SOME NOTES ON HYDROTHERMAL ALTERATION AT THE LIMONITE CREEK PROSPECT AREA

Telkwa Pass
Omineca Mining Division
British Columbia

Lat. 54°39′ N.-Long. 126°42′ W.
NTS 93 L/10

Willard D. Tompson, P. Geo.
September 11, 1993

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ILLUSTRATIONS

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Two very large zones of acid-sulfate advanced argillic alteration and aluminous alteration, each 100 to 200 meters wide and more than 500 meters long, crop out near the divide between Limonite Creek and Many Bear Creek, in Telkwa Pass southwest of Smithers, British Columbia.

The acid-sulfate alteration zones are flanked downslope by large exotic limonite deposits which have their origins from oxidizing blind sulfide deposits, which are believed to be genetically related to acid-sulfate alteration.

Rock alteration at Limonite Creek is similar to alteration at the Equity Silver mine near Houston, British Columbia which produced nearly 17,000 kg of gold and 2,300,000 kg of silver during its 12 year lifetime. It is also similar to rock alteration at the great El Indio mine in Chile.

Induced polarization surveys are recommended in the areas of acid-sulfate hydrothermal alteration in order to define possible areas of base metal-precious metal mineralization.

Diamond drilling is recommended to test I.P. targets. About 20 kilometers of I.P. surveys and 5,000 feet (1524 meters) diamond drilling are expected to cost $310,000.00.

Some Notes on Hydrothermal Alteration
at the
Limonite Creek Prospect Area,
Telkwa Pass
Omineca Mining Division,
British Columbia

PROPERTY AND LOCATION

Limonite Creek lies in Telkwa Pass, 52 kilometers west-southwest from Telkwa, British Columbia (Figures 1, 2, and 3.). The origin of Limonite Creek is at the western outlet of Tauw Lake at elevation 820 meters from whence it flows 13 kilometers southwesterly where it joins Zymoetz River at elevation 350 meters.

A 500,000 volt power transmission line, which is owned by British Columbia Hydro and Power Authority traverses Telkwa Pass as does a 16 inch, high pressure, underground natural gas transmission pipeline, which is owned by Pacific Northern Gas Ltd.

An unimproved road traverses the pass and follows approximately the route of the pipeline. Access to the claims is via truck to Tsai Creek on the Telkwa Pass road, and then by helicopter to the claims, a distance of 18 kilometers. At some future date, the road in Telkwa Pass could be improved to provide access to the lower part of the claims.

Figure 1

Map of British Columbia Showing Location of Limonite Creek Prospect Area.

Willard D. Tompson Sept. 10, 1993

Figure 2.- Map showing location of Telkwa Pass area.

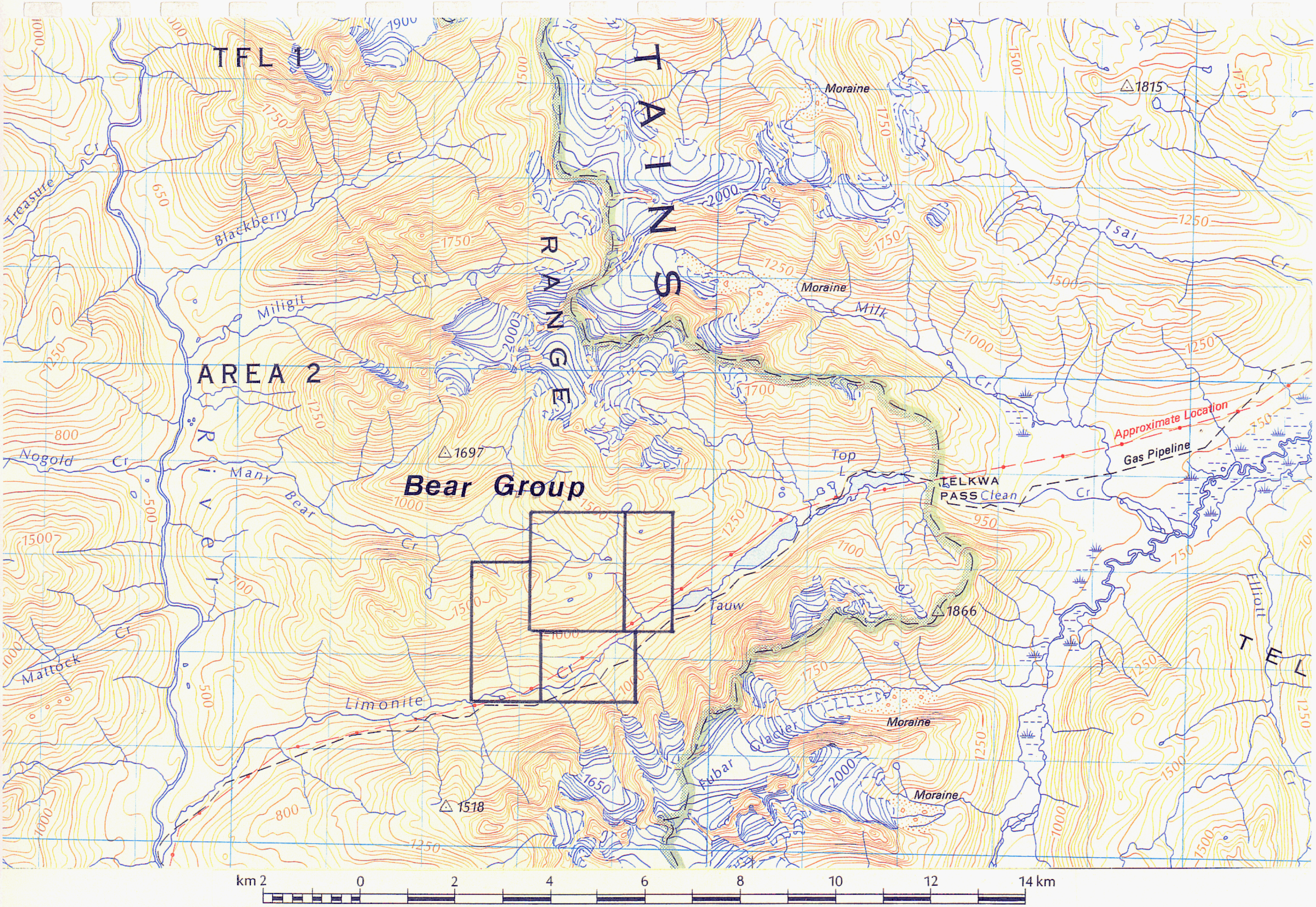

Figure 3.- Topographic map showing Telkwa Pass and area.

CLAIMS

Four claims make up the Bear group in the Limonite Creek - Many Bear Creek area (Figure 4);

Claim Name	Tenure No.	Units
Bear	11317	20
Bear 2	313995	10
Bear 3	313994	12
Bear 4	313993	18

The claims are owned by Willard D. Tompson, signator of this report.

HISTORY AND EXPLORATION RECORD

The first record of prospecting in the Limonite Creek area is reported in the B.C. Minister of Mines Annual Report for 1913. In 1914, the Annual Report noted that limonite ("iron ore") deposits were explored by open cuts and trenches. MacKenzie (1915) reporting, in the Summary Report for the Geological Survey of Canada, presented a brief description of the geology of the limonite deposits and produced analyses of nine limonite samples.

In 1957, Shawano Iron Mines Ltd. (Smith, 1957) drilled 27 holes in the limonite deposits, testing them as a source for iron ore. They noted thicknessess up to 22 feet (6.7 meters) of limonite.

Dirom (1964) reported upon exploration work by Noranda Exploration Co. Ltd. during 1963. Noranda conducted geological,

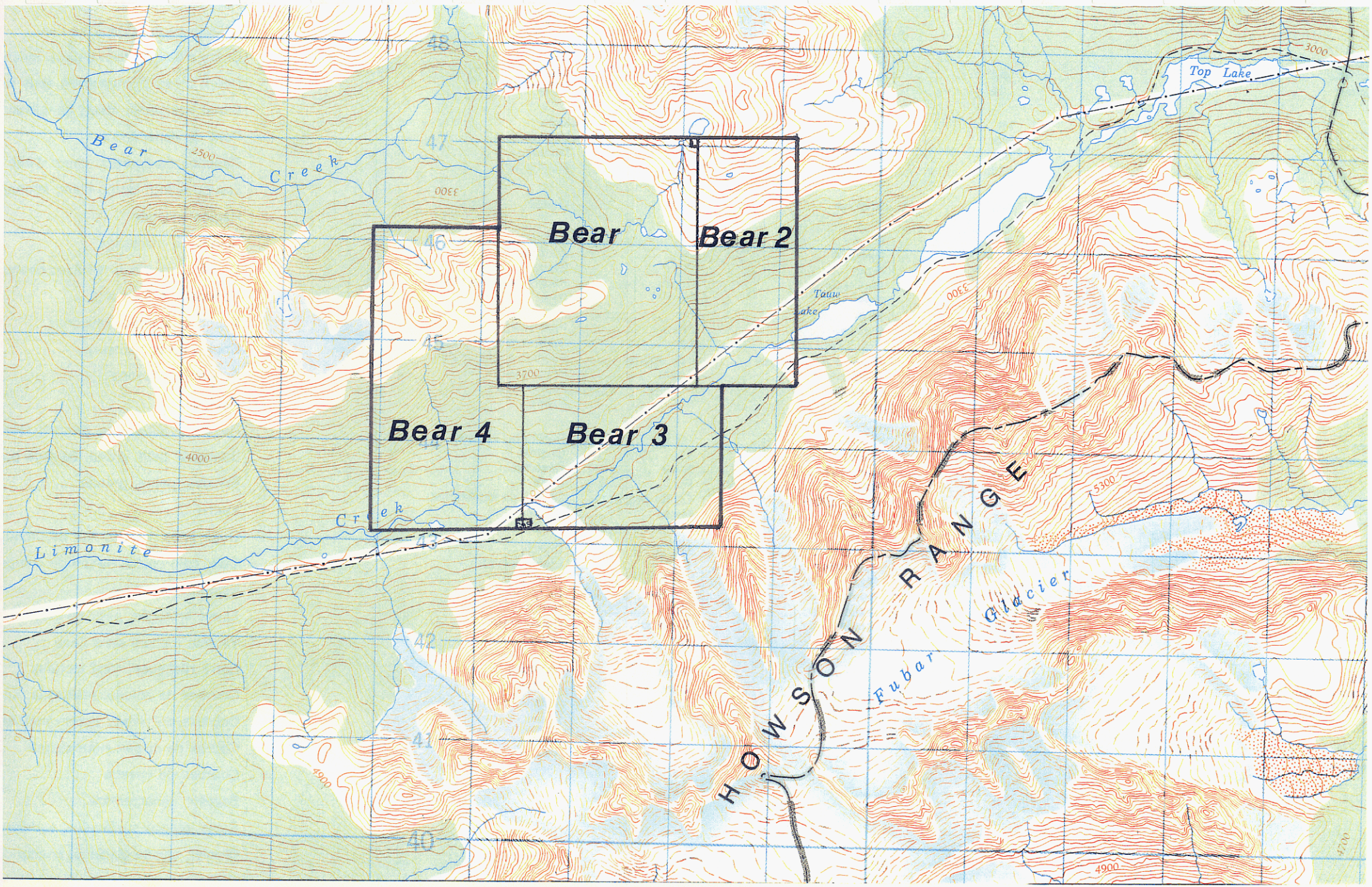

Figure 4.- Claim map of Bear group, Limonite Creek area, Omineca mining division, British Columbia.

geochemical and geophysical surveys, testing a possible porphyry copper environment and drilled one diamond drill hole to a depth of 123 feet (34.7 meters).

Evergreen Explorations Ltd. and Pacific Petroleums Ltd. cut a grid over an area about 2400 feet (730 meters) by 5000 feet (1524 meters) and conducted geological, geochemical and geophysical surveys (Chaplin and Woolverton, 1969) and in 1970 drilled two diamond drill holes for a total of 1250 feet (381 meters).

Fleming (1992) reported upon the results of geological mapping, rock, water and soil geochemical sampling, pulse EM surveys, diamond drilling (394.5 meters) and petrographic studies which were performed by Cyprus Canada Inc. The work was done over a prepared grid which was cut normal to the N.60°E. strike of observed structural features. Fleming (op. cit.) summarized their findings as follows;

"The 1992 program has resulted in the discovery of a significant zone of intense pyritic, aluminous alteration (Many Bear Zone) consisting of complete host rock replacement of sericite, quartz, andalusite, pyrite (5-40%) and lazulite $(Mg,Fe)Al_2(PO_4)_2(OH)_2$ with lesser specularite, corundum, rutile and trace chalcopyrite. The Many Bear Zone was intersected in two diamond drill holes collared 420 meters apart, inclinded to test a linear EM anomaly. The zone has indicated dimensions in excess of 1000 meters in length and 150 meters in width. Soil sampling has outlined a 100 x 300 meter area underlain with limonite, downslope from the Many Bear Zone, that is highly anomalous in copper (200-2465 ppm). Two other EM anomalies, ranging from 800 to 1100 in length, are located proximal to exotic limonites and remain untested."

"The alteration discovered at Limonite Creek is similar to alteration at the Equity Silver deposit (28 million tonnes @ 106 gpt Ag, 0.96 gpt Au and 0.38% Cu) located 100 kilometers southeast of Limonite Creek. The deposit model is one of a highly sulphidized, acid-sulphate Cu-Au-Ag deposit derived from magmatic fluid in the higher and outer parts of a porphyry deposit. The intense alteration at Limonite Creek is the result of high temperature acid leaching. Ore deposition is theorized to occur within or proximal to this alteration. The exploration target at Limonite Creek is either a large tonnage low grade Cu-Ag-Au deposit, a high grade Au-Ag bonanza, or both.

LITHOLOGIC DESCRIPTION OF ROCKS

A suite of rock specimens was collected from many outcrops throughout the grid area and were examined with the aid of a stereomicroscope. Some will ultimately be evaluated petrographically. A map showing the location of the specimen sites is shown as Figure 5 in this report. The megascopic descriptions of the rocks and their respective grid coordinates follow.

Bear Group
Limonite Creek Area
Omineca Mining Division, British Columbia

MEGASCOPIC DESCRIPTIONS OF ROCKS

Specimen Location	Rock Description
L.5W.-4+00N.	Whitish to light greyish matrix with round quartz phenocrysts. Up to 0.5 percent pyrite disseminated thruout. About 1-2 percent chlorite replacing biotite. Rock is quartz-rhyolite porphyry. One grain chalcopyrite with chlorite. This is probably an intrusive rhyolite.
5+75W.-3+00N.	Rock in creek walls is extremely friable and granular; may be readily dug from outcrop with rock hammer. Pale bluish-grey stain thruout. Sparse limonite specks, probably after pyrite. Rock appears to be composed of sericite and quartz, probably about 90:10. Sparse masses of bright blue mineral shown by petrographic examination to be lazulite.
L.2W.-2+85N.	Light grey, fine grained rock with no quartz phenocrysts. Silvery plates of sericite replace muscovite phenocrysts. Small, scattered and clustered, sub-ground grains of bright red mineral are probably rutile. This is advanced argillic zone as shown in drilling.
2+30E.-1+15S.	Coarse grain intrusive rock. Quartz not prominent; less than 10 percent. Matrix slightly sericitized. Coarser grains are slightly sericitized, but mostly fresh. Plagioclase twinning striations are clearly visible. Biotites chloritized and some amphibole partially replaced by limonite. Some feldspares partially rimmed by clay near fracture surfaces. This is a granodiorite.
2+80E.-1+14N.	This is instrusive rock at site of Noranda's DDH 63-1. Matrix is sericitized and has a waxy appearance. Feldspar phenocrysts are sericitized, but not argillized - no clay. Most biotite is glossy. Some magnetite. Chlorite

Specimen Location	Rock Description
	replaces amphibole. Quartz absent or minor. This is granodiorite.
L.2E.-2+00S.	Coarse grained intrusive rock. Matrix is sericitized and waxy. Phenocrysts are cloudy and sericitized, but a few are glossy. Quartz is less than 10 percent. A few biotite phenocrysts are chloritized thruout. Amphibole is chloritized. Rare grains of malachite. Rock is probably altered granodiorite.
1+30E.-2+70S.	Coarse grained intrusive rock. About 1/3 mafics. Feldspar sericitized. Mafics chloritized. Probably contact phase of granodiorite stock.
L.2E.-4+20S.	Fine grained, sugary textured with fg pink feldspar. Probably aplite dike. Some chloritization of a few mafic grains.
0+60E.-1+70S.	Medium grained, grey equigranular rock with about 1/2 to 2/3 mafic minerals. Rock is very magnetic. Similar to dike rocks near L.20E. at 80 to 100 meters north.
3+40E.-1+70S.	Dark grey, coarse grained intrusive rock. Quartz is prominent and up to about 10 percent or so. About 25 percent mafic minerals, all chloritized. Matrix is grey, cloudy and is greenish, waxy and sericitized. This is probably contact phase of monzonite or granodiorite stock. Minor malachite with small quartz vein.
2+30E.-1+15S.	Grey coarse grained intrusive rock. About 10 percent mafic minerals. Less than 10 percent quartz. Matrix is sericitized and waxy. Feldspars are sericitized. Biotite books are glossy, but other mafics chloritized. Some biotite masses are chloritized. Some limonite replaces amphibole. Feldspars are creamy color and waxy near surface exposures - maybe due to weathering.
L.4E.-3+25S.	Coarse grained, intrusive rock. Quartz grains easily visible; about 10 percent

Specimen Location	Rock Description
	quartz. Feldspars are greyish and waxy and are sericitized. Mafics make up about 20 percent and all are chloritized. Matrix is sericitized. This is probably contact phase of granodiorite.
L.4W.-0+15S.	Fine grained, medium grey extrusive rock with about 2 percent pyrite. Appears to be mostly granular textured sericite and pyrite with a few specks of chlorite. Possibly sericitized volcanic lava.
L.1W.-3+50S.	Fine grained, dark grey volcanic rock. All feldspars are sericitized and mafic minerals are chloritized. Rock is probably altered andesite.
L.00-2+30N.	Fine grained, equigranular rock. Mostly dark grey color. Feldspars are sericitized, but some epidote replacing plagioclase. About 5 percent mafic minerals, all chloritized. Probably less than 10 percent quartz. This is probably contact phase of granodiorite stock.
L.5W.-B.L.	Fine grained, dark colored volcanic rock. Matrix is waxy and greenish-brownish color. Mafic masses are chloritized. Rock is probably altered andesite.
L.5W.-B.L. (not same as above)	Dark grey porphyry. Slightly sugary textured. Has mafic phenocrysts. Probably porphritic andesite dike. Mafic minerals are chloritized and matrix is sericitized and/or chloritized.
L.3E.-3+70S.	Coarse grained, whitish to greenish intrusive rock. Quartz greater than 10 percent. All mafic minerals are chloritized. Mafics occur as large grains or masses. Some biotite veins; they are chloritized. A few small quartz veins. Big feldspar cleavages are prominently sericitized. Some limonite replacing small masses of pyrite. Trace malachite. Rock is sericitized and silicified porphyry - probably the local granodiorite which is common in the area.

Specimen Location	Rock Description
0+60W.-5+50N.	Fine grained, equigranular dike. Feldspars and matrix are chloritized. Mafic minerals are chloritized. Tiny quartz veinlet and epidote veinlets transect rock. No magnetite. A few grains of pyrite. This is a dike on Many Bear Creek.
L.5W.-1+40S.	White, fine grained volcanic rock. Rock is strongly sericitized with local masses of clay, which occurs with small bunches of pyrite. About 0.1 percent of vfg pyrite disseminated thruout. A few tiny veins of pyrite with some limonite, but mostly pyrite is fresh. This is a hydrothermally altered volcanic rock; probably an andesite.
L.5W.-1+00N.	Fine grained, dark to medium greenish to grey-greenish color. Many small masses of epidote scattered thruout. This is a hydrothermally altered andesite (?).
L.1W.-2+10N.	Fine grained, dark green volcanic rock. This is an andesite; mafic minerals are chloritized and plagioclase is epidotized(?) or sausseritized(?).
L.1E.-2+45N.	Fine grained equigranular intrusive rock. Probably a dike or perhaps chilled margin of intrusive rock. Rock is dark green, slightly magnetic. Trace of pyrite and a few grains of magnetite. Most mafics are chloritized. Plagioclase is partly epidotized. Rock has a general dark green color.
5+50W.-B.L.	Fine grained, dark green to greyish volcanic rock. Has a few amphibole phenocrysts. Some epidote along amphibole boundaries. Rock is altered andesite. Some bleaching along weathered surfaces. Non magnetic.
L.5W.-3+40S.	Fine grained porphyritic intrusive (?) rock. Grey to greenish matrix. Plagioclase phenocrysts are sericitized.

Specimen Location	Rock Description
	Matrix is sericitized. A few grains of pyrite and rare bornite. A few specks of limonite. This may be a dike or contact phase of an intrusive rock.
L.5W.-4+34S.	Fine grained, grey to greenish matrix with about 30 percent sericitized plagioclase laths. Sparse black phenocrysts of amphibole(?). Trace of pyrite. Non magnetic. Probably hydrothermally altered andesite.
L.5W.-4+35S.	Rock is fine grained, light green in color and appears to contain a few small (1-2mm) clasts of rhyolite. Is thoroughly sericitized. These rocks are from fault area. Fault strikes N.75W., dips 55S. Purple volcanic rocks south of this site were down-faulted along this fault.
L.2E.3+70S.	Fine to medium grained, slightly porphyritic intrusive (?) rock. Probably near contact. Matrix is greenish, sericitized. About 10 percent epidote masses scattered thruout. A few pyrite grains. White feldspar grains are sericitized. This is probably contact phase of intrusive rock.
2+15W.-B.L.	Fine grained, greensih volcanic porphyry with plagioclase phenocrysts. The pheons have parallel to sub-parallel orientation which may reflect flow banding. This is the first rock outcrop on the baseline proceeding westerly toward the ridge. Rock is andesite porphyry.
3+00W.-B.L.	Fine grained, greenish volcanic porphyry, about like specimen at 2+15W. (above). However, this has a few amphibole phenocrysts.
2+50W.-B.L.	This rock occurs along a strong E-W, 60°N. fault. It is greenish, fine grained, with what appears to be dark colored clasts-maybe andesite clasts. Has some epidote veining.

Specimen Location	Rock Description
L.3W.-0+25S.	Intensely sericitized and apparently sheared white to grey rock. It may/may not contain quartz. Quartz was not visible, but large volume of sericite tends to obscure everything else. This is probably another zone of advanced argillic alteration. Requires some petrographic work.
L.3W.-0+60S.	Strongly foliated, altered andesite. Rock is altered to sericite and quartz. Quartz is abundant and some may be secondary. Some minor boxworks. A group of lavender-colored small grain mineral masses which are unidentified. This is intensely altered rock which requires some petrographic work.
L.3W.-1+20S.	Description represented by several specimens from an area about 10X20 meters. Rock was originally andesite. It is strongly brecciated, silicified and limonite stained. Abundant quartz veining and cellular psuedomorphs after vfg sulfide minerals. Secondary quartz is brecciated and silicified. Massive talc occurs on the southeast edge of the breccia zone. It is typical white to creamy color.
0+40W.-2+30N.	Dark green, fine grained volcanic rock with a few laths of plagioclase and a few amphibole phenocrysts; amphiboles are chloritized.
0+20W.-2+70N.	Medium grained, light green intrusive (?) rock with about one percent euhedral to subhedral pyrite. A few 1mm quartz veins transect rock. Some epidote. Non-magnetic. Rock is probably an andesite dike.
L.6W.-2+60S.	Grey tuff with clasts, about 1/8" to 1/4". Contains about 2-3 percent vfg fresh auhedral pyrite. Orthoclase phenocrysts are kaolinized. Matrix is sericitized.
1+80E.-0+75N.	Dark grey, medium grained dike. Very magenetic. Equigranilar, about 2/3

Specimen Location	Rock Description
	plagioclase and 1/3 mafic minerals. Lots of vfg magnetite. Probably same dike as at L.2E.-1+00N.
4+30E.-1+50N.	This outcrop about 60 meters southwest of the kitchen tent at base camp. Coarse grained intrusive rock with prominent books of biotite which are fresh and unaltered and about 1/2 to 1 mm in section. Matrix is grey and sericitized. Phenocrysts of feldspar are fresh to slightly sericitized. About 10 percent quartz. This is the local common granodiorite.
0+40W.-1+40N.	These outcrops are just northwest of the small lake at the "00" point on the grid. The outcrops are glacially polished and the plane of the rock surface dips about 30° SE towards the lake. The rock is a volcanic breccia with clasts of volcanic rock which are up to 2 inches or so. The rock is dark, fine grained, greyish to greenish with pyrite and epidote veinlets. The rock is bleached white on fractures. There are many small masses of epidote. The rock is an andesite breccia with chloritic and epidote alteration.
1+30E.-2+30S.	Fine to medium grained grey instrusive rock. About 1/2 mafic minerals. All appear to be fresh. Minor pyrite. Rock is very magnetic. This is a diorite dike which appears to intrude the granodiorite.
4+40E.-2+25N.	This outcrop is at outlet of lake at the camp area. Coarse grained intrusive rock with prominent books of biotite. Matrix is grey, sericitized. This is the local granodiorite.
7+80W.-0+15S.	This is a hydrothermal breccia in andesite or rhyolite (?). The rock consists of crowded, angular fragements of host rock cemented by quartz and limonite.

GENERAL GEOLOGY

The Limonite Creek area is underlain by the Howson subaerial facies of the Lower Jurassic (Sinemurian) Telkwa Formation (Tipper and Richards, 1976). The rocks are largely red, maroon, purple, pink, grey and green, well bedded flows and pyroclastic rocks with compositions from basalt to rhyolite. These are intruded by rocks of the Howson batholith which are thought to be approximately coeval with the volcanic rocks. An apophysis of Coast Range Intrusions lies west of the prospect area.

GEOLOGY OF THE CLAIM AREA

The central part of the claim area was mapped by Fleming in 1992 as part of the exploration program by Cyrpus Canada Inc. (Fleming, 1992). The rocks in the mapped area are shown to be mostly green andesite with lesser amounts of rhyolite and dacite. The volcanic assemblage is intruded locally by andesite dikes, diorite dikes and by a biotite-granodiorite stock which crops out in several localities in the eastern part of the grid area.

Hydrothermal alteration is widespread and in addition to ubiquitous chloritization of the volcanic rocks, two large zones of acid-sulfate hydrothermal alteration occur.

Aluminous Alteration

A zone of aluminous alteration, as defined by Wojdak, and Sinclair (1984)in their study by hydrothermal alteration at Equity Silver, occurs on the slopes above Many Bear Creek just north of the baseline and is shown as "Unit 5" by Fleming (1992, Figure 3).

The alteration zone is exposed in the walls of small drainages in two localities and was intersected in diamond drill holes drilled by Cyprus Canada Inc. in 1992 (Fleming op.cit.). The zone strikes about N.50°E. and is known to be 150 to 200 meters wide and more than 500 meters long.

Rocks in the zone of aluminous alteration are composed principally of sericite with widely ranging amounts of quartz, andalusite from zero to 40 percent, lazulite from zero to 7 percent, corundum from zero to 3 percent, minor muscovite, traces of rutile, pyrite up to five percent and in one sample, 25 percent alum.

Advanced Argillic Alteration

Zones of advanced argillic alteration (Panteleyev, 1991, Sillitoe and Camus, 1991 and Bonham, 1988) occur along the south slope of the ridge which forms the divide between Limonite Creek and Many Bear Creek at elevations from 1365 to 1440 meters (Fleming, 1992, Fig.3). The zones strike easterly to northeasterly and are only intermittently exposed, as the area is covered by glacial drift with abundant growths of sub-alpine spruce.

The exposures occur over a length of more than 500 meters and through widths which vary up to about 200 meters. The rocks are strongly foliated, are whitish to greyish on weathered surfaces and whitish on fresh surfaces. Megascopic examination indicates that they are composed mostly of sericite with some clay. Quartz is not readily visible except as vein quartz. Pyrite content varies from about 0.1 to 2 percent and the pyrite is very fine grained and is fresh. Small masses of a lavender-colored mineral occur, which may be dumortierite.

Hydrothermal Breccia

Two hydrothermal breccias occur along a fault near the western boundary of the grid (coordinates 7+80W.-0+15S.). Host rocks are probably altered andesite or rhyolite. The breccia consists of crowded, angular fragments of the host rock cemented by quartz. The breccia zones are irregular in shape and their outcrops are slightly less than 10 by 20 meters in size.

Quartz Breccia

Quartz breccia with vein quartz and abundant cellular psuedomorphs and limonite, occur over an area of about 10 by 20 meters at coordinates, L.3W.-1+20S. Multiple stages of brecciation and healing by vein quartz are visible. Massive, white to creamy colored talc occurs on the southeast edge of the breccia zone.

CONCLUSIONS

Several features are recognized at Limonite Creek which indicate that Cu-Ag-Au mineralization is associated with acid-sulfate alternation in the area.

1. Very large exotic limonite deposits are distributed around the perimeter of the mountain which forms the height of land between Limonite Creek and Many Bear Creek, suggesting that a blind sulfide deposit lies within the mountain.

2. Drainages in and around the limonite deposits are acidic, indicating that oxidation is active in the sulfide deposit.

3. Anomalous geochemical values for Cu and Ag are irregular, but indicate the presence of those metals in the sulfide deposit.

4. The rocks were profoundly altered by a very large and dynamic hydrothermal system as shown by the presence of parallel zones of aluminous alteration and advanced argillic alteration, each more than 500 meters long and 100 to 200 meters wide.

5. Transient electromagnetic data by Cyprus Canada Inc. (Fleming, 1992) show that several conductive zones occur in the same area as the acid-sulfate advanced argillic and aluminous alteration.

It is well established that certain copper-gold-silver deposits are genetically related to acid-sulfate advanced argillic and aluminous alteration (Sillitoe and Camus, 1991; Bonham, 1986; Vila, 1991; Panteleyev, 1991 and Wojdak and Sinclair, 1984). Present geological evidence indicates that the prospects at Limonite Creek comply with this model.

RECOMMENDATIONS

Pulse EM surveys were conducted in 1992 because the geological environment was considered to be volcanogenic. However, as a result of the work done by Cyprus Canada Inc. (Fleming, 1992) the environment is shown to be epithermal, with rock alteration and mineralization being genetically related to subvolcanic porphyry intrusions.

Therefore, induced polarization surveys are recommended to cover the areas of acid-sulfate advanced argillic and aluminous alteration in order to define possible areas of base metal-precious metal mineralization. Estimated cost of the I.P. survey is $20,000.00.

A diamond drill program is proposed to test areas of acid-sulfate advanced argillic and aluminous alteration and the expected I.P. anomalies. About 5000 feet (1524 meters) are recommended at an all-inclusive cost of about $275,000.00. It is noted that a Longyear 38 drill, or a drill of comparable capacity, using NQ equipment is required due to the extremely friable character of the altered rocks.

About $10,000.00 cost will be incurred in re-establishing camp and about $5,000.00 will be required for demobilization at the end of the field season.

The total cost is expected to be $310,000.00.

STATEMENT OF COSTS OF EXPLORATION WORK

W. D. Tompson, field work, Aug. 9, 10, 11, and 19 @ $300.00	$1,200.00
Al Burrows, field work, Aug 9, 10 and 11 @ $200.00	600.00
J. A. Morin, Aug 19 @ $300.00, field work	300.00
B. M. Bohme, Aug 19 @ $300.00, field work	300.00
W. D. Tompson, research and microscope work, 42 hours	1,500.00
W. D. Tompson, report preparation, 4 days @ $300.00	1,200.00
Drafting, contract, Paul Dwyer	225.00
Typing, contract	125.00
Copies of map and Xerox	100.00
Helicopter, 0.8 hrs x 2 trips X $750/hr.	1,200.00
Total	6,750.00

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CERTIFICATE

I, Willard D. Tompson, of Smithers, British Columbia, do hereby certify:

1. THAT I am a consulting geologist residing at 1380 Cronin Place, Smithers, British Columbia;

2. THAT I hold a Master of Science degree (Geology) from Montana State University, Bozeman, Montana;

3. THAT I am registered as a Professional Geoscientist by the Association of Professional Engineers and Geoscientists of British Columbia;

4. THAT I am a Fellow of the Geological Association of Canada;

5. THAT I have practised my profession for more than 30 years;

6. THAT this report is based upon field work which was conducted by me;

7. THAT I am the owner of the claims which are the subject of this report.

Dated at Smithers, British Columbia, this 15th day of September in the year, 1993.

W. D. Tompson

Willard D. Tompson, P.Geo.

LCP BEAR

Bear M.C. 11317

Bear M.C. 11317

Bear 2 M.C. 313995

Bear M.C. 11317

Bear 3 M.C. 313994

Kitchen

Office Tent

Lake

Trail

Baseline

L.0E L.1E L.2E L.3E L.4E L.00 L.1W L.2W L.3W L.4W L.5W L.6W L.7W L.8W

25m 50m 100m

○ = Location of specimen with Litho description.

McElhanney
Ref.No. 1343 - 0

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McELHANNEY GEOSURVEYS LTD.
780 Beatty St, Vancouver, B.C., Canada
from aerial photography at an approximate scale of 1:20000
flown in July 1988

Scale 1:5000	Date May 1991
Contour Interval 5 Metres	Sheet No. 1 of 1

Figure 5

Map Showing Locations of Rock Specimens Described in Text of Lithologic Report.

Bear Group

Omineca Mining Division, British Columbia.

Willard D. Tompson August 31, 1993.