92P/1W

FRIENDLY LAKE, 16 MILES N.W. OF LITTLE FORT, B.C.
LAT. 51°35'N; LONG. 120°27'W
KAMLOOPS MINING DIVISION. N.T.S. 92-P-9

A GEOLOGICAL, GEOCHEMICAL, AND GEOPHYSICAL REPORT BY
W.J. HILL, B.Sc., M.G.A.C.
FOR IMPERIAL OIL LIMITED
500 - 6th AVE. S.W., CALGARY, ALBERTA, T2P 0S1

JUNE 1 TO SEPTEMBER 22, 1972

CLAIM HOLDER
VANGULF EXPLORATION COMPANY
P.O. BOX 29, KELLOGG, IDAHO, U.S.A.

4025

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FL 1 - 149

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SUMMARY

The Friendly Lake property consists of 149 full-sized claims (FL #1-149), located at Latitude 51°35'N; Longitude 120°27'W, 16 miles northwest of Little Fort, British Columbia. The property can be reached from Little Fort by following Highway 24 (Bridge Lake Road) for 12 miles, then northward by logging road past Meadow Lake to the property. Total distance to the central part of the property is approximately 25 miles.

The area had been staked by Anaconda American Brass Ltd. in the mid-1960's. Two to three thousand feet north of Friendly Lake, Anaconda still retains 7 claims upon which they discovered minor lead and silver mineralization.

Vangulf Exploration Company staked 43 mineral claims in November, 1971 and then added 106 claims in April, 1972. In 1972, Imperial Oil Limited undertook the exploration of this property consisting of geological mapping and geochemical and geophysical surveying.

The property is underlain by Upper Triassic andesite flows, breccias, tuffs with interbedded argillite, siltstone and limestone of the Nicola Group. These rocks are fault bounded to the northeast by Jurassic volcanic clastic rocks and porphyritic andesite flows and breccias. A small syenite stock intrudes the Nicola Group in the northwestern area of the property. Sulphides consisting of pyrite and minor chalcopyrite, molybdenum, galena and tetrahedrite are disseminated in altered volcanic Nicola rocks throughout the property. No mineralization is found in the syenite intrusion.

Geochemical values are generally erratic but there are several minor locations which show high copper and/or high molybdenum values. Copper values range from 4 ppm to 9,800 ppm; molybdenum values from 1 ppm to 137 ppm, lead values from 7 ppm to 630 ppm; silver values from 0.1 ppm to 5.0 ppm.

Magnetic intensities show a general magnetic low over the syenite intrusion with a corresponding high over the contact zone with the Nicola volcanic rocks. The I.P. results are also useful in defining the contacts between the syenite intrusion and the Nicola volcanics where higher resistivities are located over the syenite.

The definitely anomalous I.P. results are as follows:

Line 492N -	538+60E	- 541+80E
	543E	- 545E
Line 508N -	546E	- 550E
Line 524N -	516+60E	- 521E
-	526E	- 528+60E
Line 532N -	501+20E	- 503+40E
-	514E	- 518E

INTRODUCTION

General Statement

Exploration was started on the Friendly Lake property following the agreement between Imperial Oil Limited and Vangulf Exploration Company to jointly explore the property.

Work carried out during the 1972 exploration season included: geological mapping, geochemical soil sampling, magnetometer surveying, induced polarization/resistivity surveying, and linecutting. Geological mapping and geochemical soil sampling was carried out on the entire property, whereas magnetometer surveying and I.P. surveying and linecutting was performed on selected areas of the property. Data obtained during this program are compiled and discussed in this report.

Location and Access

The Friendly Lake property is located at latitude 51°35'N; longitude 120°27'W, 16 miles northwest of Little Fort, British Columbia. Access to the property is via Highway #24 west from Little Fort for 12 miles, then north along the logging road of the Fadear Logging Company for about 8 miles, and continuing for another 6 miles or so along a dirt road to Friendly Lake. A four-wheel drive vehicle is advisable in wet weather conditions.

Previous Work

Old claim posts in the district testify to early prospecting activity but none of these were recorded. The Geological Survey of Canada mapped the area in 1963-1965 and this was followed by a burst of prospecting activity.

Anaconda American Brass Limited staked hundreds of claims in various parts of the district with their main interest centralizing around three small syenite bodies north and west of Friendly Lake. Anaconda performed geological mapping, geochemical and geophysical surveying, trenching and diamond drilling over much of their claim groups. The company still holds seven mineral claims north of Friendly Lake.

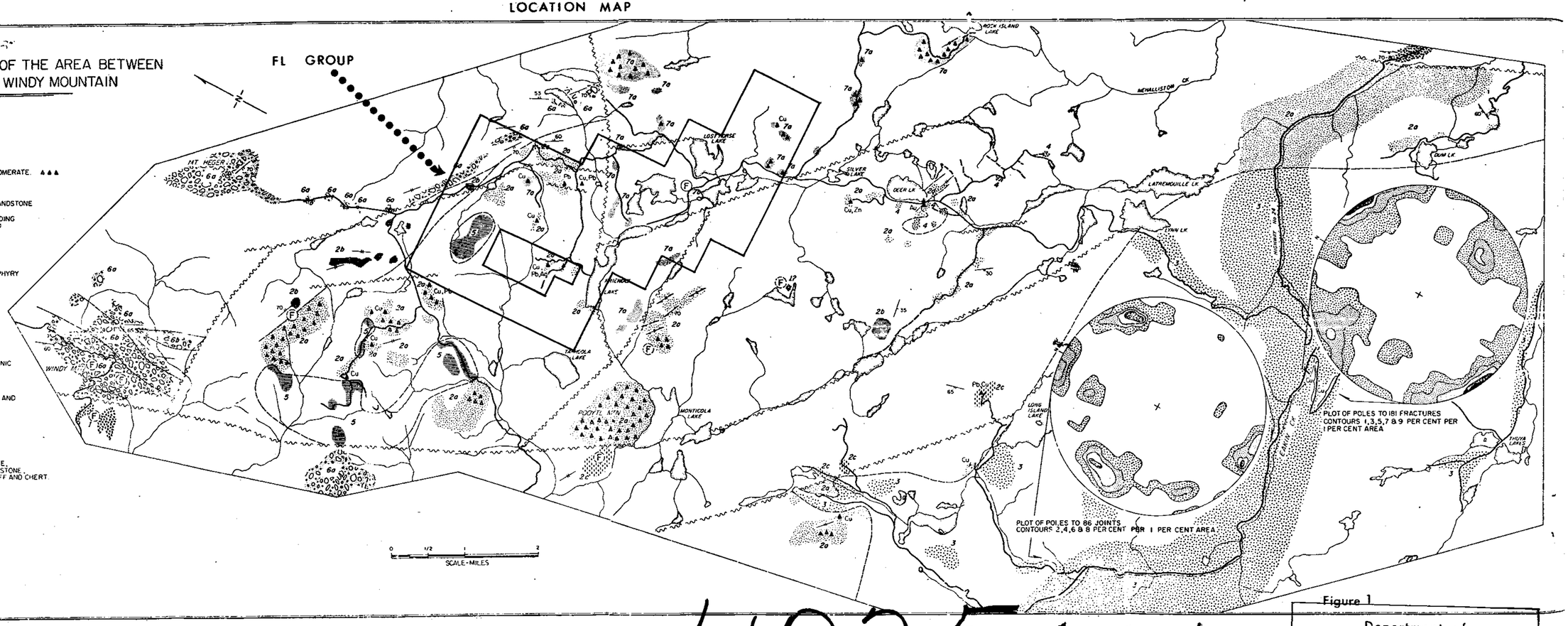
Property

Vangulf Exploration Company originally staked 43 mineral claims on the Friendly Lake property in November, 1971. One hundred and six (106) mineral claims were added to the original claims in April, 1972. The claim names, record numbers and recording dates are shown below:

FL # 1-20	133521 - 133540	November 10, 1972
FL # 21-43	171721 - 171743	November 10, 1972
FL # 44-60	335204 - 335220	April, 1973
FL # 61	335203	April, 1973
FL # 61-140	335222 - 335300	April, 1973
FL #141-149	133541 - 133549	April, 1973

LOCATION MAP

GENERALIZED GEOLOGY OF THE AREA BETWEEN EAKIN CREEK AND WINDY MOUNTAIN



LEGEND

SINEMURIAN TO (?) MIDDLE JURASSIC

- 7a. AUGITE PORPHYRY, BRECCIA AND AGGLOMERATE.
- 7b. BEDDED ARGILLITE.
- 6a. INTERBEDDED VOLCANIC SILTSTONE, SANDSTONE AND GRIT, MINOR ARGILLITE.
- 6b. AUGITE PORPHYRY AGGLOMERATE GRADING UPWARDS INTO POLYMICTIC COBBLE AND BOULDER CONGLOMERATE.

UPPER TRIASSIC OR LOWER JURASSIC

- 5. LEUCOGRANITE TO LEUCOSYENITE PORPHYRY
- 4. GREY MICRODIORITE
- 3. THUYA BATHOLITH: HORNBLENDE - BIOTITE QUARTZ DIORITE AND GRANODIORITE, HORNBLENDE DIORITE.

UPPER TRIASSIC

- 2a. MASSIVE ANDESITIC FLOWS AND VOLCANIC BRECCIA
- 2b. THIN BEDDED ANDESITIC TUFF
- 2c. INTERBEDDED CALCAREOUS ARGILLITE AND SILTSTONE
- 2d. GRAY, THIN BEDDED LIMESTONE

PENNSYLVANIAN AND PERMIAN

- CACHE CREEK GROUP VOLCANIC ARENITE, GREENSTONE CHERTY ARGILLITE, LIMESTONE, LIMESTONE BRECCIA, MINOR BEDDED TUFF AND CHERT.

SYMBOLS

- BEDDING, TOPS NOT KNOWN
- BEDDING, TOPS KNOWN
- SCHISTOSITY
- INFERRED FAULT
- MINERAL OCCURRENCE
- FOSSIL LOCALITY
- FOSSIL LOCALITY TAKEN FROM G.S.C. MAP 3-1966
- ROAD

B.C.M.M. REPORT 1970

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Figure 1

After P.S.

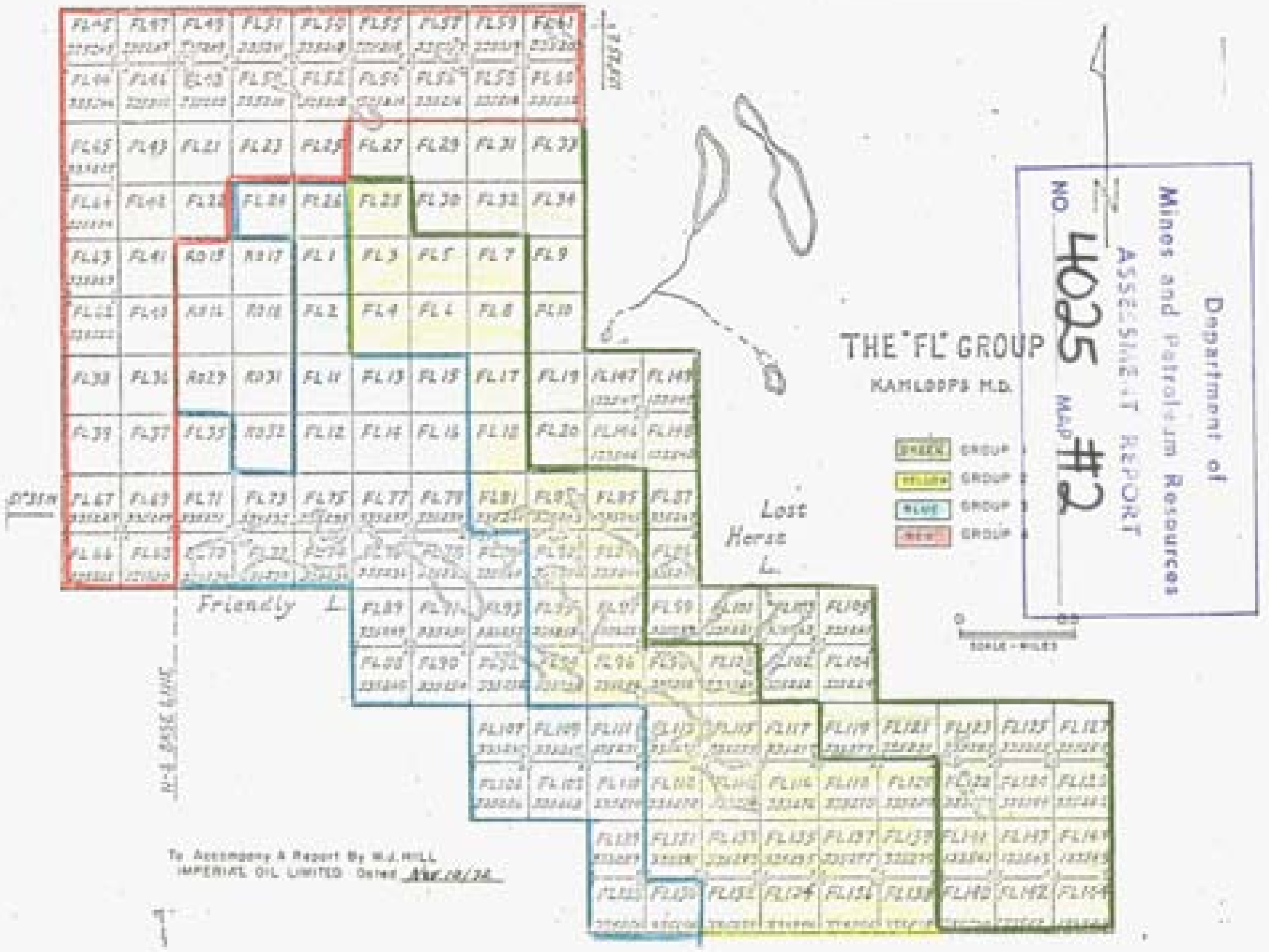

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO 4025 MAP #2
THE "FL" GROUP
KAMLOOPS M.D.
GROUP
GROUP
GROUP
GROUP
Lost
Horse
L.
Friendly L.
To Accompany A Report By W.J. HILL
IMPERIAL OIL LIMITED Dated Mar. 08/74

FIGURE 2

GEOLOGY

REGIONAL GEOLOGY

The geological setting consists of an Upper Triassic volcanic-sedimentary sequence of rocks intruded by a variety of high level alkalic intrusions of probable Cretaceous age. Block faulting is widespread. Numerous mineralized occurrences and attendant alteration relating either to the intrusive rocks and/or the surrounding volcanic rocks support the criteria for the exploration of porphyry copper-molybdenum deposits and subvolcanic stockwork or disseminated sulphide deposits.

PROPERTY GEOLOGY

General Statement

The property was geologically mapped on a scale of 1" = 1000' (see Figure 3) using the grid as control. Cut lines in the areas of sparse outcrop, or the least interesting areas, were at 800' spacings and in areas of interesting geology at 400' or 200' spacings. Outcrop is generally less than 5% providing a corresponding uncertainty in interpretation.

Rock Types

1. Andesite Flows - melanocratic volcanics of basic to intermediate composition. Volcanics of andesitic composition were distinguished as follows:

   A. Massive Andesite - a medium to dark green, fine-grained massive rock generally containing .1% to .5% pyrite. This type outcrops south and west of Friendly Lake and along fault zones. Where altered it has been classified as an altered andesite

B. Basaltic Andesite - a massive fine-grained black to very dark green rock with a high percentage of magnetite associated with it. This rock type is found only in trenches north of the eastern end of Friendly Lake. The extent of this unit is not known due to lack of outcrop.

C. Altered Andesite - this is the most widespread and economically interesting rock type in the area trending northwesterly across the property. This is generally a silicified andesite and will be covered in more detail under alteration.

D. Andesitic Conglomerate - generally consists of a fine-grained dark green andesite crystalline matrix with rounded to sub-rounded clasts of syenite and/or diorite 1 to 4 inches in size. These clasts are 10% to 20% of the rock with an individual clast being 10% to 20% hornblende and 80% to 90% feldspar. This rock unit occurs south of Friendly Lake in a northwesterly direction, being about 1,000 feet in width.

2. Volcanic Sediments

A. Interbedded Argillite and Siltstone - very fine-grained black argillite and fine-grained siliceous siltstone occur interbedded over much of the northeastern portion of the claim group. The argillite, due to its softness and fissility is recessive and occurs only as low scattered outcrops. It has a distinctive reddish-grey weathered surface, very soft, and often exhibiting well-developed layering. The siltstone strongly resembles a tuff (Unit 2C) but is somewhat more

siliceous and always occurs as thin bands or discontinuous layers in the argillite.

At least five different horizons of argillite-siltstone are present in the map area, all complexly folded and interlayered with the other volcanic sediments. These argillite-siltstone interbeds may be related to transgression and regression of the sea during volcanic activity.

B. Breccia - coarse angular fragments of the volcanics and sediments cemented by a finer-grained matrix, derived mainly from the breakdown of the argillite-siltstone interbeds. This rock type consists of 30% argillite fragments, 20% siltstone and 20% siliceous tuff with 30% matrix. The grain size is variable with fragments ranging from 2 to 10 mm, but usually >5 mm. This unit is at least 100 feet wide, complexly interlayered and folded within the volcanic-sediments.

C. Tuff-Tuffwacke - this is a gradational unit which grades from a tuff to a tuffwacke. The tuff is fine-grained, intermediate in composition, very massive with no layering visible. This grades into a tuffwacke which consists of coarse-grained angular fragments 4 to 8 mm in size composing 75% of the rock. Large angular blocks of breccia (2B) are enbedded in the tuffwacke, with one particular block located at 532N, 564E being 100' x 20'. The tuffwacke is epiclastic in nature and probably resulted from material sliding down the flanks of a volcanically active region.

D. Siliceous Ash-Chert - aphanitic, grey siliceous tuff, more massive layers break with a conchoidal fracture. Rock is normally very finely layered with layers ranging in width from 1 to 3 cm. Disseminated pyrite makes up 1% to 2% of the rock and gives the chert a rusty red iron stain on weathered surface. Where this unit is close to the fault zone it has been intensely sheared and mylonitized with the pyrite content increasing to about 5%. Normally rock unit is complexly folded and interlayered with coarser volcanic sediments.

E. Siliceous Volcanic Breccia - this unit which has limited extent, occurs as thin beds interlayered with the siliceous ash-chert. It consists of angular chert fragments 2 to 6 mm in size cemented by a siliceous cherty matrix. Width of beds are up to 50 feet maximum. This unit is probably related to erosion of the chert.

3. Syenite

This intrusive rock is generally porphyritic, medium-coarse grained rock consisting almost entirely of orthoclase with $\leq$ 5% quartz. Subhedral K-feldspar phenocrysts, on the average, comprise 40% to 50% of the rock. Minor ankerite is present up to .5% in most of the intrusive.

The only textural variation occurs at the centre of the stock which shows slightly coarser grain size. Quartz flooding, consisting of up to 20% bull quartz occupying random dilation fractures is present.

The stock is completely void of any mineralization. Within 500 feet of the syenite contact the andesites are generally sheared and a foliation direction can be measured parallel to the contact of the stock. In parts of the western contact a gneissosity is developed, with bands of hornblende and feldspar alternating.

Several dyke-like bodies extend out into the country rock, generally up to 50 feet in width, in one case up to 3,000 feet from the stock. Lack of outcrop hinders the mapping of these dykes but magnetic data is helpful in some of these features as well as contact of the stock.

4. Diorite

Two small diorite bodies have been mapped on the Friendly Lake property. Generally, it is a mafic, medium-grained massive rock with subhedral to euhedral hornblende grains comprising 40% of the rock, and anhedral greenishplagioclase comprising the remaining 60%. Minor pyrite is also present.

These diorite bodies are located in the extreme northwestern corner of the map sheet and southeast of Meadow Lake. They may be the result of a coarser phase of the intrusive andesites but due to their extent no positive conclusion can be reached.

5. Post Syenitic Rocks

A. Porphyritic Augite Andesite - this is a massive unaltered, very fine-grained grey andesite with 1 to 5 mm subhedral to euhedral black augite phenocrysts comprising 10 to 50% of the

rock. Pyrite is disseminated in the rock composing $<2\%$ of the total.

This unit occurs as dykes and flows with the dykes ranging in size from 10 to 1,000 feet across. The contact rocks are usually slightly baked and pyritiferous for about 6 inches from the contact.

This unit postdates the alteration, as completely unaltered augite andesite can be found cutting across Nicola andesites which have been completely replaced by silica.

B. Augite Andesitic Agglomerate - this is a very coarse-grained explosive pyroclastic containing scoriaceous sub-rounded clasts of augite andesite imbedded in a fine-grained augite andesite matrix. The clasts range in size from 2 to 8 inches, composing 20% to 50% of the rock. Generally, these fragments are distinguishable only where differential weathering has emphasized the physical variation between fragments and matrix.

The agglomerate occurs in the northeastern portion of the claims interlayered with greywackes and tuffs.

C. Greywacke - this is composed of medium-coarse grained sub-angular rock fragments of argillite and tuff cemented in a fine-grained epiclastic matrix. Rock consists of 30% to 40% argillite, 30% to 40% tuff clasts, and 40% matrix. It is similar to the breccia (2B) but has a much more compact matrix and is more uniform in grain size. It is interlayered with the augite andesitic agglomerate.

6. Aplite Dykes

These are found in two small outcrops south of Friendly Lake. It is not known where they fit in the geological sequence but may have been intruded at the same time as the syenite stock. The dykes are generally less than 50 feet wide composed of very fine-grained potash feldspar.

Alteration

The more intense alteration on the property is restricted to the older massive andesite flows. There are basically three stages of alteration that have been recognized. These have been further subdivded as follows:

Stage 1 - Silicification

a) Weak Alteration: characterized by darkening of the rock due to development of chlorite and biotite. Epidote is also common either in the form of veins or clots.

b) Moderate Alteration: characterized by partial silica replacement up to 60% of the rock, leaving weakly altered parts still present.

c) Intense Alteration: characterized by almost complete silicification producing a rock made up of 90% silica and 10% ghosts of andesites.

Pyrite concentration associated with this stage increases with increasing intensity of alteration, up to a maximum of 2% to 4% of the rock.

Stage 2

This alteration is characterized by glaucophane, orthoclase and hedenbergite veining. Hedenbergite veining is most common closer

to the syenite stock and occurs in those rocks which have been recrystallized but not silicified. The veins range in size from 1 inch to 3 inches.

Glaucophane is associated with shear zones which are probably related to the intrusion of the syenite stock. In the trenches between lines 508N and 500N glaucophane can be found in several small shear zones. The glaucophane is easily distinguishable in the andesites in that it is a dull blue fibrous mineral and where it is weathered it imparts a bluish stain to the rocks. It has been reported that this mineral was x-rayed and identified as fluor-richterite, a soda tremolite.

Stage 3

This is a late stage of alteration characterized by carbonate, quartz and chalcedony veining. The chalcedony veining is not found in surface outcrop but has been exposed in trenches.

Most of the alteration, especially the silicification, does not appear to be related to the emplacement of the syenite stock. When the different zones of silicification are plotted they appear to be distributed independently from the syenite stock. Origin of the silicification at this time is uncertain.

Alteration was not observed east of the fault zone separating the andesitic rocks from the volcanic sedimentary units, nor south of Friendly Lake.

Structural Geology

The Friendly Lake property is located within a belt of northwest regional faults. Lack of outcrop on the property complicates structural interpretation.

The entire area is probably complexly folded, but only in the northeast section of the property, where outcrop is more abundant, can folding be inferred. Folds are tight and isoclinal with fold axis being no greater than 500 to 800 feet apart. Strike of fold axis parallel the layering which is 310° to 320°. Plunge cannot be determined.

There are numerous airphoto lineaments cutting through the area but not all of these can be related to structures due to the scarcity of outcrop. Some of these are probably related to layering and jointing in the various rock types but others must be related to block faulting.

Sulphide Mineralization

No sulphide mineralization was seen in the syenite stock on the FL claims and none that was observed elsewhere appear to be related to the contact of the stock, placing serious doubt on any possible positive correlation between the stock and mineralization.

Pyrite is related to certain rock types and also to silicification. With increasing amounts of silicification the amount of pyrite also increases up to a total of 2% to 4% of the rock. Where pyrite is present in appreciable amounts in different rock types it has been noted under their descriptions.

There is also one mylonitized zone along a major northwest trending fault, which separates the volcanic rock from the volcanic sediments, where pyrite increases up to 4% to 5% of the total rock. This is the highest percent of pyrite observed in the area.

Sporadically disseminated chalcopyrite is found throughout the weakly altered andesites. However, this may simply be related to the irregular volcanic nature of the Nicola rocks and not directly related to any mineralizing process.

Minor mineralization consisting of chalcopyrite, galena, molybdenum and pyrite are associated with shear zones which are generally filled with chalcedony and glaucophane. It is not known how this mineralization is developed.

A transported gossan zone was found along a small stream located 150 feet west of Line 462N, 536E. This was deposited by acidic waters discharging into the stream from a small swamp. No source has been found to date to explain this gossan zone.

GEOCHEMISTRY

General Statement

A total of 1,144 soil samples were collected mainly on the grid at 200' intervals, although some samples were also taken along compass lines and along roads and streams, throughout the property.

Preparations for taking soil samples consisted of cleaning the forest litter from the sample site and digging generally a 6" x 6" x 1' deep hole. The "B" horizon was identified on the wall of the hole and a sample was taken, large enough to adequately fill a numbered, wet-strength kraft paper envelope. Notes concerning sampling depth, slope and direction of drainage, vegetation cover and type, and size fractions were taken at each sampling site.

Samples were sent to Imperial Oil's Technical Research laboratory in Calgary where they were dried and prepared, prior to being analyzed for copper, molybdenum, lead and silver. All analysis was done under the direction of Mr. C. J. Collyer.

Geochemical Results

1. Copper

The total analysis of the soil in parts per million (ppm) are plotted on Figure 4 (in pocket). A cumulative frequency distribution curve of the total copper in the soils (Figure 8) suggest that there are three populations for copper. The intersection of the last two populations gives an anomalous value of 90 ppm for this metal. Based on this finding there are several interesting copper anomalies.

a) Line 448N - high copper values, ranging from 129 ppm to 830 ppm, extend along the line from 548E - 564E, a distance of 1,600 feet. The anomaly is open to the west as swampy ground hinders the taking of good "B" horizon samples. Several high values are also found on lines north and south of this anomalous zone.

b) Line 512N - high values ranging from 130 ppm to 710 ppm extend along the line from 470E - 490E, a distance of 2,000 feet. This anomaly is situated in the Nicola volcanics close to the contact with the syenite intrusion.

c) Various other small one or two point anomalies occur throughout the property but cannot be adequately analyzed until further geochemical data can be collected.

2. Molybdenum

The total molybdenum values in parts per million are plotted on Figure 5. A cumulative frequency curve of the total molybdenum in soils (Figure 8) suggests that there are 3 populations for molybdenum. The intersection of the last two populations gives an anomalous value of 19 ppm for this metal. Based on this finding there are several anomalous molybdenum zones.

Generally, high molybdenum values occur over the central portion of the property, in the vicinity of claims 13-19. The values range from 20 ppm to 59 ppm, intermixed with values averaging about 15 ppm. As the samples are 200 feet apart and the lines are 400 to 800 feet apart more detailed sampling will be needed to adequately interpret this anomaly.

Other scattered high molybdenum values occur throughout the property but are too erratic to be interpretive.

3. Lead

The total lead values in parts per million are plotted on Figure 6 located in the pocket. A cumulative frequency distribution curve of the total lead in soils (Figure 8) suggests that there are also three populations for lead. The intersection of the last two populations gives an anomalous value of 68 ppm for lead. Based on this threshold value we can pick out the following interesting zones:

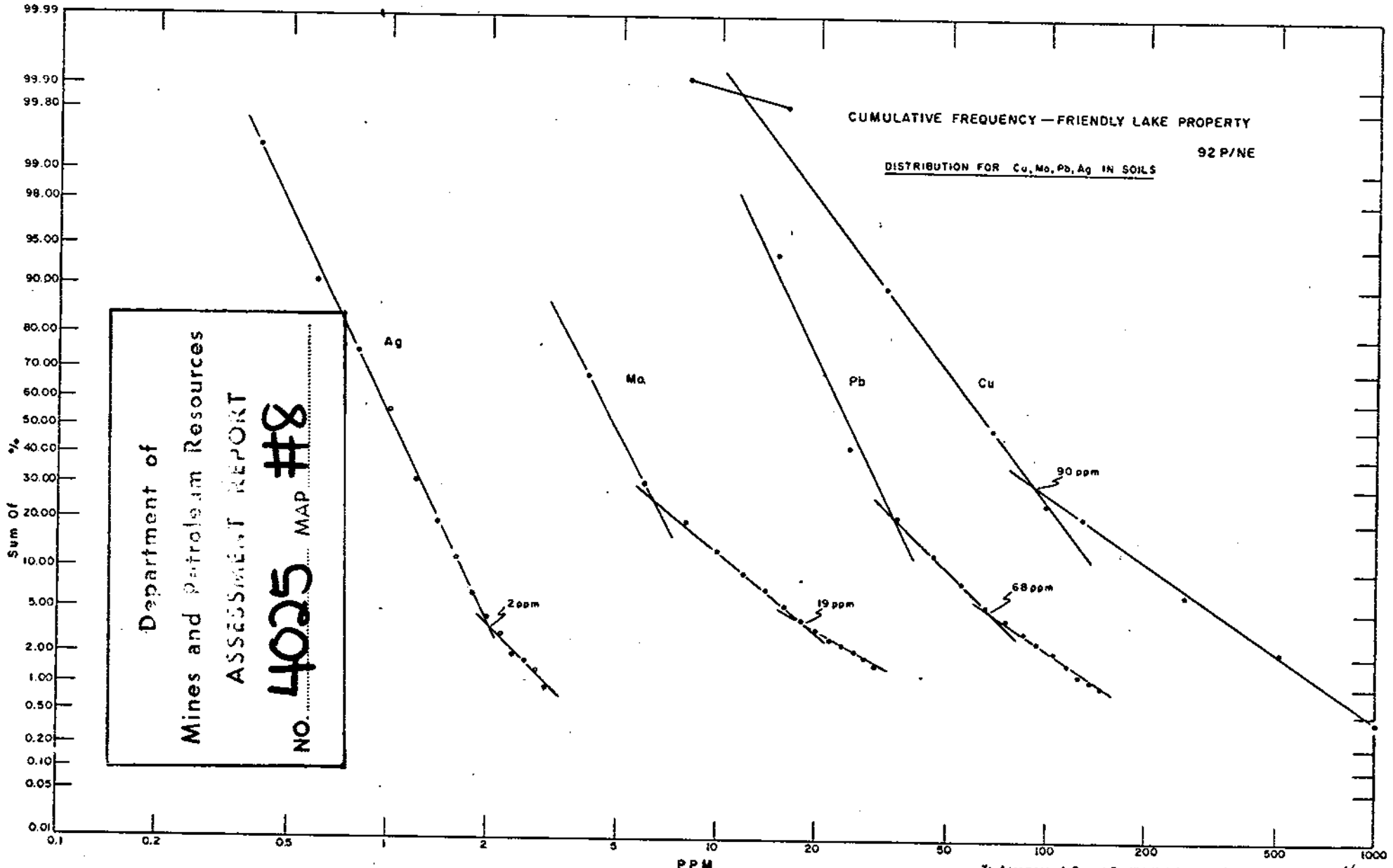
a) an area encompassing claims FL 12 and 75 have values ranging from 69 to 480 ppm. This area is immediately beside Anaconda's group of 7 claims and may show the extension of their minor lead-silver mineralization.

b) FL 3 - seven values ranging from 75 ppm to 630 ppm occur in an area approximately 400' x 400'. This is a small anomaly and may be the result of some dispersion down the slope of a southerly facing hill. Minor high values also extend in a northward direction.

Other erratic high values occur throughout the property but are not numerous enough to show any anomaly trends.

4. Silver

The total silver values in parts per million are plotted on Figure 7 located in the pocket. A cumulative frequency distribution curve of the total silver in soils (Figure 8) suggest that there are at least two populations. The intersection of these populations, at 2 ppm, is taken as being the threshold value.



To Accompany A Report By W.J. Hill, Imperial Oil Limited, Dated Nov 10/72.

Figure 8

No outstanding silver anomalies were noted in the FL claims group.

Conclusions

There are several small copper, molybdenum and lead anomalies which have been partially outlined on the FL group of claims. Most of these anomalies may be related to minor mineralization in the Nicola volcanics but only more sampling can adequately determine the extent of these zones.

GEOPHYSICS

General Statement

Since much of the claim group was overburden covered, both magnetometer and induced polarization surveys were carried out to explore beneath, what were thought to be, the most interesting geological areas.

The magnetometer survey was employed for the following purposes:

a) to map the contact between the syenite and the surrounding volcanic rocks,

b) to show any possible major structural faults,

c) to determine how the alteration zones affected the magnetic pattern of the area.

The induced polarization survey was conducted to explore for any possible sulphides and also help in mapping the geology.

Magnetometer Survey

Instrument

The magnetometer employed for the Friendly Lake survey was a M700, #7171 magnetometer manufactured by McPhar Geophysics Ltd. This is a fluxgate magnetometer which measures the vertical component of the earth's magnetic field. It has a range from +100,000 gammas to -100,000 gammas with the sensitivity being 20 gammas per scale division on the most sensitive scale (1,000 gamma scale).

Procedure

Using the latitude adjustment the earth's field was cancelled out, in order that the survey could be performed using the

most sensitive scale in most cases. This was done because only the magnetic variations were important to the survey and these could be best read on the most sensitive scale.

Several base stations were then surveyed at various points in the area. The stations with their appropriate readings are:

Base 1	Line 516N, 500E	Reading 100
Base 2	Line 492N, 550E	Reading 750
Base 3	Line 516N, 550E	Reading 200
Base 4	Line 476N, 554E	Reading 315

Using these corrected values of the bases as references, 100-foot stations were read on lines, generally 400 feet apart. These stations were corrected for diurnal variations after checking back with the base station on the average of every hour to one and one-half hours. in this manner the entire grid was surveyed and the corrected values were plotted in profile form. The results are shown on Figure 9 (in pocket).

Results and Discussions

The magnetic profiles show a pronounced magnetic low over the syenite intrusion, the average being about 200 gammas. A general high magnetic pattern is produced in the contact zone between the syenite and the volcanics, which may be the result of magnetite being produced at the time of the intrusion or at the same time the hedenbergite veining (stage 2 alteration) was produced. An area roughly 1,000 by 1,500 feet from the intrusion shows this high magnetic pattern. The pattern then drops off to a normal pattern of about 300 to 400 gammas over the Nicola volcanics.

Because of the pronounced magnetic low over the syenite intrusion it can be readily seen that it is a single intrusion at surface, not connected with two intrusions of similar composition to the northwest.

Induced Polarization Survey

Introduction and Theory

An Induced Polarization Survey was conducted on the Friendly Lake grid during the field season of 1972 in order to possibly outline any conductors which could be traced to sulphide bodies.

Induced Polarization as a geophysical measurement refers to the blocking action on polarization of metallic or electronic conductors in a medium of ionic solution conduction. The term "Induced Polarization" simply means electrical polarization induced by an applied electric field; the cause of this polarization is changes in the mobilities of ions within a rock.

At the interfaces between zones of different mobilities, excess or deficiencies of certain ions occur; these concentration gradients developed oppose the current flow causing a polarizing effect. Eventually, there is enough polarization in the form of excess ions at the interfaces to appreciably reduce the amount of current flow through the metallic particle. This polarization takes place at each of the infinite number of solution-metal interfaces in a mineralized rock.

The values of the percent frequency effect (P.F.E.) are a measurement of the polarization in the rock mass.

However, since the measurement of the degree of polarization is related to the apparent resistivity of the rock mass it is found that the metal factor values (M.F.) are most useful in determining the amount of polarization present in the rock mass. The metal factor is proportional to the product of the frequency effect and the conductivity (apparent resistivity).

Instruments

The instrument used in the Friendly Lake I.P. Survey was McPhar P660 unit along with a 2.5 KVA generator.

The P660 transmitter transmitted two frequencies: 5HZ and 0.3HZ from different channels. These frequencies were not transmitted sumultaneously. Voltage output is 0-700V with maximum current of 5 Amp.

The receiver was a McPhar P670 unit with a sensitivity of 100 microvolt to 10 volt in 5 ranges. A $\pm$1% calibrating resistor of .05 Ohm ensures accuracy under all conditions.

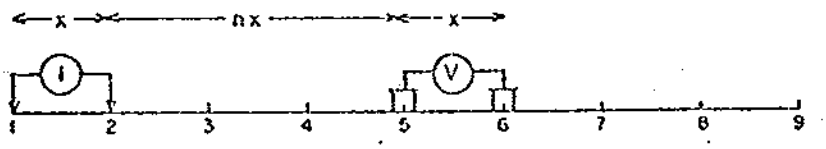
The motor generator was a 2.5 KVA; Model 152L JLO. Output was maintained at 132 volts at 400 cps.

Procedure

The survey method employed at the Friendly Lake property was the moving in line, dipole-dipole array. The dipole length was 200' and readings were taken for dipole separations of one, two and three (i.e: 200, 400, and 600 feet).

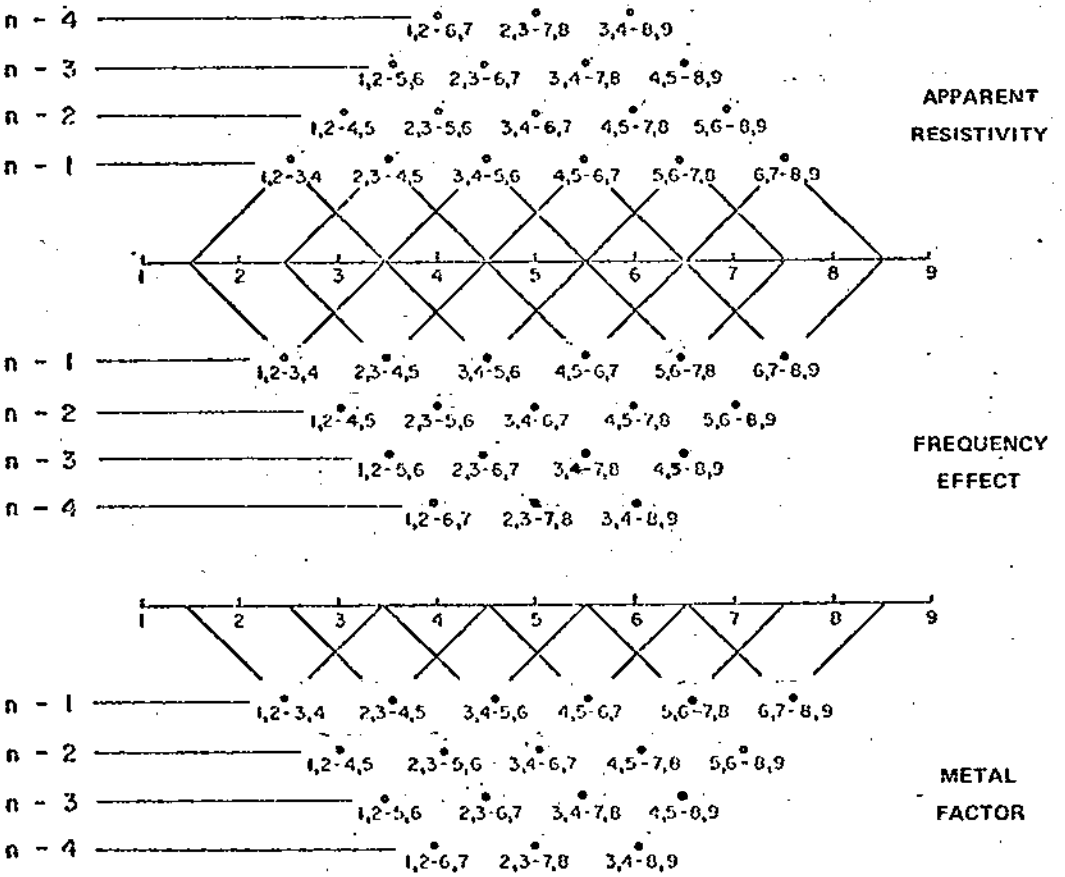
Cold rolled steel electrodes were used and to lower contact resistance salt water was used as an electrolyte. The transmitting electrodes were calibrated at every set-up to ensure accurate results.

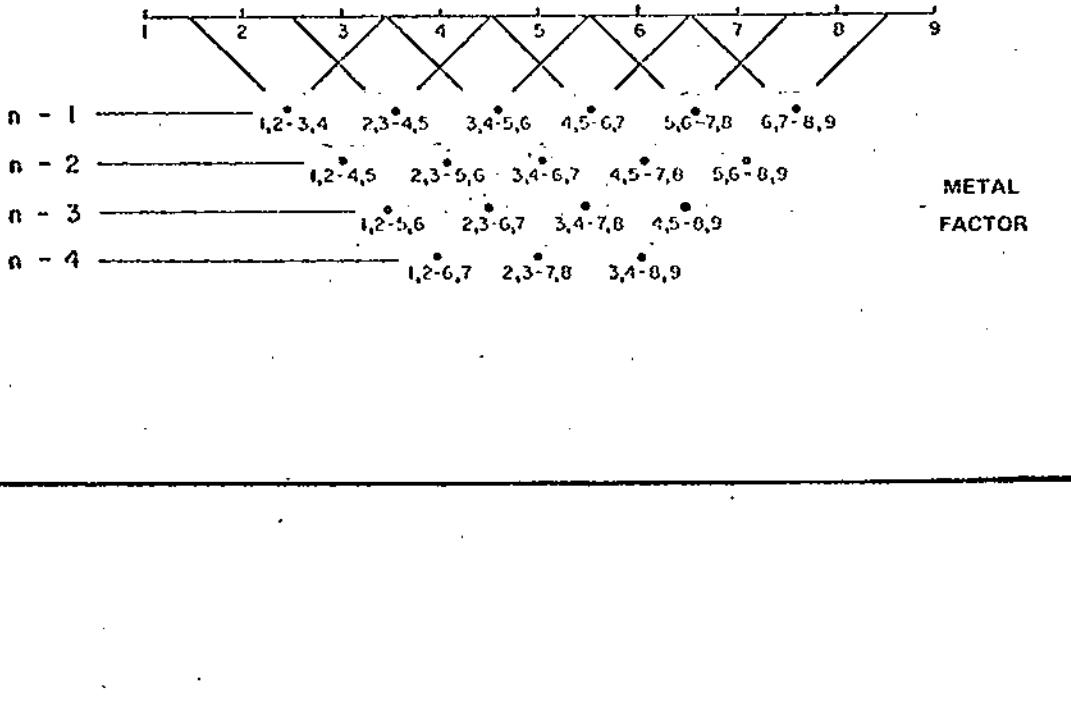
METHOD USED IN PLOTTING DIPOLE-DIPOLE INDUCED POLARIZATION AND RESISTIVITY RESULTS



Stations on line

x = Electrode spread length
n = Electrode separation





The standard plotting arrangement of a "Psuedosection" for dipole-dipole I.P. was used to assemble the data.

Results and Discussion

The results are broken down into four categories: no anomaly, possible anomaly, probable anomaly, and definite anomaly. A line by line description of the results is as follows:

Line 456N - a possible anomaly is located between 551E and 554E.

Line 464N - a possible anomaly is located between 576E and 578+20E.

Line 472N - No anomalies.

Line 480N - A possible anomaly is located between 541E and 542+20E.

Line 484 - A probable anomaly is located between 511E and 513+20E with possible anomalies on either side running from 509+80E to 511E and from 513+20E to 514E.

Line 488N - No anomalies.

Line 492N - There are two definite anomalies located on this line. They run from 538+60E to 541+80E and from 543E to 545E.

Line 496N - No anomalies

Line 500N - There is a possible anomaly located between 508E and 509+80E.

Line 504N - There is a possible anomaly located between 542E and 544E.

Line 508N - A definite anomaly is located between 546E and 550E.

Line 512N - There are two probable anomalies on this line. They run from 506E to 508+20E and from 510+40E to 512E.

Line 516N - There are two possible and one probable anomaly located on this line. The possible anomalies run from 506+40E to 509E and from 520E to 522E. The probable anomaly is located between 525+40E and 528+20E.

Line 520N - There are two possible anomalies on this line. One is located between 526+60E and 530E and the other is between 535+80E and 537+20E.

Line 524N - There are several anomalies on this line. One definite anomaly is located between 516+60E and 521E and another between 526E and 528+60E. A probable anomaly lies between 524+20E and 525+80E. A possible anomaly is located between 532E and 536+20E.

Line 532N - There are two definite anomalies on this line. One is between 501+20E and 503+40E and the other is between 514E and 518E. Also there is a probable anomaly between 518E and 520+20E.

Line 548N - No anomalies.

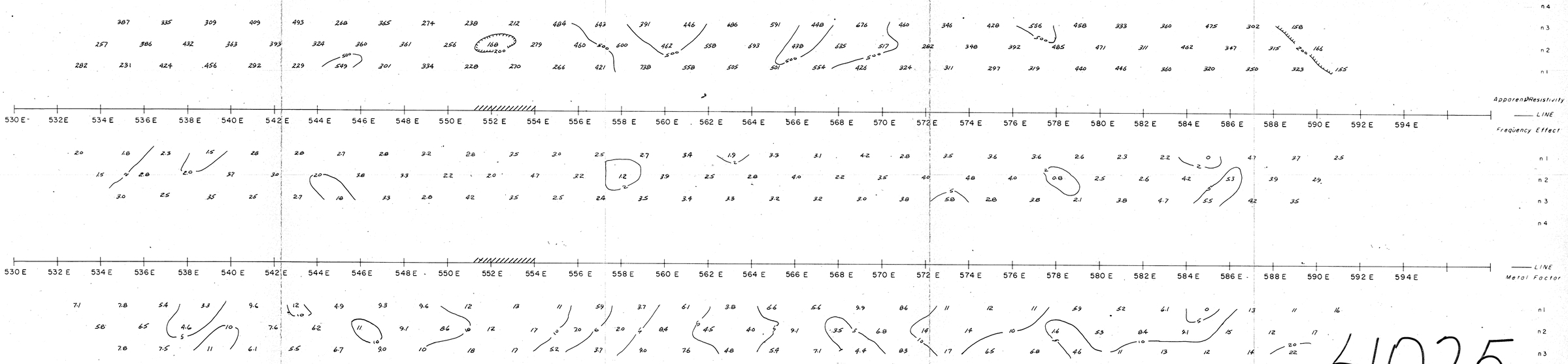
The resistivities on this particular property range from less than 100 ohm-feet to over 5,000 ohm-feet. It was found that the higher resistivities were located over the syenite body situated in the northwest part of the property.

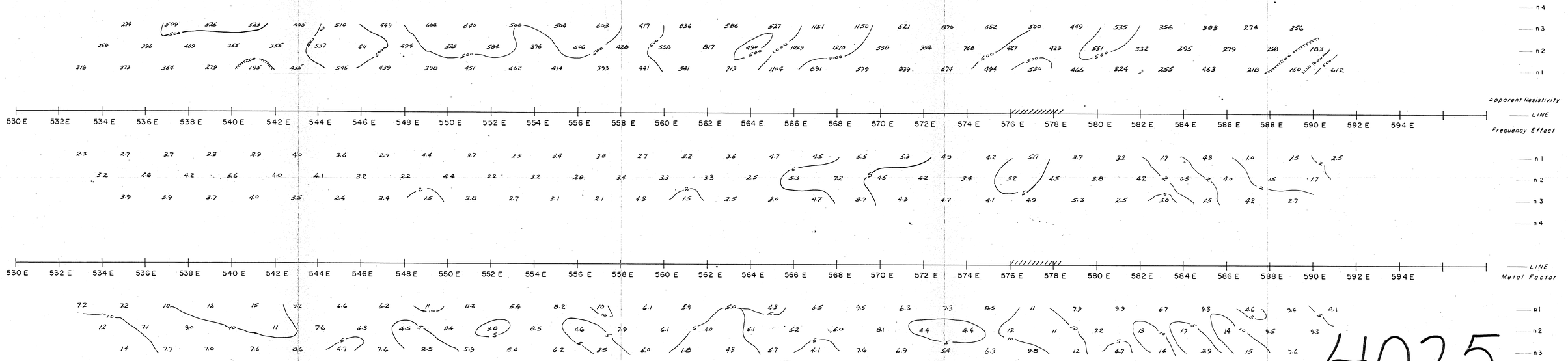
Generally, the resistivities run from 400 ohm-feet to 700 ohm-feet.

The P.F.E.'s are generally high because of the high pyritic content of the rock in the area. The P.F.E.'s generally run around 2.5% to 4% with an increase in P.F.E. in higher resistant situation and lower P.F.E. in a lower resistant surrounding.

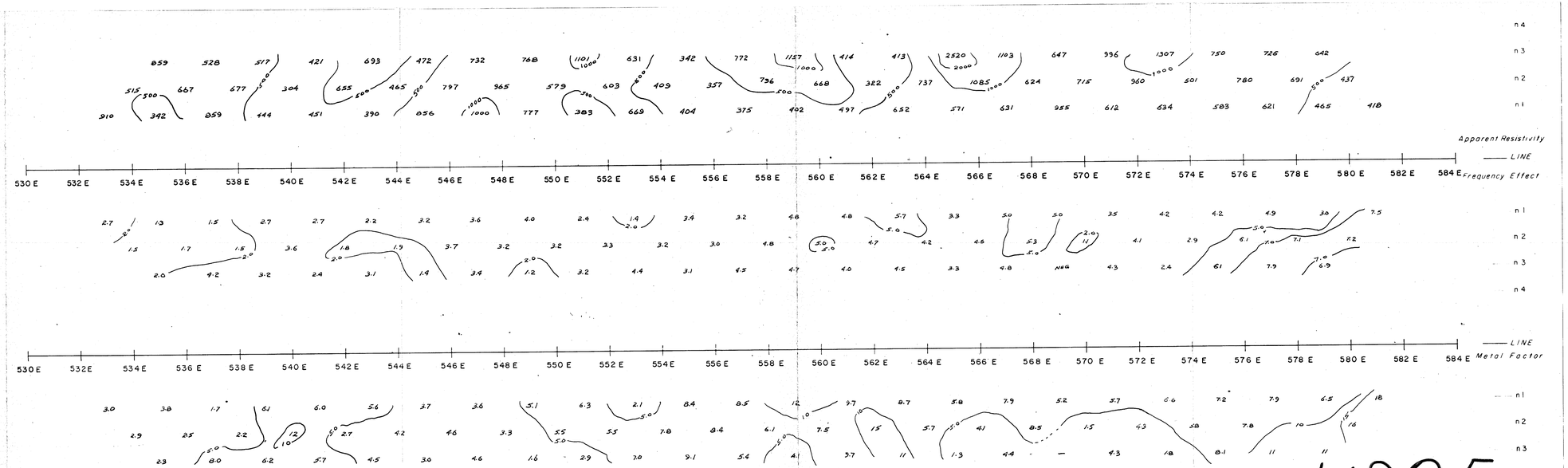
The M.F.'s are again slightly high as a result of the high P.F.E. and the lower resistivities associated with the pyrite content of the rock. The M.F.'s generally range between 5-20.

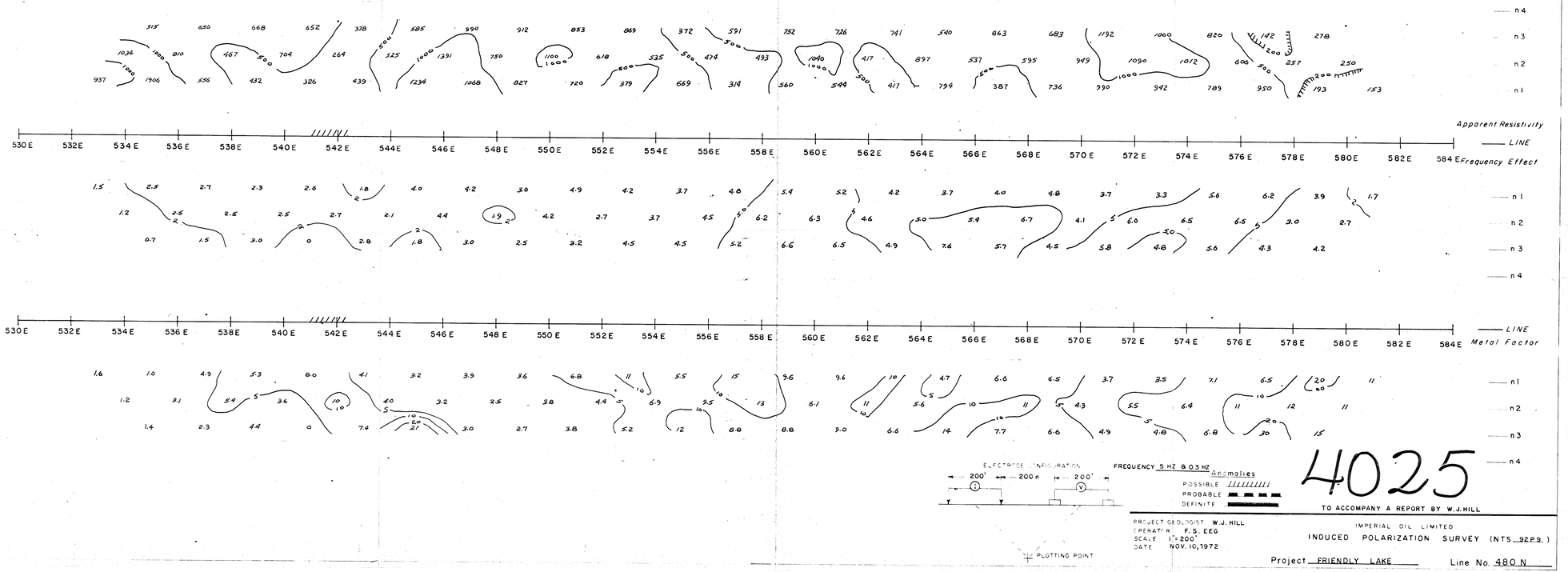
The anomalies as outlined seem to confirm the areas of alteration and the strengths depend on the amount of sulphide association with the alteration zone. The syenite body in the northwest sector was also fairly well outlined. Thus, the geological picture obtained fits in well with the magnetics and the exposed geology.


n4
n3
n2
n1
Apparent Resistivity
LINE
Frequency Effect
530 E 532E 534 E 536E 538E 540E 542E 544E 546E 548E 550E 552E 554E 556E 558E 560E 562E 564E 566E 570E 572E 574E 576E 578E 580E 582E 584E 586E 588E 590E 592E 594E
LINE
Metal Factor
FREQUENCY 5 HZ 0.03 HZ
miles
TO ACCOMPANY A REPORT BY W.J.HILL
W.J. HILL
F.S. EEG
1"=200'
NOV 11, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
4025

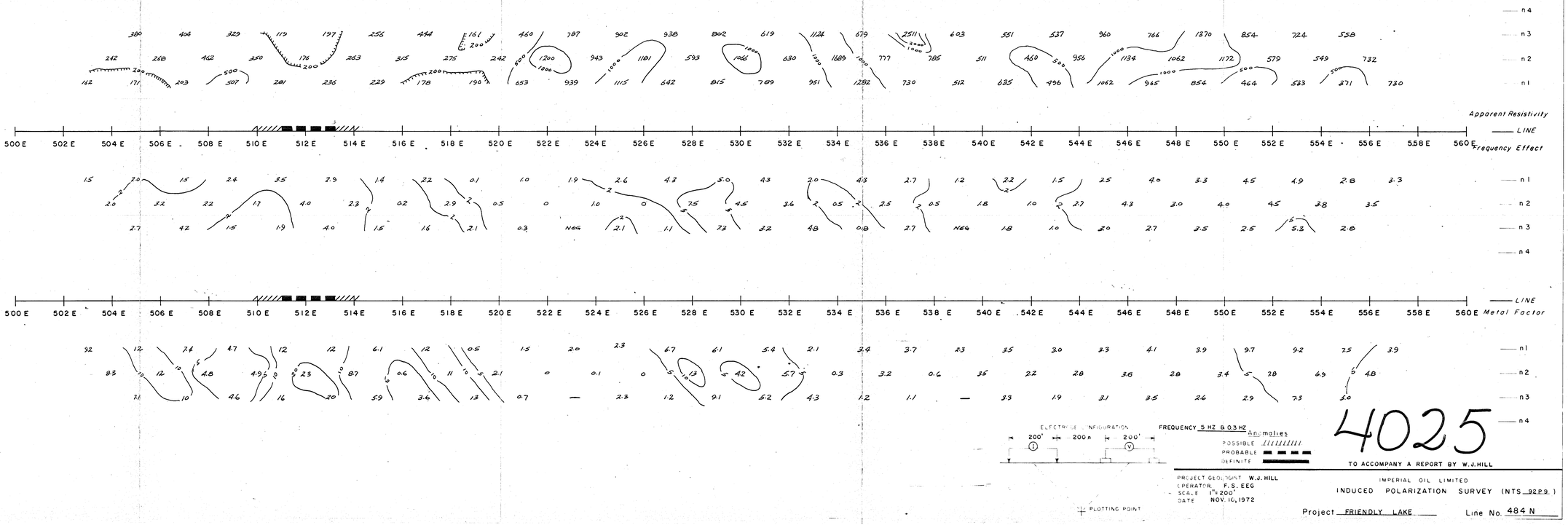

n4
n3
n2
n1
Apparent Resistivity
LINE
Frequency Effect
530 E 532E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578 E 580 E 582 E 584 E 586 E 588 E 590 E 592 E 594 E
LINE
Metal Factor
ELECTRODE CONFIGURATION
200' 200n 200'
PLOTTING POINT
FREQUENCY 5 HZ & 0.3 HZ
Anomalies
POSSIBLE
PROBABLE
DEFINITE
TO ACCOMPANY A REPORT BY W.J.HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1"=200'
DATE NOV. 16, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
Project FRIENDLY LAKE
Line No 464 N

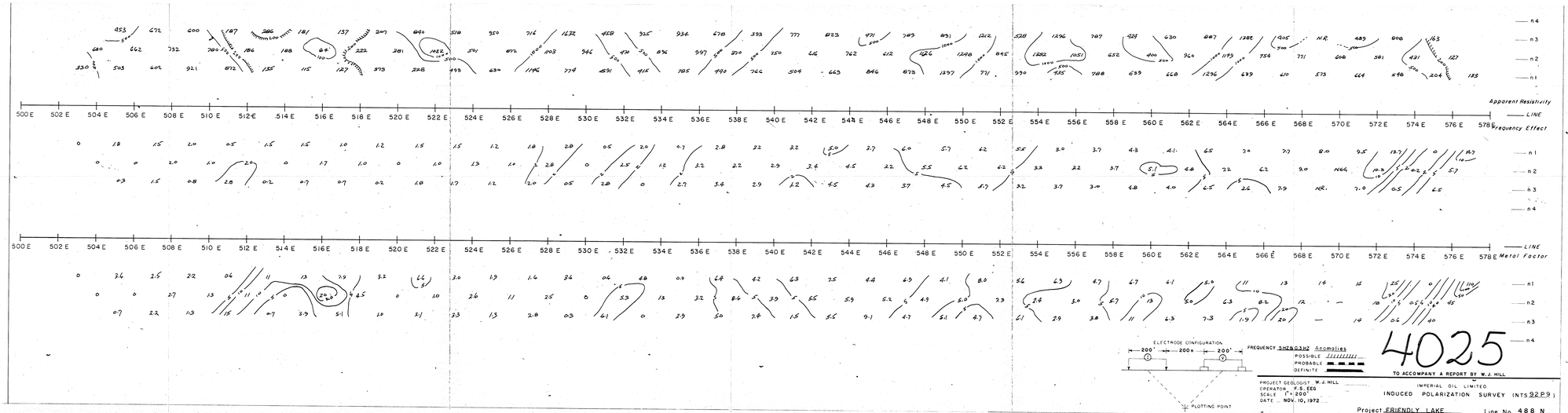
4025

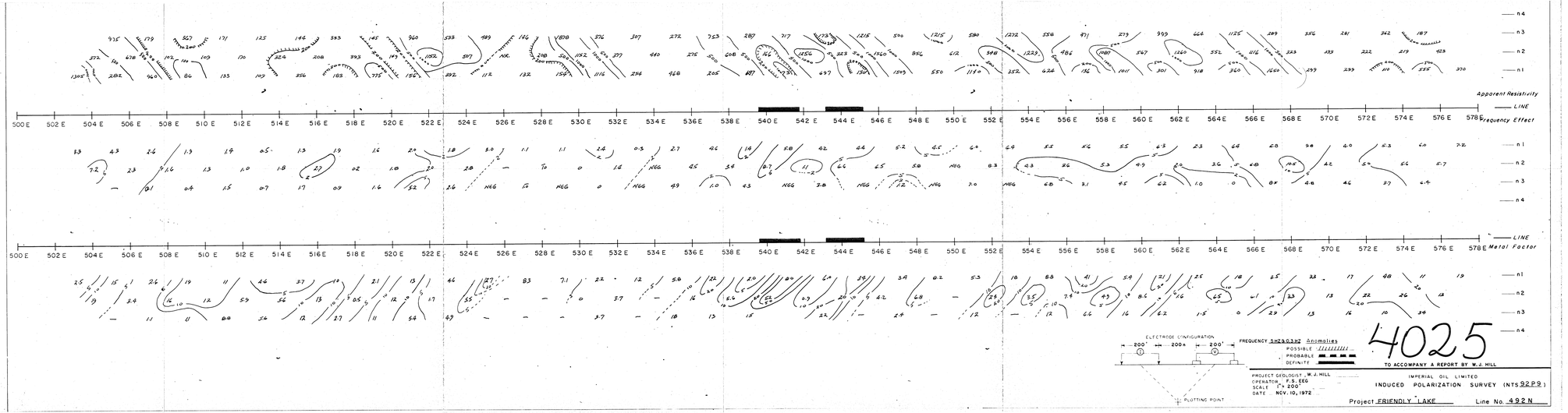

n4
n3
n2
n1
Apparent Resistivity
LINE
530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578 E 580 E 582 E 584 E
Frequency Effect
n1
n2
n3
n4
LINE
Metal Factor
530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578 E 580 E 582 E 584 E
n1
n2
n3
n4
ELECTRODE CONFIGURATION
200' 200 n 200'
FREQUENCY 5 HZ & 0.3 HZ
No. of stations
POSSIBLE
PROBABLE
CERTAIN
BLASTING POINT
4025
TO ACCOMPANY A REPORT BY W.J. HILL
W.J. HILL
OPERATOR F.S. EEG
SCALE 1" = 200'
DATE NOV. 16, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
Project FRIENDLY LAKE Line No. 472N

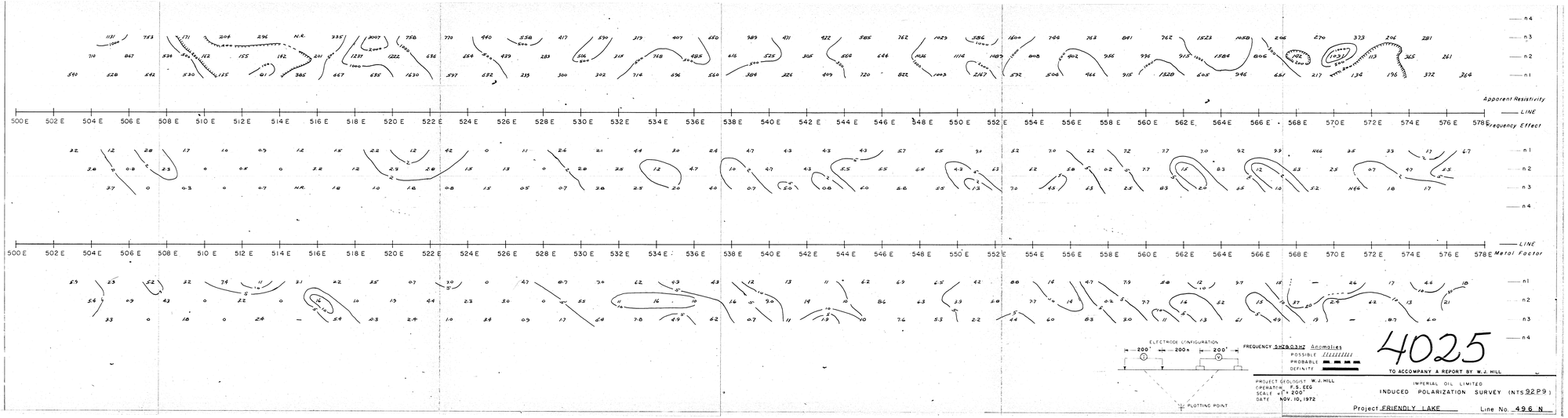

n4
n3
n2
n1
Apparent Resistivity
LINE
530E 532E 534E 536E 538E 540E 542E 544E 546E 548E 550E 552E 554E 556E 558E 560E 562E 564E 566E 568E 570E 572E 574E 576E 578E 580E 582E 584E
Frequency Effect
n1
n2
n3
n4
LINE
Metal Factor
n1
n2
n3
n4
ELECTRODE CONFIGURATION
200' 200 n 200'
FREQUENCY 5 HZ & 0.3 HZ
Anomalies
POSSIBLE
PROBABLE
DEFINITE
PLOTTING POINT
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1"=200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
Project FRIENDLY LAKE
Line No. 480 N

4

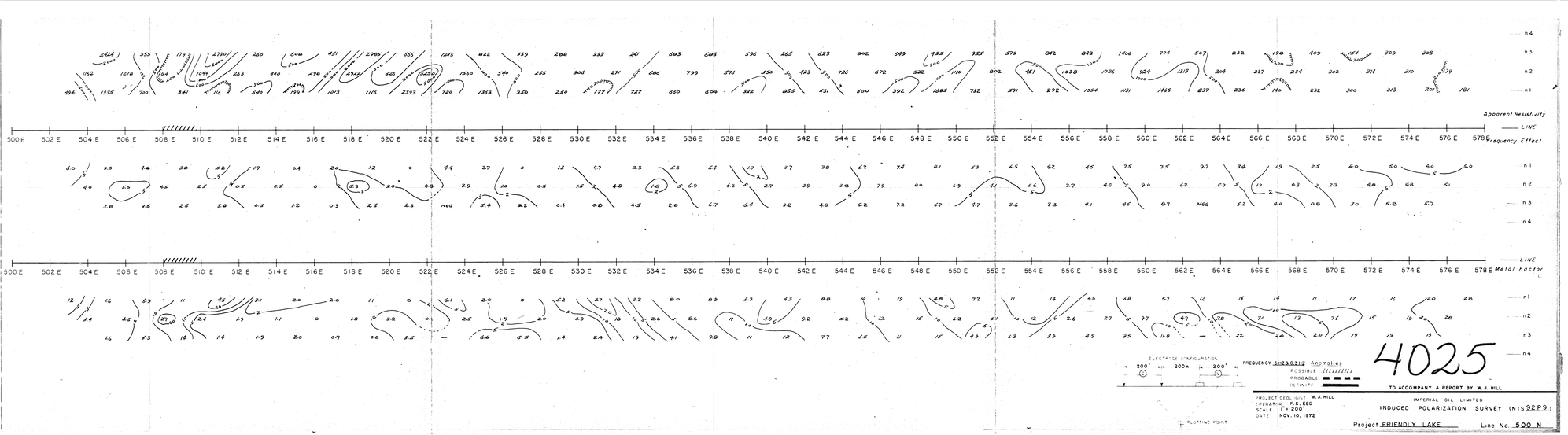

n4
n3
n2
n1
Apparent Resistivity
LINE
Frequency Effect
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E
LINE
Metal Factor
ELECTRODE CONFIGURATION
200' 200 m 200'
I V
PLOTTING POINT
FREQUENCY 5 HZ & 0.3 HZ
Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1"=200'
DATE NOV. 16, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
Project FRIENDLY LAKE
Line No. 484 N

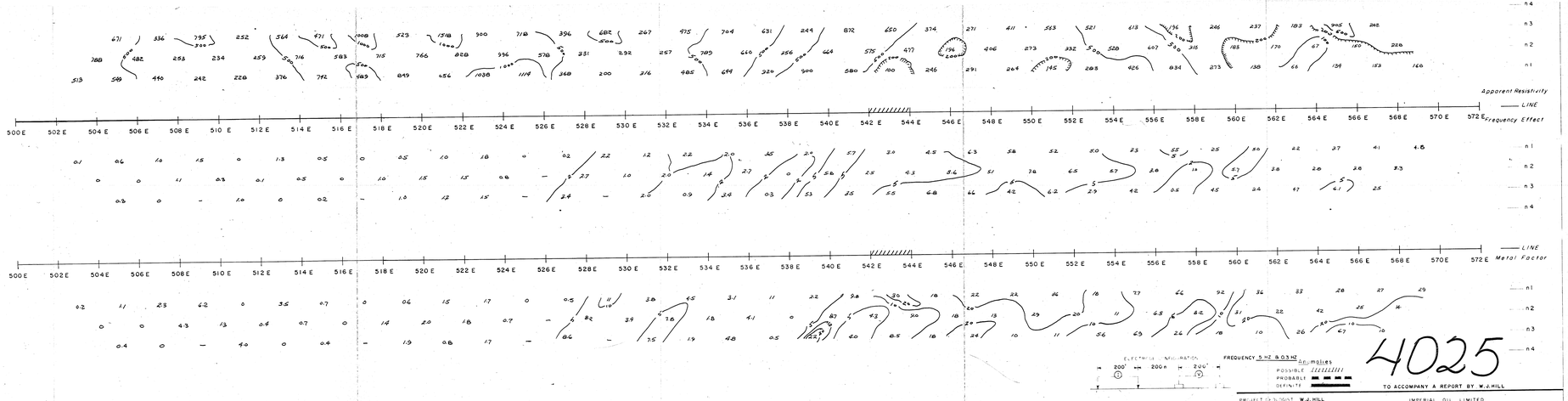

n4
n3
n2
n1
Apparent Resistivity
LINE
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578 E
Frequency Effect
n1
n2
n3
n4
LINE
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578 E
Metal Factor
n1
n2
n3
n4
ELECTRODE CONFIGURATION
200' 200 n 200'
PLOTTING POINT
FREQUENCY 5HZ&0.2HZ Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1"=200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 32P9)
Project FRIENDLY LAKE
Line No. 488 N

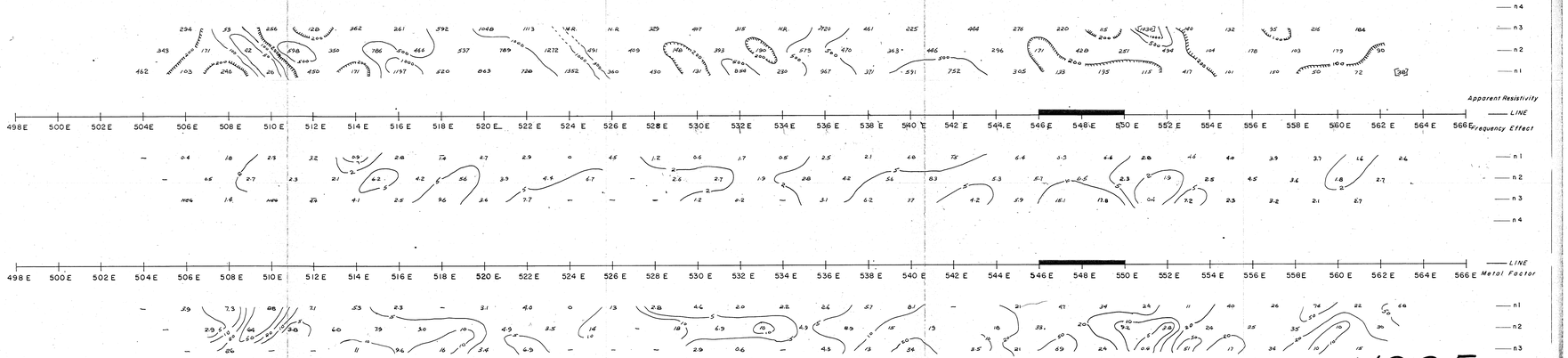

n4
n3
n2
n1
Apparent Resistivity
LINE
Frequency Effect
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578 E
n1
n2
n3
n4
LINE
Metal Factor
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578 E
ELECTRODE CONFIGURATION
200' A 200' B 200'
PLOTTING POINT
FREQUENCY 3HZ&0.3HZ Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR P.S. EEG
SCALE 1" = 200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P)
Project FRIENDLY LAKE Line No. 492N

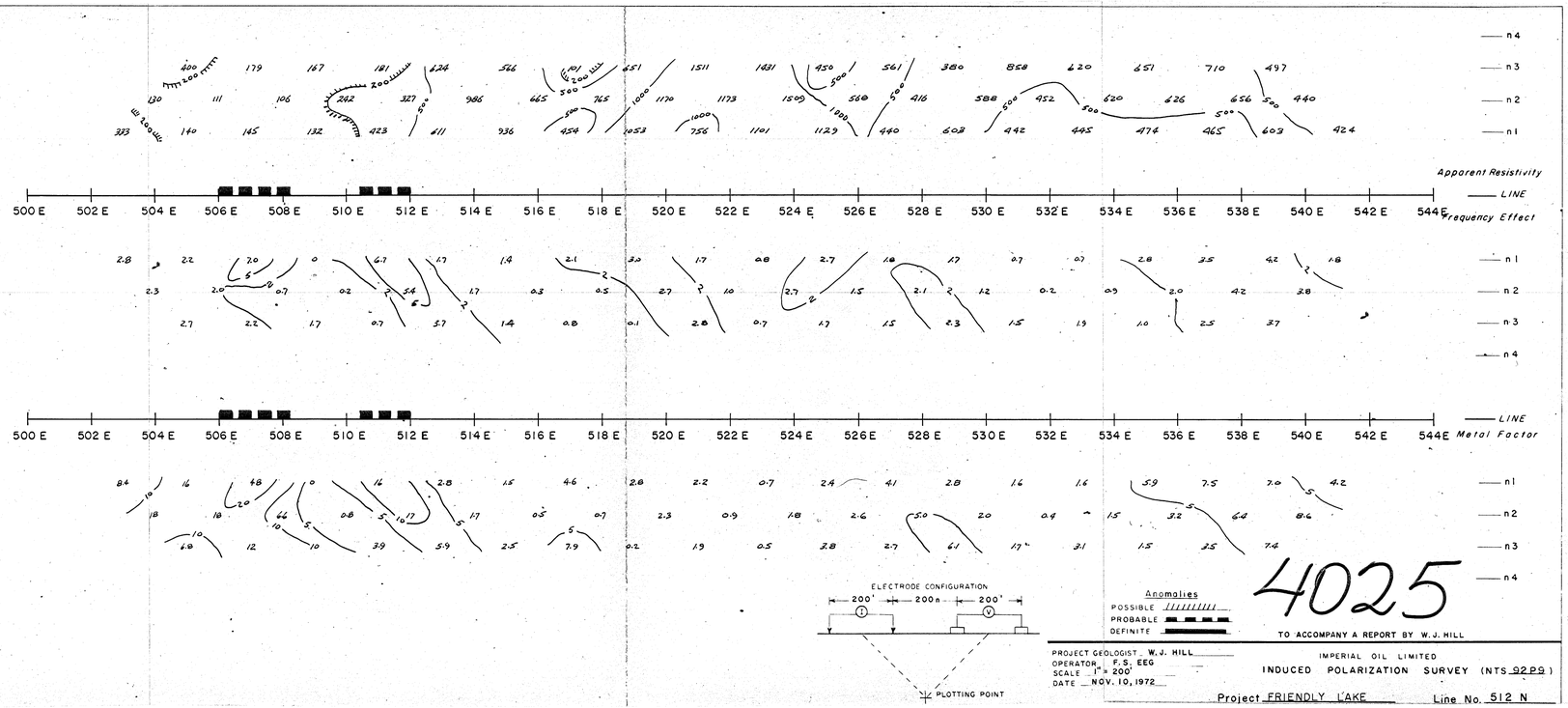

n4
n3
n2
n1
Apparent Resistivity
LINE
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578 E
Frequency Effect
n1
n2
n3
n4
LINE
Metal Factor
n1
n2
n3
n4
ELECTRODE CONFIGURATION
200' 200' 200'
PLOTTING POINT
FREQUENCY 2HZ & 0.3HZ Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR R.S. EEG
SCALE 1" = 200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92 P 9)
Project FRIENDLY LAKE
Line No. 496 N

9

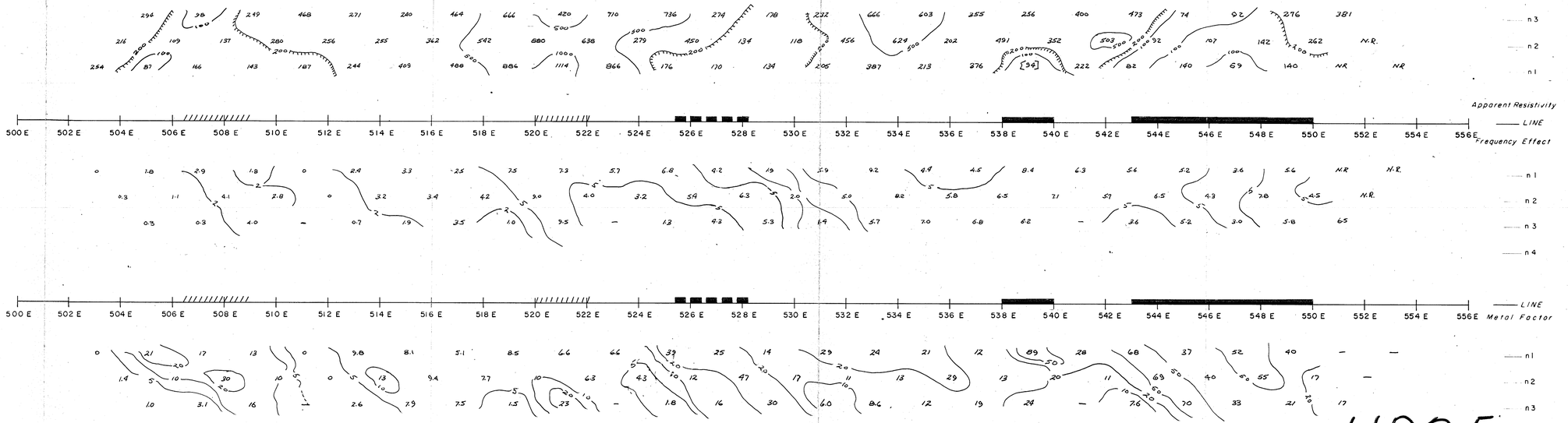

Apparent Resistivity
LINE
Frequency Effect
LINE
Metal Factor
n1
n2
n3
n4
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E 568 E 570 E 572 E 574 E 576 E 578E
ELECTRODE CONFIGURATION
200' 200n 200'
C P
PLOTTING POINT
FREQUENCY 5Hz&0.3Hz Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATING F.S. TEO
SCALE 1" = 200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
Project FRIENDLY LAKE Line No. 500 N


n 4
n 3
n 2
n 1
Apparent Resistivity
LINE
Frequency Effect
500E 502E 504E 506E 508E 510E 512E 514E 516E 518E 520E 522E 524E 526E 528E 530E 532E 534E 536E 538E 540E 542E 544E 546E 548E 550E 552E 554E 556E 558E 560E 562E 564E 566E 568E 570E 572E
n 1
n 2
n 3
n 4
LINE
Metal Factor
500E 502E 504E 506E 508E 510E 512E 514E 516E 518E 520E 522E 524E 526E 528E 530E 532E 534E 536E 538E 540E 542E 544E 546E 548E 550E 552E 554E 556E 558E 560E 562E 564E 566E 568E 570E 572E
n 1
n 2
n 3
n 4
ELECTRODE CONFIGURATION
200' 200ft 200'
FREQUENCY 5 HZ & 0.5 HZ
SCALE 1 INCH = 2000 FEET
POSSIBLE
PROBABLE
DEFINITE
PLOTTING POINT
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR R.S. EEG
SCALE 1"=200'
DATE NOV. 14, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P)
Project FRIENDLY LAKE Line No. 504 N

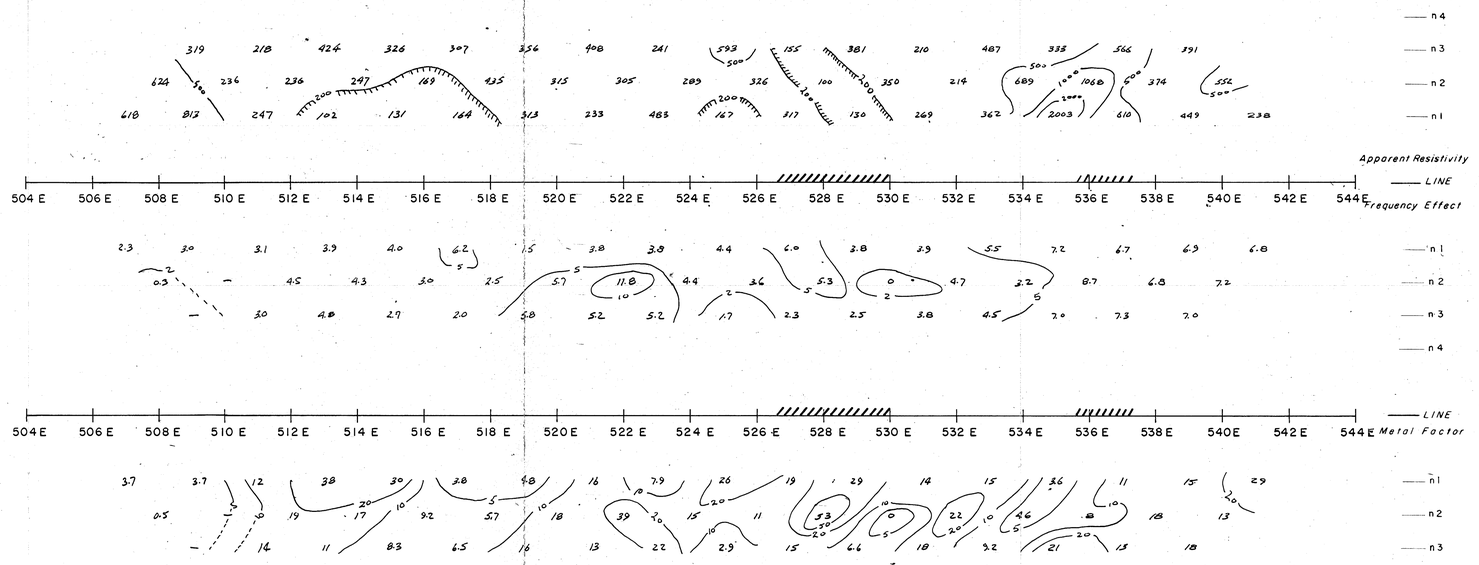

n4
n3
n2
n1
Apparent Resistivity
LINE
Frequency Effect
498 E 500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556 E 558 E 560 E 562 E 564 E 566 E
LINE
Metal Factor
ELECTRODE CONFIGURATION
200' 200' 200'
PLOTTING POINT
FREQUENCY 5 HZ & 0.3 HZ
Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR P.S. E.G.G.
SCALE 1" = 200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92 P)
Project FRIENDLY LAKE Line No. 508 N


n4
n3
n2
n1
Apparent Resistivity
LINE
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544E
Frequency Effect
n1
n2
n3
n4
LINE
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544E
Metal Factor
n1
n2
n3
n4
ELECTRODE CONFIGURATION
200' 200' 200'
C
P
V
PLOTTING POINT
Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1" = 200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
Project FRIENDLY LAKE
Line No. 512 N

12


n4
n3
n2
n1
Apparent Resistivity
LINE
Frequency Effect
500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E 528 E 530 E 532 E 534 E 536 E 538 E 540 E 542 E 544 E 546 E 548 E 550 E 552 E 554 E 556E
LINE
Metal Factor
ELECTRODE CONFIGURATION
200' 200 n 200'
PLOTTING POINT
FREQUENCY 5 HZ & 0.3 HZ
Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1"=200'
DATE NOV. 16, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P/9)
Project FRIENDLY LAKE
Line No. 516 N

13



4025

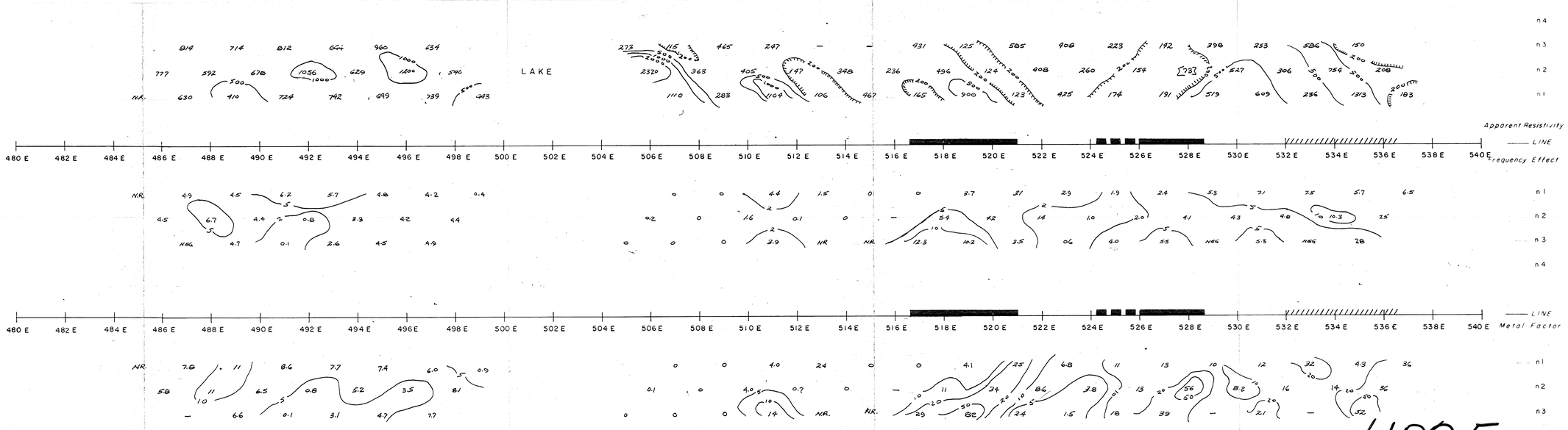
TO ACCOMPANY A REPORT BY W.J. HILL

PROJECT GEOLOGIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1" = 200'
DATE NOV. 10, 1972

IMPERIAL OIL LIMITED

INDUCED POLARIZATION SURVEY (NTS 92P9)

Project FRIENDLY LAKE Line No. 520 N



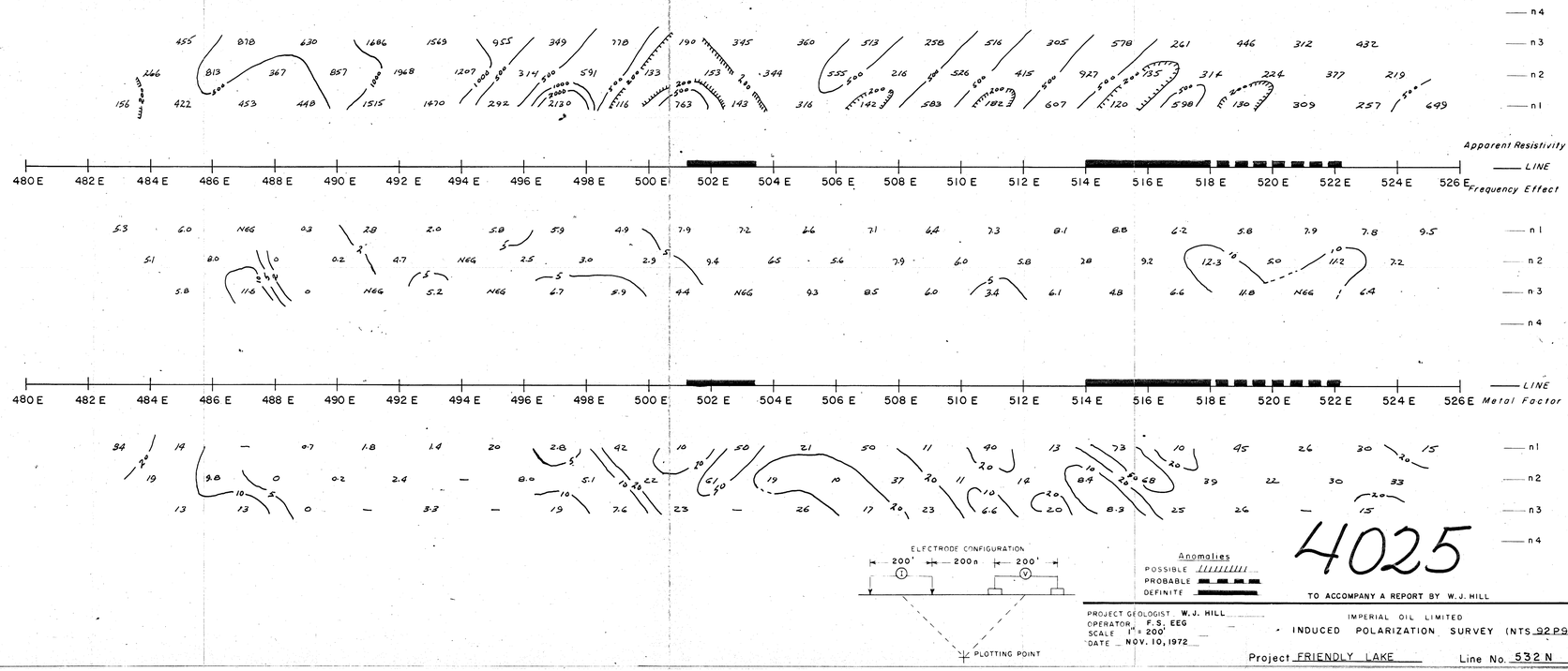
4025

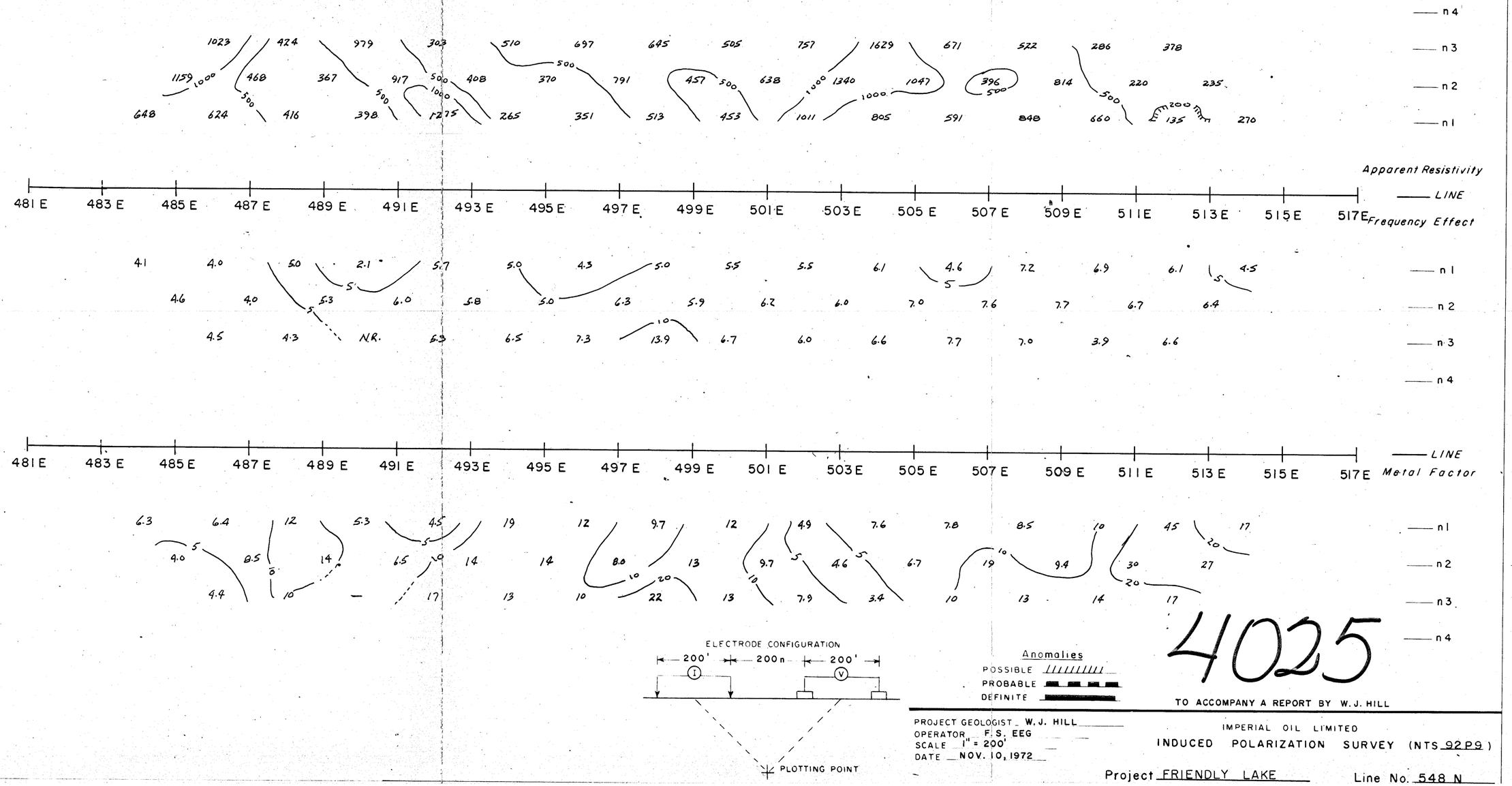
TO ACCOMPANY A REPORT BY W.J. HILL

PROJECT GEOPHYSICIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1"=200'
DATE NOV. 14, 1972

IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)

Project FRIENDLY LAKE Line No. 524 N


n4
n3
n2
n1
Apparent Resistivity
LINE
480 E 482 E 484 E 486 E 488 E 490 E 492 E 494 E 496 E 498 E 500 E 502 E 504 E 506 E 508 E 510 E 512 E 514 E 516 E 518 E 520 E 522 E 524 E 526 E
Frequency Effect
LINE
Metal Factor
ELECTRODE CONFIGURATION
200' 200m 200'
PLOTTING POINT
Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W.J. HILL
PROJECT GEOLOGIST W.J. HILL
OPERATOR F.S. EEG
SCALE 1" = 200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
Project FRIENDLY LAKE
Line No. 532 N


n4
n3
n2
n1
1023 424 979 303 510 697 645 505 757 1629 671 522 286 378
1159 468 367 917 408 370 791 457 638 1340 1047 396 814 220 235
648 624 416 398 1275 265 351 513 453 1011 805 591 848 660 270 200 135
1000
500
Apparent Resistivity
LINE
Frequency Effect
481 E 483 E 485 E 487 E 489 E 491 E 493 E 495 E 497 E 499 E 501 E 503 E 505 E 507 E 509 E 511 E 513 E 515 E 517E
4.1 4.0 5.0 2.1 5.7 5.0 4.3 5.0 5.5 5.5 6.1 4.6 7.2 6.9 6.1 4.5
4.6 4.0 5.3 6.0 5.8 5.0 6.3 5.9 6.2 6.0 7.0 7.6 7.7 6.7 6.4
4.5 4.3 N.R. 5.3 6.5 7.3 13.9 6.7 6.0 6.6 7.7 7.0 3.9 6.6
n1
n2
n3
n4
LINE
Metal Factor
481E 483 E 485 E 487 E 489 E 491 E 493 E 495 E 497 E 499 E 501 E 503E 505 E 507 E 509 E 511 E 513 E 515 E 517E
6.3 6.4 12 5.3 4.5 19 12 9.7 12 4.9 7.6 7.8 8.5 10 45 17
4.0 8.5 14 6.5 14 14 8.0 13 9.7 4.6 6.7 19 9.4 30 27
4.4 10 17 13 10 22 13 7.9 3.4 10 13 14 17
n1
n2
n3
n4
ELECTRODE CONFIGURATION
200' 200m 200'
I
V
PLOTTING POINT
Anomalies
POSSIBLE
PROBABLE
DEFINITE
4025
TO ACCOMPANY A REPORT BY W. J. HILL
PROJECT GEOLOGIST W. J. HILL
OPERATOR F. S. EEG
SCALE 1" = 200'
DATE NOV. 10, 1972
IMPERIAL OIL LIMITED
INDUCED POLARIZATION SURVEY (NTS 92P9)
Project FRIENDLY LAKE
Line No. 548 N

CERTIFICATE OF QUALIFICATIONS

I, William J. Hill, of 11040 Brae Rd. S.W., Calgary, Alberta, certify and declare that I am a graduate of the University of Manitoba with a B.Sc. degree in Geology (1967). I have taken a further two (2) years of geology and related courses at the University of Manitoba, which is credited to an M.A. degree, still to be completed.

I am an associate member of the Geological Association of Canada and a member of the Canadian Institute of Mining and Metallurgy.

I have been employed by Imperial Oil Ltd., 500 - 6th Ave. S.W., Calgary, Alberta, since 1969. While working with this company, I have conducted and directed exploration programs, property examinations and property evaluations in southeastern and central British Columbia.

Prior to working with Imperial Oil Ltd., I have helped conduct exploration programs in geological mapping, geochemical prospecting and geophysics with a variety of companies in British Columbia, Saskatchewan and New Brunswick.

SIGNED: William J. Hill

William J. Hill

WITNESSED: Edward L. Pekar

Edward L. Pekar
Chief Geologist, Western Canada

GEOCHEMICAL LABORATORY TECHNIQUES

AND

GEOCHEMICAL RESULTS

Procedure for Analysis of
Soil and Silt Samples

C. J. Collyer
November 1/72

1. Hang the bagged sample in the drying oven at 50°C over night or longer if necessary.
2. Sieve the sample to -80 mesh and retain this sieved portion in a plastic vial bearing the sample number.
3. Prepare a cross reference sheet to identify the samples during analysis.
4. Weigh 0.50 ± 0.01 gm of the sieved sample and transfer to a Coors crucible, cover and place in its designated location on a stainless steel tray.
5. Place tray of samples in the muffle oven and ash at 500°C for 45 minutes (Approximately 1½ hours is required to reach 500°C.)
6. Remove samples from the muffle oven after it is cooled down and transfer to test tubes for digestion.
7. (A) All Elements Except Molybdenum
   I. Add 5.0 ml of HNO_3 and stir.
   II. Transfer to heating blocks and digest for 1½ hours at 100°C.
   III. Transfer to plastic racks; cool and dilute with 10 ml of deionized water.

   (B) Molybdenum Plus Other Elements Requested at Same Time
   I. Add 1.5 ml HNO_3 and stir.
   II. Transfer to heating blocks and digest for ½ hours at 100°C.
   III. Add 0.5 ml HCl, and leave in heating blocks for an additional 2 hours.
   IV. Transfer to plastic racks, cool and dilute with 7.8 ml of 1500 ppm Na_2SO_4 in deionized water.
8. Leave samples sit over night, stir and analyze on the atomic absorption spectrophotometer for the elements requested after they are settled and the liquid clear.
9. Set scale expansion on the instrument at 1 ppm standard equal 34 on 7 A digestic and 1 ppm equal 20 on the 7B digestion.

92-F

IMPERIAL OIL LIMITED – PRODUCING DEPARTMENT

PRODUCTION RESEARCH & TECHNICAL SERVICE LABORATORY

MEMORANDUM

July 24, 1972

Mr. D.B. Layer
Mineral Exploration Department
Calgary

Attention: Mr. W.J. Hill

Re : Geochemical Mineral Analysis

The attached Laboratory Report No. L-40472 covers the geochemical analysis for copper, molybdenum, lead and silver of soil samples Nos. 6002-77 to 6002-231, 6002-1062 to 6002-1273 from the Canim area received on July 6, 1972.

G.G. MAINLAND

/cr

C.J. Collyer

Xerox copy

Mr. W.J. Hill
Box 36
Little Fort
British Columbia

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-40472
Analysis Requested by W. J. Hill
Type of Extraction Nitric - Hydrochloric
Method of Analysis Atomic Absorption
Analyst C.J. Collyer & A. Rossel
Date July 21 /72
Remarks:

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-77	50	0	12	0.3	6002-104	26	0	16	0.9
78	57	2	12	0.3	105	40	0	14	1.0
79	68	4	24	0.7	106	66	1	16	1.0
80	81	5	12	0.9	107	34	1	16	0.8
81	43	0	8	0.5	108	28	4	20	0.8
82	66	0	15	1.2	109	44	4	21	1.6
83	72	1	10	0.4	110	56	4	16	1.1
84	38	3	13	0.7	111	77	3	19	0.8
85	58	3	11	0.8					
86	91	1	16	0.8	6002-116	340	1	29	1.7
87	35	0	13	0.8					
88	80	1	11	1.1	6002-118	300	2	99	1.3
89	97	1	11	0.5	119	250	2	21	1.2
90	44	0	21	0.6	120	122	0	19	0.7
91	18	0	12	0.9	121	161	1	25	1.7
92	62	2	15	0.6	122	74	5	17	1.2
93	24	4	18	0.7	123	440	3	18	0.8
94	51	3	11	0.6	124	55	3	15	0.4
95	30	2	13	0.8					
					6002-126	Missing			
6002-96	Missing				127	Missing			
97	35	0	14	0.8					
98	46	3	16	0.9	6002-129	98	3	17	1.1
99	69	0	21	1.1					
100	50	1	44	0.8	6002-132	60	1	21	1.0
101	37	9	112	2.0					
102	60	0	13	0.8	6002-136	54	1	20	0.8
103	42	1	15	0.8					

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-139	66	2	18	0.8	6002-180	55	2	22	0.6
6002-141	162	21	22	1.2	6002-183	90	1	23	0.6
142	224	32	100	2.1	184	91	2	26	0.8
143	180	7	49	0.9	185	106	1	28	23
144	missing								
145	60	10	109	1.1	6002-187	88	4	29	0.7
146	101	11	98	0.9	188	125	1	39	1.4
147	missing				189	37	1	20	0.7
148		"			190	57	1	26	0.6
149		"							
150		"			6002-192	62	0	22	0.5
151	88	2	119	0.8	193	46	1	39	0.8
					194	10	1	12	0.5
6002-153	65	1	67	1.0	195	53	2	27	0.4
6002-155	80	1	59	0.8	6002-199	240	5	26	0.9
156	108	1	133	0.9	200	154	1	26	0.9
157	228	8	40	1.3	201	59	1	19	0.6
158	172	3	38	0.9	202	132	9	29	0.9
6002-160	710	2	630	2.6	6002-204	101	1	14	0.4
					205	91	0	18	0.4
6002-164	108	138	161	1.0					
165	171	27	111	1.2	6002-216	82	1	14	0.9
166	missing				217	96	0	16	0.5
167		"			218	89	0	12	0.4
168		"			219	47	1	18	1.0
169		"			220	116	2	21	1.1
170		"			221	50	3	23	1.0
171	117	6	20	1.5	222	101	1	22	0.9
172	62	2	25	0.9	223	105	1	18	0.5
					224	68	1	14	0.2
6002-174	62	1	24	0.7	225	92	1	22	0.6
					226	34	1	19	0.4
6002-177	30	0	18	0.6	227	22	1	23	0.5
178	113	1	28	1.0					
					6002-230	11	3	16	0.4

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-231	47	4	20	1.9	6002-1095	27	1	12	0.5
6002-1062	164	2	14	0.3	6002-1097	108	1	15	0.8
1063	310	1	17	0.7	1098	157	0	15	0.8
1064	92	1	14	0.2					
1065	58	1	15	0.5	6002-1100	44	1	11	0.7
1066	40	1	16	0.6	1101	67	0	16	0.6
1067	12	1	11	0.3					
1068	50	2	11	0.4	6002-1104	44	1	17	1.2
1069	3	0	3	0.0	1105	50	0	16	0.4
1070	40	2	16	0.6	1106	51	1	17	0.8
1071	25	1	20	0.4	1107	76	1	12	0.7
1072	50	0	14	0.5	1108	150	0	14	0.8
1072A	198	1	31	1.0	1109	77	0	28	1.2
1073	39	2	21	0.4					
1073A	32	0	22	0.7	6002-1112	41	1	14	0.7
1074	20	1	21	0.7	1113	180	2	28	1.6
1074A	40	0	20	0.3	1114	30	1	14	0.9
1075	48	1	18	0.3	1115	86	2	14	0.7
6002-1077	Missing				6002-1117	182	1	21	0.9
1077A	51	0	53	1.1					
					6002-1120	110	1	23	0.7
6002-1079	Missing								
1079A	79	1	12	0.3	6002-1123	64	1	20	0.6
1080	52	1	13	0.5	1124	25	1	15	0.6
1081	45	1	16	0.5	1125	53	4	19	0.9
1082	25	0	15	0.3	1126	63	1	21	0.7
1083	80	2	18	0.7	1127	154	11	30	1.2
6002-1085	79	3	20	1.3	6002-1129	79	4	25	0.9
6002-1087	76	1	16	0.6	6002-1131	108	3	24	1.0
1088	40	1	18	0.7	1132	114	7	21	1.3
1089	50	0	19	1.3	1133	55	1	19	0.8
1090	27	2	12	0.5					
					6002-1135	87	2	17	0.9
6002-1092	51	1	14	0.7	1136	94	3	25	0.9

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-1138	73	0	17	0.8	6002-1180	24	2	17	0.9
6002-1141	39	3	17	1.4	6002-1182	21	2	17	1.0
1142	33	5	19	0.7	1183	missing			
					1184	46	2	22	1.1
6002-1146	44	4	19	0.8	1185	45	3	22	1.0
					1186	68	2	20	1.0
6002-1148	42	4	19	0.9	1187	178	1	28	1.5
					1188	202	5	24	1.3
6002-1150	82	2	31	2.7					
					6002-1190	305	7	22	1.9
6002-1152	50	3	15	1.2	1191	142	3	29	1.2
					1192	91	4	23	1.0
6002-1154	41	4	19	1.5	1193	57	2	20	0.9
1155	27	1	19	1.0	1194	54	5	18	1.0
1156	77	3	17	1.1	1195	58	2	13	1.0
1157	61	3	23	2.3	1196	126	5	29	2.0
1158	58	5	19	1.1	1197	110	6	60	1.6
1159	50	3	21	1.4					
1160	48	2	19	1.6	6002-1200	107	2	32	2.0
1161	36	4	18	1.4					
1162	70	2	23	2.0	6002-1205	97	5	19	0.6
1163	29	5	26	1.1	1206	65	3	15	0.6
1164	21	1	18	1.0	1207	154	3	17	0.7
1165	43	2	19	1.0	1208	106	3	16	0.8
1166	60	1	21	1.0	1209	61	5	15	0.7
1167	31	2	16	0.9	1210	53	5	19	0.7
1168	32	3	16	1.1	1211	70	5	16	0.6
1169	42	1	17	0.9	1212	141	5	15	0.6
1170	118	2	25	2.2	1213	168	8	20	0.8
					1214	265	6	15	0.8
6002-1172	61	2	22	1.0	1215	109	2	21	0.5
					1216	117	3	17	0.5
6002-1174	28	1	21	0.8					
1175	33	3	17	0.8	6002-1219	132	2	23	1.0
1176	45	1	18	0.9	1220	116	2	15	0.8
					1221	44	3	23	0.9
6002-1178	33	3	18	0.9	1222	78	2	23	0.6

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-1223	192	3	28	0.8	6002-1261	18	1	14	0.8
1224	132	5	25	0.8	1262	77	0	13	0.5
					1263	60	2	18	1.0
6002-1226	107	5	23	0.8	1264	32	6	21	0.4
1227	60	3	20	0.4	1265	59	0	17	0.4
1228	76	4	20	0.3					
1229	102	4	24	0.8	6002-1267	38	5	23	0.6
1230	46	2	20	0.9	1268	50	7	17	0.4
1231	131	3	21	0.6	1269	256	16	24	1.1
1232	74	4	19	0.6	1270	48	1	19	0.6
1233	50	4	20	0.4	1271	96	4	17	0.7
					1272	106	3	21	0.9
6002-1235	54	5	16	0.4	1273	28	3	18	0.5
6002-1237	77	4	17	0.5					
1238	52	4	19	0.3					
1239	76	3	20	0.3					
1240	79	4	18	0.5					
1241	76	3	20	0.5					
1242	38	2	15	0.4					
1243	61	3	22	0.8					
1244	49	2	16	0.7					
1245	46	3	17	0.5					
1246	72	2	14	0.6					
1247	16	4	17	0.7					
1248	30	3	15	0.6					
1249	43	1	12	0.5					
1250	80	3	20	0.6					
1251	31	1	12	0.4					
1252	30	1	9	0.3					
1253	38	1	11	0.6					
1254	20	1	12	0.8					
1255	38	1	8	0.4					
1256	38	1	10	0.2					
1257	28	0	10	0.3					
1258	40	0	13	0.4					
1259	73	1	12	0.5					
1260	91	0	16	0.8					

IMPERIAL OIL LIMITED — PRODUCING DEPARTMENT

PRODUCTION RESEARCH & TECHNICAL SERVICE LABORATORY

MEMORANDUM

August 3, 1972

Mr. D. B. Layer
Mineral Exploration Dept.
Imperial Oil Limited
500-6th Avenue
Calgary, Alberta

Attention: Mr. W. J. Hill

Re: Geochemical Mineral Analysis

The attached Laboratory Report No. L-43672 covers the geochemical analysis for copper, molybdenum, lead, silver of soil samples No. 6002-206 to 269, 6002-1274 to 1382 and 6002-2000 to 2119 from Canim received July 26, 1972.

G. G. MAINLAND

By: C. J. Collyer

CJC:mo
Attach.

cc: Mr. W. J. Hill
P. O. Box 36
Little Fort, B. C.

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-43672 Analysis Requested by W. J. Hill

Type of Extraction Nitric - Hydrochloric Method of Analysis Atomic Absorption

Analyst C.J. Collyer & A. Rossel Date Aug. 2/72

Remarks: There were 2 samples marked 2107 - which we called A & B. One of these may be 2106 - which was missing.

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-206	53	1	14	0.6	6002-257	34	12	18	1.9
207	250	1	12	0.7	258	41	4	15	0.6
208	68	1	12	0.7	259	114	31	21	1.5
209	46	1	15	0.6	260	125	21	32	1.3
210	202	1	15	0.8	261	169	35	45	1.3
211	107	1	15	0.7	262	53	11	26	0.7
212	53	2	11	0.5	263	33	7	22	0.8
213	86	1	12	0.6	264	83	14	32	1.2
214	200	3	23	1.2	265	37	3	19	0.7
215	75	1	15	0.7	266	49	5	25	0.8
					267	81	11	29	1.1
6002-232	73	3	137	0.9	268	150	8	36	1.3
233	197	3	185	1.3	269	91	8	28	1.0
234	192	8	246	1.0					
					6002-1274	196	6	15	1.0
6002-236	66	3	87	0.7	1275	43	4	19	0.8
					1276	104	6	101	0.9
6002-238	43	6	42	0.9	1277	43	5	65	1.1
239	94	5	23	0.8	1278	80	3	105	0.9
6002-241	70	5	24	0.8	6002-1280	530	3	460	1.1
242	129	14	38	0.7					
243	142	4	26	0.8	6002-1282	141	4	122	0.8
					1283	150	3	96	1.0
6002-246	405	6	74	1.3	1284	390	2	76	0.9
247	317	7	341	2.1	1285	117	4	181	0.7
248	84	2	16	0.5					
					6002-1287	51	6	41	0.6

Laboratory Report No. L-43672 (continued.....)

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-1288	75	5	17	0.4
6002-1290	62	4	39	0.7
6002-1292	49	3	38	0.3
1293	75	2	44	0.4
6002-1294	37	1	28	0.3
1295	42	3	35	0.4
1296	53	2	29	0.4
1297	85	1	40	0.5
6002-1299	51	2	34	0.4
6002-1301	74	2	48	0.5
6002-1303	62	3	34	0.4
1304	91	2	20	1.1
6002-1306	64	3	19	0.8
6002-1308	75	2	19	1.3
1309	26	2	16	0.4
1310	41	7	16	0.7
1311	92	3	18	1.6
1312	50	6	20	1.1
1313	20	3	14	0.8
1314	58	3	18	0.7
6002-1316	111	4	18	2.1
6002-1318	50	2	16	0.6
6002-1321	42	3	15	0.9
1522	100	4	19	1.5
6002-1325	18	3	14	0.6
6002-1327	50	3	20	1.7

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-1328	38	3	18	1.0
1329	157	4	22	2.6
1330	46	4	23	1.2
1331	61	5	18	0.5
1332	71	7	18	1.0
6002-1334	25	3	15	0.6
6002-1337	55	3	16	0.4
6002-1340	84	9	14	0.7
6002-1343	15	1	18	0.6
6002-1347	50	1	21	0.7
1348	28	1	16	0.7
1349	55	2	19	1.6
1350	79	3	19	1.5
6002-1352	51	2	19	0.9
6002-1356	44	2	15	0.9
6002-1359	73	4	16	0.7
6002-1362	54	2	15	0.7
6002-1366	29	3	14	0.6
1367	35	1	15	0.6
6002-1369	75	3	18	1.2
1370	47	1	18	0.8
6002-1372	52	1	18	1.0
1373	17	1	15	0.9
1374	78	2	21	0.7
1375	140	3	19	1.9

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-1377	95	2	18	0.9	6002-2032	66	4	19	0.9
					2033	37	4	19	0.8
6002-1379	31	1	14	0.6	2034	35	3	16	0.9
					2035	39	4	14	0.4
6002-1382	47	2	18	1.0	2036	58	4	16	1.0
					2037	13	3	7	0.6
6002-2000	66	3	15	1.1	2038	23	2	16	0.7
2001	60	2	14	0.9	2039	30	3	14	0.7
2002	66	5	9	1.0	2040	21	3	15	0.6
2003	81	4	18	1.2	2041	76	3	21	1.7
2004	66	3	15	0.7	2042	82	4	16	2.8
2005	32	1	14	0.6	2043	38	6	15	0.7
2006	50	4	18	0.5	2044	23	6	12	1.2
2007	79	2	15	0.8	2045	30	8	15	0.6
2008	11	0	10	0.2	2046	20	4	13	1.2
2009	23	1	16	1.5	2047	31	2	12	0.8
2010	84	5	18	1.1	2048	Insufficient sample			
2011	30	3	14	0.7	2049	24	4	13	1.0
2012	40	0	11	1.4	2050	30	2	13	1.8
2013	44	1	15	0.9	2051	30	6	1[illegible]	1.3
2014	132	4	22	1.6	2052	60	2	15	3.1
2015	125	2	16	1.2	2053	36	3	16	1.0
2016	60	4	21	1.4	2054	35	4	15	0.8
2017	27	2	18	0.9	2055	38	1	22	1.7
2018	28	2	14	0.7	2056	50	3	19	0.9
→ 2019	Insufficient sample				2057	41	6	16	2.2
2020	54	5	23	1.4	2058	69	8	24	1.2
2021	108	4	24	1.6	2059	17	4	15	0.9
2022	50	3	10	0.8	2060	45	0	16	0.9
2023	46	4	14	0.9	2061	23	1	14	0.6
2024	112	8	20	1.2	2062	19	0	14	0.9
2025	99	4	20	1.0	2063	63	6	21	1.6
2026	95	6	22	0.7	2064	80	5	21	1.0
2027	73	4	21	1.6	2065	27	5	15	1.0
2028	21	6	15	0.6	2066	29	2	15	1.4
2029	31	3	21	1.0	2067	23	0	13	0.5
2030	19	3	18	0.8	2068	58	1	17	0.9
2031	36	2	13	0.7	2069	99	0	15	1.8

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-2070	19	0	12	0.7
2071	34	1	16	1.1
2072	117	26	21	1.2
2073	62	5	15	1.1
2074	31	1	13	1.1
2075	16	0	10	0.8
2076	70	0	18	0.8
2077	79	1	19	1.9
2078	34	1	18	1.3
2079	22	1	14	1.4
2080	40	3	15	1.6
2081	31	0	14	0.8
2082	73	1	16	1.6
2083	Insufficient sample			
2084	63	0	19	1.7
2085	20	0	14	0.9
2086	28	0	16	.06
2087	33	0	18	0.6
2088	76	0	17	1.0
2089	75	1	31	1.8
2090	32	1	17	0.9
2091	40	0	18	2.0
2092	Insufficient sample			
2093				
2094	38	0	13	1.0
2095	44	1	17	0.9
2096	58	0	16	1.4
2097	24	0	16	0.8
2098	10	0	10	0.9
2099	67	1	19	1.0
2100	21	1	11	0.4
2101	26	0	14	0.6
2102	28	0	14	0.7
2103	57	1	18	0.9
2104	80	1	21	1.4
2105	90	1	17	1.4
6002-2107A	52	1	14	0.7
6002-2107B	66	2	17	1.8
2108	59	2	16	1.3
2109	46	1	15	1.4
2110	46	1	15	1.6
2111	38	1	14	1.1
2112	45	0	12	0.8
2113	8	0	8	0.8
2114	34	2	15	1.8
2115	44	1	18	1.2
2116	44	3	13	1.7
2117	37	2	16	1.6
2118	35	2	16	1.2
2119	34	1	19	1.0

92-F7

IMPERIAL OIL LIMITED - PRODUCING DEPARTMENT

PRODUCTION RESEARCH & TECHNICAL SERVICE LABORATORY

MEMORANDUM

August 18, 1972

Mr. D. B. Layer
Mineral Exploration Dept.
Imperial Oil Limited
500-6th Avenue
Calgary, Alberta

Attention: Mr. W. J. Hill

Re: Geochemical Mineral Analysis

The attached Laboratory Report No. L-47172 covers the geochemical analysis for copper, molybdenum, lead and silver of soil samples No. 6002-2120 to 2233, 6002-2235 to 2250, 6002-2300 to 2417 from Canim received August 9, 1972.

G. G. MAINLAND

by C. J. Collyer
C. J. Collyer

CJC:mo
Attach.

cc: Mr. W. J. Hill
P. O. Box 36
Little Fort, B. C.

5469A

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-47172 Analysis Requested by W. J. Hill

Type of Extraction Nitric-Hydrochloric Method of Analysis Atomic Absorption

Analyst C. J. Collyer & A. Rossel Date Aug 17 /72

Remarks: Sample marked No 2010 was changed to No 2210 which was missing.

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2120	56	2	23	1.2	6002-2148	41	2	11	0.9
2121	40	0	21	4.0	2149	20	1	14	0.6
2122	14	1	13	0.9	2150	19	1	11	0.7
2123	69	2	23	0.9	2151	61	1	20	0.7
2124	147	3	28	4.9	2152	68	0	18	0.7
2125	37	2	18	1.3	2153	86	1	21	1.6
2126	36	4	19	1.3	2154	51	1	16	1.0
2127	26	1	14	0.6	2155	53	1	18	1.3
2128	19	2	15	0.9	2156	17	1	12	0.7
2129	22	3	15	0.9	2157	16	1	11	0.6
2130	30	4	18	1.0	2158	130	3	25	4.9
2131	25	2	16	0.9	2159	77	4	17	1.9
2132	52	1	21	1.6	2160	65	2	16	1.2
2133	13	1	10	0.6	2161	36	2	16	1.0
2134	72	3	20	1.6	2162	40	1	16	1.2
2135	27	3	16	0.6	2163	46	3	16	1.5
2136	34	1	15	0.9	2164	26	1	15	0.6
2137	16	0	13	0.4	2165	10	1	12	0.3
2138	31	2	16	0.7	2166	38	1	21	0.9
2139	20	3	20	0.9	2167	28	3	14	1.0
2140	20	3	15	0.6	2168	71	1	19	1.3
2141	41	1	18	0.7	2169	47	2	15	1.0
2142	20	1	16	0.9	2170	325	3	22	3.9
2143	50	5	17	0.9	2171	Missing			
2144	12	1	11	0.6	2172	43	1	19	1.5
2145	13	1	19	0.9	2173	49	1	14	0.9
2146	68	1	19	0.9	2174	49	2	18	1.2
2147	33	1	16	0.6	2175	25	2	15	0.9

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-2176	30	2	17	0.9
2177	34	1	17	1.0
2178	34	1	13	0.9
2179	37	5	30	1.3
2180	44	6	15	1.0
2181	25	4	15	0.9
2182	40	5	14	1.2
2183	10	1	10	0.0
2184	39	3	19	1.5
2185	22	1	13	1.2
2186	38	1	18	1.2
2187	28	2	14	1.0
2188	17	1	15	0.6
2189	34	1	13	1.0
2190	26	2	12	0.9
2191	27	1	13	1.0
2192	35	2	19	0.7
2193	15	4	39	1.6
2194	50	7	104	1.2
2195	18	1	16	1.0
2196	28	2	14	0.9
2197	42	6	15	1.2
2198	29	3	12	0.7
2199	35	1	11	0.9
2200	60	2	10	0.6
2201	26	2	14	1.0
2202	39	3	10	0.7
2203	57	2	10	0.9
2204	42	3	10	0.9
2205	38	1	9	0.9
2206	21	0	10	0.7
2207	630	14	16	1.3
2208	26	4	12	0.7
2209	48	10	13	1.3
2210	26	0	13	0.9
2211	28	0	16	0.9
2212	170	6	54	1.2
2213	80	3	27	1.2

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-2214	30	1	12	1.8
2215	48	2	17	0.9
2216	69	4	23	0.9
2217	770	9	29	1.5
2218	132	14	24	1.0
2219	26	2	11	0.9
2220	33	4	20	1.3
2221	68	6	56	0.9
2222	34	2	22	0.7
2223	49	3	20	0.6
2224	14	2	28	0.4
2225	71	6	27	1.0
2226	37	8	15	1.6
2227	67	2	16	1.2
2228	70	1	15	1.2
2229	64	3	15	1.5
2230	57	1	17	1.3
2231	13	1	13	0.7
2232	106	4	26	1.5
2233	30	1	15	1.0
6002-2235	34	0	15	0.9
2236	11	0	11	0.4
2237	10	1	14	0.4
2238	28	1	15	1.0
2239	41	0	16	0.6
2240	44	2	16	0.9
2241	29	1	12	0.9
2242	27	1	14	1.0
2243	70	2	17	1.2
2244	28	2	16	1.0
2245	29	2	16	1.0
2246	40	1	14	1.0
2247	36	1	16	0.9
2248	20	1	13	0.7
2249	47	1	14	0.9
2250	82	1	16	1.3

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-47172 Analysis Requested by W.J. Hill

Type of Extraction Nitric-Hydrochloric Method of Analysis Atomic Absorption

Analyst _____ Date Aug. 17/72

Remarks: Sample marked No. 2010 was changed to 2210 which was missing

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2300	51	2	29	1.2	6002-2328	90	4	26	1.0
2301	48	2	16	0.9	2329	100	7	23	1.9
2302	40	1	25	0.9	2330	30	2	14	0.9
2303	65	2	17	0.9	2331	54	3	17	1.3
2304	45	1	16	1.0	2332	21	2	10	0.7
2305	39	1	18	0.6	2333	65	4	16	0.9
2306	63	2	14	0.6	2334	100	7	14	0.9
2307	62	1	17	1.0	2335	39	2	14	1.0
2308	122	1	22	1.8	2336	80	2	28	1.0
2309	90	1	20	1.2	2337	99	1	26	1.8
2310	31	1	15	0.1	2338	44	1	15	0.7
2311	54	3	20	0.9	2339	50	1	20	0.7
2312	35	2	15	0.9	2340	70	1	19	0.9
2313	79	2	20	1.5	2341	54	0	14	0.6
2314	76	3	23	1.3	2342	145	3	34	1.5
2315	120	2	16	2.2	2343	92	1	20	1.0
2316	50	4	20	1.0	2344	188	1	21	1.3
2317	20	2	15	0.6	2345	117	1	23	1.2
2318	20	2	16	0.6	2346	70	1	20	0.7
2319	118	5	24	1.6	2347	70	2	26	0.7
2320	89	2	15	0.7	2348	243	1	27	2.7
2321	46	1	20	1.2	2349	34	1	13	0.6
2322	78	4	21	0.9	2350	71	1	18	0.7
2323	161	2	34	1.8	2351	42	0	21	0.9
2324	46	2	21	1.0	2352	87	1	27	1.2
2325	32	1	19	1.2	2353	34	0	27	1.0
2326	19	1	13	0.4	2354	49	2	18	0.6
2327	80	6	290	1.6	2355	78	2	18	1.2

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2356	95	2	20	1.6	6002-2394	94	1	25	2.1
2357	39	1	16	1.0	2395	109	1	26	3.0
2358	37	1	17	1.0	2396	145	1	19	3.0
2359	30	2	15	0.9	2397	33	1	20	1.2
2360	52	4	17	0.9	2398	96	2	27	1.8
2361	64	1	12	0.9	2399	49	1	18	1.3
2362	52	2	49	1.2	2400	43	0	15	1.3
2363	65	2	19	0.7	2401	86	1	15	1.5
2364	39	2	18	0.9	2402	46	1	14	1.2
2365	60	5	20	0.9	2403	34	1	15	1.3
2366	96	2	16	1.5	2404	210	3	28	4.9
2367	68	3	17	1.2	2405	41	1	14	1.5
2368	61	2	16	1.3	2406	30	0	13	1.3
2369	82	3	16	1.3	2407	46	2	13	1.3
2370	28	3	12	1.0	2408	102	1	16	1.2
2371	376	132	54	2.7	2409	86	2	15	1.6
2372	83	5	21	0.9	2410	75	2	21	2.1
2373	85	5	18	0.9	2411	44	1	16	1.6
2374	110	4	40	1.2	2412	29	1	19	1.9
2375	57	3	23	0.3	2413	57	1	16	1.6
2376	99	3	23	1.6	2414	43	2	13	2.1
2377	55	2	21	0.6	2415	56	2	14	1.9
2378	45	4	10	0.4	2416	196	4	23	4.6
2379	70	1	14	0.6	2417	46	1	11	1.5
2380	69	2	16	0.6					
2381	39	1	11	0.3					
2382	53	1	11	0.4					
2383	67	2	13	0.4					
2384	40	1	12	0.6					
2385	40	1	12	0.4					
2386	48	1	17	0.4					
2387	94	1	18	0.7					
2388	112	2	23	0.7					
2389	79	1	17	0.9					
2390	53	1	17	1.0					
2391	57	0	7	1.5					
2392	464	1	24	5.0					
2393	98	1	17	1.2					

IMPERIAL OIL LIMITED – PRODUCING DEPARTMENT

PRODUCTION RESEARCH & TECHNICAL SERVICE LABORATORY

MEMORANDUM

August 30, 1972

Mr. D. B. Layer
Mineral Exploration Dept.
Imperial Oil Limited
500-6th Avenue
Calgary, Alberta

Attention: Mr. W. J. Hill

Re: Geochemical Mineral Analysis

The attached Laboratory Report No. L-49872 covers the geochemical analysis for copper, molybdenum, lead, silver of soil samples No. 6002 - 2418 to 2526, 6002 - 2528 to 2800 from Canim received August 15th and August 21, 1972.

G. G. MAINLAND

By: C. J. Collyer
C. J. Collyer

CJC/gmj
Attach.

cc: Mr. W. J. Hill
P.O. Box 36
Little Fort, B.C.

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-49872 Analysis Requested by W. J. Hill

Type of Extraction Nitric-Hydrochloric Method of Analysis Atomic Absorption

Analyst C.J. Collyer & A. Rossel Date Aug 29/72

Remarks:

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2418	27	2	13	0.7	6002-2446	24	4	12	1.0
2419	38	1	12	0.7	2447	75	6	27	1.0
2420	19	8	13	1.1	2448	67	6	23	0.8
2421	88	6	11	0.8	2449	90	35	30	0.9
2422	58	14	15	0.5	2450	101	13	16	0.8
2423	62	9	10	0.5	2451	71	9	31	0.9
2424	118	11	14	0.9	2452	58	5	42	1.1
2425	72	3	12	0.6	2453	107	4	92	1.1
2426	50	2	13	0.8	2454	72	12	68	1.0
2427	84	3	15	0.7	2455	27	2	26	0.9
2428	65	3	14	0.8	2456	187	5	324	1.1
2429	70	5	16	0.9	2457	34	3	21	0.8
2430	26	2	10	0.6	2458	46	7	34	0.7
2431	28	1	10	0.8	2459	72	10	26	0.9
2432	49	3	17	0.9	2460	71	8	19	1.0
2433	19	1	19	0.6	2461	37	4	16	0.9
2434	72	5	21	0.9	2462	67	17	21	1.0
2435	33	3	11	0.6	2463	27	1	15	0.9
2436	75	42	33	1.1	2464	147	13	56	0.8
2437	42	1	13	0.8	2465	45	10	35	0.8
2438	104	6	16	0.9	2466	250	10	36	1.3
2439	86	4	11	0.8	2467	135	3	49	1.3
2440	52	1	11	0.9	2468	65	3	20	0.8
2441	42	11	13	0.9	2469	47	8	20	0.6
2442	43	2	11	0.6	2470	32	3	25	0.9
2443	74	10	14	0.8	2471	90	8	24	0.9
2444	34	6	16	1.1	2472	90	8	54	1.0
2445	50	7	19	1.1	2473	40	6	20	0.8

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2474	48	15	28	1.0	6002-2512	14	1	33	0.4
2475	54	6	21	0.8	2513	71	3	26	0.8
2476	77	10	15	0.8	2514	50	1	26	0.6
2477	46	4	19	0.7	2515	37	1	30	0.7
2478	72	8	14	0.6	2516	26	0	14	0.8
2479	36	5	11	0.7	2517	32	2	20	1.0
2480	97	5	10	0.4	2518	120	3	16	0.7
2481	46	5	14	0.6	2519	67	1	25	0.7
2482	26	1	14	1.0	2520	53	1	23	0.6
2483	62	4	13	0.9	2521	60	2	34	0.6
2484	37	3	14	0.9	2522	43	1	31	0.6
2485	27	7	15	0.8	2523	11	1	23	0.5
2486	106	14	13	0.9	2524	4	0	8	0.2
2487	50	3	14	0.7	2525	35	2	21	1.1
2488	36	14	19	1.2	2526	14	3	18	0.4
2489	34	7	14	0.6					
2490	110	7	18	1.0	6002-2528	28	2	28	0.6
2491	27	8	20	1.0	2529	102	2	31	0.9
2492	60	7	14	1.1	2530	60	3	26	0.6
2493	119	1	8	0.8	2531	68	2	17	0.6
2494	47	2	13	0.9	2532	39	2	26	0.6
2495	26	3	26	0.7	2533	34	4	29	0.7
2496	74	3	50	0.9	2534	30	3	22	0.6
2497	15	6	12	0.4	2535	30	1	19	0.4
2498	122	7	24	0.4	2536	26	2	26	1.0
2499	190	10	51	2.0	2537	21	4	34	0.7
2500	51	2	25	0.5	2538	47	7	75	0.9
2501	81	3	26	0.7	2539	122	3	45	0.4
2502	60	1	35	0.6	2540	25	2	15	0.3
2503	53	1	28	0.6	2541	10	4	16	0.4
2504	109	1	21	0.7	2542	71	4	17	0.7
2505	68	1	24	0.6	2543	60	5	10	0.7
2506	32	2	25	0.5	2544	99	6	34	0.6
2507	47	4	31	0.4	2545	620	11	39	1.4
2508	55	9	29	0.6	2546	520	14	74	1.3
2509	90	12	19	0.7	2547	124	6	46	0.7
2510	111	6	32	0.7	2548	51	5	20	0.7
2511	71	2	32	0.6	2549	105	6	21	0.7

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2550	79	6	28	0.8	6002-2588	415	4	14	1.4
2551	750	8	91	1.2	2589	281	8	26	1.1
2552	105	4	31	0.6	2590	219	3	20	0.9
2553	106	7	42	0.7	2591	180	3	23	0.8
2554	145	10	42	1.1	2592	130	4	30	0.7
2555	218	13	31	1.3	2593	710	16	32	3.7
2556	131	8	52	1.3	2594	265	6	26	1.2
2557	147	7	53	1.0	2595	80	6	16	0.9
2558	161	4	202	0.9	2596	83	7	15	0.7
2559	186	7	67	1.4	2597	30	3	17	0.7
2560	48	3	53	0.8					
2561	9800	2	114	2.0					
2562	68	2	44	0.5					
2563	111	2	109	0.9					
2564	171	4	172	1.0					
2565	98	1	22	0.6					
2566	105	4	20	0.6					
2567	380	7	30	1.8					
2568	80	3	28	1.0					
2569	54	5	29	0.9					
2570	65	5	38	0.7					
2571	102	4	30	0.7					
2572	580	10	28	1.0					
2573	44	5	27	0.9					
2574	86	5	27	0.8					
2575	176	6	32	0.8					
2576	420	5	32	0.8					
2577	540	13	33	1.4					
2578	510	9	105	0.8					
2579	100	3	16	0.9					
2580	54	3	13	1.1					
2581	50	1	21	0.8					
2582	206	2	48	0.9					
2583	215	1	68	1.0					
2584	34	1	19	0.6					
2585	87	2	34	0.8					
2586	82	2	51	1.1					
2587	350	8	384	3.1					

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-49872 Analysis Requested by W. J. Hill

Type of Extraction Nitric-Hydrochloric Method of Analysis Atomic Absorption

Analyst C.J. Collyer + A. Rossel Date Aug 29 /72

Remarks:

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2598	74	5	33	0.7	6002-2626	72	0	24	1.2
2599	227	1	10	0.8	2627	600	3	52	4.5
2600	190	3	14	0.9	2628	47	1	21	0.9
2601	178	4	12	0.8	2629	205	3	24	2.2
2602	75	3	12	0.8	2630	184	2	30	1.7
2603	90	2	16	0.6	2631	78	4	29	1.2
2604	104	3	17	0.9	2632	8	4	7	0.2
2605	102	5	21	1.0	2633	148	3	29	2.3
2606	57	2	20	0.8	2634	180	2	26	2.1
2607	27	3	13	0.3	2635	104	2	33	1.7
2608	166	6	21	0.9	2636	118	1	27	1.4
2609	99	3	20	0.9	2637	87	1	26	1.2
2610	126	8	24	1.2	2638	430	2	32	1.7
2611	136	4	19	1.0	2639	69	2	34	1.2
2612	75	4	18	1.1	2640	52	4	18	1.2
2613	43	3	15	1.1	2641	59	0	16	1.1
2614	46	5	31	1.1	2642	82	4	24	1.2
2615	86	2	16	1.1	2643	88	6	24	1.1
2616	43	2	14	1.0	2644	51	2	19	1.0
2617	51	3	21	1.0	2645	27	3	20	1.0
2618	74	2	27	1.1	2646	48	1	18	0.9
2619	171	4	26	1.7	2647	76	6	21	1.4
2620	63	1	31	1.0	2648	155	3	28	2.3
2621	174	2	35	1.9	2649	34	1	21	0.9
2622	75	1	21	1.0	2650	70	2	49	1.6
2623	127	1	24	1.2	2651	60	2	29	1.0
2624	27	1	21	0.9	2652	92	1	29	1.4
2625	174	1	33	2.2	2653	14	3	17	0.6

54698

Laboratory Report No. L-49872 (continued. . . .)

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag					
6002-2654	46	1	23	1.6					
2655	40	2	22	1.6					
2656	87	3	23	1.1					
2657	63	4	28	1.5					
2658	205	6	46	1.8					
2659	72	1	20	1.4					
2660	110	27	55	1.5					
2661	20	1	23	1.1					
2662	13	0	17	0.8					
2663	Missing								
2664	50	2	26	1.6					
2665	74	2	28	2.0					
2666	30	4	113	1.2					
2667	30	1	17	1.0					
2668	38	3	19	0.9					
2669	55	2	17	0.9					

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-49872 Analysis Requested by W. J. Hill

Type of Extraction Nitric-Hydrochloric Method of Analysis Atomic Absorption

Analyst C. J. Collyer + A. Rossel Date Aug 29/72

Remarks:

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2670	36	2	21	0.8	6002-2698	31	1	21	1.8
2671	83	2	22	1.0	2699	20	2	21	1.0
2672	133	3	26	1.1	2700	67	1	24	1.2
2673	82	3	29	1.5	2701	77	3	26	1.3
2674	50	7	23	0.9	2702	85	3	31	1.5
2675	22	2	23	1.0	2703	64	2	26	1.6
2676	37	3	21	0.9	2704	41	1	21	1.2
2677	47	2	22	1.0	2705	78	4	31	1.6
2678	36	2	20	1.3	2706	760	9	31	5.3
2679	198	1	27	2.5	2707	159	3	33	1.7
2680	106	3	36	1.2	2708	70	3	28	1.3
2681	79	2	28	1.3	2709	79	3	30	1.0
2682	84	3	27	1.0	2710	40	1	21	1.3
2683	43	2	22	1.0	2711	415	8	60	4.9
2684	166	2	28	2.1	2712	53	2	29	1.0
2685	28	1	19	0.9	2713	55	2	30	1.0
2686	44	3	19	1.0	2714	95	2	48	2.2
2687	41	1	27	1.2	2715	240	4	55	2.8
2688	48	0	15	1.7	2716	61	3	40	1.4
2689	67	0	22	1.1	2717	91	1	30	1.0
2690	68	2	17	0.8	2718	49	1	29	1.5
2691	52	2	20	0.8	2719	75	3	36	1.4
2692	31	1	19	1.0	2720	75	3	31	1.5
2693	41	1	21	1.0	2721	57	1	32	1.6
2694	68	3	26	0.9	2722	46	1	30	1.2
2695	228	6	17	1.7	2723	61	2	33	1.4
2696	64	2	23	1.3	2724	79	2	26	2.1
2697	67	2	23	1.5	2725	90	1	27	1.5

54698

Laboratory Report No. L-47872 (continued. . . .)

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-2726	61	3	40	1.9	6002-2764	30	3	26	0.9
2727	105	3	39	1.2	2765	44	4	27	0.9
2728	58	0	33	1.3	2766	39	3	25	0.8
2729	173	1	22	1.9	2767	34	2	21	0.9
2730	45	0	20	1.1	2768	70	8	30	0.9
2731	67	6	30	1.5	2769	45	2	59	0.9
2732	26	1	22	1.1	2770	32	3	23	0.4
2733	49	0	35	1.5	2771	23	1	15	0.9
2734	220	1	20	2.6	2772	41	1	21	0.7
2735	60	1	21	0.9	2773	76	5	21	0.6
2736	40	1	22	1.1	2774	62	9	25	0.9
2737	37	6	19	0.9	2775	140	2	23	1.0
2738	74	1	20	1.1	2776	240	1	51	1.2
2739	77	1	21	1.0	2777	27	0	16	0.4
2740	120	12	33	1.6	2778	25	1	17	0.5
2741	79	2	23	1.5	2779	15	1	8	0.3
2742	24	1	17	0.6	2780	21	0	13	0.9
2743	27	1	20	0.8	2781	40	1	13	0.6
2744	26	0	30	0.4	2782	83	0	16	0.6
2745	36	1	17	0.8	2783	193	3	18	1.0
2746	37	4	33	0.8	2784	28	0	14	0.8
2747	50	3	26	0.9	2785	35	27	14	0.7
2748	65	6	24	1.1	2786	48	6	15	0.9
2749	49	3	21	1.0	2787	50	2	15	0.8
2750	59	4	17	1.0	2788	560	9	28	1.3
2751	30	4	17	1.1	2789	45	1	17	0.7
2752	27	3	17	0.8	2790	32	2	16	1.0
2753	278	8	21	26	2791	71	5	23	1.1
2754	64	5	26	2.3	2792	46	3	20	0.9
2755	130	2	43	1.3	2793	19	0	16	0.5
2756	61	4	38	1.6	2794	15	1	16	0.8
2757	67	2	36	1.4	2795	121	27	24	1.0
2758	91	2	50	1.3	2796	36	1	18	0.6
2759	90	1	54	1.4	2797	170	15	114	1.1
2760	77	2	61	1.3	2798	35	1	18	1.1
2761	40	3	36	2.9	2799	25	0	16	0.7
2762	14	1	14	0.6	2800	31	0	18	1.1
2763	53	2	20	0.6					

IMPERIAL OIL LIMITED – PRODUCING DEPARTMENT

PRODUCTION RESEARCH & TECHNICAL SERVICE LABORATORY

MEMORANDUM

September 28, 1972

Mr. D. B. Layer
Mineral Exploration Dept.
Imperial Oil Limited
500-6th Avenue S. W.
Calgary, Alberta

Attention: W. J. Hill

Re: Geochemical Mineral Analysis

The attached Laboratory Report No. L-54172 covers the geochemical analysis for copper, molybdenum, lead, silver of soil samples No. 6002-298 to 323, 6002-1422 to 1463, 6002-2801 to 2883, 6002-3000 to 3045 from FR. L. received September 18, 1972.

G. G. MAINLAND

By: Agnes J. Rossel (A. Rossel)
For: C. J. Collyer

CJC:mo
Attach.

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-54172 Analysis Requested by G. Norman

Type of Extraction Nitric - Hydrochloric Method of Analysis Atomic Absorption

Analyst A. Rossel Date Sept 26 /72

Remarks: Sample nos. 321 and 1444 were duplicated which are called A and B.

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-298	38	3	15	1.9	6002-1422	85	9	13	0.5
299	21	3	26	1.1	1423	25	3	17	0.5
300	87	6	18	1.1	1424	21	1	15	0.7
301	51	9	45	1.0	1425	30	5	17	0.9
302	58	11	44	1.5	1426	41	4	30	0.7
303	34	9	35	1.3	1427	missing			
304	57	5	18	1.5	1428	50	2	17	0.7
305	31	5	24	2.5	1429	75	1	21	0.9
306	70	6	30	1.1	1430	43	8	41	0.7
307	35	4	24	0.8	1431	70	14	32	0.9
308	36	3	23	1.2	1432	176	11	109	0.7
309	48	1	12	0.8	1433	73	6	20	0.9
310	48	5	15	1.6	1434	30	3	22	0.7
311	28	3	12	0.8	1435	59	8	22	0.9
312	54	3	12	0.7	1436	75	15	16	0.8
313	53	1	10	1.0	1437	34	2	17	0.3
314	138	6	33	1.3	1438	108	4	16	0.9
315	49	4	38	1.5	1939	47	2	18	0.6
316	53	9	60	1.8	1440	198	6	11	0.5
317	31	3	20	1.3	1441	45	1	11	0.6
318	38	1	20	1.2	1442	30	1	12	0.8
319	34	1	24	0.7	1443	139	4	15	0.6
320	40	1	14	1.9	1444A	73	3	22	0.7
321A	32	20	40	1.2	1444B	81	2	19	1.2
321B	20	2	15	0.8	1445	59	6	31	1.0
322	missing				1446	7	1	8	0.2
323	34	7	18	1.1	1447	32	2	15	0.5
					1448	45	2	13	0.7

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-1449	62	2	17	1.4	6002-2823	20	1	12	0.5
1450	17	1	13	0.4	2824	171	3	114	1.0
1451	13	1	11	0.5	2825	44	2	20	0.9
1452	147	3	21	1.3	2826	95	14	37	1.2
1453	11	1	11	0.5	2827	36	6	16	1.4
1454	15	1	10	0.6	2828	152	7	28	1.5
1455	24	1	9	0.4	2829	340	11	33	1.1
1456	22	1	10	0.5	2830	800	42	28	1.9
1457	18	1	13	0.7	2831	125	12	16	1.0
1458	10	1	9	0.3	2832	116	6	13	0.9
1459	61	1	12	0.6	2833	23	1	11	0.7
1460	27	1	9	0.4	2834	64	3	13	0.7
1461	39	1	12	0.8	2835	27	1	10	0.8
1462	31	3	12	0.6	2836	114	3	12	0.7
1463	176	11	23	2.7	2837	27	4	12	0.7
					2838	83	6	19	0.6
6002-2801	23	1	12	0.5	2839	29	2	13	0.6
2802	51	1	12	0.6	2840	74	6	35	0.6
2803	35	1	11	0.6	2841	74	7	41	1.1
2804	72	3	17	0.8	2842	290	11	49	1.6
2805	240	9	25	1.2	2843	240	15	109	1.1
2806	77	2	17	0.6	2844	220	5	115	1.1
2807	112	4	45	0.7	2845	90	16	135	1.5
2808	57	3	13	0.6	2846	47	11	36	1.3
2809	41	3	16	0.8	2847	145	9	46	1.4
2810	70	4	20	0.6	2848	81	4	33	1.2
2811	65	2	16	0.7	2849	2200	16	46	2.1
2812	74	4	21	0.9	2850	137	7	34	0.8
2813	78	7	32	0.8	2851	41	8	24	0.8
2814	24	2	16	0.7	2852	128	13	119	0.9
2815	37	2	17	0.7	2853	122	3	35	0.9
2816	99	2	23	0.5	2854	210	4	25	1.1
2817	68	10	20	1.0	2855	75	4	15	0.8
2818	88	2	28	0.9	2856	73	3	13	0.6
2819	126	5	14	0.8	2857	53	2	16	0.9
2820	32	2	18	0.8	2858	56	1	15	0.8
2821	31	2	17	1.0	2859	78	2	19	0.9
2822	127	9	11	0.7	2860	78	3	17	1.4

5469B

Laboratory Report No. L-5417-2 (continued. . . .)

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-2861	77	3	18	1.2
2862	190	3	19	2.2
2863	46	1	15	0.8
2864	67	2	14	0.8
2865	47	2	20	0.8
2866	62	2	18	1.0
2867	70	1	15	0.7
2868	39	1	13	0.4
2869	78	1	13	0.7
2870	39	1	19	1.2
2871	18	1	13	0.3
2872	23	1	14	0.7
2873	102	3	18	1.1
2874	39	1	14	0.7
2875	35	1	13	0.5
2876	53	3	17	0.8
2877	99	5	17	0.9
2878	29	4	12	0.4
2879	23	2	15	0.6
2880	106	4	17	0.8
2881	73	3	18	1.7
2882	36	3	11	1.0
2883	60	10	17	0.7
6002-3000	21	6	12	0.6
3001	32	7	14	0.8
3002	65	7	18	0.9
3003	64	4	13	0.8
3004	57	5	12	0.7
3005	40	6	13	0.6
3006	37	6	16	1.6
3007	76	6	21	1.4
3008	53	8	23	1.6
3009	74	7	19	1.0
3010	149	7	19	1.1
3011	194	14	41	0.9
3012	177	6	24	0.9
3013	198	29	17	1.1

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-3014	48	1	17	0.2
3015	61	2	22	0.8
3016	46	1	16	0.5
3017	27	2	15	0.4
3018	15	1	16	0.3
3019	26	1	19	0.5
3020	11	1	15	0.5
3021	59	1	14	0.7
3022	29	2	14	0.4
3023	51	3	16	0.7
3024	36	3	15	0.5
3025	51	2	18	0.6
3026	103	3	21	1.0
3027	42	1	13	0.9
3028	29	1	13	0.4
3029	52	2	15	1.0
3030	69	1	15	0.9
3031	87	2	15	0.9
3032	63	3	17	1.0
3033	13	2	10	0.3
3034	46	1	13	0.7
3035	53	2	13	1.0
3036	16	1	10	0.7
3037	35	1	11	0.8
3038	10	1	8	0.4
3039	29	7	11	0.9
3040	96	7	21	1.6
3041	27	8	22	1.7
3042	13	1	16	0.6
3043	70	10	32	1.0
3044	26	2	17	0.9
3045	26	1	10	0.8

IMPERIAL OIL LIMITED – PRODUCING DEPARTMENT

PRODUCTION RESEARCH & TECHNICAL SERVICE LABORATORY

MEMORANDUM

October 25, 1972

Mr. D.B. Layer
Mineral Exploration Dept.
Imperial Oil Limited
500-6th Avenue S. W.
Calgary, Alberta

Attention: Mr. W. Hill

Re: Geochemical Mineral Analysis

The attached Laboratory Report No. L-68172 covers the geochemical analysis for copper, molybdenum, lead and silver of soil samples No. 6002-4000 to 6002-4432 from Canim received October 17, 1972.

G. G. MAINLAND

By: C. J. Collyer

CJC:mo
Attach.

5469A

IMPERIAL OIL LIMITED
PRODUCTION RESEARCH AND TECHNICAL SERVICE LABORATORY
CALGARY, ALBERTA

GEOCHEMICAL LABORATORY REPORT

Laboratory Report No. L-68172 Analysis Requested by W. Hill

Type of Extraction Nitric- Hydrochloric Method of Analysis Atomic Absorption

Analyst A. Rossel Date Oct 24 /72

Remarks:

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-4000	41	6	16	0.8	6002-4028	31	2	13	0.4
4001	20	3	13	0.8	4029	107	3	11	1.0
4002	42	3	13	0.5	4030	49	3	13	1.0
4003	35	2	12	0.6	4031	217	2	17	1.1
4004	52	1	15	0.9	4032	217	2	18	1.1
4005	49	1	11	0.2	4033	52	1	11	0.6
4006	63	1	15	0.5	4034	19	0	12	0.5
4007	23	1	12	0.4	4035	27	4	9	0.5
4008	35	1	13	0.3	4036	48	1	14	0.6
4009	19	1	11	0.4	4037	33	1	10	0.3
4010	155	4	14	1.4	4038	21	1	12	0.4
4011	120	4	16	1.3	4039	15	2	11	0.4
4012	51	1	15	0.6	4040	15	3	13	0.6
4013	20	1	13	0.4	4041	55	3	10	0.7
4014	34	1	16	0.8	4042	30	1	10	0.4
4015	25	2	12	0.5	4043	63	3	10	0.5
4016	129	4	16	1.5	4044	55	3	14	0.7
4017	108	5	10	1.1	4045	83	6	17	0.7
4018	106	1	10	0.6	4046	34	3	10	0.3
4019	35	1	13	0.6	4047	86	2	11	0.8
4020	23	1	12	0.5	4048	30	1	10	0.4
4021	27	1	11	0.3	4049	18	1	9	0.4
4022	97	2	17	0.8	4050	9	1	4	0.2
4023	49	2	14	0.4	4051	27	1	9	0.3
4024	38	2	13	0.4	4052	36	5	12	0.4
4025	34	1	12	0.4	4053	44	3	13	0.5
4026	68	2	14	0.6	4054	21	6	9	0.3
4027	151	3	16	1.2	4055	57	10	10	1.5

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-4056	25	2	7	0.4
4057	54	2	11	0.6
4058	68	3	13	0.8
4059	20	1	10	0.1
4060	39	1	10	0.3
4061	62	2	11	0.5
4062	66	1	11	0.4
4063	41	3	11	0.5
4064	81	1	13	0.3
4065	64	2	14	0.4
4066	54	1	10	0.3
4067	37	1	11	0.5
4068	32	1	11	0.5
4069	39	4	13	0.6
4070	10	0	7	0.2
4071	35	7	19	0.9
4072	85	6	14	0.8
4073	40	1	8	0.4
4074	29	1	8	0.4
4075	31	1	9	0.5
4076	25	1	9	0.2
4077	41	2	15	0.8
4078	18	3	20	0.6
4079	215	137	85	1.2
4080	450	46	76	1.4
4081	63	20	25	0.9
4082	89	23	32	1.1
4083	148	70	52	0.7
4084	77	11	26	0.6
4085	29	7	18	0.4
4086	151	41	44	1.0
4087	36	22	18	0.5
4088	80	18	21	0.7
4089	33	5	14	0.4
4090	48	10	10	0.8
4091	34	5	7	0.7
4092	32	4	16	0.4
4093	15	3	16	0.6

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-4094	73	9	16	0.6
4095	37	10	44	0.5
4096	30	9	11	0.3
4097	42	5	9	0.5
4098	22	8	12	0.7
4099	7	1	4	0.2
4100	27	5	9	0.9
4101	35	1	11	0.5
4102	44	2	10	0.5
4103	234	7	23	2.1
4104	78	12	55	1.4
4105	33	3	21	0.9
4106	44	6	18	0.3
4107	64	4	14	0.5
4108	169	8	30	1.1
4109	94	23	24	0.7
4110	223	28	28	1.3
4111	86	8	26	0.6
4112	63	5	18	0.4
4113	74	4	17	0.4
4114	101	6	26	0.2
4115	93	8	34	0.4
4116	92	7	41	0.4
4117	132	11	39	0.9
4118	106	4	79	0.6
4119	250	7	84	1.8
4120	240	6	80	1.7
4121	209	10	58	1.4
4122	230	12	73	1.4
4123	109	12	46	0.8
4124	63	5	33	0.4
4125	67	8	78	1.1
4126	130	8	53	0.7
4127	112	12	33	0.6
4128	107	9	45	1.3
4129	110	4	31	0.7
4130	196	6	34	0.6
4131	31	2	18	0.2

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Laboratory Report No. L-68172 (continued.....)

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-4132	64	10	26	0.5
4133	43	5	21	0.4
4134	193	9	15	0.9
4135	202	13	15	1.0
4136	68	7	20	0.8
4137	73	6	24	0.8
4138	33	6	26	0.6
4139	17	4	19	0.3
4140	26	3	19	0.6
4141	42	3	13	0.7
4142	31	4	11	0.7
4143	18	2	8	0.4
4144	56	4	10	0.6
4145	28	3	8	0.4
4146	44	8	13	0.6
4147	43	5	19	0.9
4148	132	17	30	0.7
4149	33	5	20	0.7
4150	31	5	19	0.7
4151	25	5	12	0.4
4152	23	3	11	0.9
4153	182	15	21	1.2
4154	81	10	29	1.3
4155	72	12	42	0.7
4156	80	7	30	0.7
4157	108	9	51	0.7
4158	220	14	43	1.3
4159	520	31	39	1.6
4160	170	13	43	0.5
4161	112	13	34	0.8
4162	330	21	44	1.3
4163	108	12	43	0.6
4164	114	16	46	0.6
4165	116	14	69	0.6
4166	63	11	54	0.7
4167	127	15	480	1.5
4168	43	6	57	0.9
4169	101	12	84	0.9

SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag
6002-4170	110	13	94	0.9
4171	65	6	58	0.5
4172	34	1	34	0.4
4173	91	2	97	0.7
4174	73	3	154	1.4
4175	78	3	93	1.2
4176	70	1	78	0.8
4177	81	3	75	0.8
4178	169	3	250	0.4
4179	49	5	31	0.6
4180	115	15	29	0.7
4181	59	9	47	0.8
4182	67	4	34	0.9
4183	81	18	38	0.5
4184	108	13	30	0.7
4185	131	15	32	0.9
4186	97	9	45	0.6
4187	85	10	45	0.7
4188	340	31	60	0.7
4189	170	20	53	1.1
4190	102	16	39	0.6
4191	60	13	34	1.2
4192	100	20	46	0.8
4193	157	52	55	0.8
4194	85	42	24	1.3
4195	116	37	30	0.9
4196	12	6	18	0.6
4197	30	14	30	1.0
4198	20	3	12	0.4
4199	33	4	14	0.8
4200	15	2	10	0.4
4201	40	5	16	0.5
4202	38	5	15	0.6
4203	66	15	32	0.9
4204	89	21	33	0.7
4205	72	59	32	0.8
4206	18	18	64	0.4
4207	29	28	74	0.4

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Laboratory Report No. L-68172 (continued. . . .)

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-4208	47	16	31	0.5	6002-4246	23	4	37	0.5
4209	44	15	28	0.5	4247	27	7	47	0.4
4210	43	8	23	0.8	4248	88	32	59	0.4
4211	45	7	24	0.7	4249	69	7	56	1.6
4212	300	23	35	1.7	4250	51	11	47	0.5
4213	490	28	89	1.1	4251	83	20	34	1.1
4214	830	22	101	2.2	4252	390	24	19	1.2
4215	360	20	52	1.6	4253	450	23	20	1.3
4216	550	17	57	1.8	4254	23	1	15	0.3
4217	129	15	47	0.5	4255	51	1	11	0.4
4218	185	12	61	0.8	4256	39	16	57	0.6
4219	420	41	33	1.1	4257	32	6	14	0.6
4220	26	2	38	0.7	4258	64	9	46	0.8
4221	31	2	28	0.9	4259	30	5	26	0.9
4222	31	1	29	0.9	4260	85	6	20	0.6
4223	35	1	63	0.9	4261	139	25	73	0.9
4224	270	9	17	1.7	4262	48	14	48	0.7
4225	380	7	15	1.5	4263	18	4	21	0.5
4226	34	2	61	0.9	4264	85	25	61	0.7
4227	142	14	88	0.5	4265	15	5	34	0.3
4228	141	10	50	0.7	4266	42	6	19	0.3
4229	73	8	24	0.7	4267	222	9	94	0.6
4230	85	8	25	0.5	4268	400	5	720	1.0
4231	127	36	34	0.6	4269	209	2	51	0.9
4232	82	7	42	0.6	4270	53	1	30	0.8
4233	300	26	73	1.3	4271	78	1	39	0.6
4234	23	1	23	0.6	4272	124	3	25	0.3
4235	230	17	19	0.8	4273	60	2	26	0.6
4236	310	16	24	1.1	4274	27	3	14	0.3
4237	85	7	44	0.8	4275	65	3	28	0.3
4238	123	11	45	0.8	4276	51	4	31	0.4
4239	56	9	54	0.5	4277	57	3	22	0.3
4240	23	6	32	0.2	4278	116	4	28	0.5
4241	103	9	26	0.3	4279	32	1	22	0.3
4242	51	7	26	0.7	4280	101	4	17	1.2
4243	40	7	25	0.6	4281	185	6	19	1.2
4244	70	10	48	0.4	4282	86	4	32	1.0
4245	41	8	60	0.6	4283	140	5	39	1.2

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-4284	55	1	48	0.6	6002-4322	80	8	14	0.8
4285	29	3	35	1.0	4323	22	2	11	0.7
4286	84	3	48	1.1	4324	65	7	14	0.9
4287	260	4	70	1.4	4325	39	4	18	1.1
4288	108	4	36	1.0	4326	37	5	17	1.0
4289	27	1	36	0.5	4327	48	12	15	1.4
4290	98	11	100	0.8	4328	87	8	17	1.1
4291	33	10	59	0.8	4329	56	7	17	1.3
4292	43	6	75	0.6	4330	21	5	15	0.9
4293	45	9	59	1.0	4331	36	4	18	0.9
4294	127	11	47	1.2	4332	27	5	18	1.1
4295	29	2	22	0.6	4333	58	10	20	1.0
4296	830	16	51	2.1	4334	147	17	32	2.7
4297	85	4	33	1.0	4335	30	8	32	1.3
4298	135	1	56	1.0	4336	17	5	14	0.7
4299	38	8	35	1.4	4337	31	8	12	0.9
4300	580	16	14	1.2	4338	47	14	17	1.6
4301	24	3	13	0.6	4339	11	3	10	0.5
4302	12	1	11	0.4	4340	31	6	11	0.8
4303	67	3	18	1.5	4341	40	8	49	1.0
4304	58	3	19	1.4	4342	57	29	170	0.9
4305	38	3	16	1.0	4343	70	19	61	1.3
4306	96	31	14	1.9	4344	121	16	25	0.9
4307	52	3	17	1.6	4345	36	3	16	0.4
4308	16	2	11	0.6	4346	78	26	44	0.9
4309	70	5	20	1.4	4347	92	17	137	1.0
4310	37	11	10	0.9	4348	18	2	24	0.8
4311	33	3	10	1.0	4349	52	10	66	0.8
4312	44	2	10	1.2	4350	58	6	74	1.1
4313	49	3	16	0.8	4351	45	3	61	0.9
4314	17	2	10	0.8	4352	76	4	33	1.1
4315	127	9	20	1.2	4353	73	3	40	0.6
4316	37	4	14	1.1	4354	38	2	27	0.8
4317	168	9	16	3.0	4355	43	2	40	1.3
4318	76	8	16	0.9	4356	165	9	91	1.0
4319	17	5	16	0.9	4357	29	2	28	0.8
4320	32	10	32	0.9	4358	64	6	26	1.1
4321	56	9	40	0.8	4359	66	4	29	1.0

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Laboratory Report No. L-68172 (continued. . . .)

SAMPLE NO.	ppm METAL				SAMPLE NO.	ppm METAL			
	Cu	Mo	Pb	Ag		Cu	Mo	Pb	Ag
6002-4360	20	1	20	0.4	6002-4398	33	4	15	0.6
4361	98	7	36	1.0	4399	39	5	31	0.8
4362	37	1	41	0.5	4400	91	8	38	1.1
4363	106	5	30	1.3	4401	62	5	21	1.1
4364	132	16	39	1.1	4402	71	4	23	0.8
4365	72	6	26	0.9	4403	48	4	16	1.0
4366	310	33	48	1.6	4404	87	1	10	1.4
4367	101	7	30	1.0	4405	104	4	28	1.2
4368	99	7	31	1.3	4406	144	3	26	1.0
4369	104	7	31	1.3	4407	79	4	26	1.0
4370	125	6	18	3.5	4408	92	4	27	1.2
4371		Missing			4409	460	4	28	1.3
4372	110	7	15	1.0	4410	96	4	27	0.9
4373	25	4	9	0.7	4411	102	3	30	1.2
4374	23	5	10	0.6	4412	17	1	10	0.4
4375	44	6	12	0.8	4413	28	2	21	0.9
4376	17	4	7	0.7	4414	78	2	19	1.2
4377	26	3	12	1.0	4415	11	1	7	0.4
4378	21	3	15	0.6	4416	70	3	19	0.9
4379	44	3	16	2.3	4417	17	2	10	0.6
4380	140	6	17	1.1	4418	105	3	25	1.1
4381	39	6	19	1.3	4419	70	4	20	0.8
4382	31	2	10	0.6	4420	12	1	18	0.5
4383	29	1	10	0.7	4421	47	3	25	1.0
4384	61	6	16	1.3	4422	380	6	27	1.5
4385	43	6	11	0.9	4423	53	6	22	0.9
4386	10	2	10	0.7	4424	81	8	37	1.1
4387	23	7	18	1.4	4425	95	6	23	1.0
4388	17	2	10	0.7	4426	44	3	18	0.8
4389	40	4	32	0.8	4427	39	4	20	0.6
4390	37	3	31	0.8	4428	80	5	17	0.9
4391	31	1	23	0.8	4429	34	3	12	0.9
4392	17	1	14	1.0	4430	41	3	13	0.8
4393	52	8	10	1.2	4431	104	4	20	1.3
4394	33	0	10	1.0	4432	105	3	10	1.3
4395	108	3	57	1.5					
4396	37	3	50	1.2					
4397	58	5	49	0.9					

INDUCED POLARIZATION PROFILES

EXPENDITURES

FRIENDLY LAKE EXPENDITURES

WAGES & SALARIES	$ 19,257.00
GEOCHEMICAL COSTS	4,302.20
LINECUTTING COSTS	2,041.05
GEOPHYSICAL RENTALS	
Magnetometer Survey	298.75
Induced Polarization Survey	2,047.68
DRAFTING COSTS	
Supplies	140.35
Inhouse Drafting of Base Map, Geology Map, Geochemical Maps, Geophysical Profile Maps, and other related material.	1,000.00
SERVICES	
Transportation - Student	407.70
Vehicle Rentals	3,414.69
Groceries	2,593.39
Camp Supplies	554.28
Telephone Rentals	256.94
	$ 36,314.03

Declared before me at the City of Vancouver, in the Province of British Columbia, this 8th day of Nov. 1972. A.D.

within 1. Mil.

A. E. Phillips

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

SUB-MINING RECORDER

WJH/gf
2/11/72

COST BREAKDOWN

GEOCHEMICAL SURVEY

TOTAL COST INCLUDING WAGES = $5,934.20

Claim Group 1

$\frac{248 \text{ samples}}{1144 \text{ Samples}} \times \$5,934.20$ = $ 1,286.43

Claim Group 2

$\frac{274 \text{ samples}}{1144 \text{ samples}} \times \$5,934.20$ = 1,421.29

Claim Group 3

$\frac{273 \text{ samples}}{1144 \text{ samples}} \times \$5,934.20$ = 1,416.11

Claim Group 4

$\frac{349 \text{ samples}}{1144 \text{ samples}} \times \$5,934.20$ = 1,810.33

$ 5,934.16

MAGNETOMETER SURVEY

TOTAL COST INCLUDING WAGES = $1,320.00

Claim Group 1

$\frac{13,400'}{131,800'} \times \$1,320.00$ = $ 134.20

Claim Group 2

$\frac{16,200'}{131,800'} \times \$1,320.00$ = 162.24

Claim Group 3

$\frac{17,400'}{131,800'} \times \$1,320.00$ = 174.26

Claim Group 4

$\frac{84,800'}{131,800'} \times \$1,320.00$ = 848.27

$ 1,318.97

LINECUTTING

Claim Group 1	
$\frac{12,400'}{65,000'}$ x $2,041.05	$ 389.36
Claim Group 2	
$\frac{20,400'}{65,000'}$ x $2,041.05	640.56
Claim Group 3	
$\frac{16,900'}{65,000'}$ x $2,041.05	530.66
Claim Group 4	
$\frac{15,300'}{65,000'}$ x $2,041.05	480.42
	$ 2,041.00

INDUCED POLARIZATION SURVEY

TOTAL COST INCLUDING WAGES = $8,686.83

Claim Group 1	
$\frac{12,206'}{103,752'}$ x $8,686.83	$ 1,021.98
Claim Group 2	
$\frac{26,290'}{103,752'}$ x $8,686.83	2,201.18
Claim Group 3	
$\frac{22,417'}{103,752'}$ x $8,686.83	1,876.90
Claim Group 4	
$\frac{42,838'}{103,752'}$ x $8,686.83	3,586.75
	$ 8,686.81

GEOLOGY SURVEY

TOTAL COSTS INCLUDING WAGES = $7,838.00

Claim Group 1	
$\frac{1}{4}$ x $7,838.00	$ 1,959.50
Claim Group 2	
$\frac{1}{4}$ x $7,838.00	1,959.50
Claim Group 3	
$\frac{1}{4}$ x $7,838.00	1,959.50
Claim Group 4	
$\frac{1}{4}$ x $7,838.00	1,959.50
	$ 7,838.00

SERVICES

TOTAL SERVICES - $9,718.35

Claim Group 1	
$\frac{1}{4}$ x $9,718.35	$ 2,429.59
Claim Group 2	
$\frac{1}{4}$ x $9,718.35	2,429.59
Claim Group 3	
$\frac{1}{4}$ x $9,718.35	2,429.59
Claim Group 4	
$\frac{1}{4}$ x $9,718.35	2,429.59
	$ 9,718.36

120°30'

120°5'

51°35'

506N

524N

428N

556E

584E

608E

L632
L524
L516
L508
L500
L492
L484
L476
L468
L460
L452
L436
L428
L420
L412
L404

LOST LAKE

FRIENDLY LAKE

TA HODLA LAKE

MTN POOYTL

MONTICOLA LAKE

MEADOW LAKE

JIM CREEK

STREAM
WATER BODY
ROAD

24 CLAIM AREA AND NUMBER

SOIL SAMPLE LOCATION AND NUMBER ●1360

GEOCHEMICAL VALUE (PPM) ●60

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4025 M.D. #5

FRIENDLY LAKE PROJECT 92 P/NE
KAMLOOPS M.D.
GEOCHEMICAL MAP
MOLYBDENUM

1000 0 1000 2000
SCALE - FEET

TO ACCOMPANY A REPORT BY W.J. HILL (IMPERIAL OIL LIMITED) DATED

FIGURE 5

120°30'

120°25'

51°35'

FRIENDLY LAKE PROJECT 92 P/NE

KAMLOOPS M.D.

GEOCHEMICAL MAP

SILVER

1000 0 1000 2000

SCALE - FEET

STREAM

WATER BODY

ROAD

24 CLAIM AREA AND NUMBER

SOIL SAMPLE LOCATION AND NUMBER ●1360

GEOCHEMICAL VALUE (PPM) ●60

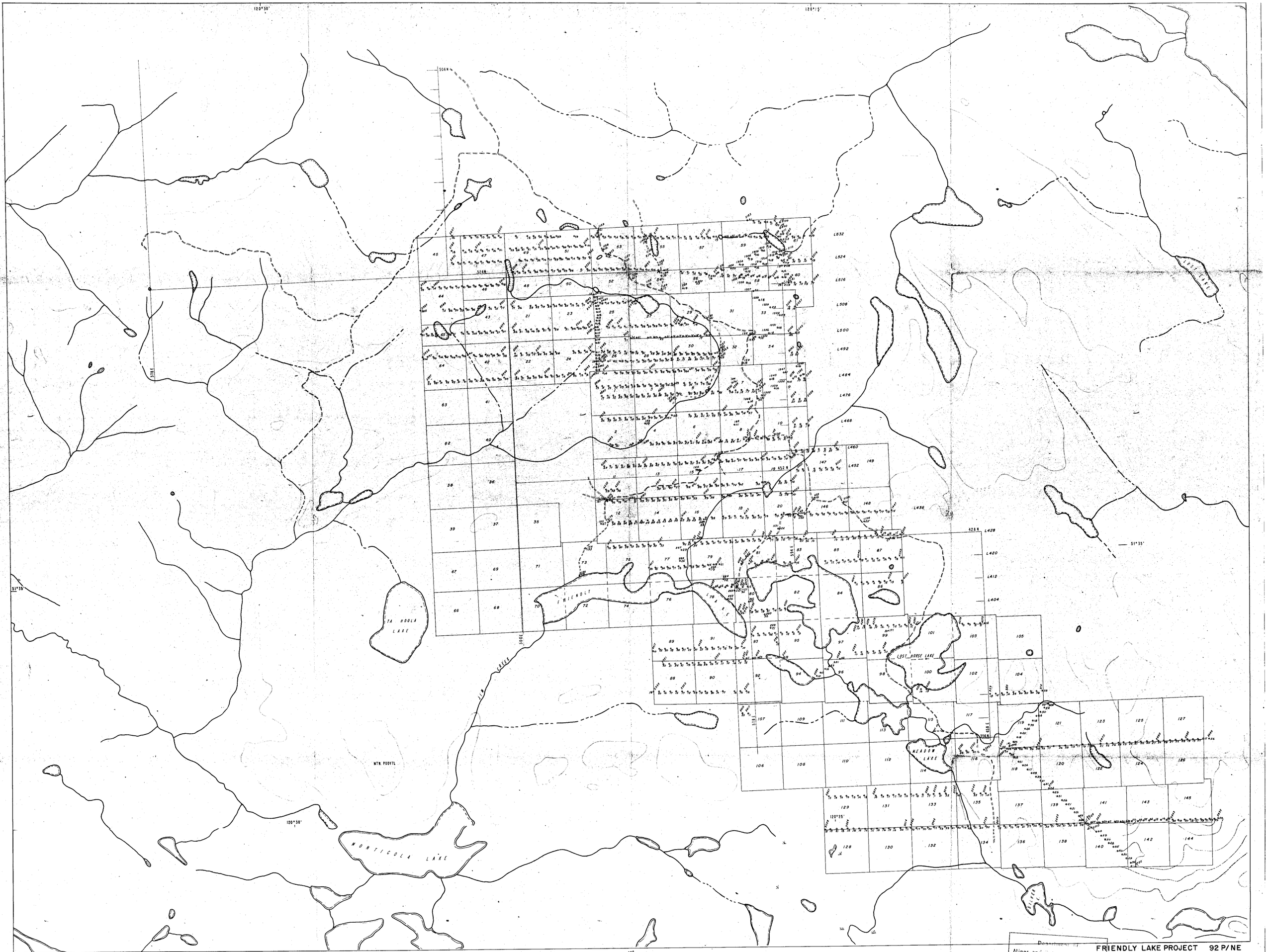
Department of Mines and Petroleum Resources

ASSESSMENT REPORT

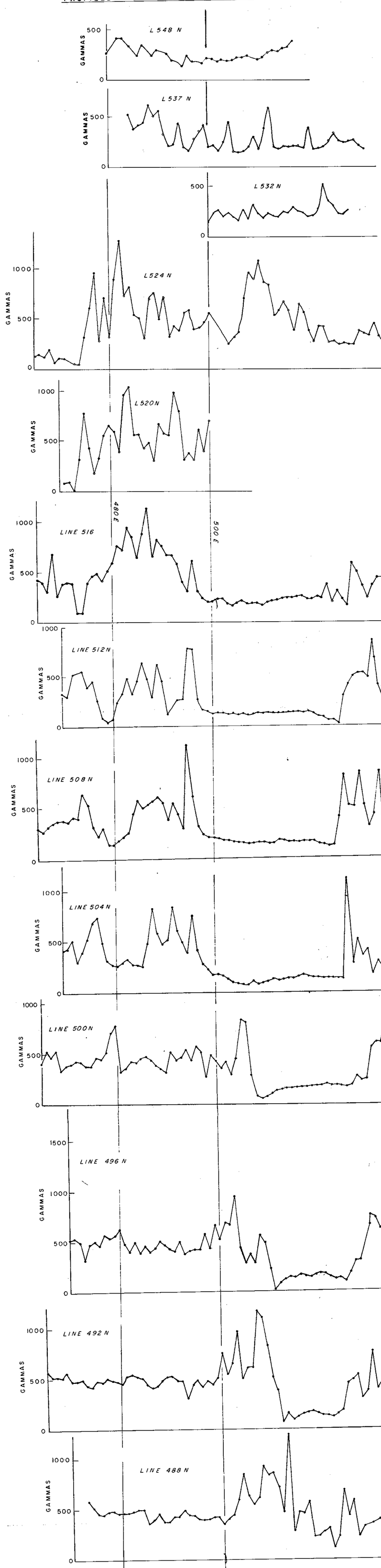
NO. 4035 MAP #7

TO ACCOMPANY A REPORT BY W.J. HILL (IMPERIAL OIL LIMITED) DATED Nov. 1972

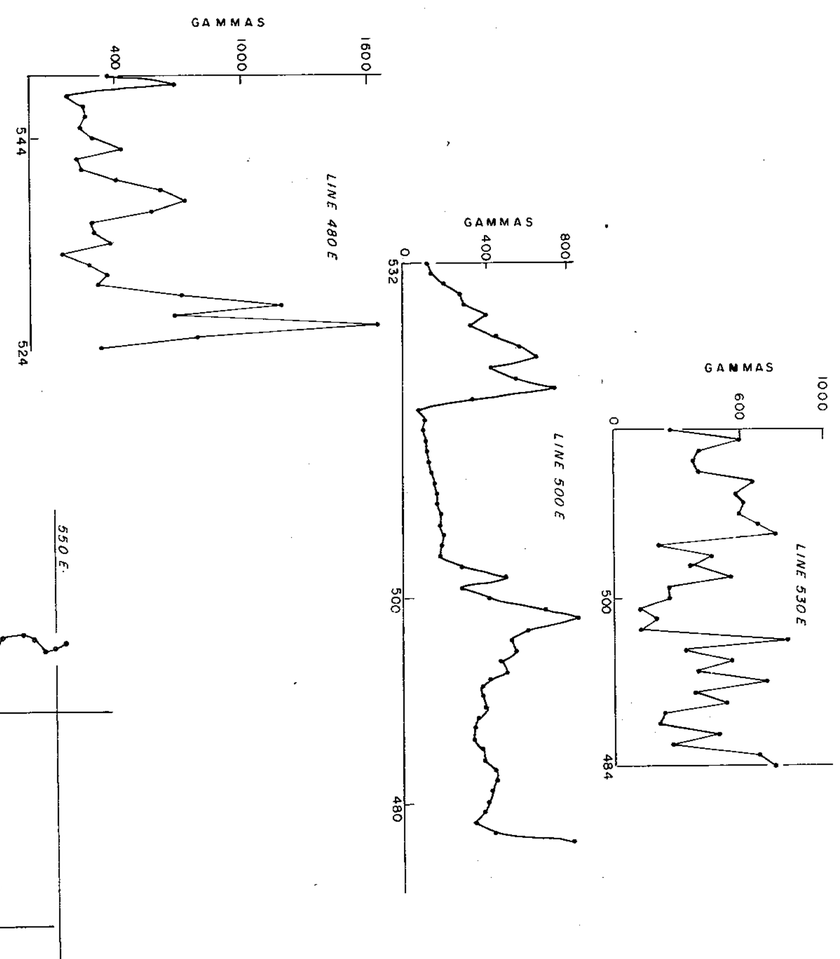
FIGURE 7

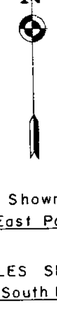

120°30'
120°25'
51°35'
506N
524N
428N
356N
L632
L624
L616
L608
L600
L492
L484
L476
L468
L460
L452
L436
L428
L420
L412
L404
500E
516E
532E
548E
564E
580E
FRIENDLY LAKE
LOST HORSE LAKE
MEADOW LAKE
TA HOOLA LAKE
MONTICOLA LAKE
MTN. PODYTL
ILIM CREEK
SILVER L.
24 CLAIM AREA AND NUMBER
SOIL SAMPLE LOCATION AND NUMBER ●1380
GEOCHEMICAL VALUE (PPM) ●60
STREAM
WATER BODY
ROAD
FRIENDLY LAKE PROJECT 92 P/NE
KAMLOOPS M.D.
GEOCHEMICAL MAP
LEAD
1000 0 1000 2000
SCALE - FEET
FIGURE 6
TO ACCOMPANY A REPORT BY W.J. HILL (IMPERIAL OIL LIMITED) DATED Nov 1972
Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4025 MAP #6

PROFILES FOR WEST-EAST LINES



PROFILES FOR NORTH-SOUTH LINES





Note: WEST-EAST PROFILES Shown In Correct Position To Each Other In West-East Position Only

NORTH-SOUTH PROFILES Shown In Correct Position To Each Other In North-South Position Only

Scales Of Profiles

FRIENDLY LAKE PROJECT (92P/NE)

KAMLOOPS M.D.

MAGNETOMETER PROFILES

To Accompany A Report By W.J. HILL (IMPERIAL OIL LIMITED) Dated Nov 10, 1972

W.J. Hill

FIGURE 9

120°30'

120°25'

51°35'

506N

524N

428N

L632
L624
L616
L608
L600
L592
L584
L576
L568
L460
L452
L436
L428
L420
L412
L404

FRIENDLY CREEK

TA HOOLA LAKE

LOST HORSE LAKE

MEADOW LAKE

MTN. POOTL

MONTICOLA LAKE

LILLOOET RIVER

STREAM
WATER BODY
ROAD

24 CLAIM AREA AND NUMBER

SOIL SAMPLE LOCATION AND NUMBER ◦1260

GEOCHEMICAL VALUE (PPM) ◦60

TO ACCOMPANY A REPORT BY W.J. HILL (IMPERIAL OIL LIMITED) DATED NOV 10/72

W.J. Hill

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4025 MAP #4

FRIENDLY LAKE PROJECT 92 P/NE

KAMLOOPS M.D.
GEOCHEMICAL MAP
COPPER

1000 0 1000 2000
SCALE - FEET

FIGURE 4

GEOLOGICAL LEGEND

- 4 Aplite Dykes
- 3a Greywacke
- 3c Andesitic Augite Agglomerate
- 3b Porphyritic Augite Andesite
- 4 Diorite
- 3 Porphyritic Syenite
- 2a Siliceous Volcanic Breccia
- 2d Siliceous Ash-Chert
- 2c Tuff—Tuff-Wacke
- 2b Breccia
- 2a Argillite-Siltstone
- 1d Andesitic Conglomerate
- 1c Altered Andesite
- 1b Basaltic Andesite
- 1a Massive Andesite

Outcrop
Geological Boundary (Defined, Assumed)
Anticline
Syncline
Bedding
Trench
Fault (Defined, Assumed)
Schistosity

ALTERATION
- (A) LOW SILICIFICATION
- (B) MEDIUM SILICIFICATION
- (C) HIGH SILICIFICATION

STREAM
WATER BODY
ROAD

CLAIM AREA
LINES CUT

4025 M-3

Department of Mines and Petroleum Resources
ASSESSMENT REPORT
NO 4025 MAP #3

FRIENDLY LAKE PROJECT 92 P/NE
KAMLOOPS M.D.
GEOLOGICAL MAP
1000 0 1000 2000
SCALE - FEET

TO ACCOMPANY A REPORT BY W.J. MILL (IMPERIAL OIL LIMITED) DATED Nov 20, 1968

FIGURE 3