

GEOCHEMICAL SOIL REPORT

ON

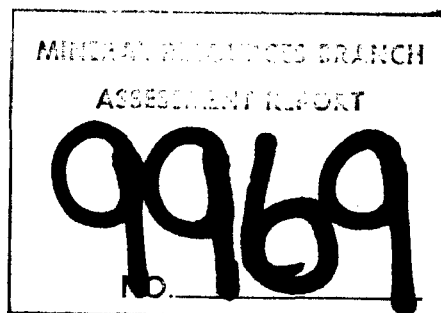
BEAR 2 & BEAR 3 CLAIMS
(38 Units)

49°59'N; 119°39'W: NTS 82E/13E
Bluegrouse Mtn., 12km NW Kelowna
VERNON M.DIV., British Columbia

N.C.Lenard, P.Geol., P.Eng. Dec.21, 1981

FIELD WORK DONE: Oct.13,26; Nov.6,9,13 & 16, 1981

OWNER: N.C.Lenard, Westbank, B.C.



INTRODUCTION:

This report deals with a geochemical soil survey done at three sites on the Bear 2 and Bear 3 Claims (38 units), which are near the summit of Bluegrouse Mountain on the west side of Okanagan Lake, 10 km north of Kelowna. The old gold-silver prospect, the Bluehawk mine, is on the south-west part of Bear 3 claim.

Evaluation is based on data gathered in the field and from published and private reports. The most recent work on the property was done by the writer in 1980 (Assessment Report 100-9074), and on the contiguous OK 1-5 claims covering the Bluehawk mine vicinity, described in an assessment report submitted to Victoria on Sept.4,1981. Field work was done by the writer, unassisted, using a belt chain and compass, tying grids to roads, outcrops, topography, and to a pre-existing grid system of Read (1969). It was performed on Oct.13 & 26, and Nov.6,9,13, and 16, 1981.

PURPOSE:

The aim of the exploratory geochemical soil survey was to:

(a) Seek precious metal values in and extend a narrow, steep quartz vein in a diorite body outcropping on the south side of Jennie Creek about 2,000 feet (610m) south of the Bluehawk mine at site 'I' of the map, Fig.2, and to

(b) Geochemically evaluate linear magnetic features and associated mercury anomalies on Bear 3 claim that were derived in an earlier survey done for the previous claim holders (Read, 1969). The features may represent shear zones, possibly metalliferous. The magnetic feature at site 'A' has an aligned linear pond, and a 100 m length shear zone was reported to have been stripped in this vicinity in the 1930's. Another, at site 'G', is near the unexposed contact of the granodiorite/Cache Creek metasediments north of the OK group. It may represent a shear zone with potential mineralization.

SUMMARY & CONCLUSIONS:

1. The property consists of two unsurveyed mineral claims (38 units) held in the name of N.C.Lenard.

2.The property, located 12 km northwest of Kelowna, British Columbia, is accessible from the Bear Lake road off the westside highway, which branches off Highway 97 west of Kelowna.

3. Work summarized in this report consisted of soil geochemical appraisals over portions of the property: on a diorite body south of Jennie Creek;

50000'N

1190

301

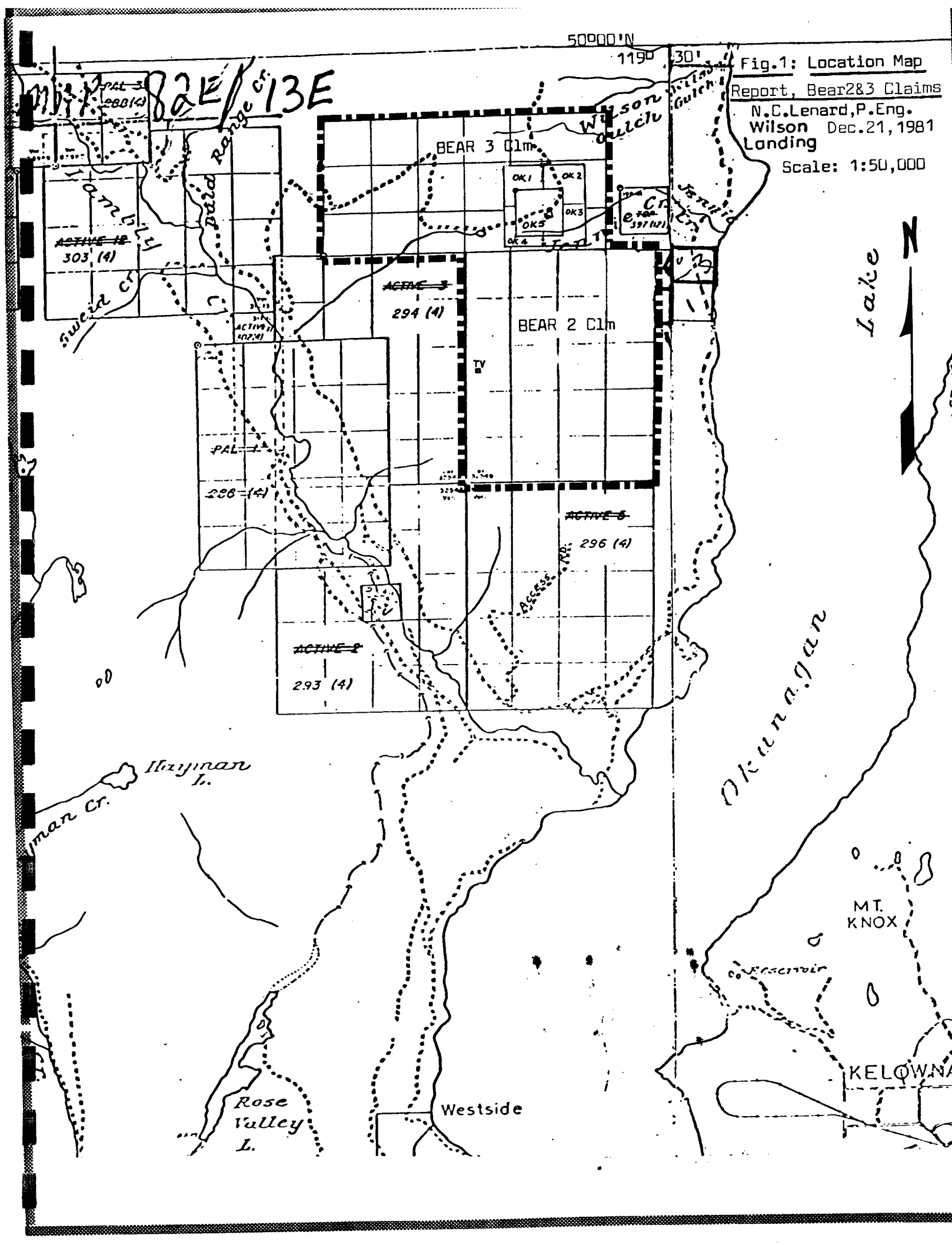
Fig.1: Location Map

Report, Bear2&3 Claims

N.C.Lenard,P.Eng.

Wilson Dec.21,1981
Landing

Scale: 1:50,000



82E/13E

BEAR 3 Clm

BEAR 2 Clm

ACTIVE 3
294 (4)

ACTIVE 5
296 (4)

ACTIVE 2
293 (4)

PAL 1
288 (4)

ACTIVE 12
303 (4)

Hizjinar L.
Hizjinar Cr.

Rose Valley L.

Westside

MT. KNOX

KELOWNA

Reservoir

Lake

N

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| Fig.2 Property, Geology, Sample grids & data | POCKET |

at the headwater pond of Jennie Creek; and near the granodiorite contact on Bear 3 claim north of the OK claim group.

4. The property is underlain by Permian Cache Creek sediments that are intruded by diorite satellites of a bordering granodiorite - tonalite batholith.

5. Limited positive results from the soil survey indicate that Lead and Bismuth may mark quartz veins at the 'I' and other diorite sites, narrowing the search for precious metal hosts on the property. Similar, spottier soil anomalies in copper, lead and silver at the prospective shear zone magnetic anomalies, 'A' and 'G', point to possible gold-silver related lodes there and in similar magnetic linears such as 'F' and 'J' on Fig.2, which are near the batholith-Cache Creek contact.

6. Consequently, primary exploration targets at present are:

(a) Inferred shear zones at the contact of the metasediments and the batholith and its satellites: sites A, F, G and J and their extensions.

(b) Site 'I' diorite body, extending the grid and detailing anomalies diagnostic of quartz veining.

RECOMMENDATIONS:

Results of the soil geochemical survey warrant follow-up exploration as here outlined:

Site I: Do detail soil sampling at the three anomalous Pb-Bi locations and expand the 15m 'B' zone grid to that shown on the map, Fig.2. Do reconnaissance soil sampling westerly to evaluate extension of the pond site 'A' magnetic linear, seeking Cu, Bi, Pb and Ag values in the 'B' horizon.

Site A: Carry out detailed appraisal of anomalous soil locations 81-2-135N, 81-3-15&30S and 120mS for Pb, Cu, Ag and possibly Bi. Extend sampling on line 81-1 to north and south for further prospective high Pb values. Try augering for basal till samples to test for gold.

Site G: Detail the 'B' soil horizon for Cu, Pb, Ag, and Bi from locations 3-6 and cross-grid the magnetic linear on 15m spacing at 100m line spacing for more 'B' zone control. Attempt augering for basal till samples to get values and geological information on petrology, structure and alteration.

As well, do reconnaissance soil sampling across the magnetic features, F & J and preliminary VLF-EM geophysics across the latter and the A and G magnetic linears. Strip and trench where indicated from resulting soil anomalies.

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LOCATION & ACCESS:

The subject claims are near the summit of Blue Grouse Mountain, across Okanagan Lake and about 12 Km northwest of Kelowna, British Columbia. Access by two or four-wheel drive vehicle is via logging roads north of Bear Lake road, which is reached from Highway 97 at the westside turnoff, about 1.6 km west of Kelowna bridge. Fair to good logging roads span the property.

PROPERTY:

The property consists of two grouped claims: Bear 2 (20 units) and Bear 3 (18 units), staked in the modified system, having the following legal descriptive data:

| <u>Claim</u> | <u>Units</u> | <u>Record No.</u> | <u>Tag No.</u> | <u>Record Date</u> | <u>Owner</u> |
|--------------|--------------|-------------------|----------------|--------------------|--------------|
| Bear 2 | 20 | 794 | 11763 | Jan.18,1981 | N.C.Lenard |
| Bear 3 | 18 | 795 | 11764 | Jan.18,1981 | N.C.Lenard |

WORK HISTORY:

Surface stripping and underground workings of the Bluehawk mine date back to the 1930's and possibly earlier. Southeast of the pond at the head of Jennie Creek, shear zones are described in old assessment reports, but no values were recorded.

A combination ground magnetic-soil mercury survey was done over the mine area and surrounding locale for the then owner, Dawood Mines Ltd., by contractor, W.S.Read in 1969 (Assessment Report 1894). Dawood Mines carried out further soil geochemical work for gold and silver plus copper over a part of the W.S.Read grid in 1974 (Fox.P.E., Assessment Rept. No.5303).

The most recent work on the property area was done by the writer in 1980 as a geological reconnaissance of the subject claims (Assessment Report No. 100-9074).

GEOLOGY:

The property's regional setting is in the central part of the Okanagan Plutonic and Metamorphic Complex, formerly assigned to the Monashee Group of the Shuswap Metamorphic Complex, which adjoins on the north.

Local geology of the property was described previously (Lenard, 1961). Diorite outcrops are plentiful at the 'I' site straddling the Bear2/Bear3 common boundary, but no outcrops of the granitic family or intruded Cache Creek metasediments were seen on the 'A' or 'G' grid lines (Fig.2) except for Cache Creek exposures at the roadside (Sample 1) on the 81-4 traverse at the 'G' site.

A brief examination of the batholith granitics north of the 'G' site revealed that composition here is nearer quartz-diorite (tonalite) than granodiorite, and that it has a wide, porphyritic border phase at the 'G' locale. It resembles the somewhat acid diorite at site 'I', but has a markedly higher quartz content. This may account for previous descriptions in government and private reports of granodiorite lying north and south of the Bluehawk minesite. Full extent of the 'I' site diorite mass is not yet known, but where observed, it lacks the highly fractured and albitized nature of the Bluehawk mine basic diorite.

GEOCHEMISTRY:

North-south grids with 15-m stations were used to collect soil samples at the pond 'A' site and the diorite 'I' site, where both the Lh-Ah and B soil horizons were sampled. A single traverse line with 30-m stations was run at 68° Azimuth at the 'G' site where only the B soil zone was sampled. The latter, single line parallels the grid set up by W.S.Read in 1969.

Soil samples were taken with a mattock from depths averaging 0.3 m for the B zone, and all were stored in paper envelopes. The samples were later dried and a -80 sieved fraction was taken for analysis. Mode of analyses are given in the appendix; the bismuth analysis mode, as for the others.

Only the B horizon samples were analyzed; the humic zone samples were retained for later analysis depending on the results from the B horizon. And the humic zone samples cover an extended part of the grids used.

The only potential gold-related element, other than silver, noted at the Bluehawk mine is Bismuth in the form of mineral tellurides. Since it occurs in the narrow vein at 'I' site, it was analyzed for to trace the vein and to seek other hidden quartz veins there. No precious metal values of note occur in any assays of that narrow, partly albitic quartz vein that are known to the writer.

GEOCHEMICAL RESULTS:

Results of the preliminary soil survey suggest that Pb and Bi anomalies may be useful indicators of quartz lenses and veins in diorite fractures and shear zones bordering the batholith and its satellite intrusives; silver, less so. Only one noticeable copper anomaly is present, - on the western line of the Pond 'A' magnetic linear site; detailing should disclose its significance.

Examination of the tabled summary of data below show increased mean values for the elements at the 'G' site, which, however, had the fewest samples, and those were taken on 30m spacings compared to 15m sampling on the rest.

| Site | No. Samples | Spacing (m) | Mean Values:Ppm | | | | No. Anom. | Type | Inference |
|------|-------------|----------------|-----------------|------|------|-------|-----------|----------|------------------------------|
| | | | (Cu) | (Pb) | (Ag) | (Bi)* | | | |
| 'A' | 25 | 15 | 27.3 | 14.7 | 1.2 | | 5 | Pb-Ag;Cu | Quartz, shear. |
| 'G' | 8 | 30 | 33 | 24 | 1.4 | | 1 | Pb-Ag | Quartz, shear. |
| 'I' | 15 | 15 | | 19 | 1.0 | 10.8 | 3 | Pb-Bi | Quartz veins, pot'l. gold |

*Bi analysis done only on 'I' site samples; copper not run at 'I' site.

On the basis of this preliminary data, bismuth may signify metalliferous quartz veins or shoots, and lead, as sparse Galena, may indicate associated silver and gold values : at the Bluehawk mine vicinity, free gold is associated with earlier bismuth tellurides in sheared quartz veins.

The usefulness of copper and silver as leads to metalliferous deposits on the subject claims is inconclusive as yet, but both are related in soil anomalies over brecciated diorite at the Bluehawk minesite.

Because of widespread mantling of Cache Creek metasediments over exposed intrusive rocks of the batholith and their probable, but unknown, metalliferous contribution to soils of the area, interpretation of soil anomalies should be very cautious until petrologic source of the metallic values is established. For this reason, soil gold anomalies are highly suspect until shown to be near in-place source structures in crystalline rocks; or, in Permian andesites related to the metasediments.

At this stage, it is inferred that gold and silver-related minor sulphides in quartz veins may occur at the magnetic lineaments at sites 'A' and 'G', and that a complex of quartz veins with unknown precious metal content may be present at the 'I' diorite site.

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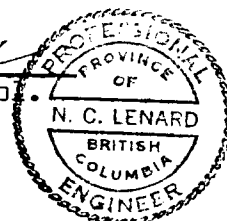
- CERTIFICATION -

I, Neall Curtis Lenard, of the settlement of Westbank in the Province of British Columbia do hereby certify:

1. that I am a consulting geologist with an office mailing address of Box 863, Westbank, British Columbia V0H 2A0,
2. that I graduated from the University of British Columbia with a Bachelor of Arts degree in 1949 (Honours Geology),
3. that I have practised my profession continuously for thirty-one years,
4. that I am the sole owner of the subject Bear group mineral claims,
5. that the statements made in this report are based on a personal examination of the claims on Oct. 13 & 26; Nov. 6, 9, 13, & 16, 1981, and on a study of published and unpublished reports on the property area,
6. that I am a member of the Associations of Professional Engineers of British Columbia and Alberta,
7. that no legal survey has been conducted over the subject mining properties and, therefor, in accordance with the mining laws of the appropriate jurisdiction in which such properties are situate, the existence of and the area of such properties could be in doubt; and,
8. that I attended a short course on Exploration Geochemistry at the University of Calgary in 1970; and, a short course in mining sponsored by the Northwest Mining Association at Spokane, Washington in April, 1981.

DATED AT: The Settlement of Westbank, in the Province of British Columbia, this twenty-first day of December, 1981.


Neall Curtis Lenard, P.Eng., P. Geo.



Ex. Date Dec. 31/1981

- EXPENDITURES -

Field Expenses:

Geochemical survey

N.C.Lenard, P.Geol., 6 days @ \$350. \$2,100.00
(Oct.13,26; Nov.6,9,13,16,1981)

Transportation Auto, 6 days @ \$30. 180.00

Analytical Expenses:

Soil analyses 186.00
Expressing samples 9.30

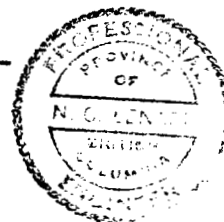
Report Expenses:

N.C.Lenard, P.Geol., 1 day @ \$350.00 350.00
Drafting - 3 hr. @ \$15. 45.00
Typing, reproduction, binding 60.00

Total Disbursements: \$2,930.30

I certify that the above statement is an accurate representation of expenditures made for the geochemical survey of the Bear 2 and Bear 3 claims conducted on Oct.13 & 26; and Nov.6,9,13,& 16, 1981.

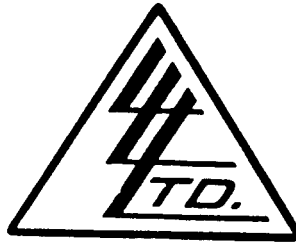
N.C.Lenard
N.C.Lenard, P.Eng., P.Geol.



Ex. Date Dec. 31/1981

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To: Mr. N.C. Lenard,
Box 863,
Westbank, B.C. VOH 2A0

File No. 22891
Date December 15, 1981
Samples Soil

Certificate of
ASSAY
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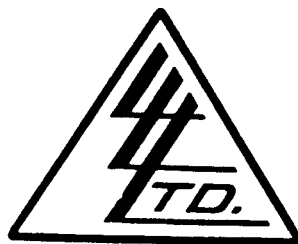
Page # 1

| SAMPLE No. | PPM Cu | PPM Pb | PPM Ag |
|--|-----------|-----------|-----------|
| <u>"Soil Samples"</u> | | | |
| <u>Bear 3</u> | | | |
| 81-1-00MS Site A | 31 | 20 | 1.5 |
| 15MS | 26 | 16 | 2.0 |
| 30MS | 30 | 17 | 1.0 |
| 45MS | 32 | 13 | 1.0 |
| 60MS | 29 | 17 | 1.0 |
| 75MS | 25 | 14 | 1.4 |
| 90MS | 29 | 22 | 1.3 |
| 81-2-60MN | 23 | 14 | 1.1 |
| 75MN | 21 | 12 | 0.8 |
| 90MN | 24 | 13 | 0.8 |
| 105MN | 14 | 10 | 1.0 |
| 120MN | 20 | 9 | 0.8 |
| 135MN | 25 | 26 | 3.1 |
| 150MN | 15 | 11 | 1.0 |
| 165MN | 22 | 11 | 1.4 |
| 180MN | 18 | 11 | 1.0 |
| 81-3-00MS | 24 | 12 | 1.0 |
| 15MS | 46 | 16 | 1.5 |
| 30MS | 90 | 12 | 1.1 |
| 45MS | 20 | 11 | 1.1 |
| 60MS | 18 | 14 | 1.1 |
| 75MS | 22 | 14 | 1.0 |
| 90MS | 30 | 15 | 1.3 |
| 105MS | 33 | 15 | 1.1 |
| 120MS | 16 | 24 | 1.0 |
| 81-4-1 Site 6.4 | 54 | 21 | 1.3 |
| 2 G | 29 | 21 | 1.5 |
| 3 | 51 | 23 | 1.4 |
| I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES | | | |

Rejects Retained one month.

Pulps Retained one month
unless specific arrangements
made in advance.

D. Sinclair
Assayer



To: Mr. N.C. Lenard,
 Box 863,
 Westbank, B.C. VOH 2A0

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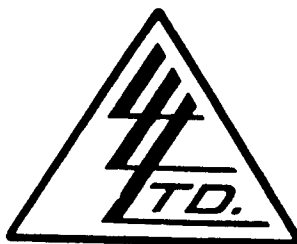
| SAMPLE No. | | PPM Cu | PPM Pb | PPM Ag |
|---|--------|-----------|-----------|-----------|
| <u>Bear 3 Cont'd</u> | | | | |
| 81-4-4 | Site 6 | 31 | 66 | 2.5 |
| 5 | G.A. | 43 | 16 | 1.8 |
| 6 | | 26 | 15 | 1.1 |
| 7 | | 17 | 15 | 1.0 |
| 8 | | 12 | 13 | 0.8 |
| < | | | | |

Rejects Retained one month.

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P. Enders
 Assayer

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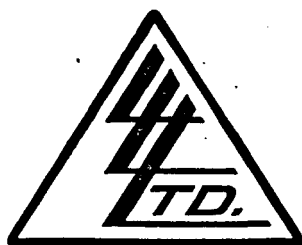
Page # 3

| SAMPLE No. | PPM Pb | PPM Ag | PPM Bi |
|---|-----------|-----------|-----------|
| <u>"Soil Samples"</u> | | | |
| <u>Bear 2/3</u> | | | |
| 81-1- 1 Site I | 14 | 0.7 | 9 |
| 2 | 15 | 1.0 | 11 |
| 3 | 13 | 1.0 | 7 |
| 4 | 14 | 1.0 | 11 |
| 5 | 15 | 1.0 | 12 |
| 6 | 15 | 1.0 | 15 |
| 7 | 17 | 1.8 | 9 |
| 81-2-23 Site I | 18 | 1.0 | 10 |
| 24 | 13 | 0.6 | 8 |
| 26 | 29 | 0.8 | 12 |
| 37 | 15 | 0.9 | 11 |
| 38 | 62 | 1.0 | 14 |
| 39 | 13 | 1.0 | 10 |
| 40 | 18 | 1.8 | 15 |
| 41 | 14 | 1.0 | 8 |
| <p>I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES</p> | | | |

Rejects Retained one month.

Pulps Retained one month
 unless specific arrangements
 made in advance.

T. Lenard
 Assayer



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Phone 274-2777

629 Beaverdam Rd. N.E.
Calgary 67, Alberta

METHODS OF ANALYSIS FOR GEOCHEMS *

1. COPPER, LEAD, ZINC, NICKEL, COBALT, SILVER

500 milligrams of -80 mesh material are weighed into test tubes. Aqua regia added and digested in water bath at 100°C for three hours.

The test tubes are then bulked to the 10 ml. level, mixed and allowed to settle overnight.

The samples are then put through the atomic absorption with appropriate standards and reported in PPM.

2. MOLYBDENUM GEOCHEMS

The same sample weight is used; aqua regia is also used, but just prior to bulking up to 10 mls. volume, 3 mls. of aluminum chloride solution is added to enhance the molybdenum atom. After standing overnight the samples are put through the atomic absorption using a nitrous oxide and acetylene flame. Reported in PPM Mo.

* For Bismuth, the same procedure was used: personal communication from Sodi Berar of Loring Laboratories.

M.C. Leonard, P. Grad.

3600

BEAR 3

'F'

Magn. High trend

Magnetic Low trend

ROAD

GDT

PCC

Magn. high

81-4

'G'

OK1

OK2

OK5 Clm

3600 ft

PCC

12

Jennie

GDT

PCC

'A' POND SITE

Mag. low

81-3

ROAD

Log Blot

Hg soil anomaly

81-1

81-2

81-4

81-5

81-6

81-7

81-8

81-9

81-10

81-11

81-12

81-13

81-14

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81-40

Magnetic high trend (W.S. Read 1969)

OK4

Magnetic high

Magn. high

OK3

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