Report of Enzyme Leach Soils Survey on the HOT MINERAL CLAIMS

KAM 2000 - 0300443-566

Clinton Mining Division

NTS 92P-15 E

Lat. 51°58' Long. 120° 39'

Owned and operated by:
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December 2000

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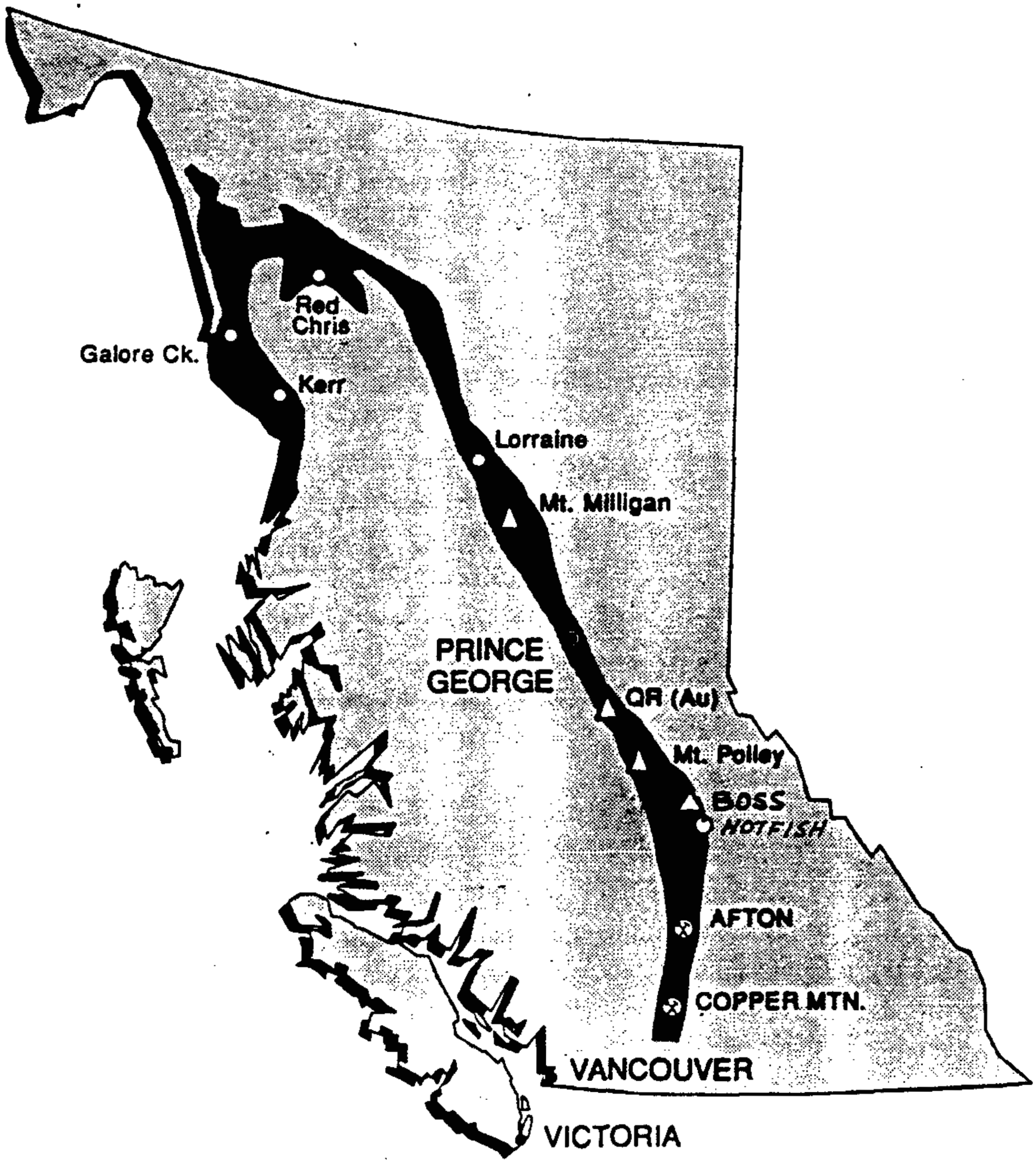
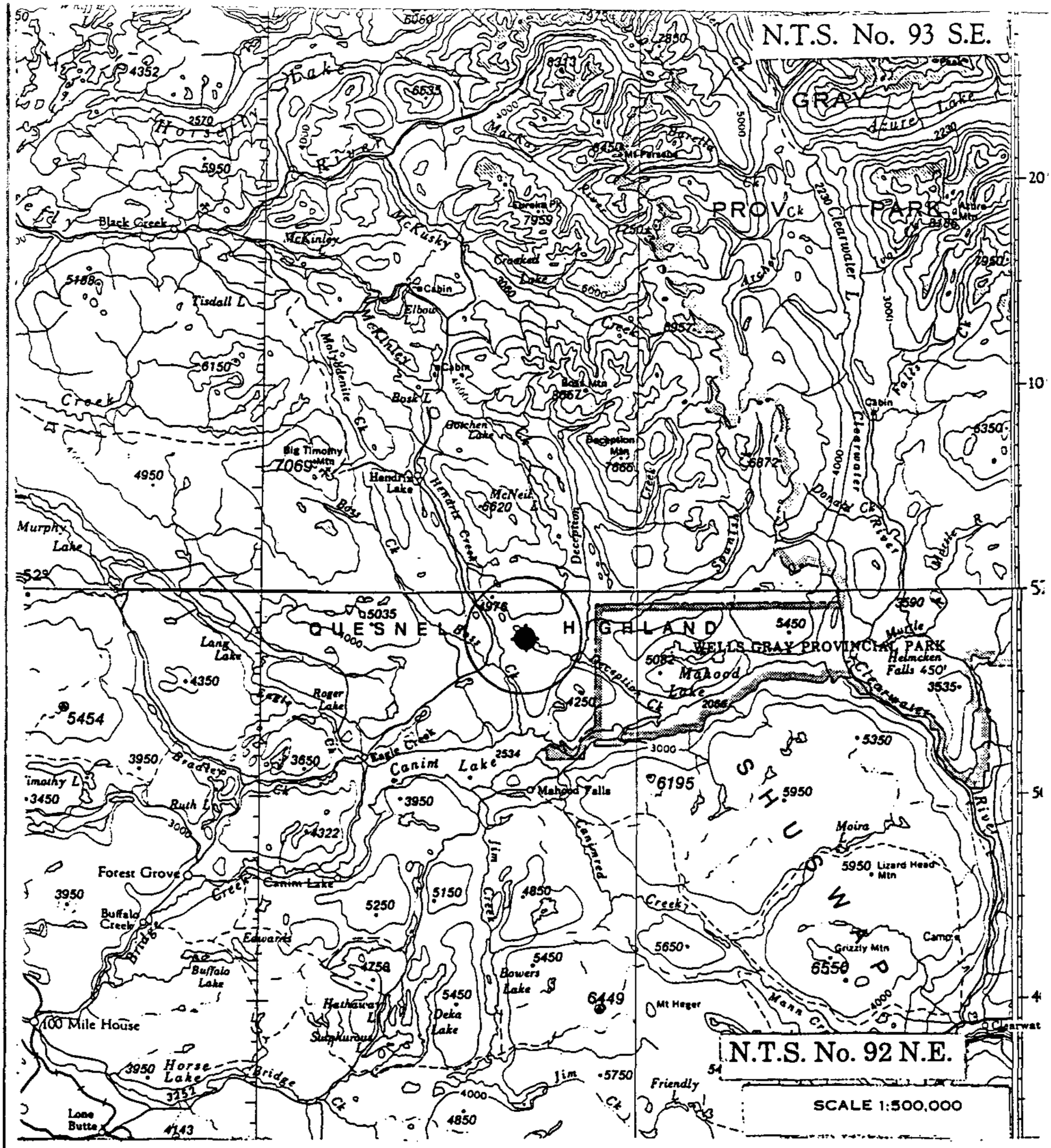


HOT CLAIMS

REGIONAL GEOLOGY LOCATION MAP

QUESNEL TROUGH VOLCANIC STRATIGRAPHY
AND ORE DEPOSITS

Figure 1A



HOT CLAIMS

GENERAL LOCATION MAP

Figure 2

SUMMARY

The Hot Mineral Claims (26 units) are located in the Clinton M.D. of central B.C., some 60 km ENE of 100 Mile House, B.C.

The property lies within the Triassic Quesnel Trough volcanic succession, and is just south of a satellite stock of the Takomkane batholith. The immediate area of interest lies within a low-lying swampy drainage system with negligible outcrop exposure. Overburden of clayey, grey glacial drift is estimated at +5 m in depth. Technical surface surveys since 1990, including soil geochemistry and I.P. survey have identified a moderately anomalous geochemical and strongly responsive I.P. chargeability target some 500 x 700 m in size, open for expansion. Scattered root ball floats have returned Cu Zn Ag results, while outcrops of felsic volcanics are not too far distant.

Current 2000 work consisted of a 50-sample Enzyme Leach project crossing the main sector of the defined I.P.-Geochem anomaly. The results of the EZL survey are affirmative, and indicate sub-surface oxidation cells caused by sulphides, with VMS potential. The zone is now ready for a winter drill test. Costs of the current work are $6,349.73.

INTRODUCTION

The southeastern sector of the Hot Claims hosts a substantial Cd Ag Cu Zn soils anomaly detected by conventional soil geochemistry which is further amplified by an underlying strong I.P. conductor zone. The anomalous area measures some 700 x 700 meters open in two or more directions. The target area is entirely drift covered and occupies low lying to swampy terrain. During the field period of 10-14 September 2000, a total of 50 soil samples were collected from the target area for Enzyme Leach Analysis (EZL). The results of the EZL analyses and specialized interpretation report are appended.

LOCATION AND ACCESS (FIG. 2,3)

The property is road accessible via provincial highway 97 to 100 Mile House, then by the Canim Lake Road to Eagle Creek, then via the Weldwood mainline to Hendrix Creek, then via the Weldwood 7000 Road to the claimed area.

Specific locational details are:

NTS 92P - 15E
Clinton Mining Division
Lat. 51° 58'
Long. 120° 35'

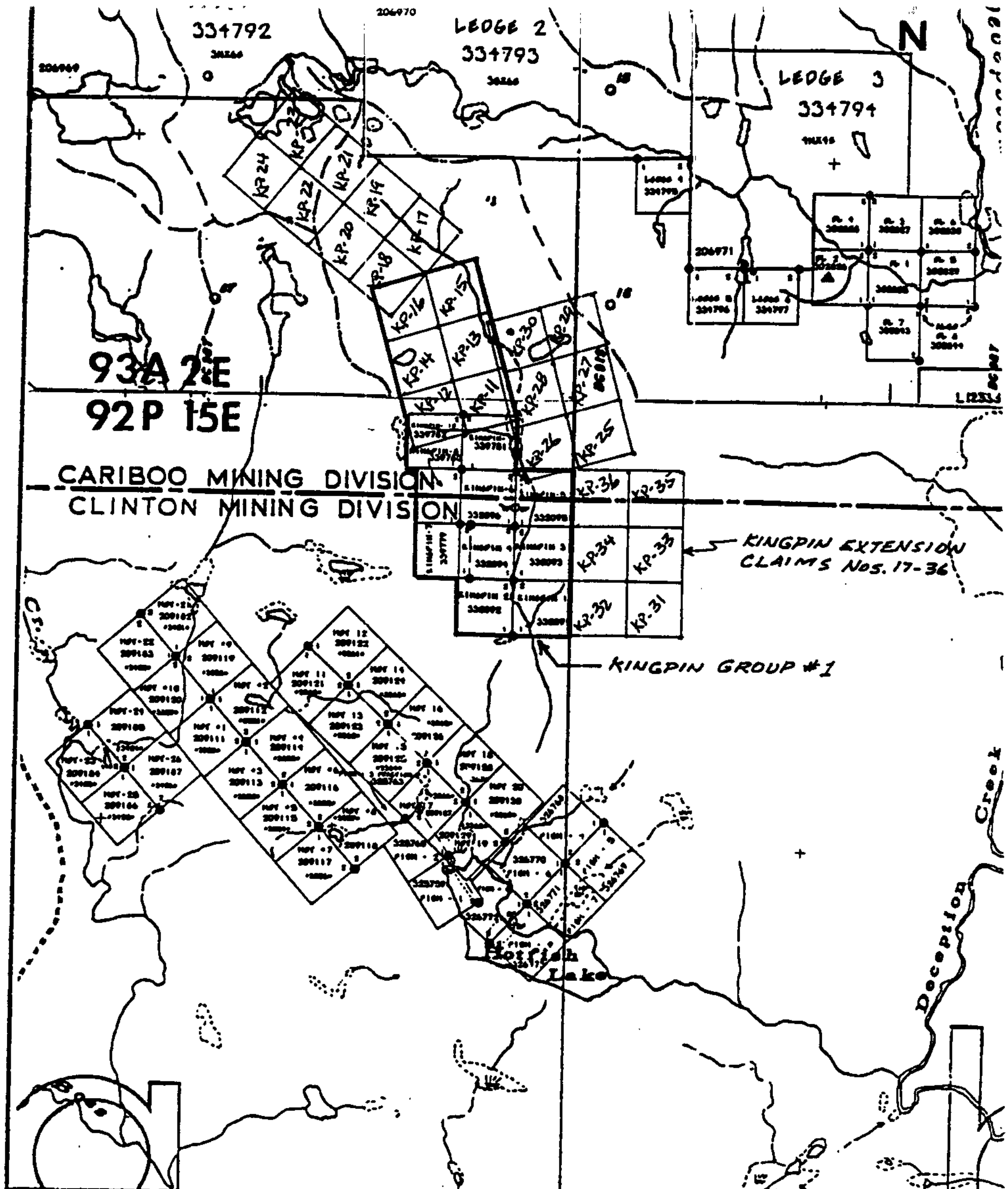


Fig. 3 PROPERTY LOCATION MAP
HOTFISH AND KINGPIN EXTENSION CLAIMS
SCALE: 1:50,000

PROPERTY (FIG.3) In Pocket

The property consists of twenty-six 2-post claims as follows:

Claims(s)	Tag/Nos.	Date Staked	Tenure Nos.
Hot-1 to 8	61456M-614573M	17 June 1990	20911-209118
Hot-9 to 14	617677M-617682M	18 June 1990	209119-209124
Hot-15 to 20	614574M-614579M	25 June 1990	209125-209130
Hot-21 to 26	636504M-636509M	03 Sept 1990	209182-209187

The above are all staked in accordance with current provincial mining regulations and are situated within the Clinton Mining Division.

TERRAIN/TOPOGRAPHY

The Hot Claims are located within the Quesnel Highland division of the Fraser Plateau. Elevations on and around the claims range from 3,300 to 4,000 feet ASL. Terrain varies from rough rocky ridges to low, flat alder-choked swampy areas.

Claims on which clear-cut logging has been performed include Hot 2 & 9, Hot 1, 3, and 4, Hot 14, and Hot 23 and 25. The unlogged claim area is covered by a dense spruce-pine-fir-cedar-aspen bush with abundant windfall. The swampy areas and ridge tops are thickly vegetated with tag alders. Overburden is variable, consisting of both sandy and clayey glacial drift.

Within the soil-anomalous area (Hot17-20) overburden is likely in excess of 5 meters.

HISTORY

There is no record of, nor indications of, any previous exploration within the claim area.

The current claim holder has submitted four reports covering work performed in the years 1991, 1992,1994 and 1996 (References).

WORK PERFORMED

Field work was completed during the period 10-14 September 2000 and consisted of:

Line Cutting: 2,410 meters lines 0, 1SE, 2NW

Soil Sampling: 50 each from lines 00 and 1SE.

Line 2 NW was not sampled due to unusually wet conditions in swampy areas. The entire grid will need re-cutting for future work due to thick underbrush growth since the last work episode.

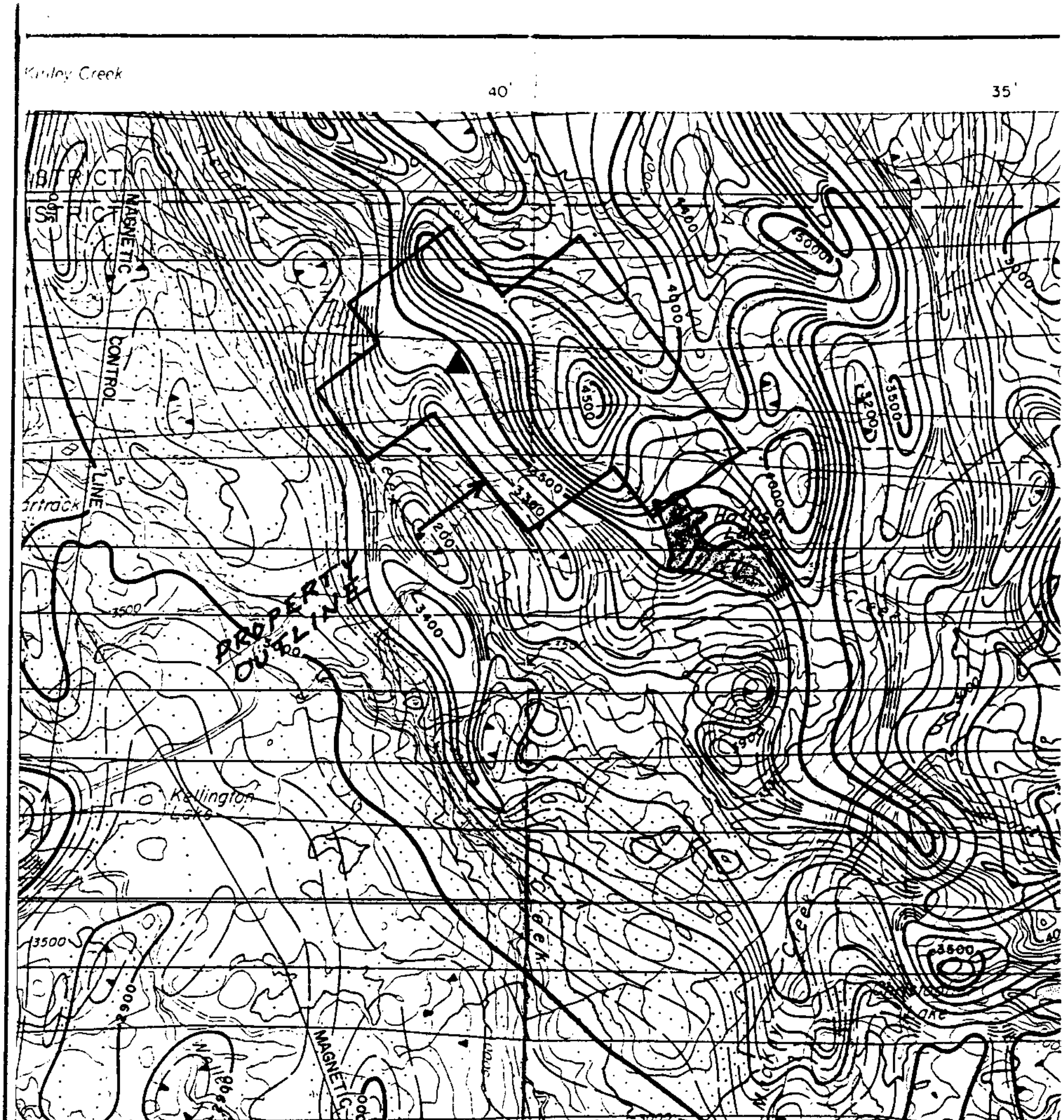
Additionally, over a dozen root balls of large windfall spruce were examined with negative results, other than positively confirming the silty, rocky nature of the glacial drift overburden.

REGIONAL GEOLOGY (reference GSC map 1278C Bonaparte Lake)

The hot claims are located within the Quesnel Trough geological belt consisting of generally mafic to andesitic volcanic rocks of Triassic/Jurassic age intruded by plutons of similar or younger ages. The Quesnel Trough is a prolific mineral belt (FIG.1) hosting many intra-volcanic and intrusive hosted Cu, Mo, Ag, Au deposits. The Hot Claims lie 24 km southeast of the former Boss Mountain molybdenum mine.

PROPERTY GEOLOGY

The Hot Claims lie in the central zone of wrap-around stratigraphy indicated by regional aeromagnetics. The zone has a broad horseshoe shape open to the northwest, interpreted to be a southeast plunging anticline. The core area is underlain by a satellite plug of Takomkane quartz monzonite (referred to as the "TK" stock), which has induced weak to strong contact metasomatic effects in the adjacent volcanic and argillite units. The stratigraphic package consists of andesitic to mafic tuffs with occasional small areas of pillow lavas and volcanic breccia, and light to dark colored argillites. A zone of partly fragmental, pyritic tuffs is present on the Fish claims about 800 meters southeast of the main soil anomaly. An out-of-context outcrop of Paleozoic? quartz-feldspar-biotite gneiss lies along the north side of the 7000 road on the nose of the monzonite plug, suggestive of high amplitude faulting.



HOT CLAIMS

LOCATION VS. REGIONAL AEROMAGNETICS
SCALE 1" = 1 mi

Figure 4

In the main soil anomaly zone, the nearest outcrops are several hundreds of meters removed from the core of high values. The low ridge to the west has outcrops of augite porphyritic volcanics showing strong carbonate alteration and variable pyritization. To the east of the core is a small outcrop area of silicified argillites which strike northerly, and are associated with a zone of higher resistivities.

GEOCHEMISTRY (FIG. 5)

The results of previous conventional soil geochemical sampling can be summarized as follows:

Humic soil samples were collected at 20M intervals along the cut lines as referenced in the above figures, using standard collection procedures. The collected samples were shipped to Acme Analytical Laboratories for 30 element ICP geochemical analysis.

Humic material was selected for the deep pumping capability of vegetative root systems, which access lower levels of ground water in contact with potential bedrock sulphides.

The resultant values show a substantial anomalous zone for Cd,Ag, Zn, and Cu in the humic soils measuring some 700 x 700 meters oriented in a NW-SE direction occupying the Hot #17 and 19 claim areas. A more defined Cd-Ag zone lies along and just west of the base line, measuring some 700 meters by 100 meters. The anomalous zone appears to continue under the waters of Hotfish Lake. Within the core area cadmium values reach a maximum of 37.2 PPM which is 186 times the normal crustal abundance (0.2 PPM) for this element. The highest silver value, 7 PPM, is 100 times normal crustal abundance (0.07 PPM). Peak values for Cu and Zn reach levels of 447 PPM and 520 PPM respectively. Low level anomalous values for Ni up to 143 PPM are generally co-associated with Cu-Zn. Higher Ba values in the range of 3-500 PPM also correlate with anomalous levels of Cd-Ag-Cu-Zn.

A plot of calcium values shows that the metal-anomalous zone coincides with Ca values of 1-5%, which may explain the lack of mobility of Cu,Zn,Ni in this particular setting.

In summary, a significant soil anomaly has been identified within a low-lying swampy area devoid of outcrop. A float has been located at ISE-122NE containing sphalerite with a Cd content of 155.5 PPM. The metal signature is indicative of VMS exhalative mineralization being present in the sub-surface.

Current Sampling Program

Surface soil samples were collected along lines 00 and 1SE at 40 meter intervals and at depths ranging from 10-30 cm, with an intrenching tool. Samples were type-coded and sealed in standard kraft envelopes for shipment to Acme Analytical Laboratories of Vancouver. The samples were prepared in Vancouver and shipped to Activation Laboratories Ltd., Ancaster, Ontario for final EZL analysis.

The type coding used was as follows:

O = Organic (black decomposed materials)
L = Loam (brown to black, uniform, organic rich soils)
N = Dark gray to gray, clayey, silt glacial drift
B = B-horizon soils

The tabulation of soil types by line and station is given below:

HOTFISH - Soil types

L 1SE	L 00
00-L	40 NE-B
40 SW-B	80 NE-N
80 SW-B	120 NE-N
120 SW-B	160 NE-N
160 SW-N	200 NE-L
210 SW-L	240 NE-B
40 NE-L	280 NE-N
80 NE-B	320 NE-L
120 NE-L	360 NE-L
160 NE-L	400 NE-L
200 NE-B	440 NE-0
240 NE-L	480 NE-B
280 NE-L	520 NE-L
320 NE-L	560 NE-L
360 NE-L	600 NE-0
400 NE-L	640 NE-0
440 NE-N	00-B
480 NE-N	40 SW-N
520 NE-N	80 SW-N
560 NE-N	120 SW-N
600 NE-L	160 SW-B
640 NE-B	200 SW-B
Total: 22	240 SW-B
	280 SW-B
	300 SW-B
	340 SW-B
	380 SW-B
	400 SW-B
	Total: 28

Analytical results for individual samples are given in Appendix 1. Interpretation of the EZL data is contained in Appendix 2. The results and conclusions of the EZL report confirm and enhance results of earlier conventional geochemical work and indicate a large +500 x +700 meter sulphide enhanced zone with VMS potential. Due to data complexity, it is necessary to employ color to differentiate the co-associations of metal patterns.

MINERALIZATION (Refer FIG. 5)

The clustering of anomalous silt and float values documented in the report of November 1992, for the Claim #17 area, has been traced to a substantial Cd-Ag-Zn-Cu soil-anomalous zone. This entirě area is covered with no outcrops. The float samples located to date have been fortuitous discoveries, and in the aggregate would represent less than 1% of the float rock composition in the near surface overburden.

The most significant finds are:

1. In October 1993, high cadmium sphalerite was seen in one float sample (LISE-122NE [R]), which returned values of 620 Zn, 1.6 Ag, and 155.5 Cd. Other floats of interest were:

LB-690SW 637 Zn, 2.7 Ag, 26.3 Cd
LC-834SW 456 Zn, 1.6 Ag, 37.0 Cd

Petrographic analysis of several float samples, including two of the above, indicates that the subject floats are tuffaceous in origin and have been strongly deformed by tectonic granulation resulting in a brecciated cataclastic texture containing broken vein minerals and sulphides, plus a later fracturing element accompanied by minor sulphides.

None of the above were particularly large samples, and none were located in close proximity to the strongest portion of the Cd-Ag soils anomaly.

2. During the 1996 program, a +200 kg block of angular, sharp edged float was located at tie line east 25SE-20SW under a recent blow-down. A sample returned ppm Cu 231, Zn 614, Ag 4.3, and Cd 43.4. petrographic analysis indicates the rock to be a crudely banded felsic/intermediate tuff of volcanic or volcaniclastic origin, containing 20% carbonate with a skarny overprint. This is the largest float found to date suggestive of a probable nearby (subsurface) origin.

GEOPHYSICS

An induced polarization survey covering 4.7 kms at the Hotfish grid was completed during the period 21-23 September 1996. A pole-depole array was employed with an electrode separation of 40 meters and readings to "N" 4.

The survey located a strong conductor zone below the Cd/Ag soil anomaly indicated by the +25msec contour. A second strong conductor was identified along the ridge at the western grid extremity.

A complete closure to the I.P. Survey was not obtained due to beaver flooding over the swampy portion of L4SE.

CONCLUSIONS & RECOMMENDATIONS

The recently completed EZL Survey has confirmed and enhanced earlier work and outlines a substantial target zone with VMS potential. A winter drill test is recommended to test for grade and size of indicated sub-surface mineralization.

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December 2000

HOTFISH
STATEMENT OF COSTS

57.14% to Hotfish project of common travel and field expense costs.

H. Wahl, 4 days field @ $600/day	$2,400.00
H. Wahl, 4 days reporting @ $300/day	$1,200.00
Sub Total:	$3,600.00
Travel expenses and accommodation	352.73
Field Equipment and supplies	157.00
Field vehicle, 1996 Cummins Dodge 4X4 Lic. No. 4086PP, 4 days @$110/day	440.00
Assays, 50 soils for Enzyme Leach Analysis, plus interpretation	1,500.00
Report preparation and secretarial	$300.00
Sub Total:	$2,749.73
Grand Total:	**$6,349.73**

Certified True and Correct

H. Wahl, P.Eng. B.C.

REFERENCES

(1) GSC Map 1278A, Bonaparte Lake, scale 1:250,000

(2) Report of Preliminary Prospecting on the Hot Mineral Claims by H. Wahl, April 1991

(3) Report of Reconnaissance Geological and Geochemical Work on the Hot Mineral Claims by H. Wahl, November 1992

(4) Report of Preliminary Grid Work on the Hot Mineral Claims, by H. Wahl, January 1994

(5) Report of I.P. Survey and Related Work on the Hot Mineral Claims, by H. Wahl, November 1996.

APPENDIX I

Quality Analysis... Actlabs Innovative Technologies

Invoice No.:	20652
Work Order:	20779
Invoice Date:	27-OCT-00
Date Submitted:	29-SEP-00
Your Reference:	A003687
Account Number:	477

ACME ANALYTICAL LABORATORIES LTD
852 EAST HASTINGS
VANCOUVER, B.C.
V6A 1R6
ATT: CLARENCE LEONG

CERTIFICATE OF ANALYSIS

50 SOILS were submitted for analysis.

The following analytical packages were requested. Please see our current fee schedule for elements and detection limits.

REPORT 20652 RPT.XLS CODE 7-ENZYME LEACH ICP/MS(ENZYME.REV1)

This report may be reproduced without our consent. If only selected portions of the report are reproduced, permission must be obtained. If no instructions were given at time of sample submittal regarding excess material, it will be discarded within 90 days of this report. Our liability is limited solely to the analytical cost of these analyses. Test results are representative only of material submitted for analysis.

CERTIFIED BY :

DR E.HOFFMAN/GENERAL MANAGER

Enzyme Leach Job #: ***20779 Report#: 20652*** ***Customer:*** ***Geologist:*** ***Customer's Job #:***

Trace element values are in parts per billion. Negative values equal NOT DETECTED at that lower limit. Elements arranged by suite and by atomic mass.

Values = 999999 are greater than the working range of the instrument. S.Q. = That element is determined SEMIQUANTITATIVELY.

Regular Package:	*Oxidation Sul*															*Base Metals:*					*Base Metal - Chalcophile Association Indicat*								*Higl*
Sample ID:	S.Q. Cl	Br	I	V	As	Se	Mo	Sb	Te	W	Re	Au	S.Q. Hg	Th	U	Co	Ni	Cu	Zn	Pb	Ga	Ge	Ag	Cd	In	Sn	Tl	Bi	S.Q. Ti
HF LO 640NE	35300	134	37	213	16	22	53	8.8	-1	-1	0.24	-0.05	-1	1.0	1.6	13	67	56	31	-1	2	1.0	-0.2	7.2	-0.1	-0.8	0.2	6.3	380
HF LO 600NE	25200	252	57	140	20	27	54	5.2	-1	-1	0.60	-0.05	-1	0.7	1.2	36	104	49	42	-1	2	0.7	-0.2	22.6	-0.1	-0.8	0.3	3.7	450
HF LO 560NE	11100	130	50	220	17	13	28	5.5	-1	-1	0.19	-0.05	-1	1.8	1.7	9	63	44	67	2	3	-0.5	-0.2	5.6	-0.1	-0.8	0.2	1.8	543
HF LO 520NE	5940	171	53	210	18	12	26	5.7	-1	1	0.09	0.06	-1	2.7	3.5	4	65	64	32	1	3	0.5	-0.2	5.6	-0.1	-0.8	0.3	1.5	414
HF LO 480NE	12800	64	22	103	13	7	5	1.8	-1	-1	0.04	-0.05	-1	2.0	1.6	30	48	42	210	2	2	-0.5	-0.2	7.4	-0.1	-0.8	0.2	-0.8	421
HF LO 440NE	33700	192	30	450	47	98	633	7.7	-1	4	1.37	-0.05	-1	1.2	2.4	28	91	83	91	13	3	2.1	-0.2	26.4	-0.1	-0.8	0.7	1.8	679
HF LO 400NE	11100	228	59	163	12	33	116	2.7	-1	-1	0.14	-0.05	-1	1.3	1.6	5	38	35	36	-1	1	-0.5	-0.2	4.5	-0.1	-0.8	0.1	-0.8	256
HF LO 360NE	39200	335	58	208	16	84	513	4.1	-1	-1	0.27	-0.05	-1	0.7	1.0	6	43	31	38	1	-1	1.1	-0.2	7.3	-0.1	-0.8	0.2	-0.8	279
HF LO 320NE	15300	237	114	21	13	17	1830	14.8	-1	-1	0.61	-0.05	-1	0.3	0.6	24	54	33	64	-1	6	-0.5	-0.2	14.2	-0.1	-0.8	0.4	-0.8	175
HF LO 280NE	6840	105	34	276	12	6	23	3.5	-1	-1	0.02	-0.05	-1	1.7	0.9	16	29	19	33	1	5	-0.5	-0.2	1.1	-0.1	-0.8	0.1	-0.8	336
HF LO 240NE	21700	141	31	139	10	11	15	3.7	-1	-1	0.02	-0.05	-1	1.0	0.8	8	22	12	24	2	3	-0.5	-0.2	1.6	-0.1	-0.8	0.2	-0.8	347
HF LO 200NE	21500	233	36	178	17	77	132	6.4	-1	-1	0.87	-0.05	-1	0.8	0.7	7	57	27	29	-1	2	2.0	-0.2	8.0	-0.1	-0.8	0.4	-0.8	387
HF LO 160NE	9560	77	32	124	10	8	5	2.3	-1	-1	0.03	-0.05	-1	1.8	1.5	7	40	36	63	2	2	-0.5	-0.2	4.1	-0.1	-0.8	0.2	-0.8	523
HF LO 120NE	2600	66	21	84	7	-5	4	1.9	-1	-1	0.02	-0.05	-1	1.5	1.2	13	25	16	27	-1	2	-0.5	-0.2	4.4	-0.1	-0.8	0.3	-0.8	276
HF LO 80NE	-2000	42	20	85	17	-5	7	1.4	-1	-1	-0.01	-0.05	-1	1.6	1.2	89	47	30	273	1	3	-0.5	-0.2	25.7	-0.1	-0.8	0.3	-0.8	461
HF LO 40NE	4050	66	19	95	10	6	6	0.8	-1	-1	-0.01	-0.05	-1	1.3	0.8	19	36	12	80	2	3	-0.5	-0.2	5.3	-0.1	-0.8	0.1	-0.8	668
HF LO BL	14000	80	22	142	15	10	15	1.7	-1	-1	0.02	-0.05	-1	1.8	3.1	16	50	38	53	2	2	-0.5	-0.2	9.3	-0.1	-0.8	0.2	-0.8	630
HF LO 40SW	16800	230	46	291	23	23	34	4.5	-1	-1	0.06	-0.05	-1	1.6	6.5	9	40	79	42	1	2	0.5	-0.2	4.7	-0.1	-0.8	0.2	-0.8	378
HF LO 80SW	16400	92	32	278	28	12	9	1.3	-1	-1	0.02	-0.05	-1	1.7	2.7	7	32	35	42	2	2	-0.5	-0.2	4.6	-0.1	-0.8	0.2	-0.8	634
HF LO 120SW	7470	59	17	190	11	-5	12	1.5	-1	-1	-0.01	-0.05	-1	1.4	1.2	35	63	23	97	2	2	-0.5	-0.2	10.1	-0.1	-0.8	0.3	-0.8	1190
HF LO 160SW	4100	66	19	201	13	6	11	1.5	-1	-1	0.03	-0.05	-1	2.0	1.5	19	39	54	72	1	2	-0.5	-0.2	9.4	-0.1	-0.8	0.2	-0.8	905
HF LO 200SW	4610	54	23	192	20	8	6	2.4	-1	-1	0.01	-0.05	-1	2.9	2.7	23	51	46	60	3	4	-0.5	-0.2	9.9	-0.1	-0.8	0.4	-0.8	847
HF LO 240SW	12900	109	23	209	10	6	10	1.3	-1	-1	0.01	-0.05	-1	2.3	1.3	24	23	32	53	1	2	-0.5	-0.2	4.7	-0.1	-0.8	0.2	-0.8	314
HF LO 280SW	13300	152	38	131	9	-5	4	2.5	-1	-1	0.04	-0.05	-1	3.1	2.2	46	57	52	87	5	4	-0.5	-0.2	7.6	-0.1	-0.8	0.5	-0.8	868
HF LO 300SW	6770	86	21	164	9	-5	4	1.9	-1	-1	0.01	-0.05	-1	3.1	1.7	15	37	28	30	2	3	-0.5	-0.2	4.2	-0.1	-0.8	0.2	-0.8	727
HF LO 340SW	17500	105	31	187	16	-5	3	2.0	-1	-1	-0.01	-0.05	-1	4.0	1.8	32	41	28	46	2	2	-0.5	-0.2	5.1	-0.1	-0.8	0.2	-0.8	591
HF LO 380SW	6160	58	16	119	6	-5	6	0.9	-1	-1	-0.01	-0.05	-1	1.2	0.9	18	20	20	22	1	2	-0.5	-0.2	1.9	-0.1	-0.8	0.2	-0.8	388
HF LO 420SW	40000	110	22	104	11	-5	8	1.3	-1	-1	-0.01	-0.05	-1	0.8	0.9	28	95	26	134	8	7	-0.5	-0.2	4.8	-0.1	-0.8	0.1	-0.8	2360
HF L15E 640NE	2920	114	36	66	7	6	2	1.8	-1	-1	-0.01	-0.05	-1	1.5	1.4	13	77	21	135	2	2	-0.5	-0.2	13.6	-0.1	-0.8	0.2	-0.8	819
HF L15E 600NE	3500	72	38	94	8	5	4	1.9	-1	-1	0.03	-0.05	-1	2.8	1.6	21	62	27	139	2	3	-0.5	-0.2	10.6	-0.1	-0.8	0.3	-0.8	738
HF L15E 560NE	2350	73	42	90	8	-5	4	2.0	-1	-1	-0.01	-0.05	-1	2.2	1.6	26	66	31	243	2	3	-0.5	-0.2	17.8	-0.1	-0.8	0.3	-0.8	767
HF L15E 520NE	8380	74	50	66	8	7	6	2.1	-1	-1	-0.01	-0.05	-1	1.9	1.3	114	64	21	142	-1	3	-0.5	-0.2	9.2	-0.1	-0.8	0.4	-0.8	862
HF L15E 480NE	-2000	68	33	127	9	-5	4	2.1	-1	-1	-0.01	-0.05	-1	2.4	1.3	22	45	17	76	1	2	-0.5	-0.2	6.8	-0.1	-0.8	0.3	-0.8	596
HF L15E 440NE	8420	59	24	91	16	7	11	1.5	-1	-1	-0.01	-0.05	-1	1.1	1.2	62	41	51	70	4	2	-0.5	-0.2	8.8	-0.1	-0.8	-0.1	-0.8	735
HF L15E 400NE	3590	74	29	153	13	-5	4	1.2	-1	-1	-0.01	-0.05	-1	1.6	1.2	15	62	28	250	3	3	-0.5	-0.2	9.5	-0.1	-0.8	0.1	-0.8	895
HF L15E 360NE	7450	119	38	94	10	11	8	3.1	-1	-1	0.03	-0.05	-1	1.9	2.0	17	49	40	72	1	2	-0.5	-0.2	8.0	-0.1	-0.8	0.3	-0.8	401
HF L15E 320NE	15600	355	72	50	31	27	140	12.1	-1	1	1.52	-0.05	-1	0.5	1.6	67	104	98	99	-1	5	-0.5	-0.2	7.0	-0.1	-0.8	1.1	-0.8	252
HF L15E 280NE	10600	283	79	134	17	42	250	12.3	-1	-1	0.64	-0.05	-1	1.2	2.8	16	53	53	25	-1	2	-0.5	-0.2	6.9	-0.1	-0.8	0.2	-0.8	211
HF L15E 240NE	29300	344	81	185	23	34	104	9.8	-1	-1	0.51	-0.05	-1	1.0	1.0	13	83	125	63	-1	3	-0.5	-0.2	48.2	-0.1	-0.8	0.4	-0.8	341
HF L15E 200NE	6380	53	25	253	14	10	11	2.8	-1	-1	0.02	-0.05	-1	2.1	1.3	15	40	38	100	2	2	-0.5	-0.2	10.2	-0.1	-0.8	0.2	-0.8	390
HF L15E 160NE	28500	100	47	219	14	15	14	5.5	-1	-1	0.11	-0.05	-1	1.9	1.7	20	88	76	138	3	4	0.6	-0.2	14.9	-0.1	-0.8	0.4	-0.8	862
HF L15E 120NE	5450	145	43	197	37	14	31	4.9	-1	-1	0.07	-0.05	-1	1.4	1.6	16	34	47	38	-1	2	-0.5	-0.2	3.5	-0.1	-0.8	0.2	-0.8	360
HF L15E 80NE	7690	96	27	282	12	10	19	1.6	-1	-1	0.02	-0.05	-1	1.3	1.1	9	44	32	111	1	3	-0.5	-0.2	9.0	-0.1	-0.8	-0.1	-0.8	755

Enzyme Leach Job #: 20779 Report#: 20652 **Customer:** **Geologist:** **Customer's Job #:**

Trace element values are in parts per billion. Negative values equal NOT DETECTED at that lower limit. Elements arranged by suite and by atomic mass.

Values = 999999 are greater than the working range of the instrument. S.Q. = That element is determined SEMIQUANTITATIVELY.

Regular Package:	*Oxidation Sui*														
Sample ID:	*S.Q. Cl*	*Br*	*I*	*V*	*As*	*Se*	*Mo*	*Sb*	*Te*	*W*	*Re*	*Au*	*S.Q. Hg*	*Th*	*U*
HF L15E 40NE	11100	135	34	141	13	10	31	3.0	-1	-1	0.06	-0.05	-1	1.7	1.8
HF L15E 00	17800	367	134	472	24	34	122	12.8	-1	-1	0.13	0.07	-1	0.7	3.9
HF L15E 40SW	11500	99	29	276	21	8	22	1.4	-1	-1	0.01	-0.05	-1	1.0	1.1
HF L15E 80SW	23500	93	25	370	13	11	11	1.4	-1	-1	-0.01	-0.05	-1	1.0	0.6
HF L15E 120SW	6440	97	29	164	12	20	6	2.2	-1	-1	-0.01	-0.05	-1	3.2	3.1
HF L15E 160SW	8530	122	40	567	26	13	26	5.9	-1	-1	-0.01	-0.05	-1	1.4	1.2
HF L15E 210SW	26800	94	29	270	28	12	15	6.2	-1	-1	0.02	-0.05	-1	1.0	0.8

Regular Package:	*Base Metals:*					*Base Metal - Chalcophile Association Indicat*								*Higl*
Sample ID:	Co	Ni	Cu	Zn	Pb	Ga	Ge	Ag	Cd	In	Sn	Tl	Bi	S.Q. Ti
HF L15E 40NE	24	57	66	137	1	2	-0.5	-0.2	25.9	-0.1	-0.8	0.4	-0.8	622
HF L15E 00	9	90	287	45	-1	1	1.3	-0.2	14.8	-0.1	-0.8	0.8	-0.8	319
HF L15E 40SW	7	36	40	47	1	2	-0.5	-0.2	5.3	-0.1	-0.8	-0.1	-0.8	386
HF L15E 80SW	7	65	24	64	1	3	-0.5	-0.2	7.8	-0.1	-0.8	0.2	-0.8	1040
HF L15E 120SW	15	79	53	127	2	4	-0.5	-0.2	4.1	-0.1	-0.8	0.4	-0.8	1340
HF L15E 160SW	11	59	51	32	2	3	-0.5	-0.2	5.8	-0.1	-0.8	0.3	-0.8	554
HF L15E 210SW	22	81	28	75	1	3	0.8	-0.2	5.1	-0.1	-0.8	0.5	-0.8	1230

Certified By:

D. D'Anna, Dipl. T.
ICPMS Technical Manager, Activation Laboratories Ltd.

Date Received: Sep-29-2000

Date Reported: Oct-27-2000

Enzyme Leac
Trace element
Values = 9999

Regular Packh-Field Strength Elements:							*Rare Earth Eleme*														*Lithophile Elements:*								*P.G.E.s:*			
Sample ID:	S.Q. Cr	Y	Zr	Nb	Hf	Ta	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	S.Q. Li	Be	S.Q. Sc	Mn	Rb	Sr	Cs	Ba	Ru	Pd	Os	Pt
HF LO 640NE	70	7.8	28	2	0.6	-0.1	5.4	10.2	1.7	6.4	1.4	0.5	1.4	0.3	1.2	0.3	0.7	0.1	0.8	0.2	19	-2	-100	1190	16	846	-0.1	270	-1	2	-1	-1
HF LO 600NE	60	9.9	13	1	0.2	-0.1	6.4	10.8	1.8	6.8	1.6	0.5	1.5	0.2	1.3	0.3	0.8	0.1	0.7	0.2	19	-2	-100	2310	8	1210	-0.1	462	-1	-1	-1	-1
HF LO 560NE	53	8.4	25	1	0.5	-0.1	4.6	8.1	1.4	5.4	1.3	0.3	1.1	0.2	1.0	0.2	0.7	0.1	0.7	0.1	20	-2	-100	716	40	573	0.5	235	-1	2	-1	-1
HF LO 520NE	54	12.7	40	2	0.8	-0.1	7.2	11.8	2.2	10.1	2.3	0.5	2.0	0.3	2.0	0.3	1.2	0.2	1.3	0.2	17	-2	-100	339	37	559	0.4	249	-1	3	-1	-1
HF LO 480NE	61	3.7	12	-1	0.3	-0.1	3.1	7.1	0.9	3.8	0.9	0.3	0.7	-0.1	0.7	-0.1	0.4	-0.1	0.4	-0.1	87	-2	-100	488	76	498	1.1	1460	-1	-1	-1	-1
HF LO 440NE	46	10.8	16	1	0.3	-0.1	8.1	9.9	1.9	8.4	1.7	0.5	1.5	0.3	1.3	0.3	0.8	0.1	0.7	0.1	17	-2	-100	9770	25	4840	0.2	808	-1	2	-1	-1
HF LO 400NE	49	11.1	27	-1	0.7	-0.1	10.0	9.9	2.7	11.2	2.5	0.6	2.1	0.3	1.8	0.3	1.0	0.1	0.8	0.1	7	-2	-100	272	22	628	0.1	209	-1	2	-1	-1
HF LO 360NE	42	5.4	18	-1	0.3	-0.1	3.6	4.0	0.8	4.4	1.1	0.3	0.8	-0.1	0.7	0.1	0.5	-0.1	0.5	-0.1	14	-2	-100	397	14	772	-0.1	262	-1	2	-1	-1
HF LO 320NE	31	2.2	5	-1	-0.1	-0.1	1.3	3.2	0.3	1.4	0.2	-0.1	0.4	-0.1	0.3	-0.1	0.2	-0.1	0.2	-0.1	18	-2	-100	68300	12	907	-0.1	391	-1	4	-1	-1
HF LO 280NE	50	4.0	20	-1	0.4	-0.1	2.7	4.2	0.7	3.4	0.7	0.2	0.7	-0.1	0.6	-0.1	0.4	-0.1	0.3	-0.1	6	-2	-100	663	26	423	0.3	211	-1	1	-1	-1
HF LO 240NE	55	2.0	16	-1	0.3	-0.1	1.5	3.3	0.3	3.9	0.4	-0.1	0.4	-0.1	0.4	-0.1	0.2	-0.1	0.2	-0.1	7	-2	-100	280	59	496	0.5	143	-1	1	-1	-1
HF LO 200NE	42	4.9	15	1	0.3	-0.1	3.1	5.6	0.7	3.4	0.7	0.2	0.8	-0.1	0.6	-0.1	0.4	-0.1	0.3	-0.1	15	-2	-100	578	33	692	0.2	301	-1	1	-1	-1
HF LO 160NE	55	4.4	29	1	0.6	-0.1	3.9	6.7	2.6	4.2	0.8	0.3	0.8	-0.1	0.9	0.1	0.4	-0.1	0.4	-0.1	12	-2	-100	186	81	658	0.5	617	-1	2	-1	-1
HF LO 120NE	44	6.3	19	1	0.3	-0.1	5.7	9.5	1.5	7.0	1.3	0.4	1.1	0.1	1.0	0.2	0.6	-0.1	0.4	-0.1	12	-2	-100	601	93	468	0.9	792	-1	1	-1	-1
HF LO 80NE	38	2.3	25	-1	0.4	-0.1	1.9	5.9	0.5	2.6	0.5	0.3	0.5	-0.1	0.5	-0.1	0.2	-0.1	0.2	-0.1	13	-2	-100	12400	141	640	0.4	3500	-1	2	-1	-1
HF LO 40NE	47	1.7	24	2	0.5	-0.1	1.8	3.6	0.3	1.8	0.2	0.2	0.3	-0.1	0.2	-0.1	0.1	-0.1	0.2	-0.1	13	-2	-100	3540	36	486	0.2	2340	-1	2	-1	-1
HF LO BL	58	9.3	20	1	0.5	-0.1	6.5	7.0	1.6	7.8	1.6	0.4	1.5	0.2	1.3	0.2	0.9	0.1	0.9	-0.1	14	-2	-100	834	54	638	0.3	594	-1	1	-1	-1
HF LO 40SW	52	21.5	33	-1	0.6	-0.1	11.8	5.2	3.1	15.1	3.3	0.8	2.9	0.5	2.7	0.6	1.9	0.3	2.0	0.2	16	-2	-100	360	18	644	0.2	289	-1	2	-1	-1
HF LO 80SW	66	6.8	27	1	0.5	-0.1	5.6	6.4	1.3	5.9	1.1	0.3	1.2	0.2	1.1	0.2	0.6	-0.1	0.5	-0.1	4	-2	-100	297	69	555	0.7	340	-1	2	-1	-1
HF LO 120SW	50	2.4	16	2	0.3	-0.1	2.3	5.9	0.5	2.7	0.5	0.2	0.4	-0.1	0.5	-0.1	0.2	-0.1	0.2	-0.1	16	-2	-100	1510	82	541	0.4	602	-1	-1	-1	-1
HF LO 160SW	44	7.4	20	2	0.5	-0.1	6.5	9.2	1.6	7.3	1.8	0.5	1.5	0.2	1.2	0.2	0.7	-0.1	0.6	-0.1	39	-2	-100	1250	26	405	0.2	411	-1	1	-1	-1
HF LO 200SW	55	18.9	28	2	0.6	-0.1	10.8	13.4	2.8	13.3	2.8	0.8	2.7	0.4	2.4	0.4	1.6	0.2	1.3	0.1	23	-2	-100	1190	79	408	1.3	770	-1	2	-1	-1
HF LO 240SW	60	4.6	28	-1	0.6	-0.1	3.9	11.6	1.0	4.7	1.1	0.3	0.9	0.1	0.8	0.1	0.4	-0.1	0.3	-0.1	2	-2	-100	1030	108	481	0.8	365	-1	2	-1	-1
HF LO 280SW	60	11.1	53	3	1.3	-0.1	9.1	20.8	2.3	10.6	2.3	0.6	1.9	0.3	1.7	0.3	0.9	0.1	0.9	0.1	8	-2	-100	12100	77	603	0.8	998	-1	4	-1	-1
HF LO 300SW	51	10.3	29	2	0.6	-0.1	8.1	18.2	2.2	9.9	1.9	0.5	2.1	0.3	1.6	0.3	0.9	0.1	0.8	-0.1	4	-2	-100	782	53	446	0.6	918	-1	2	-1	-1
HF LO 340SW	70	4.8	46	2	0.9	-0.1	3.6	25.5	1.1	5.9	1.2	0.4	1.3	0.1	0.9	0.1	0.5	-0.1	0.3	-0.1	8	-2	-100	1270	76	548	0.5	895	-1	3	-1	-1
HF LO 380SW	38	1.4	21	-1	0.4	-0.1	1.3	2.9	0.2	1.6	0.2	-0.1	0.3	-0.1	0.2	-0.1	0.1	-0.1	-0.1	-0.1	2	-2	-100	758	121	453	0.8	378	-1	2	-1	-1
HF LO 420SW	46	1.8	29	3	0.7	-0.1	1.7	3.5	0.3	1.7	0.2	0.2	0.2	-0.1	0.2	-0.1	0.1	-0.1	0.1	-0.1	10	-2	-100	4900	43	838	0.1	1270	-1	2	-1	-1
HF L15E 640N	52	1.2	16	2	0.3	-0.1	1.5	3.0	0.3	1.6	0.3	0.2	0.3	-0.1	0.2	-0.1	-0.1	-0.1	-0.1	-0.1	20	-2	-100	408	76	732	0.6	902	-1	1	-1	-1
HF L15E 600N	57	5.9	39	2	0.9	-0.1	5.5	12.1	1.9	6.2	1.1	0.5	1.2	0.2	1.1	0.2	0.6	0.1	0.5	-0.1	26	-2	-100	757	97	623	0.8	983	-1	3	-1	-1
HF L15E 560N	55	4.4	40	2	0.7	-0.1	4.2	9.3	1.1	4.9	1.0	0.3	0.9	-0.1	0.7	0.1	0.4	-0.1	0.4	-0.1	17	-2	-100	653	98	633	0.8	1040	-1	3	-1	-1
HF L15E 520N	46	3.8	25	2	0.6	-0.1	4.4	9.7	1.0	4.6	0.9	0.3	0.9	-0.1	0.8	0.1	0.4	-0.1	0.3	-0.1	19	2	-100	9560	102	720	0.5	895	-1	2	-1	-1
HF L15E 480N	42	6.9	32	2	0.6	-0.1	5.4	11.8	1.5	7.7	1.5	0.5	1.3	0.2	1.2	0.2	0.6	0.1	0.8	-0.1	22	-2	-100	585	78	711	0.6	951	-1	2	-1	-1
HF L15E 440N	41	2.7	23	2	0.5	-0.1	2.5	4.7	0.6	2.8	0.6	0.1	0.5	-0.1	0.4	-0.1	0.2	-0.1	0.2	-0.1	10	-2	-100	5060	39	799	0.2	426	-1	2	-1	-1
HF L15E 400N	57	2.3	23	2	0.5	-0.1	2.3	5.5	0.5	4.5	0.7	0.2	0.4	-0.1	0.4	-0.1	0.2	-0.1	0.2	-0.1	20	-2	-100	535	63	832	0.5	1070	-1	1	-1	-1
HF L15E 360N	39	6.9	24	1	0.5	-0.1	6.4	12.5	1.7	7.3	1.5	0.3	1.2	0.2	1.2	0.2	0.6	-0.1	0.6	-0.1	8	-2	-100	307	100	909	0.7	553	-1	2	-1	-1
HF L15E 320N	38	8.4	12	-1	0.1	-0.1	5.3	10.4	1.3	5.7	1.2	0.3	1.2	0.1	1.0	0.2	0.6	0.1	0.6	-0.1	30	-2	-100	55900	39	1490	0.3	644	-1	-1	-1	-1
HF L15E 280N	40	18.1	25	-1	0.6	-0.1	11.4	13.5	2.9	13.0	2.6	0.7	2.8	0.4	2.6	0.4	1.5	0.2	1.5	0.2	19	-2	-100	5010	10	806	-0.1	364	-1	2	-1	-1
HF L15E 240N	44	14.7	27	-1	0.4	-0.1	9.5	7.5	2.4	11.4	2.6	0.7	2.0	0.4	1.9	0.4	1.3	0.2	1.3	0.2	12	-2	-100	1180	17	1250	-0.1	376	-1	2	-1	-1
HF L15E 200N	50	5.3	28	1	0.6	-0.1	3.0	4.2	0.8	4.0	0.6	0.3	0.8	-0.1	0.7	0.1	0.4	-0.1	0.3	-0.1	7	-2	-100	649	77	618	0.7	567	-1	2	-1	-1
HF L15E 160N	67	18.4	37	3	0.7	-0.1	12.3	14.0	3.2	14.7	3.1	0.8	2.7	0.4	2.6	0.5	1.5	0.2	1.3	0.2	12	-2	-100	571	102	1180	0.9	963	-1	2	-1	-1
HF L15E 120N	40	8.3	20	-1	0.3	-0.1	4.2	5.8	1.2	11.5	1.4	0.4	1.0	0.1	1.2	0.2	0.7	0.1	0.8	-0.1	25	-2	-100	1010	8	689	-0.1	350	-1	1	-1	-1
HF L15E 80NE	45	4.3	16	1	0.3	-0.1	2.9	5.1	0.8	3.8	0.8	0.2	0.7	-0.1	0.6	-0.1	0.4	-0.1	0.4	-0.1	15	-2	-100	391	31	727	0.2	496	-1	1	-1	-1

Enzyme Leac
Trace element
Values = 9999

Sample ID:	S.Q. Cr	Y	Zr	Nb	Hf	Ta
	Regular Packb-Field Strength Elements:					
HF L15E 40NE	44	8.2	39	2	0.9	-0.1
HF L15E 00	48	35.5	35	-1	0.6	-0.1
HF L15E 40SV	53	6.7	16	-1	0.3	-0.1
HF L15E 80SV	60	3.2	20	3	0.4	-0.1
HF L15E 120S	58	14.1	23	2	0.5	-0.1
HF L15E 160S	43	17.1	28	2	0.5	-0.1
HF L15E 210S	42	9.8	18	2	0.3	-0.1

Rare Earth Eleme

Sample ID:	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
HF L15E 40NE	4.4	6.8	1.2	5.9	1.4	0.4	1.2	0.1	1.0	0.2	0.7	0.1	0.6	-0.1
HF L15E 00	18.1	5.0	4.5	21.0	5.0	1.4	4.4	0.7	4.2	0.8	2.8	0.4	2.8	0.4
HF L15E 40SV	5.8	5.4	1.1	5.1	1.2	0.3	1.1	0.1	1.0	0.1	0.6	-0.1	0.5	-0.1
HF L15E 80SV	2.4	4.6	0.6	2.5	0.5	0.2	0.5	-0.1	0.5	-0.1	0.2	-0.1	0.2	-0.1
HF L15E 120S	9.1	16.8	2.8	13.2	2.7	0.7	2.3	0.4	2.1	0.4	1.3	0.2	1.3	0.2
HF L15E 160S	8.9	6.0	2.8	11.2	2.4	0.5	2.0	0.4	2.0	0.4	1.3	0.2	1.4	0.2
HF L15E 210S	8.7	8.4	2.0	8.5	1.4	0.4	1.5	0.2	1.0	0.2	0.7	-0.1	0.6	-0.1

Lithophile Elements: / *P.G.E.s:*

Sample ID:	S.Q. Li	Be	S.Q. Sc	Mn	Rb	Sr	Cs	Ba	Ru	Pd	Os	Pt
HF L15E 40NE	30	-2	-100	6530	72	820	0.3	793	-1	3	-1	-1
HF L15E 00	35	-2	-100	648	22	1060	-0.1	471	-1	3	-1	-1
HF L15E 40SV	10	-2	-100	555	15	681	-0.1	398	-1	1	-1	-1
HF L15E 80SV	14	-2	-100	442	75	818	0.4	252	-1	1	-1	-1
HF L15E 120S	84	-2	-100	296	87	249	1.1	298	-1	2	-1	-1
HF L15E 160S	26	-2	-100	708	19	770	0.3	381	-1	2	-1	-1
HF L15E 210S	39	-2	-100	8670	14	827	-0.1	693	-1	1	-1	-1

Interpretation of Enzyme Leach[SM] Data for the Herb Wahl Hotfish project

by: Gregory T. Hill, Enzyme Laboratories, Inc.

14 December 2000

Summary

A complex, moderate contrast oxidation anomaly is present within the area tested by an Enzyme Leach[SM] soil survey on the Hotfish property. Many elements, notably Th, Ce, Co, Cs, and Li form a broad halo that brackets a 550 m wide central low near the center of the survey. This central low contains distinct zoned highs in metals commonly associated with VMS deposits. In addition to the large Th-Li halo, much narrower oxidation halos, apical anomalies, and depletion zones accompany the metal enrichments within this 550 m wide central low. The combined results from this study may indicate the presence of a dipping VMS mineralized system. The buried bedrocks beneath separate strong Cu, Ba, and Ga highs within the 550 m wide central low are recommended as drill and/or trenching targets.

Design of Soil Survey

Fifty B-horizon soil samples were collected at 40 m intervals along two northeast-trending parallel lines 100 m apart (Figure 1). Significant northwest-trending Cd and Ag anomalies have been detected with conventional soil analyses in this area, but the presence of exotic cover conceals the mineralized zones that may be present in the subsurface. Overburden is variable, composed of clay-rich to sand-rich glacial drift, and likely exceeds five meters in thickness within the soil-anomalous area. Tuffaceous and/or cherty float samples enriched in Cu-Zn-Ag-Cd have been collected at locations throughout most of the soil-anomalous area. The terrain is thickly vegetated with tag alder. Much of the sampled area comprises water saturated ground, with abundant alders. A swamp is crossed by the sample Lines as indicated in Figure 1.

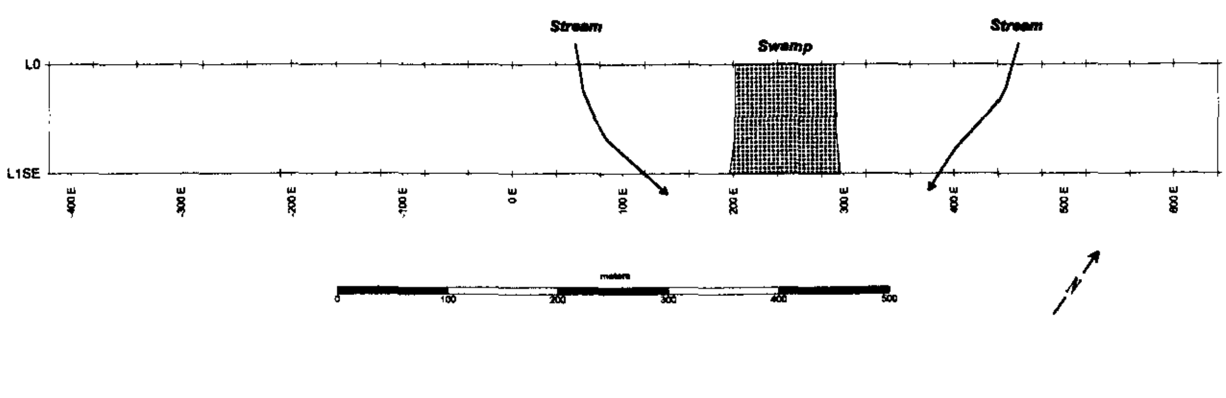

Figure 1. Sample location map showing positions of streams and swamp.

Interpretation

A broad oxidation anomaly is present within the sampled area and appears to extend beyond the limits of the soil survey to the northeast and southwest. Figure 2 illustrates some of the key features of this oxidation anomaly in which many elements are elevated to the northeast and southwest of a 550 m wide central low near the center of the survey. The z-scores of Th, Ce, Co, Cs, and Li have been summed and plotted in Figure 2 to illustrate this oxidation halo. These elements were chosen because they show little or no texture within the central low, thereby making the halo obvious. Many other elements are also enriched in halos outside of this central low, but they also form trends within the central low. Chlorine forms relatively high contrast peaks at the northeastern and southwestern edges of the survey, outside of the Th-Li halo, producing symmetry within the oxidation anomaly. Additional symmetry is produced by narrower Cl, Br, and I highs within the broad Th-Li central low. Except for Zn, the metals that are commonly enriched in VMS deposits are strongly partitioned into separate moderate contrast highs, relative to other Enzyme Leach^{SM} surveys, in separate parts of the central low. Zoning from southwest to northeast is also shown in Figure 2 among Cu, Ba, Cd, Ga, and Pb. Silver was not detected in any Enzyme Leach^{SM} samples.

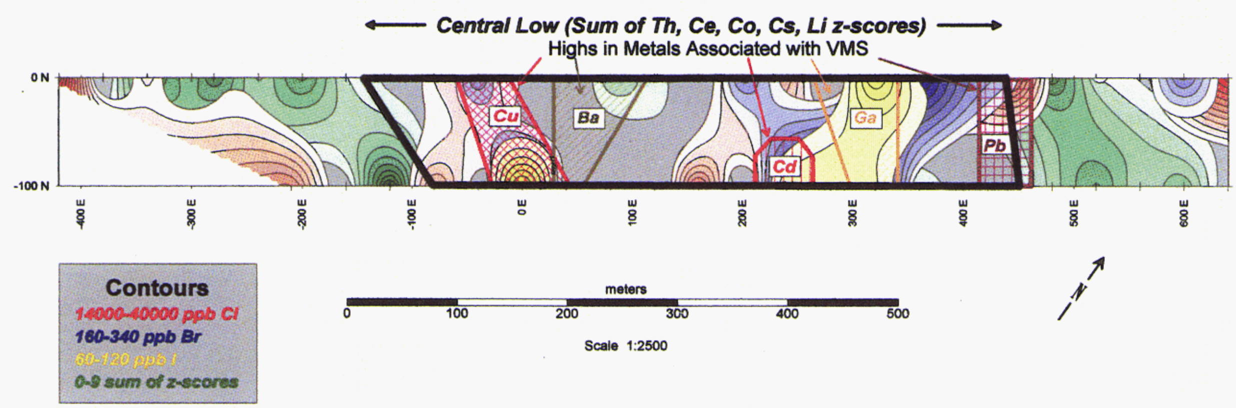

Figure 2. Summary map showing locations of the broad halo and 550 m wide central low using the sum of z-scores of Th, Ce, Co, Cs, and Li, and an outboard Cl halo at the northeastern and southwestern edges of the survey, as well as the positions of metals highs and halogen distributions within the 550 m wide Th-Li central low.

Oxidation Suite Elements and Metals

Thorium, Cl, Br, I, and Sb are distributed into peaks to the northeast and southwest of 100E. At the northeastern and southwestern edges of the survey, Cl forms a larger diameter halo to the outside of the Th halo. While the magnitudes and zoning within the Cl and Th distributions clearly indicate an oxidation anomaly bracketing a 550 m wide central low, the internal patterns within the central low are more difficult to interpret.

All of the halogens are also elevated within zones at about 0-80W and 160-400E. These occur inside of the Th, Ce, Co, Cs, and Li halo shown in Figure 2. Copper is most enriched in a distinct peak that corresponds with Br and I highs, and the northeastern edge of a Cl high in the 0-80W enrichment zone, whereas distinct Cd and Ga enrichments accompany the halogen-enriched zone at 160-400E. This metals zoning and the lack of double peak metals patterns, with the exception of Zn, suggests that the Cu, Cd, and Ga peaks are apical features above concentrations of these metals in the subsurface.

The Cu high that spans from L1SE/0E to L0/40W, coincides with Br, I, Se, U, and Sb highs but other oxidation suite elements show different relationships to Cu. Chlorine, V, and As also form highs that overlap with Cu here, but enrichments of these elements extend farther to the southwest than does the Cu high. Pronounced Cl, V, As lows occur to the northeast of the Cl, V, As highs, suggesting that a narrow Cl, V, As halo brackets a subsurface mineralized zone in which Cu is enriched, particularly along the southwestern margin of the mineralized zone (i.e. beneath the Cu high). Thorium and Cu are negatively correlated within the region of the Cu high suggesting that Th is nearly entirely partitioned into a narrow oxidation halo above this proposed subsurface Cu mineralized zone.

Thorium also forms an apparent narrow halo around the Ga high at about 320E. Chlorine, V, U, and Se are similarly distributed around this Ga high suggesting a reduced Ga-bearing body in the subsurface beneath the Ga high. Gallium commonly occurs as a trace element in base metal sulfides and has been shown to indicate base metal sulfide enrichments in Enzyme Leach^{SM} data above buried VMS deposits. The remainder of oxidation suite elements form highs that coincide with all or the southeastern portion of the Ga high. The relationships with the Cd high are less clear but most of the oxidation suite elements appear to form halos around the Cd high as well. Lead is enriched in a northwest trending high at about 440E. This high occurs near the northeastern edge of the Th-Li central low shown in Figure 2 and may indicate a Pb-enriched zone in the subsurface. While some oxidation suite elements such as I and Br form coincident lows, most form highs at L0/440E. The close spatial relationship to a stream bed in this area (Figure 1) raises questions about the origin of this readily mobile element. It is possible that this Pb high is the was introduced as an aqueous species via surface waters.

Thallium and Ni are each enriched in the Cu and Ga highs along L1SE, further defining these anomalies. In fact the Tl distribution shows a combination anomaly around the Cu high at about L1SE\0E where Tl depletions are present on either side of the Tl high thus indicating electrochemical processes.

Zinc forms a halo around the Cu zone and another apparent halo around the Cd and Ga highs. These results suggest that the predicted base metals mineralized zones in the subsurface are Zn bearing.

The presence of swampy ground at roughly 200-300E on both Lines complicates the picture because this area overlaps with the halogen and metals peaks within the region at 160-400E. Swampy areas can produce significantly different results that dryer land because of changes in organic content, Eh, pH, and the availability of aqueously transported elements. However, if these factors have played a significant role in shifting threshold values of elements, one might expect that background values would be somewhat uniform throughout the swampy area, and that elemental zoning would be obscure at best. This is not the case, as distinct metal and oxidation suite element zoning is present within this swampy area. Therefore, the Cd and Ga highs occurring near the edges of this swamp should be considered to be apical anomalies above subsurface sources of these elements.

Lithophile Elements

Barium forms a distinct high-contrast positive anomaly at the center of the Cl low near 100E in the middle of the Th-Li central low (Figure 2). This Ba high is accompanied by elevated Zn values and appears to be an apical anomaly that could represent barite-rich beds in the subsurface. This Ba high could overlie significant metals enrichments that are capped by barite which has precluded or slowed oxidation of the underlying base metal-rich sulfide zones.

Strontium, Be, and Mn are partitioned into highs on the northeastern parts of L0 and L1SE. It is *important to note that these highs do not coincide but instead are adjacent to one another.* Manganese is strongly enriched along with Ga while Sr marks the southeastern part of the Pb high. Without knowing the surface mineralogy, one can speculate that this association between Pb and Sr may reflect the presence of carbonate minerals, either detrital or diagenetic, in which these two elements have substituted for Ca. Lithium is also enriched in this area, but this element forms a high of equal magnitude on the southwest of L0 and L1SE so that the overall Li distribution strongly indicates an oxidation halo surrounding a central low extending from about 100W to 450E on both lines.

Rubidium and Cs are weakly partitioned into the oxidation anomaly. The most distinctive Rb feature is the high at L0/80E. This high occurs near the center of the oxidation anomaly and coincides with Zn and the Ba high described above which is slightly larger and extends to the southwest. These highs correspond with a distinct Cl low at the center of the oxidation anomaly. Rubidium commonly forms highs at the center of oxidation cells and can therefore be used to help define the positions of reduced chimneys.

Rare Earth Elements

With the exception of Ce, the bulk of the REE show very similar distributions. While these elements are enriched throughout much of the surveyed area, background values were detected at the northeastern and southwestern ends of the soil survey. The most obvious feature in the REE data is the northwest trending high spanning from L1SE/0E to L0/40W. This high corresponds exactly with the prominent Cu high described above.

The Ce distribution is very different from that of all other REE. Cerium forms a distinct halo near the ends of the lines and is not enriched in the high seen in the other REE. Europium, and less often Ce, can be fractionated from the other REE by changes in oxygen fugacity during magmatic and hydrothermal processes. Cerium is also fractionated in seawater which is reflected as Ce anomalies (Ce/Ce*) in many carbonates. Perhaps the Ce in these Enzyme Leach^{SM} data is reflecting the presence of subsurface marine carbonates at the edges of the proposed subsurface mineralized zone.

High Field Strength Elements

The high field strength elements form broad low contrast halos outside of the metal-enriched central zone from about 50W to 450E. The HFSE halos are indicated by broad zones where these elements are elevated and which contain the highest HFSE determinations. The highest levels of Hf, Nb, Zr, and Ti, were detected near the southwestern end of Line 0 whereas Cr is most enriched in samples on the northeast as well as the southwest. All of these elements are depleted at L0/340E suggesting that this area is near the edge of a central low with substantial electrochemical cell activity. The depletion zone is much wider among the Ti and Nb data, highlighting the importance of this zone. Niobium is also depleted at L1SE/0-40W, an area the partially overlaps with a strong Cu high as is discussed below. As is often true, Y is more correlated with the REE than the HFSE, and therefore does not form the same patterns as the other HFSE.

Conclusions and Recommendations

The Enzyme Leach^{SM} results from this soil survey indicate the presence of a complex moderate contrast oxidation anomaly in which many important metals form highs within a broader, 550 m wide, central low. Distinct highs in Cu, Ba, Cd, Ga, and Pb, metals associated with VMS systems, are clearly zoned with respect to each other. The relationships between these metals and oxidation suite, lithophile, high field strength, and REE element groups suggest the presence of mineralized zones in the subsurface beneath the 550 m wide central low. This central low may indicate the overall distribution of mineralized material whereas the individual metals highs indicate the positions of base metal rich lenses of varying composition within the mineralized body. It should be clarified that these predicted locations would represent the approximate vertical projection of the upper portions of these zones. The dips of these potential bodies are not known but the observed metal zoning suggests that mineralized beds are not flat-lying.

Drilling and possibly trenching, if the depth of overburden is not prohibitive, is recommended to test for mineralization within the 550 m wide central low spanning from about 100W to 450E. Specifically, drill holes should target potential mineralized zone beneath the Cu, Ba, and Ga zones shown in Figure 2. The subsurface beneath the Cd high should also be considered as a slightly lower priority target. Finally, the Pb high near the northeastern edge of the central low may also reflect mineralization in the subsurface and should therefore also be considered as a guide to drill targeting.

Table 1. Univariate statistics generated from the Hotfish project Enzyme Leach^{SM} (ICP-MS) data (Enzyme Leach^{SM} job #20779, report #20652). n/a - not applicable due to too few or no detected values. Statistics calculated after ½ detection limit values substituted for not detected values.

Element	Cl	Br	I	V	As	Se	Mo	Sb	Te	W	Re
Det. Limit (ppb)	2000	5	2	1	1	5	1	0.1	1	1	0.01
Maximum	40000	367	134	567	47	98	1830	15.0	n/a	4	1.52
Mean	13274.0	134.2	39.3	185.6	15.9	16.2	88.3	3.9	n/a	n/a	0.159
Median	10850	102	33	164	13	10	12	2	n/a	n/a	0.02
Std. Dev.	10144.7	86.4	23.3	108.1	8.0	20.3	277.6	3.4	n/a	n/a	0.330
StdDev+Median	20994.7	188.7	55.9	272.1	21.2	30.6	289.4	5.8	n/a	n/a	0.351

Element	Au	Hg	Th	U	Co	Ni	Cu	Zn	Pb	Ga	Ge	Ag	Cd
Det. Limit (ppb)	0.05	1	0.1	0.1	1	2	2	10	1	1	0.5	0.2	0.2
Maximum	0.07	n/a	4.0	6.5	114	104	287	273	13	7	2.1	n/a	48.2
Mean	n/a	n/a	1.64	1.67	22.5	55.1	46.0	82.1	1.8	2.7	n/a	n/a	9.59
Median	n/a	n/a	1.5	1.4	16	52	35	64	1	2	n/a	n/a	7.4
Std. Dev.	n/a	n/a	0.78	1.02	20.9	21.4	41.3	60.1	2.1	1.1	n/a	n/a	8.18
StdDev+Median	n/a	n/a	2.32	2.44	36.9	73.2	76.6	124.0	3.5	3.6	n/a	n/a	15.5

Element	In	Sn	Tl	Bi	Ti	Cr	Y	Zr	Nb	Hf	Ta
Det. Limit (ppb)	0.1	0.8	0.1	0.5	100	20	0.5	1	1	0.1	0.1
Maximum	n/a	n/a	1.1	6.3	2360	70	36	53	3	1.3	n/a
Mean	n/a	n/a	0.28	0.66	618.0	50.1	8.1	24.9	1.4	0.51	n/a
Median	n/a	n/a	0.2	0.4	549	50	7	25.0	1	0.5	n/a
Std. Dev.	n/a	n/a	0.20	0.98	373.1	9.0	6.4	9.40	0.8	0.23	n/a
StdDev+Median	n/a	n/a	0.43	1.38	921.6	59.0	13.2	33.90	2.2	0.71	n/a

Element	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu
Det. Limit (ppb)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Maximum	18.1	25.5	4.5	21	5	1.4	4.4	0.7	4.2	0.8	2.8	0.4	2.8	0.4
Mean	5.59	8.51	1.49	6.83	1.40	0.40	1.28	0.18	1.14	0.20	0.69	0.10	0.66	n/a
Median	5.0	7.1	1.3	5.9	1.2	0.3	1.1	0.1	1.0	0.2	0.6	0.1	0.5	n/a
Std. Dev.	3.53	4.78	0.96	4.24	0.96	0.25	0.84	0.14	0.79	0.16	0.53	0.07	0.54	n/a
StdDev+Median	8.49	11.87	2.27	10.13	2.19	0.59	1.98	0.28	1.78	0.32	1.14	0.12	1.04	n/a

Element	Li	Be	Sc	Mn	Rb	Sr	Cs	Ba	Ru	Pd	Os	Pt
Det. Limit (ppb)	2	2	100	1	1	1	0.1	1	1	1	1	1
Maximum	87	n/a	n/a	68300	141	4840	1.3	3500	n/a	4	n/a	n/a
Mean	18.8	n/a	n/a	4574.7	55.3	784.0	0.43	678.9	n/a	1.8	n/a	n/a
Median	15	n/a	n/a	737	54	670	0.0	525	n/a	2	n/a	n/a
Std. Dev.	16.3	n/a	n/a	12339.8	34.7	631.1	0.32	567.7	n/a	0.7	n/a	n/a
StdDev+Median	31.6	n/a	n/a	13076.3	88.2	1300.6	0.71	1092.2	n/a	2.6	n/a	n/a

Herb Wahl - Hotfish project

Enzyme Leach[SM] Data

Sample Location Map

Drawn by: G.T. Hill   Date: November 29, 2000

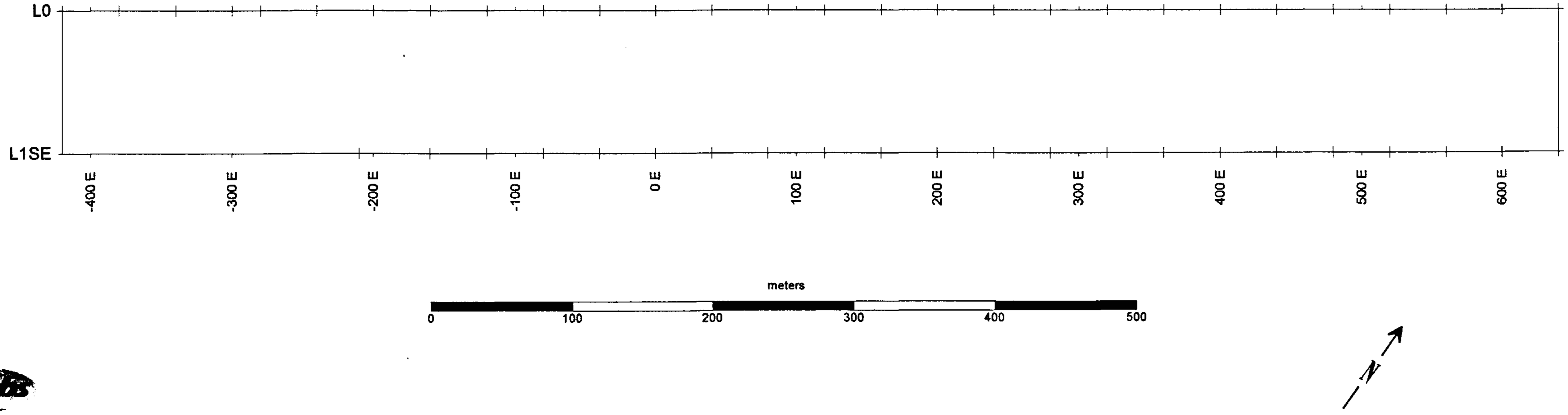

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FIG A

Herb Wahl - Hotfish project

Enzyme Leach℠ Data
Summary Map

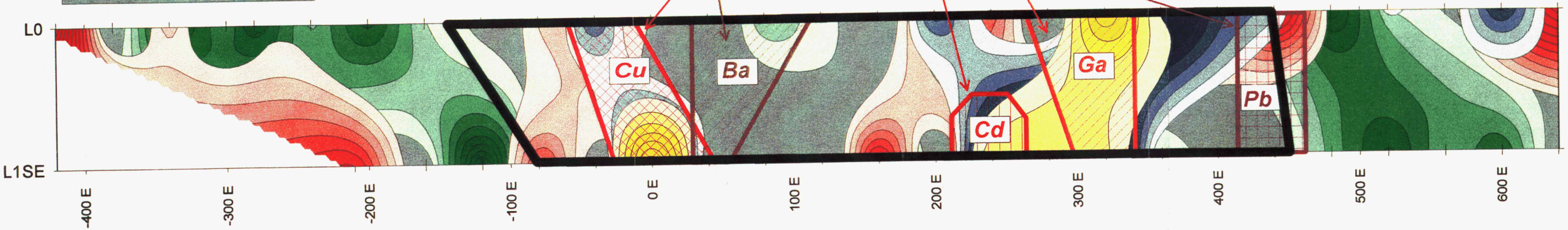
Drawn by: G.T. Hill   Date: December 9, 2000

Z-SCORES = (MEASURED VALUE − MEAN) / STD. DEV.

Contours
14000-40000 ppb Cl
160-340 ppb Br
60-120 ppb I
0-9 sum of z-scores

← *Central Low (Sum of Th, Ce, Co, Cs, Li z-scores)* →

Highs in Metals Associated with VMS



meters
0 100 200 300 400 500

Scale 1:2500

N

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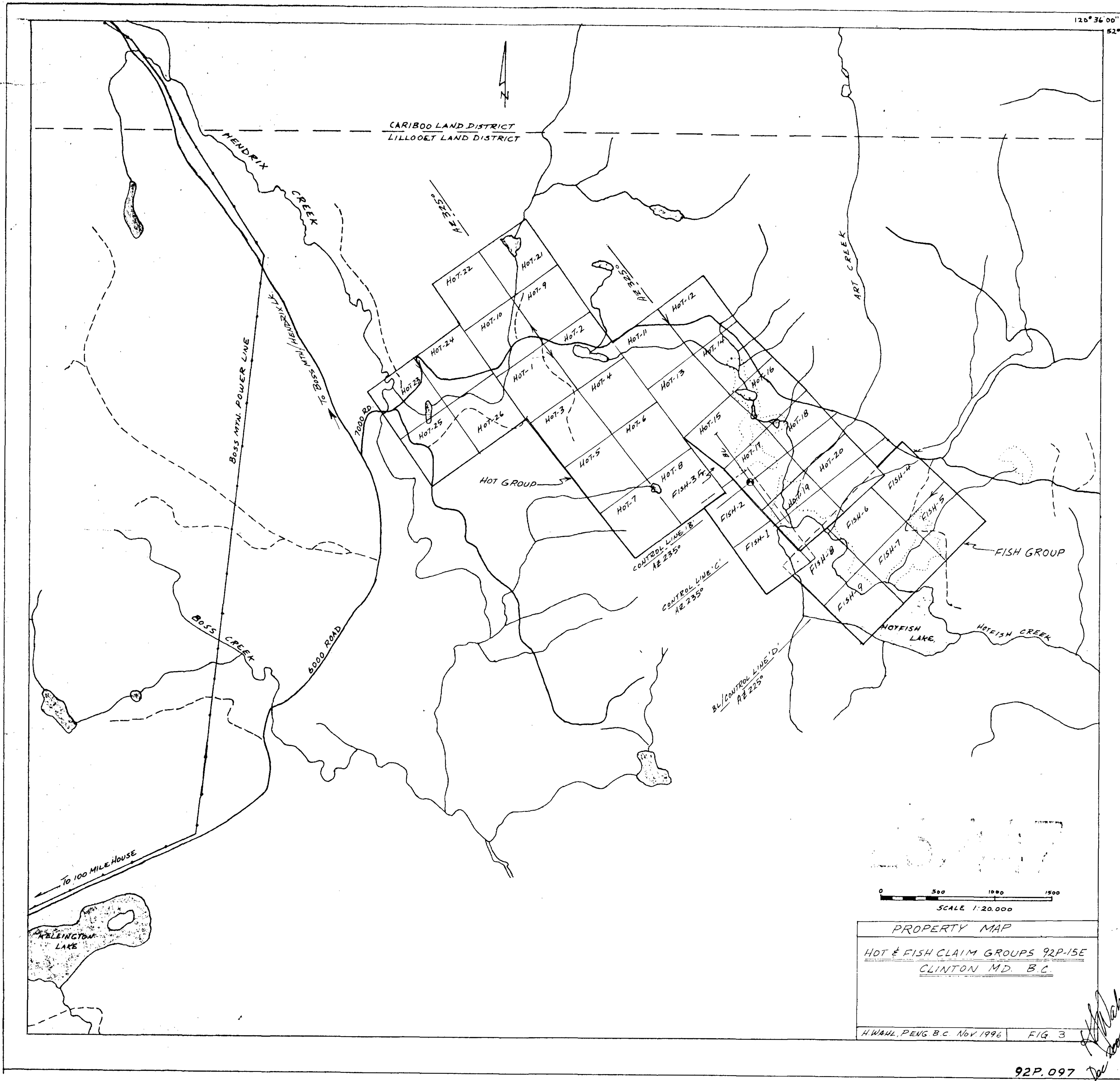
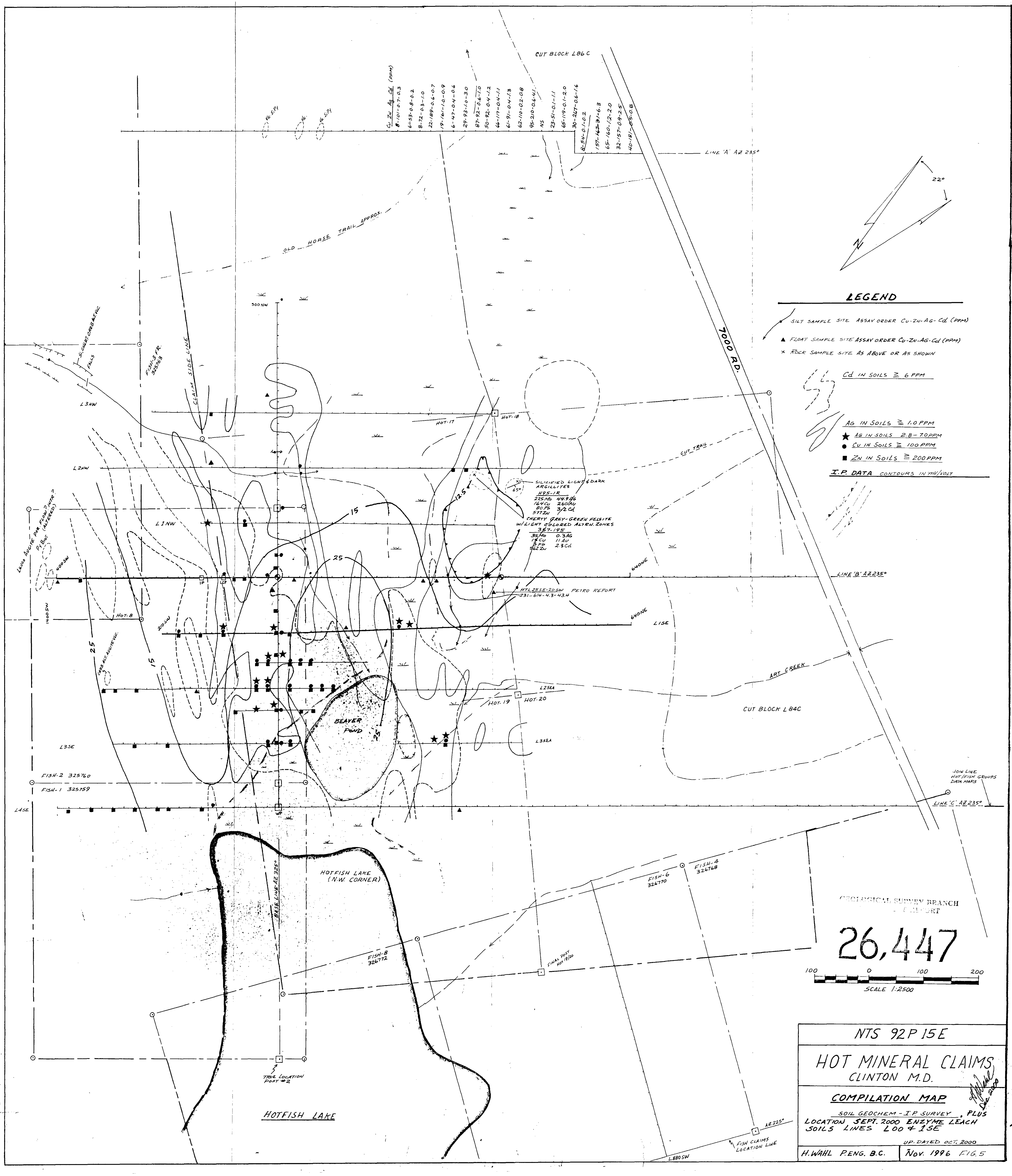
DATA FROM 20652 RPT

FIG B



120°36'00"
52°00
N
CARIBOO LAND DISTRICT
LILLOOET LAND DISTRICT
HENDRIX
CREEK
AZ 325°
BOSS MTN. POWER LINE
TO BOSS MTN/HENDRIX LK
7000 RD
HOT-22
HOT-21
HOT-9
HOT-10
HOT-24
HOT-23
HOT-2
HOT-1
HOT-11
HOT-12
HOT-14
HOT-16
HOT-4
HOT-13
HOT-3
HOT-25
HOT-26
HOT-6
HOT-15
HOT-18
HOT-5
HOT-17
HOT-20
HOT-8
HOT-7
FISH-3 Fr.
HOT-19
FISH-4
FISH-2
FISH-1
FISH-6
FISH-5
FISH-8
FISH-7
FISH 9
BL
HOT GROUP
FISH GROUP
ART CREEK
CONTROL LINE 'B' AZ 235°
CONTROL LINE 'C' AZ 235°
BL/CONTROL LINE 'D' AZ 225°
HOTFISH LAKE
HOTFISH CREEK
BOSS CREEK
6000 ROAD
TO 100 MILE HOUSE
KELEINGTON LAKE
0 500 1000 1500
SCALE 1:20,000
PROPERTY MAP
HOT & FISH CLAIM GROUPS 92P-15E
CLINTON M.D. B.C.
H. WAHL, PENG B.C. NOV 1996
FIG 3
92P.097



CUT BLOCK L86C
Cu-Zn-Ag-Cd (ppm)
LINE 'A' AZ 235°
22°
N
OLD HORSE TRAIL APPROX.
LEGEND
SILT SAMPLE SITE ASSAY ORDER Cu-Zn-Ag-Cd (PPM)
FLOAT SAMPLE SITE ASSAY ORDER Cu-Zn-Ag-Cd (PPM)
ROCK SAMPLE SITE AS ABOVE OR AS SHOWN
Cd IN SOILS ≧ 6 PPM
Ag IN SOILS ≧ 1.0 PPM
Ag IN SOILS 2.8 – 7.0 PPM
Cu IN SOILS ≧ 100 PPM
Zn IN SOILS ≧ 200 PPM
I.P. DATA CONTOURS IN mV/VOLT
7000 RD.
CLAIM SIDE LINE
FISH-3 FR. 325763
L3NW
L2NW
L1NW
500NW
HOT-17
HOT-18
CUT TRAIL
SILICIFIED LIGHT & DARK ARGILLITES
CHERTY GREY-GREEN FELSITE W/LIGHT COLORED ALTER. ZONES
PETRO REPORT
LINE 'B' AZ 235°
HOT-8
L1SE
ART CREEK
CUT BLOCK L84C
L2SEA
HOT-19
HOT-20
BEAVER POND
L3SE
L3SEA
FISH-2 325760
FISH-1 325759
L4SE
JOIN LINE HOT/FISH GROUPS DATA MAPS
LINE 'C' AZ 235°
HOTFISH LAKE (N.W. CORNER)
BASE LINE AZ 325°
FISH-6 326770
FISH-4 326768
FISH-8 326772
FINAL POST HOT 19/20
TRUE LOCATION POST #2
HOTFISH LAKE
FISH CLAIMS LOCATION LINE
AZ 225°
L880SW
GEOLOGICAL SURVEY BRANCH ASSESSMENT REPORT
26,447
100 0 100 200
SCALE 1:2500
NTS 92P 15E
HOT MINERAL CLAIMS
CLINTON M.D.
COMPILATION MAP
SOIL GEOCHEM - I.P. SURVEY, PLUS
LOCATION SEPT. 2000 ENZYME LEACH
SOILS LINES L00 & 1SE
UP-DATED OCT. 2000
H. WAHL P.ENG. B.C.
NOV. 1996 FIG. 5