt bx		1.1	71.1	1.2	37	0.1	1.3	7.7	0.1	<.1	43
04DB-H-1	652510	5765792	1383	5 Rock, py-po vns, sil, VBx		1.6	81.9	12.5	92	0.1	1202.8	22.5	23.9	0.4	135
04DB-H-2	652942	5765635	1353	4 Rock, 20 cm shear at 242 deg, Q-ser-py		3.8	188.0	2.9	70	0.1	6.3	5.5	1.1	<.1	538
04DB-H-3	654439	5763072	1314	4 Rock at ankerite zone		0.4	157.0	2.3	57	0.1	3.3	4.1	0.3	<.1	73
04DB-H-4	654439	5763072	1314	4 Rock, Strong Ankerite- Po-py	5.0	1.2	155.0	2.3	91	0.1	34.2	2.1	2.8	<.1	100
151661	653210	5764947		outcrop; 1-2% py; carb stringers @ 190\75W; grab		0.8	134.8	2.5	67	0.2	193.9	4.6	0.6	<.1	103
151662	652221	5767048		ang. float; po to 3%; chlorite veinlets; f gr diorite?		0.7	407.9	3.1	48	0.5	1.5	6.7	0.1	<.1	30
151663	652714	5765937		ang float; po to 7%; tr cpy; stkwk veinlets; pyrox basalt		0.5	110.3	1.9	27	0.1	9.1	3.8	1.3	<.1	124
151664	652347	5767304		ang float; pyritic green volcanic with minor sediments; mod hornfels		1.1	419.0	2.0	45	0.1	1.0	1.9	0.2	0.1	82
151665	653064	5765371		ang float; hornfelsed carb-altered volc.; 1-3% po		1.0	80.7	11.3	22	0.1	4.9	1.7	0.2	0.2	88
151666	653287	5764260		subcrop?; feld porp bt-horn diorite; limonite patches; chl-sercite altered; tr py		0.8	167.7	4.3	43	0.1	1.3	5.1	0.1	<.1	66
151667	652314	5767077		ang float; volc with qtz stringers; green alteration (diopside?); 2-3% po		0.3	97.9	0.7	21	<.1	2.1	0.9	0.1	<.1	250
151668	652900	5766011		ang float; crystal tuff; qtz-carb stkwk; 1-3% po; tr cpy		0.8	160.7	3.6	24	<.1	11.5	1.4	1.3	0.1	270
151669	652910	5765962		ang float; aug porp; minor qtz stringers; up to 3% po		0.4	110.8	1.3	15	0.1	14.2	1.2	1.8	0.1	202
151670	652836	5765899		subcrop; diorite; chl-ep altered; 0.5-1% cpy-bornite; tr malachite; high grade grab		0.8	2774.6	1.7	72	1.5	1.0	28.0	0.1	0.1	210
151671	653217	5766088		outcrop; aug porp with ves basalt clasts; qtz stringers 310\70E;fractures @ 050\60S;tr po		0.2	138.8	1.8	31	0.1	7.3	3.3	0.1	<.1	181
151672	653438	5766263		outcrop; aug porp; qtz stringers; 1-2% po; tr cpy; arspy?; grab		4.2	115.7	1.1	17	0.1	12.0	8.4	0.8	0.1	138
151673	653619	5766113		subcrop; aug porp; qtz stringers; 2-3% po; minor cpy;		0.3	211.8	1.2	25	0.1	3.1	4.7	0.4	<.1	104

Table 3  
Silt Samples

ELEMENT				Mo	Cu	Pb	Zn	Ag	As	Au	Sb	Bi	Ba	Hg	Pd	Pt
SAMPLES	Easting	Northing	Elevation	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppm	ppm	ppm	ppb	ppb	ppb
HEN04DS-2	652277	5766771		2.5	181.9	5.2	137.8	427	54.0	3.8	0.46	0.08	289.4	62	<10	<2
HEN04DS-3	652391	5766385		4.5	87.5	6.3	66.3	351	50.1	1.5	0.39	0.07	174.4	76	<10	<2
HEN04DS-4	652874	5765794		1.7	54.6	5.8	67.9	135	17.2	0.9	0.43	0.08	133.9	30	<10	<2
HEN04DS-5	653469	5764087		4.4	44.0	7.1	90.0	148	46.9	1.9	0.35	0.08	281.8	42	<10	<2
HEN04DS-6	652843	5766070		5.3	56.7	12.2	165.5	302	57.5	1.3	0.62	0.07	195.1	65	<10	<2
HEN04DS-7	653019	5765872		2.4	49.4	8.5	104.0	217	56.1	2.1	1.22	0.07	166.6	49	<10	<2
HEN04DS-8	653010	5765509		0.6	88.3	8.6	83.4	201	31.1	4.6	0.76	0.13	196.4	20	<10	2.0
04DB-H-2	652417	5765674	1393	2.1	68.7	6.3	75.3	690	15.3	1.3	0.54	0.09	159.6	29	<10	4.0
04DB-H-3	652547	5765564	1382	0.6	78.7	6.2	66.7	62	22.5	3.5	0.97	0.11	188.2	11	<10	<2
04DB-H-4	654136	5763937	1339	4.7	47.9	6.0	120.1	261	144.6	2.9	0.41	0.08	264	47	<10	2.0
04DB-H-5	654136	5763937	1339	9.3	47.3	9.1	136.2	207	449.9	1.1	0.60	0.08	447.7	56	<10	2.0
04DB-H-6	654136	5763937	1339	7.5	59.8	11.3	118.2	558	310.6	2.6	0.97	0.11	442.6	183	<10	2.0
04DB-H-7	653437	5765248	1337	1.0	86.8	5.5	38.3	414	15.9	1.5	0.41	0.06	100.9	175	<10	<2
04DB-H-8	653046	5765786	1338	2.2	61.0	7.4	143.2	295	16.8	2.8	0.54	0.09	164.9	70	<10	<2
04DB-H-9	653198	5765786	1349	1.3	118.6	8.3	79.9	238	28.7	4.0	0.91	0.13	206.8	64	<10	<2
04DB-H-10	653246	5765787	1339	1.6	44.5	5.6	89.9	155	28.2	1.7	0.57	0.07	139.3	32	<10	<2
04DB-H-11	653348	5765802	1331	0.8	40.1	5.3	66.4	216	14.3	1.5	0.39	0.07	116.6	38	<10	<2
04DB-H-12	653413	5765716	1335	0.9	41.7	5.6	68.1	210	14.6	1.9	0.38	0.07	126.3	47	<10	2.0
HEN04 BS-1	652383	5768801	1197	1.2	86.2	58.4	90.0	0.9	21.9	24.2	0.70	0.10	170	50		
HEN04 DS-1	658555	5769185		1.1	55.7	17.1	88.0	0.3	15.1	1.7	0.60	0.10	74	60		

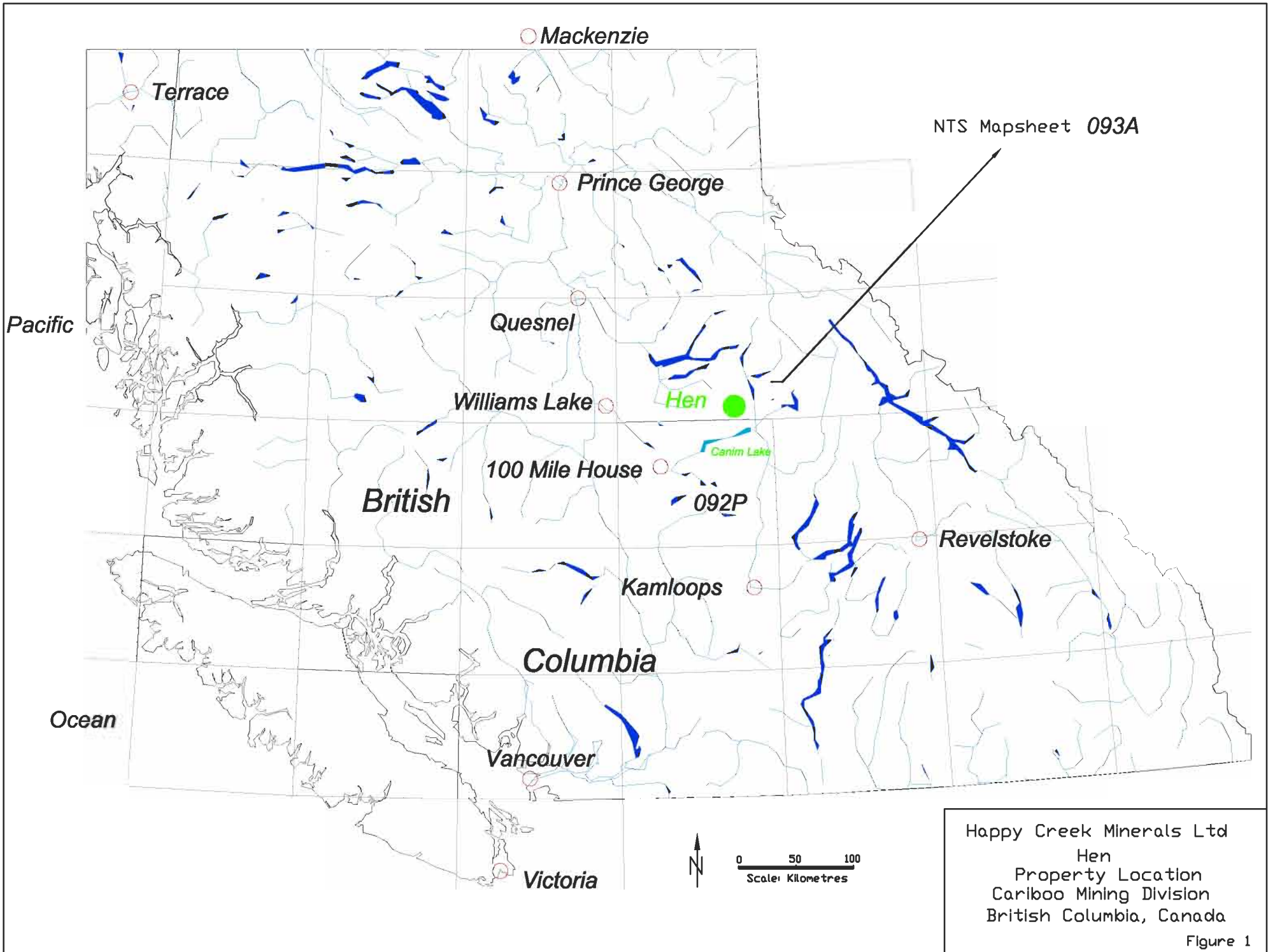
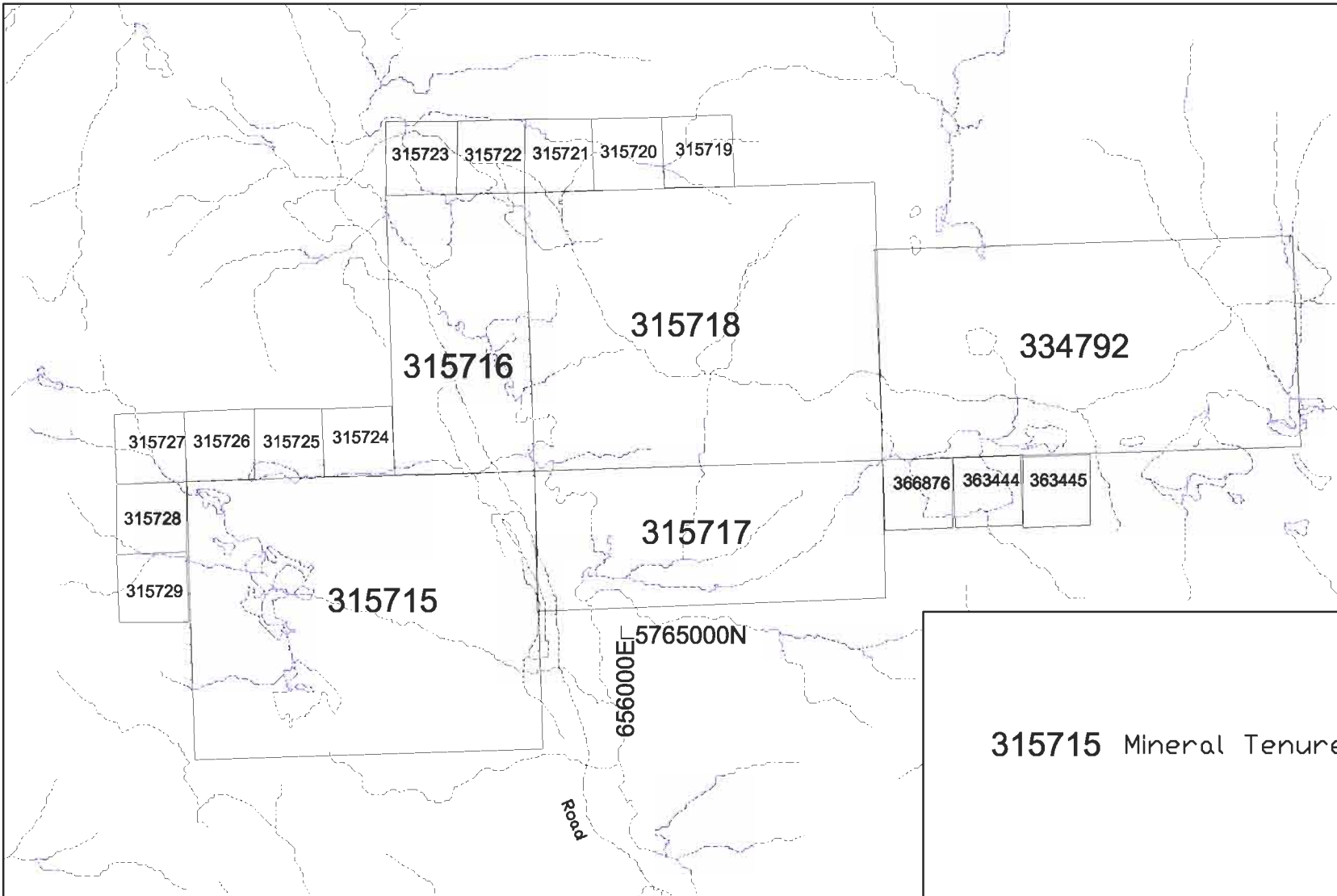


Figure 1



315715 Mineral Tenure Number

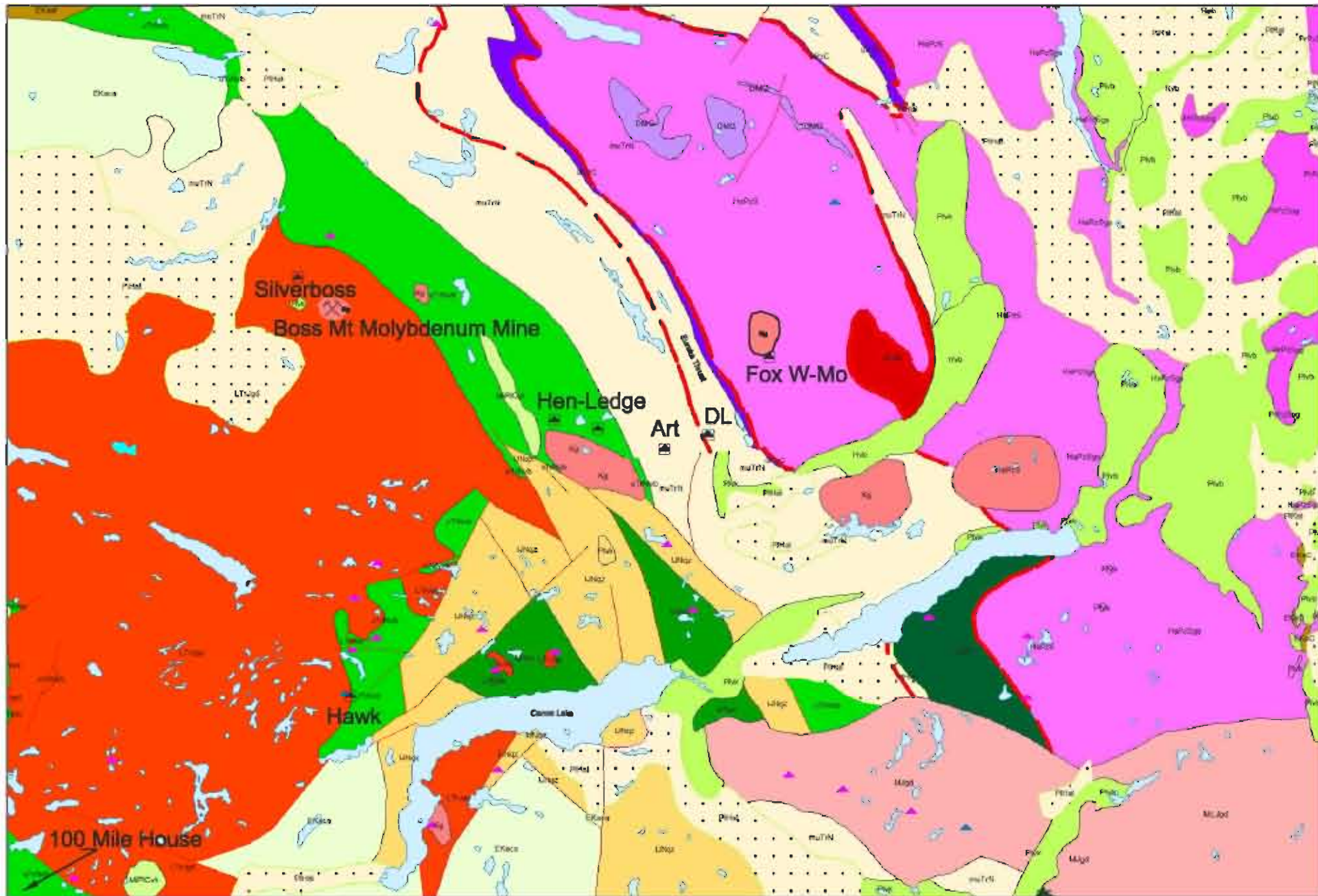
Happy Creek Minerals Ltd  
Hen Property

Mineral Tenure Location  
British Columbia, Canada Figure 2

0.0 500 1000m  
Scale: Metres



NTS: 093A.007 NAD 83 UTM Zone 10  
Cariboo Mining Division



**Geology Legend**

- PHe Paleocene to Hocene Great T1, A units
- Hb Hocene Basaltic Volcanic Rocks
- EKac Eocene Kamloops Group Calc. taline Volcanic Rocks
- Phb Paleocene Basaltic Volcanic Rocks
- Pvk Paleocene Alkaline Volcanic Rocks

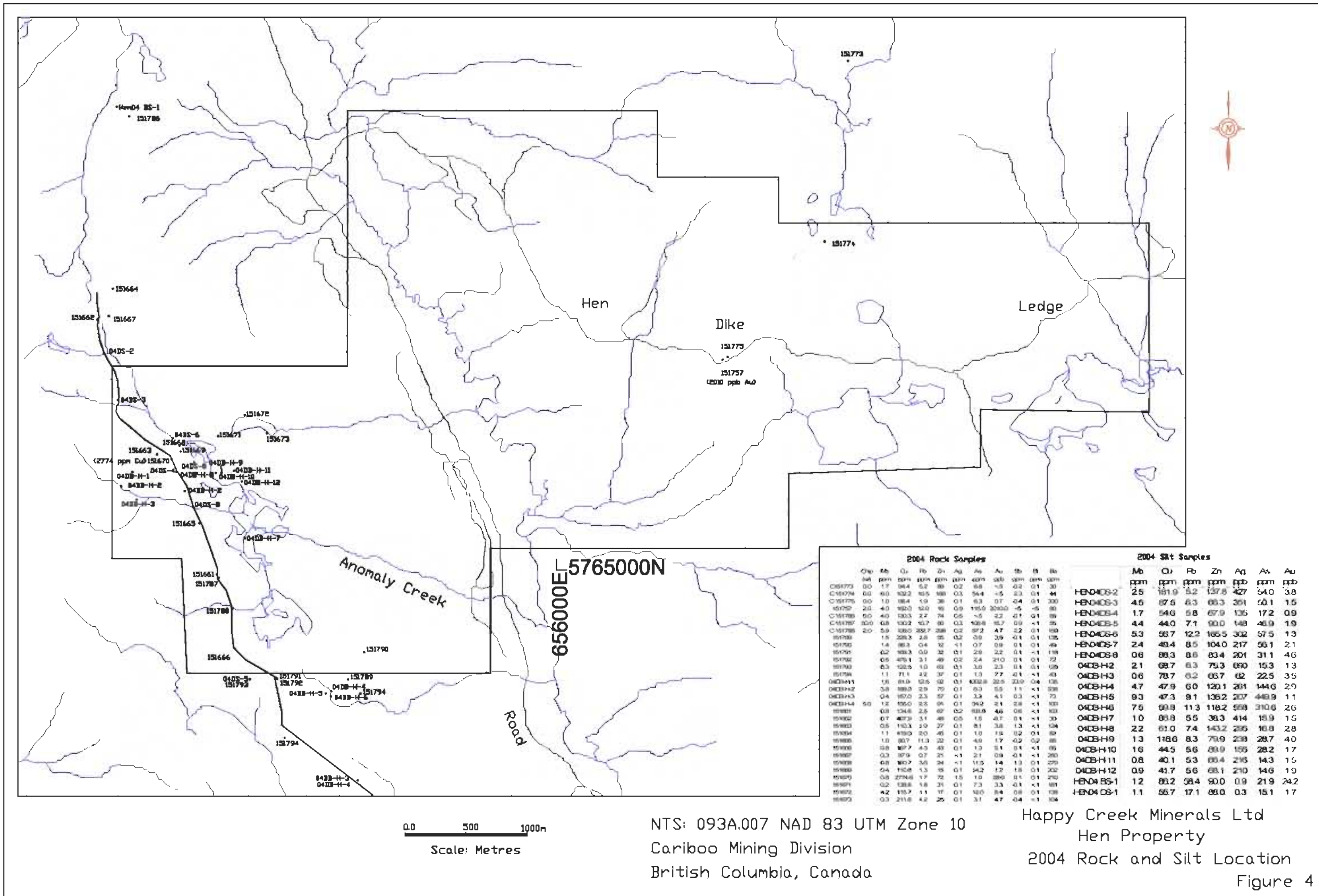
- LHvc Lower Jurassic Nioe Group Volcanic Rocks
- LHqr Lower Jurassic Nioe Group Quartzite, Quartz arenite sedimentary Rocks
- muTN Mid e Upper Triassic Basaltic phyl. ta, minor volcanic rocks
- UThvb Upper Triassic Nioe Group Basaltic Volcanic Rocks
- UPzB Upper Paleozoic Black Riders Mafic Intrusive Complex
- DMQ Devonian to Permian Felsic Formation Basaltic Volcanic Rocks
- HAPzBge Hedrinian to Paleozoic Snowshoe Group Gneiss, Greenschist, Metamorphic Rocks
- HAPzS Hedrinian to Paleozoic Snowshoe Group Undivided

- Kg Cretaceous undivided Intrusive rocks
- Mjgd Middle Jurassic Grandofels Intrusive Rocks
- LTJgd Late Triassic Early Jurassic Grandofels
- LTJey Late Triassic Early Jurassic arenite, monzonite
- DL Fault
- Thrust Fault



Happy Creek Minerals Ltd  
 Corboo Project Area  
 Regional Geology  
 Carin Lake Area, B.C., Canada  
 Mapsheets: 092P, 093A  
 D. Blann, P.Eng. Feb, 2005 **Figure 3**

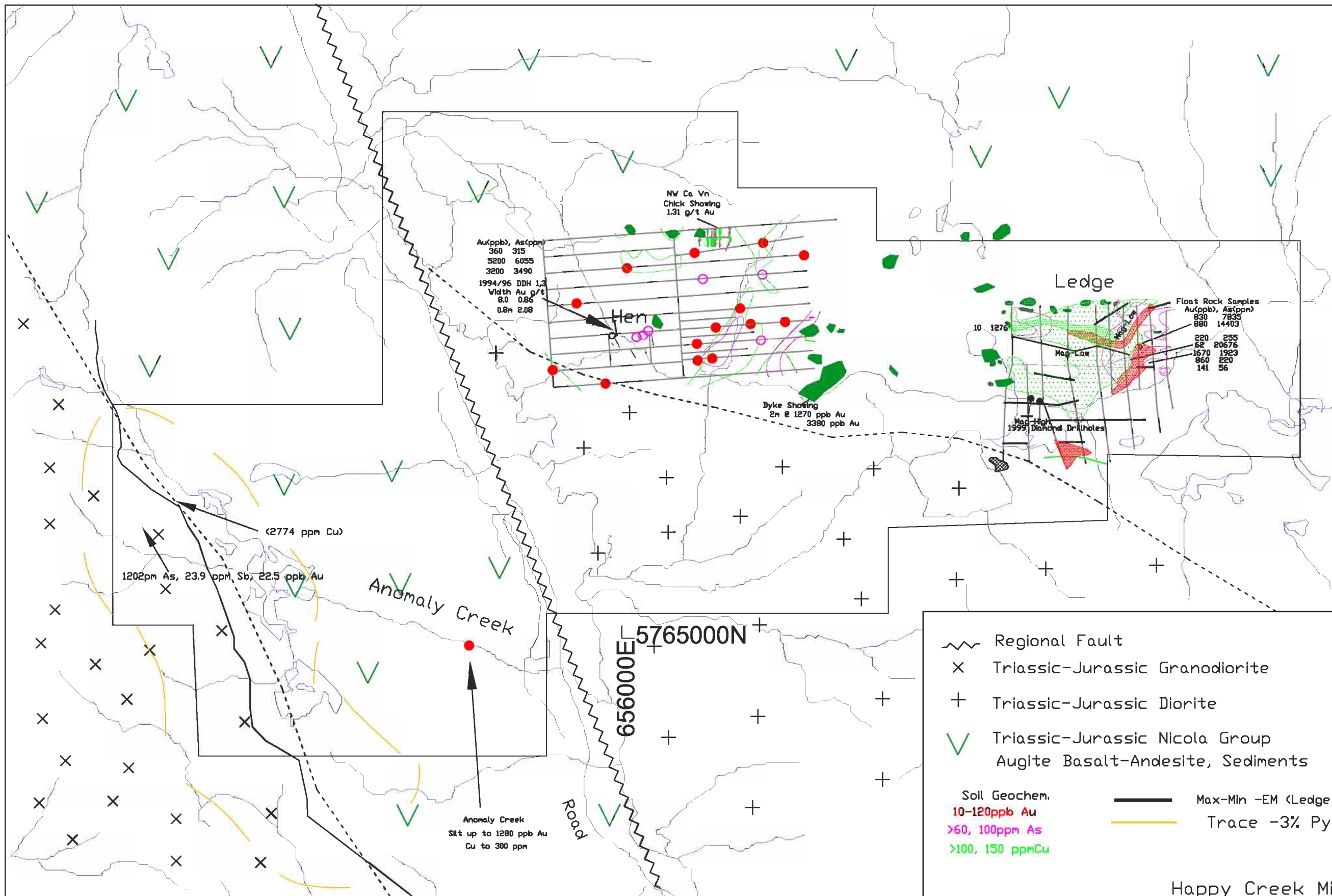




2004 Rock Samples												2004 Silt Samples								
Chr	Fe	Ca	Pb	Zn	Ag	As	Au	Sb	Bi	Ba		Mb	Cu	Pb	Zn	Ag	As	Au		
ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm		ppm	ppm	ppm	ppm	ppb	ppm	ppb		
C151773	00	1.7	94.4	5.2	89	0.2	6.8	-5	0.2	0.1	30	HEN04DS-2	2.5	161.9	5.2	137.8	427	54.0	3.8	
C151774	00	6.0	132.2	10.5	188	0.3	54.4	-5	2.3	0.1	44	HEN04DS-3	4.5	87.6	6.3	66.3	261	50.1	1.5	
C151775	00	1.0	18.4	1.9	36	0.1	6.3	0.7	0.4	0.1	300	HEN04DS-4	1.7	54.6	5.8	67.9	135	17.2	0.9	
151780	20	4.0	192.0	12.0	16	0.9	195.0	30000	-5	-5	80	HEN04DS-5	4.4	44.0	7.1	90.0	148	46.9	1.9	
C151785	00	4.0	130.3	2.7	74	0.5	-5	2.2	0.1	0.1	89	HEN04DS-6	5.3	55.7	12.2	165.5	332	57.5	1.3	
C151786	20	5.9	109.0	399.7	398	0.2	97.2	4.7	3.2	0.1	150	HEN04DS-7	2.4	49.4	8.5	104.0	217	56.1	2.1	
151788	1.8	299.3	2.8	95	0.2	59	3.9	0.1	0.1	0.1	135	HEN04DS-8	0.6	89.3	8.6	83.4	201	31.1	4.6	
151790	1.4	89.3	0.6	32	1.1	0.7	0.9	0.1	-1	1.9		04DS-H2	2.1	69.7	6.3	75.3	690	15.3	1.3	
151791	0.5	479.1	3.1	49	0.2	2.4	21.0	0.1	0.1	7.2		04DS-H3	0.6	78.7	0.2	65.7	62	22.5	3.5	
151792	6.3	125.5	1.0	63	0.1	3.0	2.3	0.1	0.1	129		04DS-H4	4.7	47.9	6.0	120.1	261	144.6	2.9	
151794	1.1	71.1	3.2	37	0.1	1.3	7.7	0.1	-1	4.3		04DS-H5	9.3	47.3	9.1	135.2	207	449.9	1.1	
04DS-H1	1.9	81.9	12.5	62	0.1	102.8	22.5	23.0	0.4	135		04DS-H6	7.5	99.9	11.3	118.2	558	310.6	2.6	
04DS-H2	3.9	189.0	2.9	70	0.1	6.3	5.5	1.1	-1	29		04DS-H7	1.0	89.9	5.5	36.3	414	15.9	1.6	
04DS-H3	0.4	167.0	2.3	57	0.1	3.3	4.1	0.3	-1	7.3		04DS-H8	2.2	61.0	7.4	143.2	235	16.8	2.8	
04DS-H4	5.0	1.2	156.0	3.2	0.6	0.1	94.2	2.1	2.8	-1	103		04DS-H9	1.3	118.6	8.3	79.9	238	28.7	4.0
151801	0.9	134.8	2.8	67	0.2	93.9	4.6	0.6	-1	103		04DS-H10	1.6	44.5	5.6	89.9	155	28.2	1.7	
151802	0.7	407.3	3.1	48	0.5	1.5	4.7	0.1	-1	3.9		04DS-H11	0.8	40.1	5.3	66.4	215	14.3	1.5	
151803	0.5	110.3	1.9	37	0.1	8.1	3.8	1.3	-1	124		04DS-H12	0.9	41.7	5.6	63.1	210	14.6	1.9	
151804	1.1	619.0	2.0	45	0.1	1.0	1.8	0.2	0.1	89		HEN04 DS-1	1.1	55.7	17.1	86.0	0.3	15.1	1.7	
151805	1.0	90.7	11.3	32	0.1	4.9	1.7	0.2	0.2	85										
151806	0.8	97.7	4.2	43	0.1	1.3	5.1	0.1	-1	85										
151807	0.3	37.9	0.7	25	-1	2.1	0.9	0.1	-1	260										
151808	0.8	90.7	3.6	34	-1	11.5	1.4	1.3	0.1	279										
151809	0.4	110.8	1.3	15	0.1	94.2	1.2	1.8	0.1	202										
151810	0.8	2744.6	1.7	72	1.5	1.0	39.0	0.1	0.1	291										
151811	0.2	138.8	1.8	31	0.1	7.3	3.3	0.1	-1	60										
151812	4.2	115.7	1.1	17	0.1	92.0	8.4	0.8	0.1	138										
151813	0.3	211.6	4.2	25	0.1	3.1	4.7	0.4	-1	104										

NTS: 093A.007 NAD 83 UTM Zone 10  
 Cariboo Mining Division  
 British Columbia, Canada

Happy Creek Minerals Ltd  
 Hen Property  
 2004 Rock and Silt Location  
 Figure 4



0.0 500 1000m  
Scale: Metres

NTS: 093A.007 NAD 83 UTM Zone 10  
Cariboo Mining Division  
British Columbia, Canada

Happy Creek Minerals Ltd  
Hen Property  
Geology and Compilation

Figure 5

# Appendix 1

## Assay Certificates

GEOCHEMICAL ANALYSIS CERTIFICATE

Standard Metals PROJECT HEN File # A406832

38151 Clarke Drive, P.O., Squamish BC V0N 3G0 Submitted by: David Blann

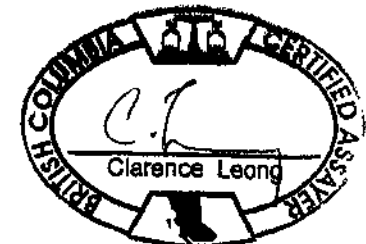


SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Pi	B	Al	Na	K	W	Hg	Sc	Ti	S	Ga	Se
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
SI	<.1	<.1	.1	<.1	<.1	<.1	<.1	2	.03	<.5	<.1	<.5	<.1	1	<.1	<.1	<.1	1	.06	<.001	<.1	<.1	<.91	2	<.001	1	<.01	.290	<.01	<.1	<.01	.1	<.1	<.05	<.1	<.5
151662	.7	407.9	3.1	48	.5	99.8	35.6	183	2.90	1.5	.5	6.7	1.0	25	.2	.1	<.1	51	1.27	.098	4	123.6	.97	30	.099	3	1.37	.042	.15	.2	.01	2.1	<.1	1.10	3	2.7
151663	.5	110.3	1.9	27	.1	20.3	18.1	242	2.00	9.1	.3	3.8	1.0	46	.1	1.3	<.1	80	1.32	.087	4	29.2	.77	124	147	3	1.30	.097	16	.3	.01	3.8	<.1	1.7	4	<.5
151664	1.1	419.0	2.0	45	.1	81.5	49.1	422	5.20	1.0	1.6	1.9	1.4	34	.1	.2	.1	86	.99	.157	7	117.8	1.14	82	138	3	1.29	.078	.32	.5	.05	4.7	<.1	1.79	3	2.4
151665	1.0	80.7	11.3	22	.1	26.1	16.1	183	1.70	4.9	.5	1.7	2.1	65	.1	.2	.2	40	2.16	.125	7	24.5	.45	88	104	3	2.03	.252	.27	.3	.03	2.0	.1	.52	5	<.5
151666	8	167.7	4.3	43	.1	10.1	13.5	497	2.55	1.3	.7	5.1	1.6	33	.1	.1	<.1	112	.90	.134	6	12.0	.98	66	117	5	1.32	.050	.18	.2	.01	1.5	<.1	<.05	5	<.5
151667	3	97.9	.7	21	<.1	86.1	23.2	231	2.01	2.1	.3	.9	1.0	41	.1	.1	<.1	51	1.18	.093	4	124.6	1.21	250	131	3	1.44	.088	.56	.1	.01	3.4	<.1	.20	3	<.5
151668	5	160.7	3.6	24	<.1	27.1	24.6	328	2.87	11.5	.6	1.4	2.4	73	.1	1.3	.1	83	1.68	.129	9	38.2	1.15	270	173	3	1.91	.151	.70	.1	.01	2.2	.1	.44	5	<.7
151669	4	110.8	1.3	15	.1	36.5	28.0	301	2.99	14.2	.1	1.2	.6	82	.1	1.8	.1	82	2.82	.114	3	46.6	1.11	202	115	2	2.26	.171	.42	2	.01	4.8	.1	.77	6	<.9
151670	8	274.6	1.7	72	1.5	14.1	21.1	939	4.84	1.0	.7	28.0	1.3	54	.2	.1	.1	176	2.30	.168	7	19.1	1.79	210	157	3	2.13	.044	.59	<.1	.01	8.5	<.1	.16	8	<.5
151671	2	138.8	1.8	31	.1	20.4	17.5	243	2.18	7.3	.3	3.3	1.0	74	.1	.1	<.1	73	1.71	.090	4	23.4	1.06	181	125	3	2.47	.242	.50	<.1	.01	2.1	.1	<.05	5	<.5
151672	4	115.7	1.1	17	.1	69.3	28.5	238	1.92	12.0	.3	8.4	1.0	77	<.1	.8	.1	47	1.96	.085	3	78.0	.81	138	122	3	1.49	.160	.48	.3	.01	2.6	.1	.36	4	<.5
151573	3	211.8	1.2	25	.1	82.1	23.5	297	2.56	3.1	.3	4.7	1.1	79	.1	.4	<.1	73	2.26	.102	4	107.6	.90	104	120	9	1.98	.179	.34	1	.01	3.4	.1	.33	4	<.5
151789	1.9	228.3	1.8	55	.2	49.1	33.1	474	3.59	.9	.4	3.9	1.3	56	.1	.1	.1	89	1.98	.105	4	93.9	1.23	135	148	2	1.86	.153	.52	1	.01	4.8	.1	.58	5	<.6
151790	1.4	86.3	.4	12	<.1	19.5	11.8	113	1.35	.7	.4	.9	1.2	60	<.1	.1	.1	23	.93	.117	6	15.0	.13	49	118	2	.57	.111	.09	.7	.01	1.0	<.1	.59	2	2.4
RE 151790	1.3	85.3	.4	13	<.1	18.3	10.7	106	1.31	.5	.4	2.0	1.1	61	<.1	.1	.1	22	.91	.118	6	14.5	.13	49	119	2	.56	.118	.08	.7	.01	1.0	<.1	.55	2	2.3
151791	2	164.3	.9	32	.1	46.4	27.3	265	2.49	2.9	.5	2.2	1.8	62	<.1	.1	<.1	67	1.16	.114	7	112.9	1.49	119	159	9	1.74	.132	.55	.1	.01	3.4	.1	.25	4	<.7
151792	5	479.1	3.1	48	.2	17.4	31.9	520	4.26	2.4	.3	71.0	.8	81	.2	.1	.1	145	1.98	.279	8	3.0	1.47	.77	169	6	2.12	.155	.23	1	.01	4.2	.1	.38	6	1.5
151793	3	122.5	1.0	63	.1	27.7	21.2	543	4.52	3.0	.5	2.3	2.2	32	.2	.1	.1	193	1.49	.120	8	75.0	2.29	129	197	1	2.34	.054	.77	1	<.01	7.9	.4	<.05	9	<.5
151794	1.1	71.1	1.2	37	.1	14.8	13.1	312	2.68	1.3	.4	7.7	1.2	35	.1	.1	<.1	52	.83	.073	5	17.4	.64	43	125	3	1.33	.091	.06	.1	.01	1.6	<.1	.49	4	2.7
0408-H-1	1.6	81.9	12.5	92	.1	30.9	17.4	1394	5.26	1202.8	.4	22.5	1.6	33	.8	23.9	.4	86	.45	.074	5	51.2	1.01	135	.093	4	1.18	.025	.17	1	.02	11.0	.1	1.11	4	1.1
0408-H-2	3.8	188.0	2.9	70	.1	9.7	18.5	1526	4.93	6.3	.5	5.5	1.2	31	.1	1.1	<.1	101	.46	.164	8	14.2	1.41	533	.042	3	1.80	.013	.49	4	.01	5.1	<.1	<.05	5	<.5
0408-H-3	.4	157.0	2.3	57	.1	104.8	38.3	906	5.02	3.3	.4	4.1	1.2	30	.2	.3	<.1	174	1.68	.109	4	262.7	3.20	73	.176	3	2.74	.051	.41	<.1	.02	10.9	.1	1.4	9	<.5
0408-H-4	1.2	155.0	2.3	91	.1	110.6	43.4	839	5.07	34.2	.7	2.1	1.6	22	.4	2.8	<.1	143	.81	.099	7	188.8	1.68	100	121	7	1.75	.058	.24	.1	.08	13.9	.1	.06	6	<.5
STANDARD D58	11.9	123.7	31.9	146	.3	24.4	11.1	694	2.86	21.9	6.8	43.0	2.9	38	6.3	3.6	5.1	58	.85	.078	13	183.6	.59	166	.074	16	1.85	.077	.14	3.4	.24	3.1	1.8	<.05	6	4.7

GROUP 1DX - 15.00 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 300 ML, ANALYSED BY ICP-MS.  
(>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.  
- SAMPLE TYPE: ROCK R150 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data f FA \_\_\_\_\_

DATE RECEIVED: NOV 3 2004 DATE REPORT MAILED: Nov 19/04



GEOCHEMICAL ANALYSIS CERTIFICATE

Standard Metals PROJECT HEN File # A406833 (a)

38151 Clarke Drive, P.O., Squamish BC V0N 3G0 Submitted by: David Blann



SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Tl	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm	
S-1	1.53	3.39	2.40	46.8	11	4.7	4.5	559	1.93	.3	1.5	<.2	3.6	92.2	.01	.02	.07	44	.54	.085	6.7	13.4	.60	253.0	.143	<1	1.09	.094	.64	1.5	2.9	.33	.01	<.5	<.1	<.02	4.7
HEN04DS-2	2.52	181.86	5.24	137.8	427	65.8	25.6	1748	5.29	54.0	1.3	3.8	1.8	39.5	.53	.46	.08	258	.87	.242	14.5	51.9	1.11	289.4	.172	<1	3.81	.015	.46	<.1	5.6	.13	.03	62	.5	.02	8.6
HENC4DS-3	4.47	87.52	6.28	66.3	351	21.1	39.6	5644	5.14	50.1	.8	1.5	.6	35.7	.84	.39	.07	216	.76	.164	11.8	33.9	.72	174.4	.094	1	1.89	.012	.14	<.1	3.6	.17	.95	76	6	<.02	5.7
HEN04DS-4	1.66	54.57	5.78	67.9	135	35.8	18.0	1120	3.03	17.2	.6	.9	1.1	36.3	.29	.43	.08	98	.55	.075	8.2	61.7	.94	133.9	.122	1	2.05	.030	.15	.1	3.9	.08	.02	30	.2	<.02	5.3
HENC4DS-5	4.35	43.96	7.08	90.0	148	33.4	30.5	6341	4.85	46.9	.6	1.9	.9	45.4	.76	.35	.08	106	.68	.080	7.8	55.5	.81	261.8	.085	1	1.89	.021	.09	<.1	4.0	.18	.03	42	.4	.02	4.9
HEN04DS-6	5.26	55.65	12.21	165.5	302	33.2	42.3	5516	4.02	57.5	.8	1.3	.5	48.0	1.93	.62	.07	122	.86	.094	10.3	43.0	.66	195.1	.069	2	2.26	.016	.08	<.1	3.6	.21	.06	65	.7	.02	4.8
HEN04DS-7	2.37	49.44	8.46	104.0	217	36.2	24.8	3312	3.52	56.1	.7	2.1	.8	40.2	.77	1.22	.07	93	.69	.084	9.0	53.3	.81	166.6	.360	<1	2.28	.024	.10	<.1	4.1	.17	.02	49	.5	.02	5.0
HEN04DS-8	.64	88.32	8.55	83.4	201	53.4	21.4	627	3.25	31.1	.8	4.6	2.3	39.6	.44	.75	.13	91	.58	.077	11.6	81.9	1.06	196.4	.160	1	2.59	.027	.23	2	5.4	.14	<.01	20	.2	.02	7.3
04DB-H-2	2.06	68.71	6.27	75.3	690	37.6	18.1	832	3.32	15.3	.7	1.3	1.7	35.5	.26	.54	.09	115	.59	.104	9.1	63.3	1.00	159.6	.121	1	2.13	.022	.14	.1	4.7	.09	.01	29	.2	<.02	5.6
04DB-H-3	.56	78.70	6.20	66.7	62	48.0	19.2	574	3.06	22.5	.5	3.5	2.6	53.8	.71	.97	.11	85	.68	.101	10.7	84.6	1.16	188.2	.157	1	2.02	.056	.23	2	5.2	.12	<.01	11	2	.03	5.9
04DB-H-4	4.66	47.92	6.02	120.1	261	37.4	33.5	3511	5.51	144.6	.8	2.9	.9	39.2	.83	.41	.08	93	.69	.109	9.9	65.1	.83	264.0	.064	1	1.99	.024	.08	<.1	5.1	.24	.03	47	.5	<.02	5.0
04DB-H-5	9.32	47.28	9.05	136.2	207	33.9	53.3	6208	17.40	449.9	.8	1.1	1.0	43.9	1.23	.60	.08	141	.76	.110	13.1	53.9	.67	447.7	.056	1	2.08	.016	.06	1	5.1	.40	.02	56	.6	.02	4.8
04DB-H-6	7.53	59.75	11.29	118.2	558	37.7	31.3	12792	8.18	310.6	1.1	2.6	.4	61.5	1.86	.97	.11	109	1.35	.154	12.7	49.0	.52	442.5	.034	2	1.81	.019	.06	<.1	4.2	.39	.12	183	1.6	.04	4.4
04DB-H-7	1.03	86.77	5.46	38.3	414	14.9	7.7	575	1.01	15.9	1.6	1.5	.2	109.4	.90	.41	.06	21	2.97	.115	5.0	24.6	.28	100.9	.019	5	.88	.021	.04	<.1	1.6	.05	.42	175	3.9	<.02	1.8
04DB-H-8	2.27	61.75	7.67	143.5	314	36.5	18.5	1938	2.68	16.6	.7	1.8	.9	48.5	.65	.56	.08	81	.69	.081	10.3	60.2	.81	168.1	.090	1	2.15	.024	.12	<.1	3.8	.11	.03	82	.3	.02	5.4
RE 04DB-H-8	2.23	61.01	7.40	143.2	295	35.0	19.4	1960	2.72	16.8	.7	2.8	1.0	48.4	.61	.54	.09	82	.69	.083	10.1	58.4	.82	164.9	.092	<1	2.18	.025	.11	<.1	3.8	.12	.03	70	.4	.03	5.3
04DB-H-9	1.30	118.61	8.29	79.9	238	52.3	19.0	481	3.34	28.7	2.3	4.0	2.4	41.8	.26	.91	.13	90	.58	.074	16.5	88.9	1.03	206.8	.122	1	2.74	.025	.17	<.1	8.7	.15	.01	64	.6	.04	6.8
04DB-H-10	1.62	44.52	5.61	89.9	155	34.3	19.4	1420	2.92	28.2	.7	1.7	1.2	36.5	.40	.57	.07	76	.58	.084	8.7	60.3	.87	139.3	.094	<1	2.02	.030	.11	2	3.8	.13	.01	32	.3	<.02	5.0
04DB-H-11	.77	40.10	5.31	66.4	216	31.7	12.1	353	2.00	14.3	.8	1.5	.7	28.5	.24	.39	.07	56	.50	.076	9.1	51.5	.69	116.6	.072	<1	1.98	.023	.07	<.1	3.6	.09	.04	38	.4	<.02	4.6
04DB-H-12	.85	41.70	5.63	68.1	210	33.4	13.7	595	2.14	14.6	.9	1.9	.7	36.3	.28	.38	.07	57	.59	.079	8.9	55.1	.77	126.3	.070	<1	2.15	.024	.09	<.1	3.8	.10	.04	47	.4	<.02	4.9
STANDARD 056	11.41	127.05	28.74	145.4	265	24.7	10.5	689	2.73	20.6	6.5	42.7	3.1	38.3	5.87	3.60	4.83	57	.83	.080	13.7	180.1	.59	166.9	.077	17	1.85	.073	.15	3.5	3.2	1.68	.03	225	4.3	2.41	5.9

GROUP 1F1 - 1.00 GM SAMPLE LEACHED WITH 6 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 20 ML, ANALYSED BY ICP/ES & MS.  
(>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.  
- SAMPLE TYPE: SILT SS80 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data FA \_\_\_\_\_ DATE RECEIVED: NOV 3 2004 DATE REPORT MAILED: Nov 26/04





GEOCHEMICAL ANALYSIS CERTIFICATE



Standard Metals PROJECT HEN File # A406833 (b)

38151 Clarke Drive, P.O., Squamish BC V0N 3G0 Submitted by: David Blann

SAMPLE#	Cs ppm	Ge ppm	Hf ppm	Nb ppm	Rb ppm	Sn ppm	Ta ppm	Zr ppm	Y ppm	Ce ppm	In ppm	Re ppb	Be ppm	Li ppm	Pd ppb	Pt ppb
G-1	2.93	.1	.07	.87	45.2	.5	<.05	1.2	4.30	13.0	.02	<1	.3	36.6	<10	<2
HEN04DS-2	2.65	.1	.02	.48	44.5	.4	<.05	1.1	17.92	48.4	.03	<1	.3	60.2	<10	<2
HEN04DS-3	1.45	.1	<.02	.41	11.8	.3	<.05	.4	13.66	28.5	.02	1	.2	14.9	<10	<2
HEN04DS-4	1.15	<.1	<.02	.77	11.4	.3	<.05	.9	6.13	19.3	.02	<1	.3	17.7	<10	<2
HEN04DS-5	1.08	<.1	<.02	.52	8.7	.3	<.05	.7	6.39	18.5	.02	1	.2	16.3	<10	<2
HEN04DS-6	1.10	.1	<.02	.53	7.7	.2	<.05	.5	10.41	26.6	.02	2	.4	20.4	<10	<2
HEN04DS-7	1.07	.1	<.02	.50	8.4	.2	<.05	.7	7.72	18.4	.02	3	.2	19.7	<10	<2
HEN04DS-8	1.55	.1	.04	1.34	20.7	.4	<.05	2.5	7.25	23.0	.03	<1	.4	17.3	<10	2
04DB-H-2	1.18	.1	.02	.62	11.5	.3	<.05	1.5	6.79	19.8	<.02	1	.4	16.6	<10	4
04DB-H-3	1.37	.1	.07	.39	18.8	.3	<.05	3.8	6.66	22.8	.02	<1	.2	13.7	<10	<2
04DB-H-4	1.08	.1	<.02	.54	6.5	.2	<.05	.7	9.15	15.9	.02	2	.3	18.0	<10	2
04DB-H-5	.97	.1	<.02	.74	5.6	.2	<.05	1.1	10.96	22.6	.02	2	.4	13.3	<10	2
04DB-H-6	.88	.1	.03	.51	5.3	.2	<.05	1.0	13.66	15.3	.02	5	.3	10.3	<10	2
04DB-H-7	.42	.1	.03	.48	2.1	.2	<.05	1.8	10.87	6.6	<.02	9	.3	3.7	<10	<2
04DB-H-8	1.16	.1	<.02	.85	10.2	.3	<.05	.8	7.72	21.2	<.02	<1	.3	15.6	<10	<2
RE 04DB-H-8	1.11	<.1	<.02	.86	10.4	.3	<.05	.8	7.74	21.1	.02	1	.4	14.8	<10	<2
04DB-H-9	1.49	.1	.06	1.16	15.0	.3	<.05	2.8	15.44	22.0	.03	1	.5	19.8	<10	<2
04DB-H-10	.99	.1	<.02	.61	9.4	.2	<.05	.7	6.31	16.8	<.02	<1	.2	15.4	<10	<2
04DB-H-11	.97	<.1	<.02	.65	6.4	.2	<.05	.6	6.87	15.0	<.02	<1	.4	14.3	<10	<2
04DB-H-12	1.06	.1	.02	.68	7.2	.2	<.05	.6	6.91	14.4	<.02	<1	.2	15.9	<10	2
STANDARD DS6	5.38	<.1	.03	1.52	14.1	5.4	<.05	3.3	6.83	28.0	1.96	1	2.4	16.4	170	40

GROUP 1F1 - 1.00 GM SAMPLE LEACHED WITH 6 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 20 ML, ANALYSED BY ICP/ES & MS.  
 (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.  
 - SAMPLE TYPE: SILT SS80 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data P FA \_\_\_\_\_

DATE RECEIVED: NOV 3 2004 DATE REPORT MAILED: Nov 26/04





GEOCHEMICAL ANALYSIS CERTIFICATE



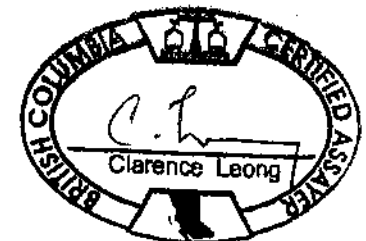
Standard Metals File # A404645  
38151 Clarke Drive, P.O., Squamish BC V0N 3G0 Submitted by: David Blann

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	Ta ppm	Cr ppm	Mg %	Ba ppm	Ti ppm	B ppm	Al %	Na %	K %	W ppm	Hg ppm	Sc ppm	Tl ppm	S %	Ga ppm	Se ppm
SI	.1	.6	.6	1	<.1	.3	<.1	<.1	.04	<.5	<.1	.6	<.1	2	<.1	<.1	<.1	1	.07	.001	<.1	1.5	<.01	3	<.001	1	.01	.347	<.01	.1	<.01	<.1	<.1	<.05	<.1	<.5
C 151657	4	53.8	1.4	50	.1	11.3	18.2	370	3.14	13.8	.3	2.4	.6	83	.1	2	1	110	1.05	.048	2	11.9	1.14	356	.234	3	2.39	.282	.86	2	<.01	4.6	.4	.24	6	<.5
C 151658	3.6	279.3	4.9	34	1.5	2.8	7.9	291	3.87	6.3	1.6	10.4	3.2	11	.2	.1	24.3	46	.23	.055	3	5.3	.63	59	.046	2	1.20	.038	.36	1.8	.01	3.0	.5	2.53	4	<.5
C 151659	6	265.1	1.7	46	.1	15.9	18.0	452	2.86	3.5	.1	1.3	.1	138	.1	.1	2	84	1.25	.103	1	31.6	1.09	17	.113	4	1.10	.030	.16	.3	.01	3.0	<.1	<.05	4	<.5
C 151660	1.3	5.7	1.3	24	<.1	6.4	30.4	335	4.86	9.6	.2	61.5	.5	16	<.1	.1	2	54	.64	.060	2	12.3	.77	41	.042	2	1.40	.056	.20	1.5	.02	3.1	.1	3.53	5	1.0
C 151661	.8	134.8	2.5	67	.2	17.3	19.3	372	3.10	193.9	.5	4.6	.7	46	.2	.6	<.1	90	1.27	.123	6	22.9	.96	103	.159	12	1.69	.056	.09	.3	.01	3.1	<.1	.08	6	1.0
C 151770	1.2	74.3	14.2	66	.5	2.3	13.0	567	2.51	3.2	.5	4.8	1.1	44	.3	.3	4	52	.84	.084	3	3.5	.47	77	.081	2	1.35	.119	.11	1.1	.01	1.3	.1	.55	4	<.5
C 151771	.3	5.9	3.2	23	<.1	3.3	3.5	325	1.15	2.2	.5	<.5	1.7	27	<.1	.2	<.1	18	.19	.036	5	5.3	.21	175	.017	2	.54	.049	.17	4	<.01	1.2	<.1	<.05	2	<.5
C 151772	.5	5.2	2.4	31	<.1	2.8	3.7	356	1.16	1.6	.9	<.5	3.3	59	<.1	.1	<.1	19	.34	.037	6	5.6	.37	71	.012	1	.75	.070	.09	<.1	.04	1.2	<.1	<.05	4	<.5
C 151773	1.7	94.4	5.7	89	.2	30.6	23.7	889	4.64	6.8	.6	<.5	1.7	34	.8	.2	.1	165	.75	.121	6	65.0	1.94	30	.199	1	1.99	.042	.11	.4	.02	5.3	.2	.87	7	1.8
C 151774	6.0	102.2	10.5	188	.3	34.5	20.4	279	3.23	54.4	1.0	<.5	1.1	77	2.6	2.3	.1	79	2.20	.132	5	27.1	.54	44	.133	3	2.67	.191	.21	1.0	.02	2.7	.2	1.42	9	4.7
C 151775	1.0	98.4	1.9	38	.1	14.7	14.0	364	3.44	6.3	.6	.7	.9	62	<.1	.4	.1	148	.85	.148	5	33.7	.94	330	.271	2	1.58	.119	.69	.3	<.01	2.6	.1	.49	5	.6
C 151776	.8	>10000	1.1	17	20.6	8.9	6.3	322	1.37	1.7	.3	2219.8	.1	73	.5	.3	7.0	56	2.32	.147	1	81.3	.62	8	.122	<.1	.63	.046	.06	.6	.29	4.2	<.1	<.05	2	5.0
RE C 151776	.9	>10000	1.0	16	20.1	9.0	6.2	315	1.34	1.6	.3	2154.1	.1	69	.4	.3	7.0	54	2.29	.136	1	77.9	.61	8	.120	<.1	.63	.045	.06	.6	.31	3.8	<.1	.07	2	4.7
C 151777	.4	8897.5	1.0	9	11.0	4.9	3.6	433	.99	1.4	.3	1112.4	.1	139	.5	.2	4.2	37	9.58	.110	1	43.4	.40	6	.091	<.1	.36	.009	.03	.3	.26	2.7	<.1	<.05	1	3.2
C 151778	.2	358.5	.9	15	.3	5.2	4.4	638	.85	3.6	.4	34.6	<.1	318	.2	.1	.1	33	26.62	.072	1	31.8	.57	4	.047	1	.29	.006	.07	.1	.03	2.4	<.1	.11	1	<.5
C 151779	.2	158.9	1.0	12	.1	5.3	4.7	833	1.16	4.0	.4	10.4	.1	301	.1	<.1	<.1	44	23.41	.085	1	51.4	.54	4	.070	1	.30	.011	.10	.1	.02	2.2	<.1	.14	1	<.5
C 151780	.6	>10000	2.5	20	5.5	14.8	8.1	578	1.65	1.9	.2	554.3	.1	117	.3	.2	3.9	52	7.74	.106	1	158.3	.88	11	.123	<.1	.62	.021	.09	.3	.78	4.1	<.1	.57	2	3.1
C 151781	.5	2344.5	1.2	33	2.6	10.4	10.4	440	1.88	3.5	.3	325.4	.3	123	.2	.5	1.2	77	6.33	.152	2	50.1	.80	19	.130	<.1	.76	.031	.12	.4	.15	3.1	<.1	.20	3	1.4
C 151782	.6	6789.0	.8	24	11.1	15.4	10.4	378	1.57	1.5	.2	1312.5	.1	67	.3	.3	3.6	60	2.00	.157	1	113.5	1.08	14	.126	<.1	.87	.048	.14	.4	.43	4.5	<.1	.19	3	5.2
C 151783	.2	1201.1	.9	25	.9	12.8	9.6	530	1.76	3.1	.3	157.4	.2	220	.2	.2	.5	67	12.99	.119	1	103.0	.87	22	.104	<.1	.65	.020	.18	.2	.44	3.0	<.1	.12	2	.8
C 151784	.6	5359.0	1.1	15	7.0	8.2	6.1	548	1.23	1.8	.5	910.2	.2	181	.3	.2	2.8	44	9.49	.132	1	59.9	.56	12	.091	<.1	.53	.014	.12	.5	.38	3.0	<.1	.18	2	3.4
C 151785	.5	8074.7	1.6	15	10.2	7.1	6.1	482	1.26	2.4	.4	1715.1	.1	146	.5	.3	3.1	48	7.47	.142	1	67.7	.64	8	.106	1	.55	.022	.04	.4	.96	3.9	<.1	.06	2	3.6
C 151786	4.0	130.3	2.7	74	.5	21.6	12.4	482	3.31	<.5	.3	2.2	1.4	76	.2	.1	.1	77	1.30	.059	4	21.7	.82	88	.182	<.1	2.37	.331	.75	.7	<.01	7.3	.5	1.53	7	5.3
C 151787	.8	130.2	19.7	80	.3	26.9	18.1	311	2.01	108.8	.5	15.7	.8	32	.5	.9	<.1	39	1.20	.088	5	36.3	.68	55	.121	60	1.24	.056	.09	.3	.03	2.5	<.1	.11	4	.7
C 151788	5.9	108.0	202.7	298	.2	66.5	43.0	2466	7.14	87.2	.9	4.7	1.0	19	1.0	2.2	.1	138	.39	.118	10	168.3	1.55	150	.017	4	2.22	.012	.25	<.1	.08	13.3	.1	<.05	6	.5
STANDARD DSS	12.5	145.7	25.2	140	.3	24.5	12.1	778	3.00	18.8	6.0	45.1	2.6	46	5.4	3.7	5.9	64	.72	.095	12	187.1	.69	135	.096	17	1.98	.031	.14	4.7	.18	3.3	.1	.06	6	5.0

GROUP 1DX - 15.00 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 300 ML, ANALYSED BY ICP-MS.  
(>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY.  
- SAMPLE TYPE: ROCK R150 60C Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

Data P. FA DATE RECEIVED: AUG 16 2004 DATE REPORT MAILED: Sept. 2/04.

Assay recommend for Cu > 1%  
Au > 1000 ppb



# **Petrographic Report**

## **HEN Rocks**

16 May 2005

Prepared For: David Blann  
Standard Metals

*PetraScience Consultants Inc.*

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## Background

A set of 8 samples were received from David Blann of Standard Metals. The objective of the work was to define the characteristics of the alteration, mineralization and ore associations. The samples were prepared as polished thin sections for petrographic analysis. No detailed geologic or spatial information was provided with the samples, however brief descriptions were provided. The petrographic work included basic transmitted and reflected light observations, covering description of lithologies (where possible), alteration and mineralization. The analyses were carried out by Anne Thompson and Alexandra Mauler at the PetraScience office, Vancouver and Kathryn Dunne at her office in Salmon Arm. The observations are summarized below and descriptions follow. All percentages in the descriptions are approximate.

## Summary

### *Lithologies*

The sample suite includes variably altered igneous lithologies, vein and skarn assemblages.

Sample Hen98-16 is a pervasively altered, vaguely granular holocrystalline rock. Sample Hen98-19 a mottled, vaguely porphyritic rock. SB DDH3-130 is less altered and is identified as a monzodiorite or possibly quartz monzodiorite.

Samples Hen941 – 69.5, Hen 92 – D3, and 00 DR4 are identified as calcic skarns. Sample Hen941 – 69.5 is banded with an assemblage of quartz-actinolite-tremolite-epidote-biotite-carbonate-K-feldspar-clinopyroxene. Sample Hen 92 – D3 has a similar skarn assemblage (except without biotite) but is not banded. Sample 00 DR4 is a semi-massive garnet-clinopyroxene (clinozoisite-epidote-calcite) skarn.

Sample SB5893 – DR3 is a quartz vein and sample SB 00H-1 – 75 is a massive pyrite-chalcopyrite-quartz vein.

### *Alteration*

The igneous samples have been variably altered. In Hen98-16 the original mineralogy and textures are replaced by patchy to pervasive epidote, quartz, K-feldspar and sericite. Veinlets of epidote-K-feldspar-quartz and K-feldspar-biotite vein selvages occur locally. In Hen98-19 the rock is replaced by epidote-clinozoisite, K-feldspar, actinolite-tremolite and quartz. In SB DDH3-130 alteration is less intense selectively pervasive replacement of amphibole and plagioclase by epidote, carbonate, chlorite and sericite. Tourmaline occurs as selvages to fine carbonate-epidote veinlets.

Calcic skarn alteration comprises bands of biotite-quartz-sulfides, clinopyroxene-carbonate-quartz, K-feldspar-epidote and carbonate-amphibole (Hen 941 – 69.5). In sample Hen 93 – D3, the skarn alteration comprises patchy aggregates of quartz-epidote-actinolite-tremolite-K-feldspar and clinopyroxene. In sample 00 DR4 clinozoisite-epidote and calcite aggregates partly replace clinopyroxene. Garnet is fractured and infilled by quartz, calcite and clinozoisite-epidote.

Minor sericite occurs as disseminated patches in sample (SB 00H-1 -75) and trace sericite occurs as alteration in the quartz vein (SB5893 – DR3). Calcite occurs as veinlet in sample SB 00H-1-75.

### *Mineralization*

Mineralization in Hen98-16, 19 and Hen941 – 69.5 comprises minor to major disseminated pyrrhotite with minor to trace chalcopyrite and arsenopyrite. Sample Hen 92 – D3 has 10% disseminated arsenopyrite. Minor chalcopyrite and pyrite occur as infill to coarse-grained quartz in SB5893 – DR3. Sample SB 00H-1-75 comprises massive pyrite with lesser chalcopyrite. Samples SB DDH3 – 130 and 00 DR4 comprise minor chalcopyrite±pyrite or pyrrhotite with traces of molybdenite.

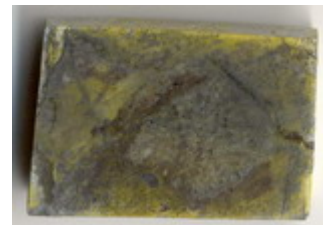
**Sample:** Hen98-16

**LITHOLOGY:** Vaguely granular holocrystalline rock

**ALTERATION TYPE:** Epidote, quartz, K-feldspar, sericite, pyrrhotite

**Hand Sample Description:**

White-gray, patchy, vaguely granular rock crosscut by thin, irregular black veinlets. Weak to strong yellow stain as patches and disseminated throughout the sample (particularly as selvages to black veinlets) indicates presence of K-feldspar. Very fine sulfides occur disseminated. Strongly magnetic, no reaction to HCl. FOV = ~ 4 cm



**MAJOR MINERALS**

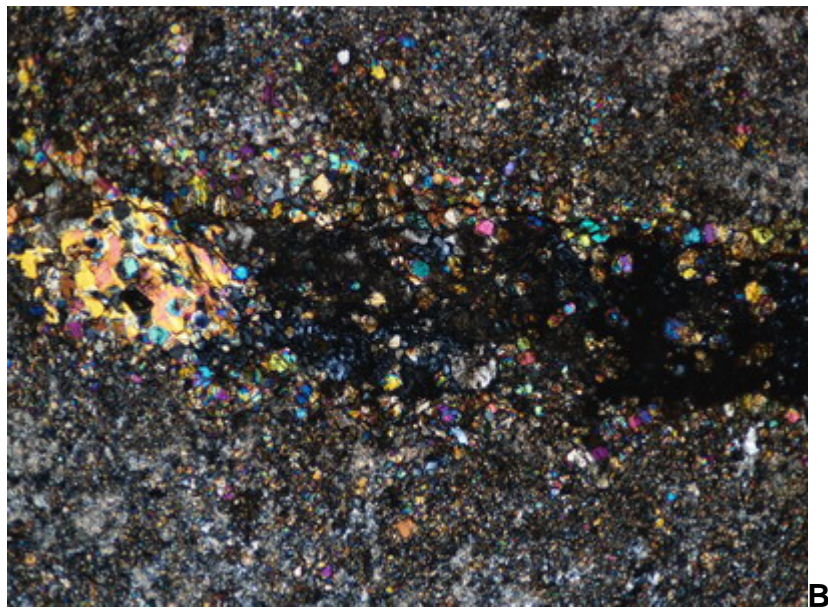
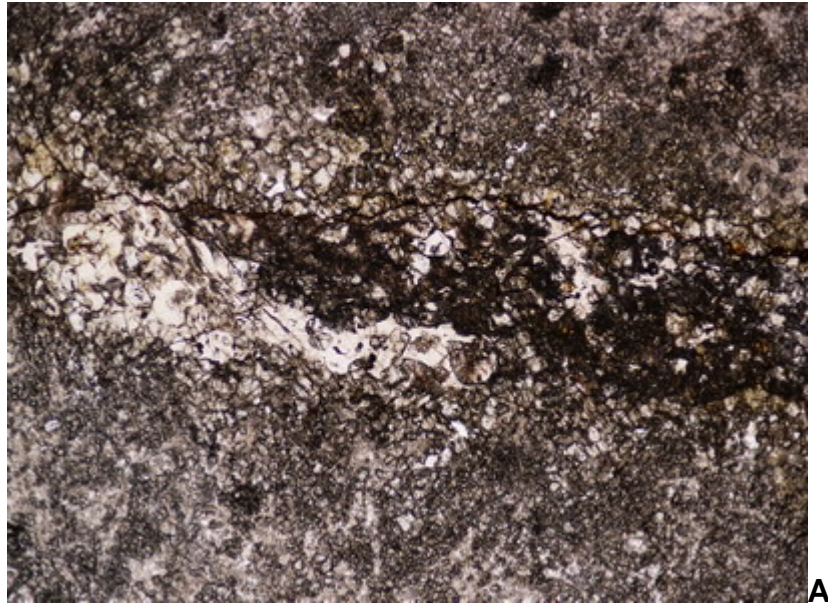
Mineral	%	Distribution & Characteristics	Optical
Epidote	30	fine to very fine rounded grains, occurs with quartz and K-feldspar as pervasive replacement of rock, locally larger prismatic grains in discontinuous veins or monomineralic patches	
Quartz	30	fine to very fine-grained, rounded equigranular grains occurs with epidote as replacement of rock; fine-grained, occurs as veinlets with epidote and K-feldspar	
K-feldspar	15	very fine-grained, grungy brown aggregates, occurs as patches with epidote and quartz, partly replaced by sericite aggregate; fine to very fine-grained, occurs as veinlets and vein selvages with epidote, partly replaced by sericite	
Sericite	10	very fine-grained, anhedral aggregates, occurs as patchy replacement of K-feldspar in rock and veinlets	
Pyrrhotite	10	fine anhedral grains, occurs disseminated and within epidote-K-feldspar-quartz veinlets, locally rimmed by rutile or ilmenite	

**MINOR MINERALS**

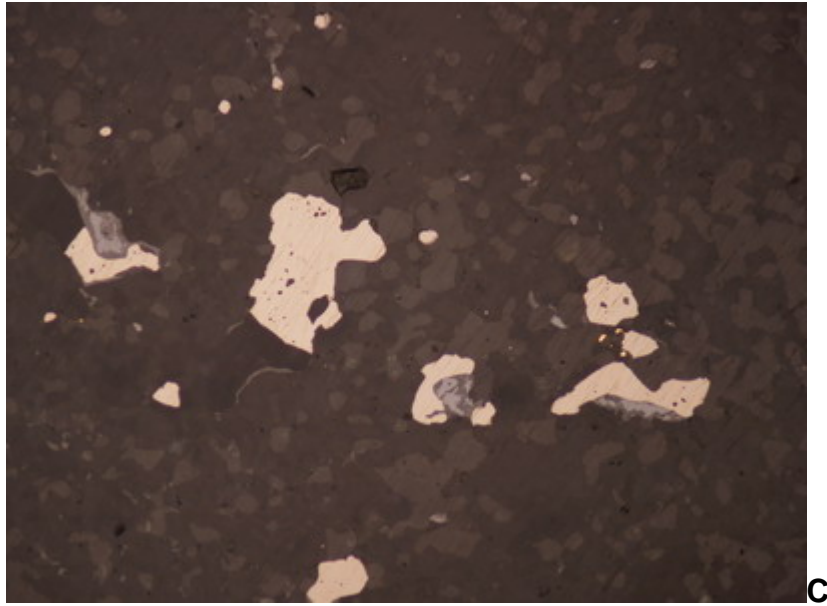
Mineral	%	Distribution & Characteristics	Optical
Chlorite	02	foliated masses disseminated, replacement of biotite	
Biotite	02	fine foliated masses typically partly replaced by chlorite, rutile and sulfides	<i>red brown-tan</i>
Ilmenite	01	very fine laths disseminated, rims pyrrhotite	
Actinolite	tr	fine-grained, subhedral aggregates, occurs as veinlets	
Chalcopyrite	tr	fine anhedral grains, disseminated, as inclusions within and intergrown with pyrrhotite	
Arsenopyrite	tr	very fine-grained, occurs rarely with pyrrhotite	
Rutile	tr	very fine-grained, anhedral aggregates, occurs with chlorite and pyrrhotite as replacement of biotite	

**Thin Section Description:**

The original mineralogy and granular texture of the sample is completely obliterated by a fine assemblage of epidote, quartz, secondary K-feldspar, sericite (after K-feldspar) and pyrrhotite. The patchy to pervasive alteration assemblage is accompanied by discontinuous veinlets of epidote-K-feldspar-quartz±pyrrhotite locally with K-feldspar and secondary biotite selvages. Actinolite veinlets occur less commonly. Outlines of former tabular minerals are occasionally preserved by epidote replacement. Chlorite, rutile, ilmenite and pyrrhotite occur locally as replacement of biotite. Pyrrhotite occurs disseminated, locally intergrown with fine chalcopyrite and rarely with trace arsenopyrite.



**Hen98-16:** Representative view showing a matrix of intermixed quartz, K-feldspar and epidote, cut by a vein of coarser-grained epidote. FOV = 3.5 mm, A) PPL, B) XPL



**Hen98-16: C)** Representative view showing pyrrhotite dissemination associated with ilmenite (light grey) and rutile (dark grey). FOV = 0.85 mm, RL

**Sample:** Hen98-19

**LITHOLOGY:** Vaguely porphyritic rock

**ALTERATION TYPE:** Epidote-clinozoisite, K-feldspar, actinolite-tremolite, quartz

**Hand Sample Description:**

Grey patchy tabular crystals in a dark gray, mottled, typically weakly stained (cobalttrinite) matrix. Tabular crystals are commonly also stained. Trace disseminated pyrrhotite. Some dark gray patches strongly magnetic, no reaction to HCl. FOV = ~ 4 cm



**MAJOR MINERALS**

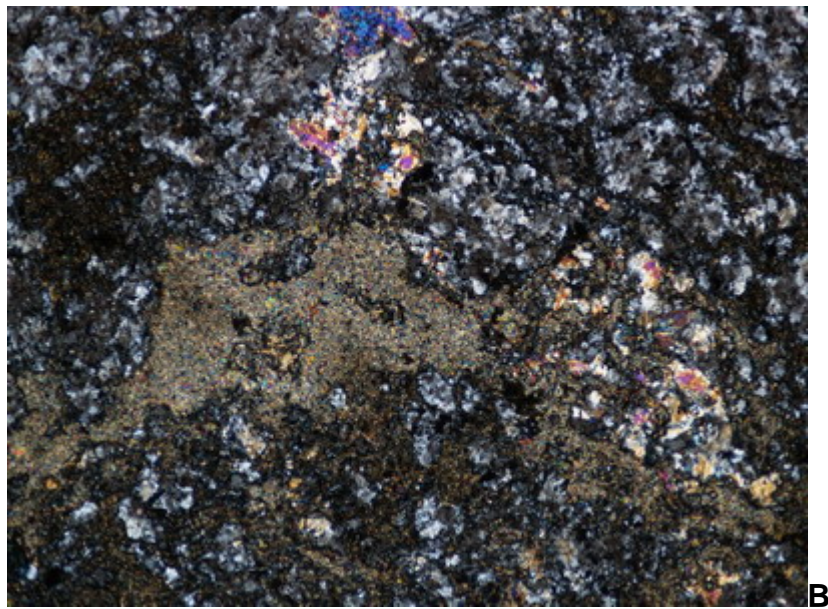
Mineral	%	Distribution & Characteristics	Optical
Epidote-clinozoisite	35	very fine to fine-grained granular aggregates, occurs as patches and irregular stringers, almost stockwork texture, locally preserves tabular crystal forms	
K-feldspar	30	fine to very fine-grained, anhedral grains and aggregates, occurs as sutured and recrystallized grain boundaries, secondary? after plagioclase, occurs with quartz, locally rimmed or weakly replaced by epidote or by carbonate; fine-grained, tabular crystals and crystal aggregates, locally twinned	
Actinolite-tremolite	15	fine to medium-grained, patchy aggregates, partly replaced by chlorite and fine granular epidote.	
Quartz	13	very fine-grained anhedral aggregates, irregular grain boundaries, occurs with very fine-grained K-feldspar as replacement of groundmass	

**MINOR MINERALS**

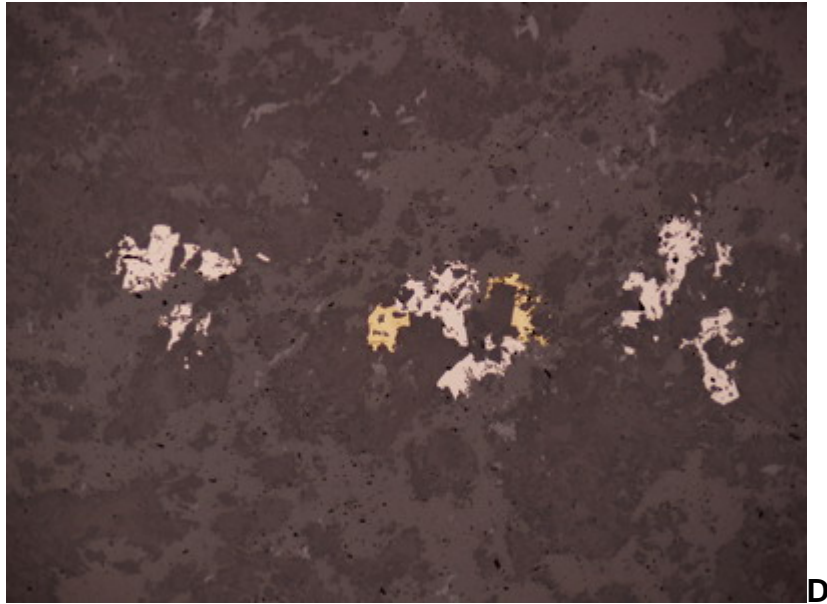
Mineral	%	Distribution & Characteristics	Optical
Titanite	03	fine-grained, brown, anhedral to subhedral grains, commonly diamond-shaped, occurs locally with carbonate	
Chlorite	02	fibrous aggregate, partly replaces actinolite-tremolite	
Pyrrhotite	02	fine anhedral masses, commonly poikiloblastic, locally as subhedral grains, locally intergrown with arsenopyrite	
Carbonate	tr	Fine patches and replacing feldspars and disseminated throughout	
Chalcopyrite	tr	fine anhedral and poikiloblastic masses, associated with pyrrhotite. Rare subhedral grains	
Arsenopyrite	tr	fine-grained, disseminated rhombic grain, intergrown with pyrrhotites	

**Thin Section Description:**

The sample is a mottled, vaguely porphyritic rock that has been pervasively replaced by epidote-clinozoisite, K-feldspar, actinolite-tremolite and quartz. Former fine-to medium-grained, tabular crystals, possibly plagioclase phenocrysts, are replaced by K-feldspar. Former mafic phases and groundmass are replaced by patchy to irregular stringers of very fine-grained aggregates of epidote with minor titanite, masses of actinolite-tremolite (partly replaced by chlorite and carbonate) and a very fine-grained aggregate of K-feldspar and quartz. Sulfide dissemination is weak only consisting of disseminated fine anhedral and poikiloblastic pyrrhotite, locally intergrown with or occurring with disseminated traces of chalcopyrite and arsenopyrite.



**Hen98-19:** Representative view showing the fine-grained quartz-K-feldspar matrix with masses of very fine-grained epidote (center) and actinolite-tremolite (top center) FOV = 3.25 mm, A) PPL, B) XPL



**Hen98-19:** C) Representative view of pyrrhotite (white) and chalcopyrite (yellow), FOV = 3.25 mm, RL

**Sample:** Hen 941 – 69.5

**LITHOLOGY:** Banded calcic skarn

**ALTERATION TYPE:** Clinopyroxene, actinolite-tremolite; biotite, K-feldspar, epidote, quartz

**Hand Sample Description:**

Locally banded rock, alternating thin light and dark gray bands, locally stained (cobaltrinite) for K-feldspar. Sulfides are disseminated within the bands. A 2cm thick vein/band cuts the sample, composed by non-oriented pinkish patches in a dark gray matrix. Light gray zones are also present, commonly stained. Masses of copper-colored sulfides are disseminated within the vein/band. Strongly magnetic, no reaction to HCl. FOV = ~ 4 cm



**MAJOR MINERALS**

Mineral	%	Distribution & Characteristics	Optical
Quartz	25	very-fine to fine granular bands (?veins) and masses, typically intergrown with sulfides and bands of biotite	
Actinolite-tremolite	15	fine to medium-sized aggregates, occurs with carbonate and K-feldspar as irregular clots	
Epidote	15	extremely fine-grained to fine-grained rounded crystals in disseminated aggregates and stringers, occurs with K-feldspar aggregate	
Biotite	10	very fine sheaves forming discontinuous bands between quartz and K-feldspar masses	<i>red-brown</i>
Carbonate	10	Fine to coarse grained, irregular shaped, commonly interstitial patches associated with actinolite-tremolite, also in very fine veinlets and extremely fine-grained, disseminated with K-feldspar and epidote	
K-feldspar	10	very fine grained, anhedral aggregates, irregular grain boundaries, occurs with masses of epidote, patchy carbonate and actinolite-tremolite and with bands of biotite and quartz	
Clinopyroxene	07	Broken and altered high relief grains, locally recrystallised to a finer grain-size	<i>inclined extinction</i>

**MINOR MINERALS**

Mineral	%	Distribution & Characteristics	Optical
?Clay	03	Extremely fine-grained intergrown with quartz, epidote, carbonate and K-feldspar	
Arsenopyrite	02	fine disseminated grains and intergrown with pyrrhotite, typically anhedral, locally subhedral with lozange-shape	
Pyrrhotite	02	fine anhedral grains and masses disseminated and as discontinuous stringers (bands), commonly intergrown with chalcopyrite and arsenopyrite	
Ilmenite	tr	fine anhedral masses and discontinuous veinlets, commonly rimmed by titanite	
Chlorite	tr	very fine-grained, anhedral aggregates, occurs with rutile as replacement of actinolite veinlets	
Rutile	tr	mostly as rims around ilmenite and with chlorite	
Hornblende	tr	One diamond shape grain within carbonate	
Chalcopyrite	tr	very fine anhedral grains, commonly intergrown with pyrrhotite	



**Thin Section Description:**

The sample is characterized by alternating bands of varying mineralogy and textures representative of calcic skarn alteration. Bands of extremely fine-grained quartz with laths of biotite and sulfides alternate with bands of coarser, near polygonal quartz aggregates with lesser sulfides. Bands of clinopyroxene are formed as granular masses and numerous fine recrystallized grains intermixed with interstitial carbonate and fine to very fine-grained quartz, K-feldspar and epidote. Large carbonate grains also occur typically containing laths of actinolite-tremolite. One large grain of hornblende is preserved within carbonate. Thin veinlets of carbonate and actinolite (partly altered to chlorite and rutile) also cut the sample. Pyrrhotite and arsenopyrite are the most common sulfides and occur mostly within quartz-biotite-K-feldspar bands as anhedral elongated masses, locally intergrown with chalcopyrite. The sulphides also occur disseminated. Trace ilmenite is rimmed by thin rutile aggregates.

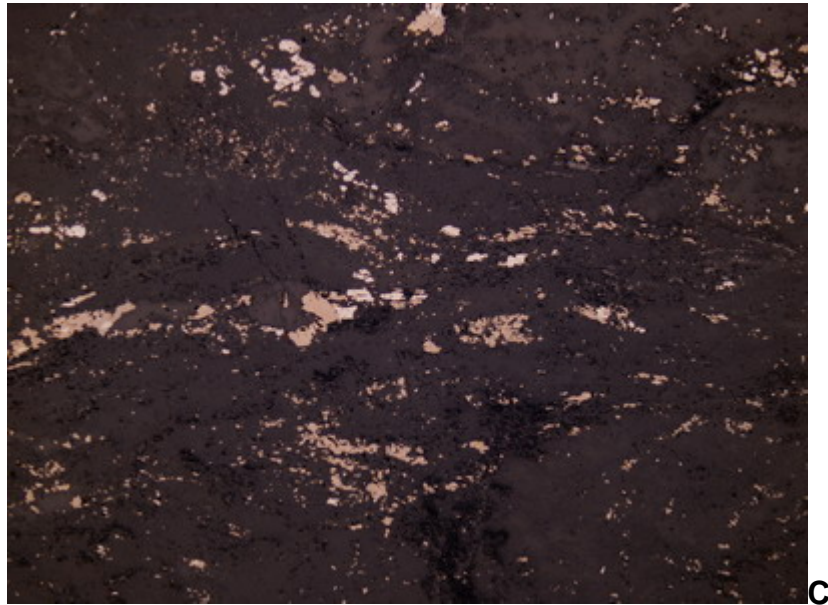


A



B

**Hen 941 – 69.5:** Representative view showing bands of quartz , biotite, K-feldspar and sulfides  
FOV = 8.5 mm, A) PPL, B) XPL



**Hen 941 – 69.5:** C) Representative view showing bands of arsenopyrite (white) and pyrrhotite (pinkish). FOV = 8.5 mm, RL. D) Representative view of a different area in the sample. The top are bands of quartz and biotite, while at the bottom the sample is made essentially of carbonate and laths of actinolite-tremolite, FOV = 8.5 mm, XPL

**Sample:** Hen 92 – D3

**LITHOLOGY:** Calcic skarn

**ALTERATION TYPE:** Clinopyroxene, actinolite-tremolite, K-feldspar, epidote, calcite, chlorite

**Hand Sample Description:**

Very fine-grained rock with light gray quartz-rich patches in a dark gray matrix. Light gray patches within the rock are weakly stained (cobaltinitrite) for K-feldspar. The sample contains part of a white vein strongly reactive with diluted HCl (presence of calcite), bordered by sulfides and dark patches. Copper colored sulfides are disseminated. Slightly magnetic. FOV = ~ 4 cm



Mineral	%	Distribution & Characteristics	Optical
Quartz	35	near polygonal aggregates of fine to very fine-sized grains and very fine anhedral grains forming most of the sample matrix, typically occurs with disseminated sulfides	
Epidote-clinozoisite	15	very fine disseminated granular aggregates, also as discontinuous veinlets	
Arsenopyrite	10	fine to medium-grained, stringer to disseminated grains, typically anhedral, locally subhedral with lozange-shape	
Calcite	10	vein of fine to medium-sized anhedral grains, locally intergrown with fine anhedral chlorite and quartz, also extremely fine-grained replacing quartz	
Actinolite-tremolite	10	fine-grained laths, occurs with K-feldspar, epidote and calcite	
K-feldspar	07	very fine-grained in brown groundmass, locally with subhedral outlines within the quartz matrix. Commonly associated with chlorite and epidote	
Chlorite	05	fan-like masses and disseminated anhedral foliated grains, typically associated with calcite, quartz and sulfides	<i>brownish biref.</i>
Clinopyroxene	05	aggregates of subhedral grains, occurs with carbonate	<i>high relief</i>

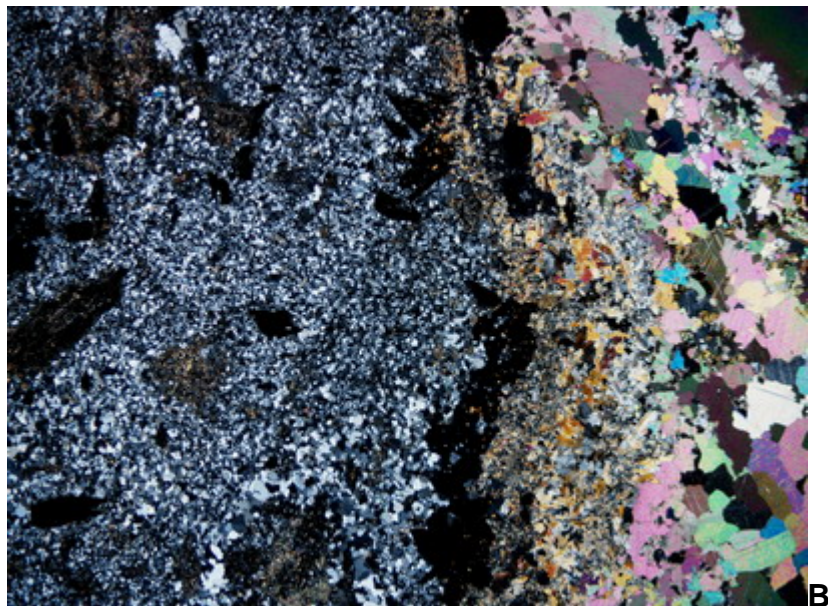
**MINOR MINERALS**

Mineral	%	Distribution & Characteristics	Optical
?Clay	01	undetermined, Brown nearly opaque, typically with very fine-grained epidote and K-feldspar	
Ilmenite	01	fine anhedral to subhedral masses disseminated, typically corroded, commonly rimmed by rutile and ?phlogopite	<i>strong aniso</i>
Pyrrhotite	01	fine anhedral grains and masses disseminated, commonly intergrown with chalcopyrite and arsenopyrite	
?Scapolite	tr	fine-grained, anhedral aggregates, worm-like intergrowth texture, occurs adjacent to calcite vein	
?Phlogopite	tr	fine micaceous sheaves around ilmenite?	
Chalcopyrite	tr	very fine anhedral grains, intergrown with pyrrhotite	
Rutile	tr	rims ilmenite grains and occurs disseminated	<i>red-brown</i>

**Thin Section Description:**

The section is a calcic skarn that comprises patchy aggregates of quartz, masses of epidote-actinolite-tremolite-K-feldspar and irregular clots of clinopyroxene aggregate cut by a calcite vein. Quartz aggregates are locally polygonal with highly heterogeneous grain sizes and patches of calcite and chlorite. Epidote occurs as very fine-grained, typically anhedral to subhedral masses associated with aphanitic brown K-feldspar and ?clay aggregate as well as patchy actinolite-tremolite laths. Arsenopyrite with minor pyrrhotite and trace chalcopyrite occur as fine anhedral grains disseminated in the quartz matrix and disseminated within epidote-actinolite-tremolite-K-feldspar rich masses. The

calcite vein is rimmed by thin discontinuous bands of actinolite-tremolite, ?scapolite, chlorite and clinopyroxene.



**Hen 92 – D3:** Representative view showing the quartzitic matrix with strong sulfide dissemination, discontinuous bands of clinopyroxene, ?scapolite and chlorite, and a large carbonate vein.  
FOV = 8.5 mm, A) PPL, B) XPL



**Hen 92 – D3: C)** same view as above showing disseminated and stringer arsenopyrite (light grey) with minor ilmenite (dark grey). FOV = 8.5 mm, RL