N.T.S. Mapsheet 104B/11
131° 5' E, 56° 42' N

GEOLOGICAL AND GEOCHEMICAL REPORT ON THE HEMLO WEST AND AURUM CLAIM GROUP ISKUT RIVER AREA, LIARD MINING DIVISION.

Claim	Record Number	Number of Units
Aurum 3	2624 (11)	20
Aurum 4	2625 (11)	5
Hemlo West 12	2518 (9)	20
Hemlo West 13	2519 (9)	20
Hemlo West 14	2520 (9)	15
Hemlo West 15	2521 (9)	16
Hemlo West 16	2522 (9)	20
Hemlo West 18	2632 (12)	16

OWNER: APEX ENERGY CORP.
501 - 700 West Pender St.
Vancouver, B.C. V6C 1G8

OPERATOR: APEX ENERGY CORP.

Prepared by: R. Macrae, P.Eng
B.V. Hall, MSc

November 7th, 1983

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HEMLO WEST AND AURUM CLAIMS

INTRODUCTION

The Hemlo West and Aurum claims owned by Apex Energy Corp. are located in the Liard Mining Division of British Columbia. This 8 claim group is situated on the north and south side of the Iskut River 38 km east of the junction of the Iskut and Stikine River, Stewart, B.C. is 115 km southeast; the Cassiar-Stewart Highway is 66 km northeast ~~of~~ at Bob Quinn Lake. Located in the Coast Range Mountains, elevations range from 66 m at the southwest corner of Hemlo West 16 on the Iskut River to 1350 m near the north boundary of Hemlo West 18. (Ref: Location Map Fig.1)

Access to the claims is available from Terrace, B.C. by wheeled aircraft to Snippaker Creek airstrip, 33 km southeast and by helicopter to the claim site. Alternatively, access can be secured by river boat from tide water at Wrangell, Alaska near the mouth of the Stikine River. Wrangell is 85 km west of the claim site, see Index Map Fig. 1.

The 8 claim Hemlo West and Aurum group consists of 132 units located by 4 Legal Claim posts (Location Map Fig.2). On September 22, 1983 the claims were grouped as follows: Apex-Iskut Group-1, Hemlo West 13, 14, 16 and 18; Apex-Iskut Group-2, Hemlo West 12, 15 and Aurum 3 & 4. Hemlo West 14 and 16 surround and, in part, overlie Iskut 1 & 2 claims, a 12 unit claim block, located on the northside of the Iskut River. These two claims are owned by Commonwealth Minerals Limited. The land north of the Iskut River occupied by the Hemlo West and Aurum claims and Iskut 1 & 2 were originally located as the Ray & Joann claims in the early 1960's. Mineralization in this area was first reported by F.A. Kerr, G.SC during his investigations of the Johnny Mountain area, south of the river in 1926 (Memoir 246). In 1964-65, the Ray & Joann claims were prospected for copper, lead, zinc and precious metals by Iskut Silver Mines Limited.

The current owner and operator of the Hemlo West 12 to 16, Hemlo West 18 and Aurum 3 & 4 claims is Apex Energy Corp., at #501 - 700 West Pender Street, Vancouver, B.C.

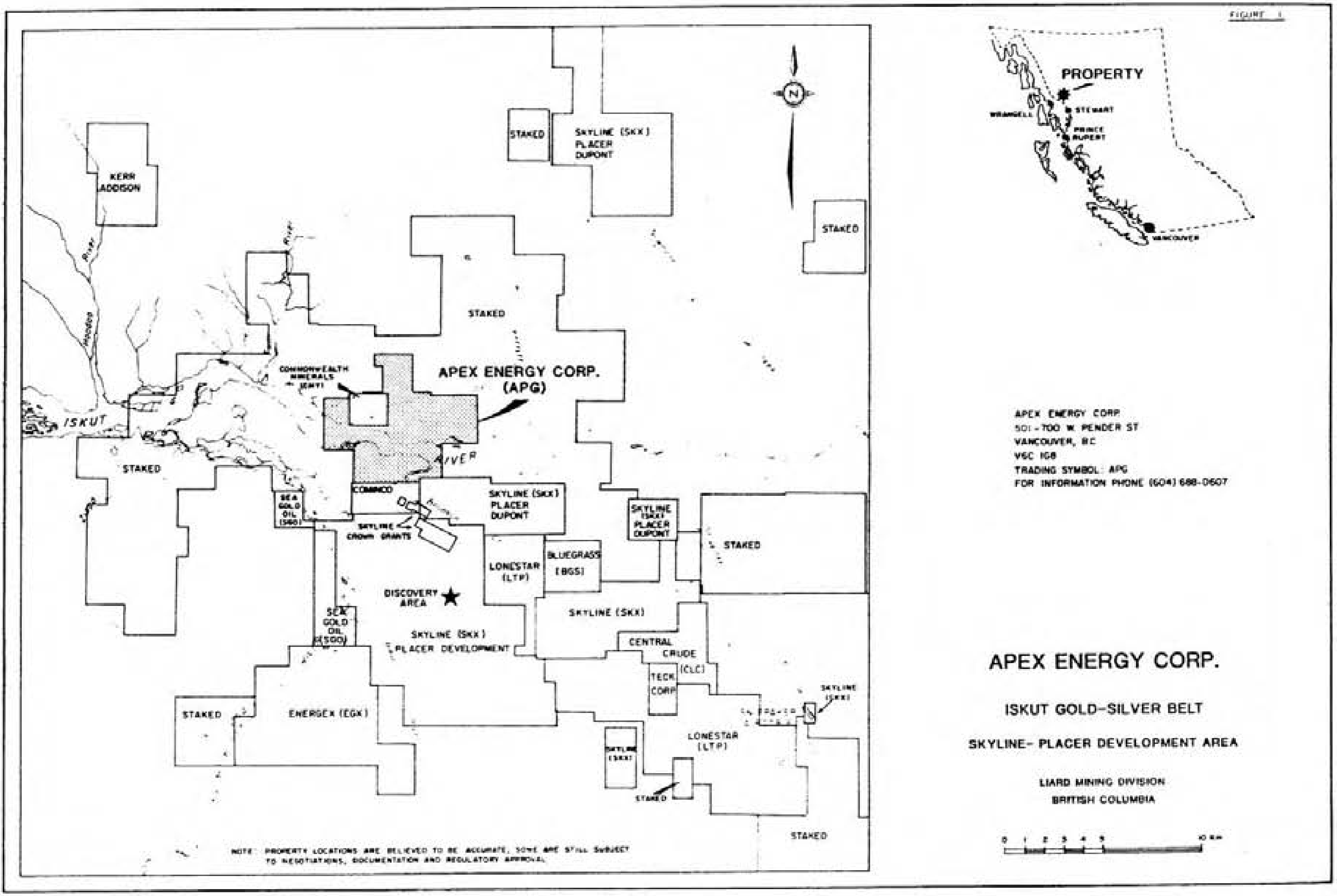
FIGURE 1
PROPERTY
WRANGELL
STEWART
PRINCE RUPERT
VANCOUVER
KERR ADDISON
STAKED
SKYLINE (SKX) PLACER DUPONT
STAKED
STAKED
ISKUT
RIVER
COMMONWEALTH MINERALS (EMT)
APEX ENERGY CORP. (APG)
STAKED
SEA GOLD OIL (SGO)
COMINCO
SKYLINE CROWN GRANTS
SKYLINE (SKX) PLACER DUPONT
SKYLINE (SKX) PLACER DUPONT
STAKED
LONESTAR (LTP)
BLUEGRASS (BGS)
DISCOVERY AREA
SEA GOLD OIL (SGO)
SKYLINE (SKX) PLACER DEVELOPMENT
SKYLINE (SKX)
CENTRAL CRUDE (CLC)
TECK CORP
SKYLINE (SKX)
STAKED
ENERGEX (EGX)
LONESTAR (LTP)
STAKED
STAKED
NOTE: PROPERTY LOCATIONS ARE BELIEVED TO BE ACCURATE, SOME ARE STILL SUBJECT TO NEGOTIATIONS, DOCUMENTATION AND REGULATORY APPROVAL.
APEX ENERGY CORP.
501 - 700 W. PENDER ST
VANCOUVER, B.C.
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APEX ENERGY CORP.
ISKUT GOLD-SILVER BELT
SKYLINE- PLACER DEVELOPMENT AREA
LIARD MINING DIVISION
BRITISH COLUMBIA
0 1 2 3 4 5 10 KM

REGIONAL GEOLOGY

Regional mapping by the Geological Survey of Canada in 1935 (Map 311A) and 1957 (Map 9 - 1957) indicate the Iskut River area is underlain by Mesozoic sediments and volcanics of the Takla and Hazelton Groups, which have been intruded by granitic rocks of the Coast Plutonic complex.

Although considerable confusion exists over the correct nomenclature, stratigraphic relationships and ages of the volcanic and sedimentary rocks a certain degree of consistency is starting to evolve. Presented in Fig.2 is a stratigraphic column compiled by geologists working for Texas Gulf and Cominco. Briefly this stratigraphic column shows a +700 m thick sequence of weakly metamorphosed siltstones and argillites which are considered to be pre-Triassic in age. Overlying this sequence is a +700 m thick sequence of black shales, siltstones, graywackes and conglomerates which coarsen upward. Two corals from a limestone bed in this sequence have been dated as middle Triassic. These sediments are in turn overlain by a chaotic mixture of andesitic to rhyolitic pyroclastic and flow rocks which have been informally termed the Snippaker volcanics. Overlying the Snippaker volcanics is a 200 m thick section of sedimentary rocks consisting of a well bedded, dark gray siliceous "arkose".

Uppermost in the stratigraphic section are a number of recent cinder cones and volcanic flows consisting of olivine basalts. Hotsprings related to this volcanic event are presently active in a number of localities.

Intruding the Mesozoic strata are lower to middle Jurassic plutonic rocks which range in composition from syenite to diorite. Contact metamorphism and anatexis accompanied the emplacement of some of these intrusives resulting in the formation of migmatites, gneisses and cataclasites at the border zones. In addition large zones of hydrothermal alteration are developed around some of the more potassic intrusives.

A preliminary economic assessment of these claims indicates a potential for gold and silver mineralization associated with sulphides of iron, zinc and lead in a sedimentary-volcanic rock assemblage.

Summary of Work Done

Geochemical Survey:	stream-silt samples collected	44
(See Fig.5)	soil samples collected	475
	rock chip samples collected	36

Geological Mapping:	Scale	1:10,000
	Area	2100 ha

(See Geological Map, Fig.3)

Line Cutting and Grid Established:

Base line cut and surveyed	1100 m
Grid lines established & surveyed	20.1 km

(See Fig.5)

Claims On Which Work Was Done

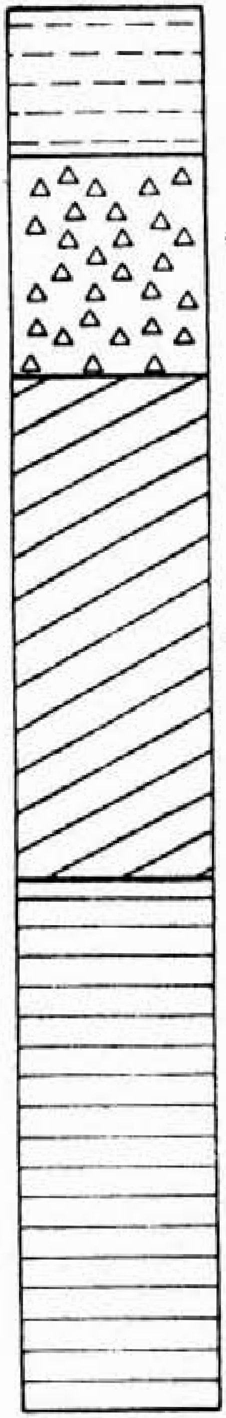
Stream silt samples collected:	Hemlo West 12 Hemlo West 13 Hemlo West 15 Hemlo West 16 Hemlo West 18 Aurum 3 Aurum 4
Soil samples collected:	Hemlo West 15 Hemlo West 16

(See Fig.5)

Geological Mapping:	traverses at 100 m -	Hemlo West 15 Hemlo West 16
	traverses at 500 m -	Hemlo West 13 Hemlo West 18 Aurum 3 Aurum 4
	single line traverse -	Hemlo West 12

Structurally the Iskut River area is relatively uncomplicated. Satellite photos show the existence of a number of large fault systems which transect the area in an easterly to northeasterly direction. Open folding has affected some portions of the Mesozoic strata with tighter folds present in the lower Mesozoic and Paleozoic strata.

According to regional mapping by the Geological Survey of Canada (Map 9 - 1957) the claim group discussed in this report should be underlain by Permian and/or Triassic rocks. This premise is collaborated by data presented in Fig.2 and maps produced by Grove (1973) to the east. The McQuillan Ridge section described by Grove contains siltstones, quartzites, limestones, pyroclastics and mafic to intermediate flows which are quite similar to the rock types present on the claim group. Fossils indicative of a Karnian or Upper Triassic age were collected from this section. In addition, the development of tighter folds and an axial plane foliation are also most compatible with a Triassic age.



AGE	THICK-NESS	LITHOLOGIES	MINERAL SHOWINGS	
JUR(?)	200m	SILICEOUS ARKOSE		
JUR(?)	+300m	ANDESITE TO RHYOLITIC PYROCLASTICS AND FLOWS, CHERT, AND VOLCANIC SEDIMENTS	REG INCL TAMI KIM PINS CENTRAL	WOLVERINE(?) LITTLE HILL PYRAMID KHYBER PELICAN
mTr(?)	+700m	BLACK SHALES, SILTSTONES, GREYWACKES, AND CONGLOMERATES.	ISKUK SILVER WOLVERINE(?) BRON	
pre-Tr	+700m	GREY-GREEN SILTSTONES AND BROWN ARGILLITES		

JOHNNY MOUNTAIN STRATIGRAPHIC SECTION	
by: B.V. Hall (modified from L. Orsa 1974)	Date: October 10, 1983
	Figure 2

PROPERTY GEOLOGY

STRUCTURE

Structural relationships on the claim group appear to be relatively straightforward. One phase of deformation has locally folded some sections of the property into a series of east to southeasterly trending "tight" folds. Accompanying this folding was the development of an axial plane foliation (F_1) and a lineation (L_1) representing the intersection of bedding (F_0) and the foliation (F_1). The foliation is best developed in the carbonaceous siltstones (Tcs) and sericite schists (Tss). In the other Triassic rock types a subtle axial plane clearage is present.

A second foliation is locally present surrounding the granodiorite (Jgr). This foliation is restricted to the finer grained foliated granodiorite (Jfg) and represents a contact zone between the intrusive and Triassic country rocks.

Based upon a study of the geology and air photograph lineaments, two fault sets appear to be present on the property. The most significant in terms of displacement is an east-west trending fault situated on the northern portion of the Hemlo West 13 claim block. This fault has an apparent left lateral displacement of approximately 1 km. The other fault set trends northeasterly and results in only minor displacement. The timing of both fault sets appears to be post-Jurassic since some offset is evident in the orthoclase porphyry (Jop).

PROPERTY GEOLOGY

LITHOLOGY

The geology of the claim group consists of two main components:

1) Triassic strata containing roughly equal portions of sediments and volcanics, and
2) Jurassic plutonic rocks of the Coast Plutonic complex.

In the Triassic strata the dominant sedimentary rock type is a carbonaceous siltstone (Tcs). This rock type is black to dark gray in colour, foliated, and well-bedded. The foliation is for the most part defined by biotite, although some chlorite is present.

With increasing grain size the carbonaceous siltstone (Tcs) grades into the quartz sandstone (Tqs). This rock type consists of well-sorted quartz arenites and poorly-sorted quartz wackes. Both are brown to purple in colour, well indurated, poorly foliated, and well-bedded. Clast size in the quartz wacke averages 1 mm in diameter, but ranges up to 1.0 cm. Biotite and chlorite are present in the more argillaceous beds.

Other sedimentary rock types include a chert (Tch) and porcellonite (Tpo). The chert (Tch) is pale green in colour, massive and has a concoidal fracture.

The porcellanite (Tpo) is brown to purple in colour, well-laminated (averaging 0.5 cm), has a concoidal fracture and in general appears to be a middle member between the chert (Tch) and carbonaceous siltstone (Tcs).

For the volcanic rock types, the mafic volcanic tuffs and breccias (Tbt) appear to be the most abundant. In general this rock type is dark green in colour, and contains angular to sub-angular clasts which range in size up to 1.0 cm in diameter. Predominately the clasts consist of volcanic fragments which in some cases are heavily epidotized.

A sericite schist (Tss) occurs in the eastern portion of the Hemlo West 16 claim block. This rock type is pale green in colour, well foliated, variably siliceous, and carries varying amounts of disseminated, veined and laminated pyrite (1 - 15%). Structural relationships suggest this rock type is conformable and may represent a felsic tuff. However, some outcrops have more the appearance of an altered sediment.

The dominant mafic volcanic flow (Tmv) is dark gray to green in colour, aphanitic, magnetic, and in some cases exhibits relict columnar jointing. The other mafic volcanic flows include a feldspar porphyry volcanic flow (Tfv) and sanidine porphyry volcanic flow (Tsv). Both are similar to the mafic volcanic flow (Tmv) except, the feldspar porphyry (Tfv) variety has phenocrysts of plagioclase up to 0.5 cm in length and the sanidine porphyry (Tsv) variant is characterized by conspicuous phenocrysts of sanidine up to 2 cm in length.

For the Jurassic plutonic rocks three members are present on the property:

1) orthoclase porphyry (Jop)
2) granodiorite (Jgr)
3) foliated granodiorite (Jfg)

The youngest appears to be the orthoclase porphyry which occurs as a small stock centered about the Hemlo West 15 claim. Large phenocrysts of orthoclase (1 - 3 cm long) set in a matrix of plagioclase and pyroxene characterize this rock type. In addition this rock type is slightly magnetic and faintly foliated at the margins of the stock.

The granodiorite (Jgr) is situated at the northern edge of the Hemlo West 18 claim. This rock type is medium grained, holocrystalline, equigranular, and contains approximately 20% quartz, 10% biotite, 20% hornblende, 2% magnetite and 48% plagioclase. To the south in contact with Triassic sediments is the foliated granodiorite (Jfg). This rock type is fine grained, foliated, holocrystalline, equigranular, and contains roughly the same mineralogy as the granodiorite (Jgr). Included with this intrusive phase are numerous xenoliths of mafic rocks and relict banding.

PROPERTY GEOLOGY

ALTERATION

Wallrock alteration on the property appears to be relatively minor. Some chloritization and quartz-actinolite veins are present in the mafic volanics, however, these appear to be more a result of regional metamorphism than related to mineralization. Quartz and/or calcite veins occur sporadically throughout the property and again appear to be a function of regional metamorphism.

Possibly related to the mineralization which accompanies the sericite schist (Tss) is the pervasive sericitization which characterizes this rock type. Outcrops of the quartz sandstone (Tqs) adjacent to the sericite schist (Tss) contain minor amounts of sericite suggesting the sericitization is gradational between the two rock types.

MINERALIZATION

Three distinct forms of mineralization are present on the property. The most widespread is disseminated and veined pyrite which is most abundant on the Hemlo West 16 and 15 claims. Accompanying the pyrite, which attains local concentrations exceeding 10% (G72, G69, B18, G75, B121, G82, G101, G100, G78 and G77) are lessor amounts of chalcopyrite and galena (B157, G78, G75 and B1). On the Hemlo West 16 claim this mineralization appears to be associated with the sericite schist, and in some cases the pyrite occurs in laminations parallel to the foliation. Also in the Hemlo West 16 claim is veined mineralization which appears to be confined to the chert (Tch). For the Hemlo West 15 claims and a small portion of the Hemlo West 14 claims the veined and disseminated mineralization appears to be related to the orthoclase porphyry intrusion (Jop).

The mineralization on the Hemlo West 16 claim does not appear to be related to this intrusion. Significant differences in the soil geochemistry suggest this mineralization has a distinctly different origin.

Other modes of mineralization on the property include a vein of sphalerite and quartz (#2 Showing, Hemlo West 16 claim), and a vein of massive pyrite, quartz and calcite (B42, Hemlo West 14). The sphalerite-quartz vein where exposed averages 30 cm in thickness and contains an average sphalerite content of 30 - 80%. Internally this vein is banded and brecciated, and has an orientation of 135/43 SW, closely approximating bedding (137/18 SW). Assay intersections obtained from Iskut Silver (Sevensma, 1966) indicate an assay intersection of 3.4 feet or 1.04 metres. At present the trenches exposing this vein are considerably oxidized and sluffed in making an accurate determination of this veins true thickness difficult.

The pyrite-quartz-calcite vein located on the western boundary of the Hemlo West 14 claim contains massive pyrite (greater than 80%) with lessor amounts of quartz and calcite. This vein averages 10 cm in thickness and has an orientation of 105/90°. The carbonaceous siltstone (Tcs) hosting this vein has 1 - 2% disseminated and veined pyrite.

HEAVY MINERAL GEOCHEMISTRY

METHOD

Heavy mineral samples were collected from all the major streams draining the claim group. In most cases the samples were collected from gravel bars in the active portion of the stream bed. After wet sieving to -20 mesh 2-5 kilograms of sample was placed in plastic bags and sent to Min-En Laboratories at 705 West 15th St., North Vancouver, B.C.

At the laboratory the samples were dried one day at 95^{o} C and sieved into a -80 mesh fraction and a -20 +80 mesh fraction. Upon grinding the samples underwent a density separation using a heavy liquid of specific gravity 3.1. From the heavy fraction of these samples the magnetic fraction was removed and weighed. The non-magnetic fractions from both the -80 and -20 +80 mesh was then analyzed for Ag, As, Au, Ba, Cd, Cu, Mo, Pb, Sb and Zn.

For the Au analysis 10.0 gms of sample was dissolved in 25 mls of hot Aqua-regia solution and left for approximately 3 hours to evaporate. The samples were then redissolved in 25 mls of concentrated hydrochloric acid and made up to 100 mls with distilled water. The Au was then extracted using the organic solvent MIBK and analyzed on a Varian Tectron model 5 atomic absorption unit.

For the analyses of Ag, As, Ba, Cd, Cu, Mo, Pb, Sb and Zn, 1.0 gms of sample was dissolved in a 8 ml solution of concentrated nitric and perchloric acid for 8 hours. The solution was then diluted to 25 mls with distilled water and analysed on a Gerell-Ashe model 9000 inductivity coupled plasma (ICP) unit. Background corrections were made for all analyses and the results compared to prepared standards.

For the data interpretation a statistical method of determining anomalous sample populations was not used, since the sample population ($n = 44$) was considered to be too small. Consequently the top 5 values for each element were assumed to be anomalous. This premise appears to be justified since many of the samples were considered to be anomalous for a number of elements.

other elements were not high as the first two areas of interest. However, minor amounts of chalcopyrite was encountered upstream from sample EH-3 (outcrop B157) and the area has not been covered by soil geochemistry.

In addition to the multi-element anomalies discussed above, a number of spot high Au values were obtained. In the -20 +80 mesh fractions, samples BH-9 (6,000 ppb), TH-6 (2,250 ppb) and TH-12 (3,700 ppb) were found to be anomalous, and in the -80 mesh fractions BH-9 (11,500 ppb) and TH-17 (3,800 ppb) were anomalous. These values were anomalous in more than one sense, since no other elements attained significant concentrations in these samples.

SOIL GEOCHEMISTRY

METHOD

Based upon the geological mapping and heavy mineral sampling a soil sampling program was conducted on the Hemlo West 15 and 16 claims. The samples were collected at 100 and 50 m intervals, except in areas of suspected or known mineralization where a 25 or 10 m sample interval was used.

The samples were for the most part taken from the BM or BF horizons using a grubhoe. Once collected the samples were placed in kraft high strength paper envelopes and field dried one week before being sent to Rossbacher Laboratory Ltd. of 2225 S. Springer St., Burnaby, B.C. At the laboratory the samples were dried overnight, then sieved to -80 mesh and analysed for Ag, As, Au, Cu, Mo, Pb and Zn.

For the Ag, Cu, Mo, Pb and Zn analyses a 0.5 gm portion of the -80 mesh fraction was digested for 4 hours in a hot acid attack consisting of concentrated nitric and perchloric acid. Upon digestion the sample was made up to a volume of 10 mls with distilled water and analysed using a Varian Techtron model 1275 atomic absorption unit.

The Au analyses were performed using a 10.0 gm portion of the -80 mesh fraction which was roasted for 1½ hours at 550^{o} C. The sample was then digested in 30 mls of hot Aqua-regia solution and diluted to 100 mls with distilled water. Then 75 mls of the solution was extracted using the organic solvent MIBK and analyzed using a Varian Techtron model 1275 atomic absorption unit. Background corrections were made for all the data and the results compared to prepared standards.

For the As analyses 0.25 gms of the -80 mesh fraction was digested in the same manner as Ag, Cu, Mo, Pb and Zn. From the diluted 10 ml solution a 5 ml aliquot was taken and diluted to 20 mls with distilled water. Then a Hydride

HEAVY MINERAL GEOCHEMISTRY

RESULTS

As a result of the heavy mineral sampling several areas of interest were isolated (Fig.3, Appendix A).

The two most anomalous areas were located in the centre of the Hemlo West 16 claim and the southwestern portion of the Hemlo West 15 claim. The first area is represented by one sample (EA-1) located in the vicinity of L 40N, 16E. This sample contained very high values in Ag, As, Cd, Cu, Mo, Pb, Sb and Zn. Soil sampling later revealed the presence of a relatively large Ag, As, Au, Cu, Pb and Zn anomaly. This heavy mineral anomaly was present only in the -20 +80 mesh fraction and not the finer -80 mesh fraction. This relationship appears to a function of the relative proximity the soil anomaly has to sample EA-1.

The second area of interest was represented by sample TH-1, TH-2, TH-3 and TH-4, and occurs in the vicinity of L 20E, 15 N on the Hemlo West 15 claim. For this area both size fractions appeared to outline the anomalous area adequately, with the -20 +80 fraction slightly more sensitive. The most anomalous sample was TH-4 which contained very high values in Ag (77.1 ppm) and Au (14,500 ppb) along with reasonably high values for As, Cd, Cu, Mo, Pb and Zn in the -80 mesh fraction. Later soil sampling revealed the presence of a relatively large area of anomalous concentrations of Ag, Cu, Mo, Pb and Zn.

A third anomalous area was located on the Aurum 3 claim. This area is represented by very high Au values in the -80 mesh fractions of samples BH-1 (5,250 ppb) and BH-2 (12,000 ppb). In addition, reasonably high values in Ag, As, Ba, Cd, Cu, Pb, Sb and Zn were obtained for samples BH-1, BH-2 and EH-3 which were especially evident in the -80 mesh fractions. Except for the two high Au values the

Generation Method was used to generate arsine using 5.0 ml of concentrated hydrochloric acid and 1.0 gm of granulated zinc. The resulting solution was analysed using a Spectronic 20 colorimeter and the results compared to a standard curve constructed from values obtained from prepared rock standards.

For the determination of background anomalous populations a statistical approach was used. Frequency plots were constructed on 3 cycle log-probability paper for each element using the values from the 50 and 100 m sample intervals (Appendix B). By using this method statistically normal populations will plot as straight lines and points of inflection are generally considered to represent the boundaries between different sample populations (Sinclair, 1975). Determination of anomalous and above background populations were made by inspection of the frequency plots (Table 1). In the case of Ag, As, Au and Mo a relatively large percentage of the data fell below the analytical detection limit. Consequently these values were removed from the sample population and the "censored" data also plotted.

"TABLE 1"

SUMMARY OF SOIL SAMPLE POPULATIONS

	Above Background		Slightly Anomalous		Anomalous		Highly Anomalous	
	A	B	A	B	A	B	A	B
Ag	14	40%			3.8	6%	4.4	4%
As	35	23%	95	12%	200	7%	340	3%
Au	20	40%			45	7%	110	3%
Cu	44	50%	95	23%			250	4%
Mo			7	25%	15	10%	27	4%
Pb			40	15%	60	10%	110	4%
Zn	145	32%	190	25%	470	7%	700	4%

A = threshold value (Au ppb, others ppm)
B = percent of total population

SOIL GEOCHEMISTRY

RESULTS

The soil geochemistry outlined five anomalous areas, of which four appear to be directly attributable to sulphide mineralization.

The largest anomaly is centered over L 22E, 14N on Hemlo West 15 claim and is defined by anomalous concentrations of Mo and Cu. This anomaly extends for approximately 200 m north-south and 400 m east-west. On a smaller scale anomalous values for Ag, Au, Pb and Zn accompany the high Cu - Mo values. The only element that was not significantly anomalous in this area was As. Of note is the area around L 25E, 18N on Hemlo West 15 claim where a number of Mo values exceed 70 ppm, attaining a high of 258 ppm.

On the Hemlo West 16 claim the anomalous zones tended to be much smaller in lateral extent, but carried much higher values. Surrounding the #2 Showing of Iskut Silver (L 46+50N, 11+40E) a detailed soil sampling grid was established on a sample spacing of 10 m. Presented in Appendix C (Fig. 12-19) are the results of this survey.

Zn was the best indicator of the anomaly, attaining a high of 8200 ppm in close proximity to the showing. Close inspection of Fig.18 reveals the presence of two sub-parallel linear zones of high values. Both trend southeast with the first centered on L 46+50N, 11+40E and the second on L 46+50N, 12+00E. Ag, As, Cu and Pb were also found to be significantly anomalous in this area with Ag and As closely approximating the shape, position and orientation of the Zn anomaly. Au also closely approximated the Zn anomaly, however the high Au values were represented by only one anomalous value plus several others which were above background. Mo was the only element which did not respond directly to the mineralization of the #2 Showing.

A second linear soil anomaly occurs in the vicinity of L 45N, 9E. This anomaly also trends south easterly and is best defined by Ag, As, Pb and Zn (Figs. 6, 9, 10 and 11) with scattered highs in Au and Cu (Figs. 5 & 7). In general individual values for all elements except Au and As are significantly higher in this anomaly than the anomaly associated with the #2 Showing. In addition the lateral extent of this anomaly is at least 50% greater (approximately 300 m) and it is open to the northwest.

Associated with the veined and disseminated mineralization centered about L 41+50N, 14+50E is a fourth soil anomaly. This anomaly is crudely ovoid in shape with the long axis orientated southeasterly to northwesterly. As, Pb and Zn best define this anomaly, along with scattered highs in Au. Although this anomaly has the same orientation as the two previous anomalies and appears to be aligned with the #2 Showing, mineralization associated with the sericite schist (Tss) is believed to be the cause.

The final soil anomaly to be considered occurs in the vicinity of L 42+50N, 16+25E. It is best defined by anomalous values in As, Cu, Pb and Zn, with scattered highs in Au and Ag. This anomaly extends for roughly 200 m and is orientated north-south, the same as the valley which contains this anomaly. Consequently, although mineralization is present in the immediate vicinity of this anomaly, the actual positioning appears to be more controlled by topography than mineralization.

ROCK GEOCHEMISTRY

METHOD

Rock chip samples were routinely collected over outcrops containing significant quantities of sulphides. In most cases the samples consisted of unweathered rock and were collected using a geological hammer. The samples were placed in plastic bags and shipped to Rossbacher Laboratory Ltd.

At the laboratory the samples were ground to -150 mesh and analysed for Ag, As, Au, Cu, Mo, Pb and Zn, with the exception of two samples which were assayed. The analytical procedure was the same as the soil samples.

For the Pb and Zn assays 1.0 gm of -150 mesh fraction was dissolved in 10 mls of concentrated nitric acid. This solution was brought to a boil, allowed to cool and 25 mls of perchloric acid added, heated to boiling again and cooled. Concentrated nitric acid (50 mls) was then added and the solution brought to a boil again. Distilled water (25 mls) was then added and the solution brought to a boil a fourth time. Upon cooling the solution was diluted to 200 mls with distilled water and a 50 ml aliquot filtered off and analyzed on a Varian Techtron model 1275 atomic absorption unit.

For the Ag assays 2.9 gms of the -150 mesh fraction was digested in 30 mls of Aqua-regia, boiled for approximately 20 minutes until dry. The sample was then dissolved in 25 mls of concentrated hydrochloric acid and 25 mls of distilled water added. The resulting solution was boiled and made up to a volume of 100 mls with distilled water. A 50 ml aliquot was then filtered off and analyzed on a Varian Techtron model 1275 atomic absorption unit. Background corrections were made for all the data and the results compared to prepared standards.

ROCK GEOCHEMISTRY

RESULTS

With the exception of samples taken from the #2 Showing, no economic concentrations of base or precious metals were disclosed by rock geochemistry. However, samples from several outcrops did return some interesting values.

For Au grab samples from outcrops B42, B121, B122 and G120 returned values greater than 100 ppb. Two of the samples (B121, 280 ppb and B122, 120 ppb), situated in the vicinity of L 43N, 15+50E came from the mineralization sericite schist unit. Both samples contained in excess of 10% pyrite and were surrounded by anomalous soil samples in Au. Sample B42 came from a 10 cm thick vein of massive pyrite containing lessor amounts of quartz and calcite, which was situated on the western border of the Hemlo West 14 claim. Although this sample was relatively high in Au (320 ppb), based upon mineralogy this vein was anticipated to contain significantly more Au. The last sample G120 came from a small (10 cm wide) quartz-pyrite vein situated on the Hemlo West 15 claim. This sample contained 380 ppb Au, not significantly high considering it came from a vein.

For Ag a number of samples were found to be above background (generally considered to be above 1.0 ppm) B1, B3, B42, B44, G1, G2, G69 and G120. For the most part these samples were situated on the southern portion of the Hemlo West 16 grid and were taken from outcrops containing in general greater than 10% pyrite. The highest sample (B1) contained 5.2 ppm Ag and came from an outcrop containing minor amounts of galena.

On the Hemlo West 15 grid some interesting values for Cu (B18, 660 ppm; G69, 700 ppm and G120, 560 ppm) were obtained. Although these values are above background, they are not considered to be significantly anomalous.

Interestingly enough, sample B157 which came from an outcrop containing visible chalcopyrite upstream from a heavy mineral sample containing relatively high Cu values did not contain a significant Cu content (68 ppm).

For Zn and Pb only samples B5 and G2 appear to be significant. Both samples came from the southern portion of the Hemlo West 16 grid and are associated with outcrops containing minor amounts of pyrite.

The most significant rock samples were obtained from the #2 Showing located at L 46+50N, 11+40E on the Hemlo West 16 claim.

"TABLE 2"

ASSAYS AND ANALYSES FROM THE #2 SHOWING

Sample No.	Au ppb	Ag oz/ton	Pb %	Zn %	Cu ppm	Mo ppm	As ppm	Sample width
B125a	160	0.56	0.06	21.80	600	1	9700	grab sample
B125b	40	0.36	0.04	9.76	500	2	3100	0.15 m
*	650	0.2	0.04	5.6				1.03 m

* values taken from (Sevensma, 1966)

In general the values obtained from this years sampling compare favourably with the results obtained in 1966. The major difference being the sample width, which was significantly greater for the 1966 sampling. However, this difference may be merely a function of the present poor condition of the trenches and once re-established a thicker vein width may be present. Zn as anticipated was quite high. Values for the other elements were not so encouraging.

SUMMARY

During the course of the exploration program three areas of interest were isolated using heavy mineral geochemistry. Two of these areas were later covered by soil geochemistry and found to be anomalous. In addition several streams containing isolated high values in Au (up to 14,500 ppb) were identified (BH-9, TH-6, TH-12 and TH-17).

The soil sampling outlined five anomalous areas. Two of these anomalies (L 22E, 14N and L 41+50N, 14+50E) covered reasonably large areas and were the result of veined and disseminated pyrite mineralization. Another two anomalies (L 46+50N, 11+40E and L 45N, 9E) were of smaller lateral extent, linear in shape and contained very high values, indicative of either stratiform or vein type mineralization. A fifth soil anomaly located in the vicinity of L 42+50N, 16+25E concides with a stream valley and appears to be hydromorphic in origin.

Several different modes of mineralization were identified on the property. Associated with the orthoclase porphyry (Jop) is veined and disseminated pyrite, plus sporadic chalcopyrite mineralization which closely resembles the type of mineralization found in the pyrite halos of porphyry copper deposits. Disseminated and veined pyrite, plus minor amounts of galena and sphalerite also occur on the Hemlo West 16 claim (L 41+50N, 14+50E). Massive sulphide veins were located in two outcrops (B125 and B42). At B125 assays returned values containing up to 21.8% Zn. The second vein B42 located at the western edge of the Hemlo West 14 claim containing very low base and precious metal values.

Respectfully submitted,

R. Macrae, P.Eng.

November 14, 1983

B.V. Hall, MSc

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APPENDIX 'A'

Heavy Mineral Analyses
(-20 to +80 mesh)

Sample	Ag ppm	As ppm	Cd ppm	Cu ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm	Ba ppm	Au ppb	non-magnetic heavy %
BH 1	5.0	593	10.2	327	92	163	51	146	270	10	1.46
BH 2	7.4	515	13.5	555	75	227	54	289	305	30	2.31
BH 3	2.9	95	3.4	382	42	142	19	158	390	10	2.13
BH 4	19.4	482	11.1	1070	102	231	50	166	125	90	1.95
BH 5	9.1	318	11.1	412	67	270	48	376	345	10	1.91
BH 6	1.7	117	5.2	93	35	86	11	98	268	10	1.75
BH 7	6.9	272	8.1	570	74	101	40	95	109	260	4.76
BH 8	6.0	256	10.4	495	53	154	41	162	172	15	2.19
BH 9	3.7	226	7.1	149	59	110	22	125	259	6000	1.07
BH 10	3.0	151	3.9	299	65	78	24	73	104	5	3.46
BH 13	2.9	94	4.1	82	66	51	9	85	206	5	3.08
EA 1	43.3	2210	56.1	1380	322	1130	541	1510	427	150	.69
EA 2	4.5	127	8.3	1970	65	71	0	247	1210	60	9.15
EH 1	3.0	239	6.7	224	38	88	16	96	163	20	8.64
EH 2	3.7	209	4.5	343	40	82	15	119	143	60	4.72

___ anomalous values (assumed)

APPENDIX 'A'

Heavy Mineral Analyses
(-20 to +80 mesh)

Sample	Ag ppm	As ppm	Cd ppm	Cu ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm	Ba ppm	Au ppb	non-magnetic heavy %
EH 3	27.3	821	17.2	1030	85	206	57	422	229	90	3.57
EH 4	8.2	628	13.7	933	82	184	51	268	169	25	2.13
EH 5	4.9	224	5.4	416	40	71	15	124	204	30	5.20
EH 6	8.0	478	8.0	414	102	133	42	117	146	90	1.39
EH 7	4.9	234	4.3	397	37	77	18	152	262	35	2.67
EH 8	5.1	316	9.6	460	40	80	24	226	215	540	2.48
EH 9	7.2	416	8.9	680	78	143	30	128	119	170	2.48
EH 10	8.3	584	15.0	797	69	193	39	188	164	70	1.88
EH 11	6.0	304	7.1	523	82	100	25	117	293	100	3.09
GH 1	3.7	148	5.1	222	61	71	23	76	116	5	9.24
TH 1	9.7	927	13.4	409	149	241	74	125	180	70	0.99
TH 2	16.1	1390	29.3	795	251	503	115	411	158	90	0.80
TH 3	50.1	760	23.1	883	171	170	59	576	126	60	3.20
TH 4	59.6	704	16.3	4320	181	185	62	768	142	100	4.84
TH 5	4.9	221	8.3	373	93	60	16	191	124	140	2.03

—— anomalous values (assumed)

APPENDIX 'A'

Heavy Mineral Analyses
(-20 to +80 mesh)

Sample	Ag ppm	As ppm	Cd ppm	Cu ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm	Ba ppm	Au ppb	non-magnetic heavy %
TH 6	6.0	168	5.0	254	69	71	16	126	246	2250	9.26
TH 7	6.7	93	3.8	89	253	40	43	158	191	100	0.16
TH 8	6.0	162	4.9	235	124	81	16	147	1030	150	0.29
TH 9	6.1	218	2.9	731	194	62	27	72	144	140	3.56
TH 10	2.2	167	3.6	126	71	49	18	101	91	30	6.06
TH 11	4.0	193	11.9	376	36	54	14	810	157	30	2.74
TH 12	5.9	523	11.9	337	78	121	42	228	261	3700	2.16
TH 13	3.4	376	8.5	251	53	92	34	119	225	50	0.76
TH 14	2.6	208	6.7	170	39	85	28	69	220	30	1.02
TH 15	4.5	362	8.9	339	45	99	26	150	197	70	0.83
TH 16	2.5	106	2.4	35	30	41	0	153	147	60	0.45
TH 17	4.8	839	21.7	703	64	122	46	116	229	250	1.47
TH 18	3.3	331	7.3	387	58	87	25	136	156	90	1.18
TH 19	8.3	407	14.9	786	82	110	30	284	242	100	0.46

—— anomalous values (assumed)

APPENDIX 'A'

Heavy Mineral Analyses
(-80 mesh)

Sample	Ag ppm	As ppm	Cd ppm	Cu ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm	Ba ppm	Au ppb	non-magnetic heavy %
BH 1	11.0	840	22.8	477	130	235	70	237	541	5250	1.21
BH 2	18.8	774	18.0	740	99	263	65	335	438	12000	1.46
BH 3	4.5	170	5.0	429	37	104	19	76	293	110	6.02
BH 4	6.7	264	7.4	316	54	108	30	94	203	2350	4.92
BH 5	8.2	239	6.1	275	53	192	33	159	273	2200	4.44
BH 6	1.6	75	3.6	76	30	79	9	70	218	15	5.27
BH 7	6.3	246	6.9	360	72	151	38	146	242	15	3.59
BH 8	5.6	254	8.7	494	49	149	34	122	193	95	6.71
BH 9	7.9	204	5.8	130	47	117	4	112	279	11500	1.89
BH 10	4.0	173	5.4	231	82	101	27	66	304	10	6.25
BH 13	5.7	73	0.6	94	70	144	7	99	306	10	3.16
EA 1	5.7	353	12.6	373	80	200	61	357	81	190	5.46
EA 2	2.5	128	4.4	893	42	98	11	180	334	70	2.26
EH 1	3.2	187	4.9	339	35	94	12	97	156	45	7.92
EH 2	4.7	232	7.4	238	38	99	27	118	122	1450	5.11

—— anomalous values (assumed)

APPENDIX 'A'

Heavy Mineral Analyses
(-80 mesh)

Sample	Ag ppm	As ppm	Cd ppm	Cu ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm	Ba ppm	Au ppb	non-magnetic heavy %
EH 3	12.1	640	15.7	843	75	187	52	280	241	960	4.65
EH 4	9.6	543	14.6	1000	70	190	49	245	220	910	3.48
EH 5	4.2	212	4.2	368	35	68	16	121	184	70	12.62
EH 6	8.6	400	3.5	330	132	100	23	159	144	1200	4.86
EH 7	4.2	194	5.1	257	29	62	16	98	196	190	5.75
EH 8	4.3	273	5.1	448	36	87	21	95	205	70	7.21
EH 9	5.7	365	8.5	533	63	90	26	111	129	285	6.55
EH 10	7.1	540	13.3	618	58	128	37	132	147	210	7.50
EH 11	8.8	356	6.5	440	94	102	35	97	206	2100	6.38
GH 1	4.0	130	5.6	212	61	103	25	106	144	125	6.86
TH 1	8.4	686	14.0	311	129	208	50	143	449	220	2.23
TH 2	24.6	1380	37.6	778	241	4060	104	1120	445	760	2.04
TH 3	49.0	715	24.5	708	164	193	61	656	177	830	4.46
TH 4	77.1	876	23.0	2050	214	322	120	773	244	14500	4.86
TH 5	3.8	127	4.2	142	58	55	8	129	74	180	5.55

—— anomalous values (assumed)

APPENDIX 'A'

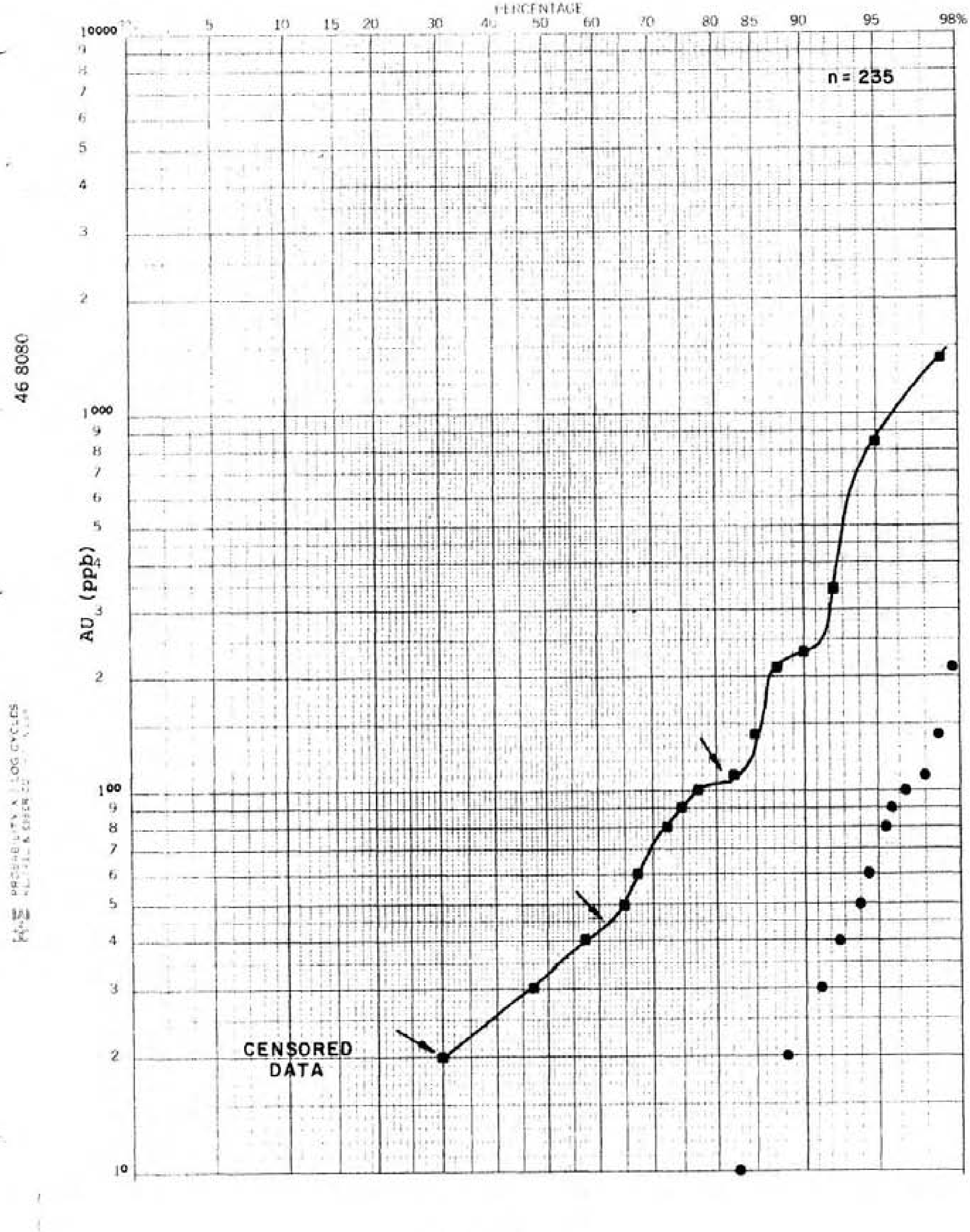
Heavy Mineral Analyses
(-80 mesh)

Sample	Ag ppm	As ppm	Cd ppm	Cu ppm	Mo ppm	Pb ppm	Sb ppm	Zn ppm	Ba ppm	Au ppb	non-magnetic heavy %
TH 6	4.6	167	5.9	186	61	63	16	103	245	200	13.98
TH 7	5.5	161	0.8	62	54	46	21	74	116	220	1.40
TH 8	<u>14.3</u>	274	2.5	99	100	89	4	152	<u>1080</u>	220	1.56
TH 9	6.5	224	4.0	461	<u>150</u>	75	25	91	169	100	8.01
TH 10	3.3	222	4.5	96	64	59	19	106	88	50	9.43
TH 11	4.1	201	5.8	148	34	63	14	177	117	45	4.47
TH 12	5.8	392	7.1	391	53	94	27	200	182	1550	3.99
TH 13	4.3	229	4.7	168	32	38	13	100	231	65	2.48
TH 14	4.0	210	4.8	148	34	87	14	91	230	65	2.00
TH 15	5.1	305	6.3	185	40	90	20	149	285	85	2.57
TH 16	6.8	209	0	79	24	55	10	182	225	90	1.88
TH 17	7.6	727	16.8	306	50	139	34	107	240	<u>3800</u>	2.71
TH 18	9.8	451	5.1	379	89	122	34	146	173	2000	2.31
TH 19	8.9	370	9.3	507	59	97	32	195	178	1200	2.44

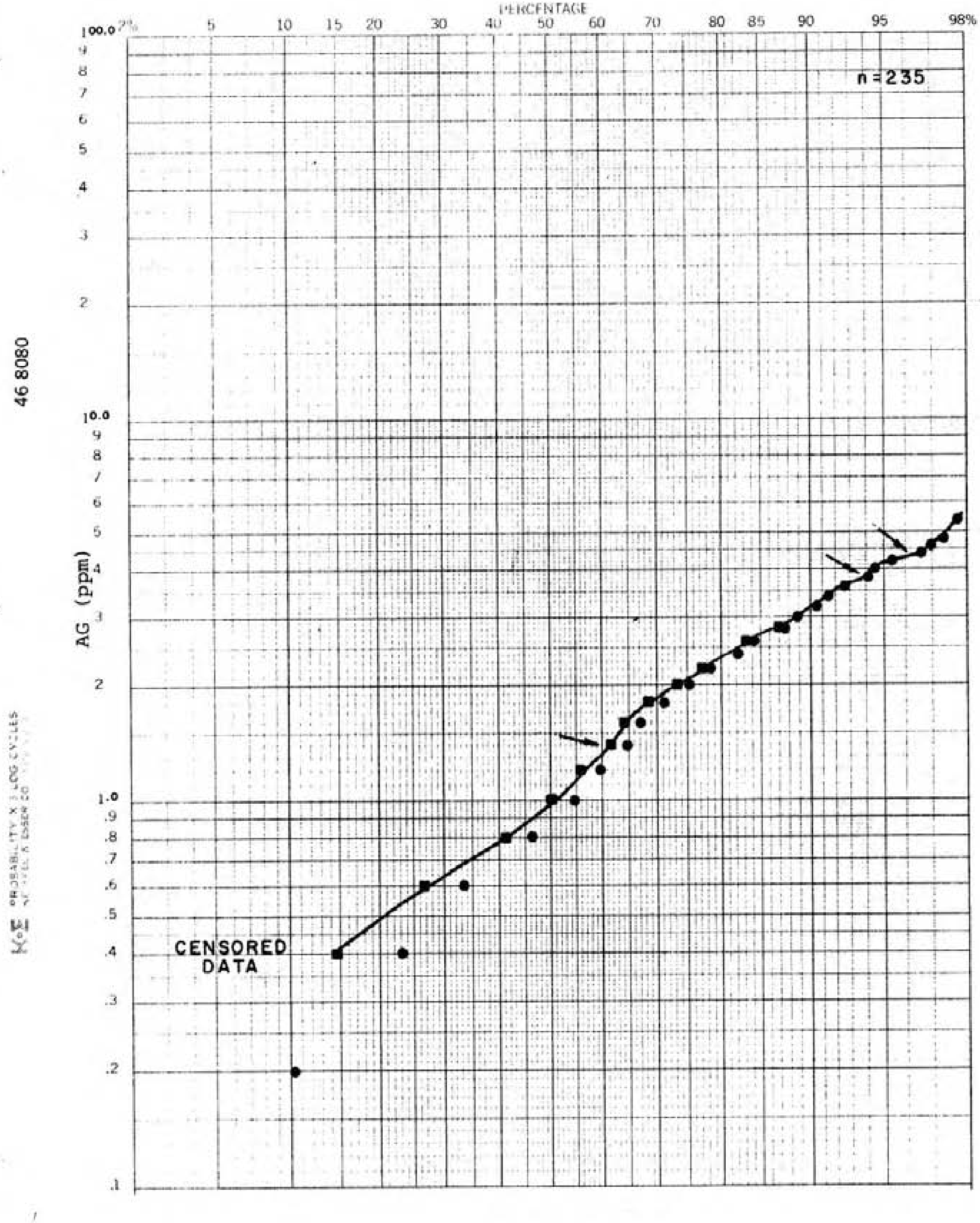
—— anomalous values (assumed)

APPENDIX 'B'

SOIL SAMPLE HISTOGRAMS

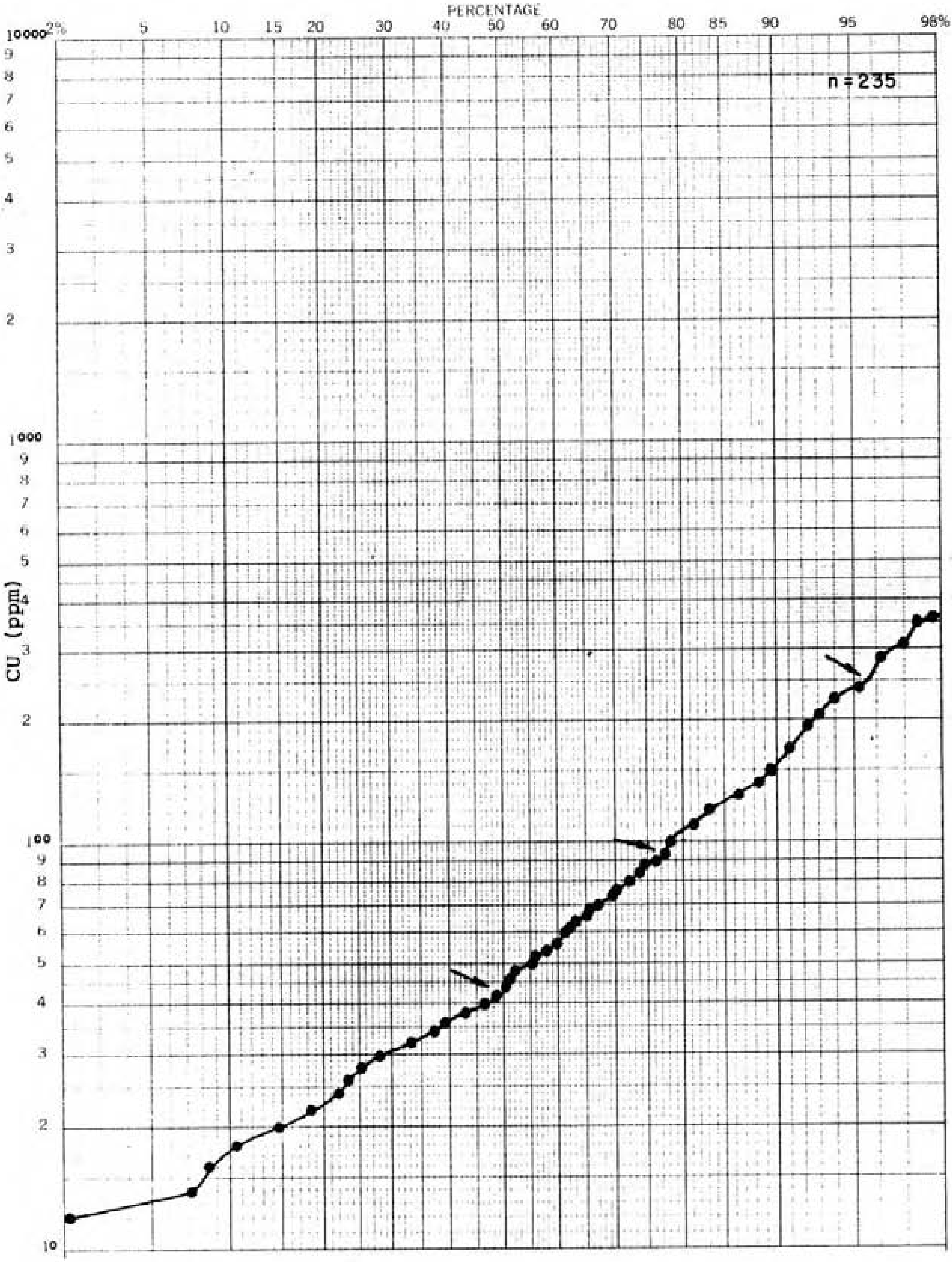


FREQUENCY %



PERCENTAGE
2%
5
10
15
20
30
40
50
60
70
80
85
90
95
98%
n = 235
AG (ppm)
100.0
10.0
1.0
.1
CENSORED DATA
46 8080
K&E PROBABILITY X 3 LOG CYCLES

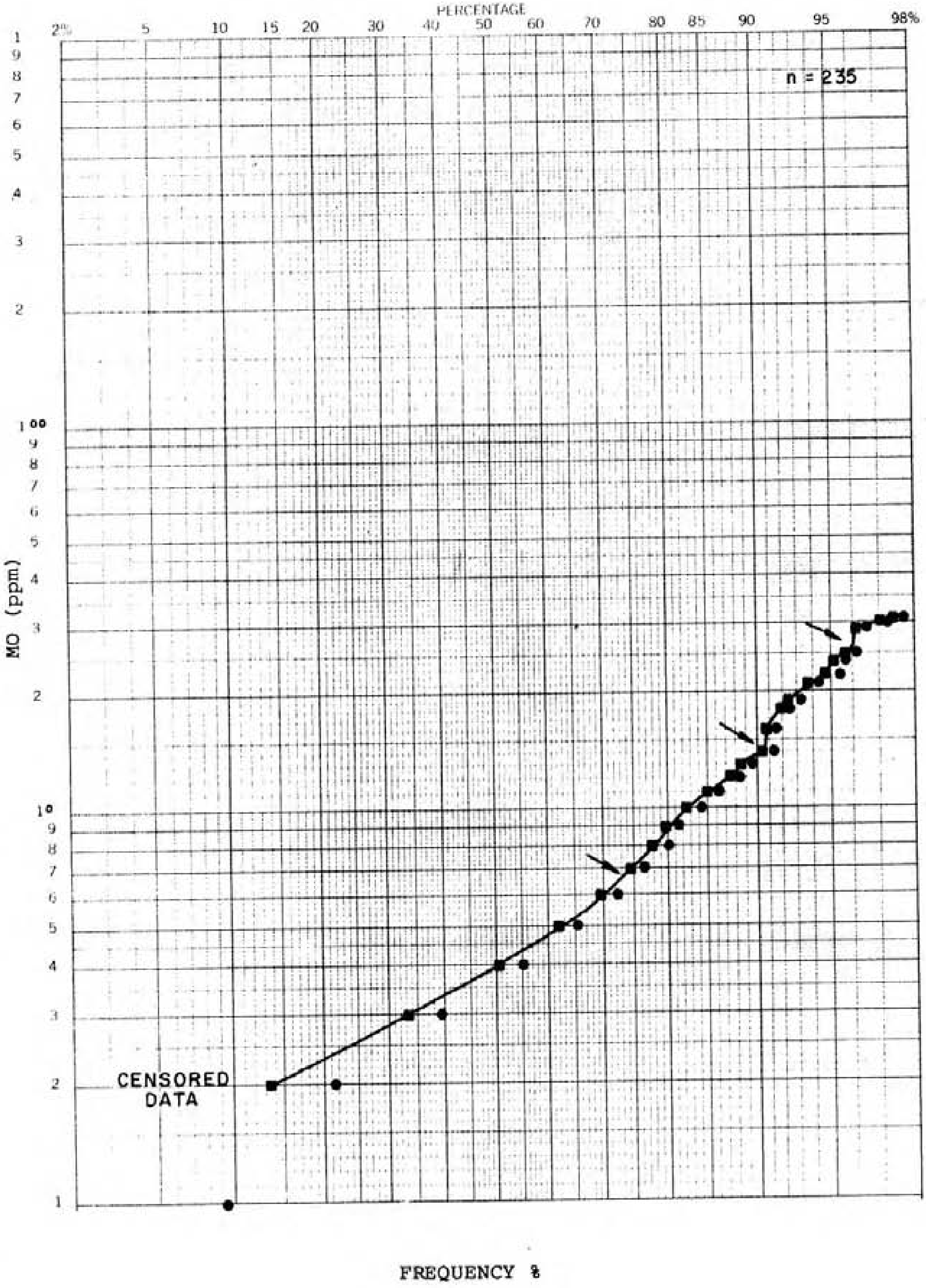
FREQUENCY %



FREQUENCY %

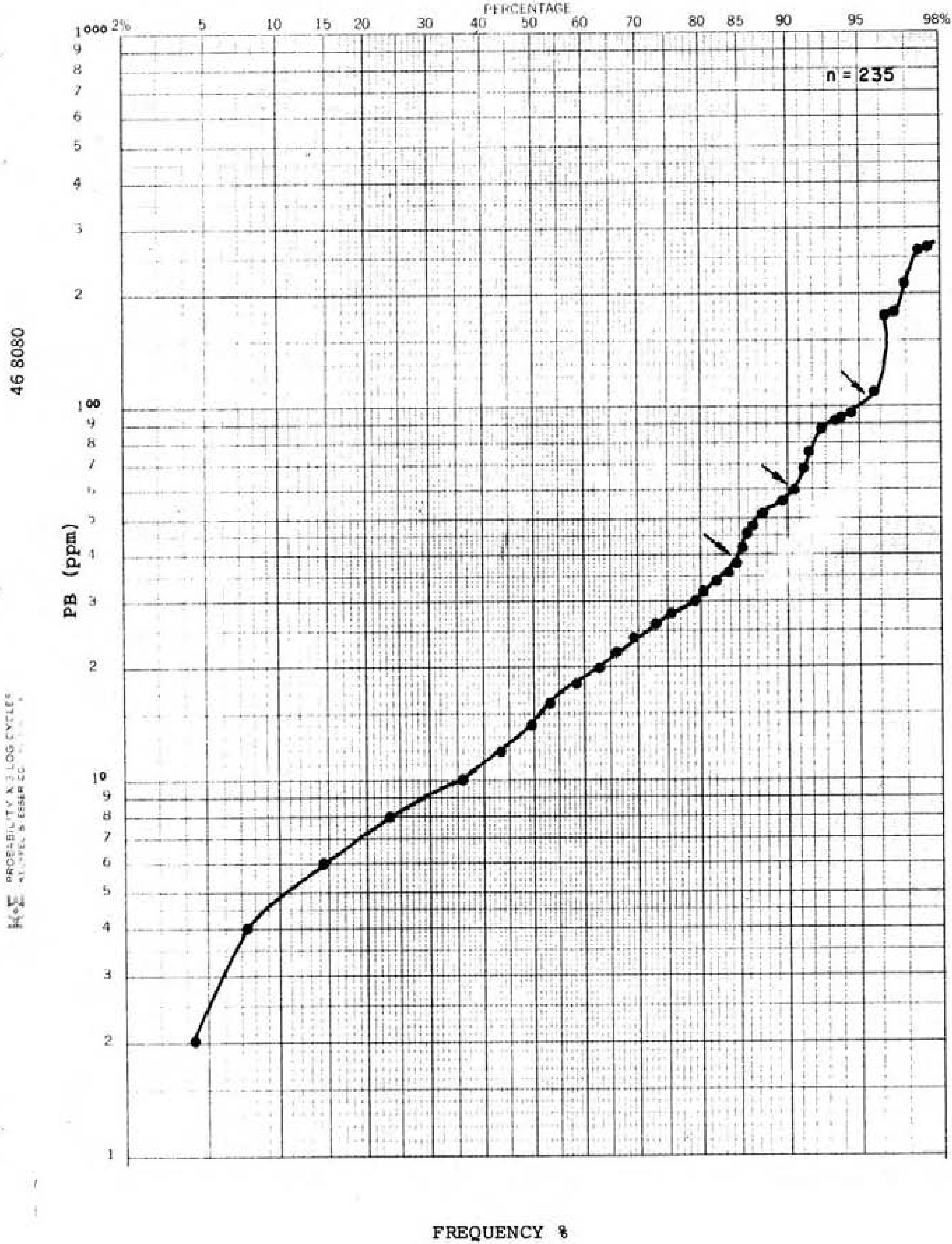
46 8080

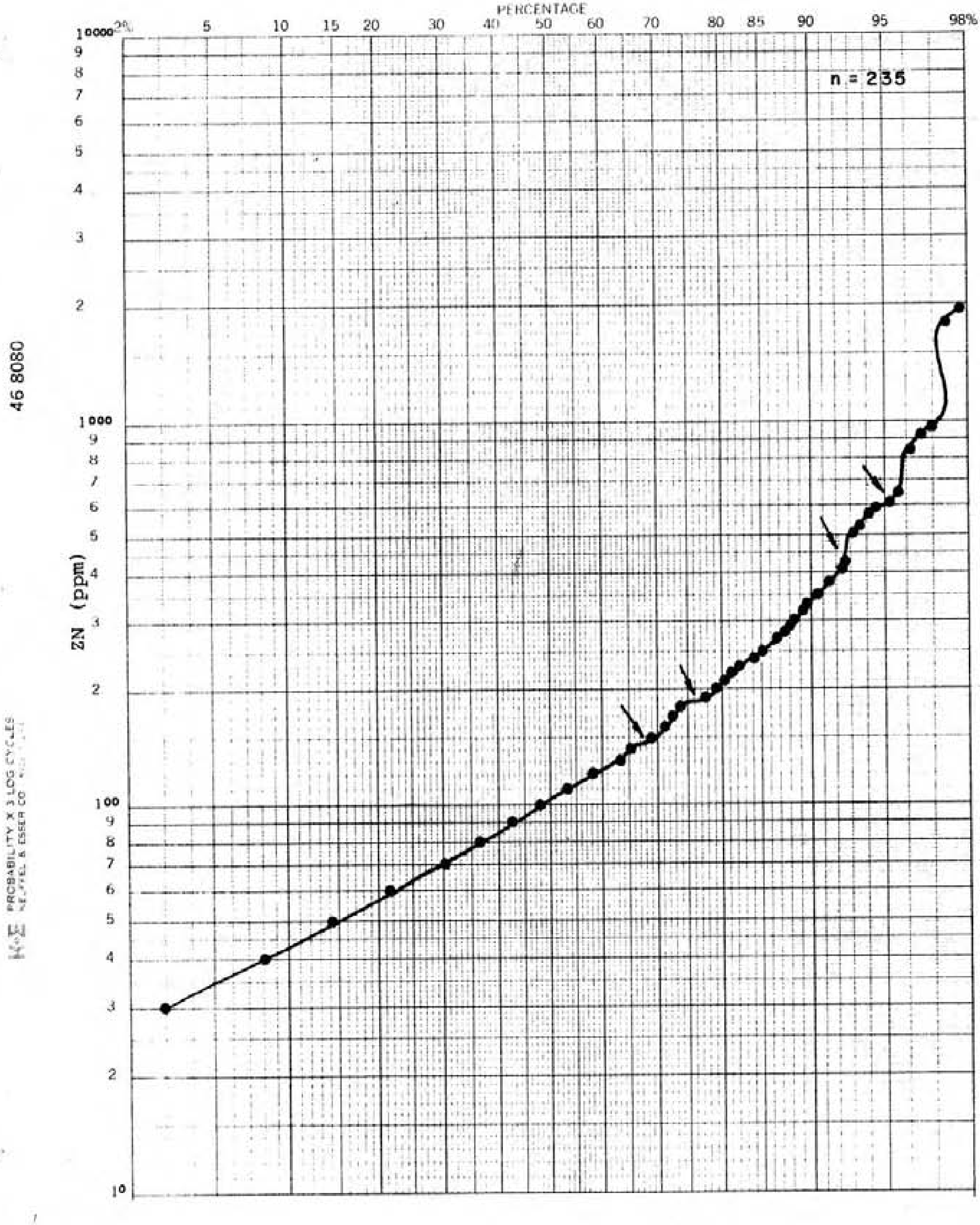
K&E PROBABILITY X 3 LOG CYCLES
KEUFFEL & ESSER CO.



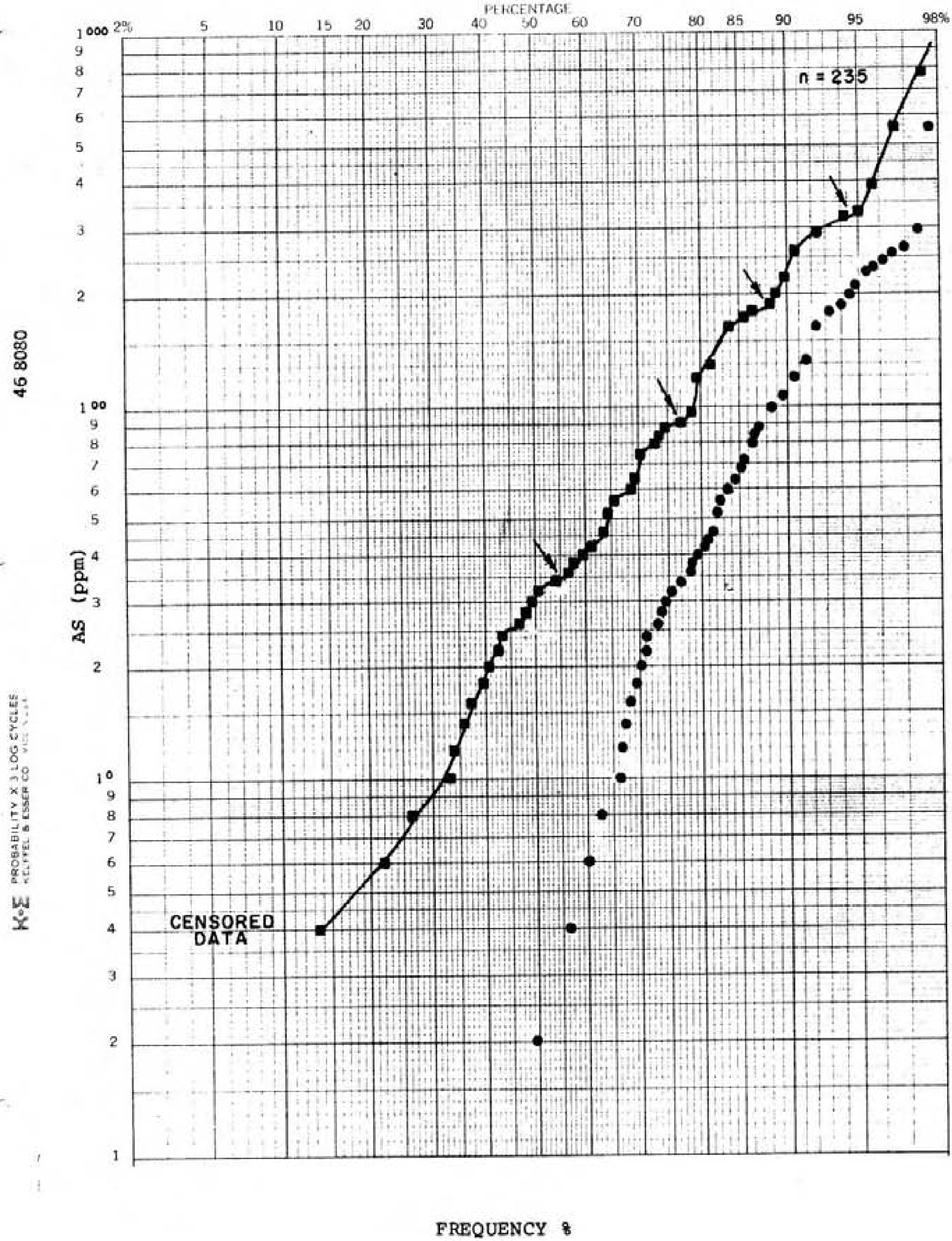
46 8080

K&E PROBABILITY X 3 LOG CYCLES


PERCENTAGE
n = 235
PB (ppm)
FREQUENCY %
46 8080
K+E PROBABILITY X 3 LOG CYCLES



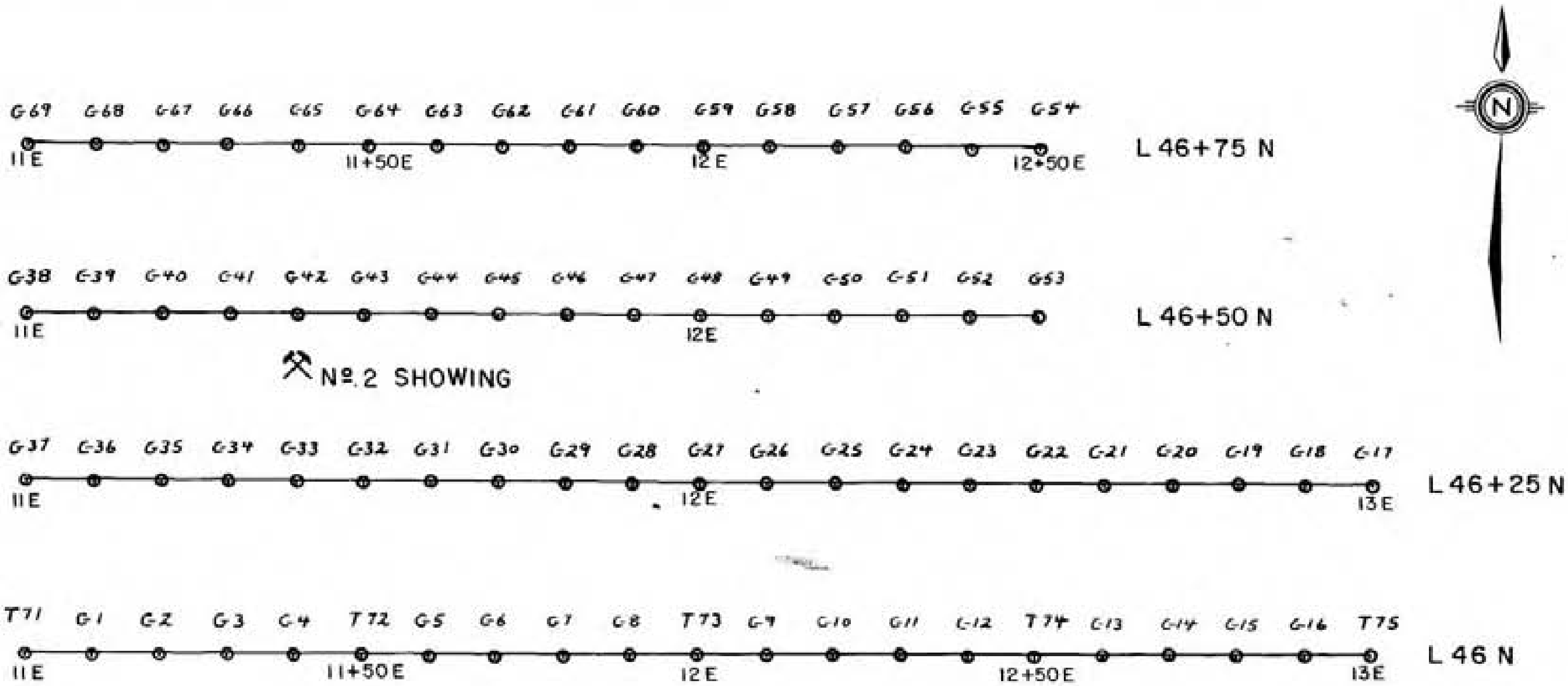
FREQUENCY %



PERCENTAGE
2%
5
10
15
20
30
40
50
60
70
80
85
90
95
98%
n = 235
AS (ppm)
CENSORED DATA
FREQUENCY %
46 8080
K+E PROBABILITY X 3 LOG CYCLES
KEUFFEL & ESSER CO.

APPENDIX 'C'

SOIL GEOCHEMISTRY
FROM #2 SHOWING



R Hoerae
November 18, 1983

APEX ENERGY CORP.

HEMLO WEST 16 M.C.
LIARD M.D.-B.C.
Nº 2 SHOWING

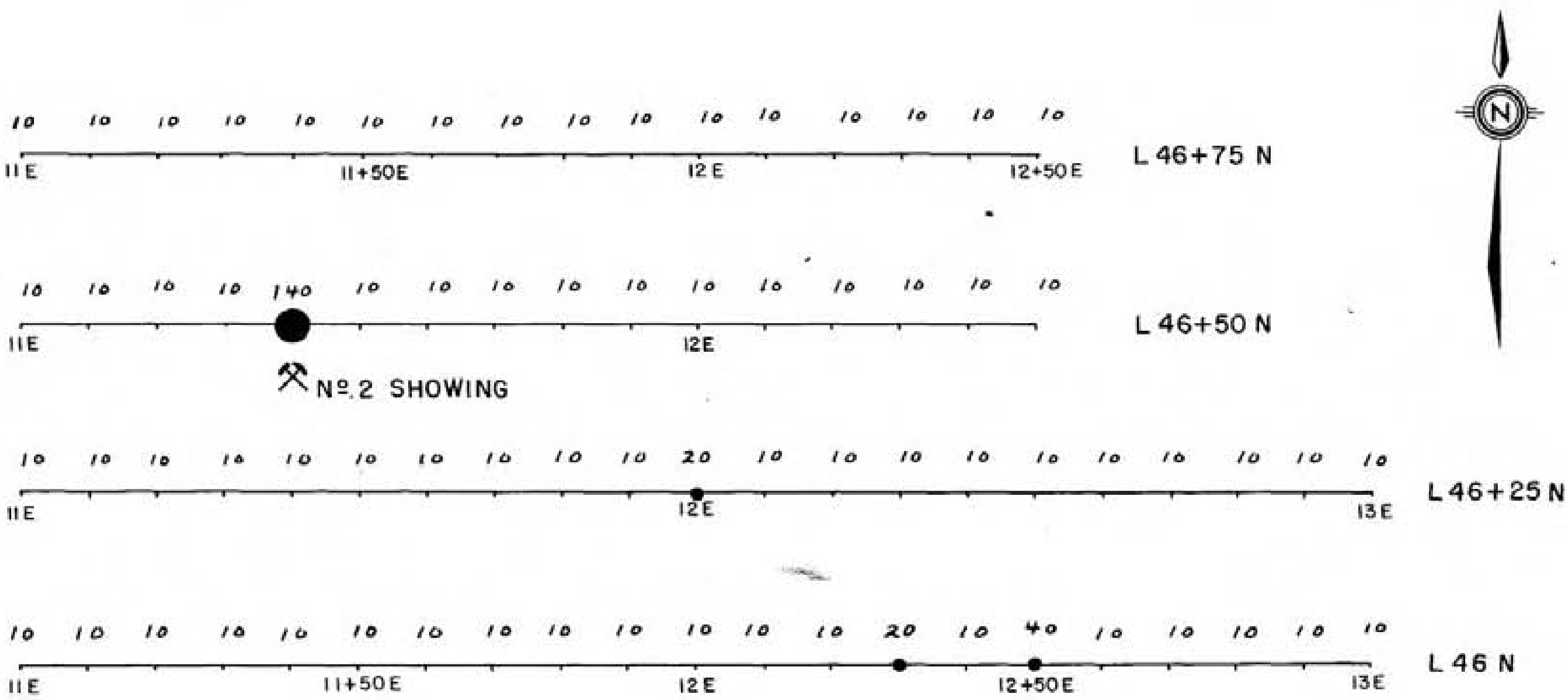
GEOCHEMICAL SURVEY
SAMPLE LOCATIONS

0 50m
SCALE 1:1000

NTS: 104-B-11
BY: R.M., B.V.H. /rwr

SEPT. 1983
FIGURE 13

BV Hall



LEGEND:

- ● ABOVE BACKGROUND 20-44 ppb
- ● ANOMALOUS 45-109 ppb
- ● HIGHLY ANOMALOUS >110 ppb

0 — 50m
SCALE 1:1000

RMacrae
November 14, 1983

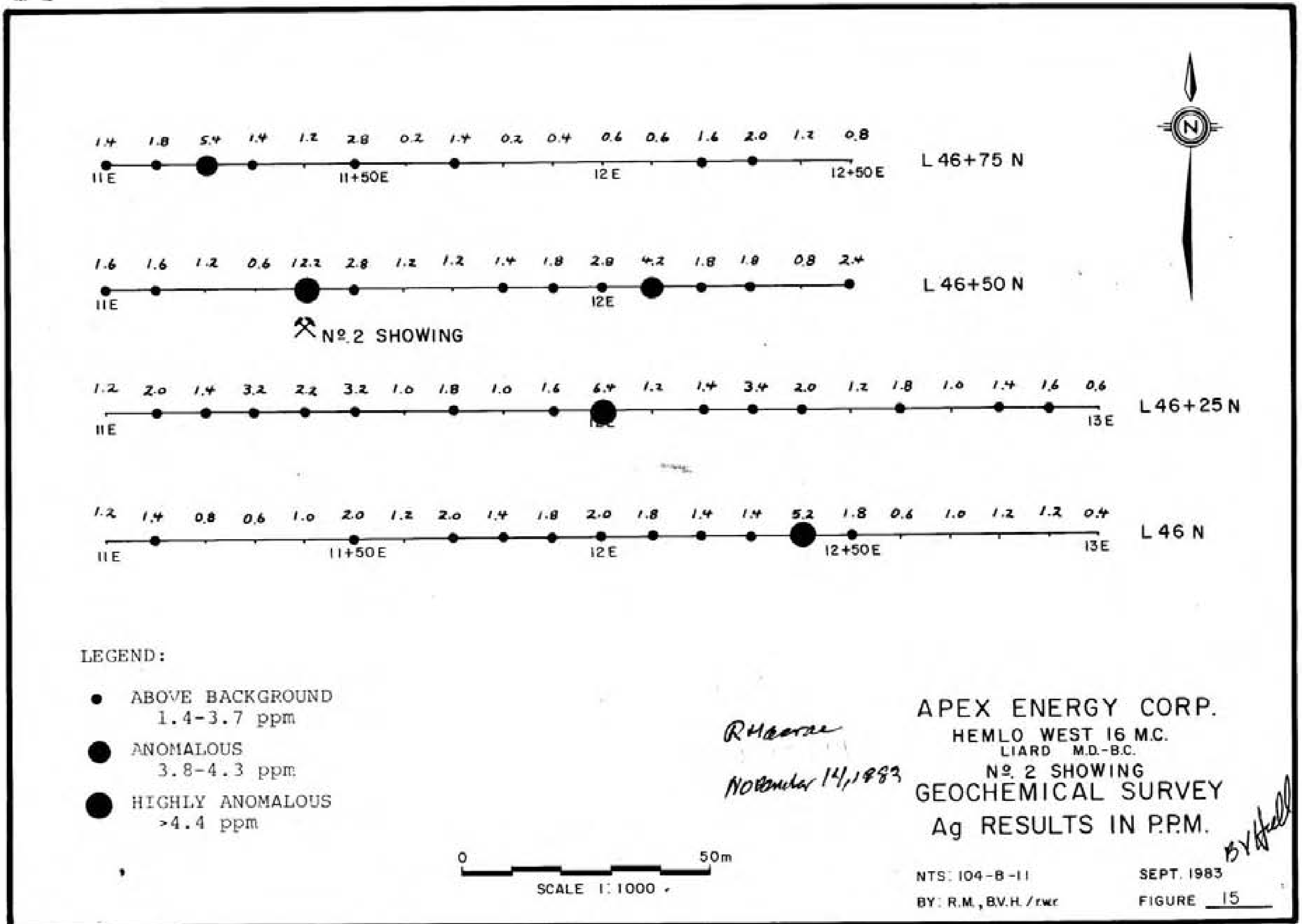
APEX ENERGY CORP.

HEMLO WEST 16 M.C.
LIARD M.D.-B.C.
Nº 2 SHOWING
GEOCHEMICAL SURVEY
Au RESULTS IN P.P.B.

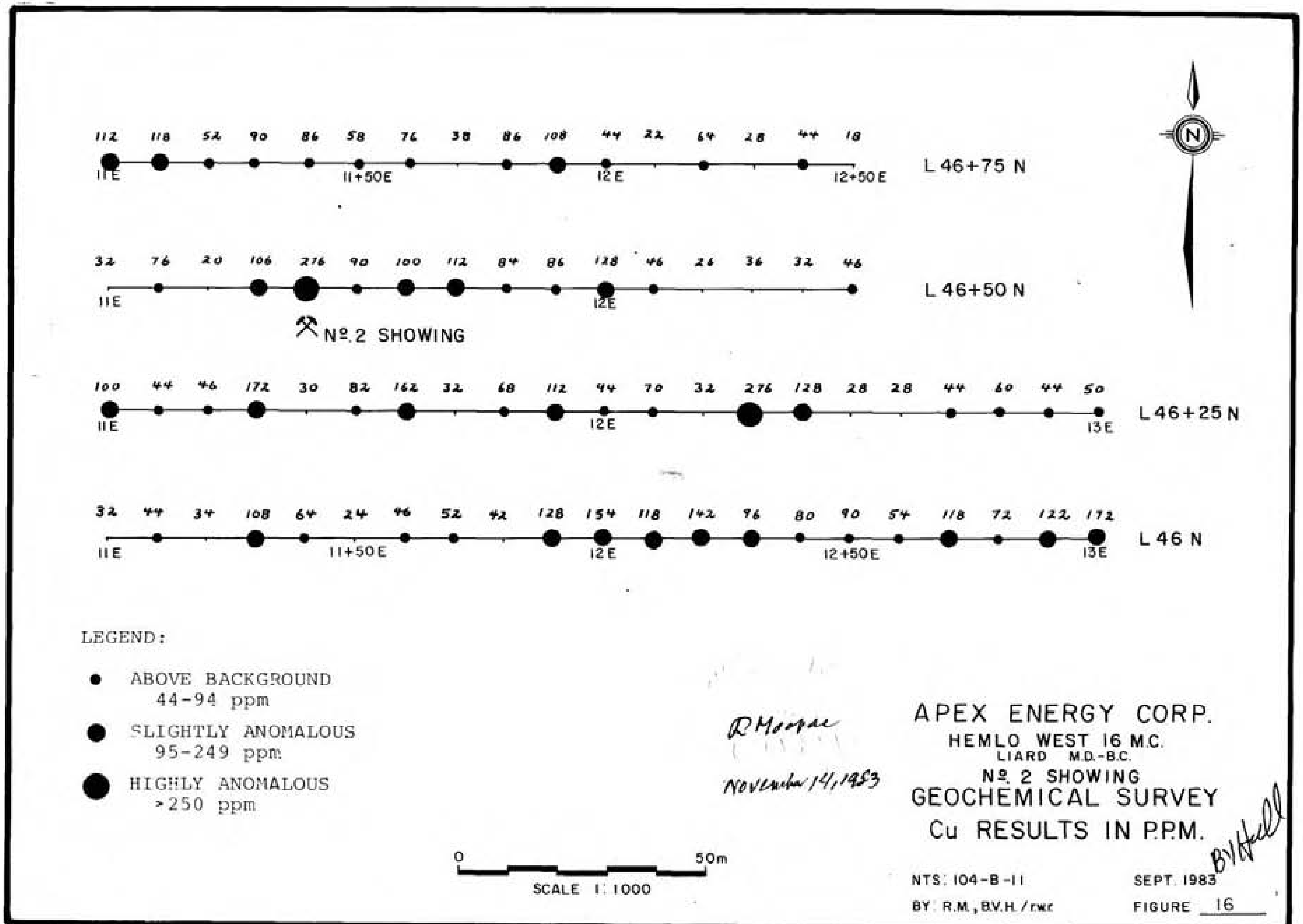
BVHall

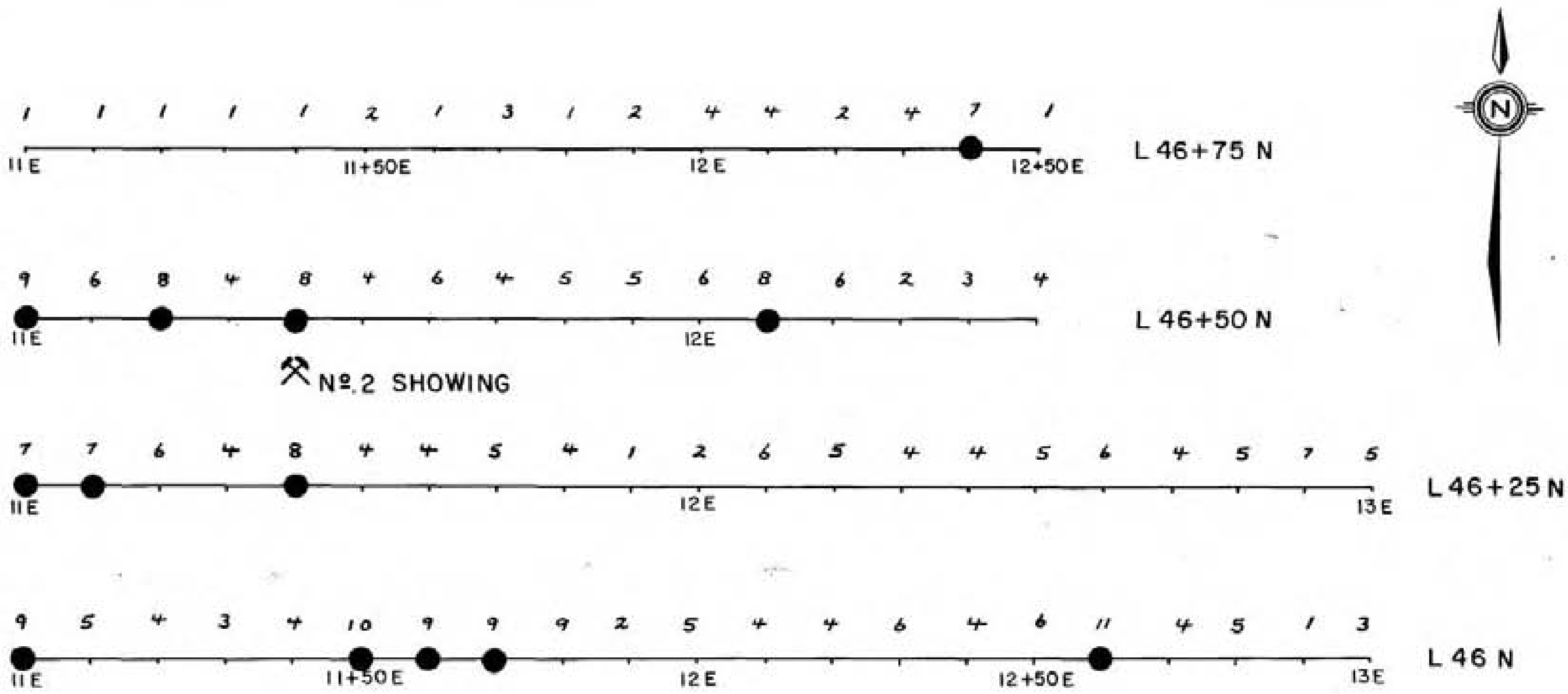
NTS: 104-B-11
BY: R.M., B.V.H. / EWC

SEPT. 1983
FIGURE 14



1.4 1.8 5.4 1.4 1.2 2.8 0.2 1.4 0.2 0.4 0.6 0.6 1.6 2.0 1.2 0.8
11E
11+50E
12E
12+50E
L 46+75 N
1.6 1.6 1.2 0.6 12.2 2.8 1.2 1.2 1.4 1.8 2.8 4.2 1.8 1.8 0.8 2.4
11E
12E
L 46+50 N
Nº 2 SHOWING
1.2 2.0 1.4 3.2 2.2 3.2 1.0 1.8 1.0 1.6 6.4 1.2 1.4 3.4 2.0 1.2 1.8 1.0 1.4 1.6 0.6
11E
13E
L46+25 N
1.2 1.4 0.8 0.6 1.0 2.0 1.2 2.0 1.4 1.8 2.0 1.8 1.4 1.4 5.2 1.8 0.6 1.0 1.2 1.2 0.4
11E
11+50E
12E
12+50E
13E
L 46 N
N
LEGEND:
ABOVE BACKGROUND 1.4-3.7 ppm
ANOMALOUS 3.8-4.3 ppm
HIGHLY ANOMALOUS >4.4 ppm
0
50m
SCALE 1: 1000
R Maerse
November 14, 1983
APEX ENERGY CORP.
HEMLO WEST 16 M.C.
LIARD M.D.-B.C.
Nº. 2 SHOWING
GEOCHEMICAL SURVEY
Ag RESULTS IN P.P.M.
B V Hall
NTS: 104-B-11
SEPT. 1983
BY: R.M., B.V.H. / rwr
FIGURE 15


112 118 52 90 86 58 76 38 86 108 44 22 64 28 44 18
11E 11+50E 12E 12+50E
L 46+75 N
32 76 20 106 276 90 100 112 84 86 128 46 26 36 32 46
11E 12E
L 46+50 N
Nº 2 SHOWING
100 44 46 172 30 82 162 32 68 112 94 70 32 276 128 28 28 44 60 44 50
11E 12E 13E
L46+25 N
32 44 34 108 64 24 46 52 42 128 154 118 142 96 80 90 54 118 72 122 172
11E 11+50E 12E 12+50E 13E
L 46 N
LEGEND:
ABOVE BACKGROUND 44-94 ppm
SLIGHTLY ANOMALOUS 95-249 ppm
HIGHLY ANOMALOUS >250 ppm
0 50m
SCALE 1:1000
R Moorae
November 14, 1983
APEX ENERGY CORP.
HEMLO WEST 16 M.C.
LIARD M.D.-B.C.
Nº 2 SHOWING
GEOCHEMICAL SURVEY
Cu RESULTS IN P.P.M.
B V Hall
NTS: 104-B-11
SEPT. 1983
BY: R.M., B.V.H. / rwr
FIGURE 16
N



LEGEND:

- SLIGHTLY ANOMALOUS 7-14 ppm
- ANOMALOUS 15-26 ppm
- HIGHLY ANOMALOUS >27 ppm

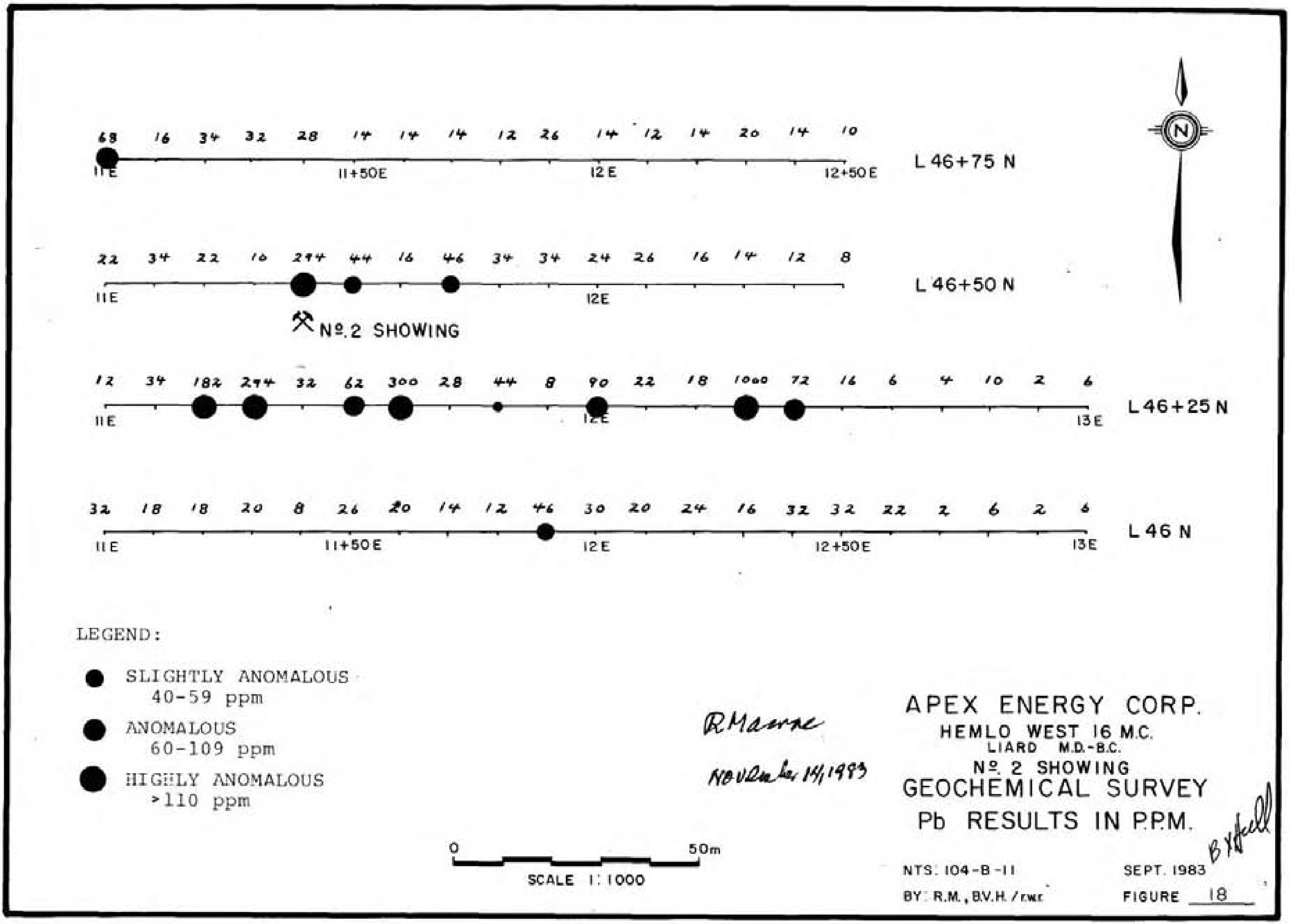
0 50m
SCALE 1:1000

RMoore
November 14/1983

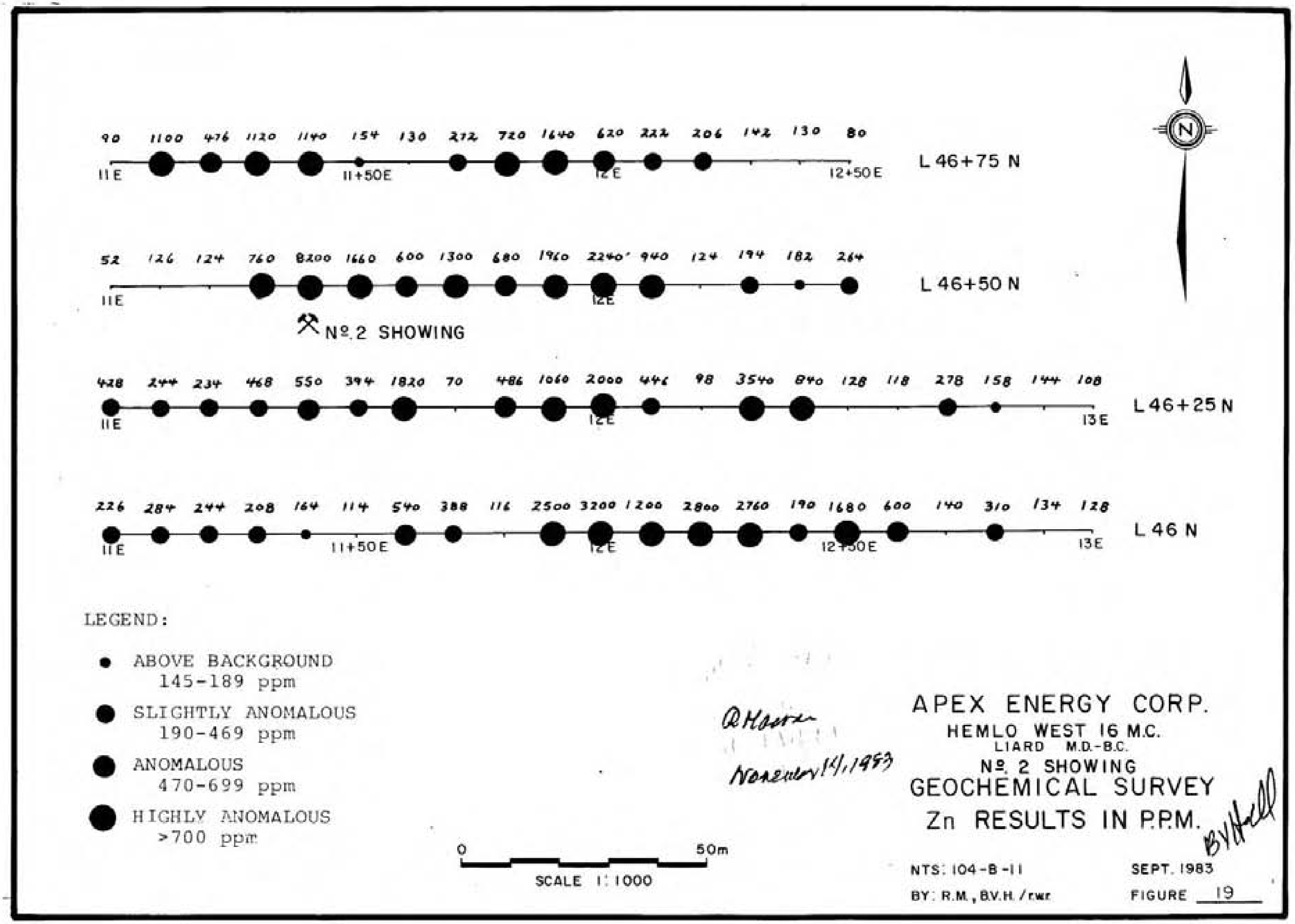
APEX ENERGY CORP.
HEMLO WEST 16 M.C.
LIARD M.D.-B.C.
Nº 2 SHOWING
GEOCHEMICAL SURVEY
Mo RESULTS IN P.P.M.

NTS: 104-B-11
BY: R.M., B.V.H. /rwr

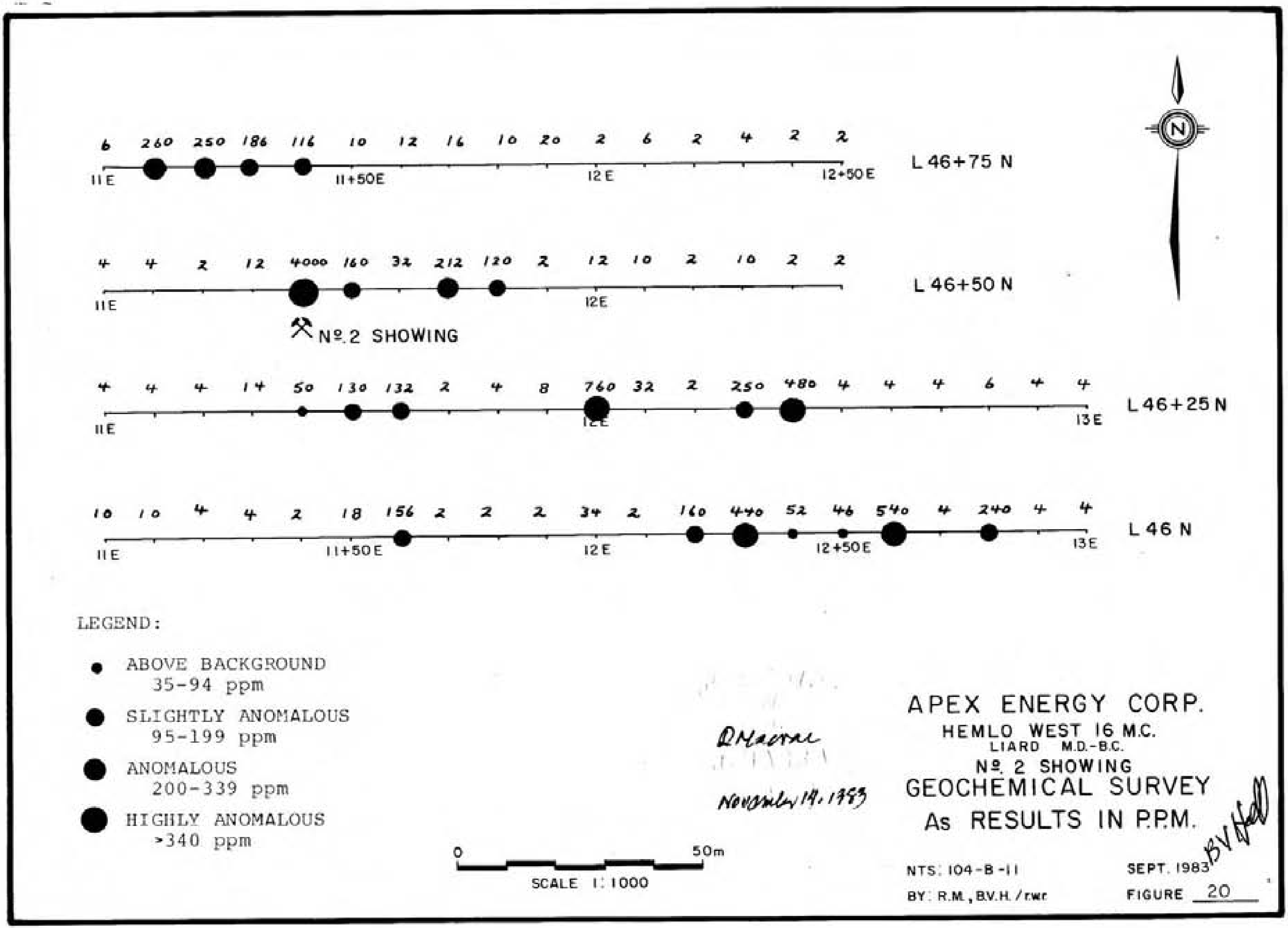
SEPT. 1983 BY Hall
FIGURE 17



68 16 34 32 28 14 14 14 12 26 14 12 14 20 14 10
11E
11+50E
12E
12+50E
L 46+75 N
22 34 22 16 244 44 16 46 34 34 24 26 16 14 12 8
11E
12E
L 46+50 N
Nº. 2 SHOWING
12 34 182 244 32 62 300 28 44 8 90 22 18 1000 72 16 6 4 10 2 6
11E
12E
13E
L 46+25 N
32 18 18 20 8 26 20 14 12 46 30 20 24 16 32 32 22 2 6 2 6
11E
11+50E
12E
12+50E
13E
L 46 N
N
LEGEND:
SLIGHTLY ANOMALOUS
40-59 ppm
ANOMALOUS
60-109 ppm
HIGHLY ANOMALOUS
>110 ppm
0
50m
SCALE 1:1000
November 14, 1983
APEX ENERGY CORP.
HEMLO WEST 16 M.C.
LIARD M.D.-B.C.
Nº. 2 SHOWING
GEOCHEMICAL SURVEY
Pb RESULTS IN P.P.M.
NTS: 104-B-11
BY: R.M., B.V.H. / r.w.r.
SEPT. 1983
FIGURE 18



90 1100 476 1120 1140 154 130 272 720 1640 620 222 206 142 130 80
11E 11+50E 12E 12+50E
L 46+75 N
52 126 124 760 8200 1660 600 1300 680 1960 2240 940 124 194 182 264
11E 12E
L 46+50 N
Nº 2 SHOWING
428 244 234 468 550 394 1820 70 486 1060 2000 446 98 3540 840 128 118 278 158 144 108
11E 12E 13E
L46+25 N
226 284 244 208 164 114 540 388 116 2500 3200 1200 2800 2760 190 1680 600 140 310 134 128
11E 11+50E 12E 12+50E 13E
L 46 N
N
LEGEND:
ABOVE BACKGROUND
145-189 ppm
SLIGHTLY ANOMALOUS
190-469 ppm
ANOMALOUS
470-699 ppm
HIGHLY ANOMALOUS
>700 ppm
0
50m
SCALE 1:1000
R.Moore
November 14, 1983
APEX ENERGY CORP.
HEMLO WEST 16 M.C.
LIARD M.D.-B.C.
Nº 2 SHOWING
GEOCHEMICAL SURVEY
Zn RESULTS IN P.P.M.
BVHall
NTS: 104-B-11
SEPT. 1983
BY: R.M., B.V.H. / rwr
FIGURE 19



6 260 250 186 116 10 12 16 10 20 2 6 2 4 2 2
11E
11+50E
12E
12+50E
L 46+75 N
4 4 2 12 4000 160 32 212 120 2 12 10 2 10 2 2
11E
12E
L 46+50 N
Nº. 2 SHOWING
4 4 4 14 50 130 132 2 4 8 760 32 2 250 480 4 4 4 6 4 4
11E
12E
13E
L 46+25 N
10 10 4 4 2 18 156 2 2 2 34 2 160 440 52 46 540 4 240 4 4
11E
11+50E
12E
12+50E
13E
L 46 N
LEGEND:
ABOVE BACKGROUND 35-94 ppm
SLIGHTLY ANOMALOUS 95-199 ppm
ANOMALOUS 200-339 ppm
HIGHLY ANOMALOUS >340 ppm
0
50m
SCALE 1:1000
N
November 19, 1983
APEX ENERGY CORP.
HEMLO WEST 16 M.C.
LIARD M.D.-B.C.
Nº. 2 SHOWING
GEOCHEMICAL SURVEY
As RESULTS IN P.P.M.
NTS: 104-B-11
SEPT. 1983
BY: R.M., B.V.H./rwr
FIGURE 20

APPENDIX 'D'

HEMLO WEST - AURUM CLAIM GROUP
LIARD MINING DIVISION

ITEMIZED COST STATEMENT - WAGES

Name	No. of Days	Rate/ Day	Dates - 1983	Wages	Total
E. Ackerly	20	225.00	25/8-26/8 to 15/9	4500.00	
"	2	168.75	26/8, 27/8	337.50	
"	1	150.00	19/9	150.00	4,987.50
T. Hayes	19	185.00	25/8 to 14/9	3515.00	
"	2	168.75	26/8, 27/8	337.50	3,852.50
H. Chaudet	23	155.00	24/8 to 15/9	3565.00	3,565.00
P. Stuart	.5	125.00	24/8	62.50	
"	19	155.00	25/8, 28/8 to 14/9	2945.00	
"	2	116.25	26/8, 27/8	232.50	3,240.00
J. Lee	20	160.00	25/8, 27/8 to 14/9	3200.00	
"	1	120.00	26/8	120.00	3,320.00
G. Pickens	21	150.00	25/8 to 14/9	3150.00	3,150.00
B. Hall	24	200.00	22/8 to 14/9	4800.00	4,800.00
R. Macrae	24	250.00	22/8 to 14/9	6000.00	6,000.00
C. Foster	4	165.00	24/8 to 27/8	660.00	660.00
P. Thompson	-	$15/day plus	$40/hr. expediting	837.79	837.79
I. Swan		$15/day plus	$40/hr. expediting		
					$ 34,412.79

R Macrae.

November 14, 1983

APPENDIX 'D'

ITEMIZED COST STATEMENT - FOOD & ACCOMODATIONS

Name	No. of Days	Rate/ Day	Dates-1983	Food Accomodation, Communication	Location
E. Ackerly	4	32.52	25/8 - 28/8		In Transit
T. Hayes	4	32.52	25/8 - 28/8		" "
H. Chaudet	5	32.52	25/8 - 28/8		" "
J. Lee	4	32.52	25/8 - 28/8		" "
G. Pickens	4	32.52	25/8 - 28/8		" "
P. Stuart	4	32.52	25/8 - 28/8		" "
C. Foster	4	32.52	24/8 - 27/8		" "
B. Hall	4	32.52	25/8 - 28/8		" "
R. Macrae	4	32.52	25/8 - 28/8		" "
C. Johnson	2	32.52	25/8 - 26/8		" "
E. Ackerly	2	32.52	14/9, 15/9		" "
H. Chaudet	2	32.52	14/9, 15/9		" "
				$ 1,398.36	
E. Ackerly	17	51.48	28/8 - 13/9		On Claim Site
T. Hayes	17	51.48	28/8 - 13/9		" " "
H. Chaudet	17	51.48	28/8 - 13/9		" " "
J. Lee	17	51.48	28/8 - 13/9		" " "
G. Pickens	17	51.48	28/8 - 13/9		" " "
P. Stuart	17	51.48	28/8 - 13/9		" " "
B. Hall	17	51.48	28/8 - 13/9		" " "
R. Macrae	17	51.48	28/8 - 13/9		" " "
				7,001.28	
			Total	$ 8,399.63	

RMacrae

November 14, 1983

APPENDIX 'D'

ITEMIZED COST STATEMENT - TRANSPORTATION

Dates 1983	Supplier	Load	From:	To:	Cost
24/8-27/8	Budget Rental	Camp/food	Langley	Bob Quinn L.	1,373.28
25/8	Black Top Cab	2 people	Vanc. Int'l Airport		18.00
25/8	N.Shore Taxi	2 people	Vanc. Int'l Airport		25.50
25/8	C.P.A.	5 people	Vanc.	- Terrace	702.00
25/8	C.P.A./T.P.A.	2 people	Vanc.	- Snippaker Cr. (return)	753.60
25/8	C.P.A.	1 person	Vanc.	- Terrace (return)	280.80
25/8-28/8	Tilden Rental	Freight	Terrace area		218.37
28/8	T.P.A.	6 people + Frt.	Terrace-Snippaker-Bob Quinn L. $4.05/mi.		2,608.20
28/8	N.M.Helicopter	" "	Snippaker - Hemlo W. 16 6.9 hrs. @ $553.50/hr.		3,819.15
28/8	Frontier Hel.	Freight	Snippaker - Hemlo W. 16 2.6 hrs. @ $549/hr.		1,427.40
1/9-3/9	N.M.Helicopter	7 people	Hemlo W - Aurum Claims 4.7 hrs. @ $553.50/hr.		2,601.45
5/9-13/9	Frontier Hel.	7 people	Hemlo W - Aurum Claims 7.1 hrs. @ $549/hr.		3,897.90
23/8	Budget Rental	Freight	Langley	- Vanc.	91.62
25/8	C.P.A.	Freight	Vanc.	- Terrace	89.90
28/8	C.P.A.	Freight	Vanc.	- Terrace	17.00
29/8	C.P.A.	Freight	Vanc.	- Terrace	21.00
1/9	T.P.A.	Freight	Terrace	- Snippaker	329.28
3/9	T.P.A./C.P.A.	Freight	Snippaker	- Vanc.	76.28
2/9	P.W.A.	Freight	Terrace	- Vanc.	10.00
3/9	C.P.A.	Freight	Terrace	- Vanc.	18.00
8/9	T.P.A.	Food/Mail	Terrace	- Snippaker	177.87
10/9	C.P.A.	Mail	Vanc.	- Terrace	18.00
13/9	T.P.A.	Mail	Terrace	- Snippaker	18.00
14/9	Frontier Hel.	8 people + camp	Hemlo W. 16 - Snippaker 3.6 hrs. @ $549/hr.		1,976.40
14/9	T.P.A.	" "	Snippaker - Terrace		2,461.45
14/9-15/9	C.P.A.	6 people	Terrace	- Vanc.	849.60
14/9-15/9	Tilden Rental	Freight	Terrace area		55.19
19/9	Can. Freightway	"	Terrace	- Langley	456.25
19/9	C.P.A.	Freight	Terrace	- Vanc.	38.25
14/9	Airport Taxi	2 people	Vanc. Int'l Airport - N.Vanc.		27.50
					$24,457.24

[illegible]
November 14, 1983

APPENDIX 'D'

ITEMIZED COST STATEMENT - MAPS, EQUIPMENT & OTHER CHARGES

Date - 1983	Item	Cost
22/8 to 24/8	Geological map, topographic map, milar and prints, Map 104/B11 1:10,000	$ 788.30
	Survey Equipment	30.80
	Kraft Soil Sample Bags	130.54
	6 mil Poly-bags, repellent spray paint, vynal cloth	122.59
	Flare kits, flagging markers and sample drying stove	490.94
	Sample Shovels	16.61
	Rental: 2 chain saws, 3 W/T radios	570.00
	Disbursement charges, Bema Industries 10% of $33,261.67	3,326.17
		$5,475.95

R Kdcome

November 14.1983

APPENDIX 'D'

ITEMIZED COST STATEMENT - SAMPLE ANALYSES

Geochemical Sample Analyses:

64 - Heavy minerals stream-silt samples analysed for: Ag, As, Cd, Cu, Mo, Pb, Sb, Zn, Ba and Au. ($64.54 per sample)	$ 4,130.40
24 - Heavy minerals stream-silt samples analysed for: Ag, As, Cd, Cu, Mo, Pb, Sb, Zn, Ba and Au. ($30.75 per sample)	738.00
475 - Soil samples analysed for: Au, As, Cu, Ag, Mo, Pb, and Zn. ($10.30 per sample)	4,892.50
38 - Rock samples analysed for: Au, As, Cu, Ag, Mo, Pb and Zn. ($14.01 per sample)	476.80
	$10,237.70

R. Moore
November 14, 1983

APPENDIX 'D'

ITEMIZED COST STATEMENT - ASSESSMENT REPORT PREPARATION

Writing report, plotting geochemical sample values, preparing geological map, etc.		
	Brian Hall, geologist fee	$ 2,200.00
	Rod Macrae, mining engineer fee	1,250.00
Preparing itemided cost statements		
	Rod Macrae, mining engineer	3,000.00
Preparing and drafting maps		
	R. Rollings, map maker	760.00
Printing maps for report		115.90
		$ 7,325.90

RMacrae
November 15, 1983

APPENDIX 'E'

STATEMENT OF QUALIFICATIONS

I, Brian V. Hall, of Vancouver, British Columbia do hereby certify that:

1. I am a geologist presently residing at #115 - 1999 Nelson Street, Vancouver, B.C. V6G 1N4.

2. I am a graduate in geology of the University of British Columbia B.Sc. (1975) and of the University of Waterloo M.Sc. (1978).

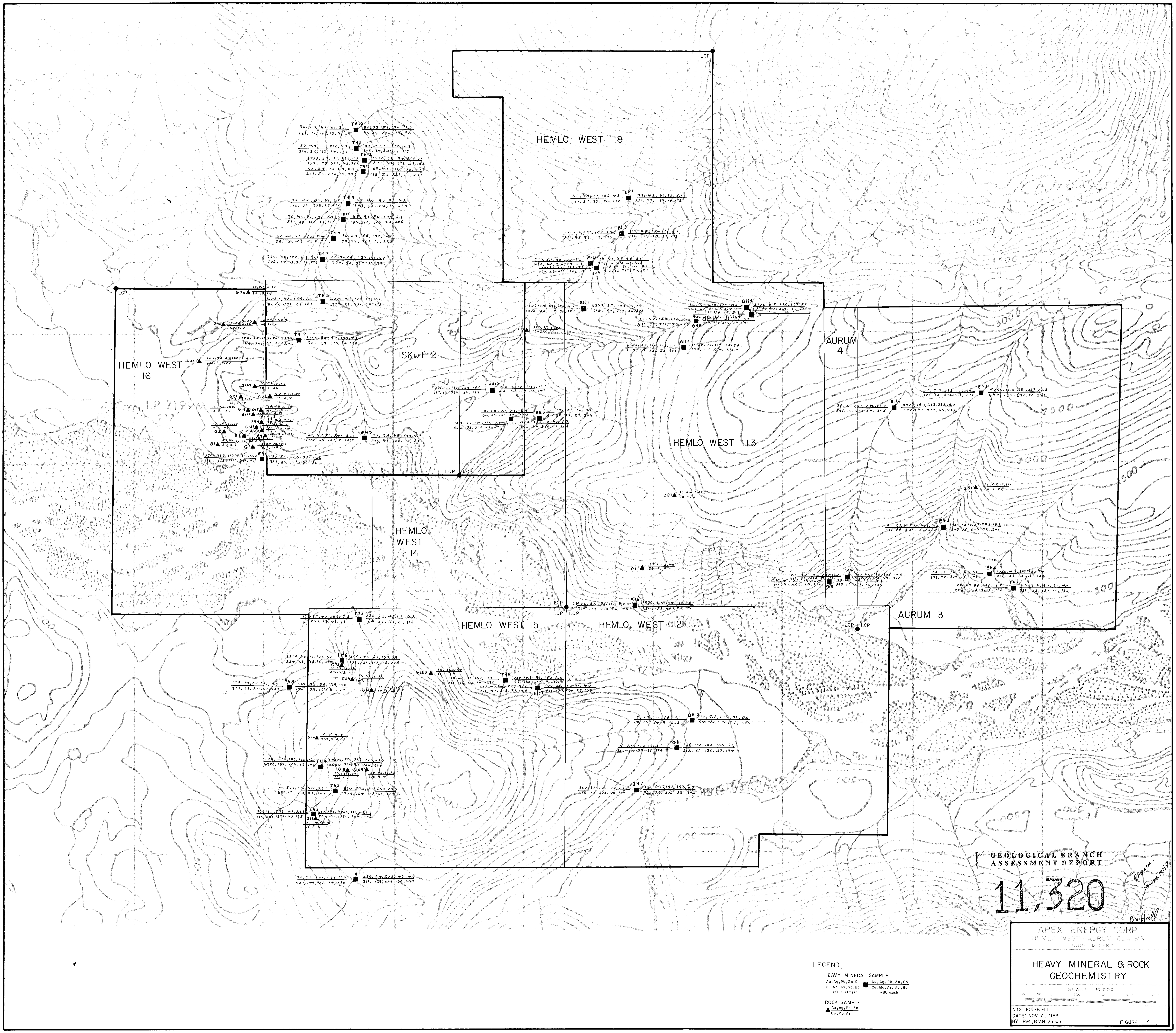
3. I have practised my profession for twelve field seasons.

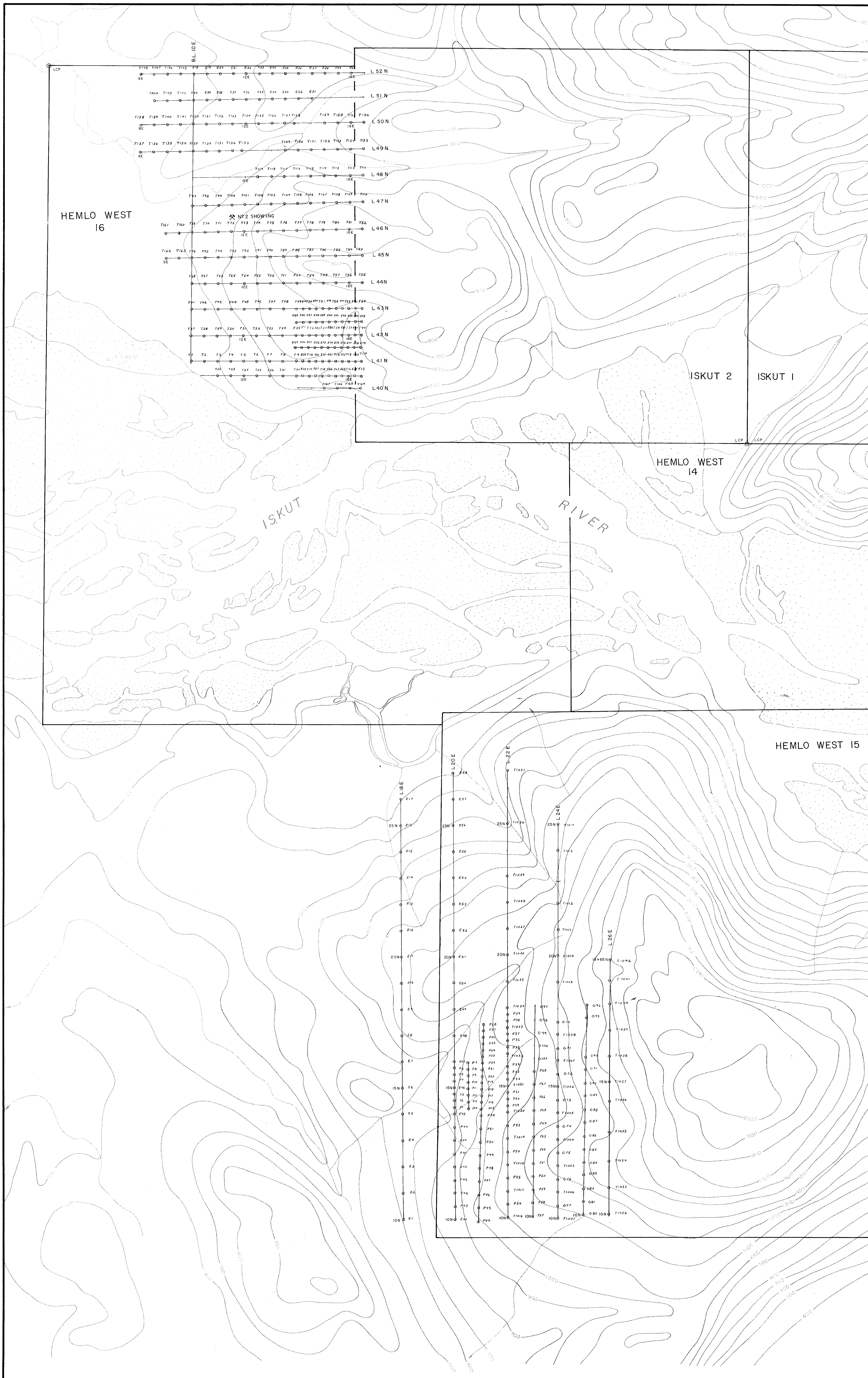
4. I have no beneficial interest in the property discussed in this report nor do I expect to receive any in the future.

5. I am presently a Fellow of the Geological Association of Canada.

Brian V Hall

Brian V. Hall, M.Sc.
November 7, 1983


HEMLO WEST 18
HEMLO WEST 16
ISKUT 2
HEMLO WEST 13
AURUM 4
AURUM 3
HEMLO WEST 14
HEMLO WEST 15
HEMLO WEST 12
LCP
GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,320
BV Hall
LEGEND:
HEAVY MINERAL SAMPLE
Au, Ag, Pb, Zn, Cd / Cu, Mo, As, Sb, Ba -20 +80 mesh
Au, Ag, Pb, Zn, Cd / Cu, Mo, As, Sb, Ba -80 mesh
ROCK SAMPLE
Au, Ag, Pb, Zn / Cu, Mo, As
APEX ENERGY CORP.
HEMLO WEST - AURUM CLAIMS
LIARD MD - BC
HEAVY MINERAL & ROCK
GEOCHEMISTRY
SCALE 1:10,000
NTS: 104-B-11
DATE: NOV. 7, 1983
BY: R.M., B.V.H. / r.w.r.
FIGURE 4



GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,320

Released November 14, 1983
BV Hall

APEX ENERGY CORP.
HEMLO WEST 14,15 & 16 M.C.
LIARD M.D.-B.C.

GEOCHEMICAL SURVEY
SAMPLE LOCATIONS

SCALE 1:5000
100 0 100 200 300 400

BY: R.M.,B.V.H./r.w.r.	NTS 104-B-11
DATE: SEPT. 1983	FIGURE 5

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,320

LEGEND:

- ABOVE BACKGROUND 20-44 ppb
- ANOMALOUS 45-109 ppb
- HIGHLY ANOMALOUS >110 ppb

R Hacrae
November 14 1983

BV Hall

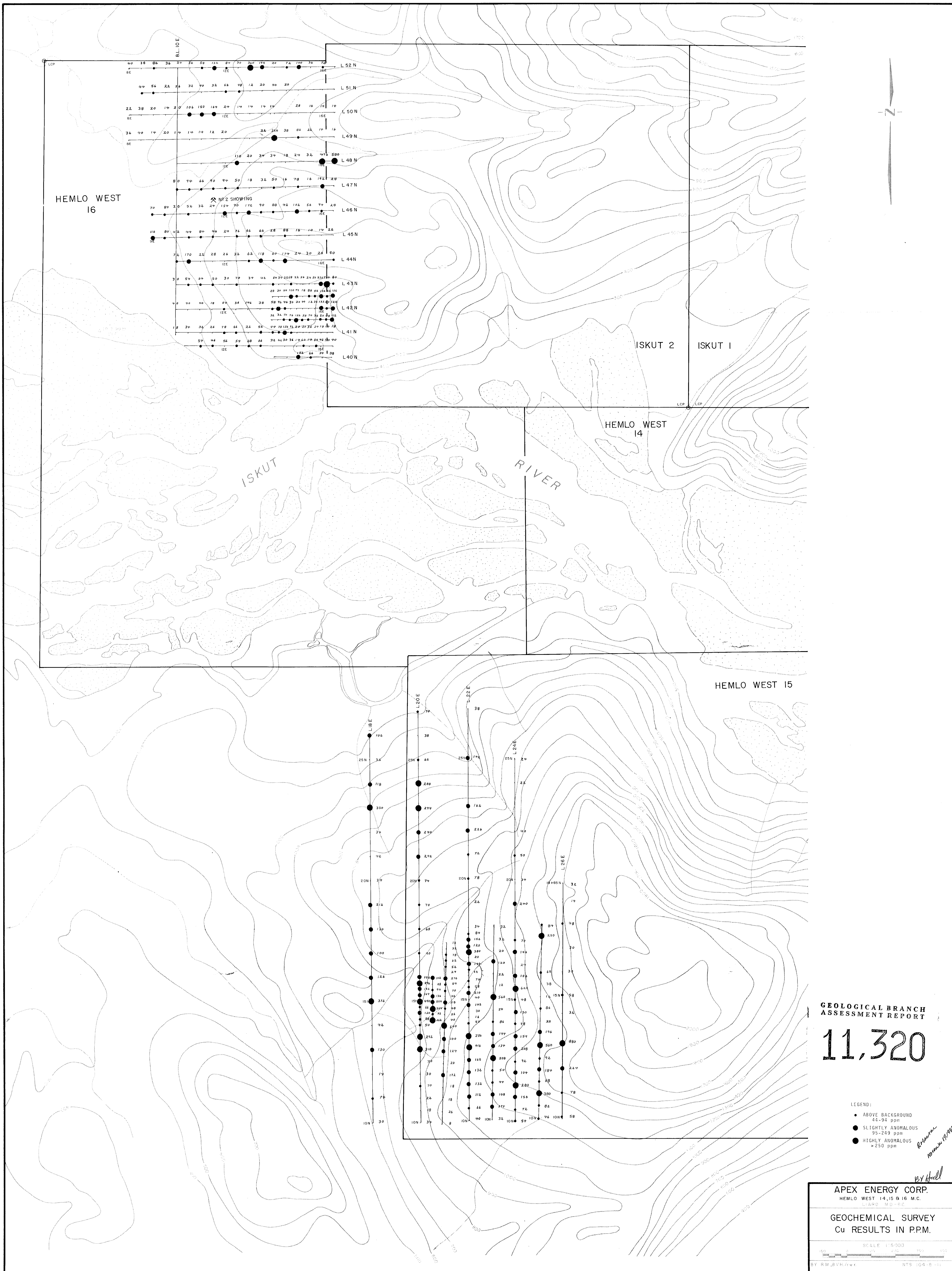
APEX ENERGY CORP.
HEMLO WEST 14,15 & 16 M.C.
LIARD M.D.-B.C.

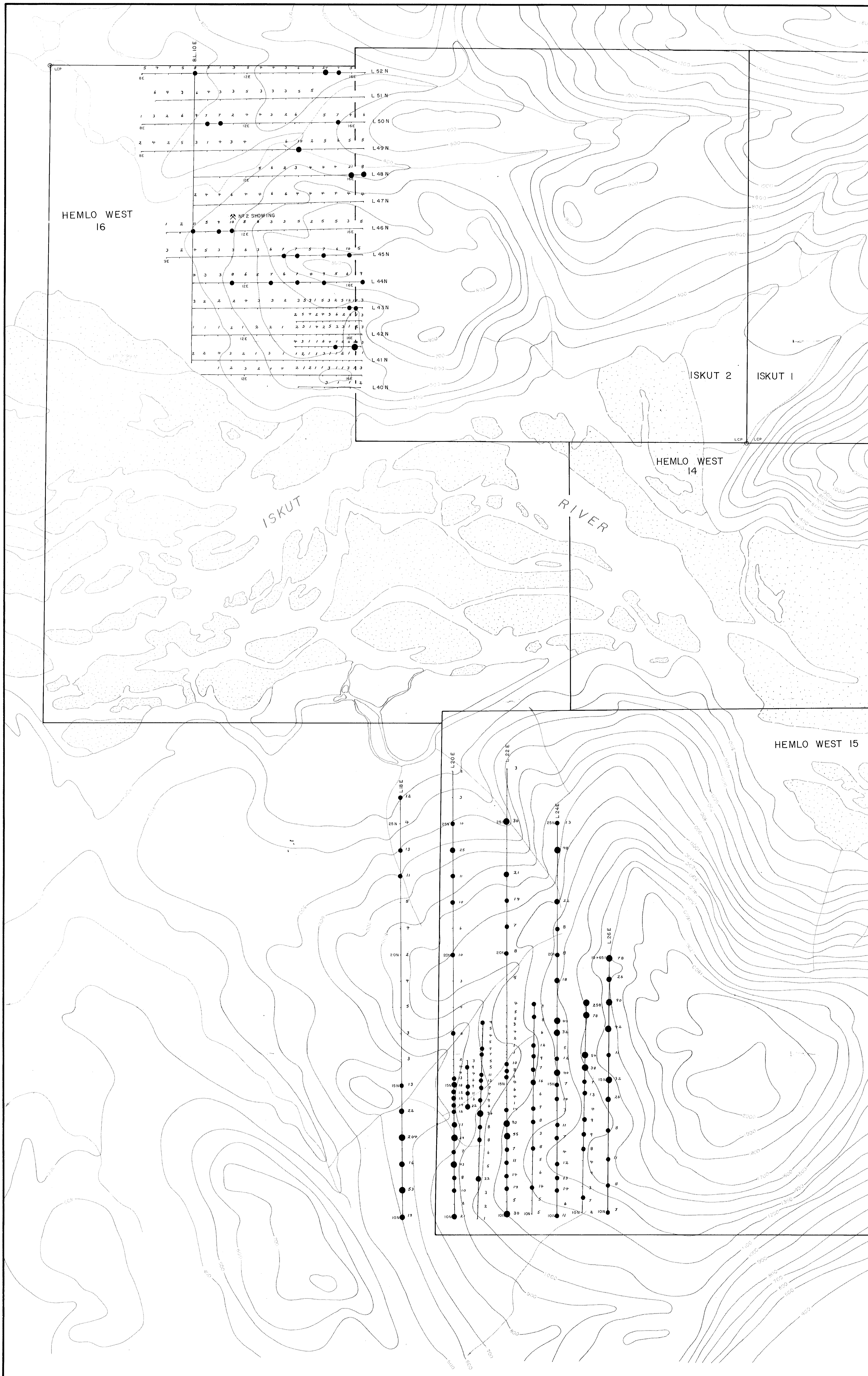
GEOCHEMICAL SURVEY
Au RESULTS IN P.P.B.

SCALE 1:5000

BY R.M., B.V.H./rwr. NTS 104-B-11
DATE SEPT. 1983 FIGURE 6

HEMLO WEST 16
ISKUT 2
ISKUT 1
HEMLO WEST 14
HEMLO WEST 15
ISKUT RIVER
No 2 SHOWING
L 52 N
L 51 N
L 50 N
L 49 N
L 48 N
L 47 N
L 46 N
L 45 N
L 44 N
L 43 N
L 42 N
L 41 N
L 40 N
L 18E
L 20E
L 22E
L 24E
L 26E
GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,320
LEGEND:
ABOVE BACKGROUND 1.4-3.7 ppm
ANOMALUS 3.8-4.3 ppm
HIGHLY ANOMALOUS > 4.4 ppm
APEX ENERGY CORP.
HEMLO WEST 14,15 & 16 M.C.
LIARD M.D.-B.C.
GEOCHEMICAL SURVEY
Ag RESULTS IN P.P.M.
SCALE 1:5000
BY R.M.,B.V.H./rwr.
NTS 104-B-11
DATE SEPT 1983
FIGURE 7


HEMLO WEST 16
HEMLO WEST 15
HEMLO WEST 14
ISKUT 2
ISKUT I
ISKUT RIVER
Nº 2 SHOWING
BL. 10E
L 52 N
L 51 N
L 50 N
L 49 N
L 48 N
L 47 N
L 46 N
L 45 N
L 44N
L 43N
L 42 N
L 41 N
L 40 N
L 18E
L 20E
L 22E
L 24E
L 26E
LCP
N
GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,320
LEGEND:
ABOVE BACKGROUND 44-94 ppm
SLIGHTLY ANOMALOUS 95-249 ppm
HIGHLY ANOMALOUS >250 ppm
APEX ENERGY CORP.
HEMLO WEST 14, 15 & 16 M.C.
LIARD M.D. - B.C.
GEOCHEMICAL SURVEY
Cu RESULTS IN P.P.M.
SCALE 1:5000
DATE SEPT. 1983
FIGURE 8



GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,320

LEGEND:

- SLIGHTLY ANOMALOUS 7-14 ppm
- ANOMALOUS 15-26 ppm
- HIGHLY ANOMALOUS >27 ppm

R Harvee November 14, 1983

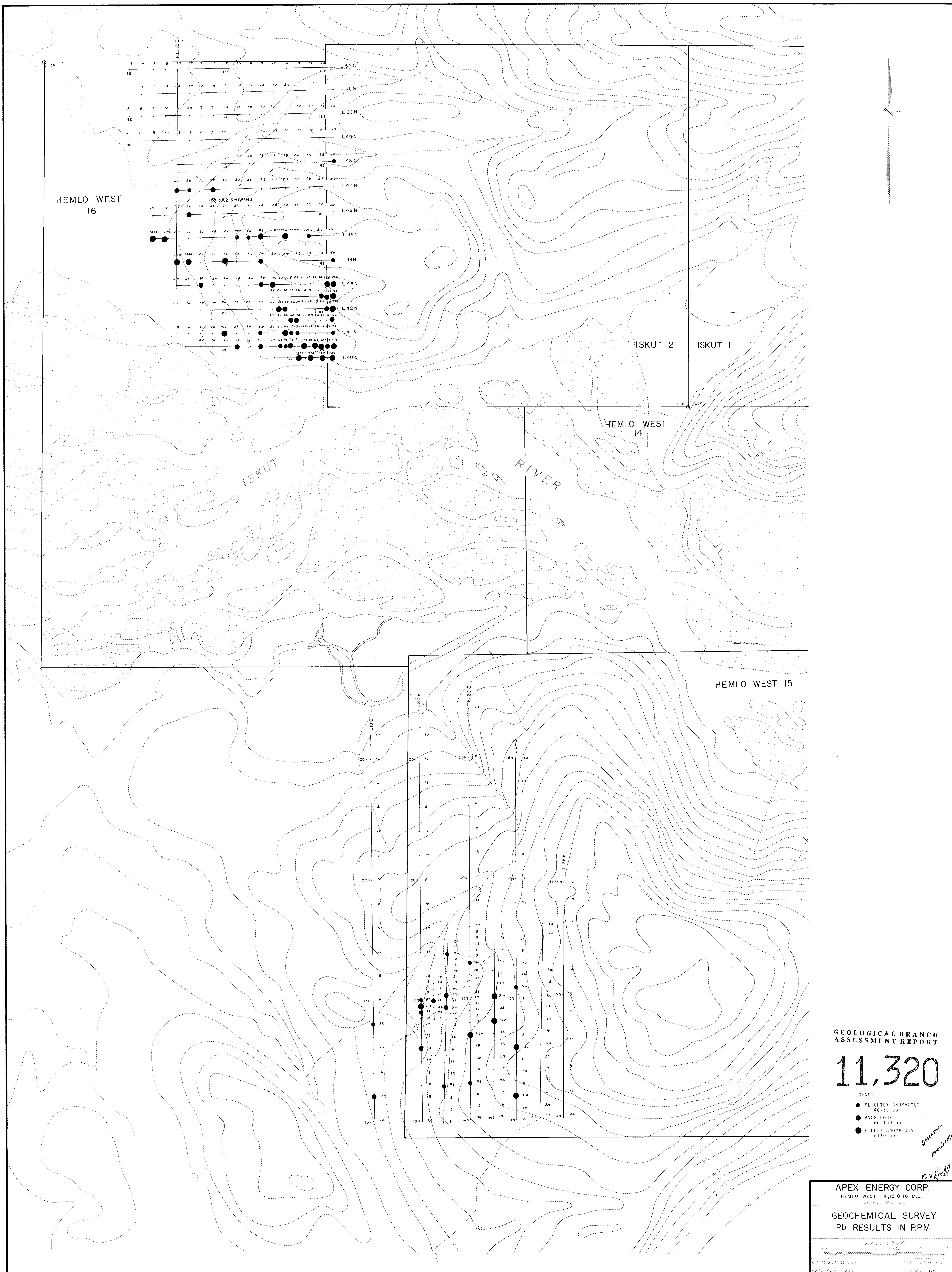
BY Hall

APEX ENERGY CORP.
HEMLO WEST 14, 15 & 16 M.C.
LIARD M.D.-B.C.

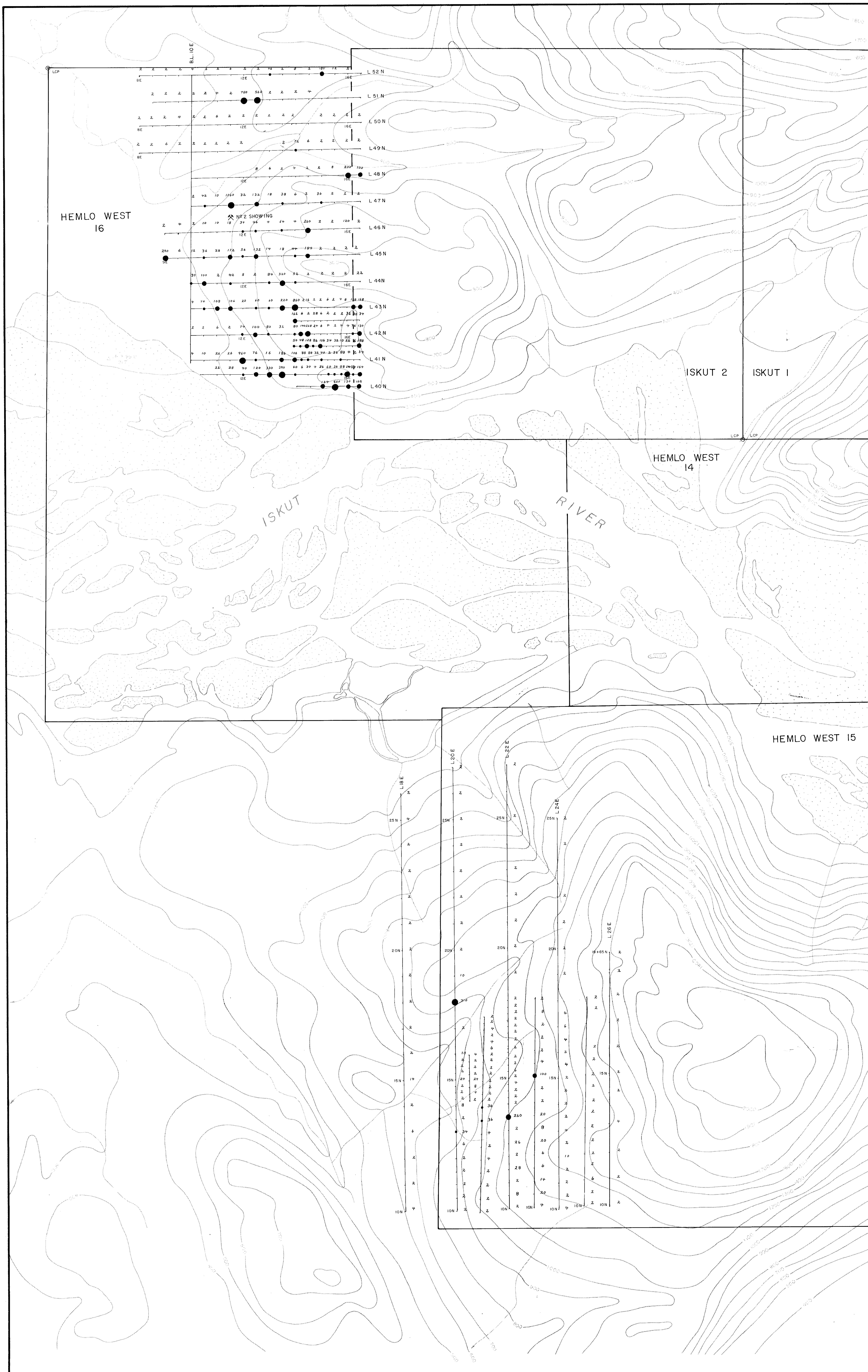
GEOCHEMICAL SURVEY
Mo RESULTS IN P.P.M.

SCALE 1:5000

BY R.M., B.V.H./rwr. NTS 104-B-11
DATE SEPT. 1983 FIGURE 9


HEMLO WEST 16
HEMLO WEST 14
HEMLO WEST 15
ISKUT 2
ISKUT 1
ISKUT RIVER
No 2 SHOWING
BL 10E
L 52 N
L 51 N
L 50 N
L 49 N
L 48 N
L 47 N
L 46 N
L 45 N
L 44 N
L 43 N
L 42 N
L 41 N
L 40 N
L18E
L20E
L22E
L24E
L26E
LCP
GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,320
LEGEND:
SLIGHTLY ANOMALOUS 40-59 ppm
ANOM LOUS 60-109 ppm
HIGHLY ANOMALOUS >110 ppm
APEX ENERGY CORP.
HEMLO WEST 14,15 & 16 M.C.
LIARD M.D.-B.C.
GEOCHEMICAL SURVEY
Pb RESULTS IN P.P.M.
SCALE 1:5000
BY R.M.,B.V.H./rwr.
NTS 104-B-11
DATE SEPT. 1983
FIGURE 10
BVHall

HEMLO WEST 16
HEMLO WEST 14
HEMLO WEST 15
ISKUT 2
ISKUT 1
ISKUT RIVER
N
BL 10E
No 2 SHOWING
L 52 N
L 51 N
L 50 N
L 49 N
L 48 N
L 47 N
L 46 N
L 45 N
L 44 N
L 43 N
L 42 N
L 41 N
L 40 N
L18E
L20E
L22E
L24E
L26E
LCP
GEOLOGICAL BRANCH
ASSESSMENT REPORT
11,320
LEGEND:
ABOVE BACKGROUND 145-189 ppm
SLIGHTLY ANOMALOUS 190-469 ppm
ANOMALOUS 470-699 ppm
HIGHLY ANOMALOUS >700 ppm
BV Hall
APEX ENERGY CORP.
HEMLO WEST 14,15 & 16 M.C.
LIARD M.D.-B.C.
GEOCHEMICAL SURVEY
Zn RESULTS IN P.P.M.
SCALE 1:5000
BY R.M.,B.V.H./rwr.
NTS 104-B-11
DATE SEPT. 1983
FIGURE 11



GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,320

LEGEND:

- ABOVE BACKGROUND 35-94 ppm
- SLIGHTLY ANOMALOUS 95-199 ppm
- ANOMALOUS 200-339 ppm
- HIGHLY ANOMALOUS >340 ppm

R Heeras
November 14, 1983

BVHall

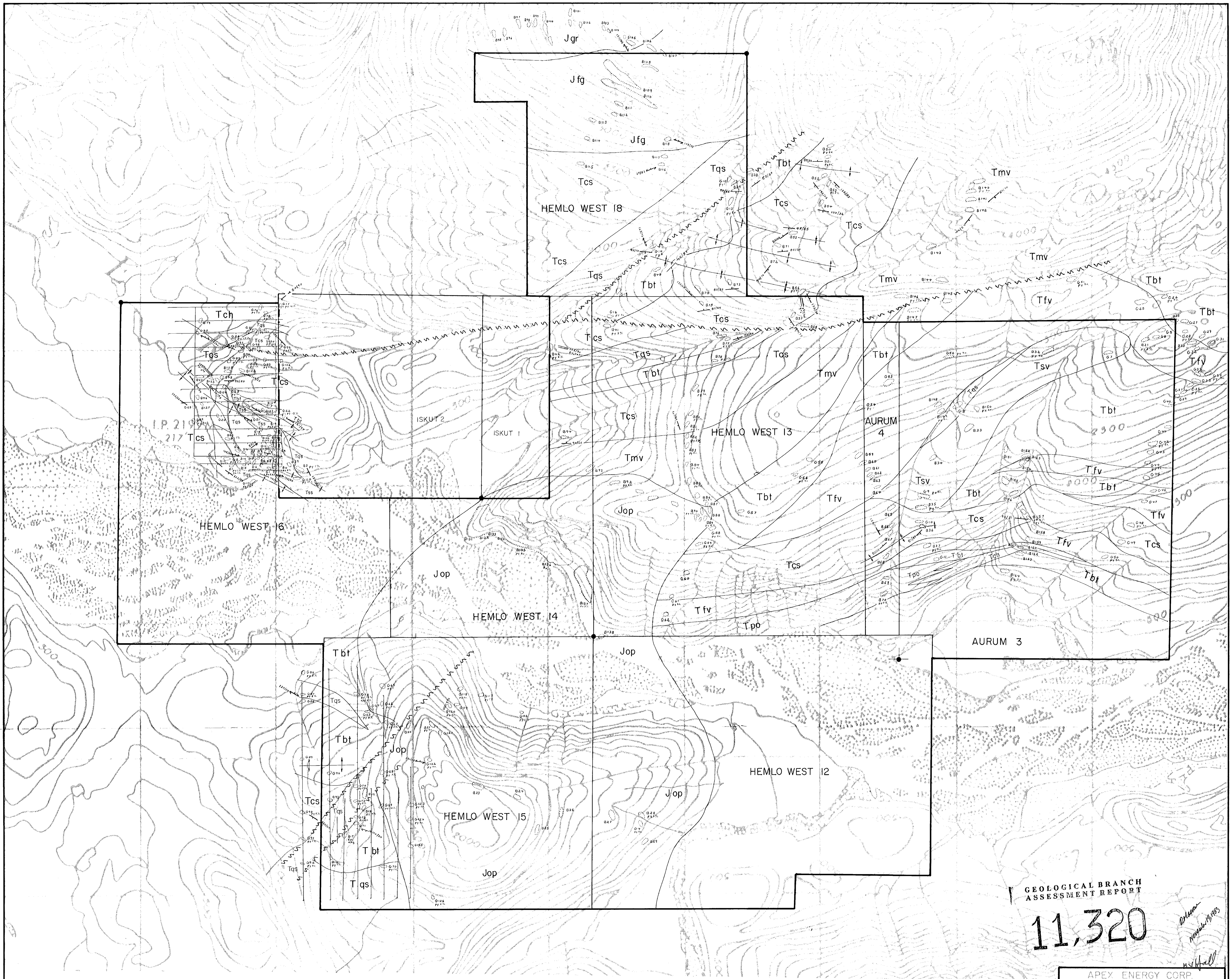
APEX ENERGY CORP.

HEMLO WEST 14, 15 & 16 M.C.
LIARD M.D. - B.C.

GEOCHEMICAL SURVEY
As RESULTS IN P.P.M.

SCALE 1:5000

BY R.M., B.V.H./rwr. NTS 104-B-11
DATE SEPT 1983 FIGURE 12



LEGEND:

Jop	ORTHOCLASE PORPHYRY	
Jgr	GRANODIORITE	
Jfg	FOLIATED GRANODIORITE	
Tss	SERICITE SCHIST	
Tbt	MAFIC BRECCIA / TUFF	
Tmv	MAFIC VOLCANIC FLOW	
Tsv	SANIDINE PORPHYRY VOLCANIC FLOW	
Tfv	FELDSPAR PORPHYRY VOLCANIC FLOW	
Tch	CHERT	
Tpo	PORCELLONITE	
Tcs	CARBONACEOUS SILTSTONE	
Tqs	QUARTZ SANDSTONE	

BEDDING
FOLIATION
CLEAVAGE
VEIN
FAULT

py	PYRITE
po	PYRRHOTITE
cpy	CHALCOPYRITE
gn	GALENA
sp	SPHALERITE
ep	EPIDOTE
qtz	QUARTZ
cal	CALCITE
mag	MAGNETITE

APEX ENERGY CORP.
HEMLO WEST - AURUM CLAIMS
LIARD M.D. - B.C.

GEOLOGY MAP

SCALE 1:10,000

NTS : 104- -11
DATE : NOV. 6, 1983
BY: R.M., B.V.H. / r.w.r.
FIGURE: 3