#### **GEOCHEMICAL AND GEOLOGICAL REPORT**

#### ON THE

#### HEN PROPERTY (Tenures # 518934, 526686)

#### **CARIBOO MINING DIVISION**

#### NTS 093A007

#### FOR

#### HAPPY CREEK MINERALS LTD. 38151 Clarke Drive Box 1852 Squamish, BC V0N 3G0

By

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# **Table of Contents**

1.	Location and Access	4
2.	Physiography and Infrastructure	4
3.	Claim Status	4
4.	History	5
5.	Regional Geology	7
5.1	2005 Regional Radiometric/Magnetic Survey	7
6.	Property Geology	8
7.	2005 Silt and Soil Sampling	9
8.	2005 Rock Sampling	9
9.	Discussion	12
10.	Conclusions	13
11.	Recommendations	14
12.	References	15
13.	Statement of Costs	16
14.	Statement of Qualifications	17
15.	Tables	
16.	Figures	19

# Appendix

- 1) Assay Certificates
- 2) Petrography Descriptions

#### Summary

The Hen property is located about 16 kilometres southeast of the Boss Mt. molybdenum Mine, 57 kilometres northeast of 100 Mile House in South Central British Columbia. The property covers several gold showings, first discovered by D. Ridley in1992.

The property is underlain by Nicola Group volcanic, sediment and intrusive rocks, Triassic to Lower Jurassic in age, locally consisting of pyroxene, augite basalt, volcanic sediment, calcareous tuff, siltstone, and locally marble. These rocks occur in north trending contact with granodiorite/ monzodiorite of the Takomkane batholith along the western side of the property, and east trending contact with biotite-hornblende monzodiorite, granodiorite and Early Cretaceous in age for 4 kilometres long the south side of the property

The Early Cretaceous stock has imparted strong biotite and calc-silicate hornfels of the volcanic-sediments, and approximately 1.0 kilometres from the contact, dikes, sills, fracture-controlled and disseminated pyrrhotite and trace copper, arsenic and antimony values occur. Anomalous gold values occur in calcic skarn zones in proximity with intrusive contacts however limited outcrop prevents detailed inspection.

Historically, the Hen prospect was discovered and explored first returning 3.98 g/t gold over 2.1 metres in a trench, and a short diamond drilling program performed by Pioneer Metals Corp. between 1994 and 1996 returned 2.08g/t gold over 0.8 metres in hole 96-3, approximately 200 metres in elevation below the trench. Subsequent to this work, the Dike, Ledge, and Southeast skarn zones were discovered, and soil geochemical, and geophysical surveys and additional rock sampling was performed returning 2,640, 33.0-860, 1050 ppb gold from the Dike, Southeast and Ledge prospects, respectively. In 1999 TNR Resources and Ivory Oil and Gas diamond drilled two holes. The holes were collared 500 metres southwest and directed away from the gold in rock float, and coincident gold, arsenic, copper in soil anomalies on the Ledge prospect. The results were disappointing with best assay of 1.5 metres of 32 ppb gold in the first sample. TNR/Ivory dropped the option early in 1999. In 2004, additional prospecting and silt geochemistry was performed along new roads up the west side of the property and returned 2880 ppm copper, 28 ppb gold hosted in diorite of the Takomkane batholith.

In 2005, Happy Creek Minerals Ltd performed detailed prospecting and rock sampling, geology, and limited soil and silt sampling over the Hen, Dike, Ledge prospect areas. 101 rock, 19 soil, and 3 silt were obtained.

At the Ledge prospect a re-sample sample of a 1998 rock in float returned 1.10 g/t gold, >10,000 ppm arsenic, and approximately 500 metres west, surface rock samples in float returned anomalous gold, arsenic values including 0.82 g/t gold, 3899 ppm arsenic. Rock samples from the Southeast Skarn showing returned 1.14 g/t gold, 278 ppm arsenic from angular hornfelsed sediments containing 4-5% pyrrhotite, and approximately 20 metres east, outcrop returned 59 ppb gold. The similar nature of the host rock, alteration and sulphides present, soil and rock anomalies of gold, arsenic and copper along with airborne magnetic and radiometric anomalies suggest the Southeast Skarn and Ledge prospect may be part of a large pyroxene or calcic style gold-skarn system, approximately 500 metres by 1.0 kilometre in dimension.

Results from the Dike showing in 2005 include several outcrops containing anomalous gold (11.8-16.4 ppb), and up to 35.04 g/t gold was returned from a grab sample of pyroxene skarn adjacent the hornblende-biotite quartz monzodiorite. Approximately 2 metres east of this sample, chip sampling returned 3.5 metres containing 3.46 g/t gold that remains open. Approximately 15 metres north, a float/subcrop sample returned 2.34 g/t gold. Exploration in 2005 has demonstrated that persistent rock sampling in areas containing approximately 10-1,000 ppb gold in outcrop or float can locate significant zones of gold mineralization.

The Hen property contains several calcic skarn zones containing widespread anomalous to potentially economic gold values, and the potential size of these mineralized zones may in part be reflected in the gold, copper, arsenic values occurring in soil and rock, and coincident 2005 airborne magnetic and radiometric anomalies. Further exploration including trenching, soil, silt sampling, and prospecting and geological mapping is warranted at a cost of \$75,000.

#### 1. Location and Access

The Hen property is located approximately 57 kilometers northeast of 100 Mile House, and 16 kilometres southeast of the former Boss Mountain molybdenum mine, in the south Cariboo, British Columbia. The property is situated on Trim 1:20,000 scale map sheet 093A.007 (Figure 1). The property is accessed via paved and gravel logging roads from Highway 97 at 100 Mile House. Access from highway 97 is via the Canim-Hendrix road to Eagle Creek bridge and 27 kilometers along 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 mark of the 6000 road, or 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 and Infrastructure

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 thick fireweed which later in the season reaches heights of up to 6 feet and can seriously impede traverses of these areas during late summer.

A hydro power transmission line that powered the former Boss Mountain molybdenum mine and currently Hendrix Lake cuts through the Hen property.

3. Claim Status

The Hen property is composed of converted legacy tenures held continuously since 1993 and the property totals approximately 3,282 hectares (Figure 2, Table 1). The property is owned 100% by Happy Creek Minerals, and currently registered in the names of D. Ridley and D. Blann.

#### 4. History

In 1982, the BOSS claim was located by D.R. MacQuarrie to cover an anomalous regional stream sediment 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. returned up to 1280 ppb gold in silt, and soil samples returned up to 310 ppm copper, 60 ppb gold from a grid having 200 metre lines and samples 100 metres apart (A.R. #11910).

In 1992, regional prospecting by Ridley located float containing up to 3.2% arsenic and 5678 ppb gold on the east side of Hendrix valley, near the three kilometer mark of the 6300 forestry road above Hendrix creek. The HEN 1-4 and HEN 5-19 mineral claims were staked between 1992 and February 1993. The HEN claims were optioned to Pioneer Metals Corporation in 1993 and carried out a program of reconnaissance soil and rock sampling, prospecting and machine trenching close to the road. During 1994 Pioneer collected 1,375 soil samples on two grids, 142 rock, and 12 silt samples. Four machine trenches were conducted and 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 that remains open. Soil samples from the upper side of trench B returned anomalous in gold over a distance of at least 60 metres. Prospecting of the property also confirmed strongly anomalous gold, copper, arsenic in silt from Anomaly creek, discovered the Chick showing with float rock samples returning up to 1.31 g/t gold, and the Northwest Marble (34 ppb gold, 163 ppm arsenic, 33 ppm antimory).

Two diamond drill holes were collared from the north end of Trench B at 160 degrees azimuth and -45 and -70 degree dip in Hen 94-1 and Hen 94-2, respectively. Approximately 40% of the core was sampled, and both holes intersected the projected extension of surface mineralization. Drill hole Hen 94-1 was drilled to 157.3 meters and returned 0.05g/t gold over 12.4 metres and Hen 94-2 was drilled to 41.8 meters and returned geochemical anomalous of gold in the bottom15.3 metres, including 2.0 metres containing 254 ppb gold, and the last sample returned 2.0 metres containing 67 ppb gold.

Hen 94-1 intersected a second zone starting at 65 metres down hole that returned 0.80g/t gold over 8.0 metres, including 1.0 metre containing 1.3 g/t gold and 1.6 metres containing 1.0 g/t gold that remain open to additional sampling (A.R. #23770).

Pioneer Metals Corp. completed an additional two diamond drill holes in the area of the Hen main showing between late-May and mid -June, 1996.

Drill-hole Hen 96-3 was collared at the bottom or south end of Trench B and drilled at an azimuth of 015<sup>0</sup>/-45<sup>0</sup>, for a total length of 316.5 meters. Approximately 30% of this core was split. Between approximately 230.0 to 273.1 metres down (43 metres) values ranged from 10 ppb gold to around 150 ppb gold, and locally 2.0 metres containing 445 ppb gold, and 0.8 metres containing 2.08 g/t gold were obtained. This zone appears similar to Trench B, over 200 meters in elevation above (Ridley, 1997).

Drill hole Hen 96-4 is located approximately 200 metres east of 96-3 and oriented  $195^{\circ}/-45^{\circ}$  for 153.4 metres beneath Trench D that contained approximately 9.0 metres grading between 20 to 30 ppb gold. Approximately 30% of the drill core was split. One zone contained 225 ppb gold, 355 ppm arsenic over 0.8 metres and remains open. The lower portion of the hole contained over 10% granodiorite dykes (AR # 25056). Pioneer dropped its option later in 1996 and returned the claims to Ridley.

In May 1997, Ridley received funding from the BC Prospectors Assistance Program (Ref. No. 97\98 P67) and carried out prospecting, geological mapping, and reconnaissance soil sampling and located two new gold showings: the Dyke (2640 ppb gold), Southeast Skarn (33 to 860 ppb gold), Ledge (1050 ppb gold, 10840 ppm arsenic). In May 1998, an additional Prospectors Assistance Grant was received and 10 kilometers of grid, prospecting, soil and rock sampling and an EDA geophysical survey were completed (PAG #98/99 P51). The VLF-magnetic survey over a portion of the Ledge area identified a strong magnetic anomaly in a swamp in spatial proximity with the assumed intrusive contact. In November 1998 an option agreement was signed between D. Ridley and TNR Resources Ltd. (TNR) and Ivory Oils and Minerals Inc. (Ivory) for the Ledge 1 and Skarn 1-4 mineral claims.

In December 1998 TNR\Ivory drilled two holes into a strong magnetic anomaly located by the previous EDA geophysical survey. The holes were collared from the 6300 road and about 150 meters north of the highest magnetic readings. The drill holes were oriented southward at -45 degrees and intersected augite phyric basalt with the best results occurring in the top 40 metres of 99-1, including 1.5 metres of 32 ppb gold in the first sample. TNR/Ivory dropped the option early in 1999.

In 2004 Ridley and Blann conducted stream sediment and rock sampling along new logging roads in the Anomaly creek area located west of Hendrix creek valley. This work identified the area to host potential for porphyry copper-gold mineralization, returning up to 2774 ppm copper, 28 ppb gold in diorite, or skarn similar to the Hen, returning up to 1202 ppm arsenic, 23.9 ppm antimony, and 22.5 ppb gold.

5. Regional Geology

The Hen property is situated near the eastern side of Quesnell Terrane, in the South Cariboo, British Columbia (Figure 3). Regional geology mapping of the adjacent mapsheet NTS92P/15 (Schiarizza, Boulton, 2006) is summarized below.

This area is underlain by predominantly fine to coarse clast sediments, carbonate, volcanic sediments, breccia, and flow of the Nicola Group, Middle and Late Triassic in age. These rocks are cut by and are in part coeval with intrusive rocks, diorite to monzodiorite and quartz monzonite to granodiorite in composition, Late Triassic- Early Jurassic in age. Hornblende-biotite granodiorite, monzogranite, tonalite, sandstone and conglomerate are Early Jurassic in age. Hornblende biotite quartz monzogranite and granodiorite are Jurassic or Cretaceous in age. Biotite-hornblende monzogranite and granodiorite are Early Cretaceous in age, and is generally related to molybdenum mineralization at the Boss Mountain molybdenum mine, located approximately 15 kilometres northwest. A unit of siltstone and mudstone are tentatively dated Eocene in age. Locally basalt, andesite, volcanic breccia and minor medium to coarse sedimentary rocks and dacite cut and overlie deposits and are of the Kamloops Group, Eocene in age. Alkali basalt cuts and in part overlies older rocks, and is Quaternary/Recent in age.

Glacial till and glacio-fluvial, lacustrine deposits are over 30 metres in thickness locally.

5.1 2005 Regional Radiometric/Magnetic Survey

Results of the 2005 Regional airborne magnetic and radiometric survey conducted over the Hen property in 2004 are in part included within this report. Part of the 2005 exploration program on the Hen property was performed to inspect areas of interest generated from this survey. The total magnetic field and vertical magnetic gradient maps display two sub-circular zones of positive magnetic response located in the east central portion of the property (Figure 4, 5). A north-northwest trending low magnetic response occurs in the western portion of the property, and a subparallel northwest trending structure occurs in the Hendrix valley, near the logging road. A west-northwest magnetic low structure occurs in the area of the Hen, Dike showings and around the positive magnetic anomalies (Figure 5).

A northwest trending zone of elevated total potassium occurs in proximity with the Hen gold showing and an irregular shaped potassium anomaly occurs in spatial proximity with the Ledge showing (Figure 6).

6. Property Geology

Immediately south of the Hen property, the Nicola Group is represented by pyroxene phyric basalt, breccia, conglomerate, siltstone and minor limestone (Breccia Subunit), overlain by volcanic sandstone, siltstone, and locally calcareous sandstone, phyllite, chert, and sandy limestone (Schiarizza, 2006).

The western side of the Hen property is underlain by the Takomkane Batholith, monzodiorite in composition and occurs in north trending contact to the east with Nicola Group basalt and sediments (Figure 7). This area was explored in 2004 and identified the contact zone to contain sericite, chlorite and k-feldspar alteration, pyrite and trace chalcopyrite, bornite. Samples returned 2774 ppm copper, 28 ppb gold from a grab of altered diorite, and 15.7 ppb gold over a 50.0 metre long grab sample. Historical silt samples draining this area returned up to 1280 ppb gold (Anomaly Creek, Blann, Ridley, 2005).

The central portion of the Hen property is underlain by monzodiorite, diorite of probable Cretaceous age, and occurs in an approximately 4 kilometres long, east-southeast trending contact to the north with pyroxene basalt and volcanic sediments, chert (siltstone?), and locally marble. The contact zone with the intrusive is locally irregular in shape, and dikes or sills occur up to several hundred metres from the moderately north dipping contact. Rocks within approximately 1 kilometre of the quartz monzonite/monzodiorite stock contact are strongly biotite-hornfelsed, contain between 1-5% pyrrhotite, pyrite, trace chalcopyrite and trace to 3% arsenopyrite. Dominant structures trend around 110 degrees azimuth, generally subparallel the intrusive contact. Banded quartz, actinolite, tremolite, epidote , biotite, carbonate, k-feldspar and clinopyroxene, trace pyrrhotite, chalcopyrite and arsenopyrite occurs with gold values in drillcore at the Hen main showing (Thompson, 2005). Ilmenite, rutile actinolite and possibly scapolite occur with 10% pyrrhotite (Thompson, 2005). Red garnet occurs locally in carbonate veins and wollastonite and diopside are mentioned in previous rock descriptions (Hancock, 1998). Disseminated and stringers of pyrrhotite, chalcopyrite and arsenopyrite locally contain significant gold values. Gold occurs with highly variable concentrations of copper, arsenic, and antimony. All of these data suggest the Hen property contains gold-bearing pyroxene, calcic skarn zones.

#### 7. 2005 Silt and Soil Sampling

In 2005, 21 (twenty one) soil and silt samples were collected on the Hen property (Figure 7). Three silt samples taken from drainage between the Dike and Chick showing and returned up to 10.3 ppb gold, 98.5 ppm copper, 36 ppm arsenic. The historical baseline was re-flagged, extended east approximately 100 metres, and line 8700E was flagged for approximately 1.0 kilometre north with 50 metre stations, and 19 soil samples taken from "B" horizon, or about 15 cm depth. Samples were placed in kraft paper envelopes, tied closed, air dried and shipped to Acme Analytical Laboratories, Vancouver, for analyses by ICP-MS (Figure 7, Appendix 1). Soil samples identified an area containing 82.7 to 191.8 ppm copper, 43.6 to 142.4 ppm arsenic, and 4.2 to 12.0 ppb gold approximately 200 metres in width and remains open to the east. The soil sampling has extended the historical copper, arsenic and gold soil anomaly to the east, and remains open.

#### 8. 2005 Rock Sampling

One hundred and one (101) rock samples were collected from the Hen property in 2005. Rock samples are taken of float, subcrop or outcrop, GPS located and described in Table 2, Rock Sample Descriptions. Results from sampling of the Dike showing by Keewatin Consultants Ltd are provided in Table 3. Samples are placed into heavy plastic bags, tied closed, and shipped to Acme Analytical Laboratories, Vancouver, for analyses by ICP-MS. Over-limit or anomalous samples were repeated using ICP assay and one assay tone fire assay for gold. Sample locations, gold, arsenic and copper analytical results are plotted in Figures 8, 9, 10, 11, respectively.

Hornfelsed, k-feldspar or calc-silicate altered rocks containing pyrrhotite, pyrite, trace chalcopyrite and arsenopyrite were preferentially selected samples in the field, however rock having other styles of alteration was also performed. Sampling was directed to areas having positive potassium, magnetic anomalies, or low magnetic anomalies that may represent geological structures or alteration.

Results from this program suggest rocks containing anomalous to significant gold values are widespread, however, very difficult to predict from visual inspection of the rock and is variably associated with total sulphide or presence of copper, arsenic, and antimony, and locally molybdenum trace elements.

Rock samples from the Southeast Skarn areas returned anomalous gold and associated arsenic, antimony values. Float rock sample 184257 returned 1.14 g/t gold, 278.4 ppm arsenic, 11.1 ppm antimony from silty sandstone/chert skarn rock containing carbonate veinlets, and 4-5% pyrrhotite. Approximately 20 metres east, outcrop sample 175565 returned 59.0 ppb gold, 31.7 ppm arsenic, 3.8 ppm antimony, and 195.8 ppm copper from a calc-silicate pyroxene skarn. Anomalous gold values occurring in outcrop and float from this area remains open.

Rock float from the Ledge prospect was re-sampled and returned 1.1 g/t gold, >1.0% arsenic, 16.4 ppm antimony. To the west, along a new logging road, an area approximately 500 metres in length and 250 metres in width was prospected and 28 float rock samples collected. Results include 4 over 12.6 ppb gold, 6 over 33.3 ppb gold, and 1 (one) returned 840.6 ppb gold (0.82 g/t gold), 3899.4 ppm arsenic, 8.8 ppm antimony, 172 ppm copper. This area is underlain in part by an airborne potassium anomaly.

The Dike showing is comprised of strong hornfelsed and calc silicate altered volcanic, volcanic sediments in contact with a northwest trending hornblende diorite/granodiorite dike, approximately 25-50 metres in width, and locally smaller conjugate to cross-cutting feldspathic dikes trend northeast/ east. Historical chip sampling returned 2.0 metres containing 2.0 g/t gold. Additional sampling in this area was performed in 2005. Outcrop sample 175582 returned 35.06 g/t gold, 6.2 g/t silver, 469.1 ppm arsenic from a grab of silicified biotite-pyroxene skarn in contact with the intrusive rock. Approximately 2 metres east of this sample, a north-south trending chip sample performed by Keewatin Consultants returned 3.46 g/t gold, 4.29 g/t silver over 3.5 metres and remains open (Table 3). Approximately 15 metres north of the above sampling, float/subcrop of calcsilicate, garnet-pyroxene skarn with carbonate veinlets returned 2.34 g/t gold, 2.8 ppm silver, 101.5 ppm arsenic. Approximately 75 metres east of the Dike showing, rock sample 175580 returned 12.9 ppb gold, 508.7 ppm copper, and 21.9 ppm tungsten. Approximately 25 metres south of the Dike showing, rock sample 175572 returned 16.4 ppb gold, and 68.8 ppm tungsten. Anomalous to potentially economic gold values occur at the Dike showing appear associated with pyroxene skarn zones in spatial proximity with the dike contact.

Historical rock samples from the Chick prospect returned up to 1.31 g/t gold from skarn and marble. In 2005, rock sample 185337 from the Chick prospect area returned 24.8 ppb gold from a hornblende porphyry. In float sample 184265, hornfelsed sediment containing pyrrhotite returned up to 13.9 ppb gold, 143.8 ppm arsenic, 13.5 ppm antimony, and sample 184259 returned 18.9 ppb gold, 142.2 ppm arsenic. Geochemical anomalies of gold, arsenic and antimony in rock are widespread in the Chick area.

The 4 kilometre zone is located on the main logging road between the Hen and Dike showings. This area is underlain by monzodiorite in west trending contact to the north with strongly hornfelsed and pyroxene skarn altered volcanic sediments. Rock sample 175562 returned 20.3 ppb gold, 158.3 ppm copper, and 27.6 ppm molybdenum, and sample 41594 returned 9.0 ppb gold, 94.2 ppm molybdenum. Rock sample 184256 returned 214.2 ppm molybdenum- the highest molybdenum value to date on the property. The 4 kilometre zone contains anomalous gold and molybdenum values in the pyroxene skarn and hornfels.

11

#### 9. Discussion

The Hen property is underlain by mafic volcanic, volcanic sediment, and locally siliciclastic and carbonate rocks of the Nicola Group. These rocks are cut by a stock of biotite-hornblende monzogranite and granodiorite, and associated dikes or sills occur. The contact between intrusive and volcanic rocks trends easterly approximately 4 kilometres along the south side of the property. At the Dike zone, the main dike trends 345 degrees azimuth, 80 degrees eastward dip, however, conjugate dikes, smaller in size may cross cut, or splay from the main body and trend 270 degrees azimuth and 60 degrees north in dip.

The Hen, Dike, and Southeast zones are gold-bearing hornfels and calcic skarn in close spatial proximity with the main intrusive contact. The Chick and Ledge zones appear similarly hornfelsed and calcic skarn altered, contain similar gold arsenic values, and locally dikes or sills occur on surface and in part suggest the stock may dip north beneath the volcanic and sedimentary rocks.

On the Ledge and Southeast skarn prospects, anomalous gold values and associated arsenic, antimony trace elements occur in calcic skarn. In 2005 rock samples from the Southeast skarn returned 41.3, 59.0 and 989.5 ppb (1.14g/t) gold, and are located approximately 25 metres apart. Approximately 500 metres northeast, float rock samples from the Ledge prospect returned up to 1007.7 ppb gold (1.10 g/t gold), and approximately 500 metres west, widespread anomalous gold, arsenic in pyroxene skarn occurs and returned up to 840.6 ppb (0.82g/t) gold. The widespread occurrence of anomalous gold, arsenic, antimony, and copper trace elements in rock samples are in part coincident with soil geochemical and magnetic, radiometric geophysical anomalies in the Ledge and Southeast Skarn areas.

Approximately 2.5 kilometres west of the Ledge prospect, the Dike showing was subject to additional sampling in 2005. Grab samples returned anomalous gold, arsenic, copper values up to 35.5 g/t gold. Approximately 2 metres east, three chip samples averaged 3.46 g/t gold over 3.5 metres and remains open. Approximately 15 metres north, subcrop or float returned 2.34 g/t gold. The best gold values to date appear to occur in

intensely contact metamorphosed, skarn altered volcanic-sediments in direct contact with, or very close to hornblende quartz monzonite/monzodiorite and the known gold mineralization remains open to expansion.

#### 10. Conclusions

The Hen property is located approximately 16 kilometres southeast of the Boss Mt. molybdenum mine, and approximately 57 kilometres northeast of 100 Mile House in the south Cariboo, British Columbia. The property has undergone several periods of exploration activity since discovery of a rock containing 3.2% arsenic and 5,678 ppb gold at the Hen prospect in 1992.

The property is underlain by Nicola Group rocks, Upper Triassic, Lower Jurassic in age, and locally is comprised of augite basalt, finer grained calcareous volcanic sediment and siliciclastic rocks. On the west side of the Hen property, these rocks are cut by the Takomkane batholith, Lower Jurassic in age, and granodiorite in composition. Quartz monzonite/ monzodiorite, Early Cretaceous in age, occurs in an east-west trending, approximately 4 kilometre contact zone along the south side of the property. The Nicola Group rocks are strongly biotite to calc silicate altered and calcic skarn and abundant disseminated to stringer pyrrhotite, trace chalcopyrite, and locally arsenopyrite, stibnite occurs in fractures and disseminated within wall rock over one kilometre from the contact.

Geology, geophysical and geochemical surveys over the Ledge and Hen grids, and outcrop at the Dike showings suggest a strong west to northwesterly trending structure occurs in proximity to the intrusive-volcanic-sedimentary contact.

At the Ledge prospect a re-sample sample of a 1998 rock in float returned 1.10 g/t gold, >10,000 ppm arsenic, and approximately 500 metres west, surface rock samples in float returned anomalous gold, arsenic values including 0.82 g/t gold, 3899 ppm arsenic. Rock samples from the Southeast Skarn showing returned 1.14 g/t gold, 278 ppm arsenic from angular hornfelsed sediments containing 4-5% pyrrhotite, and approximately 20 metres east, outcrop returned 59 ppb gold. The similar nature of the host rock, alteration and sulphides present, soil and rock anomalies of gold, arsenic and

copper along with airborne magnetic and radiometric anomalies suggest the Southeast Skarn and Ledge prospect may be part of a large pyroxene style gold-skarn system, approximately 500 metres by 1.0 kilometre in dimension.

Results from the Dike showing in 2005 include several outcrops containing anomalous gold (11.8-16.4 ppb), and up to 35.04 g/t gold was returned from a grab sample of pyroxene skarn adjacent the hornblende-biotite quartz monzodiorite. Approximately 2 metres east of this sample, chip sampling returned 3.5 metres containing 3.46 g/t gold that remains open. Approximately 15 metres north, a float/subcrop sample returned 2.34 g/t gold. These significant gold values occur in areas where prospecting rock samples returned 10-1,000 ppb gold and suggest that persistent rock sampling or continuous chip sampling around these areas can locate significant gold bearing skarn zones.

11. Recommendations

The Hen property contains significant gold values associated with a large-scale skarn style setting at the Hen, Dike, Ledge and Southeast zones, and copper-gold porphyry style hydrothermal system occurs in the Anomaly creek area. Additional prospecting and a reconnaissance soil survey grid over the Anomaly Creek prospect and machine trenching of the Ledge, Southeast skarn and Dike prospects is warranted

#### Phase 1: \$75,000

- 1) Machine trenching of a) Dike, b) Ledge c) Southeast Skarn prospects.
- Selected reconnaissance-scale soil sampling in the Anomaly creek area, Line spacing of 200 meters with 50 meter sample stations are adequate for an initial examination.
- Re-log and sample portions of the Hen prospect drill core obtained by previous operators.
- 4) Geology mapping, prospecting

#### **Respectfully Submitted**

David E. Blann, P.Eng.

#### 12. References

ALLAN DG, FLEMING D; 1983; Geological and Geochemical report; Ass. Rpt. #11910.

BLANN D; 1993; Preliminary examination of Hen 1-4 for Sun Joint Venture; private report.

Blann, D. and Ridley, DW, 2005, Geological and Geochemical report on the Hen property, prepared for Happy Creek Minerals Ltd. Assessment Report.

CAMPBELL RB; 1978; Geology of Quesnel Lake Area; 93A; GSC Open File #574.

CAMPBELL RB, TIPPER HW; 1971; Geology of Bonaparte Lake Area; 92P; GSC Memoir 363.

BC DEPT. OF MINES ANNUAL REPORT 1929; Hedley Gold Mining Co. pgs. C263-C267.

DUNN D, RIDLEY D; 1994; Geological, Geochemical, Trenching, and Drilling report on the Hen Group; Ass. Rpt. # 23770.

DURFELD RM; 1988; Geochemical and Geological Report on the Rec claims; Ass. Rpt. #17646.

ETTLINGER AD, RAY GE; 1989; Precious Metal Enriched Skarns in British Columbia; An Overview and Geological Study; Paper 1989-3.

HANCOCK K,; 1998 Geology and Geophysical report on the Ledge property, Mt. Hendrix Area, Cariboo Mining Division, prepared for TNR Resources Ltd., and Ivory Oils and Minerals Inc., March 2000. HARRIS JF; 1993; Petrographic Report on two samples from the Hen claims; in Ass. Rpt. # 23214.

PANTELEYEV A, et al; 1996; Geology and Mineral Deposits of the Quesnel River-Horsefly Map Area, Central British Columbia; Bulletin #97.

RAY GE, DAWSON GL; 1994; The Geology and Mineral Deposits of the Hedley Gold Skarn District, Southern British Columbia; Bulletin #87.

RIDLEY DW, DUNN D; 1993; Prospecting and Trenching on the Hen Group; Ass. Rpt. #23214.

RIDLEY DW, DUNN D; 1993; Geological and Geochemical Report on the DL Group; Ass. Rpt. #23201.

RIDLEY DW; 1992; Prospecting Report on the DL claims; Ass. Rpt. #22460.

RIDLEY DW; 1997; Geological and Diamond Drilling Report on the Hen-Ledge-DL Claim Groups; Ass. Rpt. #25056.

RIDLEY DW; 1998; Geological and Geochemical Report on the Hen-Ledge-DL Claim Groups: Ass. Rpt. #25575.

### 13. Statement of Costs

Wages			# days	\$/day	Totals
D. Blann, P.Eng	J		14	600	\$8,400.00
D. Ridley, Prosp		20	375	\$7,500.00	
D. Black, Prosp	ector		12	275	\$3,300.00
C. Blann, M.Sc.			1.25	225	\$281.25
G. Thompson, F	P. Geo.		0.33	450	\$148.50
					\$19,629.75
Disbursements					
Truck	-		22	100	\$2,200.00
Room/Board			32	60	\$1,920.00
Communication	S		13	7	\$91.00
Field Supplies					\$45.39
Analyses					
	Assays	rocks	100	18.5	\$1,850.00
		soil/silt	21	14.32	\$300.72
	Petrogra	aphics	4	100	\$400.00
	PIMA				
Reproductions					\$300.00
					\$7,107.11
					Wages and

\$26,736.86
\$3,208.42
\$29,945.28

GST @ 7% <u>\$2,096.17</u> \$32,041.45

### 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 2005.

Dated in Squamish, B.C., May 16, 2006

David E Blann, P.Eng.

# 15. Tables

# Hen Property Mineral Tenures

Tenure Number	Claim Name	Owner	Map Number	Good To Date	Mining Division	Area (ha)
518934		122739 (100%)	093A	2008/JAN/15	Cariboo	1830.056
526686		122739 (100%)	093A	2008/JAN/15	Cariboo	955.051
526702	HEN WEST	102557 (100%)	093A	2008/JAN/15	Cariboo	497.217
						3282.324

122739 D.W. Ridley 102557 D.E. Blann

				Мо	Cu	Pb	Zn	Ag	As	Au	Sb	Bi	Ва	w	Au
Sample ID	Easting	Northing		ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	gm/mt
41526	658470	5766683	ang float; 6 km; mottled green skarn-hornfels; minor garnet; 3-5% po	1.9	289.7	6.1	58	0.3	8.2	38.0	0.9	0.4	101	0.2	
41527	658445	5766683	subcrop? 6 km area; aug porp; K-spar-diopside veining; 1-3% po	0.6	144.8	2.8	46	0.1	17.5	21.0	0.7	<.1	317	1.3	
41528	658438	5766683	ang float; 6 km; as at 41526; w quartz stringers; up to 7% po	12.7	165.5	4	42	0.2	2.6	2.3	0.6	0.5	48	1.2	
41529	658045	5766765	subcrop in road bed? volc sed;carb veinlets; 50% green skarn-hornfels	1.8	69.4	1.7	41	<.1	14.9	2.0	1.9	0.1	44	0.2	
41530	656378	5767075	ang float; grey-green hornfelsed sed; 5% po; tr py- cpy	0.9	704.7	8.2	37	1.1	23.7	97.5	1.8	1	109	1.4	
41531	656378	5767087	ang float; skarned volc; intrusive veinlets and qtz stringers; 3-5% po	5.6	313.8	1.3	10	0.2	16.7	9.3	0.7	0.3	135	48.6	
41532	656962	5767205	ang float; hornfelsed volc; minor epidote patches; 3-5% po	0.6	90.8	11.2	75	0.3	8.5	13.0	0.5	0.1	257	0.9	
41533	657088	5766880	ang float; pyrox-hornfels altered seds; 1-3% po	2	167.8	2.8	82	0.1	7.1	4.1	1.9	<.1	276	0.3	
41534	656980	5766869	subcrop; volc seds and agglom; hornfels, minor carb and pyrox stingers; 1-3% po	1.3	148.7	2.2	54	0.1	12.6	1.7	1.6	0.1	77	0.9	
41535	656980	5766893	subcrop? as at 41534 but more intense alteration and sulphides	2.5	138	1.7	50	0.1	6.8	3.3	1.4	0.1	150	0.1	
41536	656970	5766893	outcrop; as at 41535;	2.8	108.3	2	35	0.1	9	1.6	1.9	<.1	50	1.1	
41537	656661		ang float; hornf seds; much grd float also; very hard rock; 1-3% po	3.3	142.6		68	0.1	36.8	9.0	1.5	0.1	223	0.4	
41538	656906	5767644	ang float; It grey altered volc; rusty weathering; 3- 5% py	1.7	145.4	7.2	66	0.1	22	3.0	5	<.1	36	1.1	
41539	659027	5767064	ang float; hornfelsed seds and agglom w 40% green alteration; 1-3% po	1.1	172.7	2.4	51	0.3	3899.4	840.6	8.8	0.2	167	3.7	0.82
41540	658748	5767130	ang float; aug porp agglom; calcite-garnet-K spar veining; tr po	1.1	98.9	33.2	40	0.2	129.3	22.8	6.4	0.3	86	2.5	
41541	658997	5767052	outcrop grab 1 meter; pyrox-calcite stringers and blebs in hornf seds; 300/60N; probable Chick structure	2.6	84.5	7.3	76	0.2	184.3	8.4	3.4	<.1	99	4	
41542	658976	5767077	subcrop; well altered (pyrox-hornfels) seds; minor po; tr garnet	0.4	27.2	4.4	45	0.1	264.4	8.7	3	<.1	177	3.3	
41543	658943	5767064	ang float; rusty hornfels sed w pinkish calcite veining; 1-2% po	1.8	145.6	6.8	61	0.1	14.8	4.3	2.1	<.1	44	0.3	

Sample ID	Fasting	Northing	Description	Mo	Cu	Pb	Zn	Ag	As	Au ppb	Sb	Bi	Ba	W	Au gm/mt
41544	658980	•	ang float; sediment w carbonate alteration; up to	<b>ppm</b> 0.8	<b>ppm</b> 167	<b>ppm</b> 8.4	<b>ppm</b> 81	<b>ppm</b> 0.1	<b>ppm</b> 8	<b>ррь</b> 7.7	<b>ppm</b> 2.5	<b>ppm</b> 0.1	<b>ppm</b> 49	<b>ppm</b> 0.9	gm/m
41545	659104	5767030	5% po ang float; just east of new L75E; aug porp w green	0.9	114.4	1.9	58	0.2	20.9	4.7	2.8	<.1	254	0.2	
41546	659181	5766967	veinlets; minor po subcrop; similar to 41544; calcite-epidote veining; 2-3% py	1	113.3	4.6	67	0.1	9.9	<.5	0.6	<.1	59	0.8	
41547	659322	5766989	ang float; volc seds; minor carb veining; epdote; 3- 4% py-po	4.3	31.5	1.4	20	<.1	17	2.5	3.2	0.1	179	0.5	
41548	659746	5767127	ang float; as 41547 but green veining to 10%; 3- 4% py-po	0.4	140.9	22.4	42	0.6	64.5	17.1	6.9	0.1	148	1.4	
41549	659494	5766970	ang float; aug porp agglom cut by green veins; 3- 5% py-po	1.9	111.5	3.3	28	0.1	20.6	17.3	2.7	0.2	191	0.4	
41550	659423	5767022	ang float; sheared amg basalt; amgdules filled with carbonate; 1-2% po	2.4	108.9	4.2	13	0.1	5.2	1.5	0.5	<.1	94	0.9	
41590	656846	5767847	subcrop, Chick area; new road; bleached volcanic	1.4	32.2	1.6	13	<.1	0.9	0.6	0.7	<.1	156	0.1	
41591	656905	5767674	ang float; Chick area; bleached volc seds tr po, cpy	0.7	132.1	3.8	61	0.1	7.2	1.7	4.4	<.1	255	0.7	
41592	656905	5767664	ang float; Chick area; light green veining; altered aug porp and ves basalt	1	130.2	3.6	48	0.1	12.6	3.4	2.8	<.1	111	0.3	
41593	656931	5766854	ang float; 4 km area; aug porp; carb veining; 2-3% po	2.9	148	2.4	34	0.1	11.7	4.0	1.9	0.1	76	1.1	
41594	656853	5766823	subcrop in road ditch; 4 km; hornfelsed seds w carb? veining; 1-2% po-py	94.2	102	1.7	621	0.5	129.1	9.0	4	0.1	37	0.4	
175561	656956		4 km zone, purple-brn Bi Hnfs + pale-dark grn	1.2	199.2	2	67	0.1	4.5	1.0	0.9	<.1	100	0.2	
175562	656853	5766820	4 km zone, 20 kg fl/sub on S side of road. Pale- olive grn Px-Calc Sic/Ga SKN, Sil? Conchoidal frct. V.v. hard (Ridley O/C on N side of road)	27.6	158.3	1.4	59	0.3	18.3	20.3	2.8	0.1	70	2.9	
175563	656788	5766820	On N side of road. (Ga)-calc-sil Px SKN v.v. hard conchoidal fracture (fl).	3.2	60.1	1.3	25	0.2	11.1	2.2	1.3	0.4	69	0.4	
175564	659399	5766366	S.E. SKN FI of sil+/- calc-sil-Ga SKN with plae grn Px, Wk banded seds at 184257.	6	119.6	25.8	53	0.5	20.3	41.3	3.7	0.3	58	2.1	
175565	659420	5766366	S.E. SKN 20 m E of 175564. O/C (Si-Ca) Calc-sil- Px SKN, v.v. hard.	5.5	195.8	19.5	91	1.3	31.7	59.0	3.8	0.7	58	0.6	

Table 2

<b>Sample ID</b> 175566	<b>Easting</b> 656934	Northing 5767671	<b>Description</b> chick. Road cut 25 m grab of O/C. Bi-Hnf+Px, Vbx/tuff+ApBSLT flow, FeOx, Po, possible mafic dike 110.	<b>Mo</b> <b>ppm</b> 0.7	<b>Cu</b> ppm 93.9	<b>Pb</b> <b>ppm</b> 5.5	Zn ppm 56	<b>Ag</b> ppm 0.1	<b>As</b> <b>ppm</b> 41.1	<b>Au</b> <b>ppb</b> 3.3	Sb ppm 6	Bi ppm <.1	<b>Ba</b> <b>ppm</b> 431	<b>W</b> ppm 1.9	Au gm/mt
175567	657238	5767422	At end of gumbo road, E side of small hill (Apv). Well frctd, chl-(ser)-py/Po, dark Bi-Px, FeOx frcts.	6.1	177.5	6.7	240	0.4	2.8	2.9	0.9	0.1	97	0.2	
175568	656684	5766875	75 m E of Chick road near creek, W of 4 km zone, Px-Bi SKN w Px veins +replacing Bi, Tr-5% Py, Vbx/tuff.	0.3	99	2.2	33	0.1	4.4	3.8	0.6	<.1	292	0.7	
175569	656166	5767132	Hen main show upper road, grab 20 m from end of road, strg purple-brn Bi-Px SKNW Px vns Po- Py Tr As Py.	lost											
175570	656174	5767092	25 m south of 175569 at crest of drill trail. Grab f Bi Px-SKN, Px veins+/-Ca, Po-Py, tr Cp, ASPy?.	13.5	137.9	1.6	41	0.3	12.3	21.2	3.6	0.1	158	1.3	
175571	657384	5766744	Dike show. 15 m north of main 2g/t Au zone. Purple-brn Bi + pale orange calc-sil, cut by Px+/- Ca veinlets. Float, S/C.	2.5	83.1	2	28	2.8	101.5	2166.5	0.8	0.1	340	3.6	2.34
175572	657394	5766695	25 m south of dike show. O/C Gd contact 090/90, 0.9 m grab. Vbx int calc-sil, Ga-Px matrix, Po red- orange calc-sil.	3.7	106.6	1.7	24	0.2	7	16.4	1.1	2.7	98	68.8	
175573	657400	5766695	As above 1.5 m E, chip 0.75 m, Vbx FeOx, pale green Px.	1.6	78	3.5	15	0.2	15	11.8	2.2	23.1	79	13.8	
175574	657479	5766750	•	5.4	128	4	36	0.2	9.4	5.1	0.7	0.3	115	1.2	
175575	657585	5766847	Dike show ~ 150 m E up road. O/C Px-calc sil (Ga+/-), Po, no hand sample, L60E 49+25N. Sample is ~ 15 m W of station.	2.6	105.4	1.3	61	0.1	16.7	2.0	0.7	0.2	432	0.2	
175576	657402	5766659	Dike zone, O/C Px-red-brn Ga/ banded calc-sil. Grab 20 cm.	2.7	144	1.1	25	0.1	16.2	0.6	0.6	0.2	275	16.6	
175577	660040	5767017	Ledge 20 m W of road and 25 m NW of baseline at road. Dark green Px+/-Ga, BiPx-calc sil SKN, Px veins with PoPy, tr Cp. Late chl?	0.7	115.4	7.7	62	0.2	562.4	8.9	4	0.1	188	0.6	

Sample ID 175578	<b>Easting</b> 657370	Northing 5766729	<b>Description</b> Dike show NW end. 5 m grab of Po-rich calc sil SKN Vbx float (along contact with dike?). Dike trends 330-150/60. Px pale green-olive green, white veins 0.5 cm wide, Po-Py+tr Cp.	<b>Мо</b> <b>ррт</b> 1.1	<b>Cu</b> <b>ppm</b> 105.7	<b>Pb</b> <b>ppm</b> 2.1	Zn ppm 26	<b>Ag</b> <b>ppm</b> 0.1	<b>As</b> ppm 17.1	<b>Au</b> ppb 84.9	<b>Sb</b> <b>ppm</b> 0.6	<b>Bi</b> <b>ppm</b> 0.3	<b>Ва</b> <b>ррт</b> 193	<b>W</b> <b>ppm</b> 1.2	Au gm/mt
175579	657386	5766761	Dike N end of zone in cut block area. Float Px- Bi+/-Ep/D, Po-Py+/-Cp? (v.g.)? 15 m at 340 from dike show. Pale-light green-Px, absorbs BiHnf.	1.8	148	2	38	0.1	10.3	3.3	0.4	0.2	273	0.7	
175580	657452	5766660	Dike 75 m E of 175576. Float Px red Bi + Px-Ca- Ep(Ga?), veins Py-Po+/-Cp?, no hand sample.	0.8	508.7	2.3	34	0.5	2.1	12.9	0.4	1	44	21.9	
175581	657342	5766697	65 m W down road from dike, lower contact. 100 kg float boulder, Py-Po 1% Bi HNFS+ Px flooding and white veins.	1	89.2	1.8	30	0.1	7	0.7	0.7	<.1	35	0.5	
175582	657382	5766724	Dike 3 m W. Repeat of old sample? Orange flag. Sil-Px veins Brn Ga Py-Po+/-Cp int Qtz-Bi alteration. Olive green GA + red-brn Ga veins - Px-Qtz veins.	12.8	84	2.1	17	6.2	469.1	31037.6	4.6	0.4	48	7.6	35.04
184251	659423	5767063	ang float; as at 41549 without veining; minor epidote-calcite-chlorite; up to 10% py	70.5	59.6	1.7	7	0.1	7.4	34.0	1.9	0.4	28	2.7	
184252	659347	5767129	ang float; sheared aug porph; carbonate veining with green alteration; 1-2% po; tr cpy	1.8	102.8	2.9	28	0.1	1.2	<.5	0.1	0.1	218	0.1	
184253	659448	5767110	ang float; aug porp; minor green freacture fill veinlets; 3-5% py; tr cpy?	1	101.1	2.3	26	0.1	20	5.0	3.1	0.2	123	1.1	
184254	659908	5767014	re-sample of Ledge showing rubble (98DR-4)	5.7	119.8	4.4	22	0.4	>10000	1007.7	16.4	1.1	76	1.1	1.1
184255	656956	5766917	ang float; subcrop? Carb veining in hornfelsed volc; 1-3% po;	3.7	268	2	46	0.1	38.3	6.9	0.9	0.1	102	1.5	
184256	656855	5766820	subcrop; banded seds, hornfels; carb stringers; minor green veins and blotches; 2-3% po	214.2	89.6	3.3	61	0.5	38.7	8.1	1.2	0.2	40	0.8	
184257	659399	5766369	ang float; hornfelsed seds with minor hair-line qtz- carb veinlets; 4-5% po; re-sample of SE skarn show.	4.8	115.5	9.5	64	1.9	278.4	989.5	11.1	0.1	56	2.2	1.14
184258	658995	5767052	1 m grab; hornfelsed seds up to 40% green stockwork, minor po, tr cpy; Chick structure?	3.2	79.9	3.9	69	0.1	174.6	14.7	2.8	<.1	163	2.1	

				Мо	Cu	Pb	Zn	Ag	As	Au	Sb	Bi	Ва	w	Au
Sample ID	-	Northing	Description	ppm		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	gm/mt
184259	657628	5767912	ang float; hornfelsed seds; minor green alter; 1- 2% po	2.4	111.4	2.6	55	0.2	142.2	18.9	3	0.1	80	0.4	
184260	657597	5767640	subcrop; hornfelsed seds; green veinlets with K spar; 1-2% po; minor magnetite	2.2	87.9	6	34	0.1	25.8	8.8	8.4	0.1	66	1.3	
184261	657550	5767644	subcrop?; as 184260 without magnetite and K spar	2.1	125.6	3.8	34	0.1	18	7.5	3.9	<.1	27	0.3	
184262	657512	5767620	subcrop? Aug porp flow; hornfelsed and mottled w 40% green alteration; 2% po; magnetic; beside access trail	3.5	128	5.3	48	0.2	133	5.0	6.5	<.1	127	0.6	
184263	657174	5767408	ang float; hornfelsed basalt with 20% green stringers; tr po	0.9	52.3	1.8	70	0.1	78.5	4.9	2.6	<.1	246	0.4	
184264	656918	5767044	subcrop?; volc seds with 25% green veining; 1- 3% po	3.8	124.5	11.7	40	0.2	78.6	13.1	5.7	0.1	82	1.1	
184265	657367	5767558	ang float; hornfelsed seds with 60% green alteration; 3-4%po; tr cpy	9.5	253.4	6.1	29	0.3	143.8	13.9	13.5	0.2	69	0.4	
184266	657184	5766933	ang float; altered seds; fracture fill po to 5%; tr cpy	4.9	141.3	8.1	25	0.5	42	7.9	5	0.2	47	1.6	
184401	657416	5766720	50 cm chip; altered volcanic; qtz-garnet-biotite hornfels; 3-5% po	0.6	97.9	2.2	32	<.1	7.6	<.5	0.5	0.1	391	0.1	
184402	657475	5766750	grab from subcrop rubble; as @ 184401 but more po less garnet; tr cpy	1.6	160.3	5	41	0.1	7.3	2.7	0.3	0.1	83	0.2	
185309	658480	5766721	grab 1 meter outcrop; hornfels and minor green	1.6 2.3	100.3	э 3.8	41 43	0.1	7.3 3.9	2.7 <.5	0.3 0.7	0.1	03 114	0.2 1.2	
			alter; po	2.0								0.1			
185310	658487	5766721	grab 2 m outcrop; aug porp; K spar, carb veinlets; py	1	75.2	2.1	56	<.1	2.4	<.5	0.4	<.1	307	0.3	
185311	658487	5766736	grab 1 m outcrop; aug porp; K spar-qtz veinlets;	0.6	76.7	2.5	70	<.1	8.1	<.5	0.6	<.1	623	0.3	
185312	658045	5766780	ang float; hornfelsed seds;	0.9	66.4	4.9	60	0.2	7.2	<.5	1.8	0.2	73	1.4	
185317	656920		ang float; hornfels	0.7	17.2	2.8	72	0.2	481.9	8.6	2.6	0.2	286	0.2	
185318	657030	5767001	ang float; hornfels with carbonate gash veinlets	0.4	187.8	1.5	75	0.1	16.9	0.5	1.5	<.1	96	1	
185319	656995	5767072	ang float; hornfels with carbonate gash veinlets	1.8	27.1	2	62	0.1	17.7	2.4	4.8	0.2	262	0.3	
185320	657605	5767578	subcrop?; hornfels with epidote; po	3.6	123.3	5.6	19	0.1	23.1	8.9	3.6	0.1	64	1.1	
185321	657605	5766933	ang float; green alter; po, tr cpy?	3.1	390	6.2	46	0.2	1	<.5	0.7	0.2	144	0.2	
185322	657890	5766948	outcrop grab; alteration; K spar veining	2.6	100.8	4	60	0.1	8.3	1.2	1.9	0.4	139	1.4	

Osmala ID	Fasting	N a stille ins as	Description	Мо	Cu	Pb	Zn	Ag	As	Au	Sb	Bi	Ва	w	Au
Sample ID	-	Northing	Description	ppm	ppm	ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	ppm	gm/mt
185323	658520	5766966	ang float; K spar veining; weak green alteration; po	52	130.2	4.1	65	0.1	61.9	5.1	2.5	0.1	245	0.4	
185324	658739	5766970	ang float; K spar-epidote alteration; minor po	0.5	101.7	4	28	<.1	15.2	3.2	5.6	<.1	125	1.7	
185325	657555	5767518	ang float; altered; po	0.9	77.4	2.8	29	0.1	17.4	3.2	5.7	0.2	195	0.3	
185326	657555	5767518	ang float; as at 185325	11.7	127.3	6.6	40	0.2	17.1	6.5	4	0.1	122	0.9	
185327	659572	5766957	ang float; skarny; po-py-cpy	2.5	143.6	17.6	55	0.2	57.5	3.9	6.9	0.2	99	0.2	
185328	657605	5767572	ang float; altered; po	2.6	70.5	4.5	54	0.1	22.2	0.6	5	0.1	70	0.7	
185329	659053	5766953	ang float; altered intrusive?; garnet; po	1.3	43.6	3.2	20	0.1	14.7	<.5	3.7	0.1	121	0.1	
185330	659093	5766988	hornfels; po; minor green veinlets	0.9	141.6	4.8	55	0.1	6.5	4.9	2.8	0.1	53	0.8	
185331	658916	5767107	subcrop; hornfels; green veinlets; magnetite; K spar; py	0.8	121.3	2.4	117	0.2	15.4	4.4	3	<.1	186	0.4	
185332	658802	5766957	float; pyrox veins cutting hornfels	2	132	4.7	122	0.4	140	33.3	2.8	0.1	509	2.4	
185333	658932	5767004	ang float; sediments with altered veinlets	0.9	207.2	2.9	117	0.9	493.7	36.8	4.2	2.5	442	0.9	
185334	659191	5767051	float; hornfels with some veining; py	1.2	219.9	3.7	102	0.4	44.4	12.6	52.9	<.1	134	0.6	
185335	659209	5767160	ang float; sediments; silicified	9.1	101.3	25.8	9	0.8	26.3	73.3	1.2	2	35	0.4	
185336	659449	5767148	ang float; c gr aug porph; epidote; py-po-mag; @ edge new clearcut on access trail	4	264.7	1.7	21	0.2	12.1	44.2	2.2	0.3	74	1.3	
185337	657056	5767998	subcrop;hornblende porphyry;epidote;po; upper side of road	2.5	92.3	4.3	26	0.2	7.9	24.8	1.5	0.1	87	0.4	
185338	657150	5768010	ang float;po-py; silicified, epidote veining	1	110.5	2.7	18	0.1	17.2	13.4	1.7	<.1	125	1.1	
185339	657056	5768261	ang float; altered cut by qtz veins; biotite?	0.9	94.2	1.7	56	<.1	2	4.2	0.7	<.1	19	0.5	
185340	656993	5768136	ang float; green alteration and veining; po	2.3	168.5	9.7	45	0.3	28.6	6.7	2.6	0.2	164	0.8	
185341	657398		ang float; hornfelsed seds cut by narrow aplite dyke; @ Dyke show below road	1.3	33	0.5	17	<.1	2.8	<.5	0.3	<.1	107	0.1	
BK1HEN05	656905	5767664	ang float; carbonate rich sediment; minor po	0.4	81.6	5.5	12	0.1	5.5	1.4	3.1	0.1	132	0.4	
BK2HEN05	656975	5767116	ang float; rusty hornfels w qtz-carb stockwork, minor po?	1.9	103.4	5.1	109	0.3	68.2	1.8	3.1	0.1	191	0.3	

To Keewatin Cons Acme file # A5054			•
Analysis: GROUP 6 - F	PRECIOUS	METALS BY F	TIRE ASSAY FROM 1 A.T. SAMPLE, ANALYSIS BY ICP-ES.
ELEMENT	Ag**	Au**	
SAMPLES	gm/mt	gm/mt	
HD05T-C03	9	9.54	
HD05T-C04	4	0.56	
HD05T-C05	<2	1.72	
NDARD R-2a/O	156	5.82	
Dyke Showing			
Sample No	Ag*	Au	Length (m)
HD05T-C03	9	9.54	1

HD05T-C03 9 9.54 1 HD05T-C04 4 0.56 1.5 HD05T-C05 0 1.72 1 4.29 3.46 3.5

Samples were small (hard to sample polliched surface of a hornfels), but even - definitely representative \* <2 Ag values calculated as 0

# 16. Figures















# Au Cu As ppb ppn ppn + 1.4 63.8 8.7 7.1 46.2 11.5 2.1 37.4 17.8 1.5 46.8 8.7 2.1 45.2 9.4 2.6 54.2 142 1.0 927, 436 5.8 /19 1668 42 99.1 113 54 391 017 4.5 648 181 22 554 118 21 421 10.7 4.1 48.7 7.3 14 521 47.7 Ledge 216 33 3 8.7 SECSBarr $\mathcal{D}$ Legend Fault/Structure Eocene Kamloops Group Basalt Cretaceous(?) Monzodiorite Upper Triassic-Lower Jurassic Nicola Group Quartz Monzodiorite:Takomkane Batholith Hornfelsed Volcanic Sediments Volcanic sandstone, siltstone, conglomerate calcareous sediments, limestone, chert Pyroxene basalt, minor sediments Happy Creek Minerals Ltd Hen Property Geology Soil and Silt Compilation

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

Figure 7








Appendix 1

Assay Certificates

ACME ANALYTICAL LABORATORIES LTD. 9001 Accredited Co.)

852 B. HASTINGS ST. MANCOUVER BC V6A 1R6

PHONE (604) 253-3158 FAX (604) 253-1716

GEOCHEMICAL ANALYSIS CERTIFICATE

Standard Metals PROJECT HEN File # A600367

P.O. Box 1852 38151 Clark, Squamish BC VON 3GD Submitted by: David Blann

			<u> </u>		<u> (</u>			S										·· · · ·	. X	<u> </u>			:					ليته فتكم			. :	ليدعد
SAMPLE#		Cu opm	Pb ppm (	Zn ppm p	-	Ni ppm		Mn ppm	Fe %	As ppm p	U pm	Au Th ppb ppn		Cd S ppm pp			Ca X	թլ % pp		Cr ppm	Mg f % pp		⊺i E %tppn		Na %	K ∦⊈		łg Sc xm ppm			Se ippm	
G-1 L-87E 56N L-87E 55+50N L-87E 55N L-87E 55N L-87E 54+50N	.1 2 1.9 63 1.1 46 3.3 37 2.7 46	3.8 5.2 7.4	6.0 1 5.9 7.4	133 93 64	.4 .3 .3	48.3 88.6 22.0	29.3 24.1 9.2		4.93 3.31 4.57	8.7 1 11.5 17.8	l.1 .7 .7	<.5 4.1 1.4 1.4 7.1 .6 2.1 1.3 1.5 .8	42 43 16	.9. .3. .5.	6.1 6.1 8.1	145 97 136	.49 . .46 . .11 .	106 078 039	8 90 6 149 5 62	8.0 0.3 1 9.1 1 2.6 6.1 1	.86 1 .66 1 .84	57 .18 40 .19 73 .20	84 2 51 1 52 2	2 3.34 2.80 2 3.09	.017 .021 .008	.40 .25 .08	.1 .0 .2 .0 .3 .0	)2 6.8 )4 4.1 )9 4.1		5 10 5 7 5 9	.5 .5 .8	
L-87E 54N L-87E 53+50N L-87E 53N L-87E 52+50N L-87E 52N	2.4 45 3.9 54 .9 92 1.6 82 7.2 191	4.2 2.0 2.7 1	7.1 6.4 2.2	67 70 < 129	.3 .1 .3	70.4 70.7 69.8	16.0 23.3 17.2	434 643 529	4.59 3.55 4.19	142.4 77.5 43.6 1	.8 .7] L.2		30 44 33	.72. .21. .71.	1 .1 5 .1 5 .1	104 114 142		044 065 055	5 12 7 10 9 10	3.9 1 3.0 1 9.4 1 8.3 1 9.2 3	.13 ( .42 12 .76 24	52 .10 25 .10 30 .24	582 331 191	2 3.02 1 2.14 1 3.65	.014 .020 .018	.16 .30 .42	.2 .0 .2 .0 .3 .0	)5 3.3 )1 4.5 )7 7.6	. 1< .0 . 1< .0 . 2< .0 .3< .0 .2< .0	15 9 15 6 15 1 (	) .8 5 <.5 1 .9	
L-87E 51+50N L-87E 51N L-87E 50+50N L-87E 50N L-87E 50N L-87E 49+50N	4.1 99 2.0 39 2.0 64 1.6 59 2.0 42	9.1 4.8 9.4	5.6 5.4 4.6	80 114 114	.2 .3 .3	51.3 67.3 86.2	12.0 17.4 20.7	396 547 536	3.89 4.66 4.75	81.1 18.1 11.8	.4 .7 .5	5.4 .9 4.5 1.1	25 35 32	.2 1. .7 1. .4 ,	3 .1 3 .1 9 .1	124 124 117	.34 . .39 . .40 .	091 083 055	6 11 7 12 6 15	0.91 0.71 6.51 8.32 9.71	.36 1 .56 1 .10 1	21 .19 16 .19 14 .23	95 2 97 2 95 2	2 2.28 2 3.19 2 3.22	.016 .013 .018	. 11 . 17 . 18	.2 .0 .2 .0 .2 .0	)2 4.1 )5 5.1 )3 4.5	.2<.0 .1<.0 .2<.0 .1<.0	15 8 15 9	1.2 <.5 1.0 .6 8 .8	
L-87E 49N L-87E 48+50N L-87E 47+50N L-87E 47+18N RE L-87E 47+18N	2.2 48 2.2 52 1.6 33 2.1 59 2.0 60	2.1 3.3 9.8	7.3 5.8 4.7	82 47 66	.3 .2 .2	68.6 41.8 60.8	17.8 11.0 17.6	446 260 364	4.69 3.17 3.92	47.7 8.7 17.2	.6 .5 .6	4.1 .7 1.4 .9 2.6 1.3 2.4 1.8 2.1 1.7	25 25 25 27	.4 1. .2 . .3 1.	0 .1 7 .1 0 .1	137 97 103	.22 . .24 . .25 .	037 046 076	6 12 7 9 8 10	2.8 1 4.2 1 4.6 1 2.3 1 3.6 1	.55 1 .11 1 .31 1	8 .23 6 .18 38 .19	32 2 39 1 94 2	2 3.56 1 2.27 2 2.73	.012 .015 .020	.13 .08 .13	.2 .0 .2 .0 .2 .0	)4 4.6 )6 3.7 )3 4.5	.1<.0 .1<.0 .1<.0 .1<.0	15 1( 15 7 15 7	-6 -5 -5 -5 -5	
STANDARD DS6	11.6 122	1.3 2	29.3	140	.3	24.4	10.8	689	2.77	21.1 6	5.5 4	48.3 2.9	40	6.1 3.	4 5.0	55	. 84 .	079	13 18	0.5	.58 1	53 .03	79 17	7 1.88	.072	. 15 🕻	3.5.2	22 3.2	1.7.0	)7 (	4.3	

GROUP 10X - 15.0 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HN03-H20 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. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns. - SAMPLE TYPE: SOIL SS80 60C

Data ( FA

Feb 14/06 DATE RECEIVED: JAN 24 2006 DATE REPORT MAILED:.



ACMB AA LI	AN (ISC						IES Co.)	•	Stai		GE cd	Met	EM] al:	ICA B P	L . RO	ANA JEC	LY T	SI: HEI	s Ci	ERT: Filo	IFI e #		<b>E</b> 031	35		<b>R</b> (60	)4)2	253-	3151	8 FA	<b>X (6</b>	0	53-1		
SAMPLE#	Мо ррп	Cu ppm	Pb ppm	Zn ppm	•	Ni pprn	Co ppm			As pom				Sr ppni							La ppm	Cr ppm		Ba ppm	Ti %	B ppm	Al %	Na %		₩ ppm p		Sc Ti xnippn		Ga ppnip	
G-1 BK-S1 BK-S2 BK-S3 STANDARD	1.3 1.4 .8	64.6 66.0 98.5	6.7 7.0 6.4	115 104 74	.2 .3 .3	69.4 61.7 57.3	24.8 23.4 23.6	1090 1122 689	4,57 4,51 4,35	<.5 63.1 84.1 36.0 22.1	1.0 .9 1.0	4.8 4.0 10.3	.9 1.1 1.2	63 64 48	.4 .4 .3	3.1 4.0 1.8	.1 .1 .1	117 120 125	1.04 1.13 .78	.123 .119 .093	7 8 10	139.3 99.7 97.2	1.47 1.10 1.27	183 174 181	.156 .131 .204	2 2 4 2 4 2	2.33 2.09 2.51	.033 .018 .028	.37 .33 .45		04 5. 06 5. 04 7.	.0 .2 .9 .2 .4 .1	.10 <.05 .06	61 71 8	.4 .6 .7

Standard is STANDARD DS6.

GROUP 1DX - 15.00 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HN03-H20 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: SILT SS80 60C

Data A FA \_\_\_\_ DATE RECEIVED: JUL 4 2005 DATE REPORT MAILED: JUL 4 11/05



ACME A VIICAL LABORATORIES LTD (1. 9001 Accredited Co.)			PHONE (604) 253-3158 FAX (604) 253-1716
	ASSAY CERTIF: Standard Metals PROJECT HE	. · · · ·	34R <b>~ ~</b>
	P.O. Box 1852 38151 Clark, Squamish BC VON	3G0 Submitted by: David	d Blann 📕 🌆
	SAMPLE#	Au** gm/mt	
	C184254 C184257 D175571 D175582 E41539	1.10 1.14 2.34 35.04 .82	
	STANDARD OxL34	5.78	
		-	Clarence Leong



Standard Metals PROJECT HEN FILE # A503134

Page 3

ACME ANALYTICAL									ACME ANALYTICAL
SAMPLE#	Mo Cu Pb Zr ppm ppm ppm ppm	2		Au Th Sr Coi Sb Bi ppb ppm ppm ppm ppm ppm	V Ca P La opmo % % ppm			K Willig Sc Ti Xi ppm ppm ppm ppm	S Ga Se %tppmr ppmr
E41528 E41529 E41530 E41531 E41532	12.7 165.5 4.0 42 1.8 69.4 1.7 41 .9 704.7 8.2 37 5.6 313.8 1.3 10 .6 90.8 11.2 75	1 <.1 2.8 16.7 7 1.1 49.0 36.5 0 .2 213.9 27.5	430   4.84   14.9   .2     238   3.78   23.7   .6     130   2.57   16.7   1.7	2.0   .5   71   .1   1.9   .1     97.5   1.5   240   .3   1.8   1.0     9.3   7.1   303   .2   .7   .3	29     1.61     .108     5       62     2.37     .131     6       34     2.42     .070     11	9   31.4   1.23   48   .268     5   6.5   .34   44   .094     6   59.7   .31   109   .089     1   93.9   .23   135   .052     5   63.7   1.78   257   .247	4 51.46.583.3 9 52.08.451.1 2 42.51.122.0	<b>1 1.4&lt;.01 3.3 .1 1</b> 09 48.6 .02 2.5 .1	.96 4 <.5
E41533 E41534 E41535 E41536 E41537	2.0167.82.8821.3148.72.2542.5138.01.7502.8108.32.0353.3142.63.568	4 .1 43.5 29.9 3 .1 63.0 35.3 5 .1 40.2 30.1	598     4.86     12.6     .6       511     4.93     6.8     .7       331     4.40     9.0     .6	1.7   .8   115   .1   1.6   .1     3.3   .7   181   .2   1.4   .1     1.6   .7   114   .2   1.9   .1	116     1.75     .168     7       89     2.72     .170     7       59     2.71     .157     6	8.   31.6   2.03   276   .369     7   59.5   1.65   77   .175     7   86.4   1.49   150   .238     6   41.8   .74   50   .144     7   37.4   1.67   223   .387	5 8 3.68 1.334 1.6 8 6 3.66 1.023 1.3 4 8 3.93 1.823 1.2	57 .9<.01 2.7 .1 1 37 .1<.01 2.3 .1 1 21 1.1<.01 1.5 <.1 1	.71 7 .7 .99 7 .9
E41538 E41539 E41540 E41541 E41542	1.7   145.4   7.2   60     1.1   172.7   2.4   51     1.1   98.9   33.2   40     2.6   84.5   7.3   70     .4   27.2   4.4   45	1 .3 17.3 29.8 0 .2 13.9 19.4 5 .2 15.9 15.5	517 4.12 3899.4 .5	840.6 2.1 46 .1 8.8 .2 22.8 1.2 291 .3 6.4 .3	176 1.01 .220 105 4.19 .191 ( 147 3.33 .145	9 110.1 1.39 36 .203 7 13.1 1.29 167 .235 6 22.8 .45 86 .126 5 22.5 .87 99 .161 4 41.9 .66 177 .170	5 2 1.56 .117 1.1 6 11 2.39 .205 .4 1 7 2.19 .051 .4	12   3.7   .02   4.8   .5     15   2.5   .01   4.0   .1     16   4.0   .02   8.2   .2	.69   8   .9     .69   8   1.5     .27   6   <.5
E41543 RE E41543 E41544 E41545 E41545 E41546	1.8 145.6 6.8 6 1.8 145.2 6.4 59 .8 167.0 8.4 8 .9 114.4 1.9 58 1.0 113.3 4.6 6	9 .1 32.1 42.8 1 .1 28.6 47.0 8 .2 16.0 16.1	383     6.70     14.6     .6       626     7.30     8.0     1.0       560     4.55     20.9     .5	5.0 1.8 92 .1 2.3 .1 7.7 1.9 53 .1 2.5 .1 4.7 2.0 79 .1 2.8 <.1	133 2.30 .212 8 197 1.69 .223 8 210 1.13 .191 5	8 40.9 1.35 44 .198 8 40.4 1.37 45 .206 8 31.8 2.58 49 .336 7 28.1 1.42 254 .298 8 133.2 1.61 59 .168	6 4 1.43 .136 .6 6 2 2.13 .080 1.6 8 3 1.82 .106 1.3	55 .3 .01 4.8 .1 3 58 .9 .01 4.5 .1 2 31 .2 .02 4.5 .2	8.47 6 .5 2.37 8 .5 .11 8 .5
E41547 E41548 E41549 E41550 E41552	4.3 31.5 1.4 20 .4 140.9 22.4 42 1.9 111.5 3.3 20 2.4 108.9 4.2 13 1.8 102.8 2.9 20	2 .6 15.4 25.9 8 .1 35.8 31.5 3 .1 409.5 49.9	427   3.94   64.5   .3     326   4.09   20.6   .5     363   3.14   5.2   .2	17.1   1.4   65   .3   6.9   .1     17.3   1.3   40   .1   2.7   .2     1.5   .5   234   .2   .5   <.1	L56 1.07 .179 ( 170 .96 .180 . 37 6.17 .094 2	5 17.7 .64 179 .157 6 21.1 .99 148 .210 5 64.1 1.83 191 .267 2 215.0 1.17 94 .092 1 103.3 1.64 218 .101	0 2 1.43 .160 .8 7 7 1.71 .109 1.3 2 1 .86 .127 .2	36 1.4<.01 6.1 .3 < 32 .4<.01 3.6 .3 1 23 .9<.01 2.0 .1 1	.11 7 1.6
E41553 E41590 E41591 E41592 E41593	1.0 101.1 2.3 26 1.4 32.2 1.6 13 .7 132.1 3.8 63 1.0 130.2 3.6 44 2.9 148.0 2.4 34	3 <.1 26.4 7.5 1 .1 21.1 26.4 8 .1 28.7 34.9	167 .95 .9 .3	3,4 2,0 88 <,1 2,8 <,1	30 .87 .106 . 179 1.15 .178 1 152 1.57 .207 (	4   51.2   1.58   123   .254     7   84.2   .69   156   .146     1   52.1   1.46   255   .313     9   41.5   1.22   111   .222     6   33.0   .46   76   .099	6 <1 .53 .091 .2 3 Z 2.05 .054 1.5	23 .1<.01 2.4 <.1 < 57 .7 .01 3.4 .1 76 .3<.01 5.2 .1 1	1 1   10 1   10 8   10 8   10 6
E41594 BK1 BK2 STANDARD DS6	94.2 102.0 1.7 62 .4 81.6 5.5 12 1.9 103.4 5.1 10 12.1 122.7 30.1 14	2 .1 35.6 8.6 9 .3 62.3 36.8	5 357 .94 5.5 .1 3 1200 5.97 68.2 .4	1.4 .1 436 .2 3.1 .1	31 10.55 .101 . 41 5.51 .157 !	9 43.7 .34 37 .152 I 93.3 .78 132 .042 5 95.1 2.49 191 .083 3 188.1 .57 161 .072	2 6 .90 .099 .1 3 3 <b>1.</b> 76 .025 .5	.4<.01 2.1 <.1	.07 1 .5 .55 6 3.0

Sample type: ROCK R150 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.



Standard Metals PROJECT HEN FILE # A503134

Page 2

ACHE ANALYTICAL							<u> </u>																						-					NALYTICAL
SAMPLE#	Mo ppm	Cu ppm			-				า Fe ก มี		U ppm	Au Th ppb ppn					۷ ppm	Ca %		La ppm	Cr ppm		Ва ррп	Ti %µ		A1 %	Na ≵	K X	W ppm p	~	Sc T pm pp		Ga ppm p	
C184257 C184258 C184259 C184260 C184261	3.2 2.4 2.2	79.9 111.4 87.9	3.9 2.6 6.0	69 55 34	.1 .2 .1	20.6 51.0 34.0	16. 27. 20.	1 612 6 364 5 294	2 3.04 4 3.54 4 3.54	278.4 174.6 142.2 25.8 18.0	,4 .3 .3	989.5 1.8 14.7 1.6 18.9 1.0 8.8 .8 7.5 .6	37 120 91	.1 .1 .2	2.8 3.0 8.4	<.1 .1 .1	170 101 92	1.4 <b>1</b> 1.25	.192 .156 .143	5 5 1 4	29.2 105.2 64.5	1.33 .94 .78	163 80 66	. 105 . 186 . 190 . 174 . 166	20 1 4 1. 88 1.	.75 . .87 . .73 .	097 238 182	.71 .78		02 6 01 5	.5 . .8 . .0 .	6 2.89 2 .24 2 1.11 2 1.73 2 1.78	9 6 7 1	.5 .8 L.1
C184262 C184263 C184264 C184265 C184265 C184266	.9 3.8 9.5 :	52.3 124.5 253.4	1.8 11.7 6.1	70 40 29	.1 .2 .3	18.5 20.4 26.6	i 16. 20. 23.	5 554 0 484 9 244	4 2,98 4 3.64 4 3.83	133.0 78.5 78.6 143.8 42.0	.5 .7 .3	5.0 .6 4.9 1.7 13.1 2.0 13.9 .8 7.9 1.0	41 76 126	.1 .1 .2	6.5 2.6 5.7 13.5 5.0	<.1 .1 .2	192 161 95	.76 .83	. 196 . 165 . 161	6 7 5	41.6	1.39 1.78 .89	246 82 69	. 254 . 191 . 182	1 1 3 1 7 1	.51 . .69 . .57 .	116 1 292	L.19 L.30 .62	.4 1.1 .4<	01 3	.5 . .4 . .1 .	4 1.89 3 .16 9 1.76 2 1.91 2 2.20	9 - 8 2 5 3	<.5 2.3 3.8
0175561 0175562 0175563 0175564 0175565	27.6 3.2 6.0	158.3 60.1 119.6	1.4 1.3 25.8	59 25 53	.3 .2 .5	54.4 21.0 18.1	14. 12. 14.	7 <b>8</b> 9 2 170 4 230	9 2.28 0 2.19 0 3.72	4.5 18.3 11.1 20.3 31.7	1.4 .6 1.0	1.0 2.3 20.3 2.3 2.2 1.3 41.3 2.4 59.0 2.5	17 47 73	1.2 .1 .2	.9 2.8 1.3 3.7 3.8	.1 .4 .3	92 48 127		.110 .095 .134	11 8 7	33.6 27.2 21.4	.28 .40 .14	70 69 58	.088 .120 .117	1.	.40 . .96 . .31 .	065 114 054	.17 .22 .15	2.9 .4<. 2.1	01 2 01 2 01 3	.1 . .4 . .1 .	1 .66 1 1.25 1 .82 1 3.55 1 2.41	1 6 2 1 2 3	5.1 1.6 3.2
0175566 D175567 D175568 D175570 D175571	6.1 .3 13.5	177.5 99.0 137.9	6.7 2.2 1.6	240 33 41	.4 .1 .3	28.2 31.7 24.1	29. 21. 17.	1 534 6 220 7 149	4 5.21 0 3.04 9 2.62	4.4 12.3	.5 1.3 1.3	3.3 .4 2.9 1.2 3.8 1.5 21.2 2.0 2166.5 .5	2 109 5 187 1 48	3.3 <.1 .2	.9 .6	.1 <.1 .1	166 187 102	.82 1.03 1.11	.210 .151 .137	5 5 9	59.0 85.4 32.8	1.62 1.30 .79	97 292 158	. <b>183</b> . 245 . 192	31. 21. 21.	.82 . .31 . .20 .	112 1 071 128	L.24 .97 .43	.2 .7< 1.3<	.02 3 .01 3 .01 3	.1 . .3 . .2 .	1 .18 3 2.31 1 <.05 1 .90 1 .65	87 5 < 4 2	7.9 <.5 2.5
D175572 D175573 D175574 D175575 D175575 D176576	1.6 5.4 2.6	78.0 128.0 105.4	3.5 4.0 1.3	15 36 61	.2 .2 .1	8.8 21.0 6.3	3 5. 19. 3 11.	4 57 3 319 2 323	93.39 33.19	15.0	.6 .6 .3	16.4 1.4 11.8 1.6 5.1 .6 2.0 .4 .6 1.6	5 44 3 178 5 47	.1 .2 .1	1.1 2.2 .7 .7	23.1 .3 .2	33 72 156	2.83 2.71 .69	.151 .163 .102	11 6 3	22.3	.16 .56 .96	79 115 432	.073 .135 .277	10 2. 3 1.	.17 . .50 . .45 .	038 161 096	.05 1 .27 .90	1.2 .2<	01 1 01 2 01 4	.5 <. .1 <. .8 .	1 .20 1 .17 1 1.68 1 .43 1 .31	5 6 1 5 <	.8 1.0 <.5
D175577 D175578 D175579 D175580 D175581	1.1 1.8 .8	105.7 148.0 508.7	2.1 2.0 2.3	26 38 34	.1 .1 .5	45.8 35.8 7.0	3 15. 3 22. 9 19.	9 21) 3 29) 0 329	7 2.29		.4 .4 .5	8.9 1.3 84.9 .8 3.3 .1 12.9 .8 .7 1.3	8 84 70 8 63	.1 <.1 .3	4.0 .6 .4 .4 .7	.3 .2 1.0	89 106 76	1.60	.153 .111 .110	6 4 4	10.4	. 64 . 88 . 50	193 273 44	.129 .174 .095	51	.65 . .31 . .61 .	091 110 241	.33 .64 .15 (	1.2 .7 21.9<	01 3 01 4	.9 . .2 . .8 <.	3 <.05 1 .30 1 .54 1 .76 1 .13	5 6 • 5	.6 <.5 .6
D175582 E41526 E41527 RE E41527 STANDARD DS6	1.9 .6 .7	289.7 144.8 148.2	6.1 2.8 2.7	58 46 46	.3 .1 .1	30.5 12.7 12.9	5 40. 7 22. ∂ 22.	8 35 5 43 9 41	5 5.57 3 3.61 2 3.52	8.2 17.5 17.3	.7 .4 .4	31037.6 .! 38.0 1.0 21.0 1.8 22.0 1.5 48.3 3.0	5 101 3 13 <b>49</b> 7 1370	<.1 .1 .1	.7 .7	.4 <.1 .1	130 143 141	1.32 2.54 2.47	.178 .181 .186	9 8 8	21.8	1.13 .99 .96	101 317 298	.234 .269 .258	9.2	.03 . .67 . .62 .	221 150 154	. 91 . 93 . 94	.2< 1.3< 1.2	01 3 01 4 01 4	.4 . .2 . .1 .		8 10 < 10 <	.8 <.5 <.5

Sample type: ROCK R150 60C. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

	00	1 Ac	cre:	dit	ed	со. <u>S</u>	-	idar P.C	: <u>d 1</u> ). Bo	GE <u>Meta</u> × 1852	ls	IEMI PRC	JE	CT	HĒ	en	si: F	s c ile	'ER' ; #	A5	1C2 03	<b>ATE</b> 134	vid	Paç	ge j	1							4	
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185317 185318 185319 185320 185321	.4 1.8 3.6	187.8 27.1 123.3	1.5 2.0 5.6	75 62 19	.1 .1 .1	25.3 21.6 21.8 123.1 67.3	25.3 24.6 38.6	804 556 254	4.12 5.12 2.67	481.9 16.9 17.7 23.1 1.0	.2 .3	.5 2.4 8.9	.4 1.0	113 225	.3 <.1 .2	1.5 4.8 3.6	<.1 .2 .1	105 212 57	1.40 1.18 1.49	.146 .211 .160	3 6 2		.86 .46 .72	96 262 64	. 330 . 292 . 090	2 1.60 2 2.42 4 2.08 4 .99 10 2.80	.054 .111 .128	.73 1.38 .18	1.0 . .3<. 1.1 .	01 01 01	2.8 5.8 3.5	.1 <.0 .3 .7 .1 1.1	)5 6 76 11 11 3	3 <. 5 <. 3 1.
185322 185323 185324 185325 185325 185326	52.0 .5 .9	130.2 101.7 77,4	4.1 4.0 2.8	65 28 29	.1 <.1 .1	4,4 16,2 9,6 5,5 30,8	29.4 12.0 9.1	565 498 460	5.35 2.21 1.60	8.3 61.9 15.2 17.4 17.1	.6 .3	5.1 3.2 3.2	8 1.8 2 .7	348 115	<.1 .1 .2	2.5 5.6 5.7	.1 <.1 .2	253 137 63	2.28 2.30 5.87	. 132 . 184 . 186 . 267 . 175	5 9 9	21.4 10.8	.18 .51 .38	245 125 195	.423 .136 .129	9 1.88 4 2.37 25 1.89 10 1.91 5 1.90	.147 .343 .238	1.22 .33 .21	.4 . 1.7 . .3<.	01 01 01	5.3 3.7 < 2.3 <	.1 .9 .1 <.0 .1 .0	95 9 )5 6 )6 6	7 <. 5 <. 5 <. 7 2.
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185332 185333 185334 185335 185336	.9 1.2 9.1	219.9 101.3	2.9 3.7 25.8	117 102 9	.9 .4 .8	48.8 28.7 96.9 12.2 28.0	13.4 40.8 39.5	721 1498 66	3.86 5.69 6.60	140.0 493.7 44.4 26.3 12.1	.4 .6 .4	36.8 12.6 73.3	3 1.3 5 .6 3 1.4	49 319 38	.9 .5 <.1	4.2 52.9 1.2	2.5 <.1 2.0	191 90 149	7.07 .18	. 205 . 207 . 218 . 121 . 182	8 9 5	67.8 2	66 2.07 .16	442 134 35	.338 .057 .101	2 2.32 2 1.99 12 1.41 <1 .36 3 1.36	.121 .013 .048	1.75 .66 .45	.9	01 08 1 08 1	5.9 0.0 3.2	.2 6.1	L4 10 L6 4 50 3	1 <.
85337 85338 85339 85340 85341	1.0 .9 2.3	110.5 94.2 168.5	2.7 1.7 9.7	18 56 45	.1 <.1 .3 :	7.7 179.3 38.6 216.9 5.7	32.8 19.5 50.2	309 426 406	2.50 3.06 4.37	17.2 2.0 28.6	.5 .3 .2 .3 .2	13.4 4.2 6.7	.7 2.6 2.7	144 94	.1 .2 .2	1.7 .7 2.6	<.1 <.1 .2	47 72 113	1.84 1.41 1.39	. 160 . 158 . 138 . 173 . 089	2 3 3	15.7 208.9 1 89.6 1 333.3 1 15.6	.41 .28 .27	125 19 164	.076 .317 .164	4 .91 4 1.36 8 1.93 3 1.64 1 .50	.243 .042 .252	. 29 . 13 . 94	.4 . 1.1<. .5 . .8<. .1 .	01 01 01	4.1 3.1 4.1	.2 1.3	85 3 95 9 24 9	4 1. 3 1. 5 <. 2 <.
.84251 .84254 .84255 .84256 .84256 ANDARD DS6	5.7 3.7 214.2	119.8 268.0 89.6	4.4 2.0 3.3	22 46 61	.4 .1 .5		51.9 22.5 13.4	250 396 713	2.23 3.62 2.44	>10000 38.3 38.7	.3 1.0 1.6	6.9 8.1	2.0 1.8 1.8	92 90 183	.1 .1 1.6	16.4 .9 1.2	1.1 .1 .2	65 113 39	1.49 1.83 5.86	.242 .281 .099	8 12 14	66.1 15.7	.39 .94 .11	76 102 40	.080 .176 .108	2 .54 2 1.35 6 1.30 15 3.32 16 1.94	.577 .252 .235	. 20 . 73 . 04	2.7 . 1.1<. 1.5 . .8 . 3.5 .	01 01 01	3.3 < 2.4 < 1.8 <	.1 . .1 1. .1 1.	50 4 33 3 21 5	4 35. 4 3. 3 . 5 3. 5 4.

GROUP 1DX - 15.0 GM SAMPLE LEACHED WITH 90 ML 2-2-2 HCL-HN03-H20 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 Refuns and 'RRE' are Reject Refuns.

Clarence Lec

DATE RECEIVED: JUL 4 2005 DATE REPORT MAILED: M. 18.05... Data FA

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Appendix 2

Petrographic Reports

# **Petrographic Report**

# **HEN Rocks**

16 May 2006

Prepared For: David Blann Standard Metals

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info@petrascience.com www.petrascience.com

# 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. SampleHen98-19 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 as 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 =  $\sim 4$  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,	red brown-
		rutile and sulfides	tan
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 (cobaltrinite) matrix. Tabular crystals are commonly also stained. Trace disseminated pyrrhotite. Some dark gray patches strongly magnetic, no reaction to HCl. FOV =  $\sim$  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-clinozoizite, 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 finegrained 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 =  $\sim 4$  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	red-brown
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	inclined extinction

#### 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 form 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.





**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,	brownish
		typically associated with calcite, quartz and sulfides	biref.
Clinopyroxene	05	aggregates of subhedral grains, occurs with carbonate	high relief

## 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	strong aniso
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	red-brown

## Thin Section Description:

The section is a calcic skarn that comprises patchy aggregates of quartz, masses of epidote-actinolitetremolite-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