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GEOLOGICAL, GEOCHEMICAL and GEOPHYSICAL  
REPORT  
on the  
STANDARD CREEK PROPERTY

Lillooet Mining Division - British Columbia

Lat.  $50^{\circ} 42' N.$

Long.  $122^{\circ} 37' W.$

N.T.S. 92J/10E

for

TRANS ATLANTIC RESOURCES LTD.  
**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

by **13,232**

Donald G. Allen, P. Eng., (B. C.)

November 28, 1984

Vancouver, B. C.

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## SUMMARY

Trans Atlantic Resources Inc. holds 69 claim units at the southern end of the Bridge River gold camp of southwestern British Columbia. The claims are situated 15 kilometres southeast of the Bralorne-Pioneer Mine, the largest gold mine, in terms of past production (4.93 million tonnes grading 18 grams gold per tonne) in the province. Exploration activity in the camp recently has been intense. E and B Explorations Inc. has announced additional ore at Bralorne-Pioneer, and Veronex and Levon Resources have announced a new find on their Congress Property.

The Standard Creek property includes the Royal tungsten and Standard gold prospects. Both lie along the southeast extension of the Cadwallader Break, a prominent fault structure with which the Bralorne-Pioneer Mine is also associated. The property is underlain by sedimentary rocks of the Bridge River and Cadwallader groups which are intruded by a variety of intrusive rocks including diorite of the Bendor intrusions, diorite-greenstone of the Bralorne intrusions, and altered ultramafic rocks of the President intrusions.

The mineral occurrences on the Standard Creek property have not been well documented. They were discovered and worked in the 1930's. Gold values and tungsten mineralization occur on the Royal prospect and visible gold and

0.125 ounces per ton over a width of 70 feet from underground workings on the Standard prospect have been reported. Workings are now caved and hence could not be sampled, but moderately anomalous gold values and highly anomalous arsenic values were obtained on dump material from the latter. The property was examined by Hillside Energy Corporation in 1980 to 1982. They identified a number of gold geochemical anomalies and prominent zinc and arsenic anomalies in soils, but did not carry out follow-up evaluation of these anomalies.

In 1984, Trans Atlantic funded an exploration program comprising soil geochemical sampling, magnetometer, horizontal loop, VLF-electromagnetic, and induced polarization surveys on the property. Geochemical work confirmed and extended the anomalies previously outlined and also identified a number of significant arsenic, zinc, molybdenum, nickel and cobalt anomalies. Magnetic and VLF electromagnetic surveys were somewhat successful in defining the distribution of ultrabasic rocks and their related fault structures. The horizontal loop electromagnetic survey detected several conductive zones but due to the limited program detailed information was not obtained and therefore we were unable to define the depth, dip or conductivity of the conductors located. The induced polarization and resistivity surveys were very effective in outlining the altered serpentinites and apparently detected an anomalous zone which corresponds with the gold mineralized section reported in the Standard adit.

Follow-up surveys including detailed geochemical, geological and geophysical surveys, trenching and diamond drilling are proposed.

#### CONCLUSION

The Standard Creek property is considered to have good exploration potential for the following reasons.

- 1) The property is well situated at the southern end of the Bridge River gold camp, the most prolific gold producer in British Columbia. It lies along the Cadwallader break, a prominent transcurrent fault with which the Bralorne-Pioneer mine is also associated.
- 2) Exploration activity in the Bridge River camp is intense. E and B Explorations Inc. have announced new reserves on the Bralorne-Pioneer Mine, and Levon and Veronex Resources have announced a new find on their Congress property.
- 3) Scattered gold geochemical anomalies and prominent arsenic and zinc (pathfinder elements for gold) geochemical anomalies in soil have been identified.
- 4) Altered ultramafic rock (mariposite-bearing quartz carbonate-talc schist) or listwanite has been identified. This rock type appears to be endemic to gold deposits such as in the Cassiar gold camp, and in the Allegheny mining district of California, although they do not have a direct spatial relationship to auriferous quartz veins. Gold mineralization in the Allegheny district

for example, occurs in steeply dipping veins within altered serpentinite bodies intersected by the veins (Wittkop, 1983). Characteristic features of these veins are as follows: (a) they are extremely rich but erratically distributed, (b) they are surrounded by a zone of carbonate alteration and pyritization often more than ten feet wide and (c) extensive carbonate alteration (mariposite bearing quartz-carbonate rock) occurs along the serpentinite contacts. Listwanite is presumably developed by hydrothermal carbonatization to form the free quartz found in the rock. The alteration process may also release gold from the ultramafic rock and remobilize it into quartz veins.

The Standard Creek property therefore should be explored for similar high grade gold deposits. In addition, potential exists for bulk tonnage, low-grade gold mineralization as indicated by reported gold values from the Standard prospect and as suggested by Sawyer (1980) and Ostler (1980).

#### RECOMMENDATION

A program of further, more detailed geochemical sampling in conjunction with geological mapping is recommended. An attempt should be made to open and rehabilitate the Standard adit for mapping and sampling to confirm the reported gold-bearing zone (Phase I). Contingent on results of the above work, then a second phase exploration program comprising

geophysical surveys to help define trenching and drilling targets, followed by road construction, trenching and diamond drilling should be carried out.

ESTIMATED COSTS OF RECOMMENDATIONS

PHASE I Follow-up geological mapping, geochemical sampling, and underground rehabilitation of Standard adit.

Salaries

Geologist	1 month @ \$6,000/mo	\$ 6,000
Labour - 2 assistant soil samplers	2 man months @ \$4,000	8,000
Room & board	90 man days @ \$30/day	2,700
Geochemical analyses and assay		4,000
Bobcat Rental	25 hours @ \$40 (all incl.)	1,000
Helicopter support	8 hours @ \$500/hr	4,000
Material, camp supplies		500
Vehicle rental, transportation		1,000
Report		1,500
		<hr/>
		\$28,700
	Contingencies	3,000
		<hr/>
	TOTAL	\$31,700

PHASE II

Costs for this phase have not been estimated. Follow-up work would depend upon the results of Phase I. Geophysical surveys to further define targets, road and drill site preparation, bulldozer trenching and diamond drilling probably will be considered.

*Donald S. Allen*



## INTRODUCTION

Trans Atlantic Resources Inc. holds 69 claim units in the Bridge River gold camp of southwestern British Columbia. The claims cover two gold prospects formerly known as the Royal and Standard Prospects. These and other showings such as the Butte-I.X.L., along with the Bralorne-Pioneer Mines, are related to the Cadwallader Break, a major trans-current fault structure. The property is situated 15 kilometres southwest of the Bralorne-Pioneer Mine which was the largest gold producer in British Columbia.

This report summarizes results of an exploration program funded by Trans Atlantic Resources Inc. The program was conducted during the period October 3 to 25, 1984 by consultants A & M Exploration Ltd. and consisted of geological mapping, geochemical sampling, magnetic, VLF-electromagnetic and induced polarization surveys.

This report also summarizes results of geochemical surveys carried out on the western part of the claim group by Hillside Energy Corporation, former holders of the property. Their work identified a number of multi-element soil geochemical anomalies.

TRANS ATLANTIC RESOURCES INC.  
STANDARD CREEK PROPERTY  
LOCATION MAP

SCALE 200 0 200 KILOMETRES MILES  
100 0 100

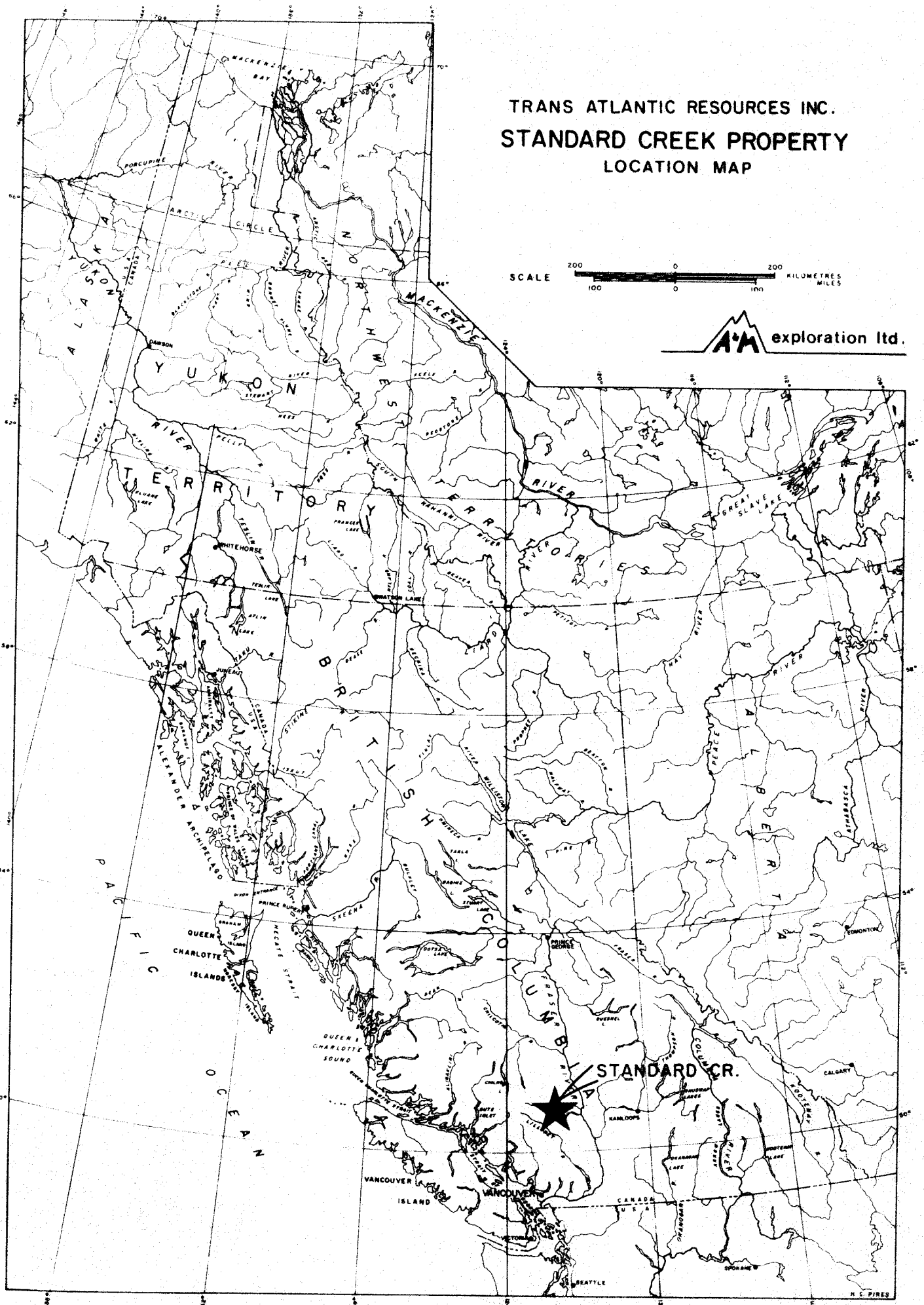


FIGURE - 1

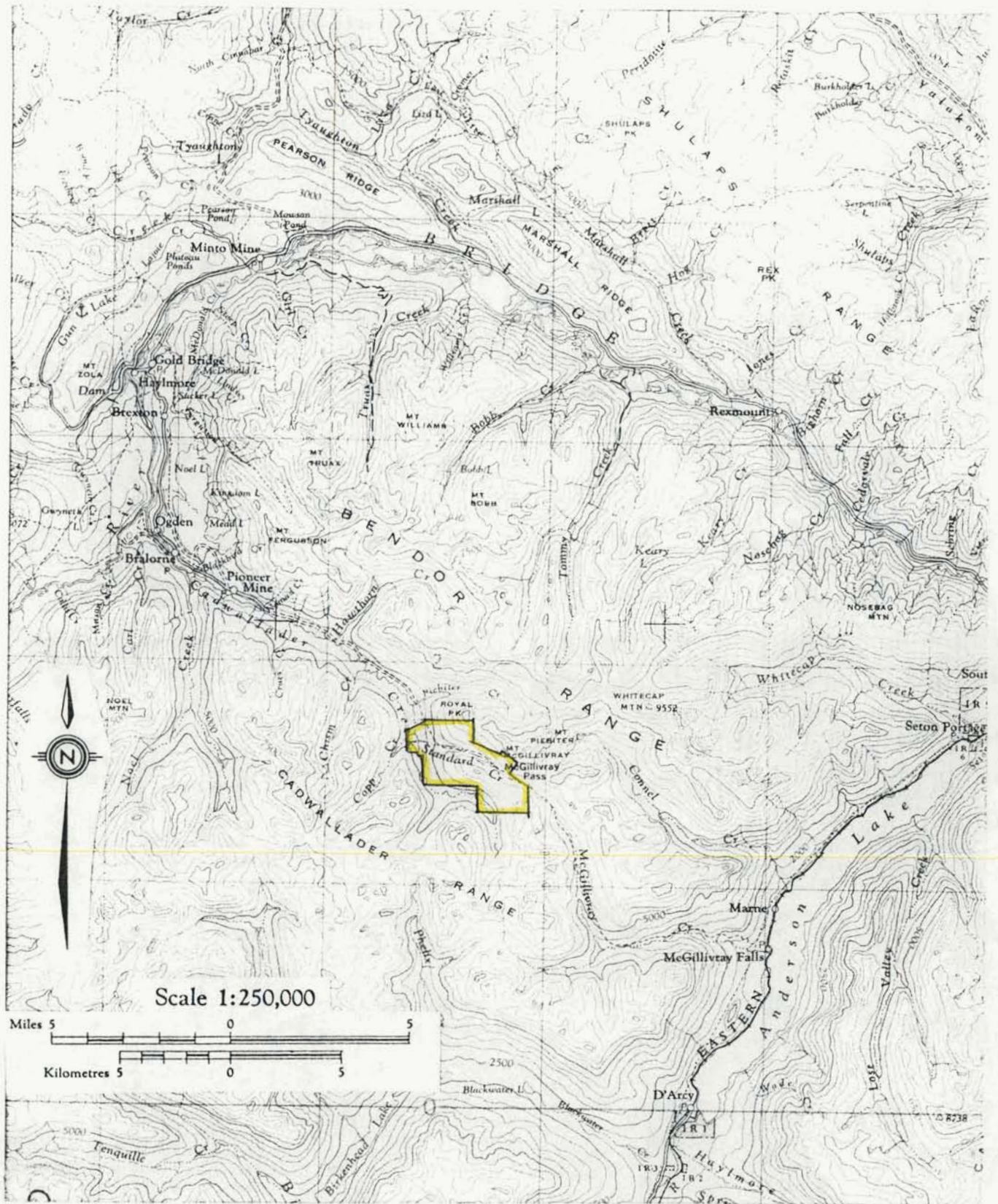
LOCATION, ACCESS, PHYSIOGRAPHY

The Standard Creek property is situated on Standard Creek, a tributary of Cadwallader Creek, which in turn is a tributary of the Hurley and Bridge Rivers. It lies 15 kilometres southeast of Bralorne, British Columbia (Figures 1 and 2). The western part of the property is accessible from Lillooet by a good gravel road to Bralorne, and thence by a gravel and bush road along the eastern side of Cadwallader Creek to Lower Standard Creek. A trail extends up Standard Creek valley through the eastern part of the claims to McGillivray Pass.

The property is in the Bendor Range of the Coast Mountains. The claims cover much of the Standard Creek valley which is a prominent "U-shaped" ice-carved valley. A number of prominent lateral glacial moraines lie along the upper part of the valley. Elevations range from 1350 and 2000 metres and topography varies from gentle on valley bottoms to moderately steep on valley walls. Slopes are covered with a virgin growth of spruce, balsam fir, jack pine, white pine and minor poplar and birch. Alder and willow occupy slide areas. Grass-covered slopes predominate above treeline (above 1950 metres elevation).

ENVIRONMENTAL CONSIDERATIONS

Environmentally, the Standard Creek area is in a



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## ACCESS MAP

STANDARD CREEK PROPERTY

Lillooet Mining Division - British Columbia

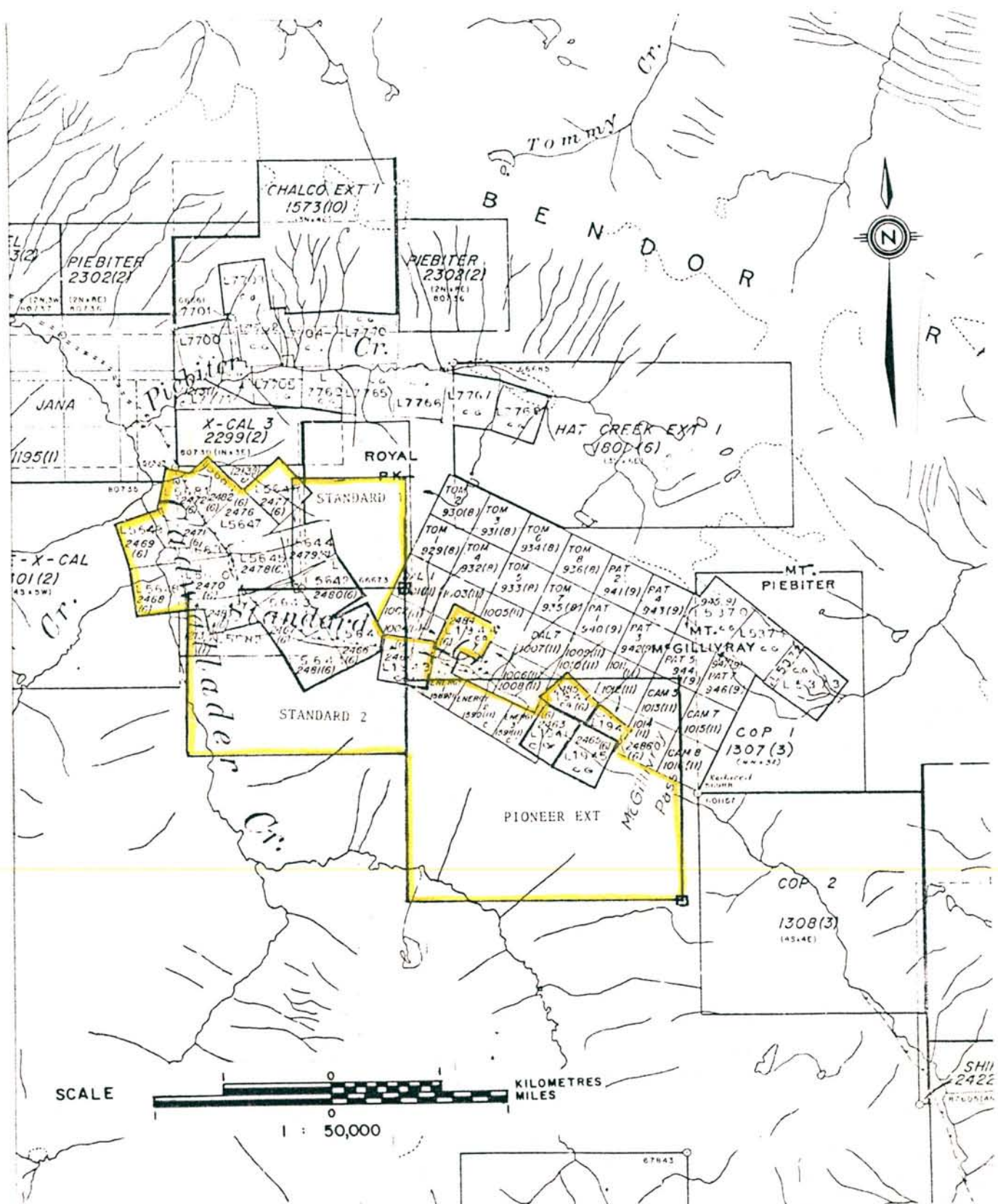
moderately sensitive area. The B.C. Ministry of Forests classifies the trail along Standard Creek as a "wilderness trail". The area does not have a park status but it is used for hiking, snowmobiling and cross country skiing. The Varsity Outdoor Club of the University of British Columbia maintains a cabin on Standard Creek. Any bulldozer work in the eastern part of the property should be carried out when the ground is frozen to minimize surface disturbance along the trail. Any initial drilling should be undertaken with helicopter support.

## CLAIM STATUS

The Standard Creek property consists of 13 reverted crown grant claims and 36 claim units (modified grid) as shown on Figure 3. Claim data is as follows:

<u>Claim Name</u>	<u>Record No.</u>	<u>Lot No.</u>	<u>Type</u>	<u>Expiry date</u>
Lion 1	2463	1940	Reverted Crown Grant	June 13, 1988
Lion 7	2464	1943	" " "	June 13, 1988
Bulldog 7	2465	1945	" " "	June 13, 1988
Royal	2481	5641	" " "	June 14, 1988
Royal 1	2466	5640	" " "	June 14, 1988
Royal 2	2467	5643	" " "	June 13, 1988
Royal 3	2480	5642	" " "	June 14, 1988
Royal 4	2478	5645	" " "	June 14, 1988
Royal 5	2479	5644	" " "	June 14, 1988
Royal 6	2476	5647	" " "	June 14, 1988
Royal 7	2477	5646	" " "	June 14, 1988
Royal 8	2468	5648	" " "	June 13, 1988
Royal 9	2469	5649	" " "	June 13, 1988
Royal 10	2470	5650	" " "	June 13, 1988
Royal A Fr.	2483	5682	" " "	June 14, 1988
Royal B Fr.	2471	5683	" " "	June 13, 1988
Royal C Fr.	2482	5684	" " "	June 14, 1988
Royal 11	2472	5681	" " "	June 13, 1988
Trail 2	2484	1944	" " "	June 13, 1988
Unicorn 4	2486	1941	" " "	June 13, 1988
Unicorn 6	2385	1942	" " "	June 13, 1988
Bralorne Ext.	2989		Modified Grid: 20 Units	Sept. 15, 1988
Standard 1	3021		" " 4 Units	Nov. 19, 1988
Standard 2	3022		" " 12 Units	Nov. 19, 1988

The claims are registered in the name of Trans Atlantic Resources Inc.



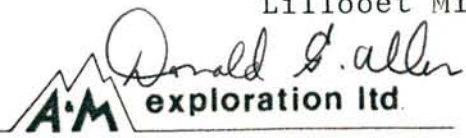
TRANS ATLANTIC RESOURCES INC.

N.T.S. 92J/10E

# CLAIM MAP

STANDARD CREEK PROPERTY

Lillooet Mining Division - British Columbia



## HISTORY

Gold was discovered in the Bridge River-Cadwallader Creek area in 1896. The district subsequently became the most productive in western Canada. During the 40 years of operation, production from the Bridge River gold camp amounted to 8,224,000 tonnes grading 16 ppm gold (0.52 ounces per ton) and 3 ppm silver. Production ceased in 1971 as a result of increasing costs and a fixed gold price.

The earliest recorded work in the Standard Creek area dates back to 1932 (Clothier, 1932, 1933). The Royal and Standard prospects were acquired and worked by Cadwallader Gold Mines Ltd. and Standard Gold Mines Ltd., respectively. Exploration work on the Royal prospect consisted of ground sluicing and underground development in a short crosscut adit on quartz veins up to 4.5 feet wide. The Standard prospect was explored with a number of open cuts and trenches and underground development in two adits, the principal one being 204 metres in length.

The Standard and Royal groups and surrounding claims were held in 1980 to 1982 by Hillside Energy Corp. (current holders of the JANA claim - Figure 3) who carried out soil geochemical sampling in the vicinity of the Royal prospect and on the west side of Cadwallader Creek (see Ostler, 1980; Brownlee and Fairbank, 1980; Melrose and Fairbank, 1982). Although results were positive and detailed follow-up work was recommended by Melrose and Fairbank, no further work was



carried out.

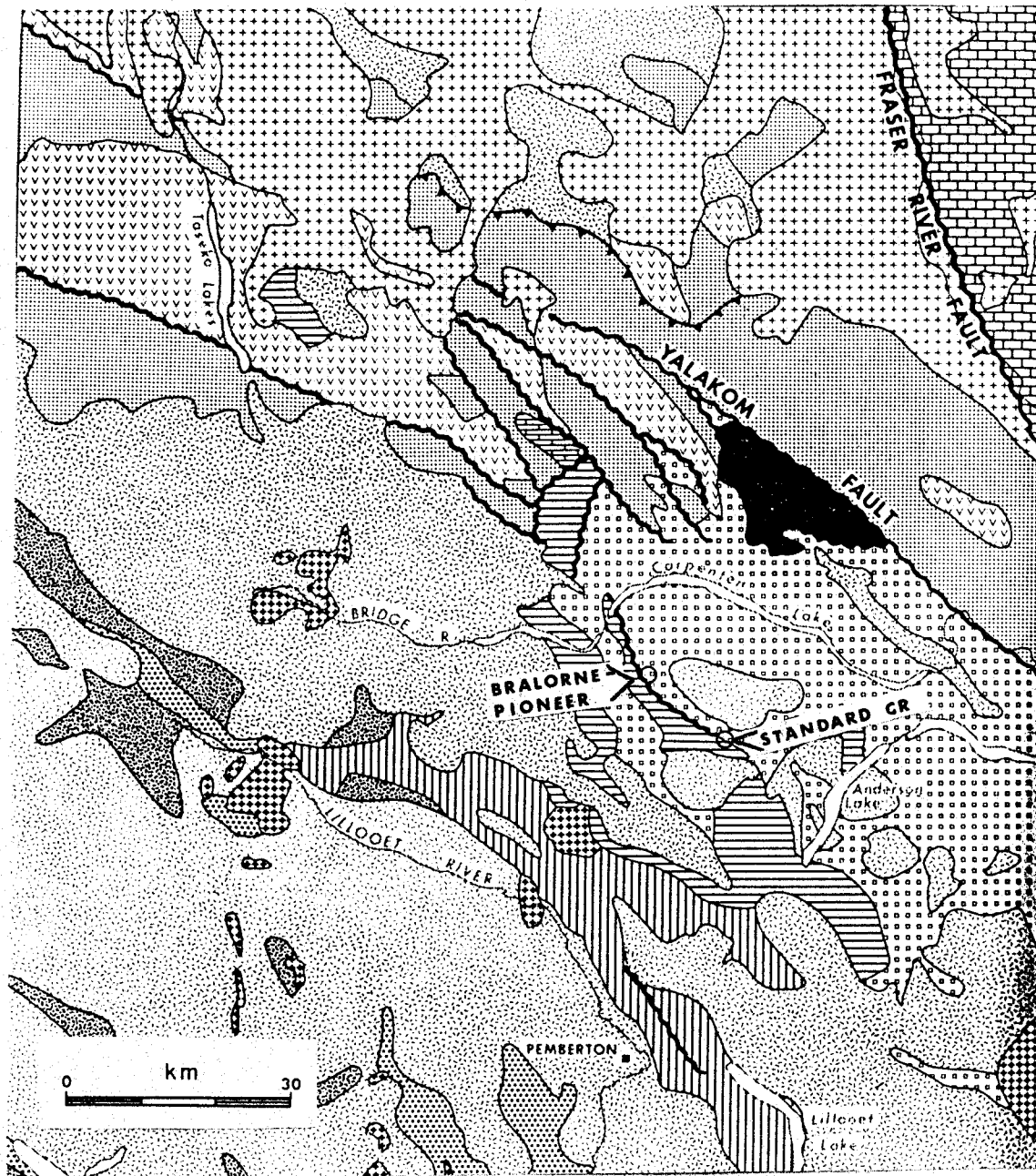
Exploration activity in the Bridge River gold camp currently is intense. E and B Exploration Inc. hold the Bralorne-Pioneer mine and have outlined reserves of 816,000 tonnes grading 8.5 ppm gold (0.24 ounces per ton) with an unknown amount of additional tonnage below the 2600 level (Bellamy and Saleken, 1983). Feasibility studies are reported to be in progress. Levon Resources and Veronex Resources have announced a new discovery (October 10 and 11, 1984 News Releases) on their Congress property (Number 16 on Figure 6) 13 kilometres north of Bralorne. Warstar Resources (October 18, 1984 News Releases) has announced discovery of new exploration targets on their Golden Sidewalk property (Peerless: Number 12 on Figure 6). X-Calibre Resources has extensive claim holdings in the camp and is presently constructing a road up McGillivray Creek to their claims immediately to the southwest of Standard Creek. Chopper Mines hold the DAL, TOM, and PAT claims (Figure 3) immediately to the north of Standard Creek and have reported the presence of a prominent quartz vein (1600 metres long by three metres wide) containing silver values of up to 27.9 ounces per ton and 1% copper (Chopper Mines Ltd. News Release of September 13, 1983).

## GEOLOGY

The Bridge River gold camp is in the Pemberton Map-Sheet of Roddick and Hutchison (1973) and Woodsworth (1977). The geology of the Bridge River-Cadwallader Creek area has been described by McCann (1922), Cairnes (1937) and Joubin (1948) and has been summarized by Pearson (1975) and Woodsworth et al (1977).

Regionally, the Standard Creek property lies off the northeast edge of the Coast Plutonic Complex, near the boundary of two of the main tectonic units of the Cordillera (see Figure 4). Sedimentary and intrusive rocks of the Intermontane belt underlie the Cadwallader Creek area and plutonic rocks of the main part of the Coast Crystalline belt occur about 10 kilometres to the southwest. The Intermontane belt in the Pemberton area consists of three tectonic subdivisions separated by transcurrent faults. Several of these faults, such as the Yalakom and Fraser River fault systems have right later displacements of up to 200 kilometres and are the loci of ultramafic intrusions. According to Woodsworth et al (1977):

"Between the Coast Plutonic Complex and the Yalakom fault system is a complex series of strata, ranging in age from Middle Triassic (and older?) to Late Cretaceous. The oceanic assemblage of cherts, basalts, pelites, and ultramafics of the Bridge River Group is at least in part Middle Triassic but may include older strata. In fault contact with this assemblage are Upper Triassic pillow basalt, graywacke, and argillite of the economically important Cadwallader Group.



## LEGEND

### TERTIARY

- Basalt, andesite, dacite
- GARIBALDI GROUP and related rocks: andesite, basalt, dacite

### UPPER CRETACEOUS

- KINGSVALE GROUP: andesite, basalt, arkose, conglomerate, greywacke

### JURASSIC and/or LOWER CRETACEOUS

- TAYLOR CREEK GROUP: andesite, basalt, shale;
- JACKASS MOUNTAIN and RELAY MOUNTAIN GROUPS: greywacke, arkose, conglomerate;
- Undivided: andesite, basalt, shale, greywacke
- Metamorphosed sediments and volcanics

### UPPER TRIASSIC

- TYAUGHTON GROUP: limestone
- CADWALLADER GROUP: argillite, greenstone, limestone, diorite
- Metamorphosed sediments and volcanics, in part equivalent to Cadwallader Group

### MIDDLE TRIASSIC and (?) OLDER

- BRIDGE RIVER GROUP: chert, argillite, basalt, phyllite

### PERMIAN and TRIASSIC

- Ultramafic rocks

### PENNSYLVANIAN and TRIASSIC

- CACHE CREEK and PAVILION GROUPS: greenstone, argillite, basalt, limestone, chert

### AGE MOSTLY UNKNOWN

- Plutonic rocks, mainly granodiorite and quartz diorite
- Migmatitic complexes

Fault

Thrust fault

Figure 4. Regional Geology of Pemberton-Taseko Lakes Area (after Woodsworth, 1977)

The Bridge River Group forms the core of a complex antiform that plunges northwesterly beneath, and is faulted against Jurassic and Cretaceous marine and nonmarine clastic rocks. To the northeast, the antiform is terminated by the Yalakom fault. The area between the Yalakom and Fraser River fault systems is underlain mainly by Cretaceous clastic and volcanic rocks and an extensive cover of Tertiary plateau basalts.

Strata between the Coast Plutonic Complex and the Fraser River fault system are punctured by intrusions of granodiorite, quartz diorite, and quartz monzonite that range in age from Middle Jurassic to Eocene."

#### MINERAL DEPOSITS OF THE BRIDGE RIVER CAMP

The Bridge River camp is best known for its precious metals deposits but deposits containing tungsten, antimony, mercury, copper, lead, zinc and molybdenum have been worked to varying degrees. Mineralization zoning in the camp was described by Pearson (1975 - see Figure 6) and Woodsworth et al (1977).

The geology of the Bralorne and Pioneer Mines was described by Joubin (1948) and more recently by Bellamy and Saleken (1983). According to Bellamy and Saleken:

".... a regional northwest-striking fault lens that cuts Permian to Jurassic sedimentary/volcanic rock units.... and is known as the Cadwallader fault lens....

The Cadwallader fault lens is bounded on the southwest by the Cadwallader fault and on the northeast by the Fergusson thrust fault. The Cadwallader strikes northwesterly and dips vertically to steeply southwest. This fault ranges from 15 to 300 metres in width and is slickensided serpentine. Displacement along the fault is un-

known as it trends approximately parallel to the bounding Hurley-Noel sedimentary and volcanic rocks. The Fergusson thrust fault is a northwest-striking, 60 to 80-degree northeast-dipping structure that thrusts Permian Fergusson sedimentary/volcanic rocks over the younger formations. The relative age relationships of the bounding faults are unclear but assumed to be contemporaneous. The faults were active over a long period of geologic time thus creating a structural setting conducive to the emplacement of the diorite/greenstone bodies that host the gold-bearing quartz veins. The movement within the fault lens was never static during the hydrothermal activity responsible for the gold solutions as is evidenced by the multi-banded quartz veins containing high-grade gold values.....

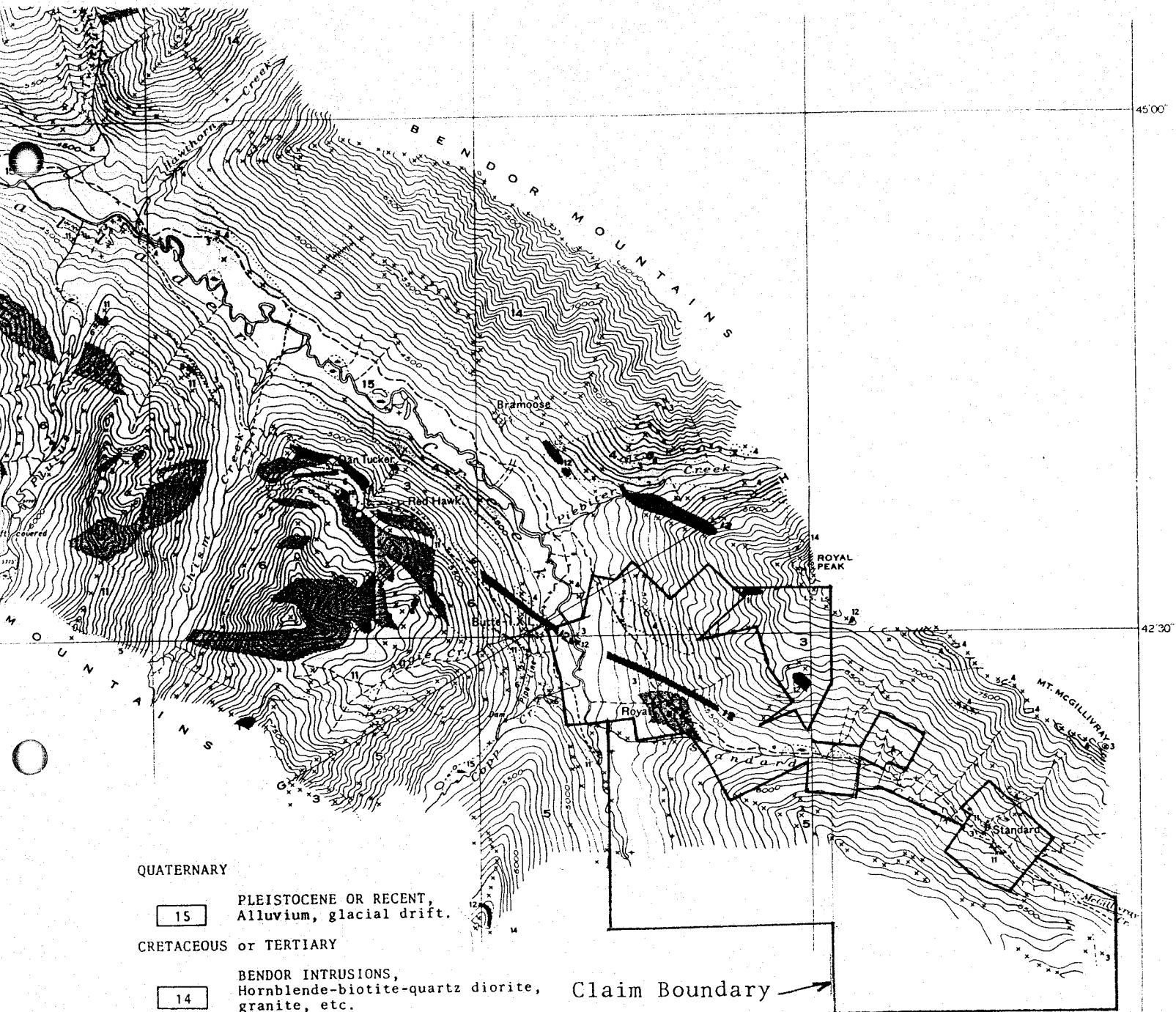
The wallrock control for the Bralorne-Pioneer veins are greenstone/diorite bodies that are competent enough to sustain brittle fractures. Veins that strike tangentially to the Cadwallader fault lens constitute the bulk of the known gold-quartz bodies in the Bralorne-Pioneer area"...

In the Bralorne-Pioneer vein system, production came from 19 of the 52 known veins".

## LOCAL GEOLOGY

### Structure

The most prominent structural feature of the Bridge River gold camp is the Cadwallader Creek Fault, a prominent northwest-trending fault that parallels the Yalakom Fault. The Cadwallader Creek valley has been eroded along a fault-bounded line defined by the Cadwallader Fault on the southwest and the Fergusson Thrust Fault on the northeast. The ultramafic body (unit 12, Figure 5) in the vicinity of the Butte-I.X.L. and Royal prospects probably lies along the



QUATERNARY

15 PLEISTOCENE OR RECENT,  
Alluvium, glacial drift.

CRETACEOUS or TERTIARY

14 BENDOR INTRUSIONS,  
Hornblende-biotite-quartz diorite,  
granite, etc.

Claim Boundary →

JURASSIC

12 PRESIDENT INTRUSIONS,  
Peridotite, pyroxenite, etc.

11 Serpentine.

UPPER TRIASSIC

8 BRALORNE INTRUSIONS  
Gabbro, augite-diorite, quartz  
diorite, etc.

6 PIONEER FORMATION,  
Andesite, meta andesite, tuff,  
breccia.

5 NOEL FORMATION,  
Argillaceous and tuffaceous  
sediments; conglomerate, tuff,  
some chert, and greenstone.

PERMIAN and/or TRIASSIC

4 FERGUSSON SERIES,  
Basalt, andesite; tuff, breccia,  
crystalline limestone.

3 Mainly thinly interbedded chert,  
argillite, massive chert,  
crystalline limestone.

Part of G.S.C. Map 431A

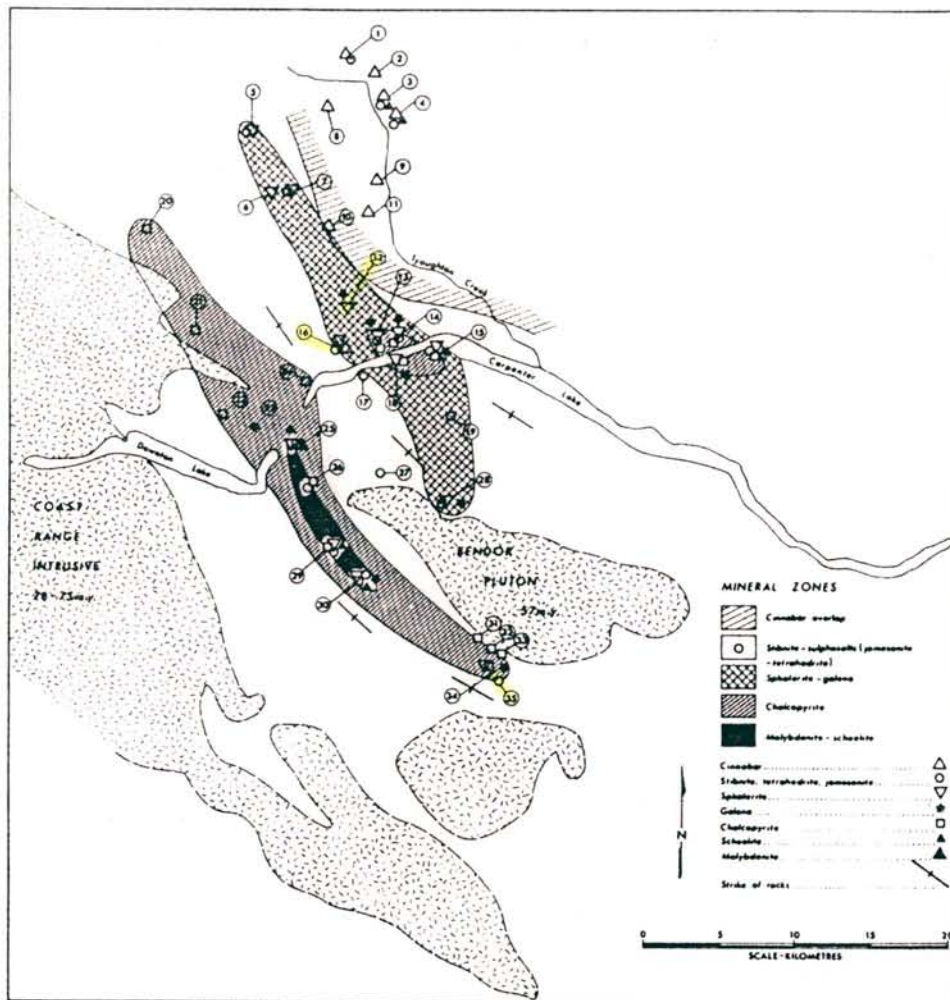
CADWALLADER CREEK AREA

by C. E. Cairnes, 1934-35

Scale 1:50,000

*Donald G. Allen*

Figure 5



### PRINCIPAL PROPERTIES

- |                   |                |                   |
|-------------------|----------------|-------------------|
| 1. Mugwamp        | 13. Golden     | 25. Arizona       |
| 2. Manitou        | 14. Minto      | 26. Forty Thieves |
| 3. Tungsten King  | 15. Olympic    | 27. Rock          |
| 4. Tungsten Queen | 16. Congress   | 28. Grey Rock     |
| 5. Robson         | 17. Omen       | 29. Bralorne      |
| 6. Northern Light | 18. Kelvin     | 30. Pioneer       |
| 7. Lucky Strike   | 19. Ben Dor    | *31. Bramoose     |
| 8. Silverquick    | 20. Native Son | *32. Chalco 2     |
| 9. Paul           | 21. Jewel      | *33. Chalco 12    |
| 10. Lillomer      | 22. Penrose    | 34. Butte-I.X.L.  |
| 11. Charlotte     | 23. Veritas    | 35. Standard      |
| 12. Peerless      | 24. Wayside    |                   |

\*Skarn mineralization

*Donald G. Allen*

Figure 6. Metal Zoning Pattern in Bridge River Mining Camp (after Pearson, 1975).

extension of the Fergusson Thrust and/or Cadwallader Fault. Other ultramafic bodies (peridotite and dunite of the President intrusions) probably lie along branch faults. The Standard Creek valley has probably been eroded along the southeast extension of the Cadwallader Fault.

#### Property Geology

The Standard Creek property is underlain mainly by sedimentary and volcanic rocks of the Bridge River Group (Fergusson series of Cairnes, 1937, Figure 5) which outcrop north of Standard Creek, and sedimentary rocks of the Noel formation of the Cadwallader Group to the south. Both groups are of Triassic age (Figures 5 and 7). The Bridge River Group in the claim area is comprised of recrystallized chert, intercalated with thinly bedded phylitic argillite. Andesite and andesite tuff occur as units within the sedimentary sequence. The sedimentary rocks generally strike northwesterly and dip to the northeast. The Noel formation is comprised of argillaceous and sedimentary rocks.

The above rock units are intruded by a variety of rock types.

Granodiorite of the Bendor pluton outcrops to the north of the property in the vicinity of Royal Peak. The rock is a coarse-grained equigranular granodiorite. A fine-grained granodiorite containing scattered quartz veins was observed



in float on the ridge to the south of the Standard prospect.

A small body of dioritized greenstone outcrops in the vicinity of the Royal prospect. This rock contains andesitic to dioritic fragments in a diorite matrix. This rock type appears to be similar to the greenstone/diorite bodies which host the veins of the Bralorne-Pioneer Mine.

Serpentinite outcrops in several areas of the property. It occurs as a dike extending across Cadwallader Creek in the vicinity of the Butte-I.X.L. and Royal prospects. Outcrops are relatively few in the Standard Creek valley and on lower slopes, but an altered equivalent of serpentinite occurs both above and in the vicinity of the Standard prospect and is found on the Standard dump suggesting that it may extend from the Royal to the Standard prospects. This altered equivalent includes quartz-talc schist and a mariposite-bearing quartz-carbonate rock (listwanite) and is considered significant in that it occurs associated with many gold deposits (e.g., see Wittkop, 1983; Panteleyev and Diakow, 1981).

### Mineralization

#### Royal Prospect

Mineralization at the Royal prospect was not observed because of snow conditions and the collapsed adit; however, it was described and sampled by Ostler (1980) as follows:

"The Royal Adit extends 13.6 m into sheared diorite at a bearing of 040°. Ten meters from the portal, the tunnel intersects a shear zone that strikes 240° and dips 60°N. The shear and accompanying tension gashes are filled with milky white quartz containing 2mm-long euhedral scheelite (CaWO<sub>4</sub>) crystals. Small rusty pits, probably from weathered pyrite are common on vein surfaces exposed in the adit.

At the working face; 13.6 m from the portal, is a 5cm-thick quartz vein that strikes 031° and dips 68°SE. The vein contains up to 0.5% scheelite indentified by a U.V. lamp.

Samples from the shear zone and the vein at the working face were taken and assayed:

	%WO <sub>3</sub>	Ag oz/t	gm/mt	Au oz/t	gm/mt
Portal + 10m vein	0.25	0.10	2.58	0.003	0.08
Portal + 10m shear	0.08	0.20	5.15	0.003	0.08
Portal + 13.6 vein	0.01	0.12	3.09	0.003	0.07

A 20m-long trench was dug just up the hill from the portal. It exposed a large milky quartz vein. The adit may have been an attempt to cross-cut to the vein below surface. The writer suspects that the adit came close but did not intersect the vein exposed in the trench above."

### Butte-I.X.L.

The Butte-I.X.L. workings lie off the north edge of the Royal 9 claim (Lot 5649). They are undoubtedly associated with the structure that strikes southwesterly and includes the Royal and possibly the Standard prospects. The property as described by Cairnes is as follows:

"The property is underlain, mainly, by banded, argillaceous, and tuffaceous sediments of the Noel formation and by substantial bodies of greenstone and associated, Bralorne dioritic rocks, most of which appear to be intrusive into the Noel. There are, also, sediments and greenstones of the Fergusson series and bodies of serpentine and peridotite.

The principal workings are at the main camp and consist of a crosscut adit 803 feet long, with short drifts from it, and a vertical shaft sunk 165 feet from the surface and connecting near the bottom with the crosscut at 300 feet from the portal.

The above work was designed to investigate exposures of vein quartz, one of which near the shaft is in sediments and another, about 200 feet southwest and farther up the hill, in greenstone. The structure of these deposits is not well defined, but they seem to strike about north 55 degrees west and to dip steeply to the southwest about parallel with the general trend of enclosing formations. The continuity to the adit-level was uncertain, although it appeared probable that the first-mentioned corresponds with a quartz vein intersected by the shaft at 90 feet below the collar and that the other is the one drifted on from the crosscut level. Very little mineralization was observed in these veins at the surface, though they are reported to carry low values in gold.

At adit-level a mineralized fissure with about the same attitude as the veins above was intersected at 750 feet from the portal in the greenstone-diorite formation. It has been driven on for 50 feet or more on either side of the crosscut and a shallow winze sunk on it in the west drift. As explored the fissure carries variable widths up to 2 feet of vein quartz which, in places, is heavily mineralized with pyrrhotite, chalcopyrite, and sphalerite with lesser pyrite and galena. The vein matter pinches out towards the faces of the drifts. Values up to about \$4 in gold a ton are reported to have been obtained from this mineralized quartz."

Galena-sphalerite-chalcopyrite-pyrite-bearing quartz veins were observed and sampled by the writer. Analyses of two samples are presented on Table 1 (Samples At 182 and At 183).

### Standard Prospect

The Standard prospect is situated at the eastern part of the property. An attempt was made to open the lower adit by hand trenching without success because of thick deposits of glacial till. The mineralization as described by Cairnes is as follows:

"For nearly 400 feet from the portal the principal adit cuts across interbedded argillaceous and cherty sediments of the Fergusson series. These strike northwesterly across the adit and dip northerly at about 65 degrees. At 100 feet from the portal the sediments are sheared and are intersected by a quartz vein, a few inches wide, with some attendant pyritic mineralization in the wall-rocks. At 150 feet a well-defined fault-fissure crosses the level and dips southwesterly at 75 degrees. At about 250 feet a strong, talcose shear crosses the adit in a more northerly direction, dipping 70 degrees easterly. Beyond this shear, the sediments, for about 25 feet, contain a network of quartz veins and veinlets, and the intervening wall-rock is sparsely mineralized with pyrite; below the shear a lot of iron oxide on the walls of the adit testify to the presence of more iron sulphides. The course and continuity of this mineralized vein zone are uncertain and no attempt has been made to follow it. At about 350 feet another shear, or fault, crossed the adit in an east-west direction and stands nearly vertical. Its relation to the talcose shear is not disclosed.

Between 400 and 620 feet the adit crosses highly altered rocks, which for much of this distance are intensely sheared and talcose. They appear to be mainly igneous types including altered serpentine, with some greenstone about midway of the section. At different places in this section the crosscut exposes considerable widths of quartz across zones up to several feet wide and striking apparently about northwesterly. Both quartz and wall-rocks carry pyrite and a little arsenopyrite. The section, too, includes a conspicuous amount of the bright green mineral, mariposite.

"Beyond this belt of highly altered rocks the crosscut again enters Fergusson sediments which persist to near the face where a rather coarse-textured, talc-carbonate rock, probably formed from serpentine, appears.

No sampling was attempted by the writer, but the management reports assays in gold ranging from less than a dollar to as much as \$240 a ton (with gold at \$30 an ounce) and visible gold is stated to have been seen in some crushed samples. Average values are not known, but channel samples across sections of the widest vein zone, about 250 feet from the portal, are reported to have assayed as high as \$5.10 in gold a ton.

At a point on the surface about 150 feet above and midway of the length of the adit is an open-cut or trench 30 feet long, exposing near the centre 4 feet of quartz lying between sediments to the southwest and probably altered serpentine to the northeast. The latter is sheared and carries an abundance of mariposite. Fifty feet or so higher and apparently about vertically above the face of the crosscut adit is an open-cut or short-caved adit, exposing sheared, talcose carbonate rock. Similar rock is exposed in a small creek bed about 50 yards to the southeast.

Over 100 feet higher up the slope on the east bank of the same creek and about 1,300 feet northeast of the portal of the crosscut adit is an open-cut across a narrow, but well-defined ridge, exposing a width of 15 to 20 feet of highly sheared rocks containing numerous quartz veinlets and spotted with mariposite. The ridge itself is a noticeable topographic feature and can be followed northwesterly for about 2,000 feet.

Trenching in the valley bottom to the southeast of the crosscut adit has exposed a width of about 30 feet of a mineralized zone striking northwesterly and standing nearly vertical. The zone is flanked to the southwest by serpentine and appears to be an altered, mineralized phase of this rock. It is composed mainly of talc and carbonate with an abundance of mariposite. The zone contains a network of quartz veinlets including many irregular, small masses of crystalline and chalcedonic quartz. In places it is liberally impregnated with pyrite and samples containing visible free gold are reported to have been found.

The short adit and open-cuts near the Standard camp expose sheared and altered sediments, containing veinlets of quartz along numerous slips and fractures which, in places, are coated with pyrite.

The foregoing description of the Standard workings indicates a series of shear zones, striking northwesterly and associated with vein quartz deposits and a disseminated, pyrite mineralization. It seems probable that both sulphide mineralization and quartz deposition are related to the serpentine alteration to talc and carbonate and have been affected by thermal solutions originating with the underlying Bendor batholith."

Mapping and sampling the dump by the writer revealed phyllitic argillite, talc-altered serpentinite containing mariposite and much quartz vein material. Samples of dump material were found to contain significant amounts of arsenic (up to 1310 ppm or 0.13%) and minor gold values (up to 0.008 ounces per ton in a panned concentrate). The talc altered serpentinite also contained significant nickel values (up to 1120 ppm or 0.11% - see Table 1).

#### Other

Elsewhere on the property, the sedimentary rocks of the Bridge River series are locally quartz-veined and contain amounts of pyrite. Distribution of the quartz-veined sedimentary rocks appears to have some relationship to the distribution of molybdenum in soil (see below) and quartz-veined rocks contained 4 to 13 ppm molybdenum suggesting that a centre of quartz stockwork mineralization may be present but this has not been proven by mapping, nor has geochemical sampling fully outlined the zone.

TABLE 1

<u>ROCK SAMPLE DESCRIPTIONS</u>			Au ppb	As ppm
248 AT	181	Quartz-mariposite rock - Standard dump.	10	
	182	Quartz-mariposite rock. Standard dump.	10	
	183	Quartz vein material from Butte-IXL dump.	460	
	184	Quartz vein material with chalcopryrite, sphalerite, galena, from Butte-IXL dump.	90	
	211	Rusty weathering biotite phyllite.	10	4
	213	Pyritized diorite.	10	4
	215	Green tuff with minor disseminated pyrite.	10	4
	217	Phyllitic argillite interlayered with quartzite - contains disseminated pyrite.	10	12
	218	Quartzite and/or recrystallized chert containing vuggy quartz veins - rusty weathering.	10	32
	220	Grey phyllite from Standard dump.	10	516
	220a	Panned concentrate of crushed dump material.	0.001 oz/t	6
	221	Talc-quartz-mariposite rock - Standard dump.	10	154
	221a	Panned concentrate of crushed dump material.	0.006 oz/t	
	222	Serpentinite with some quartz vein material - Standard dump.	10	1310
	222a	Panned concentrate of crushed dump material.	0.008 oz/t	
	223	Quartz-mariposite-talc rock.	10	344
	224	Panned concentrate of crushed dump material.	0.001 oz/t	
L18E	6+50S	Fine-grained chert interlayered with biotite phyllite containing vuggy qtz veins.	10	6
L20E	11+90S	Epidote-rich greenstone (float) with disseminated pyrrhotite.	10	2
L20E	7+60S	Pyritized metasilstone.	10	4
248 MT	1	Quartz-veined quartzite with abundant pyrite.	10	4
	MT 2	Gabbro-pyrite on fractures.	10	2
L37-39	21+00S	Quartz-veined quartz diorite.	10	8

## 1984 WORK PROGRAM

During the period October 3 to November 6, 1984, an exploration program consisting of geophysical and geochemical surveys was carried out on the Standard Creek property. Geological mapping was also carried out but was hampered by an unusually early snow fall. An unsuccessful attempt was made to open up the Standard adit by hand. In addition, topographic base maps at a scale of 1:2,500 and 1:5,000 were prepared from airphotographs by Triathlon Mapping Corporation.

To facilitate fieldwork, a flagged grid was established. Lines were laid out using compass and hip chain at 100 or 200 metre spacing and flagged at 25-metre intervals. The lines were tied into Hillside Energy's grid (Lines 1E to 12E, Figure 8) on the western part of the property. The trail along Standard Creek was used as a base line (Line 16+00 South).

## GEOCHEMICAL SURVEY

### Method

Soil sampling was carried out at 50-metre intervals on flagged lines as shown on Figure 8. Soil material was collected with grubhoes and consisted mainly of glacial till taken at depth of 20 to 30 centimetres, well below the "A"



horizon. Above treeline, fine brown grassland soil was locally present. Stream sediment samples were collected at selected locations. Stream sediment samples consisted of silt or unsorted gravel, taken from active parts of the stream channel. Rock samples were also taken at selected locations (Table 1).

The soil geochemical survey was intended to test primarily for gold and silver; however, extensive overburden in the form of valley bottom fill and prominent lateral glacial moraines on valley walls indicated that more mobile pathfinder elements such as molybdenum, copper, zinc, and arsenic should be used. Previous geochemical surveys by Hillside Energy on the western part of the claim group had identified prominent zinc and arsenic anomalies along with scattered gold, tungsten and mercury anomalies. Results of this work are summarized on Figures 8a to 8c. In addition, nickel and cobalt analyses were possibly useful, along with magnetic surveys, to outline serpentinite bodies. Manganese and iron were analyzed mainly to assist with evaluating any multi-element anomalies obtained.

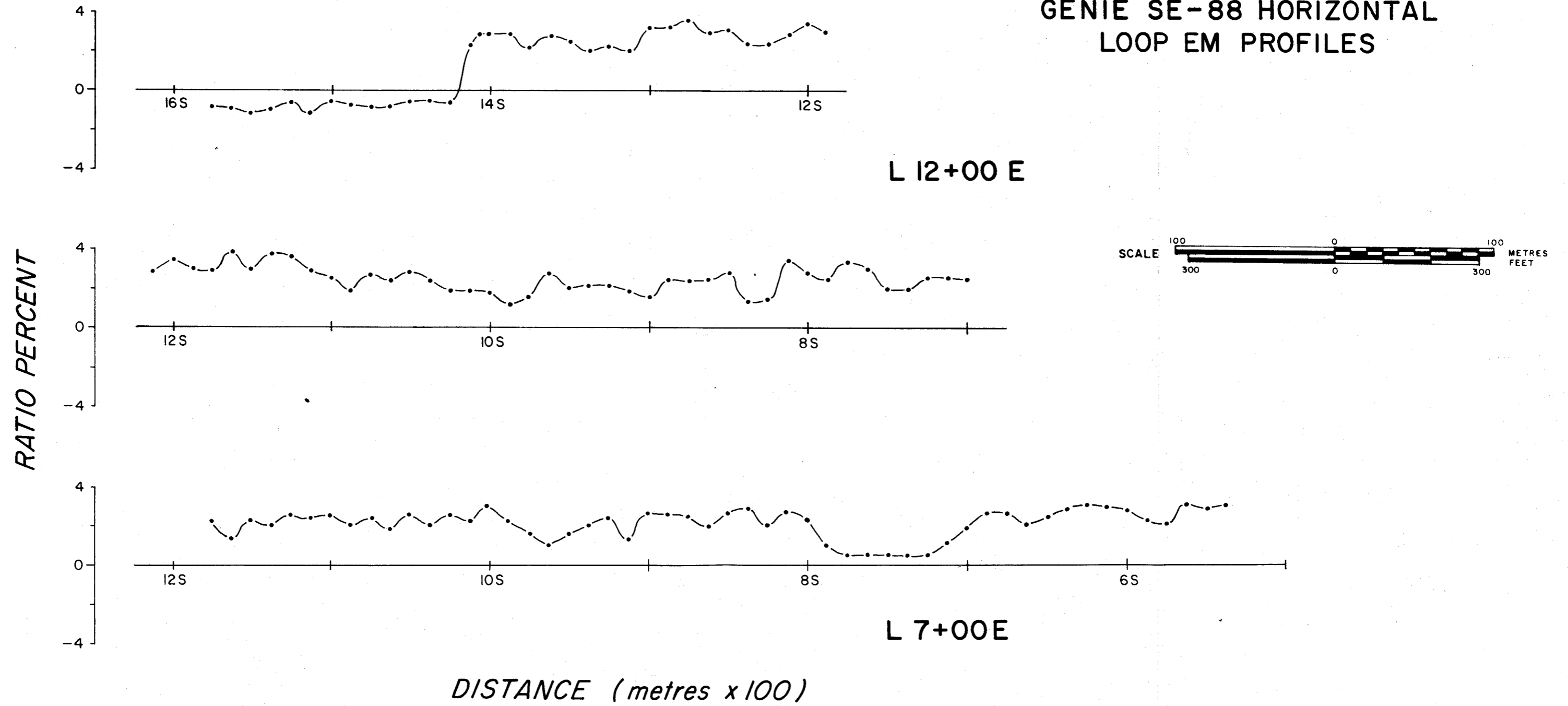
Soil and stream sediment material was placed in Kraft paper bags and shipped to Rossbacher Laboratory Ltd. for preparation and analyses. Samples were screened to -80 mesh and analyzed for molybdenum, copper, nickel, cobalt, manganese, iron, silver, lead, zinc, arsenic and gold by standard atomic absorption techniques.

Frequency Pair 112 / 3037  
Survey date : Oct. 22, 1984.

LOOP SEPARATION = 60 metres

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STANDARD CREEK PROPERTY  
LILLOOET MINING DIVISION - BRITISH COLUMBIA

### GENIE SE-88 HORIZONTAL LOOP EM PROFILES



## Results

Soil sample sites and selected results are plotted on Figures 8a to c and results presented in Appendix I. Some of the geochemical results of interest are summarized below:

### Arsenic Geochemistry

Much of the Standard Creek area has a high arsenic background. Prominent arsenic anomalies ( $> 60\text{ppm}$ ) with values ranging up to  $4160\text{ ppm}$  ( $0.41\%$ ) in soils, occur in a number of east-west trenching belts across the property. The most prominent anomalies are on the Royal claims and in the vicinity of the Standard prospect. The former is about  $1500\text{ metres}$  long by  $50\text{ to }200\text{ metres}$  wide and the latter is  $700\text{ metres}$  long by  $200\text{ to }300\text{ metres}$  wide (open to the south-east).

### Gold and Silver Geochemistry

Scattered gold anomalies occur throughout the grid area, the best value being  $350\text{ ppb}$  to the north of the Standard prospect. Anomalous silver values ( $0.8\text{ to }1.6\text{ ppm}$ ) are also scattered.

### Zinc Geochemistry

Moderately to strongly anomalous ( $> 200\text{ ppm}$ ) zinc values occur mainly in the western part of the property. Work by the Hillside Energy outlined a prominent  $+500\text{ ppm}$  zinc anomaly north of the Royal prospect.

### Molybdenum Geochemistry

Molybdenum values are usually high ( $10\text{ to }35\text{ ppm}$ )

in soil over parts of the Standard prospect area and much of the area between Lines 14 and 20. The anomalous area has not been defined to the west because Hillside Energy did not analyze for the element. The high values suggest that the sedimentary rocks might have unusually high metal contents, or else may be related to the quartz veining which has been observed locally. Molybdenum in soils might indicate areas where quartz veining and hence hydrothermal activity was more intense.

#### Nickel and Cobalt Geochemistry

Anomalous nickel (> 200 ppm) and cobalt (> 20 ppm) appear to have potential in outlying distribution of the altered ultramafic rocks. Anomalous nickel values in the Standard prospect area in the vicinity of Line 18 appears to define the ultramafic rocks. The high nickel and cobalt values in the vicinity of Line 20E, 12 to 16S are unexplained.

#### Copper and Lead Geochemistry

Copper values are generally low but elevated to anomalous values (> 80 ppm) occur associated with higher nickel values. Lead values are uniformly low.

#### Discussion

Geochemical soil sampling has revealed the presence of prominent zinc, arsenic, molybdenum, and nickel geochemical anomalies. The zinc and arsenic anomalies are considered to be significant because 1) both arsenopyrite and sphalerite

occur in gold-quartz veins at Bralorne, 2) both are relatively mobile in the weathering environment and 3) both are known to be good pathfinder elements for gold. Molybdenum anomalies in soils appear to be related to quartz veining observed in outcrops. Areas of high molybdenum might indicate "hot spots" of hydrothermal activity and should be followed up with detailed mapping and detailed geochemical sampling.

Gold and silver anomalies in soil are scattered and widespread. This may be due to their relative immobility compared to zinc and arsenic as well as the presence of lateral glacial moraines which occur in a number of benches along the valley walls.

Selected series of samples should be tested for antimony and mercury. Both are also possible pathfinder elements for gold and both occur in many mineral prospects in the Bralorne Gold Camp.

## GEOPHYSICAL RESULTS

A program of very low frequency electromagnetic and magnetic surveys were completed over a large portion of the survey grid. In some areas, induced polarization and horizontal loop electromagnetic surveys were also completed.

A Scintrex MP-2 proton magnetometer, and a Sabre Model 27 VLF-EM receiver were used for the surveys. Readings were taken at 25 metre intervals on lines generally spaced 100 metres apart. Detailing was performed in selected areas with a Scintrex Genie SE88 horizontal loop electromagnetic system. A Sabre frequency domain induced polarization system was used for the I.P. survey.

### Standard Adit Area

In the vicinity of the Standard adit all four techniques were employed in order to geophysically "fingerprint" the responses of the various rock types and the mineralized zone, reported by Clothier (1933), (Figures 9 to 11 and 13).

The induced polarization and resistivity surveys were most effective in outlining potential mineralized zones of the type reported in the Standard adit between 214 and 284 feet from the portal (70 feet of 0.125 oz/ton Au). The vertical projection of this zone is marked by a pronounced apparent resistivity high (greater than 400 ohm metres) with a co-incident weak relative high I.P. response (greater than 3% frequency effect). The responses obtained could

be accounted for by an introduction of silica in the form of quartz stringers carrying the minor amounts of pyrite into the talcose vein zone as reported by Clothier. The zone of high resistivity is approximately 75 metres wide, strikes parallel to the 16S baseline, and extends from station 15 + 15S on L37E to 15 + 50S on L35E.

The talc-altered serpentinite bodies are characterized by very distinct I.P. highs (from 10-40 p.f.e.) and marked apparent resistivity lows (from 50 to 250 ohm metres). There is a local 50 gamma magnetic high in the vicinity of the talc-altered serpentinite outcrop located at 14 + 00S on L37E. The unaltered serpentinites located just south of the baseline between L38 and 39E corresponds with a marked magnetic high, with values exceeding 1200 gammas above background (Figure 9). The talc alteration would therefore appear to have removed the magnetite from the serpentinite bodies.

A linear VLF-electromagnetic conductor occurs immediately north of the talc-altered serpentinite at 13 + 50S between Lines 35 and 39E. The response could be caused by a near surface shear zone, as is further evidenced by a co-incident strong, topographic linear feature. This shear is believed to represent the extension of the Cadwallader fault.

Further induced polarization and resistivity surveys will be required to fully outline the resistivity high zone detected by the present survey. Readings should be obtained

for a minimum of  $n=2$  to 3, in order to allow sufficient depth penetration to detect any unoxidized sulphides present.

#### Royal Creek Area

Very low frequency electromagnetic and magnetic surveys were completed over the grid in the Royal Creek area (Figures 12 and 13). Horizontal loop electromagnetic profiles were also completed on lines 7 and 12E.

The magnetometer survey outlined a 400 gamma east-west trending high zone located between lines 16 and 20E from 5 + 00 to 10 + 00S. This anomaly is probably caused by an underlying serpentinite body. Two other lower level magnetic anomalies were also detected at between lines 16 and 20E at 14 + 00S and between L12E, 13 + 00S and L7E, 10 + 00 to 14 + 00S. These lower level anomalies may outline the more highly altered serpentinite rocks.

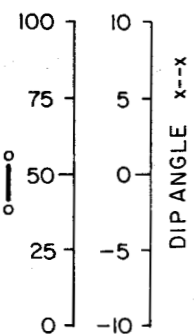
The 400 gamma magnetic high anomaly is separated from the lower level anomalies by a weak but continuous VLF-electromagnetic conductive zone. This conductor is trending approximately northwesterly co-incident with a marked topographic linear. It strikes from approximately 3 + 00 to 4 + 00S on L7E to 9 + 00 to 12 + 00S on L18E. It probably represents a major shear zone, perhaps a splay of the Cadwallader fault.

A forty metre wide weakly conductive zone was detected by the Genie SE88 horizontal loop electromagnetic system, centred at 7 + 50S on L7E. This weak conductor is flanked on each side by anomalous arsenic soil anomalies and will therefore require further evaluation.

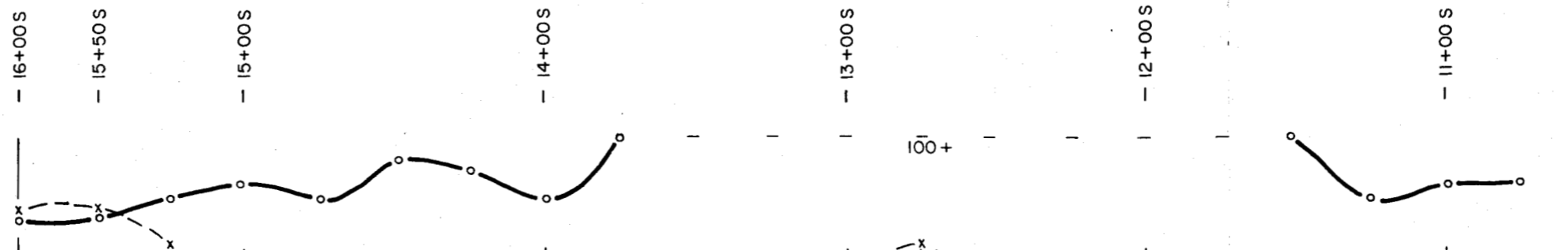
*Donald J. Allen*



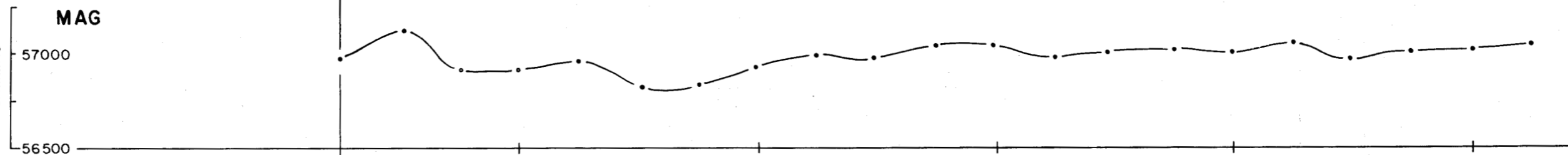
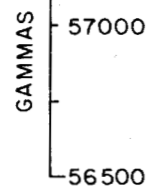
(%) RELATIVE FIELD STRENGTH



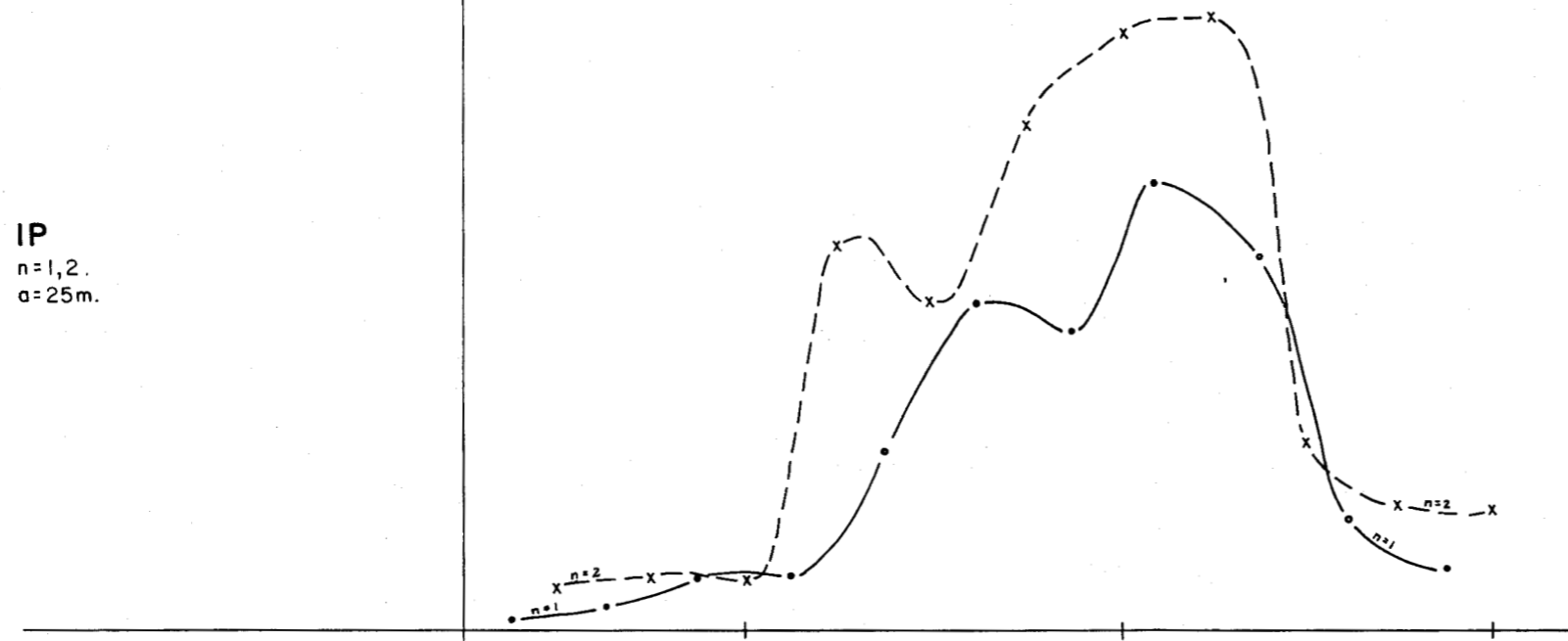
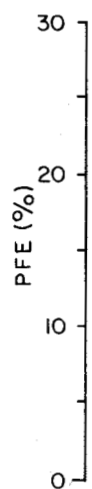
VLF - EM  
Annapolis



MAG

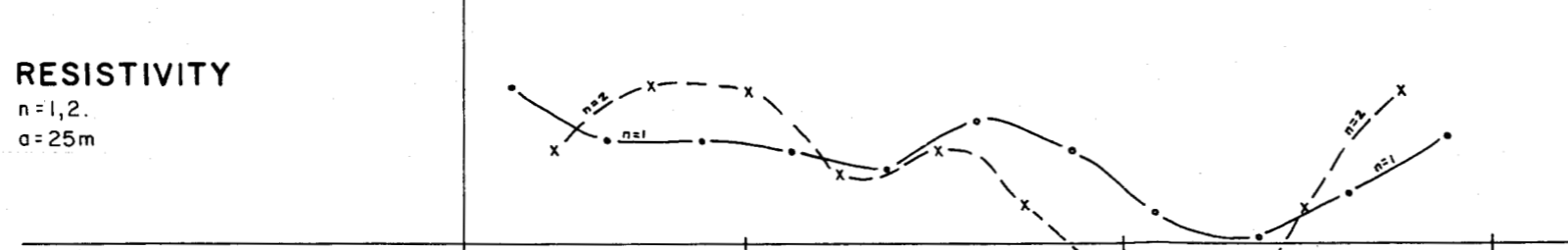
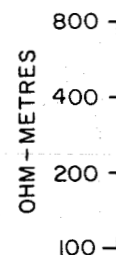


IP  
n=1,2.  
a=25m.



RESISTIVITY

n=1,2.  
a=25m

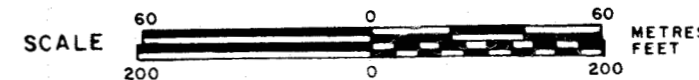


BASELINE

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# GEOPHYSICAL PROFILES COMPARISON

## L 35 E



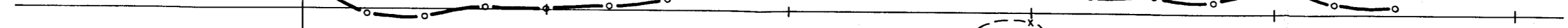
Donald S. Allen  
exploration Ltd

(%) RELATIVE FIELD STRENGTH

100  
75  
50  
25  
0  
-25  
-50  
-75  
-100  
10  
5  
0  
-5  
-10  
DIP ANGLE x-x

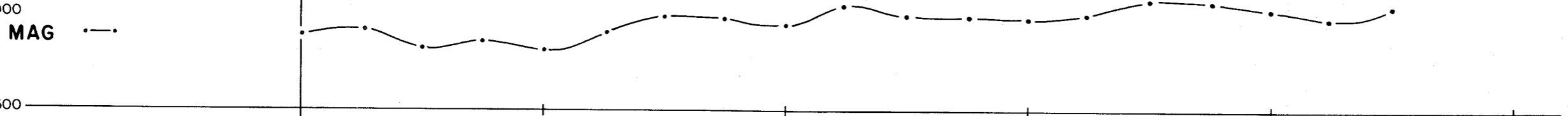
VLF-EM  
Annapolis

-16+00 S  
-15+00 S  
-14+00 S  
-13+00 S  
-12+00 S  
-11+00 S



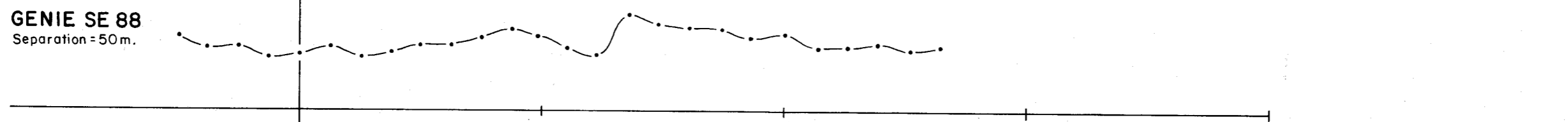
GAMMAS

57000  
MAG  
56500



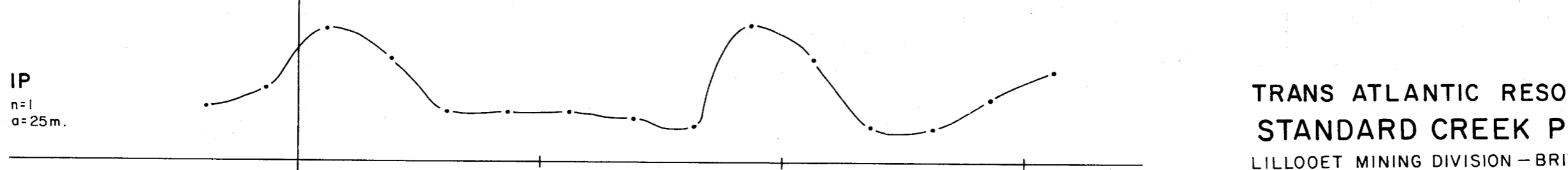
RATIO %

GENIE SE 88  
Separation = 50m.



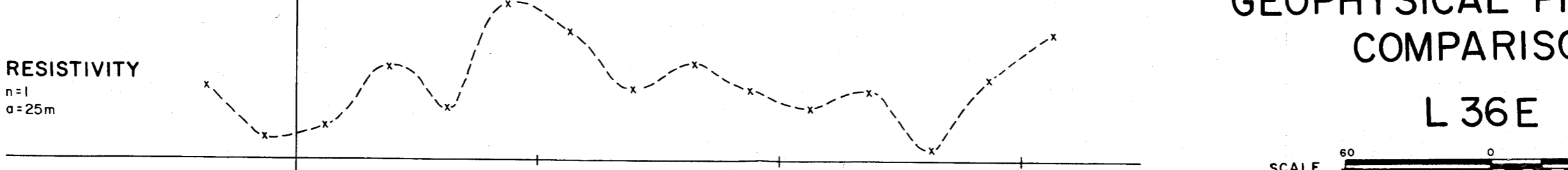
PFE (%)  
15  
10  
5  
0

IP  
n=1  
a=25m.



OHM-METRES  
800  
400  
200  
100

RESISTIVITY  
n=1  
a=25m

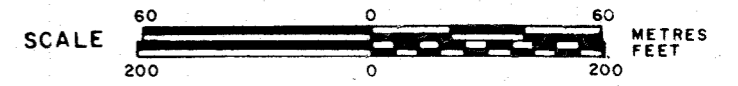


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# GEOPHYSICAL PROFILES COMPARISON

## L 36 E

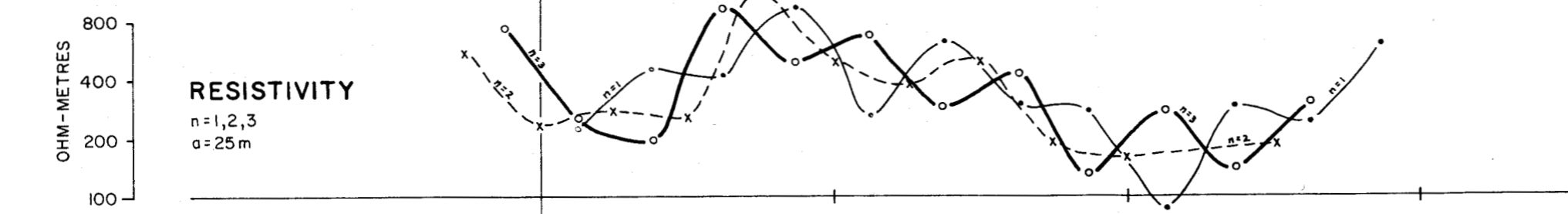
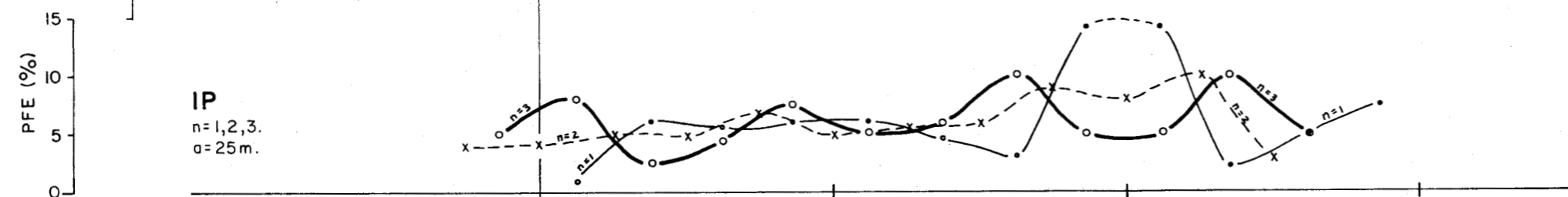
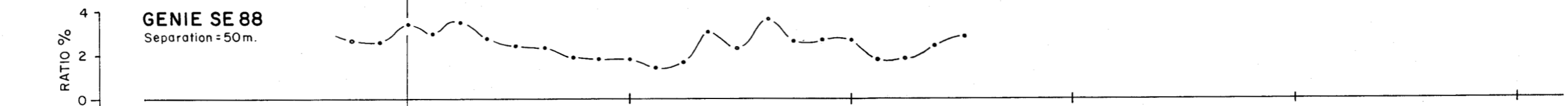
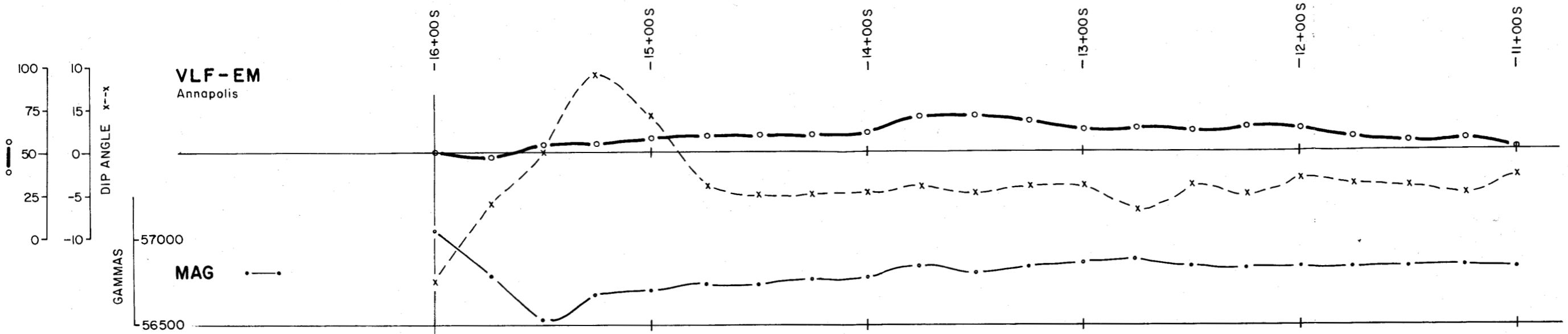


*Donald S. Allen*  
A.M. exploration Ltd

Nov. 16, 1984

Figure 10b

(%) RELATIVE FIELD STRENGTH



**GEOLOGY OF ADIT**  
after Clothier, 1933.

Fergusson Sediments | Altered Serpentine |  
dip 65° N

BASELINE

Partial (?)

Top of cavc in.

2" Q. vein mpy in wall.

Fault - dip SW 75°

70 m. of 0.125 oz/ton Au.

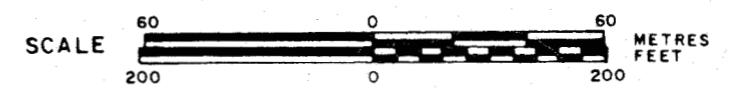
N/dip 70°E Shear - telocose vein zone, py-Q. stringer.

Shear - fault - vertical

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# GEOPHYSICAL PROFILES COMPARISON

## L 37 E



*Donald S. Allen*  
**A.M.** exploration Ltd.

## REFERENCES

- Bellamy, J. and Saleken, L. W. (1983). Bralorne Gold Mine G.A.C.-M.A.C. Fieldtrip No. 4 Guidebook: Some Gold Deposits in the Western Canadian Cordillera, pp. 23-39.
- Brownlee, D. J. and Fairbank, B. D. (1980). Geochemical Report on the Jana Property, B. C. Ministry of Mines and Pet. Resources Assessment Report 8001.
- Cairnes, C. E. (1937). Geology and Mineral Deposits of the Bridge River Mining Camp, B.C. Canada Geol. Survey Mem. 213.
- Clothier, G. A. (1932). I.X.L. and Butte Groups, Cadwallader Gold Mines Ltd. (Royal Group) in B. C. Department of Mines Ann. Rept. for 1932, p. A226.
- Clothier, G. A. (1933). Standard Gold Mines, Butte-I.X.L. Gold Mines Ltd. in B. C. Department of Mines Ann. Report for 1933, p. A273-274.
- Goldsmith, L. B. and Tyralla, L. M. (1980). Geology of a portion of the Piebiter Creek Property. B. C. Ministry of Energy, Mines and Pet. Resources Assessment Report 8657 for Chopper Mines Ltd.
- Joubin, F. R. (1948). Bralorne and Pioneer Mines in Structural Geology of Canadian Ore Deposits. Can. Inst. Mining & Metallurgy, Jubilee Volume, pp. 168-177.
- McCann, W. S. (1922). Geology and Mineral Deposits of the Bridge River Map-area, B.C. Canada Geol. Survey Memoir 130.
- Melrose, D. L. and Fairbank, B. D. (1982). A Report on a Geochemical Survey of the Jana-Butte-Royal-Standard Claim Group, B. C. Ministry of Mines and Pet. Resources Assessment Report 10211.
- Ostler, J. (1980). Geochemical and Geological Report on the Jana-Butte-Royal-Standard Claim Group. B.C. Ministry of Energy, Mines and Pet. Resources Assessment Report 8878.
- Panteleyev, A. and Diakow, L. J. (1981). Cassiar Gold Deposits, McDame Map-Area in B.C. Ministry of Energy, Mines and Pet. Resources, Paper 1982-1 pp. 156-161.

REFERENCES (Cont'd.)

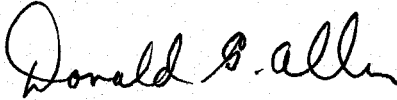
- Pearson, D. E. (1975). Mineralization in the Bridge River Camp in B. C. Ministry of Mines Annual Report for 1975, pp. G58-53.
- Roddick, J. A. and Hutchison, W. W. (1973). Pemberton (East Half) Map-Area, B.C. Canada Geol. Survey Paper 73-17.
- Sawyer, J. P. P. (1980). Report on the Cook Option Properties and Jana Claim, Bridge River Area in Statement of Material Facts of Hillside Energy dated October 6, 1980.
- Sheppard, E. P. (1973). Geological Report on the Tom and Pat Claims, Royal Peak, B.C. for Chopper Mines in Statement of Material Facts for Chopper Mines Ltd. dated August 31, 1983.
- Wittkopp, R. W. (1983). Hypothesis for the Localization of Gold in Quartz Veins, Alleghany District, California. California Geology, June, 1983, pp. 123-127.
- Woodsworth, G. T., Pearson, D. E., and Sinclair, A. J. (1977). Metal Distribution Patterns across the Eastern Flank of the Coast Plutonic Complex, South Central B. C. Econ. Geol., vol. 72, pp. 170-183.
- Woodsworth, G. T. and Roddick, J. A. (1977). Geology of the Pemberton Map-Area, Canada Geol. Survey Open File 482.
- Wright, R. C., Nagel, J. and McTaggart, K. C. (1982). Alpine Ultramafic Rocks of Southwestern British Columbia. Canadian Journ. Earth Sciences, vol. 19, pp. 1156-1173.

CERTIFICATE

I, Donald G. Allen, certify that:

1. I am a Consulting Geological Engineer, of A & M Exploration Ltd., with offices at #214 - 850 West Hastings Street, Vancouver, British Columbia.
2. I am a graduate of the University of British Columbia with degrees in Geological Engineering (B.A.Sc., 1964; M.A.Sc., 1966).
3. I have practised my profession of exploration geologist since 1964 to present in British Columbia, the Yukon, Alaska and various parts of the Western United States.
4. I am a member in good standing of the Association of Professional Engineers of British Columbia.
5. This report is based on field work carried out personally on October 3 and October 18 to 21; on field work carried out by A & M Exploration Ltd., during the period October 18 to October 25, 1984, and on information listed under References.
6. I hold no interest, nor do I expect to receive any, in the Standard Creek property or in Trans Atlantic Resources Inc.
7. I consent to the use of this report in a Statement of Material Facts or in a Prospectus in connection with the raising of funds for the project covered by this report.

November 28, 1984  
Vancouver, B. C.

  
Donald G. Allen  
P. Eng. (B. C.)

APPENDIX I

Analytical Results

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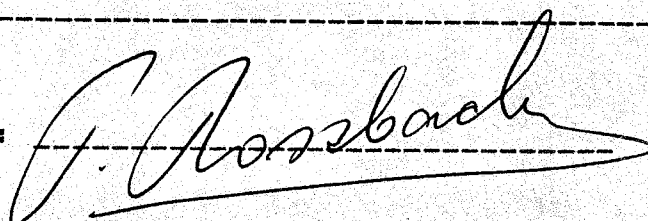
## CERTIFICATE OF ANALYSIS

TO : A&M EXPLORATION LTD.  
214-850 W. HASTINGS STREET  
VANCOUVER, B.C.  
PROJECT No. : 248

CERTIFICATE No. : 84448 - 1  
INVOICE No. : 5013  
DATE ANALYSED: Oct. 11, 1984  
FILE NAME: A&M448

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ag	PPM Zn	PPM Pb	PPB Au
A	248 AT 181	1	16	0.4	34	4	10
A	182	1	18	0.2	54	4	10
A	183	5	42	0.4	48	14	460
A	248 AT 184	1	1860	2.8	8800	180	90

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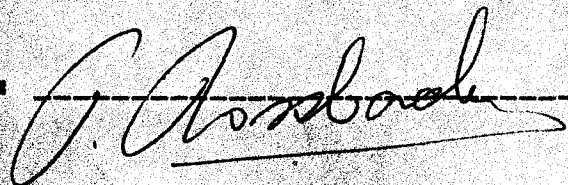
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 214-850 W. HASTINGS ST.  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84488 - 1  
 INVOICE No.: 5077  
 DATE ANALYSED: NOV. 7, 1984  
 FILE NAME: A&M488

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ni	PPM Co	PPM Mn	% Fe	PPM Ag
S	ST#2-OW- 500 S 1600S	7	94	520	46	750	4.2	1.0
S	L20 550 S 1650S	2	18	56	12	310	2.7	0.4
S	600 S 1700S	2	22	58	14	550	3.3	0.4
S	650 S 1750S	1	26	28	8	300	3.1	0.2
S	700 S 1800S	2	20	22	8	270	3.3	0.2
S	750 S 1850S	2	14	22	8	220	3.2	0.2
S	800 S 1900S	1	4	4	2	90	1.2	0.2
S	L20 850 S 1950S	3	26	60	10	280	3.2	0.2
S	900 S 2000S	2	8	16	4	180	2.3	0.2
S	950 S 2050S	1	6	20	8	300	3.2	0.2
S	ST#2-OW-1000 S 2100S	3	26	36	14	810	3.4	0.4
S	L19 ST#2-1W- 850 S 1950S	3	18	40	8	260	3.7	0.2
S	900 S 2000S	2	22	26	8	730	2.8	0.2
S	ST#2-1W- 950 S 2050S	2	8	10	4	160	1.5	0.2
S	248 MT 1	14	62	8	2	450	1.6	0.4
A	248 MT 2	4	96	98	36	730	5.3	0.2
S	84-248 GS 76 S.LINE 784 M	3	22	34	8	240	2.8	0.2
S	84-248 GS 78	3	26	88	16	560	2.3	0.2
S	84-248 GS 77	8	20	62	14	1700	1.9	0.6
S	L-W 0+00 S	3	52	178	32	810	4.3	0.4
S	0+50 S	2	48	132	28	760	4.2	0.2
S	1+00 S	2	46	144	28	820	3.7	0.2
S	1+50 S	3	62	322	26	810	3.8	0.2
S	2+00 S	4	46	84	12	600	3.0	0.2
S	2+50 S	4	80	122	20	560	3.9	0.2
S	3+00 S	2	86	396	42	820	5.2	0.2
S	3+50 S	3	58	124	22	540	3.9	0.2
S	4+00 S	5	52	122	16	520	3.7	0.2
S	4+50 S	5	44	100	22	840	3.3	0.2
S	5+00 S	9	56	110	20	710	3.3	0.2
S	LW 5+50 S	12	54	98	16	830	3.2	0.2
S	6+00 S	4	38	86	14	570	2.8	0.2
S	6+50 S	4	40	120	18	680	3.5	0.4
S	7+00 S	5	34	86	14	400	3.3	0.4
S	7+50 S	7	46	98	18	910	3.2	0.2
S	8+00 S	5	44	92	12	580	3.8	0.2
S	8+50 S	13	46	118	14	860	2.7	0.2
S	LW 9+00 S	11	10	34	6	280	2.2	0.2
S	B4CRS 3 L2 0+100	3	74	150	24	740	3.0	0.2
S	4 L2 1+ 50	3	64	100	16	590	2.8	0.2

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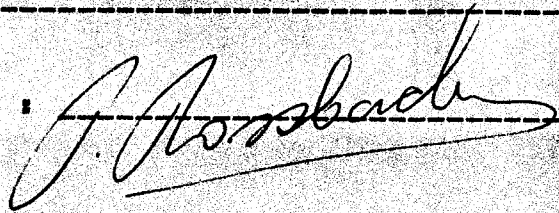
## CERTIFICATE OF ANALYSIS

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS ST.  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84488.A - 1  
 INVOICE No.: 5078  
 DATE ANALYSED: NOV. 7, 1984  
 FILE NAME: A&M488.A

PRE FIX	SAMPLE NAME	PPM Zn	PPM Pb	PPB Au	PPM As
S	ST#2-OW- 500 S 1600S	202	12	10	48
S	550 S 1650S	70	4	10	82
S	600 S 1700S	88	2	10	100
S	650 S 1750S	66	2	10	12
S	700 S 1800S	58	4	10	6
S	750 S 1850S	46	6	10	2
S L20	L20 800 S 1900S	16	2	10	2
S	850 S 1950S	62	2	10	26
S	900 S 2000S	36	6	10	6
S	950 S 2050S	64	4	10	70
S	ST#2-OW-1000 S 2100S	116	2	10	140
S	ST#2-1W- 850 S 1950S	60	4	10	14
S L19	900 S 2000S	84	4	10	72
S	ST#2-1W- 950 S 2050S	30	2	10	10
S	248 MT 1	94	12	10	4
A	248 MT 2	124	4	10	2
S	84-248 GS 76 S. LINE 784 M	62	4	10	26
S	84-248 GS 78	64	2	10	26
S	84-248 GS 87	50	2	10	14
S	L-W 0+00 S	98	4	10	30
S	0+50 S	96	4	10	24
S	1+00 S	92	4	10	24
S	1+50 S	120	8	10	66
S	2+00 S	100	8	10	28
S	2+50 S	110	4	10	28
S	3+00 S	150	4	10	50
S	3+50 S	108	4	10	10
S	4+00 S	122	4	10	14
S	4+50 S	120	4	10	10
S	5+00 S	140	4	10	10
S	L-W 5+50 S	136	4	10	10
S	6+00 S	86	4	10	10
S	6+50 S	112	4	10	20
S	7+00 S	92	4	10	36
S	7+50 S	126	4	10	36
S	8+00 S	112	2	10	100
S	8+50 S	86	2	10	50
S	L-W 9+00 S	54	2	10	46
S B4CRS	3 L2 0+100	124	12	10	52
S	4 L2 1+ 50	104	12	10	44

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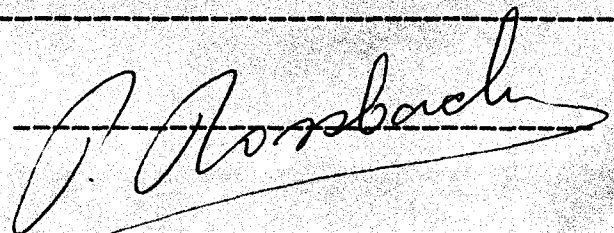
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 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479 - 1  
 INVOICE No.: 5058  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ni	PPM Co	PPM Mn	% Fe	PPM Ag	PPM Zn	PPM Pb	
S	GS	1	1	20	26	8	520	1.5	0.2	76	12
S		2	1	20	32	8	410	2.4	0.2	90	8
S		3	1	14	12	6	300	2.2	0.2	206	8
S		4	1	28	26	8	280	3.5	0.2	66	10
S		5	1	14	14	6	260	2.3	0.2	58	6
S		6	1	14	14	6	470	2.3	0.2	66	6
S		7	1	12	14	6	230	1.8	0.2	56	6
S		8	2	18	20	10	360	2.8	0.2	76	4
S		9	2	16	52	10	290	2.4	0.8	60	8
S		10	2	30	170	24	410	3.1	0.4	96	6
S	GS	11	3	32	268	40	790	3.5	0.2	114	8
S		12	11	56	162	34	820	4.0	0.4	122	8
S		13	7	54	206	32	840	3.9	0.6	112	8
S		14	3	58	270	34	620	4.3	0.6	96	8
S		15	7	72	178	30	750	4.3	0.6	106	6
S		16	8	46	130	28	860	4.0	0.4	116	6
S		17	3	64	114	22	510	3.5	0.4	100	4
S		18	115	20	68	16	860	9.7	0.2	28	6
S		19	10	66	162	30	790	4.5	0.2	122	8
S		20	5	56	154	22	630	4.2	0.2	130	6
S	GS	21	4	44	88	18	720	3.1	0.2	126	8
S		22	5	40	84	16	770	3.3	0.2	136	8
S		23	3	48	88	12	630	3.1	0.4	98	10
S		24	3	44	82	18	720	3.0	0.4	120	8
S		25	3	38	68	12	530	2.8	0.6	110	8
S		26	8	46	80	20	690	3.5	0.6	118	8
S		27	4	36	68	16	570	3.0	0.2	110	8
S		28	2	12	18	2	140	0.8	0.2	32	6
S		29	2	46	94	16	410	3.3	0.4	94	8
S		30	4	52	90	18	630	3.5	0.4	118	6
S	GS	31	3	46	76	18	740	3.0	0.2	112	8
S		32	3	30	70	14	550	3.2	0.2	104	8
S		33	3	38	146	20	510	3.7	0.2	126	8
S		34	2	38	312	42	830	4.6	0.2	98	4
S		35	1	30	74	16	400	3.2	0.2	100	6
S		36	1	30	470	26	720	3.1	0.4	84	6
S		37	2	32	74	16	540	3.2	0.4	104	8
S		38	3	50	92	20	690	3.4	0.4	116	6
S		39	2	48	94	20	670	3.3	0.4	104	6

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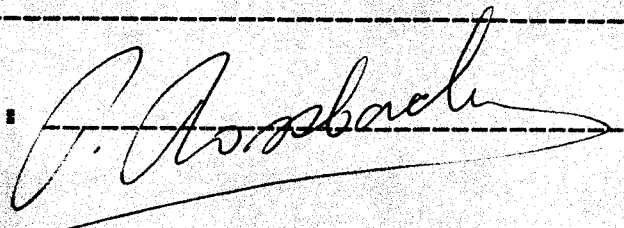
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TO : A&M EXPLORATION LTD.  
214-850 W. HASTINGS STREET  
VANCOUVER, B.C.  
PROJECT No.: 248

CERTIFICATE No.: 84479.A - 1  
INVOICE No.: 5059  
DATE ANALYSED: NOV. 5, 1984  
FILE NAME: A&M479.A

PRE FIX	SAMPLE NAME	PPB Au	PPM As
	GS 1	10	14
	2	10	16
	3	10	12
	4	10	36
	5	10	14
	6	10	12
	7	10	10
	8	10	52
	9	10	62
	10	10	170
	GS 11	10	400
	12	10	164
	13	10	170
	14	10	228
	15	10	180
	16	10	76
	17	10	52
	18	10	336
	19	10	42
	20	10	40
	GS 21	10	34
	22	10	28
	23	60	40
	24	10	22
	25	10	18
	26	350	26
	27	10	30
	28	10	14
	29	20	46
	30	10	42
	GS 31	10	42
	32	10	160
	33	10	412
	34	10	630
	35	10	92
	36	10	94
	37	10	44
	38	10	48
	39	10	70

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TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479 - 2  
 INVOICE No.: 5058  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ni	PPM Co	PPM Mn	% Fe	PPM Ag	PPM Zn	PPM Pb	
S	GS	40	5	42	78	12	490	3.2	0.6	88	14
S		41	4	44	80	12	380	3.0	0.2	78	8
S		42	4	42	80	10	380	3.2	0.4	96	8
S		43	6	44	80	18	680	3.6	0.2	124	8
S		44	5	40	82	26	710	3.3	0.2	112	6
S		45	5	44	86	18	690	3.6	0.2	122	10
S		46	4	40	78	16	850	2.9	0.2	132	8
S		47	4	48	82	18	690	3.5	0.2	126	6
S		48	5	26	46	12	460	1.7	0.2	52	6
S		49	4	38	84	16	480	3.3	0.2	94	6
S	GS	50	4	34	82	12	500	2.8	0.2	78	8
S		51	3	30	66	14	660	2.7	0.2	92	8
S		52	3	14	46	10	480	1.8	1.2	64	8
S		53	4	30	68	16	630	3.0	0.2	92	8
S		54	3	30	96	28	930	3.6	0.4	170	10
S		55	4	20	74	10	320	2.8	0.4	62	8
S		56	4	30	94	16	690	3.1	0.2	96	8
S		57	3	50	382	34	790	5.0	1.6	102	8
S		58	3	28	148	16	480	3.4	0.2	78	6
S		59	3	46	210	30	880	4.3	0.6	96	8
S	GS	60	3	28	98	14	390	3.1	0.2	66	8
S		61	4	44	98	18	600	3.5	0.2	104	8
S		62	4	26	62	8	270	2.3	0.2	54	10
S		63	12	38	98	18	750	3.9	0.4	108	8
S		64	6	40	84	16	560	3.5	0.2	102	8
S		65	19	46	74	20	560	3.8	0.2	106	10
S		66	5	66	126	26	990	3.8	0.2	122	10
S		67	4	42	92	18	850	3.4	0.2	110	8
S		68	4	58	104	18	600	3.5	0.6	106	8
S	(L38 12+50S)	69	4	56	102	20	640	3.6	0.4	118	8
S	(L38 13+00S)	69	4	30	74	12	630	2.7	0.2	88	8
S		70	4	36	70	16	910	3.0	0.2	96	8
S		71	4	44	98	14	460	3.6	0.2	102	8
S		72	4	48	116	20	640	3.7	0.2	86	6
S		73	3	44	170	24	860	3.9	0.2	96	8
S		74	1	64	212	28	770	6.3	0.6	88	20
S	GS	75	2	22	410	46	1040	3.2	0.2	92	8
S	TS	1	9	40	250	28	900	4.7	0.2	150	8
S		2	4	74	300	16	510	2.9	1.4	142	8

CERTIFIED BY :

*J. Rossbach*

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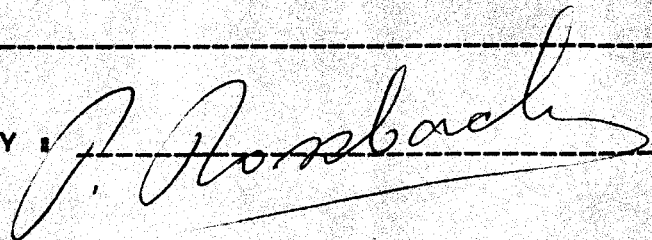
**CERTIFICATE OF ANALYSIS**

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479.A - 2  
 INVOICE No.: 5059  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479.A

PRE FIX	SAMPLE NAME	PPB Au	PPM As
	GS	40	10
		41	10
		42	10
		43	10
		44	10
		45	10
		46	10
		47	10
		48	10
		49	10
	GS	50	10
		51	10
		52	10
		53	10
		54	10
		55	10
		56	10
		57	10
		58	10
		59	10
	GS	60	10
		61	10
		62	10
		63	10
		64	10
		65	10
		66	10
		67	10
	<b>L38 12+005</b>	68	10
	(L38 12+505)	<b>68b</b>	10
	(L38 13+005)	69	10
		70	10
		71	10
		72	10
		73	40
		74	10
	GS	75	10
	TS	1	10
		2	10

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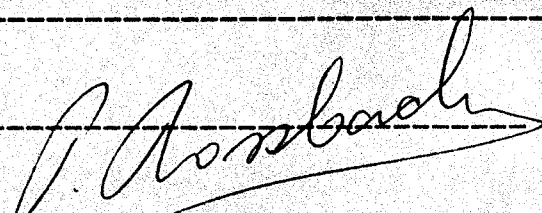
**CERTIFICATE OF ANALYSIS**

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479 - 3  
 INVOICE No.: 5058  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ni	PPM Co	PPM Mn	% Fe	PPM Ag	PPM Zn	PPM Pb	
S	TS	3	3	14	52	6	230	1.1	1.4	62	10
S		4	6	50	244	16	420	3.4	0.4	270	16
S		5	7	32	78	8	350	3.4	0.2	114	10
S		6	9	26	90	12	390	3.4	0.2	114	8
S		7	23	48	272	20	540	4.8	0.2	178	8
S		8	9	22	36	6	240	2.5	0.2	90	10
S		9	24	170	122	26	370	4.8	0.2	320	10
S		10	22	54	66	12	310	3.2	0.2	162	12
S		11	25	88	112	24	590	4.6	0.4	224	10
S		12	20	38	76	16	720	2.9	0.2	128	8
S	TS	13	26	80	102	20	770	3.7	0.4	172	12
S		14	11	38	46	6	310	2.3	0.2	74	12
S		15	11	76	148	14	590	3.6	0.2	112	8
S		16	5	38	120	16	520	3.3	0.2	98	10
S		17	3	48	126	14	490	4.1	0.2	112	16
S		18	2	40	114	18	620	3.5	0.2	106	14
S		19	3	36	118	22	700	3.7	0.2	106	14
S		20	2	38	92	20	520	3.8	0.2	124	12
S		21	4	32	172	28	1040	3.7	0.2	106	8
L	TL	22	2	26	154	22	600	3.2	0.2	86	8
S	TS	23	3	12	42	10	350	3.7	0.4	66	6
S		24	5	34	102	16	370	4.3	0.2	114	8
S		25	3	18	44	8	410	4.0	0.2	72	10
S		26A	2	14	14	6	300	2.6	0.2	50	8
S		26B	2	8	10	4	140	1.8	0.2	34	8
S		27	2	20	18	8	280	2.7	0.2	60	8
S		28	2	14	16	8	250	3.5	0.2	48	8
S		29	2	34	52	10	380	3.8	0.2	84	8
S		30	2	42	38	12	380	3.6	0.2	82	6
S		31	3	30	20	12	800	3.1	0.2	82	8
S	TS	32	2	34	16	6	210	1.8	0.2	44	6
S		33	3	12	14	4	180	2.1	0.2	40	8
S		34	2	36	36	10	350	3.0	0.2	66	8
S		35	1	20	18	6	300	3.0	0.2	52	8
S		36	2	26	22	8	430	3.1	0.2	72	8
S		37	1	18	40	6	290	3.1	0.2	72	8
S		38	1	18	20	6	180	2.8	0.2	42	8
S		39	3	24	64	14	780	3.3	0.2	94	8
S		40	3	34	70	10	420	3.0	0.2	86	10

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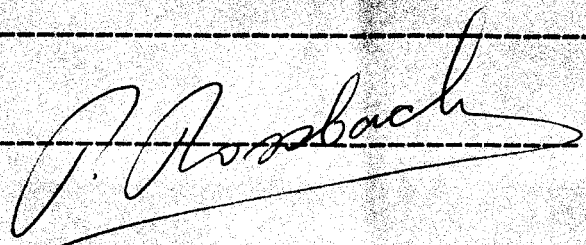
**CERTIFICATE OF ANALYSIS**

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479.A - 3  
 INVOICE No.: 5059  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479.A

PRE FIX	SAMPLE NAME	FPB Au	PFM As
	TS	3	10
		4	8
		5	26
		6	16
		7	12
		8	38
		9	22
		10	110
		11	62
		12	94
		13	40
	TS	14	66
		15	28
		16	12
		17	12
		18	20
		19	18
		20	14
		21	16
		22	240
	TL	23	160
	TS	24	28
		25	122
		26A	28
		26B	14
		27	8
		28	22
		29	4
		30	6
		31	14
		32	10
	TS	33	6
		34	4
		35	14
		36	6
		37	10
		38	10
		39	26
		40	62
			66

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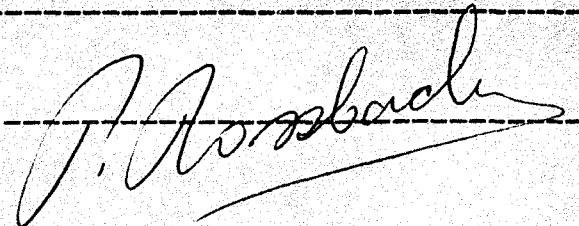
## CERTIFICATE OF ANALYSIS

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479 - 4  
 INVOICE No.: 5058  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ni	PPM Co	PPM Mn	% Fe	PPM Ag	PPM Zn	PPM Pb	
S	TS	41	4	28	122	24	910	3.5	0.2	106	6
S		42	3	52	206	22	560	4.8	0.4	84	4
S		43	4	44	176	26	570	3.5	0.6	78	6
S		44	6	56	710	88	1360	6.3	0.8	78	8
S		45	1	52	860	74	920	4.7	0.4	72	4
S		46	18	32	74	20	560	3.4	0.6	100	6
S		47	48	16	200	6	130	0.4	0.2	32	4
S		48	11	34	64	12	600	3.2	0.2	100	6
S		49	7	42	68	12	400	3.1	0.2	112	8
S		50	7	56	134	24	670	3.6	0.2	136	6
S	TS	51	5	36	98	18	720	2.9	0.2	108	8
S		52	4	28	56	16	860	2.6	0.2	96	8
S		53	4	38	84	12	500	3.2	0.2	102	8
S		54	4	50	60	10	350	3.2	0.2	80	8
S		55	4	28	68	10	340	2.9	0.4	82	8
S		56	6	26	62	10	340	2.8	0.4	88	8
S		57	9	24	54	8	590	2.6	0.4	76	10
S		58	25	46	8	16	690	3.2	0.4	128	10
S		59	23	38	70	16	680	2.7	0.4	86	8
S		60	14	54	180	42	920	3.5	0.2	166	8
S	TS	61	16	48	128	26	590	3.1	0.6	112	10
L	TL	62	19	104	270	42	730	3.6	0.6	182	10
S	TS	63	14	42	118	12	390	2.6	0.4	94	10
S		64	14	48	120	22	710	3.0	0.2	176	8
S		65	20	138	148	24	800	5.1	0.4	326	6
S		66	20	78	94	24	930	3.4	0.2	206	8
S		67	16	64	104	22	700	3.4	0.2	166	8
S		68	35	92	162	20	540	4.4	0.6	206	8
S		69	18	62	130	22	460	3.7	0.4	184	8
S		70	8	42	72	12	350	2.8	0.4	116	8
S	TS	71	12	50	144	18	410	3.5	0.4	168	6
S		72	13	36	70	10	300	3.1	0.4	118	10
S		73	12	36	96	12	340	3.1	0.4	130	8
S		74	7	14	56	4	260	0.4	0.4	48	4
S		75	6	18	52	6	270	2.0	0.2	74	8
S	TS	76	33	128	1600	32	620	0.4	1.0	32	6
S	248 AB	210	13	68	224	20	580	3.0	0.4	268	6
L	AL	212	24	76	226	22	590	3.0	0.6	260	8
L	AL	214	19	66	220	26	890	3.8	0.4	192	8

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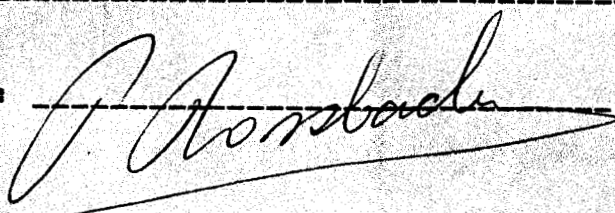
## CERTIFICATE OF ANALYSIS

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479.A - 4  
 INVOICE No.: 5059  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479.A

PRE FIX	SAMPLE NAME	PPB Au	PPM As
	TS 41	10	92
	42	10	344
	43	10	160
	44	30	3470
	45	10	524
	46	10	56
	47	NSS	18
	48	10	26
	49	10	32
	50	10	30
	TS 51	10	22
	52	10	14
	53	10	36
	54	10	20
	55	10	40
	56	10	24
	57	10	20
	58	10	22
	59	10	10
	60	10	16
	TS 61	10	44
	TL 62	10	40
	TS 63	10	30
	64	10	48
	65	10	86
	66	10	42
	67	10	34
	68	10	52
	69	10	44
	70	10	22
	TS 71	10	24
	72	10	28
	73	10	34
	74	10	2
	75	10	12
	TS 76	10	10
	248 AL 210	10	40
	AL 212	10	54
	AL 214	10	40

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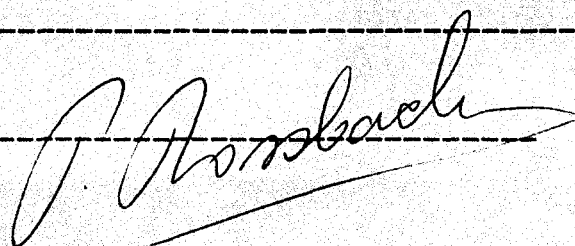
## CERTIFICATE OF ANALYSIS

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No. : 248

CERTIFICATE No. : 84479 - 5  
 INVOICE No. : 5058  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ni	PPM Co	PPM Mn	% Fe	PPM Ag	PPM Zn	PPM Pb
L	248 AL 216	23	94	216	28	750	4.4	0.4	228	8
L	219	2	30	348	44	680	3.7	0.2	88	4
L	224	6	66	186	32	680	4.2	0.2	110	6
L	225	11	30	90	16	630	3.3	0.2	104	6
L	226	21	56	118	22	850	3.8	0.2	106	6
L	227	43	58	230	26	3160	5.6	0.2	178	4
L	248 AL 228	46	90	452	30	2770	5.8	0.2	352	6
S	L18E 5+00S	4	34	86	14	470	3.4	0.4	100	10
S	5+50S	4	42	88	22	850	3.3	0.2	112	12
S	6+00S	8	62	114	26	860	4.2	0.2	172	16
S	7+15S	8	110	328	44	1020	5.9	0.4	258	20
S	7+50S	9	92	202	32	850	5.6	0.2	324	12
S	8+00S	8	48	116	24	840	3.4	0.2	154	8
S	8+50S	1	64	700	50	800	4.3	0.2	100	4
S	9+00S	13	60	160	16	440	3.5	0.4	110	6
S	9+50S	10	38	122	14	400	3.6	0.4	102	8
S	10+00S	21	74	222	24	500	5.2	0.4	152	6
S	10+50S	11	72	240	36	720	4.6	0.4	196	4
S	11+00S	9	76	310	46	890	5.2	0.4	194	6
S	11+50S	8	46	148	28	610	3.8	0.2	148	6
S	L18E 12+00S	7	42	86	18	430	3.5	0.4	144	8
S	12+50S	6	34	94	14	360	3.5	0.4	138	6
S	13+00S	8	38	96	16	410	4.0	0.4	172	6
S	13+50S	11	98	660	60	820	5.2	1.2	136	10
S	14+00S	13	74	770	56	830	5.3	1.2	134	8
S	L18E 14+50S	9	68	386	34	650	4.3	0.2	136	6
S	L20E 5+00S	5	50	98	14	380	3.6	0.4	116	18
S	5+50S	4	30	50	8	460	2.9	0.4	90	10
S	6+00S	4	44	100	20	700	3.8	0.4	146	12
S	6+50S	3	32	84	18	600	3.0	0.2	92	10
S	7+00S	5	40	116	26	910	4.1	0.2	146	8
S	7+50S	9	68	172	38	960	4.3	0.2	244	10
S	8+00S	8	64	178	34	860	4.3	0.2	200	12
S	8+25S	9	76	154	20	570	4.5	0.4	180	12
S	9+50S	8	58	106	22	830	4.2	0.4	182	8
S	10+00S	21	102	224	36	820	4.6	0.6	236	8
S	10+50S	9	78	158	30	730	4.1	0.6	190	12
S	11+00S	9	50	202	30	670	4.7	0.2	138	6
S	11+50S	10	64	204	30	580	5.3	0.6	148	6

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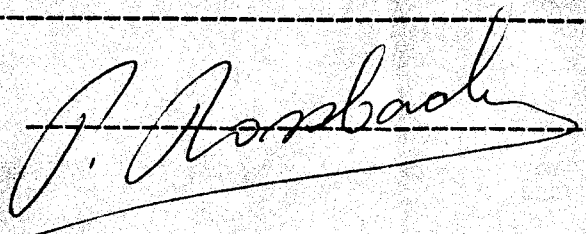
**CERTIFICATE OF ANALYSIS**

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479.A - 5  
 INVOICE No.: 5059  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479.A

PRE FIX	SAMPLE NAME	PPB Au	PPM As
	248 AL 216	10	36
	219	10	366
	224	10	76
	225	10	40
	226	10	48
	227	10	50
	248 AL 228	10	82
L18E	5+00S	10	20
	5+50S	10	24
	6+00S	10	18
	7+15S	10	16
	7+50S	10	20
	8+00S	10	14
	8+50S	10	40
	9+00S	10	20
	9+50S	10	20
	10+00S	10	88
	10+50S	10	80
	11+00S	10	52
	11+50S	10	42
L18E	12+00S	10	100
	12+50S	10	40
	13+00S	10	40
	13+50S	10	86
	14+00S	10	100
L18E	14+50S	10	48
L20E	5+00S	10	36
	5+50S	10	16
	6+00S	10	20
	6+50S	10	20
	7+00S	10	20
	7+50S	10	18
	8+00S	10	16
	8+25S	10	30
	9+50S	10	12
	10+00S	10	16
	10+50S	10	22
	11+00S	10	62
	11+50S	10	32

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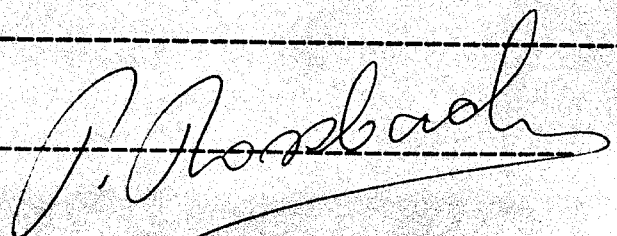
## CERTIFICATE OF ANALYSIS

TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479 - 6  
 INVOICE No.: 5058  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ni	PPM Co	PPM Mn	% Fe	PPM Ag	PPM Zn	PPM Pb
S	L20E 12+50S	8	94	378	48	760	5.4	0.2	294	12
S	13+00S	10	96	306	52	890	5.5	0.4	282	8
S	13+50S	9	114	474	48	780	5.3	0.4	278	8
S	14+50S	10	80	356	42	710	5.0	0.2	260	10
S	15+00S	12	88	390	50	810	5.3	0.6	236	8
S	15+50S	8	68	330	58	890	4.7	0.4	226	10
T	L18E 6+50S	11	44	14	2	70	1.0	0.2	36	12
T	L20E 8+60S	1	82	32	22	270	1.4	0.2	38	4
T	L20E 12+10S	1	176	174	46	520	3.3	0.2	70	4
T	L37-39E 21+00S	1	10	32	20	710	3.5	0.2	60	2
T	248 AT 211	1	36	40	18	730	2.8	0.2	44	2
T	213	1	50	12	12	530	3.5	0.2	48	2
T	215	1	10	50	22	480	3.2	0.2	26	2
T	217	13	68	66	20	460	2.8	0.2	96	4
T	248 AT 218	4	24	6	2	90	0.9	2.2	18	20
T	248 HS	1	118	42	30	240	1.7	0.4	46	4
T	248L1327 W OF LCP	1	40	90	30	440	2.0	0.2	72	2
A	248 AT 220	1	56	52	18	710	3.4	1.0	112	24
A	221	1	12	1030	68	570	3.3	0.2	40	4
A	222	2	62	32	18	610	2.7	1.0	62	6
A	248 AT 223	1	14	1120	72	640	3.8	0.2	42	6

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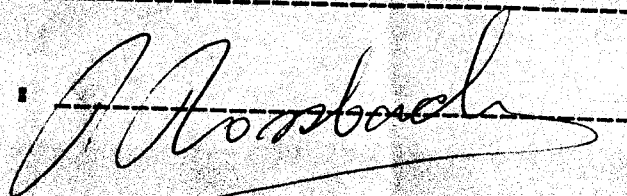
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TO : A&M EXPLORATION LTD.  
 214-850 W. HASTINGS STREET  
 VANCOUVER, B.C.  
 PROJECT No.: 248

CERTIFICATE No.: 84479.A - 6  
 INVOICE No.: 5059  
 DATE ANALYSED: NOV. 5, 1984  
 FILE NAME: A&M479.A

PRE FIX	SAMPLE NAME	PPB Au	PPM As
	L20E 12+50S	10	30
	13+00S	10	20
	13+50S	10	40
	14+50S	10	30
	15+00S	10	40
	15+50S	10	30
	L18E 6+50S	10	6
	L20E 8+60S	10	2
	L20E 12+10S	10	4
<del>20E</del>	L37-39E 21+00S	10	8 ?
	248 AT 211	10	4
	213	10	4
	215	10	4
	217	10	12
	248 AT 218	10	32
	248 HS	10	62
	248L1327 W OF LCP	10	10
	248 AT 220	10	516
	221	40	154
	222	10	1310
	248 AT 223	10	344

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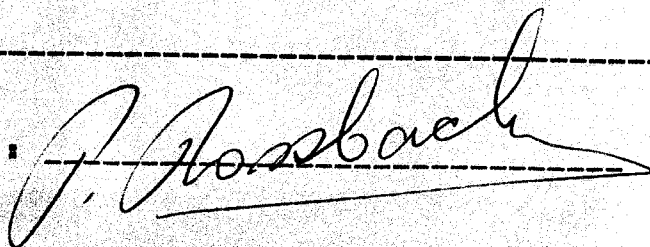
**CERTIFICATE OF ANALYSIS**

TO : A&M EXPLORATION LTD.  
214-850 W. HASTINGS STREET  
VANCOUVER, B.C.  
PROJECT No. : 248

CERTIFICATE No. : 84479.A - 4  
INVOICE No. : 5059  
DATE ANALYSED: NOV. 5, 1984  
FILE NAME: A&M479.A

PRE FIX	SAMPLE NAME	PPB Au	PPM As
	AT 211	10	

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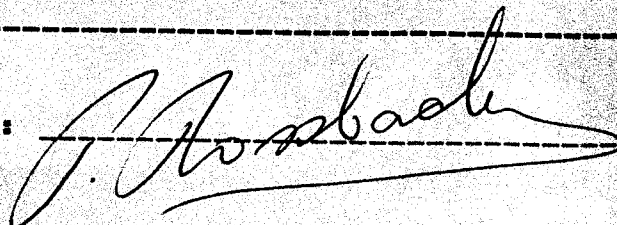
2225 S. SPRINGER AVENUE  
BURNABY, B.C. V5B 3N1  
TEL : (604) 299 - 6910

TO : A&M EXPLORATION LTD.  
214-850 W. HASTINGS STREET  
VANCOUVER, B.C.  
PROJECT No. : 248

CERTIFICATE No. : 84479 - 4  
INVOICE No. : 5058  
DATE ANALYSED: NOV. 5, 1984  
FILE NAME: A&M479

PRE FIX	SAMPLE NAME	PPM Mo	PPM Cu	PPM Ni	PPM Co	PPM Mn	% Fe	PPM Ag	PPM Zn	PPM Pb
T	AT 211	4	62	24	14	660	2.5	0.2	150	12

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TEL : (604) 299 - 6910

TO : A&M EXPLORATION LTD.  
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VANCOUVER, B.C.

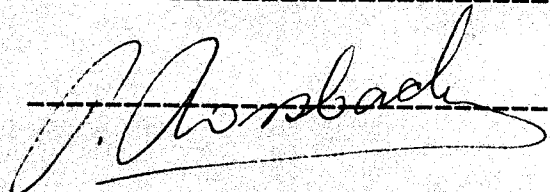
CERTIFICATE No.: 84497.X - 1  
INVOICE No.: 5075  
DATE ANALYSED: NOV. 7, 1984  
FILE NAME: A&M497.X

PROJECT No.:

PRE FIX	SAMPLE NAME	oz/t Au	gm WT.	mg Au
	220	0.001	88.73	NIL
	221	0.006	77.59	0.016
	222	0.008	73.08	0.020
	223	0.001	42.59	NIL

*Crushed + Panned ~~Assay~~ material from Standard*

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APPENDIX II  
AFFIDAVIT OF EXPENSES

AFFIDAVIT OF EXPENSES

This will certify that geophysical and geochemical surveys were carried out on the Royal Group of claims Standard Creek area, Lillooet Mining Division, British Columbia, during the period October 3 to 25, 1984, to the value of the following.

Mobilization and Fieldwork

Salaries

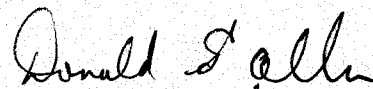
S. Travis	\$ 1,105.00
L. Riteman	750.00
D. Greenman	1,040.00
R. Vinnie	1,040.00
D. MacQuarrie	1,500.00
D. Allen	2,400.00
G. Allen	875.00
Field supplies	525.45
Room and board	1,062.95
Vehicle rental, transportation, gas	1,143.68
Geochemical analysis	3,879.40
Topographic base (Triathlon Surveys)	1,128.82
Helicopter support	4,062.21
VLF-EM and magnetometer rental	400.00

Report Preparation and Draughting

Engineering fees

D.G. Allen, D. MacQuarrie	3,000.00
Typing, draughting, compilation	1,920.00
Maps, photocopying	472.44
	<hr/>
	\$26,379.17

\*Assuming that work represented by this report is accepted.

  
Donald G. Allen,  
P. Eng. (B. C.)



**LEGEND**

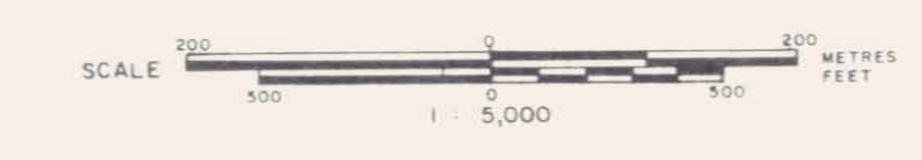
- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>- - - Fault</li> <li>/ / Bedding, foliation</li> <li>- - - Quartz veins</li> <li>⊗ Float, Outcrop</li> <li>- - - Geological contact</li> <li>↖ Adit</li> <li>Topographic contours (contour interval = 10 feet).</li> <li>— Creek</li> <li>- - - Roads</li> </ul> | <ul style="list-style-type: none"> <li><b>5</b> BENDOR INTRUSIONS<br/>Granodiorite, quartz diorite</li> <li><b>4</b> BRALORNE INTRUSIONS<br/>Diorite - greenstone</li> <li><b>3</b> PRESIDENT INTRUSIONS<br/>Serpentine; 3a Talc-quartz-carbonate rock</li> <li>BRIDGE RIVER GROUP</li> <li><b>2</b> Argillite, chert; 2a Andesite, andesite tuff</li> <li>NOEL FORMATION</li> <li><b>1</b> Argillite</li> </ul> |
|---|--|

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**13 232**

TRANS ATLANTIC RESOURCES INC.  
STANDARD CREEK PROPERTY  
LILLOET MINING DIVISION - BRITISH COLUMBIA

**GEOLOGICAL MAP**



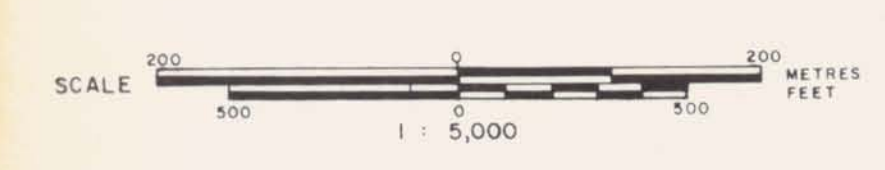


**LEGEND**

- Boundary of anomalous area;  $\geq 20$  ppb Au,  $\geq 60$  ppm As.
- Rock sample site, sample number; ppm As, ppb Au, ppm Ag.
- Silt sample site, sample number; " " " " " "
- Soil sample site, sample number; " " " " " "
- Survey grid line, line number.
- Topographic contour (contour interval 10 feet).
- Creek.
- Roads.

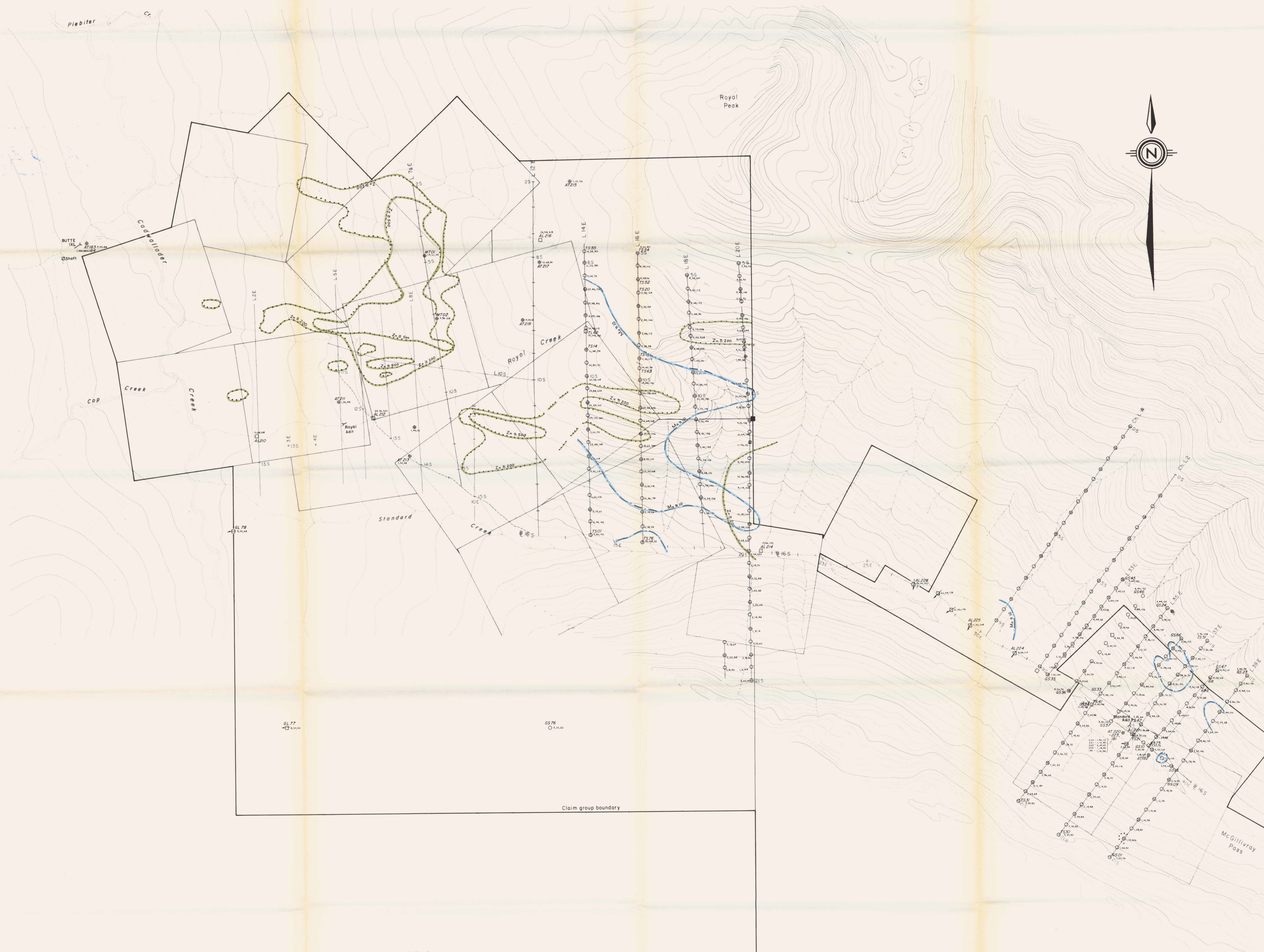
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STANDARD CREEK PROPERTY  
LILLOET MINING DIVISION - BRITISH COLUMBIA

**GEOCHEMICAL MAP**  
Arsenic, Gold, Silver



**GEOLOGICAL BRANCH  
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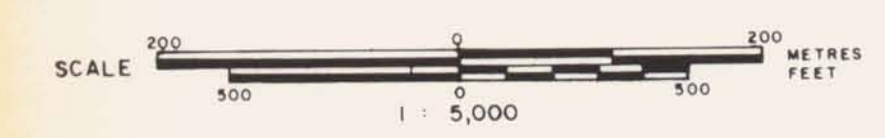
**LEGEND**

- Boundary of anomalous area;  $\approx 10$  ppm Mo,  $\approx 200$  ppm Zn.
- Rock sample site, sample number; ppm Mo, ppm Cu, ppm Zn.
- Silt sample site, sample number; " " " " " "
- Soil sample site, sample number; " " " " " "
- Survey grid line, line number.
- Topographic contour (contour interval 10 feet).
- Creek.
- Roads.

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**GEOCHEMICAL MAP**  
Molybdenum, Copper, Zinc

**GEOLOGICAL BRANCH**  
ASSESSMENT REPORT



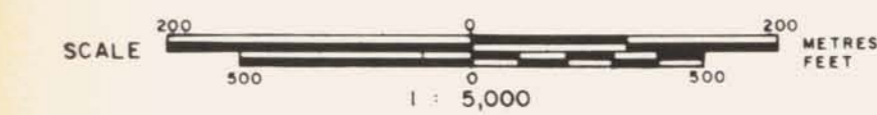
**13,232**



**LEGEND**

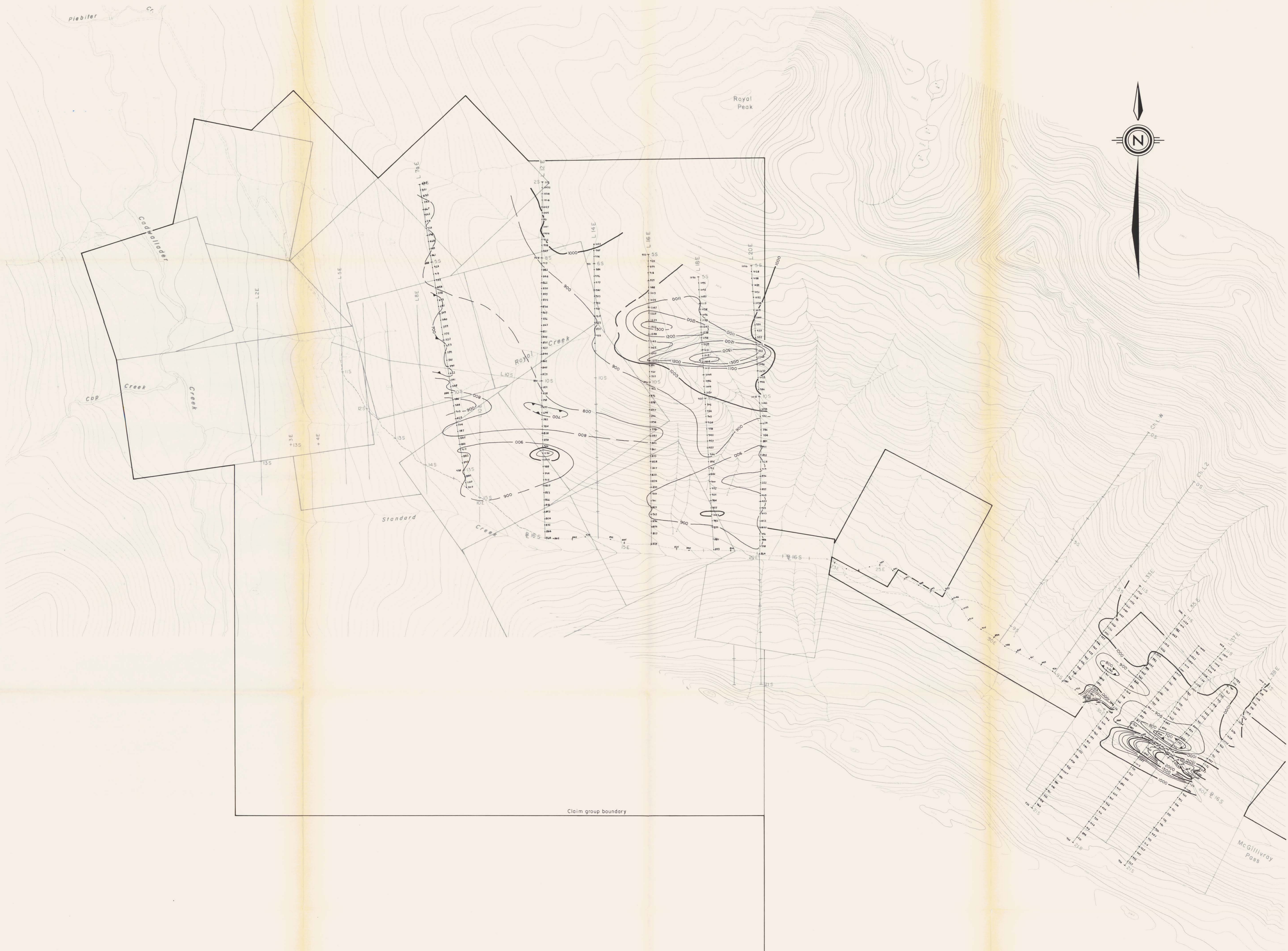
- ⋯⋯⋯ Boundary of anomalous area;  $\approx$  200 ppm Ni.
- ⊙<sub>152.11</sub> Rock sample site, sample number; ppm Ni, ppm Co.
- ⊙<sub>152.14</sub> Silt sample site, sample number; " " "
- ⊙<sub>152.14</sub> Soil sample site, sample number; " " "
- Survey grid line, line number.
- ⋯ Topographic contour (contour interval 10 feet).
- Creek.
- Roads.

TRANS ATLANTIC RESOURCES INC.  
 STANDARD CREEK PROPERTY  
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**GEOCHEMICAL MAP**  
 Nickel, Cobalt










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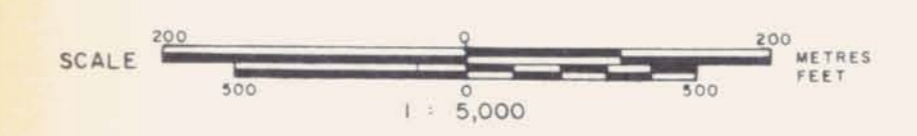


**LEGEND**

-  Iso-magnetic contours (contour interval = 100 gammas).
-  Survey site, magnetic reading in gammas.
-  Magnetic low  
Note: Base value = 56000 gammas.
-  Survey grid line, line number.
-  Topographic contour (contour interval 10 feet).
-  Creek.
-  Roads.

Instrument: Scintrex MP 2 Magnetometer.

TRANS ATLANTIC RESOURCES INC.  
STANDARD CREEK PROPERTY  
LILLOET MINING DIVISION - BRITISH COLUMBIA  
**MAGNETOMETER SURVEY**



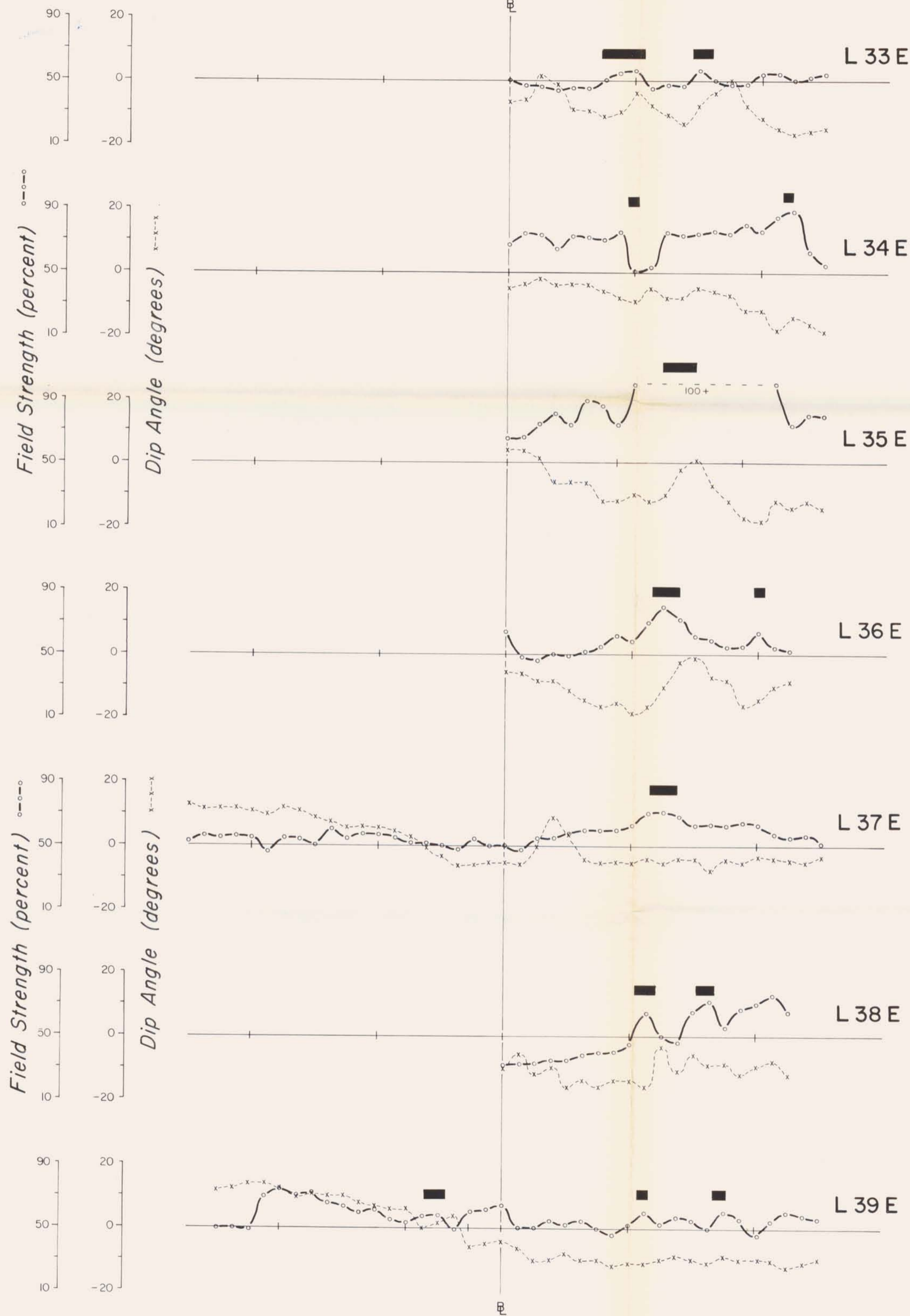
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ASSESSMENT REPORT**

**13,232**



DISTANCE (metres x 100)

20S 18S 16S 14S 12S



Instrument : Sabre 27 VLF-EM Receiver  
 Operator facing northwest.  
 Survey date : Oct 19-20 , 1984.  
 Transmitter : Annapolis , Md.

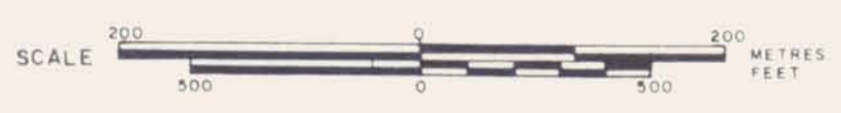
Interpretation  
 ■ Conductor

**GEOLOGICAL BRANCH  
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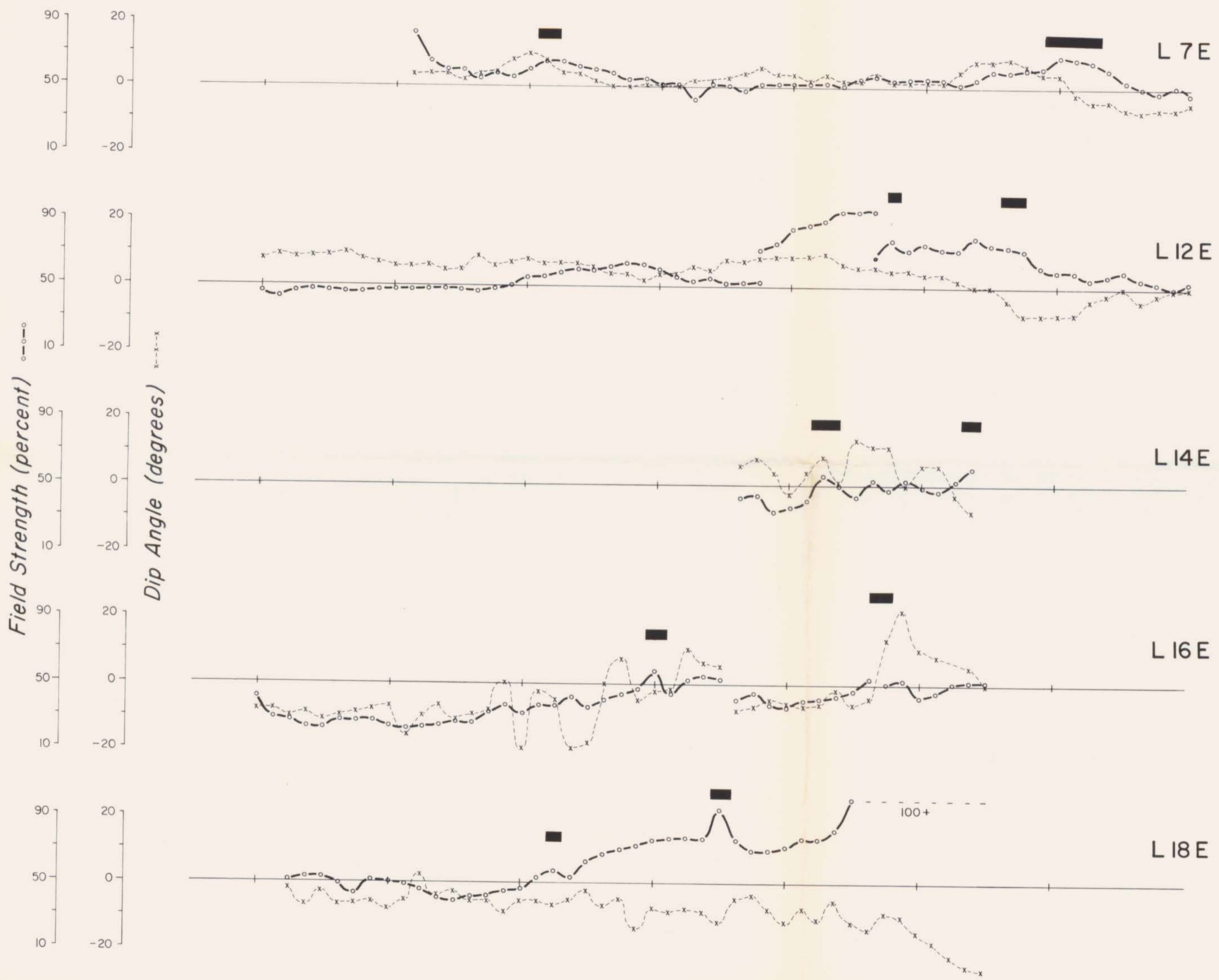
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 STANDARD CREEK PROPERTY  
 LILLOOET MINING DIVISION - BRITISH COLUMBIA

**VLF EM PROFILES**



DISTANCE (metres x 100)

16S 14S 12S 10S 8S 6S 4S 2S



Instrument : Sabre 27 VLF-EM Receiver.  
 Operator facing SE on L7&12E, NW on others.  
 Survey date : Oct. 19-21, 1984.  
 Transmitter : Annapolis, Md.

Interpretation  
 ■ Conductor

GEOLOGICAL BRANCH  
 ASSESSMENT REPORT

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TRANS ATLANTIC RESOURCES INC.  
 STANDARD CREEK PROPERTY  
 LILLOOET MINING DIVISION - BRITISH COLUMBIA

VLF EM PROFILES

