

DATE RECEIVED  
OCT 03 1995

Geological Report on the  
**Cunningham Creek Prospect**

Barkerville, British Columbia

Latitude 52<sup>0</sup> 56' North Longitude: 121<sup>0</sup> 21' West  
NTS: 93A/14W

OWNER

Chaput Logging Ltd.  
Box 245  
Lumby, B.C.  
V0E 2G0

OPERATOR

Clansmen Resources Ltd.  
508 - 9521 Cardston Court,  
Burnaby, B.C.  
V3N 4R8

By

FILMED

David E. Blann, P.Eng.  
Norian Resources Corp.  
August, 1995

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

24,056

## TABLE OF CONTENTS

	<u>Page</u>
Summary .....	1.
1.0 Introduction .....	2.
2.0 Location/Infrastructure .....	2.
3.0 Physiography and Climate .....	2.
4.0 Property Status .....	3.
5.0 History .....	3.
6.0 Regional Geology .....	4.
7.0 Property Geology .....	5.
7.1 Structure .....	6.
7.2 Alteration and associated Mineralization .....	6.
8.0 Discussion .....	7.
9.0 Conclusions .....	8.
10.0 Recommendations .....	9.
11.0 Statement of Costs .....	10.
12.0 References .....	11.
13.0 Statement of Qualifications .....	12.
Appendix A .....	Back
Appendix B .....	Back

## TABLES

Table 1	Claim Status .....	3
---------	--------------------	---

## ILLUSTRATIONS

<u>Figure</u>		<u>Following Page</u>
1.	Location map 1:1,000,000	2.
2.	Claim location 1:50,000	3.
3.	Regional geology 1:50,000	4.
4.	Regional magnetic plan 1:50,000	4.
5.	Property plan, zone locations 1:30,000	5.
6.	Rock sample locations 1:10,000	6.

## SUMMARY

The Cunningham Creek property is located approximately 90 kilometres east of Quesnel, British Columbia, and 25 kilometres southeast of the Wells-Barkerville gold camp.

The property is dominantly underlain by a northwest trending series of regionally metamorphosed, calcareous and carbonaceous sedimentary and minor volcanic rocks of the Downey and Hardscrable Mountain successions; these rocks are the host to gold mineralization occurring in the Cariboo Gold-Quartz, Island Mountain and Mosquito Creek mines which have a historical production of over 1.29 million ounces of gold. Approximately 1.4 kilometres south of the Cunningham Creek property, the Cariboo Hudson mine produced 13,000 tons grading 0.4 ounces per ton between 1937 and 1939. Current reserves are estimated at 37,000 tons grading 0.36 ounces per ton gold. Mining of the Coniagas vein (Penny Creek vein), located on the Cunningham Creek property, resulted in the shipment of 3.98 tons grading 7.63 ounces per ton gold and 1.25 ounces per ton silver between 1937 and 1938. In 1980, milled ore shipments of 14,822 tons grading 0.07 oz/ton gold, 89.4 oz/ton silver, 1.05% copper, 11.4% lead, and 3.8% zinc, and a shipment of 15,846 tons grading 0.152 oz/ton gold, 114.85 oz/ton silver, 1.45% copper, 19% lead and 5.1% zinc were made from the Silver Mine in upper Penny Creek. Stratabound galena, sphalerite, and barite occur along the western and eastern side of the property. Rio Tinto trenched a 14.5 metre zone grading 5.98% combined lead-zinc with 2.09 ounces per ton silver in 1977.

The Hibernia, Jewellery Store, and B zone occur near the centre of the property and consist of deformed zones of strong quartz-sericite-pyrite altered metasediments of the Downey succession. Strong alteration zones occur from 10-40 metres in width and 20-50 metres in length. Sampling within these zones returned gold values from approximately 100 ppb over 0.3 metres to 32,143 ppb over 1.5 metres. These zones trend northward and appear to have a moderate northerly plunge and subvertical to easterly dip. Gold from approximately 1.0 to 32 grams per ton and silver values up to 20 g/t occur with dominantly porphyroblastic pyrite, arsenopyrite and minor galena in erratically distributed quartz veins, silicified shears, lenses and pods within the overall alteration zone. Limited diamond drilling in 1989 returned width-weighted averages of 18.5 metres grading 4.35 g/t gold from the Jewellery Shop, 33.2 metres grading 2.40 g/t gold from the B zone, and 12.1 metres grading 3.86 g/t gold from the Hibernia zone.

The Penny Creek gold vein occurs at the south end of the Cunningham Creek property, and contains up to 12.69 g/t gold and 2.8 g/t silver across 1.1 metres. A vein from the northwestern corner of the property contains 15.51 g/t gold and 157.6 g/t silver over 2.0 metres. To date, all gold showings with values over 10 g/t gold occur within the Downey succession, and geochemical zonation of silver may occur through the property.

The Silver Mine area lies within the Hardscrabble Mountain succession, to the east of the Downey succession. The Silver Mine quartz vein structure is traceable on surface for over 200 metres in a northerly direction from upper Penny Creek. On surface, the vein and silicified shear zone is from 0.5 to approximately 1.5 metres in true width. Chip sampling of the widest surface exposure returned 1.8 metres grading 156 ppb gold, 233.4 ppm silver, approximately 1.1% copper, 2.2% lead, 1.9% zinc, 0.16% arsenic, 0.88% antimony, 191.8 ppm cadmium and 0.1% tungsten. An ICP geochemical value of 1662 ppm tungsten with 240.4 ppm silver across 1.0 metres was returned from the southernmost exposure of the vein in upper Penny Creek.

Further work on the property should include evaluating the down plunge, and blind body potential of existing gold zones. Three diamond drillholes are recommended for the Silver Mine zone to determine structure and grade. Potential for other gold-silver and lead-zinc-silver deposits exist throughout the property.

## **1.0 INTRODUCTION**

Between August and September, 1994, the author performed mapping and sampling of several zones of exposed mineralization in order to determine controlling structures, geochemical patterns and continuity of gold and silver occurrences on the property.

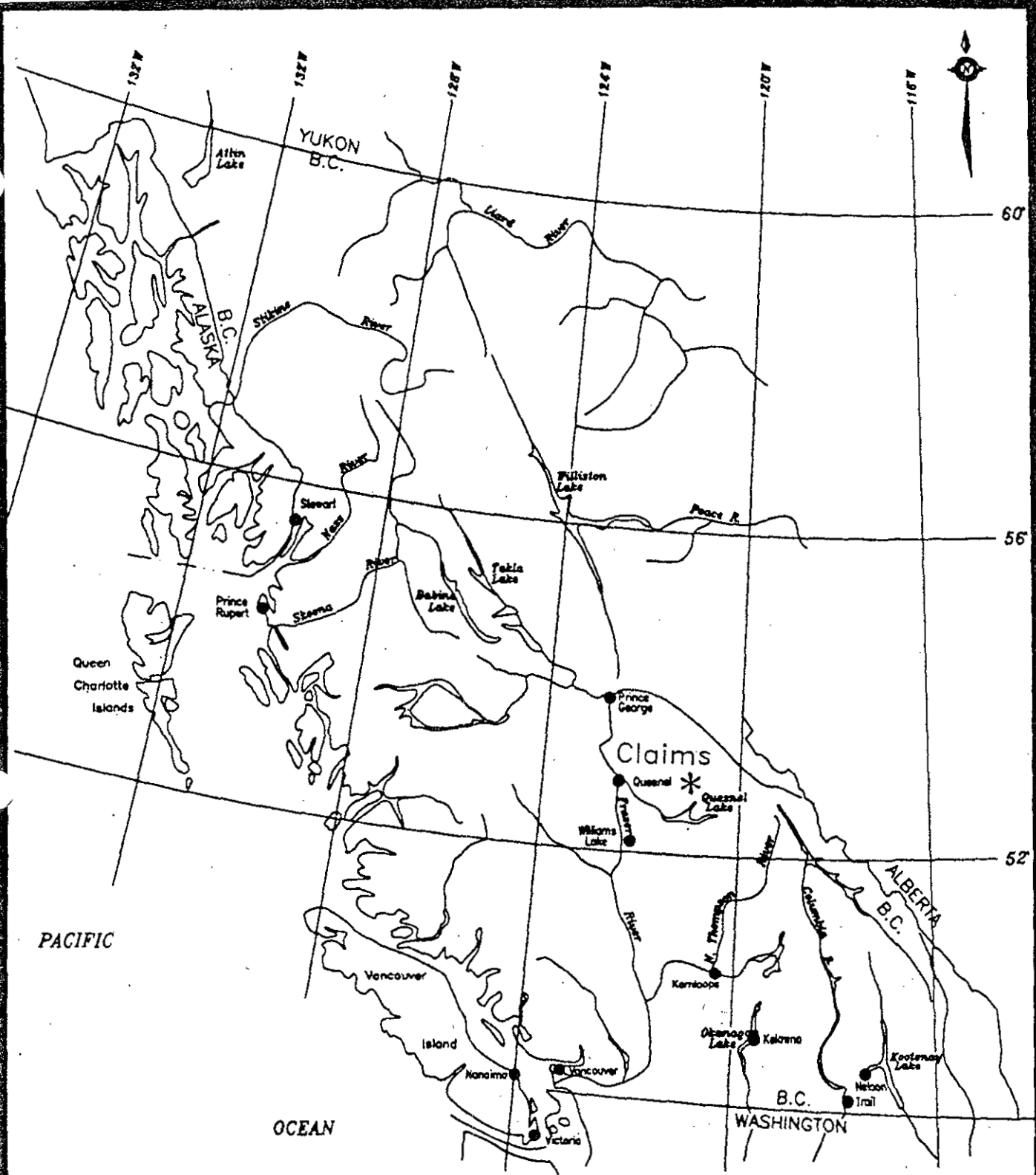
## **2.0 LOCATION/ INFRASTRUCTURE**

The Cunningham Creek prospect is located 25 kilometres southeast of the village of Wells., B.C., and approximately 90 kilometres east of Quesnel, B.C. (Figure 1). The approximate coordinates are: latitude; 52<sup>0</sup> 55' N, longitude; 121<sup>0</sup> 20' E on NTS mapsheet 93A/14W. The property is accessible from Wells by approximately 25 kilometres of good gravel road via the 3100 logging road for 14.6 kilometres, then via the Keithley-Barkerville road through the centre of the property. Access throughout most of the property is on established logging roads and spurs.

The local economy is primarily dependant on forestry and tourism, however a mining company is currently evaluating the potential to put several past-producing mines back into production at Wells.

## **3.0 PHYSIOGRAPHY AND CLIMATE**

The Cunningham Creek prospect is located in the Central Plateau of the Cariboo region of south central British Columbia. The claim area ranges in elevation from Cunningham Creek at 1,372 metres to 1,981 metres on Roundtop Mountain to the east of the property.



PACIFIC

OCEAN



**Clansmen Resources Ltd.**  
*General Location Map*

Cunningham Creek Property

NTS' 93A/14W  
 LONG' 121° 21'W      LAT: 52° 56'N

Report By : D. Blann  
 Ellis Technical Graphics

Figure: 1

The peaks are rounded with moderate to locally steep sides. The area is within the interior wet belt and receives over 2000 millimetres of precipitation annually. Approximately 3 metres of snow may accumulate between November and April. Approximately 25% of the fir, spruce and cedar forest in the immediate area has been clearcut, and logging is ongoing.

#### 4.0 PROPERTY STATUS

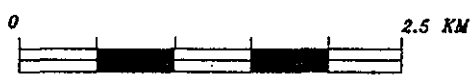
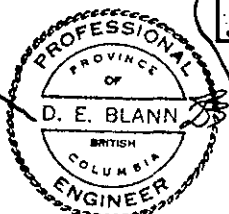
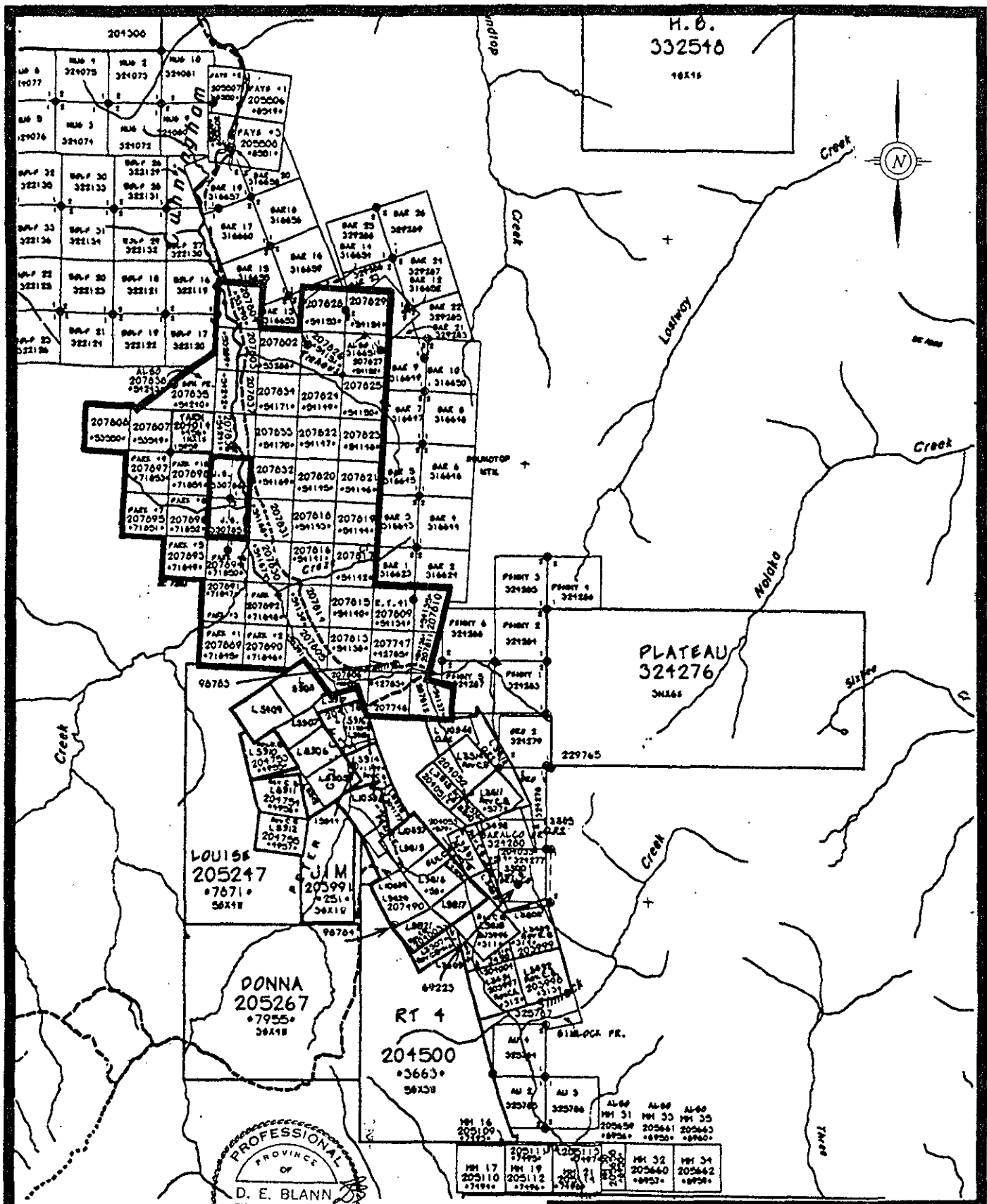
The Cunningham Creek property is comprised of 50 claims totalling 50 units recorded in the Cariboo Mining Division (Figure 2). The claims are recorded in the name of Chaput Logging Ltd., and are held under option by Clansmen Resources Ltd. Refer to Table 1.

**TABLE 1**  
**PROPERTY STATUS**

<u>Claim</u>	<u>Record Number</u>	<u>Units</u>	<u>Expiry Date</u>
<u>Park Group</u>			
Park 1-10	71845-71854	10	27/09/96
Park 11,12	53549,53559	2	27/08/96
Tarn	456	1	20/07/96
<u>Roundtop Group</u>			
Base Metal 1-5	54167-54171	5	25/08/96
Base Metal 6,7	53289,53290	2	30/08/96
Base Metal 8-10	54241-54243	3	14/10/96
Bon FR.	54240	1	14/10/96
R.T. 41-44	54134-54137	4	15/09/96
Roundtop 1	42783	1	20/06/96
Roundtop 3	42785	1	20/06/96
Roundtop 10-26	54138-54154	17	25/08/96
Roundtop 27, 28(Fr)	53291-53292	2	30/08/96
Silver Mountain 2	53288	1	30/08/96

#### 5.0 HISTORY

The Cariboo region is recognized as a major gold producing belt. Placer miners worked the Williams Creek area (site of Barkerville) and adjacent streams since 1859. Over 2.5 million ounces of gold were produced. Cunningham Creek is recorded as having produced 12,857 ounces of gold from placer, with a small bedrock depression 10 metres in length containing 18,500 grams (539.6 ounces) of gold. A local source for the gold has been suggested ( Levson, V., Giles, T., 1993).



Scale : 1:50,000

*Clansmen Resources Ltd.  
Claim Location Map*

Cunningham Creek Property

NTS: 93A/14W

LONG: 121° 21' W

LAT: 52° 56' N

Report By : D. Blann

Figure: 2

Ellis Technical Graphics

A lode gold deposit was discovered in 1929 at the northeast end of Jack of Clubs Lake, currently the site of Wells. Mining of the Cariboo Gold-Quartz, Island Mountain, and Mosquito Creek deposits produced over 1.29 million ounces of gold (Alldrick, 1983). Immediately south of the Cunningham Creek property, the Cariboo Hudson mine produced 13,000 tons grading 0.4 oz/ton gold from quartz veins between 1937 and 1939. Imperial Metals Corp. have published reserves of 37,000 tons grading 0.36 oz/ton gold above the 200 foot level.

Between 1937 and 1938, 3.98 tons grading 7.63 oz/ton gold and 1.25 oz/ ton silver were reportedly shipped from the Coniagas Adit (Penny Creek vein ?), located on the Cunningham Creek property.

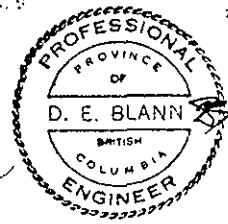
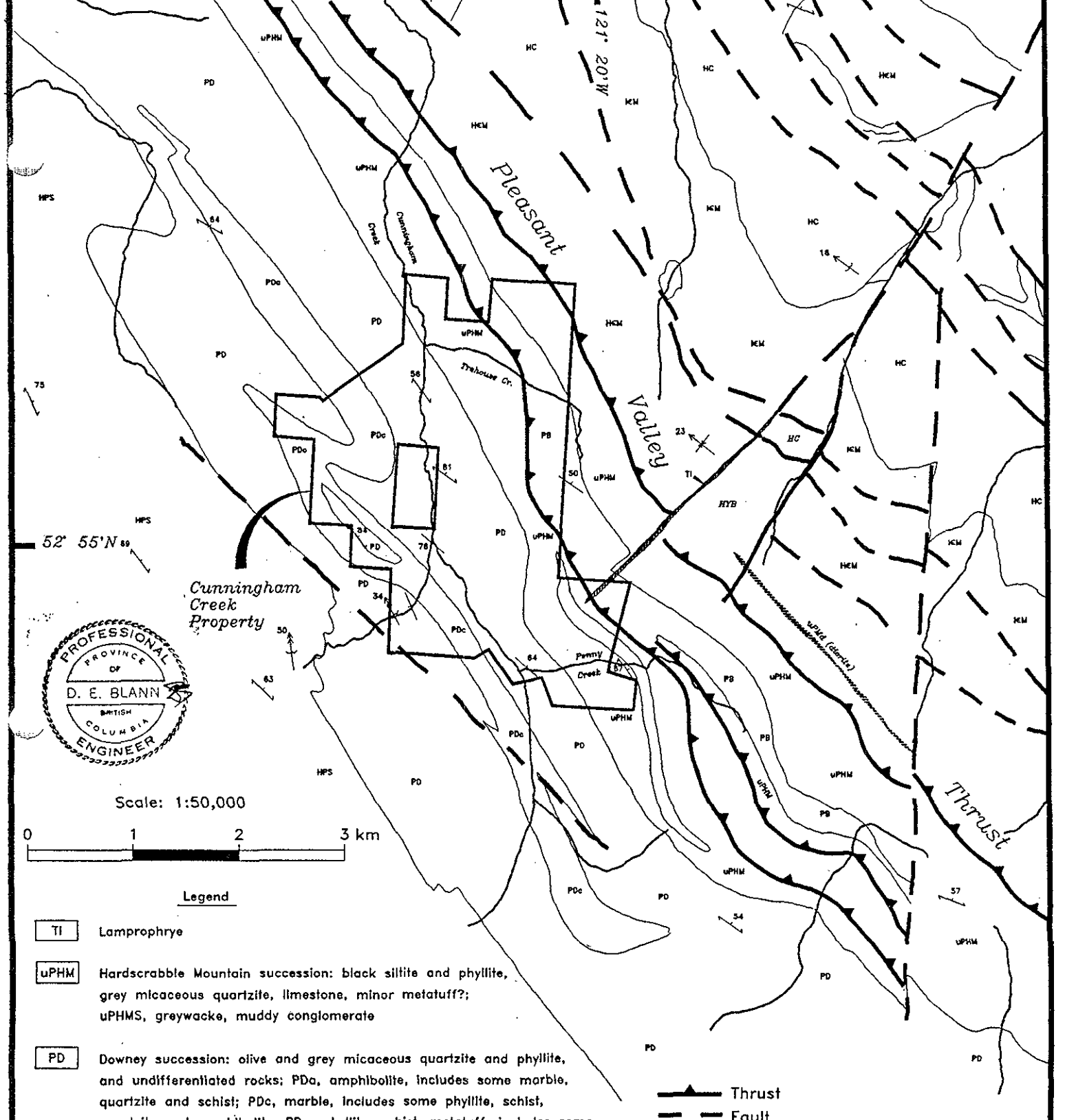
In 1971, Coast Interior Ventures Ltd. explored the property for base metals and also located an area of high grade silver-gold quartz veins. Between 1976 and 1978, Rio Tinto carried out detailed soil sampling, magnetic and I.P. surveys, followed by drilling in two areas for gold and stratabound lead-zinc-silver mineralization. Trenching revealed a 14.5 metres true width section grading 5.98% combined lead-zinc with 2.09 ounces per ton silver (Hodgson, 1977). In 1980 an adit was driven 180 feet on a silver-bearing quartz vein exposed along Penny Creek. Private records indicate Chaput Logging Ltd. shipped ore to Lumby, where it was milled, and 14,822 dry tons were shipped to Trail yielding a grade of 0.07 oz/ton gold, 89.4 oz/ton silver, 1.05% copper, 11.4% lead, and 3.8% zinc. Another shipment of 15,846 dry tons grading 0.152 oz/ton gold, 114.85 oz/ton silver, 1.45% copper, 19% lead, and 5.1% zinc was made. The second shipment may have contained material from the Jewellery Shop zone, known to have higher gold values.

In 1987, Chaput Logging Ltd. completed 11.51 km of VLF and magnetometer surveys over known gold-bearing veins. In 1988 Preido Mines optioned the property and performed trenching and channel sampling of several of these veins. In 1989, Loki Gold Corp. performed trenching, mapping, sampling, soil geochemistry and 1090.5 metres of drilling in 17 holes focussing on the Jewellery Shop, B-Zone, Hibernia and Nugget Mountain zones (northwestern corner of property) (Termuende, 1990).

## **6.0 REGIONAL GEOLOGY-** after Struik, 1988

The area of Cunningham Creek lies within complexly deformed, generally lower greenschist facies Upper Paleozoic metasediments in the Omineca Tectonic Belt of the Canadian Cordillera. The Pleasant Valley Thrust trends northwest, crossing the claim area, and separates the Barkerville Terrane to the west and the Cariboo Terrane to the east. The Barkerville Terrane is comprised dominantly of grit, quartzite and pelite with minor limestone and volcanoclastic rocks. The Cariboo Terrane is comprised of Hadrynian to Lower Paleozoic limestone and clastic rocks and Middle to Upper Paleozoic shales, limestones and minor basalt further east.





Scale: 1:50,000

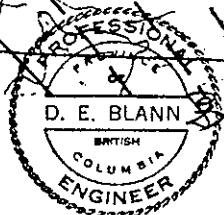
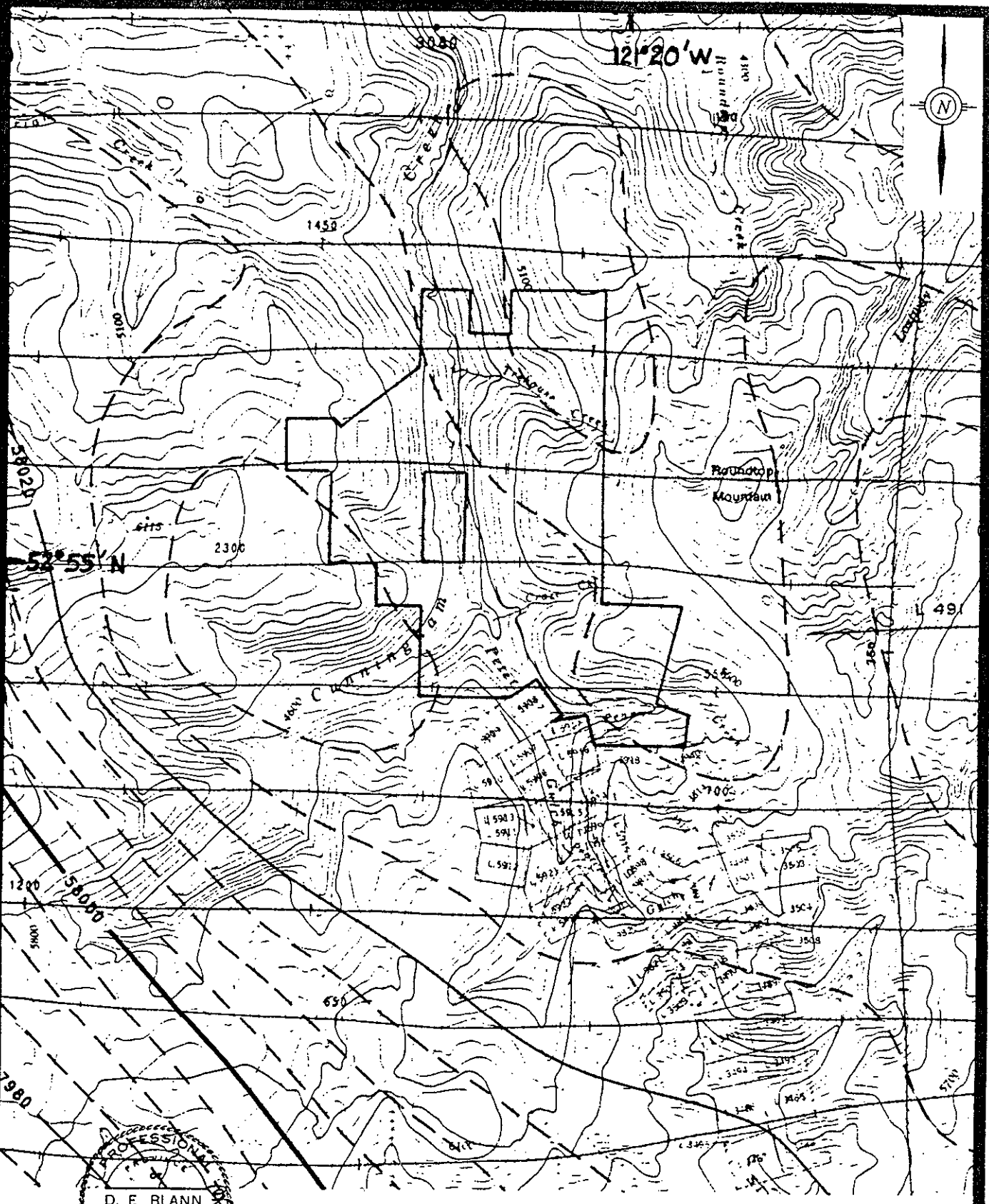


**Legend**

- TI Lamprophyre
- uPHM Hardscrabble Mountain succession: black siltite and phyllite, grey micaceous quartzite, limestone, minor metatuff?; uPHMS, greywacke, muddy conglomerate
- PD Downey succession: olive and grey micaceous quartzite and phyllite, and undifferentiated rocks; PDa, amphibolite, includes some marble, quartzite and schist; PDC, marble, includes some phyllite, schist, quartzite and amphibolite; PDp, phyllite, schist, metatuff, includes some marble, quartzite and amphibolite; PDv, metatuff, metadiorite includes some marble, phyllite, schist and amphibolite; (metamorphism ranges from chlorite to kyanite grade)
- HPS Snowshoe Group undifferentiated: HR to PE, mainly PHR to PE
- IEM MURAL FORMATION: limestone, minor shale and argillite
- HEM MIDAS FORMATION: dark siltstone and quartzite, minor shale and argillite
- HC CUNNINGHAM FORMATION: grey limestone, minor shale, argillite and dolostone

- Thrust
- Fault

**Clansmen Resources Ltd.**  
 Regional Geology  
 After Struik, 1988, GSC map #1638A  
 Cunningham Creek Property  
 NTS 93A/14W  
 Long: 121° 21'W      Lat: 52° 56'N  
 Report by: D. Blann      Figure 3



Scale : 1:50,000

Clansmen Resources Ltd.  
 Regional Aeromagnetics  
 G.S.C. MAP 9814G 1987-88  
 Cunningham Creek Property  
 NTS: 93A/14W  
 LONG: 121° 21'W      LAT: 52° 56'N  
 Report By : D. Blann  
 Ellis Technical Graphics

Figure: 4

The Cariboo and Barkerville Terranes may have been affected by at least four episodes of deformation. The lithology generally strikes northwest and dip subvertically to the northeast, and fold axes generally plunge gently to the northwest. Pervasive cleavage striking west-northwest and dipping moderate to steeply northeast occurs throughout the Cariboo Terrane (figure 3).

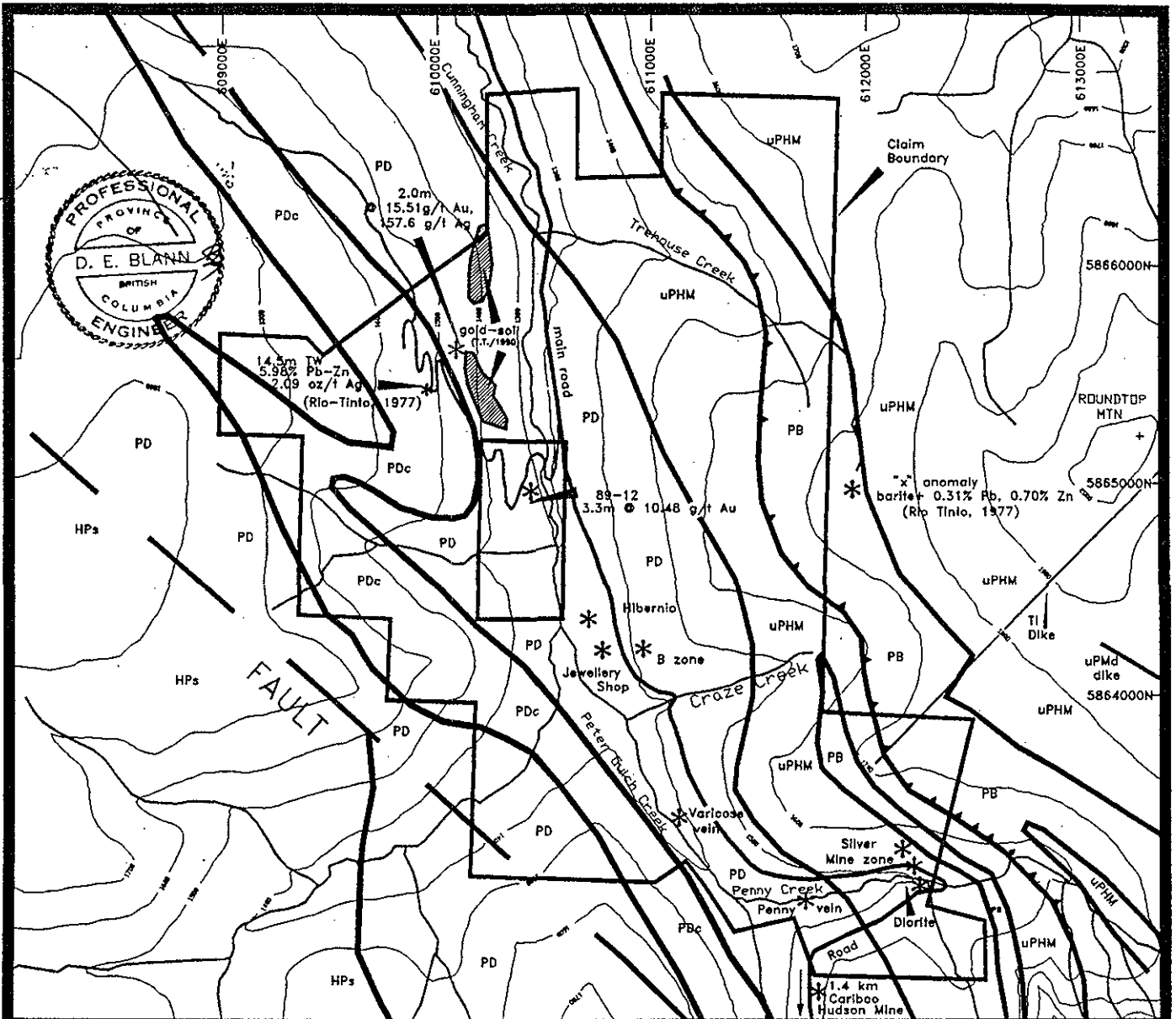
Mineral deposits in the Wells- Barkerville area have produced approximately 3 million tons grading 0.4 ounces of gold per ton. Ore deposits occur in a large number of discrete bodies over a strike length of 4.5 kilometres. These deposits are developed along the contact of the Downey and Hardscrabble Mountain succession. Mineralization occurs as gold-bearing quartz veins up to 5 metres in width and massive pyrite bodies in proximity to limestone beds. The massive pyritic bodies are gently plunging, cylindrical and occur in folded limestone. Grades for the quartz veins typically average 0.35 oz/ton gold and the massive pyritic bodies average 0.58 oz/ton gold.

## 7.0 PROPERTY GEOLOGY

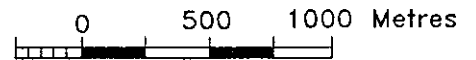
The Cunningham creek property is underlain dominantly by Hardscrabble and Downey successions comprised of fine grained sericite schist, mudstones, argillites, shale, quartzite, and limestone lenses with gradational contacts (Struik, 1988). Hardscrabble Mountain rocks are more graphitic than the underlying Downey succession.

Chlorite, sericite and graphitic schists weather buff brown and have ankeritic porphyroblasts. Quartzite is fine grained, brown weathering, contains trace to 3% fine grained pyrite, and generally occurs in lenses. Mudstones, argillites and shale tend to be graphitic and/or weakly calcareous and occur in lenses dominantly on the east side of Cunningham Creek; these rocks are probably associated with the Hardscrabble Mnt. succession. Limestone occurs as 1-3 metre wide lenses throughout the property in all units (Termuende, 1990).

Diorite of Mississippian age or younger occurs in Penny creek at an elevation of 4,900 feet, and also subparallel to the mineralized Silver Mine structure. Struick mapped a northwest trending diorite dike just east of the claims, and a northeast trending, kilometre long Tertiary lamprophyre dike crossing south of Roundtop Mnt; this dike appears related to a regional northeast trending fault (figure 3). Regional magnetics outline a broad iso-magnetic "bench" through the Cunningham Creek watershed, with weakly elevated magnetic responses trending north to northwest (figure 4).



- Legend**
- TI Lamprophyre
  - uPHM Hardscabble Mountain succession: black siltite and phyllite, grey micaceous quartzite, limestone, minor metatuff?; uPHMS, greywacke, muddy conglomerate
  - PD Downey succession: olive and grey micaceous quartzite and phyllite, and undifferentiated rocks; PDa, amphibolite, includes some marble, quartzite and schist; PDc, marble, includes some phyllite, schist, quartzite and amphibolite; PDp, phyllite, schist, metatuff, includes some marble, quartzite and amphibolite; PDv, metatuff, metadiorite includes some marble, phyllite, schist and amphibolite; (metamorphism ranges from chlorite to kyanite grade)
  - HPS Snowshoe Group undifferentiated: HR to PE, mainly PHR to PE
  - KEM MURAL FORMATION: limestone, minor shale and argillite
  - HEW MIDAS FORMATION: dark siltstone and quartzite, minor shale and argillite
  - HC CUNNINGHAM FORMATION: grey limestone, minor shale, argillite and dolostone



Scale: 1:30,000

C.I. = 100M

*Clansmen Resources Ltd.*  
*General Showing Plan*

Cunningham Creek Property

NTS: 93A/14W

LONG: 121° 21'W

LAT: 52° 56'N

Report by: D. Blann

Figure 5

## 7.1 STRUCTURE

Prevalent orientation of bedding appears to be northwest with variable eastward dip. Bedding-parallel cleavage is crosscut by moderately north-plunging second generation crenulation cleavage accompanied by faults and shears. Faults and shears commonly trend north to northeast.

## 7.2 ALTERATION AND ASSOCIATED MINERALIZATION

Alteration and mineralization on the Cunningham Creek property consists of two or three distinct types. Massive sulphide lead-zinc-silver deposits were the target of exploration during the 1970's. Trenching revealed schistosity-conformable zones of barite, galena and sphalerite with 14.5 metres grading 5.98% combined lead-zinc and 2.09 oz/t silver. A polymetallic silver-bearing quartz vein was mined in 1980. Arsenical gold zones occur in highly deformed, altered, metavolcanic-sedimentary rocks (figure 5).

### The Central Zone (Hibernia, Jewellery Store, and B Zone)

Quartz-sericite-pyrite alteration and silicification with two or more phases of quartz veining occurs in the Hibernia, Jewellery Store and the B Zone. Limestone units are weakly marbled to dolomitized. Strong alteration zones occur between 10 and 40 metres in width, and 20-50 metres in length. Porphyroblastic pyrite, arsenopyrite and minor galena occur in quartz veins, semi-massive lenses/pods, and stringers along silicified shears. Rock sampling returned from 100 to 32,143 ppb gold and 0.2 to 20.1 ppm silver in variably mineralized zones up to two metres in width (figure 6). Slickensides along mineralized shears trend north with a 30-50 degree northward plunge and subvertical dip. Concentrations of over 5-10 g/t gold occur in subparallel, en-echelon sigmoidal veins, shears or lenses and pods separated by lower grade material. Structures containing 10- 30 g/t gold are difficult to trace on surface consistently, however they do occur frequently within a relatively confined area of each zone.

A review of previous drilling of these zones show a geochemical jump occurs from approximately 5-15 ppb gold background to 25-100 ppb gold background in the strong alteration zones. Within the alteration zones, drilling returned width-weighted assays of 18.5 metres grading 4.35 g/t gold from the Jewellery Shop, 33.2 metres grading 2.40 g/t gold from the B zone, and 12.1 metres grading 3.86 g/t gold from the Hibernia zone.

### Other Gold Occurrences

The Penny Creek and Varicose veins, Central zone, and showings further to the northwest on the property, contain gold and silver values within quartz-sericite-pyrite alteration and mineralized quartz veins. The Penny Creek vein is a one metre wide mineralized quartz

vein and silicified zone with approximately 1.0 -12.69 g/t gold and 1.0-3.0 g/t silver. From the showings at the north end of the property, a 2 metre quartz vein contained 15.51 g/t gold and 157.6 g/t silver (Termuende, 1990).

### **The Silver Mine**

The Silver Mine area is located at the southeastern corner of the property within graphitic quartz-sericite-pyrite altered schist. The structure mined during 1980 consists of a polymetallic quartz vein, 0.5- 1.5 metres in width on surface, and can be traced for over 200 metres along strike. Strike varies from about 350 to 360 degrees, and the dip varies from approximately 60-90 degrees east. A feldspar porphyry diorite dike, 0.3 to 1.0 metre in width, subparallels the quartz vein structure, and locally contains quartz vein fragments. A 1.8 metre wide portion of the Silver Mine vein returned 156 ppb gold, 233.4 ppm silver, and approximately 1.1 % copper, 2.2% lead, 1.9% zinc, 0.17 % arsenic, 0.88% antimony, 191.8 ppm cadmium, and 0.1% tungsten (#76403). Tungsten values up to 1,662 ppm (I.C.P.) were returned from the Silver Mine structure (#76406). Several zones of alteration with quartz veins occur to the west of the Silver Mine vein; in this area, up to 8.6 ppm silver with minor lead and zinc occur over a 4.0 metre width (figure 6, #76362).

## **8.0 DISCUSSION**

The Cunningham Creek property is underlain by a northwest trending series of highly folded and faulted metavolcanic-sedimentary rocks with northward plunging second generation axial planes. An east-dipping reverse thrust cuts through the eastern side of the property. Diorite dikes occur in the Silver mine area. Polymetallic gold and silver deposits and stratabound massive sulphide lead-zinc-silver deposits occur on the Cunningham Creek property.

The change from low-silver gold veins at Penny Creek to high-silver gold veins in the northwestern portion of the property, and to low-gold silver veins with tungsten eastward suggest geochemical zonation occurs. Regional and local geology suggest the polymetallic silver and tungsten veins lie in the Hardscrabble Mnt. succession and the arsenic (+/- lead) gold-silver deposits lie in the Downey succession to the west. Gold occurrences greater than 10.0 g/t over a 1.0 metre width occur in the Downey Succession through the length of the property.

Rock sampling of the Hibernia ,Jewellery Shop, and B Zone suggests quartz-sericite-pyrite alteration and mineralization with elevated gold values occurs in zones approximately 10-40 metres in width and 20-50 metres in length; smaller 1-3 metre wide sections within can reach 20-30 g/t gold. Width-weighted assays from diamond drilling returned 18.5 metres grading 4.35 g/t gold in the Jewellery Shop, and 33.2 metres grading 2.40 g/t gold in the B Zone. Regional and local structures, and diamond drilling suggest zones of mineralization

may occur in north plunging, east dipping lenses. The change in gold grade and width of the mineralized zones along strike and down dip suggest blind zones may occur.

## 9.0 CONCLUSIONS

The Cunningham Creek property is located in a prolific gold mining district, approximately 115 kilometres east of Quesnel, B.C. The property is underlain dominantly by Hardscrabble Mountain and Downey successions comprised of fine grained sericite schist, mudstones, argillites, shale, quartzite, and limestone lenses with gradational contacts.

The Downey succession appears to contain dominantly silicification and quartz-sericite-pyrite alteration zones with arsenical gold mineralization, and the Hardscrabble Mnt. succession contains dominantly polymetallic silver-tungsten quartz veins. Occurrences of greater than 10.0 g/t gold over 1.0 metre occur within the Downey succession throughout the property. Silver concentrations appear to increase from the Penny Creek vein in the south to the northwestern corner of the property.

The Silver Mine area contains a vein structure traceable for two hundred metres whereas the Hibernia, Jewellery Shop and B Zone contains generally erratic high gold values over variable widths and lengths within a broader alteration package.

Structures in the centre of the property suggest gold mineralization in the Hibernia, Jewellery Shop and B Zone dips subvertically to eastward overall, with a moderate northward plunge. Mineralized zones appear to be from 10-40 metres in width and 20-50 metres in length. Width-weighted assays from diamond drilling include 18.5 metres grading 4.35 g/t gold from the Jewellery Shop and 33.2 metres grading 2.40 g/t gold from the B Zone. Blind zones may occur throughout the the property in the Downey succession. Placer workings immediately south of the Central zone may overlie mineralized Downey rocks.

The Silver Mine quartz vein structure reaches up to approximately 1.5 metres in width on surface, contains elevated tungsten, and is paralleled by a narrow porphyritic diorite dike. A 1.8 metre wide portion of the Silver Mine vein returned 156 ppb gold, 233.4 ppm silver, and approximately 1.1 % copper, 2.2% lead, 1.9% zinc, 0.17 % arsenic, 0.88% antimony, 191.8 ppm cadmium, and 0.1% tungsten (#76403). Vein structures containing elevated silver values occur to the west.


## 10.0 RECOMMENDATIONS

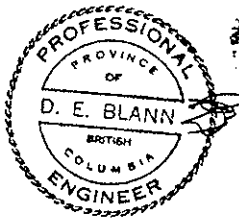
The Cunningham Creek property requires further investigation of the Hibernia, Jewellery Shop and B Zones by diamond drilling down plunge in order to determine widths, continuity and level of confidence of the grade of the overall zones. All veins, showings, soil anomalies, and placer workings located in the Downey succession require evaluation in the context of regional deformation and mineralization. Blind deposits may occur. Lithochemical sampling and mapping through the property, followed by trenching or diamond drilling of targets is warranted. Investigation of the bedrock near the placer workings in Cunningham Creek is also warranted.

The Silver Mine area requires further evaluation by mapping, sampling and diamond drilling 3 holes.

### COST ESTIMATE

Trenching , mapping, sampling		\$ 15,000.00
Diamond drilling	1,200 metres @ \$100/metre	\$120,000.00
Surveying		\$ 2,500.00
	Total	----- \$137,500.00

  
David E. Blann, P.Eng.





**11.0 STATEMENT OF COSTS- provided by Clansmen Resources Ltd.**

Assays (27 assays @ \$15.00/assay) .....	\$ 405.00
Vehicle Expenses .....	687.80
Room & Board (10 man days @ \$75.00/day) .....	750.00
Field Supervision (R.G.Matheson, pro rata) .....	320.00
Field Assistant .....	960.00
Geological Fees (including report) .....	4,479.50

---

**Total:** \$ 7,602.30

## 12.0 REFERENCES

- Alldrick, D.J., 1983. The Mosquito Creek Mine, Cariboo Gold Belt (93H/4); in Geological Field Work, 1982, British Columbia Ministry of Energy, Mines and Petroleum Resources, Paper 1983-1, pp 99-112.
- Claque, J.J., 1989. Placer Gold in the Cariboo District, British Columbia; in Current Research, Part E, Geological Survey of Canada, Paper 89-1E.
- Delaney, P.R., 1987. Assessment Report # 17114- 1987 Cunningham Creek Property Report, Imperial Metals Corporation.
- Durfield, R.M., 1983 Assessment Report # 11831- Geochemical Report on the Bon 1-4 Mineral Claims.
- Humphreys, N., 1989. Geological Report on the Cunningham Creek Property, Loki Gold Corporation.
- Kirwin, G.L., 1971, Report on Property for Coast Interior Ventures Ltd.
- Levson, V.M., Giles, T.R., December, 1993, Geology of Tertiary and Quaternary Gold-Bearing Placers in the Cariboo Region, British Columbia (93A,B,G,H), B.C. MEMPR, Bulletin 89 pp12, 79-80.
- Longe, R.V., and Hodgson, G.D., 1978, Assessment Report #7106- Barkerville Project, Cunningham Creek claims, Rio Tinto Canadian Exploration Ltd..
- Singhai, G.C., 1980. Report on the Park 1-15 and Tarn mineral Claims, Cunningham Creek Area, Cariboo mining Division, B.C., for Chaput Logging Ltd., Lumby, B.C.
- Struik, L.C., 1988, Structural Geology of the Cariboo Mining District, East-Central British Columbia. GSC Memoir 421.
- Termuende, T.J., 1990, Geological Report on the Craze Creek (Cunningham) Property, on behalf of Loki Gold Corporation.
- Timmins, W.G., 1972, Assessment Report # 3521. Report on Property for Coast Interior Ventures Ltd.

### 13.0 STATEMENT OF QUALIFICATIONS

I, David E. Blann, of Vancouver, B.C., do hereby certify:

- 1.) That I am a Professional Engineer registered in the Province of British Columbia.
- 2.) That I am a graduate in Geological Engineering from the Montana College of Mineral Science, Butte, Montana (1986).
- 3.) That I am a graduate in Mining Engineering Technology from the B.C. Institute of Technology (1984).
- 4.) That I performed work on the subject property between September and October, 1994, and information, conclusions and recommendations in this report are based on my work on the property and a review of previous reports and literature.
- 5.) That I have no direct or indirect interest in the Cunningham Creek property.

Dated at Vancouver, B.C., August 4, 1995

  
David E. Blann, P.Eng.



**APPENDIX A**

**CUNNINGHAM CREEK PROPERTY**

**1994 ROCK SAMPLE DESCRIPTIONS**

# STANDARD METALS EXPLORATION LTD.

## ROCK SAMPLE DESCRIPTION SHEET

SAMPLER: D. BLANN DATE: OCT/94 PROPERTY: <sup>CUNNINGHAM</sup> MID CREEK NTS: P1183

#	WIDTH (M)	ROCK TYPE	ALTN.	MINERALS	OBSERVATIONS STRUCTURES	Au (PPM)	Ag (PPM)	Cu (PPM)	Pb (PPM)	Zn (PPM)	As (PPM)	Sb (PPM)	Cd (PPM)	W (PPM)
AG ZONE 76401	(F)	QTZ. VEIN	Q-S-PY sil	Gl, TET 1%	50M NE OF SWITCHBACK BESIDE CAMP; IN ROOTWAD									
AG ZONE 76402	1.5M	QTZ. VEIN Bik. GRAPH. SCHIST	Q-SER	Gl, SP +1%	VEIN BESIDE PORTAL SEE 89-54466; VEIN 330°/90 GOOD CONTACT	40	91.5	1680	4206	454	393	2536	6.3	146
AG ZONE 76403	1.8M	QTZ. VEIN	WALLROCK IS Q-S-PY SCHIST	Gl, SP, CP/ + 1-3%	352°/70°E: MID CUT ABOVE ADIT: Q-Fp DIKE NEARBY	156	233.4	11116	22164	19007	1697	8781	191.8	105
AG ZONE 76404	0.60M	GRAPHITIC QTZ-VEIN.	WEAK Q-S-PY	Tr Gl, TET?	360°/70°E. APPX. 40M NORTH, 20M ABOVE 76403	70	9.9	121	1075	135	68	84	1.2	507
AG ZONE 76405	(G)	(QTZ)-Ca- FP DIKE.	WEAK CHL-EP	FG. DISS PY, PO	IN PIT BELOW 76404. RHODACITE? CONTAINS QTE VEIN FRAGS. TRENDS NORTH Q-S-SCHIST FOLIATION 300°/58°N 45°NW PLUNGE	8	0.9	60	39	73	40	16	0.2	7
AG ZONE 76406	1.0M	QTZ. VEIN	WALLROCK Q-S-GRAPH.	CP, PY, Gl, SP, Sb	360°/80°E: VEIN BESIDE CREEK; ANASTOMOSING. SEE 89-54317: SCHIST FOL. 320°/80°N	106	240.4	4080	10944	1032	542	6017	18.2	166
JEWELLERY SHOP														
ASB ZONE 76407	GRAB 2X2M	QTZ-Ca VEIN + Q-S-SCHIST	Q-S-PY	PY CLOTS IN QTZ VEIN	NORTH END OF VEIN SYSTEM: 330°/90°	1021	2.8	68	124	66	1892	39	0.2	32
SB ZONE 76408	CHIP/GRAB 2.5X1M	QTZ-SULF. VEIN+WALLROCK	Q-S-PY FUCHSITE/MAR.	PY, ASPY	76407 + 15M at 150° 30° NORTH PLUNGE LINEAR	4075	1.3	14	91	127	20291	15	0.4	9
SB ZONE 76409	2X2M	Q-S-PY SCHIST	sil	Tr PY	76407 + 40M at 150° CONTACT ZONE 360°/90/50°	432	1.5	29	71	48	327	27	0.5	16

# STANDARD METALS EXPLORATION LTD.

## ROCK SAMPLE DESCRIPTION SHEET

SAMPLER: D. BLANN

DATE: OCT/94

PROPERTY: CREEK

CUNNINGHAM

NTS:

Page 2 of 3

# BZONE	WIDTH (M)	ROCK TYPE	ALTN.	MINERALS	OBSERVATIONS STRUCTURES	Au (PPb)	Ag (PPM)	Ca (PPM)	Pb (PPM)	Zn (PPM)	As (PPM)	Sb (PPM)	Cd (PPM)	Mn (PPM)
DB-1 76365	1.5	SERICITE SCHIST	Sil, Ca (ANK)	Py, ASPY, LIM.	CHECK 89-54348-50 VEINS 330°/90, 300° ASPY LENSES/PODS	4147	0.7	14	63	35	11237	3	0.8	2
DB-2 76366	1.0	Q-SER SCHIST	Q-S-PY Sil	Py, ASPY, LIM.	CHECK 89-54339-40 75% QUARTZ REPLACEMENT	25068	20.1	13	345	35	3878	9	0.9	11
DB-3 76367	1.5	BRN-GRN SER. SCHIST	Q-S-PY Sil	ANK-PY	3M NORTH OF 76366	233	0.1	21	146	174	605	2	3.6	41
DB-4 76368	1.5	QZT VEINS SER. SCHIST	Q-S-PY Sil	MINOR SULFIDES (PY), ANK.	3M NORTH OF 76367	1427	0.4	18	42	65	896	2	1.4	1
HIDERNIA 76351	1.5 x 0.30	QZT VEIN	Sil	LIM BOXWORK ARTTER PY (20%)	VEIN 070° CUT BY 320° SCHISTOCLITY	104	0.2	80	37	18	49	5	0.2	3
76352	1.5	Q-S- SCHIST	INT. SIL QUARTZ FLOODING	Py, ASPY 5-10% SULFIDES	GRAPHITIC QUARTZ VNS 340° CHECK 89-79928-830	32143	19.9	37	5668	27	1004	2	1.2	2
76353	1.0	GRAPHITIC Q-S-SCHIST	SIL Q-S-PY	50% PY-COARSE X-FAL, +GL.	340° ZONE: E. EDGE OF TRENCH + 50° NORTH PLUNGE LINEAR.	6795	1.1	32	20	10	11028	42	1.1	41
76354	2.0 2.0	GRAPHITIC Q-S-SCHIST	Q-S-PY	10-20% PY, ASPY + GL	Z & ZK AREA OF MULTIPLE QZT VEINS.	9444	1.2	34	29	26	666	42	0.6	41
76355	GRAB 2M	Q-S-SCHIST & GRAPHITIC	Sil, Q-S-PY	5% PY, ASPY DISS IN QZT	SILICIFIED ZONE	7746	1.4	60	36	29	3913	42	0.9	41
76356	1.0	QZT VNS + Q-S-SCHIST	Sil Q-S-PY	LIM BOXWORK LIM ARTTER PY	ZONE 340° CUT BY 050° VEINS (GASH)	18074	3.9	26	79	49	276	4 42	0.7	4
76357						295	0.4	26	9	13	107	5	0.2	3
TADPOLE 76358	3M	BLK GRAPH. SHALE/SCHIST	WEAK Sil, -2nd Q-S-PY	TR PY, SP, GL?	QZT STOCKWORK/VEINS 340°. PREVIOUS REPTD	34	0.5	25	9	270	54	14	2.2	559
76359	1.5	Q VEIN MINE	Sil - SER	GRAPHITIC MAL, AZ, PY, CP, GL	VEIN 360°/90° CHECK 89-54313	85	1.7	303	904	270	133	453	2.2	541
76360	1.0	BLK GRAPH SCH + SER	Sil, SER	TR-1% PY	330° - PELITIC SEDS.	199	1.0	139	30	134	494	32	0.5	13
76361	1.5	GRAPH. SCHIST	QZT-SER	TR PY	VEINS 010°	25	0.8	44	79	129	38	28	1.3	574



**APPENDIX B**

**CUNNINGHAM CREEK PROPERTY**

**ASSAY CERTIFICATES**





GEOCHEMICAL ANALYSIS CERTIFICATE



Chemco Services Inc. File # 94-3187 Page 1  
 1440 Gabriola Drive, Coquitlam BC V3E 2B7 Submitted by: D. Blann

SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au** ppb
B 76402	3	1680	4206	454	91.5	12	3	118	1.36	393	<5	<2	2	18	6.3	2536	4	2	.09	.016	6	11	.02	145	<.01	7	.15	.01	.08	146	40
B 76403	3	11116	22164	19007	233.4	12	3	288	.90	1697	<5	<2	<2	64	191.8	8781	3	<2	.25	.011	3	22	.11	56	<.01	4	.08	.01	.04	1054	156
B 76404	5	121	1075	135	9.9	13	2	151	.78	68	<5	<2	<2	19	1.2	84	<2	4	.03	.014	4	12	.03	848	<.01	3	.11	.01	.03	507	70
B 76405	1	60	39	73	.9	273	33	883	4.48	40	<5	<2	<2	169	.2	16	<2	116	3.46	.214	16	272	5.43	283	.17	<2	2.09	.13	.35	7	8
RE B 76405	2	61	39	73	.8	280	34	906	4.60	43	<5	<2	<2	172	.4	18	<2	120	3.53	.220	17	278	5.54	301	.17	2	2.14	.13	.36	4	6
B 76406	3	4080	10944	1032	240.4	9	2	78	.71	542	<5	<2	<2	43	18.2	6017	2	2	.11	.010	2	14	.02	122	<.01	3	.07	<.01	.04	1662	106
B 76407	2	68	124	66	2.8	74	26	1393	8.45	1892	<5	<2	3	45	.2	39	3	2	.88	.024	3	10	.79	37	<.01	<2	.20	.01	.13	32	1021
B 76408	1	14	91	127	1.3	35	10	1027	7.20	20291	<5	3	4	16	.4	15	2	3	.37	.022	6	10	.26	23	<.01	<2	.20	.01	.11	9	4075
B 76409	2	29	71	48	1.5	41	11	1614	4.84	327	<5	<2	5	4	.5	27	3	3	.04	.022	11	11	.03	58	<.01	4	.18	.01	.12	16	432
STANDARD C/AU-R	20	58	38	123	6.9	73	33	1060	3.96	41	14	6	36	51	18.5	15	20	61	.49	.093	40	61	.93	182	.08	34	1.88	.06	.15	10	495

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: P1 ROCK P2 GRAPHITE AU\*\* ANALYSIS BY FA/ICP FROM 10 GM SAMPLE.  
 Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: SEP 15 1994 DATE REPORT MAILED: *Sept 26/94* SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

AA  
LL

## GEOCHEMICAL ANALYSIS CERTIFICATE

AA  
LL

Chemco Services Inc. File # 94-3187 Page 2  
 1440 Gabriola Drive, Coquitlam BC V3E 2B7 Submitted by: D. Blann

SAMPLE #	TOT/C %	GRA/C %	Au** ppb
1	3.98	.03	34
3	5.98	.07	53

TOTAL C BY LECO. GRA/C - HNO3 LEACHED, RESIDUE ANALYZE BY LECO.  
 AU\*\* ANALYSIS BY FA/ICP FROM 10 GM SAMPLE.  
 - SAMPLE TYPE: P1 ROCK P2 GRAPHITE

DATE RECEIVED: SEP 15 1994

DATE REPORT MAILED: Sept 30/94

SIGNED BY: *C. Long* .D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE



Chemco Services Inc. File # 94-3913  
 1440 Gabriola Drive, Coquitlam BC V3E 2B7 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	Ti	B	Al	Na	K	W	Au**
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppb
B 76351	2	80	37	18	.2	33	6	565	2.53	49	<5	<2	5	4	.2	5	<2	3	.03	.015	5	10	.03	35<.01	5	.12	.01	.05	3	104	
B 76352	5	37	5668	27	19.9	159	46	946	10.62	1004	<5	26	5	29	1.2	2	21	4	.74	.025	3	8	.52	17<.01	3	.23	.01	.15	2	32143	
B 76353	6	32	20	10	1.1	54	12	968	13.25	11028	<5	5	5	30	1.1	<2	<2	2	1.00	.012	<2	7	.60	14<.01	7	.12	.01	.08	<1	6795	
RE B 76353	6	32	17	13	.9	52	11	944	12.92	10774	<5	5	3	29	.9	<2	<2	2	.98	.011	<2	6	.58	11<.01	<2	.12	.01	.09	<1	6718	
B 76354	4	34	29	26	1.2	49	10	1545	6.13	6661	<5	8	4	30	.6	<2	<2	5	1.33	.027	4	7	.49	68<.01	2	.31	.02	.20	<1	8444	
B 76355	7	60	36	29	1.4	61	15	1639	7.80	3913	<5	6	<2	68	.9	<2	<2	5	2.15	.032	2	7	1.25	19<.01	2	.20	.01	.13	<1	7746	
B 76356	2	26	79	49	3.9	37	10	764	3.55	276	<5	23	4	8	.7	4	<2	3	.18	.015	5	11	.04	49<.01	2	.19	.01	.12	4	18074	
B 76357	2	26	9	13	.4	21	3	237	1.21	107	<5	<2	<2	1	.2	5	<2	<2	.03	.001	<2	10	.05	9<.01	4	.03	.01	.02	3	295	
B 76358	11	25	9	270	.5	27	3	833	.88	54	<5	<2	2	1696	2.2	14	<2	39	6.81	.013	8	11	.76	313<.01	10	.34	.01	.19	559	34	
B 76359	5	303	904	270	1.7	32	2	287	1.25	133	<5	<2	<2	334	2.2	453	<2	18	1.07	.089	3	17	.44	190<.01	6	.17	.01	.09	541	85	
B 76360	3	139	30	134	1.0	181	42	639	6.10	494	<5	<2	3	555	.5	32	<2	16	3.80	.101	3	44	4.59	68<.01	5	.33	<.01	.19	13	199	
B 76361	7	44	79	129	.8	25	1	295	.77	38	<5	<2	<2	402	1.3	28	<2	16	1.37	.097	3	15	.07	456<.01	8	.10	.01	.05	574	25	
B 76362	5	111	1547	630	8.6	110	14	1168	3.77	197	<5	<2	2	674	5.1	89	3	11	3.57	.043	2	16	1.96	70<.01	4	.18	.01	.12	37	36	
B 76363	4	46	34	78	.7	28	16	438	5.08	413	<5	<2	4	59	.7	14	<2	9	.16	.036	11	12	.09	110<.01	9	.30	<.01	.20	10	103	
B 76364	2	14	914	2114	5.7	14	2	1197	1.40	33	<5	<2	<2	1847	14.7	9	2	5	22.98	.015	4	4	2.00	139<.01	2	.08	<.01	.04	336	5	
B 76365	11	14	63	35	.7	30	7	315	5.28	11237	<5	4	8	14	.8	3	2	5	.10	.029	12	10	.04	84<.01	4	.26	.01	.18	2	4147	
B 76366	1	13	345	35	20.1	114	7	205	12.30	39878	<5	65	7	7	.9	9	17	2	.06	.011	2	7	.01	7<.01	<2	.13	<.01	.10	11	25068	
B 76367	4	21	146	174	.1	53	12	2136	4.06	605	<5	<2	6	8	3.6	2	<2	4	.09	.030	16	13	.04	73<.01	5	.31	.01	.19	<1	233	
B 76368	2	18	42	65	.4	61	18	683	4.33	896	<5	<2	7	6	1.4	2	<2	3	.07	.025	17	11	.03	47<.01	3	.28	.01	.17	1	1427	
B 76401	100	26	1774	101	5.2	20	2	140	.88	50	<5	<2	2	3	.9	5	9	<2	.02	.004	<2	13	.01	25<.01	<2	.02	<.01	.01	2	37	
STANDARD C/AU-R	19	58	38	125	6.9	72	31	1042	3.96	42	20	7	36	52	18.8	15	18	61	.49	.093	40	60	.91	183	.08	33	1.88	.07	.16	10	462

ICP - .500 GRAM SAMPLE IS DIGESTED WITH 3ML 3-1-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 10 ML WITH WATER.  
 THIS LEACH IS PARTIAL FOR MN FE SR CA P LA CR MG BA TI B W AND LIMITED FOR NA K AND AL.  
 ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
 - SAMPLE TYPE: ROCK AU\*\* ANALYSIS BY FA/ICP FROM 10 GM SAMPLE. Samples beginning 'RE' are duplicate samples.

DATE RECEIVED: OCT 28 1994 DATE REPORT MAILED: *Nov 4/94* SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS

**RECEIVED**

**OCT 18 1995**

**Gold Commissioner's Office  
VANCOUVER, B.C.**

GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORTS

DATE RECEIVED

NOV 23 1995

JUN 25 1996

**Preliminary Water Quality Report on the  
Cunningham Creek Prospect**

Barkerville, British Columbia

Latitude 52° 56' North, Longitude 121° 21' West  
NTS: 93A/14W

**Owner:**

Chaput Logging Ltd.,  
Box 245, Lumby, B.C.  
V0E 2G0

**Operator:**

Clansmen Resources Ltd.  
508 - 9521 Cardston Court,  
Burnaby, B.C.  
V3N 4R8

24,092

GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORTS

**Pacific Environmental Surveys Inc.**  
43 Dieppe Place, Vancouver, B.C., V3E 4B7

August, 1995

## Summary

In September, 1994, Clansmen Resources Ltd., of Burnaby, British Columbia, commissioned Pacific Environmental Surveys Inc. to perform a preliminary water quality assessment on a group of mineral claims known as the Craze Group, located in the Cariboo Mining District. Limited water sampling was undertaken to determine the ambient water quality baseline at the property.

The claims are located at 121° 21'W longitude and 52° 56' N latitude on NTS map sheet 93A/14. They are approximately 25 km southeast of Wells and 90 km east of Quesnel, B.C. The property has long been an area of interest for mineral exploration, tourism activity, and most recently, clear-cut logging.

Sampling equipment and analytical analysis was provided by Norwest Labs of Langley, B.C.. The results of these findings are listed in Appendix 1. Pacific Environmental Surveys has made no interpretation of the results of the testing. The testing has been performed to record the general water quality at the Craze Group property.

## Table of Contents

1. Introduction and Objectives
2. Background and Site Description
3. Property Description
4. Field Methodology
  - i. Sample Sites
  - ii. Equipment
  - iii. Sample Collection and Storage
5. Meteorological Conditions
6. Analytical Methodology
7. Analytical Results
8. Limitations

### Figures

General Location Map  
Claim Location Map  
Sample Location Map

Appendix 1 - Analytical Results

Appendix 2 - Statement of Costs

## **1. Introduction and Objectives**

Pacific Environmental Surveys Inc. was commissioned by Clansmen Resources Ltd. of Burnaby, British Columbia, to carry out a preliminary water quality assessment in September, 1994 for the area known as the Craze Group, or more commonly as the Cunningham Creek claims. The scope of the assessment was to perform limited sampling of the main water courses in the area to develop an initial baseline assessment of the water resources on site. Due to financial constraints, sampling was kept to a minimum. No laboratory or field blanks or replicates were taken.

This document serves only to describe the following parameters; pH, total suspended solids, alkalinity, hardness, sulphate (SO<sub>4</sub>), chloride, nitrate and nitrite nitrogen, mercury (total or dissolved), carbonate, bicarbonate, hardness, BOD, and a 33 element ICP scan (Al, Sb, As, Ba, Be, Bi, Cd, Ca, Cr, Co, Cu, Fe, Pb, Li, Mg, Mn, Mo, Ni, P, K, Se, Si, Ag, Na, Sr, S, Sn, Ti, Th, U, V, Zn, Zr).

## **2. Background and Site Description**

The Cunningham Creek claims are located at 121° 21'W longitude and 52° 56' N latitude on NTS map sheet 93A/14. They are approximately 25 km southeast of Wells and 90 km east of Quesnel, B.C., (refer to Figure 1, General Location Map), within the Cariboo Mining District. The claims and the surrounding area consist of evergreen forest covered hills, at elevations of 3900 to 6600 feet. The region experiences winters with heavy snowfalls and rainy summers. Access to the property is good, as the main access road (3100 Road) is maintained by forestry and graded year round.

Mining activities have taken place in this region since 1859, when major placer deposits were found in the area presently known as Barkerville. The largest mining operation to exist nearest to the property began in 1937, when the Cariboo Hudson Mine opened. This mine, located north of the claims, was closed in 1939. Since then, the property has been the site of several activities, including base mineral exploration, soil sampling, magnetic and I.P. surveys, and the drilling of an adit that shipped 14,822 dry tons of ore. Most recently, a magnetometer survey was done in 1987, and in 1988 the property was optioned and a trenching and channel sampling program was undertaken. Further exploration in the area was performed in 1989, prior to the water sampling program.

The two other main activities on the property include an ongoing tourism interest and forestry activities. At the time that the sampling was undertaken, there had been extensive logging in the southern region of the claims. The area was clear-cut down to the creek, and no riparian zone had been left.

### 3. Property Description:

The following table describes the subject property listing the claims under the ownership of Chaput Logging Ltd.:

<b>Claim Name:</b>	<b>Old Record Number</b>	<b>New Tenure Number</b>	<b>GTD</b>
Silver Mountain 2	53288	207802	08/30/95
Round Top 1	42783	207746	06/20/96
Round Top 3	42785	207747	06/20/96
Base Metal 1 - 5	54167 - 54171	207830 - 207834	08/25/95
Base Metal 6 & 7	53289 & 53290	207803 - 207804	08/30/95
Base Metal 8 - 10	54241 - 54243	207836 - 207838	10/14/95
Round Top 27 & 28	53291 - 53292	207805 - 207806	08/30/95
Round Top 10 - 26	54138 - 54154	207813 - 207829	08/25/95
Round Top 41 - 44	54134 - 54137	207809 - 207812	09/27/95
Bon Fraction	54240	207835	10/14/95
Park 1 - 10	71845 - 71854	207889 - 207898	09/27/95
Park 11 & 12	53549 - 53550	207807 - 207808	08/27/95
Tarn	456	204014	07/20/95

Total of 50 mining claims.

Primary Map Number: 093A14W

For further information on claim location, please refer to Figure 2, Claim Location Map.



#### 4. Field Methodology

##### i. Sample Sites:

Sample sites were chosen to define the water quality parameters as it enters the property, exits the property, and at the major waterway junctions. Each site was *flagged and marked with a metal identification tag*. Distances between points of reference (ie. roadways, creek junctions, etc.) were determined using a hip chain. For map locations of the sample sites, please refer to Figure 3, Sample Location Map.

The following table describes the site locations for each numbered sample:

##### Sample # Location:

- |   |   |
|---|---|
| 1 | Penny Creek, intersection of creek and property boundary (east)       |
| 2 | Penny Creek, intersection of Penny and Petergultch Creeks             |
| 3 | Craze Creek, intersection of Craze and Cunningham Creek junction      |
| 4 | Craze Creek, 1 km east of main road, approximating property boundary  |
| 5 | Cunningham Creek, intersection of creek and property boundary (west)  |
| 6 | Trehouse Creek, intersection of Trehouse and Cunningham Creeks        |
| 7 | Cunningham Creek, intersection of creek and property boundary (north) |

##### ii. Equipment:

Sampling equipment was provided by Northwest Laboratories of Langley, B.C.. Sample containers were translucent polypropylene plastic bottles. One 1 liter and one 500 ml grab samples were taken at each site. The samples were analyzed by Norwest Labs within 72 hours.

##### iii. Sample Collection and Storage:

Water samples were taken on September 12, 1994 from seven sites at the subject property. Sample bottles were rinsed with creek water immediately prior to collection. The samples were taken from the center of the creek, at a depth of approximately 10 cm from the water surface. Care was taken to ensure that the sediments at the bottom of the creeks remained undisturbed, and that no flocculates were included in the samples. Samples were placed in cold, dark storage for transport to Norwest Labs.

#### 5. Meteorological Conditions:

Weather prior to sampling was typical for the region and had been cold and raining for several days. On September 12, 1994, it rained for approximately 4 hours prior to sampling.

## 6. Analytical Methodology

Norwest Labs has used the following methodology to perform the water analysis:

- Dissolved metals were determined in a filtered (0.45 um) and acidified sample aliquot by ICP-AES with ultrasonic nebulization (EPA Method 200.7).
- Total metals were determined in a sample aliquot which was acid digested in a closed teflon vessel in a microwave oven (EPA Method 3015). The digest was analyzed by ICP-AES with ultrasonic nebulization (EPA Method 200.7).
- Mercury was determined by cold vapour - UV (EPA Method 245.1).

## 7. Analytical Results

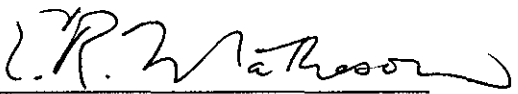
The results of the water analysis are listed in Appendix 1.

PES has made no interpretations or drawn any conclusions as to the results of the testing. The testing was performed as a method of recording the general water quality baseline at the subject property prior to any proposal for site development.

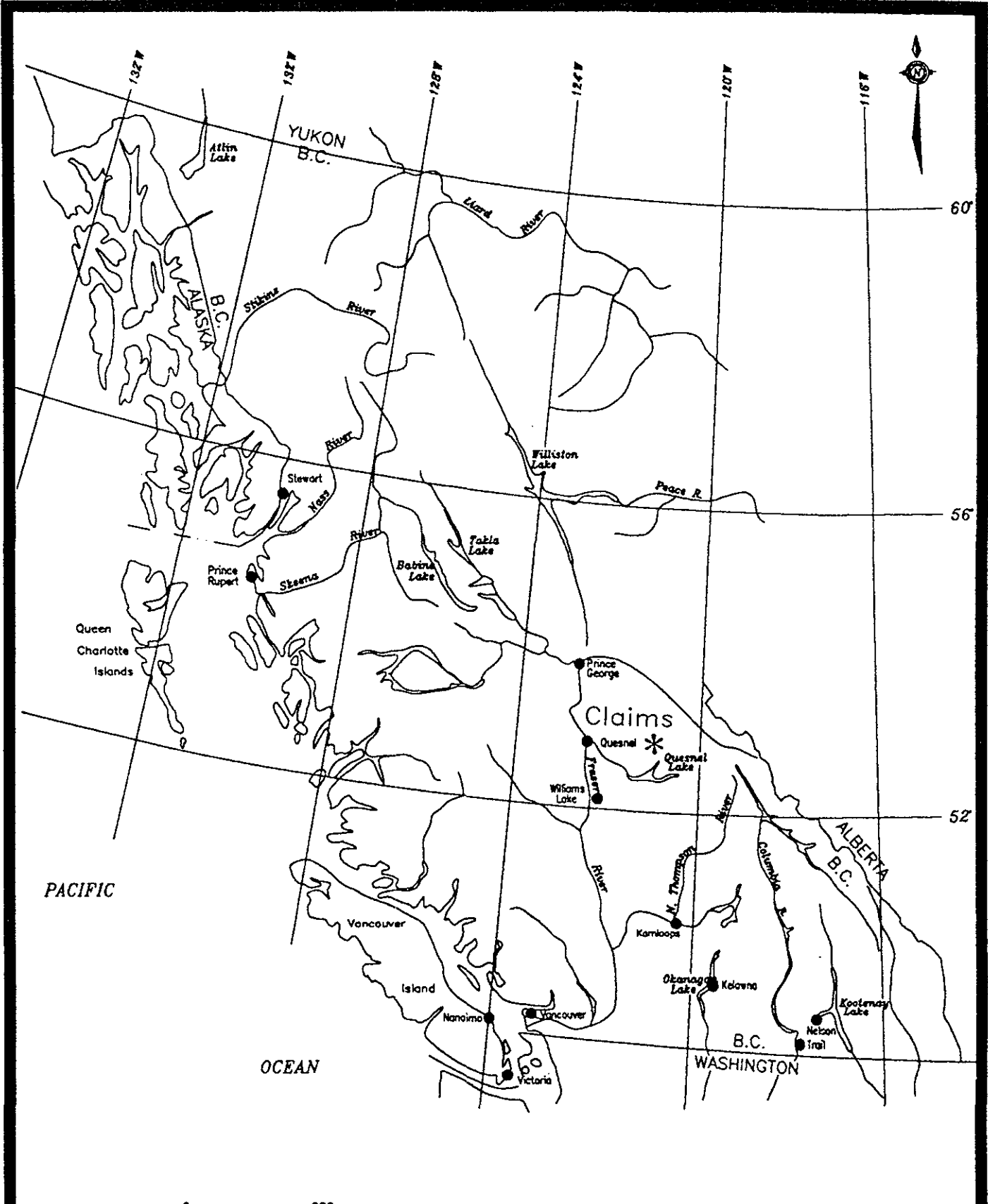
## 8. Limitations

This report is limited to the use of Clansmen Resources Ltd. without the express written consent of Pacific Environmental Surveys Inc.

Due to financial constraints, sampling was kept to a minimum. No laboratory or field blanks, or replicates were taken.

  
Pacific Environmental Surveys Inc.  
E.R. Matheson, BSc

## Figures

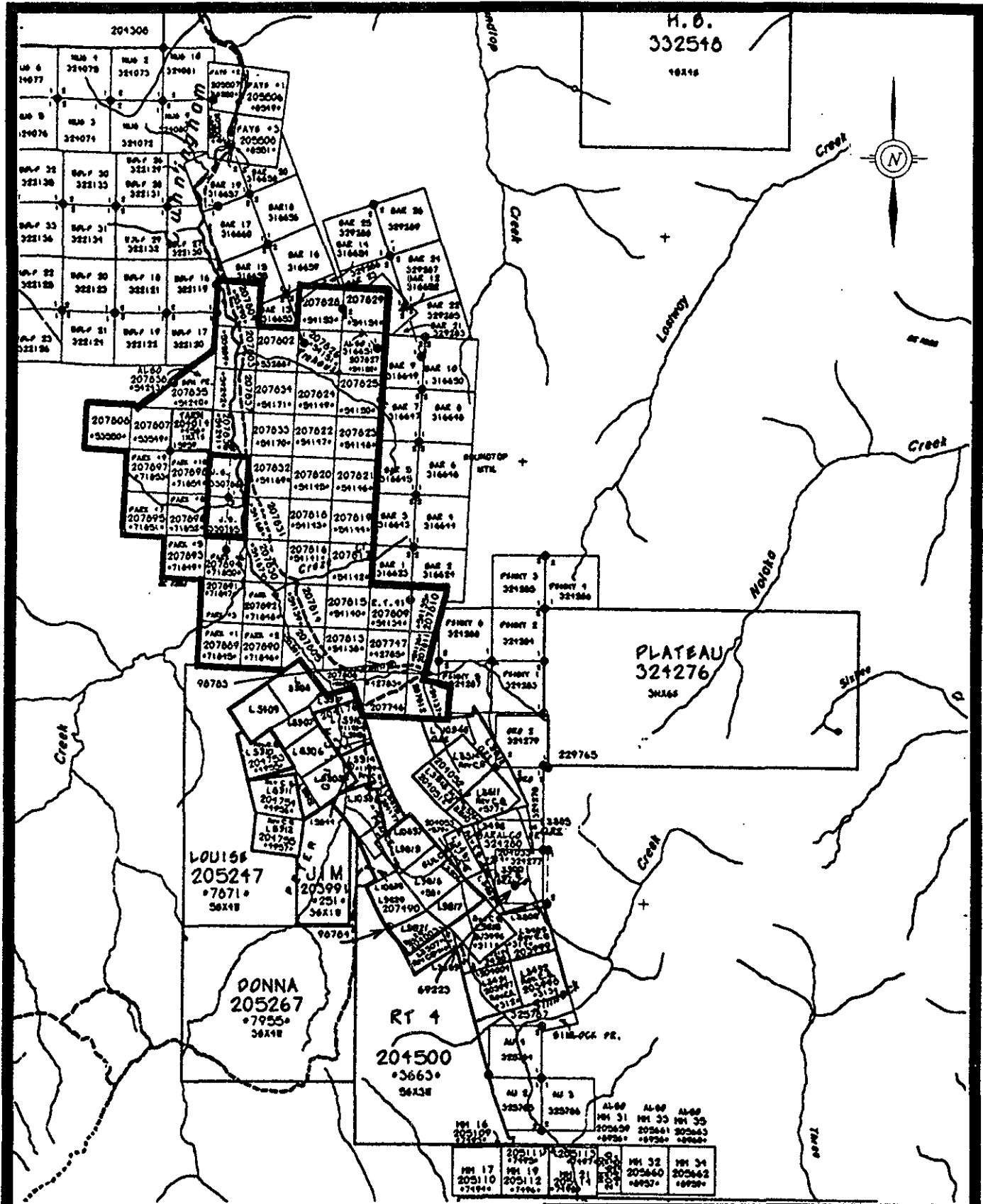


*Clansmen Resources Ltd.*  
*General Location Map*

Cunningham Creek Property

NTS: 93A/14W  
 LONG: 121° 21'W      LAT: 52° 56'N

Figure: 1      Pacific Environmental Surveys Inc.



*Clansmen Resources Ltd.*  
*Claim Location Map*

Cunningham Creek Property

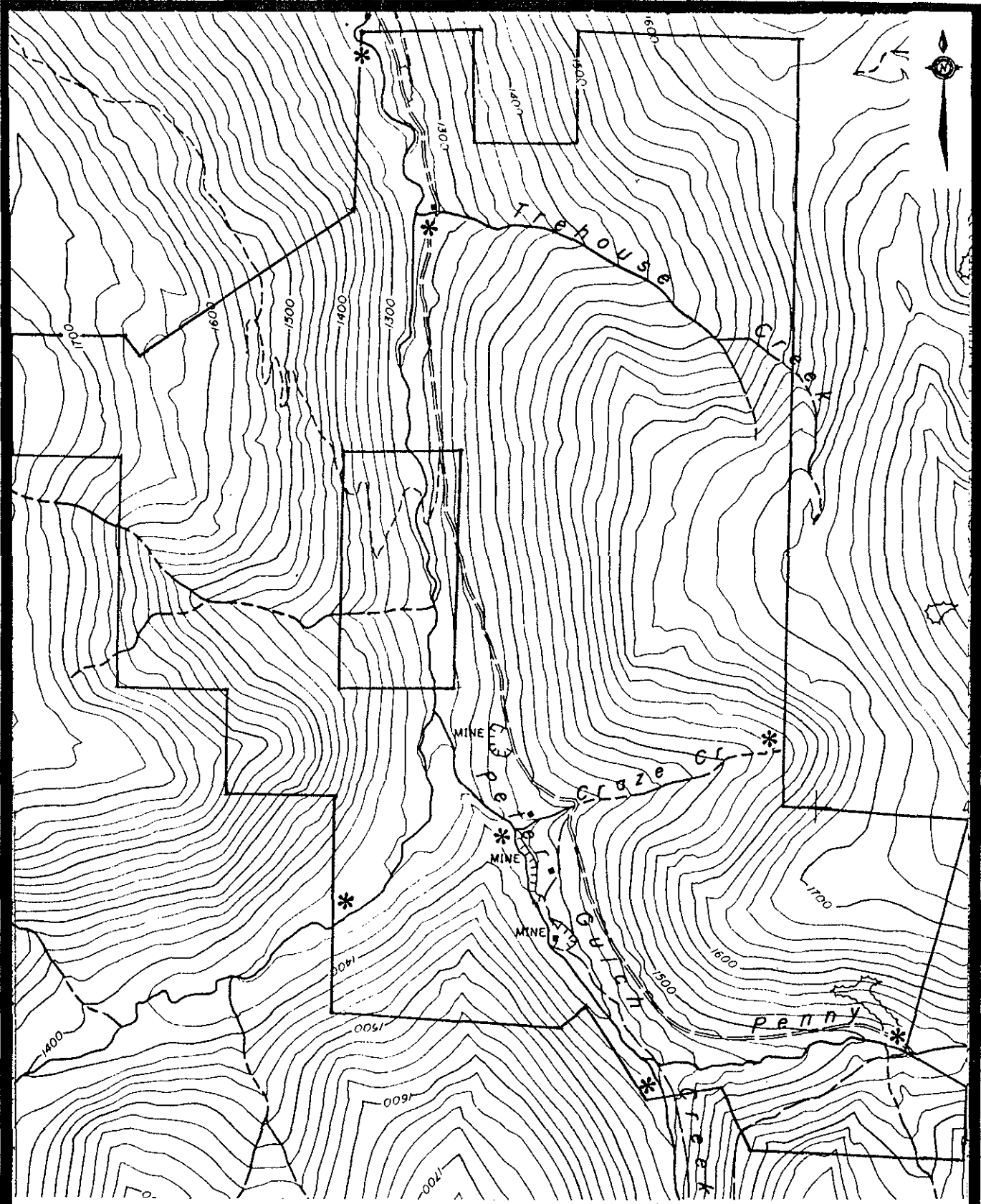
NTS: 93A/14W

LONG: 121° 21'W

LAT: 52° 56'N

Figure: 2

Pacific Environmental Surveys Inc.



\* Sampling Sites



Scale: 1:20,000

*Clansmen Resources Ltd.*  
**Sample Location Map**

G.S.C. MAP 9814G 1987-88  
 Cunningham Creek Property

NTS: 93A/14W

LONG: 121° 21'W

LAT: 52° 56'N

Figure 3

Pacific Environmental Surveys Inc.

**Appendix 1 - Analytical Results**





# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. # (Lang.): 9371  
W.O. # (Other):  
P.O. # :  
Date Rec'd. : 09/15/94  
Date Comp. : 09/21/94

Page 2 of 4

Client

Received From

<b>Name</b> : Beth Matheson <b>Address</b> : 1440 Gabriola Drive, Coquitlam, B.C. V3E 2B7 <b>Phone</b> : (604) 945-7562 <b>Fax</b> : (604) 945-7562 <b>Attn.</b> :	<b>Name</b> : <b>Address</b> : <b>Phone</b> : <b>Fax</b> : <b>Attn.</b> :
--	---

## Water Analysis Report Results

Lab # :	9371-4	9371-5	9371-6
Sample ID:	Sample #4 09/12/94	Sample #5 09/12/94	Sample #6 09/12/94

PARAMETER: (mg/L) -	Dissolved Metals	Total Metals	Dissolved Metals	Total Metals	Dissolved Metals	Total Metals
Aluminum (Al)	< 0.01	0.04	0.02	0.27	0.01	0.09
Antimony (Sb)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Arsenic (As)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Barium (Ba)	0.0587	0.0605	0.0031	0.0092	0.0317	0.0351
Beryllium (Be)	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Bismuth (Bi)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Cadmium (Cd)	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Calcium (Ca)	34.0	34.0	9.10	9.13	24.0	24.5
Chromium (Cr)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Cobalt (Co)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Copper (Cu)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Iron (Fe)	0.019	0.089	0.043	0.502	0.015	0.022
Lead (Pb)	< 0.01	< 0.01	< 0.01	0.01	< 0.01	< 0.01
Lithium (Li)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Magnesium (Mg)	4.10	4.13	3.60	3.68	4.90	4.92
Manganese (Mn)	0.002	0.006	0.002	0.014	0.002	0.008
Mercury (Hg) (CVUV)	-	< 0.001	-	< 0.001	-	< 0.001
Molybdenum (Mo)	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Nickel (Ni)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Phosphorus (P)	< 0.06	< 0.08	< 0.06	< 0.06	< 0.06	< 0.06
Potassium (K)	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Selenium (Se)	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
Silicon (Si)	2.02	2.16	1.36	1.56	2.03	2.18
Silver (Ag)	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Sodium (Na)	0.39	0.42	0.63	0.66	0.70	0.76
Strontium (Sr)	0.06	0.06	0.03	0.04	0.09	0.09
Sulfur (S)	1.9	40.1	1.0	767.0	2.5	59.4
Thorium (Th)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tin (Sn)	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Titanium (Ti)	< 0.001	0.002	0.001	0.003	0.001	0.002
Uranium (U)	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07	< 0.07
Vanadium (V)	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
Zinc (Zn)	0.015	0.029	< 0.005	< 0.005	< 0.005	< 0.005
Zirconium (Zr)	< 0.001	< 0.001	< 0.001	0.003	< 0.001	0.006

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344

Client: (604) 534-9996

W.O. # (Lang.): 9371  
W.O. # (Other):  
P.O. # :  
Date Rec'd. : 09/15/94  
Date Comp. : 09/21/94

Page 3 of 4

**Received From**

<b>Name</b> : Beth Matheson <b>Address</b> : 1440 Gabriola Drive, Coquitlam, B.C. V3E 2B7 <b>Phone</b> : (604) 945-7562 <b>Fax</b> : (604) 945-7562 <b>Attn.</b> :	<b>Name</b> : <b>Address</b> : <b>Phone</b> : <b>Fax</b> : <b>Attn.</b> :
--	---

**Water Analysis Report Results**

Lab # : 9371-7  
Sample ID: Sample #7  
09/12/94

PARAMETER: (mg/L) -	Dissolved Metals	Total Metals
Aluminum (Al)	0.02	0.03
Antimony (Sb)	< 0.02	< 0.02
Arsenic (As)	< 0.02	< 0.02
Barium (Ba)	0.0166	0.0194
Beryllium (Be)	< 0.0002	< 0.0002
Bismuth (Ba)	< 0.02	< 0.02
Cadmium (Cd)	< 0.0005	< 0.0005
Calcium (Ca)	17.0	17.2
Chromium (Cr)	< 0.001	< 0.001
Cobalt (Co)	< 0.001	< 0.001
Copper (Cu)	0.003	0.004
Iron (Fe)	0.021	0.073
Lead (Pb)	< 0.01	< 0.01
Lithium (Li)	< 0.002	< 0.002
Magnesium (Mg)	4.90	4.93
Manganese (Mn)	0.002	0.003
Mercury (Hg) (CVUV)	-	< 0.001
Molybdenum (Mo)	< 0.005	< 0.005
Nickel (Ni)	< 0.001	< 0.001
Phosphorus (P)	< 0.06	< 0.06
Potassium (K)	< 0.2	< 0.2
Selenium (Se)	< 0.02	< 0.02
Silicon (Si)	1.73	1.74
Silver (Ag)	< 0.001	< 0.001
Sodium (Na)	0.60	0.62
Strontium (Sr)	0.08	0.08
Sulfur (S)	1.7	3.8
Thorium (Th)	< 0.01	< 0.01
Tin (Sn)	< 0.01	< 0.01
Titanium (Ti)	0.001	0.002
Uranium (U)	< 0.07	< 0.07
Vanadium (V)	< 0.002	< 0.002
Zinc (Zn)	< 0.005	< 0.005
Zirconium (Zr)	< 0.001	< 0.001

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. # (Lang.): 9371  
W.O. # (Other):  
P.O. # :  
Date Rec'd. : 09/15/94  
Date Comp. : 09/21/94

Page 4 of 4

Client

Received From

Name : Beth Matheson	Name :
Address : 1440 Gabriola Drive, Coquitlam, B.C. V3E 2B7	Address :
Phone : (604) 945-7562	Phone :
Fax : (604) 945-7562	Fax :
Attn. :	Attn. :

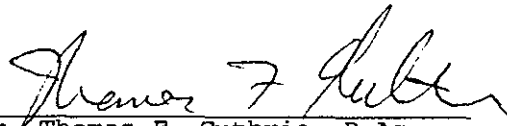
## Methodology

Dissolved metals were determined in a filtered (0.45 um) and acidified sample aliquot by ICP-AES with ultrasonic nebulization (EPA Method 200.7).

Total metals were determined in a sample aliquot which was acid digested in a closed teflon vessel in a microwave oven (EPA Method 3015). the digest was analyzed by ICP-AES with ultrasonic nebulization (EPA Method 200.7).

Mercury was determined by cold vapour - UV (EPA Method 245.1).

Approved By:

  
Dr. Thomas F. Guthrie, P.Ag.,  
General Manager

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. (Lang.) : 9371  
W.O. (Other) :  
P.O. # :  
Date Received : 09/15/94  
Date Completed : 09/21/94

## Client

## Received From

Name : BETH MATHESON	Name :
Address : 1440 GABRIOLA DRIVE, COQUITLAM, B.C. V3E 2B7	Address :
Phone : 945-7562	Phone :
Fax : 945-7562	Fax :
Attention:	Attention:

## WATER ANALYSIS REPORT

Lab #: 9371- 1

Sample ID: WATER SAMPLE #1 SEPT.12/94

### ANALYTICAL RESULTS

pH 7.84  
Total Suspended Solids 0 mg/L  
Calcium 29.00 mg/L  
Magnesium 4.20 mg/L  
Sulfate-S 1.6 mg/L  
Nitrate-N (+ Nitrite-N) < 0.05 mg/L  
Chloride 3.9 mg/L  
Carbonate 0.0 mg/L  
Bicarbonate 98.0 mg/L  
Hardness (As CaCO<sub>3</sub>) 89.80 mg/L  
Nitrite-N < 0.05 mg/L  
Total Alkalinity (As CaCO<sub>3</sub>) 98.00 mg/L

Results quoted as zero indicate concentrations below the following detection limits:

Less than 0.01 mg/l Fe, Cu, Zn, Mn, B

Less than 0.10 mg/l Cl, Fl, SO<sub>4</sub>-S

Less than 0.05 mg/l Na, Ca, Mg, K, PO<sub>4</sub>-P, NH<sub>4</sub>-N, NO<sub>3</sub>-N

Less than 1 mg/l TDS, TSS, carbonate & bicarbonate

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. (Lang.) : 9371  
W.O. (Other) :  
P.O. # :  
Date Received : 09/15/94  
Date Completed : 09/21/94

## Client

## Received From

Name : BETH MATHESON	Name :
Address : 1440 GABRIOLA DRIVE, COQUITLAM, B.C. V3E 2B7	Address :
Phone : 945-7562	Phone :
Fax : 945-7562	Fax :
Attention:	Attention:

## WATER ANALYSIS REPORT

Lab #: 9371- 2

Sample ID: WATER SAMPLE #2 SEPT.12/94

### ANALYTICAL RESULTS

pH	7.80
Total Suspended Solids	0 mg/L
Calcium	14.00 mg/L
Magnesium	4.90 mg/L
sulfate-S	0.7 mg/L
Nitrate-N (+ Nitrite-N)	<0.05 mg/L
Chloride	3.9 mg/L
Carbonate	0.0 mg/L
Bicarbonate	56.0 mg/L
Hardness (As CaCO <sub>3</sub> )	55.20 mg/L
Nitrite-N	<0.05 mg/L
Total Alkalinity (As CaCO <sub>3</sub> )	56.00 mg/L

Results quoted as zero indicate concentrations below the following detection limits:

Less than 0.01 mg/l Fe, Cu, Zn, Mn, B

Less than 0.10 mg/l Cl, F1, SO<sub>4</sub>-S

Less than 0.05 mg/l Na, Ca, Mg, K, PO<sub>4</sub>-P, NH<sub>4</sub>-N, NO<sub>3</sub>-N

Less than 1 mg/l TDS, TSS, carbonate & bicarbonate

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. (Lang.) : 9371  
W.O. (Other) :  
P.O. # :  
Date Received : 09/15/94  
Date Completed : 09/21/94

## Client

## Received From

Name : BETH MATHESON	Name :
Address : 1440 GABRIOLA DRIVE,	Address :
: COQUITLAM, B.C.	:
: V3E 2B7	:
Phone : 945-7562	Phone :
Fax : 945-7562	Fax :
Attention:	Attention:

## WATER ANALYSIS REPORT

Lab #: 9371- 3

Sample ID: WATER SAMPLE #3 SEPT.12/94

### ANALYTICAL RESULTS

pH 8.02  
Total Suspended Solids 0 mg/L  
Calcium 29.00 mg/L  
Magnesium 4.90 mg/L  
Sulfate-S 3.4 mg/L  
Nitrate-N (+ Nitrite-N) <0.05 mg/L  
Chloride 4.0 mg/L  
Carbonate 0.0 mg/L  
Bicarbonate 105.0 mg/L  
Hardness (As CaCO<sub>3</sub>) 92.70 mg/L  
Nitrite-N <0.05 mg/L  
Total Alkalinity (As CaCO<sub>3</sub>) 105.00 mg/L

Results quoted as zero indicate concentrations below the following detection limits:

Less than 0.01 mg/l Fe, Cu, Zn, Mn, B

Less than 0.10 mg/l Cl, F, SO<sub>4</sub>-S

Less than 0.05 mg/l Na, Ca, Mg, K, PO<sub>4</sub>-P, NH<sub>4</sub>-N, NO<sub>3</sub>-N

Less than 1 mg/l TDS, TSS, carbonate & bicarbonate

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. (Lang.) : 9371  
W.O. (Other) :  
P.O. # :  
Date Received : 09/15/94  
Date Completed : 09/21/94

## Client

## Received From

Name : BETH MATHESON	Name :
Address : 1440 GABRIOLA DRIVE,	Address :
: COQUITLAM, B.C.	:
: V3E 2B7	:
Phone : 945-7562	Phone :
Fax : 945-7562	Fax :
Attention:	Attention:

## WATER ANALYSIS REPORT

Lab #: 9371- 4

Sample ID: WATER SAMPLE #4 SEPT.12/94

### ANALYTICAL RESULTS

pH 8.07  
Total Suspended Solids 0 mg/L  
Calcium 34.00 mg/L  
Magnesium 4.10 mg/L  
Sulfate-S 1.9 mg/L  
Nitrate-N (+ Nitrite-N) <0.05 mg/L  
Chloride 3.8 mg/L  
Carbonate 0.0 mg/L  
Bicarbonate 116.0 mg/L  
Hardness (As CaCO<sub>3</sub>) 101.90 mg/L  
Nitrite-N <0.05 mg/L  
Total Alkalinity (As CaCO<sub>3</sub>) 116.00 mg/L

Results quoted as zero indicate concentrations below the following detection limits:

Less than 0.01 mg/l Fe, Cu, Zn, Mn, B

Less than 0.10 mg/l Cl, F1, SO<sub>4</sub>-S

Less than 0.05 mg/l Na, Ca, Mg, K, PO<sub>4</sub>-P, NH<sub>4</sub>-N, NO<sub>3</sub>-N

Less than 1 mg/l TDS, TSS, carbonate & bicarbonate

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. (Lang.) : 9371  
W.O. (Other) :  
P.O. # :  
Date Received : 09/15/94  
Date Completed : 09/21/94

## Client

## Received From

Name : BETH MATHESON	Name :
Address : 1440 GABRIOLA DRIVE,	Address :
: COQUITLAM, B.C.	:
: V3E 2B7	:
Phone : 945-7562	Phone :
Fax : 945-7562	Fax :
Attention:	Attention:

## WATER ANALYSIS REPORT

Lab #: 9371- 5

Sample ID: WATER SAMPLE #5 SEPT.12/94

### ANALYTICAL RESULTS

pH	7.24
Total Suspended Solids	0 mg/L
Calcium	9.10 mg/L
Magnesium	3.60 mg/L
Sulfate-S	0.6 mg/L
Nitrate-N (+ Nitrite-N)	<0.05 mg/L
Chloride	3.8 mg/L
Carbonate	0.0 mg/L
Bicarbonate	24.0 mg/L
Hardness (As CaCO <sub>3</sub> )	37.60 mg/L
Nitrite-N	< 0.05 mg/L
Total Alkalinity (As CaCO <sub>3</sub> )	24.00 mg/L

Results quoted as zero indicate concentrations below the following detection limits:

Less than 0.01 mg/l Fe, Cu, Zn, Mn, B

Less than 0.10 mg/l Cl, F, SO<sub>4</sub>-S

Less than 0.05 mg/l Na, Ca, Mg, K, PO<sub>4</sub>-P, NH<sub>4</sub>-N, NO<sub>3</sub>-N

Less than 1 mg/l TDS, TSS, carbonate & bicarbonate



# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. (Lang.) : 9371  
W.O. (Other) :  
P.O. # :  
Date Received : 09/15/94  
Date Completed : 09/21/94

## Client

## Received From

Name : BETH MATHESON	Name :
Address : 1440 GABRIOLA DRIVE,	Address :
: COQUITLAM, B.C.	:
: V3E 2B7	:
Phone : 945-7562	Phone :
Fax : 945-7562	Fax :
Attention:	Attention:

## WATER ANALYSIS REPORT

Lab #: 9371- 6

Sample ID: WATER SAMPLE #6 SEPT.12/94

### ANALYTICAL RESULTS

pH 7.95  
Total Suspended Solids 0 mg/L  
Calcium 24.00 mg/L  
Magnesium 4.90 mg/L  
Sulfate-S 2.7 mg/L  
Nitrate-N (+ Nitrite-N) < 0.05 mg/L  
Chloride 3.9 mg/L  
Carbonate 0.0 mg/L  
Bicarbonate 90.0 mg/L  
Hardness (As CaCO<sub>3</sub>) 80.20 mg/L  
Nitrite-N < 0.05 mg/L  
Total Alkalinity (As CaCO<sub>3</sub>) 90.00 mg/L

Results quoted as zero indicate concentrations below the following detection limits:

Less than 0.01 mg/l Fe, Cu, Zn, Mn, B

Less than 0.10 mg/l Cl, F, SO<sub>4</sub>-S

Less than 0.05 mg/l Na, Ca, Mg, K, PO<sub>4</sub>-P, NH<sub>4</sub>-N, NO<sub>3</sub>-N

Less than 1 mg/l TDS, TSS, carbonate & bicarbonate

# Norwest Labs



"We Solve Problems"

203 - 20771 Langley By-Pass  
Langley, B.C. V3A 5E8  
Phone (604) 530-4344  
Fax: (604) 534-9996

W.O. (Lang.) : 9371  
W.O. (Other) :  
P.O. # :  
Date Received : 09/15/94  
Date Completed : 09/21/94

## Client

## Received From

Name : BETH MATHESON	Name :
Address : 1440 GABRIOLA DRIVE,	Address :
: COQUITLAM, B.C.	:
: V3E 2B7	:
Phone : 945-7562	Phone :
Fax : 945-7562	Fax :
Attention:	Attention:

## WATER ANALYSIS REPORT

Lab #: 9371- 7

Sample ID: WATER SAMPLE #7 SEPT.12/94

### ANALYTICAL RESULTS

pH 7.81  
Total Suspended Solids 0 mg/L  
Calcium 17.00 mg/L  
Magnesium 4.90 mg/L  
Sulfate-S 2.0 mg/L  
Nitrate-N (+ Nitrite-N) < 0.05 mg/L  
Chloride 3.8 mg/L  
Carbonate 0.0 mg/L  
Bicarbonate 71.0 mg/L  
Hardness (As CaCO<sub>3</sub>) 62.70 mg/L  
Nitrite-N < 0.05 mg/L  
Total Alkalinity (As CaCO<sub>3</sub>) 71.00 mg/L

Results quoted as zero indicate concentrations below the following detection limits:

Less than 0.01 mg/l Fe, Cu, Zn, Mn, B

Less than 0.10 mg/l Cl, F, SO<sub>4</sub>-S

Less than 0.05 mg/l Na, Ca, Mg, K, PO<sub>4</sub>-P, NH<sub>4</sub>-N, NO<sub>3</sub>-N

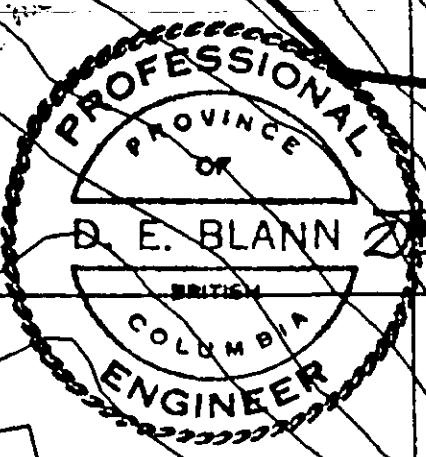
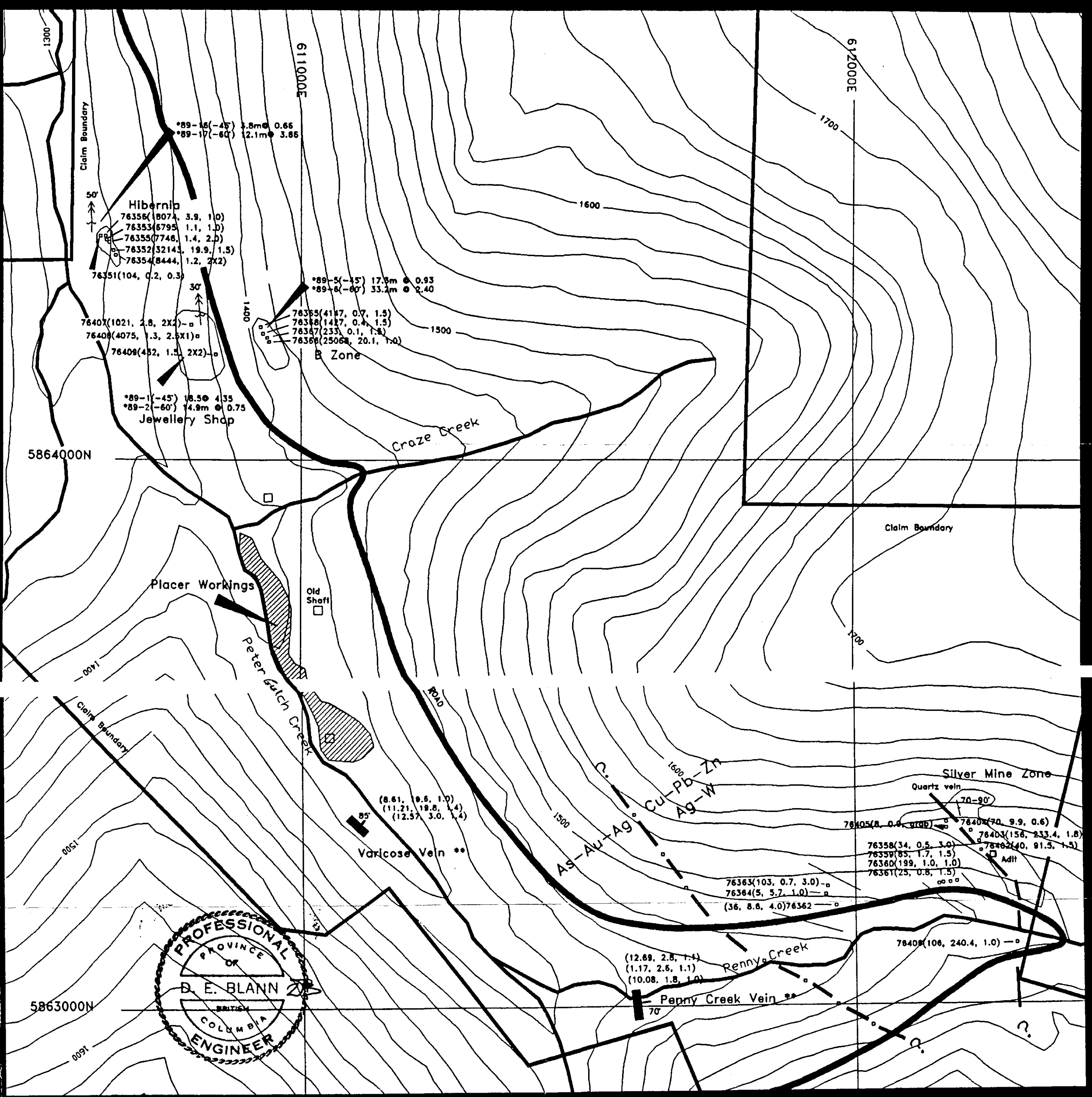
Less than 1 mg/l TDS, TSS, carbonate & bicarbonate

**Appendix 2 - Statement of Costs**

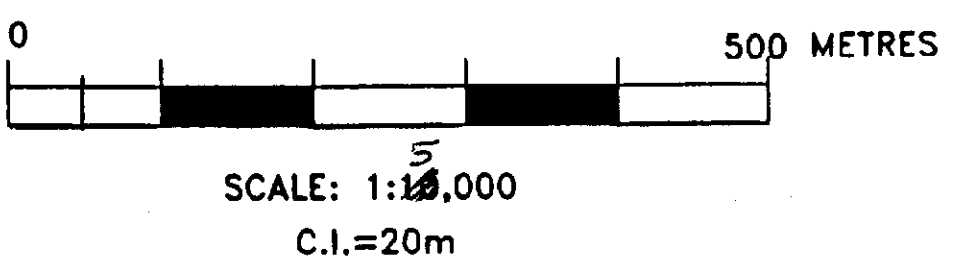
**Statement of Costs, provided by Clansmen Resources Ltd.**

Water Analysis: (7 samples @ \$184.00/sample).....	1,378.16
Vehicle Expenses: (1600 km @ \$0.40/km).....	640.00
Room and Board: (6 man days @ 75.00/day).....	450.00
Field Supervision: (R.G. Matheson, pro rata).....	528.00
Wages:.....	1,470.00
Report:.....	<u>2,000.00</u>

**Total Costs:.....\$6,466.16**



1994 rock sample #76368(25068,20.1,1.0) 24, 092  
 Assays: (Au (ppb), Ag (ppm), width(m))  
 \* Diamond Drilling, 1989, Au(g/t)  
 \*\* Rock samples from Termuende, 1990-Au(g/t), Ag(g/t), width(m)



Clansmen Resources Ltd.  
 Rock Sample Locations

Cunningham Creek Property 1  
 NTS 93A/14W

Long: 121° 21'W  
 Report by: D. Blann

Lat: 52° 56'N

Figure 6