CANADIAN OCCIDENTAL PETROLEUM LIMITED

MINERALS DIVISION

GEOLOGY, GEOCHEMISTRY AND GROUND RADIOMETRICS OF THE FRED 1-5 CLAIMS

CLAIM SHEET: 92I/8W

Lat.: 50° 27' N

Long.: 120° 27' W

FRED 1 - Tag # 21767, Units 1-15
FRED 2 - Tag # 21768, Units 1-15
FRED 3 - Tag # 21778, Units 1-10
FRED 4 - Tag # 21779, Units 1-7
FRED 5 - Tag # 21780, Units 1-14

KAMLOOPS MINING DIVISION

British Columbia

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7777

by

J. R. HILL, B.Sc.

Covering Work Completed On August 4 and August 16-18, 1979.

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SUMMARY

The FRED 1 & 2 Claims were originally staked in June, 1978 to cover a number of stream sediment uranium anomalies generated from the original Princeton/Nicky data. After the completion of follow-up work in the summer of 1978, FRED 3-5 claims were staked in October, 1978. The follow-up work generated values up to 70 ppm U in stream sediments and 29 ppb U in waters.

Detailed geological mapping, geochemical sampling and scintillometer survey were completed on cut lines across a portion of the FRED claims by a 5-person crew, during the period August 4 and 16-18, 1979. Soil and rock chip samples were collected and geochemically analysed for uranium, with the rock chip samples also analysed for thorium. All work was done at a scale of 1" = 400' (1 cm = 48 m) on 1000' (305 m) lines.

The area has been shown to be underlain by felsic intrusions belonging to the Early Tertiary interior phase of the Nicola batholith. The most recent survey on the FRED property has described the intrusive as a fairly uniform, fine to medium-grained, biotite-granodiorite which has been commonly cut by pegmatite dykes and aplite dykes. Local zones were very slightly foliated. Zones of intense fracturing/jointing were locally common and were often associated with limonitic and hematitic staining. There was thus, minor evidence that the unit had undergone some degree of post-emplacement alteration as well as minor hydrothermal activity. Rock chip samples contained 0.5 - 11.0 ppm U with the 11 ppm originating from a sample of the aplite.

There are two models which can be used to explain the uranium mineralization observed to date. Leaching processes related either to the deuteric phase of the intrusion or to later hydrothermal activity may have resulted in the build-up of uranium within zones of the granodiorite itself. Alternatively, normal weathering processes may have leached quantities of uranium from the underlying rock to collect in soil and stream environments.

Soil samples were collected along the 1000' (305 m) lines at 200' (61 m) intervals. Samples ranged in value <0.5 ppm U to 0.049% U_3O_8. Based on the 8.0 ppm U contour, two major, NS trending soil anomalies were defined. One extended for 5000' (1525 m) in the vicinity of the baseline, while the other extended for 7000' (2135 m) through the centre of the property. As well, a total of 13 additional single and double-station anomalies were defined throughout the property. It was found very difficult to relate the soil anomalies to any of the geological data collected to date; therefore, further work in the area should concentrate on identifying as closely as possible, variations in the mineralogy, alteration and structure of the granodiorite underlying the area of the two major soil anomalies.

A scintillometer survey was carried out on the 1000' (305 m) grid with readings recorded every 100' (30 m). All values greater than or equal to 23 c.p.s. were considered anomalous compared to a mean of 17 c.p.s. For the most part, all of the larger, multi-point scintillometer anomalies, defined by the 22 c.p.s. contour corresponded to areas of the property with the greatest density of outcrop.

Further work in the area should consist of a more detailed examination and sampling of the rock underlying the area, in relation to soil and stream uranium anomalies.

INTRODUCTION

The FRED 1 & 2 claims were staked to cover the headwaters area of a number of stream sediment uranium anomalies generated from the original Princeton/Nicky data. Samples collected from streams draining the central plateau averaged 20 ppm U with a high of 102 ppm U. A total of 30 units were staked on June 20, 1978. Results from follow-up stream geochemical sampling carried out during the summer of 1978 resulted in the staking of additional ground surrounding the original FRED 1 & 2 claims. The FRED 3-5 claims, totalling 31 units, were staked on October 10 & 11, 1978.

This report will describe the geology of the claim area and the results obtained from a soil and rock geochemical sampling survey and scintillometer survey completed by Canadian Occidental Petroleum Limited, Minerals Division. The work was done to determine the cause of the sediment uranium anomalies originating in streams draining the area. All work was completed on August 4 and August 16-18, 1979.

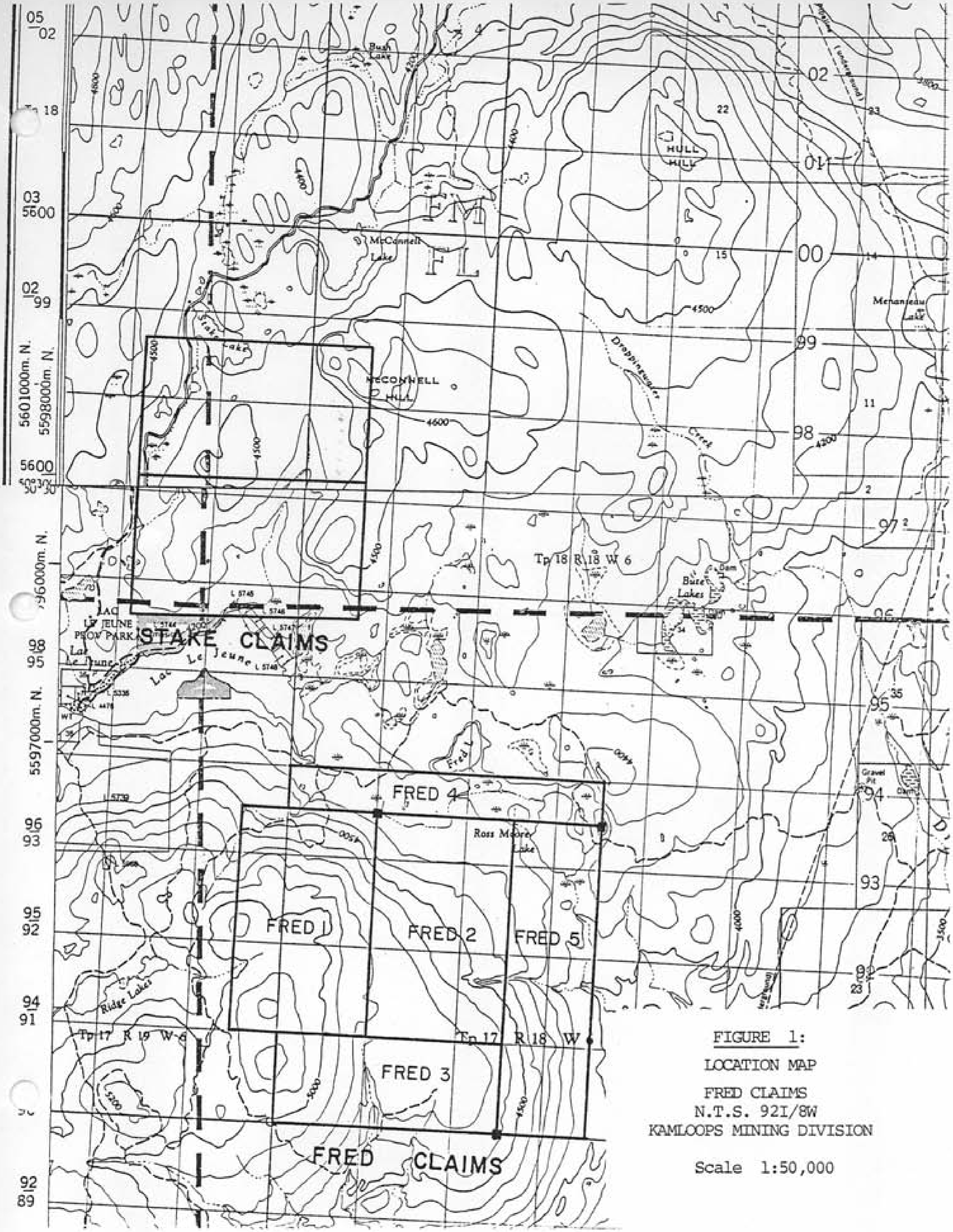


FIGURE 1:

LOCATION MAP

FRED CLAIMS
N.T.S. 92I/8W
KAMLOOPS MINING DIVISION

Scale 1:50,000

LOCATION AND ACCESS

The FRED 1-5 claims are recorded on claim map 92I/8W. The property is located 20 km south of the city of Kamloops, B.C., just to the SE of Lac Le Jeune (see Fig. 1) and covers an area of approximately 8 km^2.

Access is either a) from the north via the Lac Le Jeune road and a rough trail, turning off the cottage road, leading to Ross Moore Lake or b) from the SE using a logging road starting at Hwy. #5 just north of Stump Lake and taking the branch to Ross Moore Lake.

VEGETATION

The FRED claim group is located below tree line. The vegetation throughout most of the area was burnt off approximately 10 years ago and has been replaced by second growth spruce and pine. The abundant deadfall makes travel on foot extremely slow and difficult.

PREVIOUS WORK

A total of 13 stream silt samples were collected by Canadian Oxy within the area of the FRED claims during the original Princeton/Nicky Program in 1973/74. The samples ranged in value 1.6 to 102 ppm U (using neutron activation analysis) and on this data, the FRED 1 and 2 claims were staked on June 20, 1978 by Eastern Associates Limited, Whitehorse, Y.T.

Follow-up geochemical sampling was carried out on July 8, 13 and September 3, 1978. A total of 59 stream and lake silts, 46 stream and lake water samples, and 2 heavy mineral samples were collected on the property and from the area immediately adjacent to it. Sediment samples ranged <0.5 to 70 ppm U with a mean of approximately 5 ppm U, while water samples ranged <0.2 to 29 ppb U with a mean of approximately 1.0 ppb U. Portions of the area were prospected using scintillometers and 6 rock chip samples were collected for geochemical analysis. An additional three claims were added to the existing FRED group to cover extensions of the original anomaly generated from the follow-up data. A total of 31 additional units were staked by Futura Developments Limited of Whitehorse, Y.T. on October 10 and 11.

Detailed results from the follow-up geochemical work completed last summer are contained in the report, "Geology and Geochemistry of the FRED Claim Group, J. R. Hill, Novermber, 1978".

WORK COMPLETED

Line Cutting

A 9600' (293 m) surveyed baseline was cut and chained to form the NS trending western boundary of the grid. The baseline was actually extended 2000' (610 m) further north to meet the road.

A total of 10 EW trending cross-lines 6000' (1830 m) long blazed and chained at 1000' (305 m) intervals from the baseline to the eastern blazed boundary line of the FRED 2 claim, which was used at the tie-line. A total of 14.8 line miles (27.7 line km) were "cut" and chained by Futura Developments Limited during the period August 1 to 15, 1979.

Geological Mapping

Geological mapping of the FRED claims was completed on the 1000' (305 m) lines by J. R. Hill and E. F. Parry during the period August 4 and 16-18, 1979. A total of 14.8 line miles (27.7 line km) were mapped to cover a total area of 2.1 sq. miles (5.4 km^2).

Geochemical Survey

Soil sampling was completed on the 1000' (305 m) lines by J. Bracken, C. Rahme and T. Van Wiechen on August 4 and 16-18, 1979. A total of 411 soil samples were collected at 200' (61 m) intervals on the grid, while 22 samples were collected from 2 soil pits. Rock chip samples were systematically collected from outcrops at 1000' (305 m) intervals, where possible. A total of 27 rock chip samples were collected and analysed for uranium and thorium. Chemex Labs Limited, Vancouver, B.C. completed 360 determinations for uranium and 27 thorium determinations.

Scintillometer Survey

A scintillometer survey was carried out on the 1000' (305 m) grid lines in conjunction with the soil sampling program.

Readings were recorded at 100' (30 m) intervals using an URTEC UG-130 scintillometer on the TC2 at 10 sec. channel. A total of 771 readings were recorded.

Names and Addresses of Personnel

J. R. Hill	Party Chief	Canadian Oxy # 311-215 Carlingview Dr. Rexdale, Ontario
E. F. Parry	Sr. Assistant	"
J. Bracken	Jr. Assistant	"
G. Rahme	Jr. Assistant	"
T. Van Wiechen	Jr. Assistant	"

PHYSIOGRAPHY

Relief over the area is 400 m. The topography is dominated by a NS oriented hill in the west of the property which rises to a maximum elevation of 1750m a.s.l. The majority of the property covers the east-facing slope. Moore Creek which drains southward from Ross Moore Lake bounds the property in the east. Streams drain radially from the western plateau usually following deeply cut, narrow, rock-walled valleys.

GEOLOGY AND ROCK GEOCHEMISTRY

Introduction

The area has been shown to be underlain by felsic intrusives belonging to the Early Tertiary (Paleocene) interior phase of the Nicola batholith (Preto et al. 1979). The rock is fairly uniform in composition and can generally be described as a fine to medium-grained, biotite-granodiorite. The unit outcrops more commonly in the east half of the property which is up to 50% outcrop.

Models of uranium mineralization in such a "granitic" terrain could include: 1) intragranitic veins associated with the deuteric phase of a granitic intrusion, 2) porphyry uranium mineralization found in granitoids, or 3) deposits of uranium located within fault and shear zones as a result of deep leaching of granitoids. As well, Eocene volcanics have been mapped immediately to the east of the claims, which gives rise to the possibility of uraniferous mineralization that has developed along an unconformity between the, presumably earlier, intrusive and previously unmapped outlines of the Eocene volcanics.

General Geology

Only one major rock type was described during the most recent mapping of the FRED claims. The entire area was found to be underlain by a leucocratic, fine to medium-grained biotite granodiorite. The rock was commonly cut by pegmatite dykes up to 8 cm in width, as well as occasional aplite dykes. Local zones appeared to be very slightly foliated. Zones of intense fracturing/jointing were locally common and were often associated with limonite and hematite staining. Generally, the granodiorite was quite fresh and displayed no evidence of severe structural deformation.

Description of the Rock Unit

The biotite granodiorite is compositionally quite uniform over the entire property. The constituent minerals form an interlocking mosaic of irregularly-shaped anhedra, of variable grain size. Quartz and plagioclase are the two predominant minerals with K-feldspar occasionally reaching almost equal proportions with the plagioclase. The unit may thus approach a monzonitic composition in local zones. Generally, however, plagioclase makes up 40% of the rock usually occuring as fine to medium-grained anhedra, white quartz makes up 30% forming aggregates of crystals up to 5 mm across which occur as irregularly-shaped anhedra. K-feldspar may occur in quantities up to 30% of the total rock, but usually makes up 10-20%, also as irregularly-shaped anhedra. Mafic minerals are dominated by biotite which may occur in quantities up to 10%, as fine to medium-grained flakes. The K-feldspars are very fresh however, plagioclase may be slightly sericitized or kaolinized and biotite may show slight alteration to chlorite. As a result of weathering, outcrop surfaces are usually quite crumbly, and easily break apart.

The unit is commonly cut by coarse-grained, quartz/feldspar-rich bands, which have been described as pegmatite dykes in the field. Aplite dykes are common as well, and may contain aggregates of tourmaline crystals which have formed on fracture surfaces. Fracturing, within the granodiorite, may be locally common occurring as closely spaced, nearly vertical sets dominantly trending NE.

The grandiorite was characterized in outcrop by a scintillometer response which averaged 35 c.p.s. (using an URTEC UG130 scintillometer on the TC2 channel)

Alteration and Structure

While the rock underlying the FRED property displayed no signs of intense alteration or structural deformation, evidence indicating that the unit had undergone some degree of post-emplacement alteration, as well as minor hydrothermal activity, was observed. These included: 1) cross-cutting, coarse-grained quartz/feldspar-rich veins, 2) aplite dykes, and 3) local zones displaying intense surface staining of limonite and hematite. The surface alteration may be more a result of weathering processes, however, the staining appeared to be coincident with zones more highly fractured/jointed than normal, and with rare zones of the granodiorite which were very faintly foliated. The limonitic and hematitic staining occurred as elongated zones averaging 20' (6 m) in width parallel to the direction of dominant fracturing, ie. NE, and randomly distributed over the entire property. The staining, however, appeared to be more common and more intense over an area approximately 3000' (915m) long from L10S in the north to L40S, and 2000' (610 m) wide between the eastern tie-line and approximately station 40E in the west (see Plan 1).

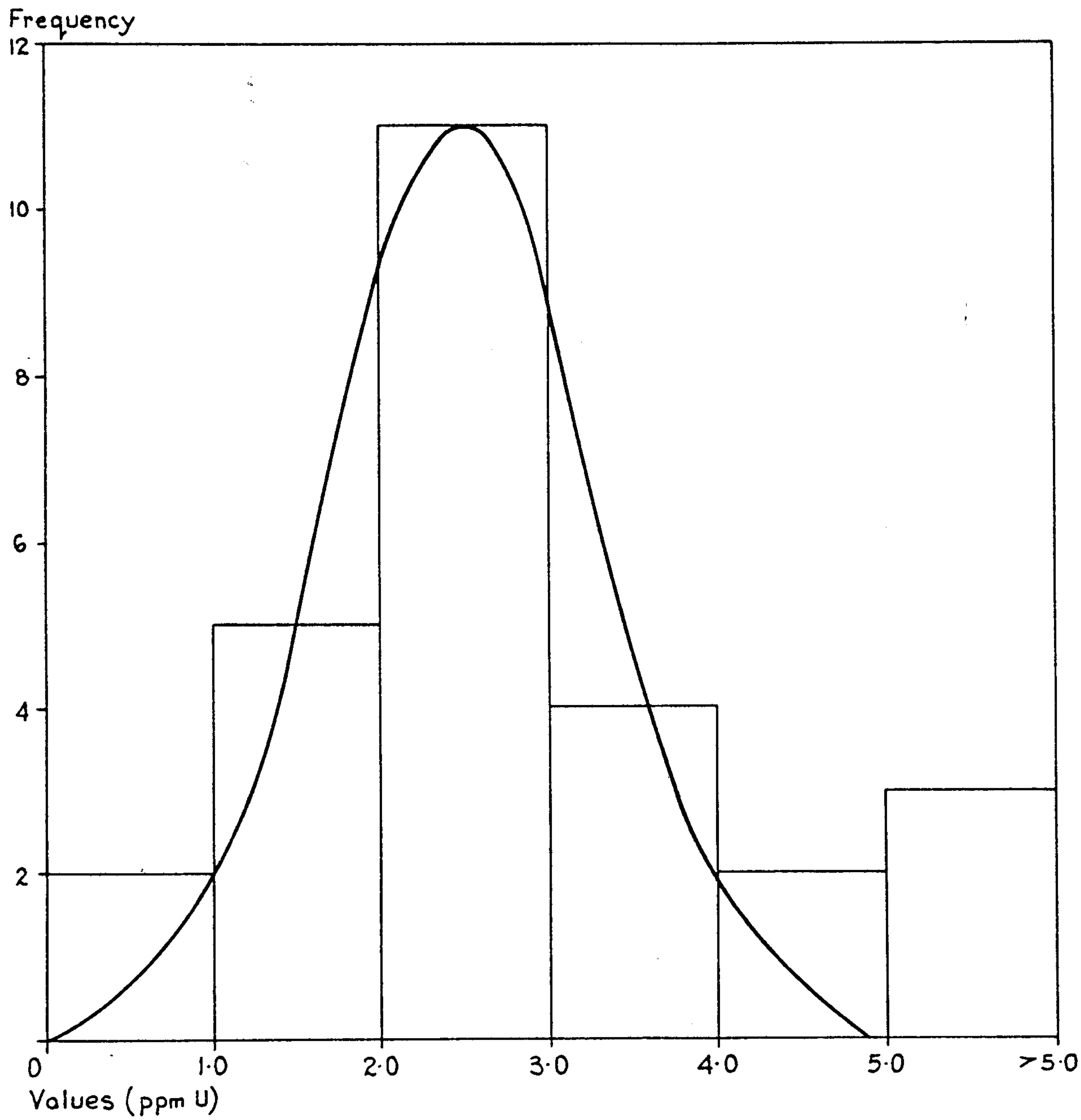
The degree of alteration and fracturing observed in the FRED rock, up to this point, does not appear to be of great significance. It does indicate that there was some movement of solutions through the intrusive which may have resulted in the leaching of uranium from the rock to collect elsewhere in suitable traps. On the other hand, if the hematite/limonite staining is simply associated with weathering activity, resulting in the mechanical disaggregation of outcrop surfaces, such processes would also result in the leaching of uranium from surface outcrops through the alteration of biotite to produce local soil or stream anomalies.

Economic Geology

Visible uranium mineralization was not observed in any outcrops on the property. Analysis of rock chip samples collected during a systematic sampling survey of the FRED rocks showed a range of 0.5 - 11.0 ppm U and a mean of 2.5 ppm U. This is considered average, or even slightly below average, for "granitic" rocks. Values $\geq$4.5 ppm U were considered anomalous (see Fig. 2). The samples were analysed for thorium as well (using neutron activation). Samples ranged in value 4-12 ppm Th with a mean of approximately 8.0 ppm. The locations of all rock chip samples collected during the survey have been shown on Plan 1, along with their corresponding uranium and thorium values. Lab results, including the U/Th ratio for each rock chip sample have been listed in Appendix IV.

FIG. 2.

FREQUENCY DISTRIBUTION OF URANIUM IN FRED ROCKS.



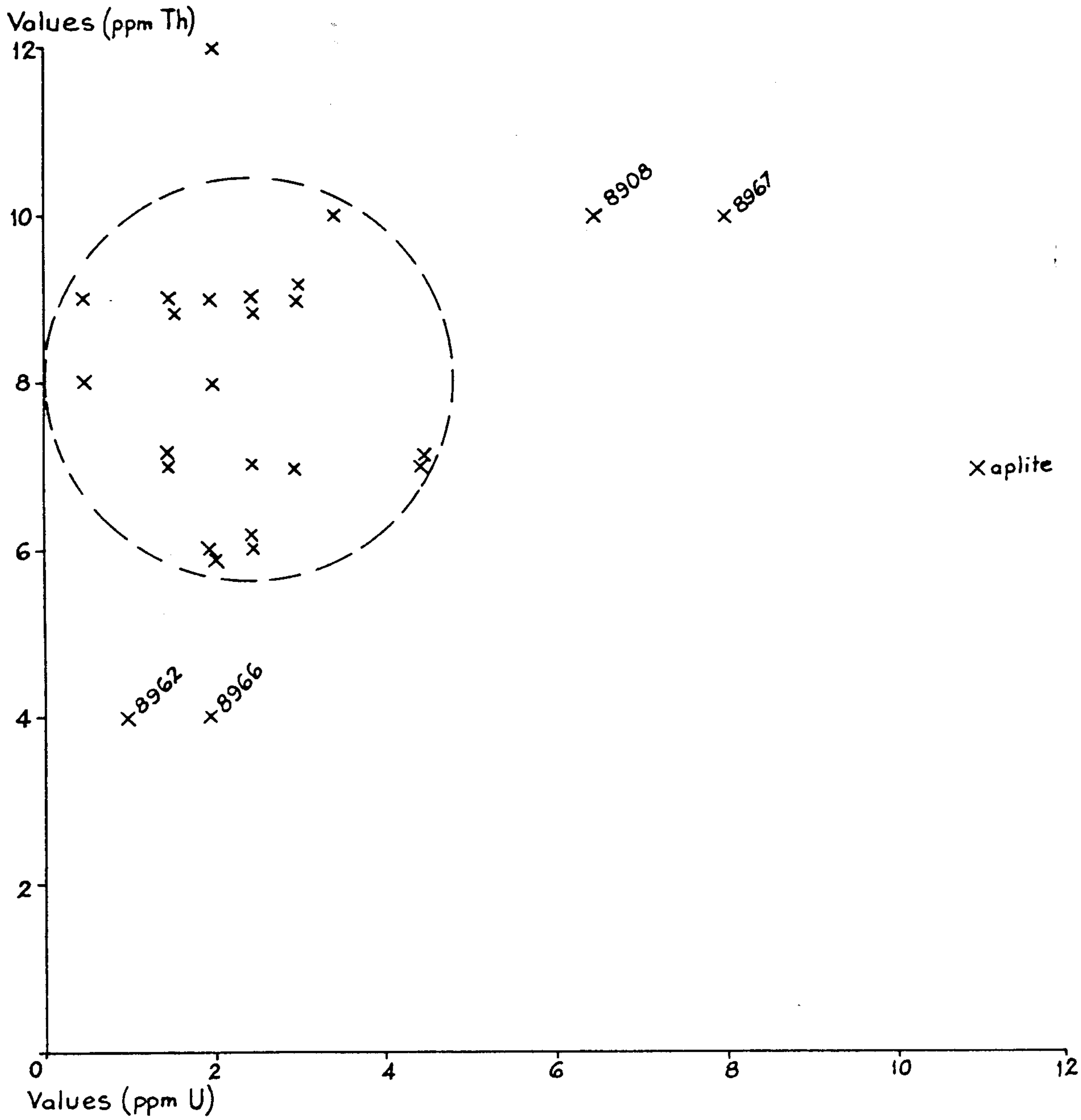
A scattergram of U vs. Th in FRED rocks (Fig. 3) showed a very strong grouping of the majority of the samples about 8 ppm Th and 2.5 ppm U, which supported the observation of only one major rock type on the property.

Only five of the rock samples contained anomalous uranium and of these, only one of the samples was of different rock type than the granodiorite. The sample containing 11.0 ppm U was collected from an aplite dyke displaying aggregates of tourmaline crystals on fracture surfaces. The four remaining samples were all collected from zones of the granodiorite which were highly hematized and limonitized; although other samples from similar zones contained only average uranium.

Therefore, there is an indication that enough uranium was present in the rocks of the FRED area which could have been made available for transport, and later deposition, in the system by various leaching processes. These processes may have been related either to: 1) the deuteric phase of the intrusion or, 2) later hydroghermal activity, which may have resulted in the build-up of uranium within zones of the granodiorite itself, or 3) normal weathering processes which may have leached quantities of uranium from the underlying rock to collect in soils and streams.

FIG. 3.

SCATTERGRAM OF URANIUM vs. THORIUM IN FRED ROCKS.



SOIL GEOCHEMISTRY

Soil Development

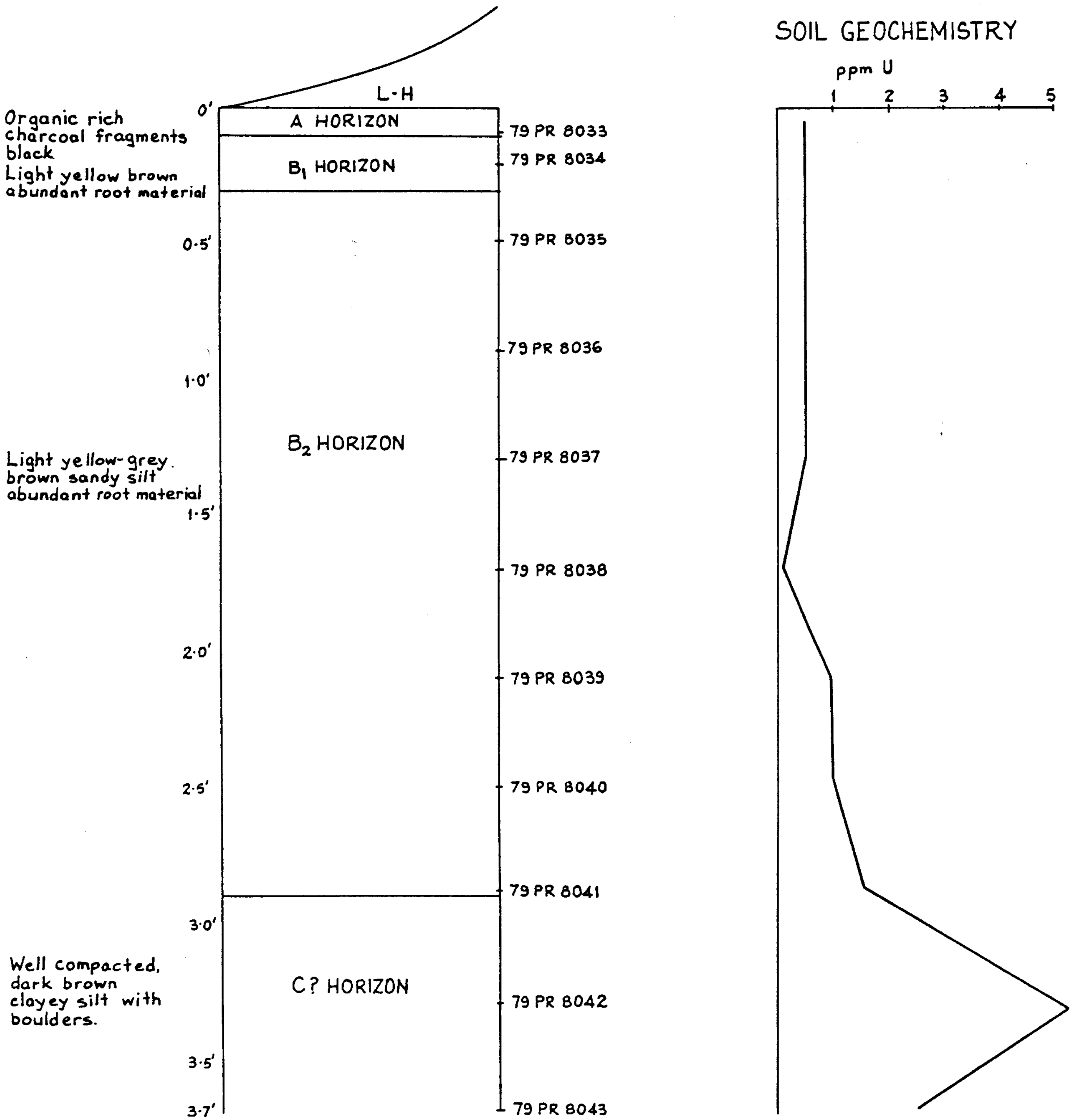
Soil horizons characteristic of a brown forest-type soil have developed in well-drained areas within a parent material of glacial origin. The soil profile was found to consist of a 2 - 4 cm black 'A' horizon, highly organic, consisting of decaying forest litter. A well-developed 'B' horizon immediately underlay the 'A' and consisted of a light yellowish brown to grey sandy, pebbly silt with abundant rooty material. The 'B' horizon varied in thickness 40 - 70 cm. The parent material in 'C' horizon consisted of a fairly undisturbed, well compacted, dark brown clayey silt with occasional boulders. The material may represent a lodgement till.

The distribution of uranium in the various soil horizons was determined by excavating two soil pits in different physiographic settings over the property. Each horizon was sampled at equal intervals with a minimum of 10 samples per pit. Each horizon was described, thickness recorded and variation in uranium content plotted on a section.

One soil pit was dug at the north end of TL50E into the side of a small isolated knoll immediately adjacent to a swamp. The swamp was found to contain anomalous sediments from last year's survey. The uranium distribution ranges 0.5 - 1.0 ppm throughout most of the profile reaching a peak of 5 ppm U in the 'C' horizon at a depth of 10 cm below the contact with the 'B' horizon (see Fig. 4). The second pit was dug at the end of TL59E, in a well-

FIG. 4.

FRED: SOIL PROFILE: TL59E-01S



drained environment, near outcrop. The uranium distribution varied 1 - 2 ppm throughout most of the profile, and reached a high of 3.5 ppm U in the 'C' horizon approximately 15 cm below the contact with the 'B' horizon (see Fig. 5).

For practical purposes, however, all soil samples collected during the most recent sampling survey on the FRED property were collected from a depth 10 - 15 cm below ground level, within the 'B' horizon, although the 'B' was shown to be uncharacteristically depleted in uranium in this particular area.

Sampling Procedures

The sampling area was covered by cut lines at 1000' (305 m) intervals trending EW, with a western cut baseline and an eastern blazed tie-line at 59+00E. Soil samples were collected along the lines at 200' (61 m) spacing.

All soil samples were stored in special, heavy-duty, pre-numbered kraft envelopes, semi-dried in the field and sent to Chemex Labs Limited, Vancouver for uranium analysis.

Laboratory Procedures

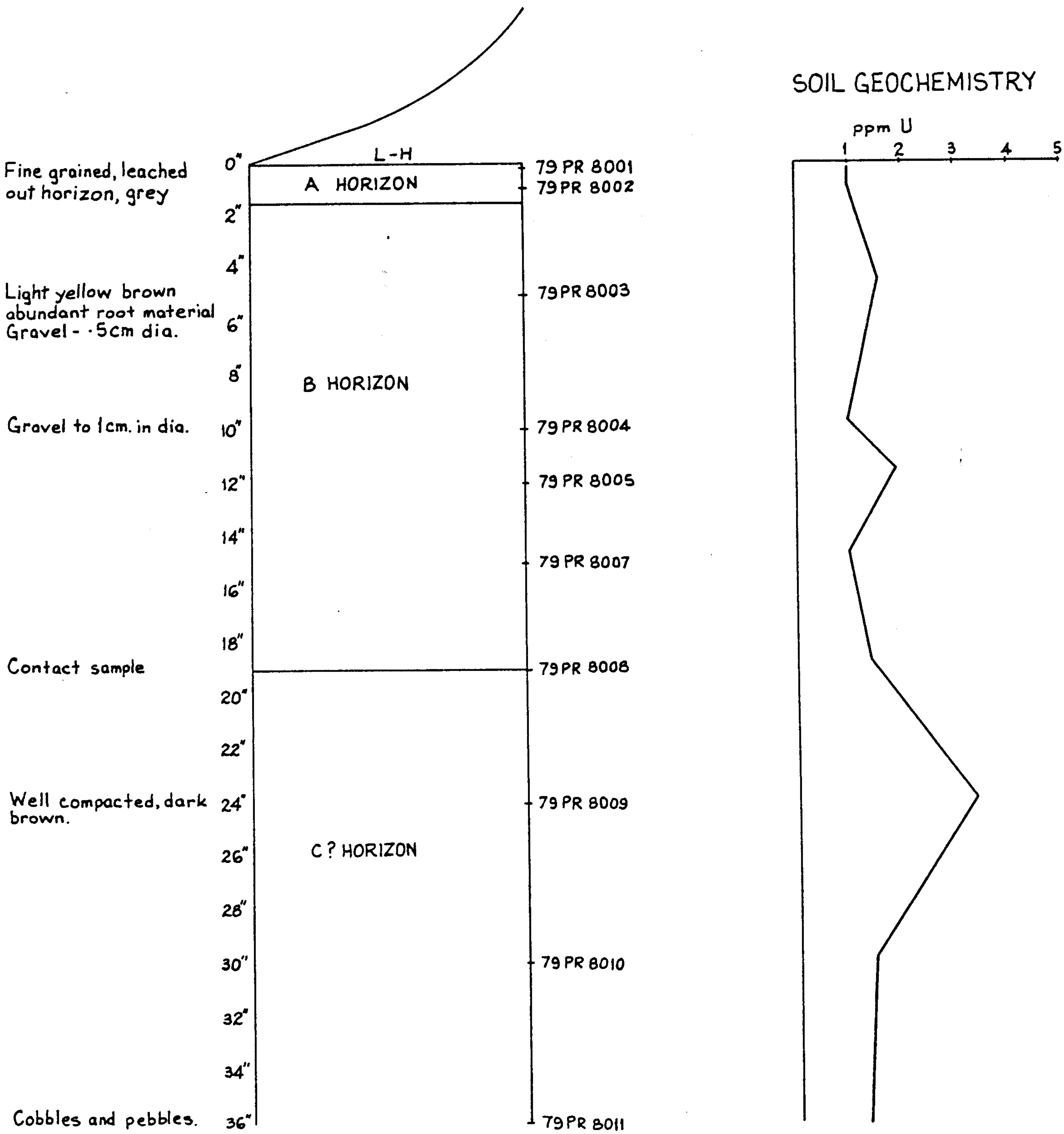
see Appendix I

Standard Sample

To check the reproducibility and quality of the analytical work, standard samples were sent to the lab as part of each regular shipment. From the pre-numbered sequence of sample envelopes, 5 out of every 100 were set aside to be filled with the standard

FIG. 5.

FRED: SOIL PROFILE: TL 72S-59E



material. The material, taken from the 'B' horizon of one of the soil pits, was made as highly homogeneous as possible and put in the standard envelopes.

The analytical results for the standard samples and their reproducibility about the mean are listed in Table 2 in Appendix II. The mean value for the standard sample was 5.4 ppm U with an average % variance from the mean of 18.2%. Generally, the accepted figures for reproducibility of results in applied geochemistry is 30% for values 1-10 ppm, 20% for 10-50 ppm, and 30% for +50 ppm. For the most part, the FRED standards are in accordance with the acceptable figures for their range of values. However, 5 of the 22 standards (23%) fall outside the acceptable % variance. This may be more a result of poor homogeneity of the standard sample, rather than laboratory error.

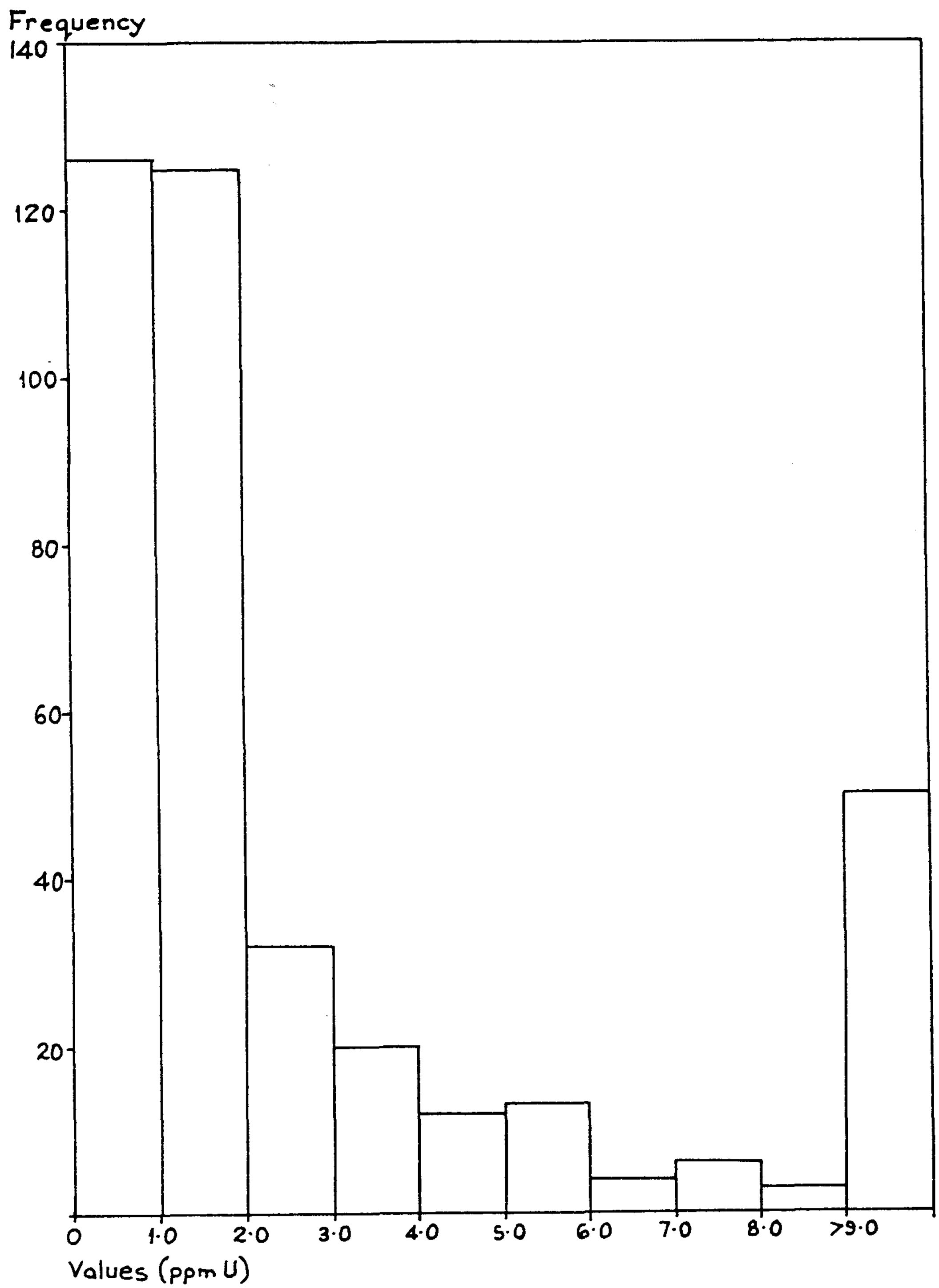
Statistical Treatment of Results

To determine mean and anomalous values for uranium, the element values obtained from the laboratory (Appendix III) were grouped into fixed ranges (Table 3 in Appendix II). A histogram of the frequency distribution was constructed.

From Fig. 6, the frequency distribution of uranium in FRED soils is obviously log-normal. This is probably a result of detection limit problems in the laboratory, resulting in population 'truncation', and does not represent a true log-normal distribution of the sample population. The background population shows a mean value of 1.0 ppm U and all values greater than or equal to 3.0 ppm U are considered anomalous. There is a slight tendency towards bi-

FIG. 6.

FREQUENCY DISTRIBUTION OF URANIUM IN FRED SOILS.



modality evident in the distribution, with the presence of a large anomalous population made up of values ≥9.0 ppm U. This group makes up 13% of the total sample set.

Results of the Soil Sampling Survey

Lab results for the soil samples were plotted on Plan 2. Values ranged from < 0.5 ppm U to 0.049% U_3O_8. On the Plan, a completely filled NW quadrant of the sample station symbol represents an anomalous value. The lab results were contoured to better delineate the areas of interest using a contour interval of 2-4-8-16 ppm U. (Plan 3).

Discussion of Anomalies

Based on the 8 ppm U contour, two major NS trending soil anomalies were defined. The smaller western anomaly near the BL, extended for 5000' (1525 m) between L10S in the north and L60S, and varied in width approximately 100' (30 m) to 1000' (305 m). The anomaly enclosed values up to 82 ppm U. The larger, more central anomaly could be traced from L00 in the north to L70S, and varied in width 100' (30 m) to 1200' (366 m). The anomaly enclosed values up to 0.049% U_3O_8. A total of 13 additional single and double-station anomalies were scattered throughout the property enclosing values up to 207 ppm U.

It is difficult to relate the soil anomalies to any of the geological data collected to-date, or to physiographical features. The anomalies do not correspond to any of the major drainage systems of the area which have been shown to contain anomalous uranium in the sediments. The central anomalous zone is immediately adjacent to the larger zone of more intense hematitic and limonitic staining observed in outcrops of the biotite granodiorite. It has been mentioned that this alteration/weathering of the granodiorite may have been caused by surface or groundwater activity. Such activity may also have resulted in the leaching of uranium from the rock to collect in the soils downslope. The theory has not been supported by the most recent observations, however, a more detailed study of variations in the granodiorite may substantiate it.

It is, however, possible that the soil anomalies may represent uranium in a structure or phase of the granodiorite since the anomalies can be traced over large distances and are occasionally parallel to the direction of foliation. Again, further work in the area should concentrate on identifying, as closely as possible, variations in the mineralogy, alteration and structure of the granodiorite underlying the areas covered by the two major soil anomalies.

SCINTILLOMETER SURVEY

A ground radiometrics survey was conducted on the 1000' (305 m) grid in conjunction with the soil sampling program. Readings of total background radiation were recorded at 200' (61 m) intervals along the lines, using a hand-held URTEC-UG-130 scintillometer set on the TC2 at 10 sec. channel from a height of approximately 1 m above ground level. The TC2 channel measures all energies above 0.40 MeV over an integrating time of 10 secs.

Plan 4 shows the contoured scintillometer results. To determine mean and anomalous values, the readings were first grouped into fixed ranges, and a histogram of the frequency distribution was constructed (Fig. 7). As arbitrary best-fit curve was drawn through the majority of the data and where this curve intersected the abscissa defined the cut-off for the 'normal' or background population. All values lying to the right of the cut-off were considered anomalous.

From Fig. 7, the cut-off for the FRED scintillometer data is approximately 23 c.p.s. and therefore all values greater than or equal to 23 c.p.s. are anomalous compared to a mean value of 17 c.p.s.

From Plan 4, it can be seen that the 20 c.p.s. contour corresponds almost exactly with the distribution of outcrop on the FRED property. The two largest areas defined by the 22 c.p.s. coutour lie within the zone of the granodiorite with more intense hematitic and limonitic staining. They also correspond to areas of the property with the greatest density of outcrop.

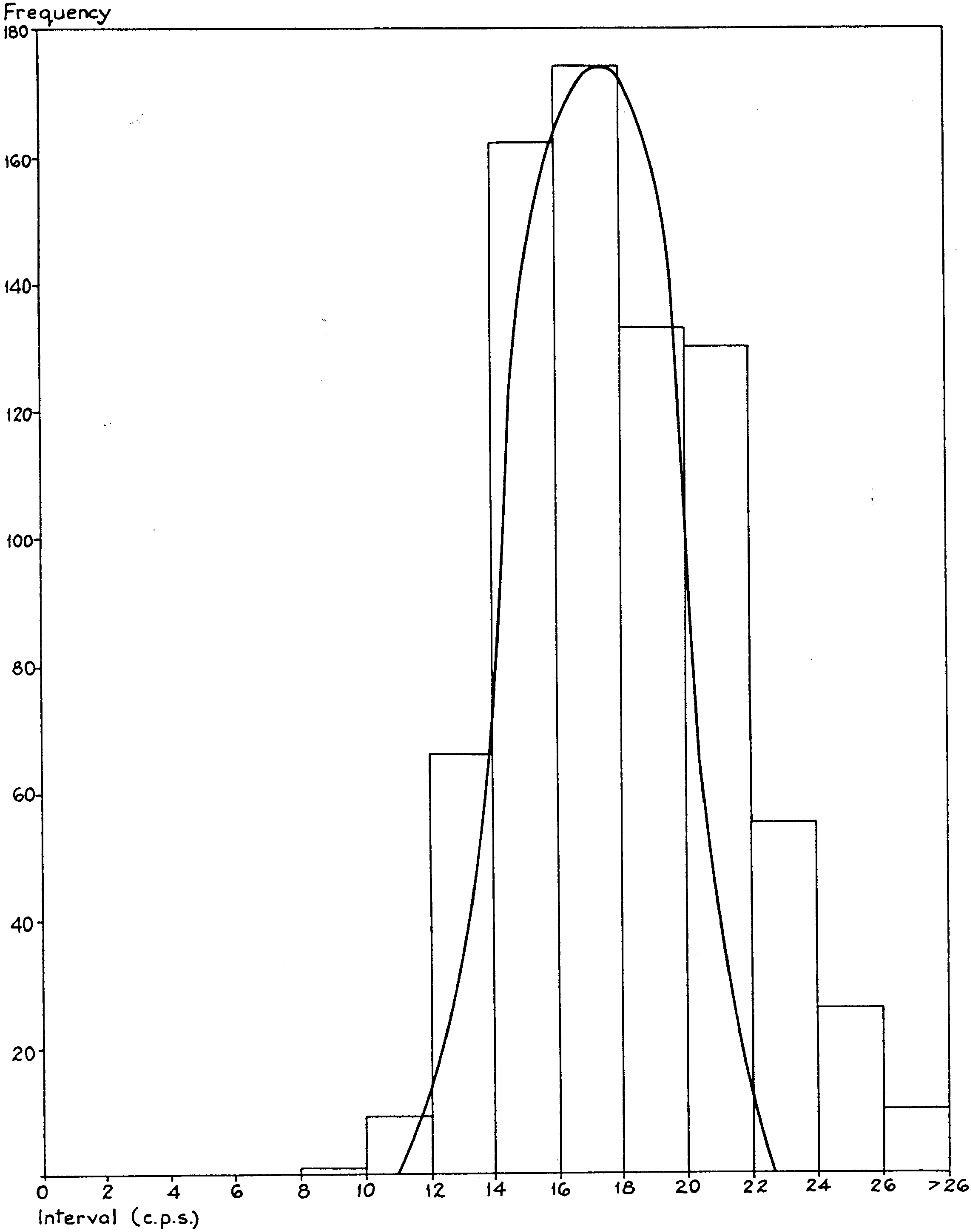
CONCLUSIONS AND RECOMMENDATIONS

An examination of the compilation map (Plan 5) provides a summary of the data collected over the past two-years from the FRED claims.

It is evident that significant quantities of uranium exist in the soils and streams of the FRED area. There are at least two theories which can be used to explain the occurance of anomalous uranium in the system. The most likely theory suggests that normal

FIG. 7.

FREQUENCY DISTRIBUTION OF FRED SCINTILLOMETER DATA.



weathering/alteration processes resulted in the leaching of background quantities of uranium from the rock to collect and accumulate in suitable environments in either stream sediments or soils. Evidence to support such a theory exists in, a) the presence of local zones of hematitic and limonitic staining on outcrop surfaces indicating there was probably some movement of solutions through the granodiorite; and b) the occurrence of aplite dykes, as well as isolated occurrences of the granodiorite which contain slightly higher than background quantities of uranium.

The alternative theory, obviously, is that the soil and stream anomalies reflect zones of uranium enrichment within the underlying rock. These same zones of hematite/limonite staining, observed in surface outcrops, may also indicate earlier movement of hydrothermal fluids through the intrusive resulting in the leaching, transport, and later deposition of significant quantities of uranium in the rock. Such processes may have been related to the deuteric phase of the intrusion, or to later hydrothermal activity.

No suitable drill targets can be defined on the FRED property as yet from data collected to date. It is, however, recommended that further surface work on the FRED claims should concentrate on detailed examination of variations in minerology, alteration and structure of the granodiorite and relate such variations to the disbribution of soil anomalies over the property. More detailed rock geochemical sampling should also be undertaken to determine the possibility of additional zones of slight uranium enrichment in the granodiorite, and their relation to the geology.

Such follow-up work on the property should be undertaken on 500' (152 m) lines with rock chip sampling completed on 200' (61 m) stations.

Respectfully submitted,

R. H. WALLIS

JOHANNES R. HILL, B.Sc.

December 11, 1979
Toronto, Ontario.

REFERENCES

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APPENDIX I

LABORATORY PROCEDURES

Appendix I - Laboratory Procedures

1. Soil Samples

Samples are sorted and dried at 50°C for approximately two hours. The dried material is passed through a -80 mesh (177 micron) screen; fine material is retained for analysis and coarser material discarded.

2. Rock Samples

The entire sample is crushed. If necessary (> 250 gm), the sample is split on a Jones splitter, the reject being retained for a short period. The split fraction is pulverized such that 90% passes a 200 mesh (74 micron) sieve.

3. Geochem Procedures

A). Uranium (Fluorometric)

A 1-gram sample of -80 mesh soil or -200 mesh rock is digested with hot $HClO_4$ - HNO_3 to strong fumes of $HClO_4$ for approximately 2 hours. The digest is cooled, diluted to volume and mixed.

An aliquot is extracted into methyl isobutyl ketone (MIBK) with the aid of an aluminum nitrate-tetrapropyl ammonium hydroxide salting solution. The uranium in the MIBK is determined by evaporating a portion of the MIBK in a platinum dish and fusing with a mixture of Na_2CO_3 - K_2CO_3 - NaF. The fluorescence of the fused flux is measured to determine the uranium content.

Detection limit is 0.5 ppm.

Appendix I a - Laboratory Procedures (Cont'd.)

B). Thorium (Neutron Activation)

A 1-gram sample of -80 mesh soil or -200 mesh rock material is weighed into a polyethelene vial and heat sealed. Samples, along with standards, are then irradiated for sufficient periods to receive a neutron dose of 1 - 3 X $10^{15}/CM^{2}$. Following irradiation, samples are cooled for at least one week and thorium is determined by the measurement of its characteristic gamma ray using a semiconductor (Ge/Li) detector.

Detection limit is 1 ppm.

APPENDIX II

TABLES

TABLE 1: DETAILS OF ROCK SAMPLES AND ANALYSES - FRED CLAIMS

Sample Number	Rock Type	Rock Description	U ppm	Th ppm	Scintillometer Tc 2 (cps)
79-PR-8901	bgd		1.5	9	28
8902	bgd		2.0	12	35
8903	bgd		2.5	9	35
8904	bgd		4.5	7	35
8905	bgd	hematitic staining fine-grained	3.0	9	35
8906	bgd	fine-grained	1.5	7	32
8907	bgd	fine-grained	2.0	8	20
8908	bgd	hematitic staining	6.5	10	
8951	bgd		2.5	6	25
8952	bgd		2.5	7	37
8953	Aplite	Fine-gr., tourmaline crystals	11.0	7	36
8954	bgd		2.5	6	30
8955	bgd	hematitic staining	4.5	7	28
8956	bgd		3.0	9	27
8957	bgd		2.0	9	26
8958	bgd		1.5	7	28
8959	bgd		2.5	9	25
8960	bgd		0.5	8	27
8961	bgd		1.5	9	35
8962	bgd	fine-grained	1.0	4	42
8963	bgd		2.0	6	24
8964	bgd		0.5	9	30
8965	bgd		2.0	6	30
8966	bgd	coarse-grained	2.0	4	38
8967	bgd	fine-grained	8.0	10	42
8968	bgd		3.0	7	35
79-PR-8969	bgd		3.5	10	31

bgd = biotite granodiorite

TABLE 2: REPRODUCIBILITY OF FRED STANDARD SOIL SAMPLES

Sample No.	Value (ppm U)	% Variance from Mean
79PR8006	4.0	25.9
8104	5.5	1.9
8120	5.5	1.9
8136	5.5	1.9
8160	5.0	7.4
8187	6.0	11.1
8213	5.5	1.9
8232	7.0	29.6
8249	3.0	44.4
8264	5.5	1.9
8287	8.0	48.1
8312	4.0	25.9
8326	7.0	29.6
8343	5.5	1.9
8368	8.5	57.4
8391	5.0	7.4
8409	6.0	11.1
8428	3.0	44.4
8468	5.5	1.9
8510	3.5	35.2
8528	5.5	1.9
79PR8608	5.0	7.4
Mean =	5.4 ppm U	Avg. =18.2%

TABLE 3: FREQUENCY DISTRIBUTION OF URANIUM IN FRED SOILS

Interval (ppm U)	Frequency	% Frequency	% Cumulative Frequency
< 1.0	126	32.2	32.2
1.0 - 1.9	125	32.0	64.2
2.0 - 2.9	32	8.2	72.4
3.0 - 3.9	20	5.1	77.5
4.0 - 4.9	12	3.1	80.6
5.0 - 5.9	13	3.3	83.9
6.0 - 6.9	4	1.0	84.9
7.0 - 7.9	6	1.5	86.4
8.0 - 8.9	3	0.8	87.2
≥ 9.0	50	12.8	100

Range = < 0.5 ppm U - 0.049% U_3O_8

Mean = 1.0 ppm U

Anomalous = ≥ 2.5 ppm U

TABLE 4: FREQUENCY DISTRIBUTION OF FRED SCINTILLOMETER DATA

Interval (c.p.s.)	Frequency (# of Samples)	% Frequency	% Cumulative Frequency
8, 9	2	0.3	0.3
10, 11	9	1.2	1.5
12, 13	66	8.6	10.1
14, 15	162	21.0	31.1
16, 17	174	22.6	53.7
18, 19	133	17.2	70.9
20, 21	130	16.9	87.8
22, 23	56	7.3	95.1
24, 25	27	3.5	98.6
≥ 26	12	1.6	100.0
	771		

Range = 9 - 28 c.p.s.

Mean = 17 c.p.s.

Anomalous = ≥ 23 c.p.s.

APPENDIX III

LABORATORY GEOCHEMICAL RESULTS

SOILS

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

CHEMEX LABS LTD.

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: Canadian Occidental Petroleum Ltd.,
Minerals Division
Ste. 311 - 215 Carlingview Dr.,
Rexdale, Ont.
ATTN:
PRINIC-FRED CLAIMS CC. J. Hill

CERTIFICATE NO. 49514
INVOICE NO. 32098
RECEIVED Aug. 12/79
ANALYSED Aug. 22/79

SAMPLE NO. :	PPM U
79 PR 8001	1.0
8002	1.0
8003	1.5
8004	1.0
8005	2.0
8006	4.0
8007	1.0
8008	1.5
8009	3.5
8010	1.5
8011	1.5
8033	0.5
8034	0.5
8035	0.5
8036	0.5
8037	0.5
8038	< 0.5
8039	1.0
8040	1.0
8041	1.5
8042	5.0
8043	2.5
8101	1.0
8102	3.5
8103	4.5
8104	5.5
8105	2.0
8106	2.5
8107	1.0
8108	1.5
8109	1.5
8110	1.0
8111	1.5
8112	1.0
8113	2.0
8114	1.5
8115	20.5
8116	1.5
8117	2.0
79 PR 8118	1.5

CTA MEMBER CANADIAN TESTING ASSOCIATION

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Rexdale, Ont.
ATTN: PRINIC-FRED CLAIMS

CC. J. Hill

CERTIFICATE NO. 49515
INVOICE NO. 32098
RECEIVED Aug. 12/79
ANALYSED Aug. 22/79

SAMPLE NO. :	PPM U
79 PR 8119	3.0
8120	5.5
8121	2.5
8122	3.0
8123	5.0
8124	2.0
8125	1.5
8201	1.0
8202	1.5
8203	4.0
8204	1.5
8205	1.0
8206	0.5
8207	< 0.5
8208	12.5
8209	< 0.5
8210	0.5
8211	0.5
8212	4.0
8213	5.5
8214	1.0
8215	0.5
8216	1.0
8217	0.5
8218	1.0
8219	0.5
8220	1.0
8221	1.0
8222	1.0
8223	0.5
8224	2.0
8225	0.5
8226	2.5
8227	143
8228	20.5
8229	11.0
8230	3.5
8231	1.5
8232	7.0
79 PR8233	1.5

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Rexdale, Ont.

ATTN: PRINIC-FRED CLAIMS CC. J. Hill

SAMPLE NO. :	PPM U
79 PR 8234	0.5
8235	3.5
8236	1.5
8237	1.5
8238	< 0.5
8239	0.5
8240	3.5
8241	1.5
8242	0.5
8243	< 0.5
8244	0.5
8245	1.0
8246	1.5
79 PR 8249	3.0

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TO: Canadian Occidental Petroleum Ltd.
Minerals Division
STe. 311 - 215 Carlingview Dr.
Rexdale, Ont. M9W 5X8
ATTN: PROJECT: Prinic-Fred Claims-Soil CC: J. Hill

SAMPLE NO. :	PPM U
79PR8126	3.0
8127	0.5
8128	0.5
8129	2.0
8130	2.5
8131	0.5
8132	0.5
8133	1.0
8134	135
8135	5.5
8136	5.5
8137	57
8138	2.0
8139	1.5
8140	2.5
8141	145
8142	2.0
8143	0.5
8144	5.5
8145	0.5
8146	1.0
8147	0.5
8148	1.0
8149	1.5
8150	<0.5
8151	1.0
8152	<0.5
8153	0.5
8154	82
8155	1.5
8156	1.5
8157	4.5
8158	1.0
8159	2.0
8160	5.0
8161	2.5
8162	0.5
8163	2.5
8164	4.5
79PR8165	1.5

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ATTN: PROJECT: Prinic-Fred Claims-Soil CC: J. Hill

SAMPLE NO. :	PPM U
79PR8166	0.5
8167	17.0
8168	7.0
8169	1.5
8170	1.0
8171	3.0
8172	1.0
8173	1.5
8174	1.5
8175	8.5
8176	6.5
8177	0.5
8178	2.0
8179	80
8180	115
8181	1.5
8182	>400
8183	4.5
8184	47
8185	3.5
8186	0.5
8187	6.0
8188	0.5
8189	0.5
8190	28
8191	1.5
8192	3.0
8193	28
8194	3.0
8195	0.5
8196	0.5
8197	105
8198	4.0
8199	1.5
8200	6.0
8247	1.0
8248	<0.5
8250	1.5
79PR8251	5.5

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CERTIFICATE NO. 49933
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SAMPLE NO. :	PPM U
79PR8252	1.0
8253	1.5
8254	2.0
8255	0.5
8256	2.0
8257	2.0
8258	0.5
8259	0.5
8260	36
8261	4.0
8262	1.0
8263	1.0
8264	5.5
8265	26
8266	1.0
8267	1.0
8268	1.0
8269	1.5
8270	2.0
8271	1.0
8272	3.5
8273	9.5
8274	11.0
8275	2.0
8276	1.0
8277	2.5
8278	12.5
8279	11.5
8280	23.5
8281	6.0
8282	2.0
8283	2.5
8284	1.5
8285	1.0
8286	8.5
8287	8.0
8288	1.0
8289	14.5
8290	1.0
79PR8291	1.0

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ATTN:
PROJECT: Prinic-Fred Claims-Soil CC: J. Hill

SAMPLE NO. :	PPM U
79PR8292	0.5
8293	1.5
8294	3.0
8295	2.5
8296	5.0
8297	7.0
8298	5.5
8299	5.5
8300	3.0
8301	2.0
8302	0.5
8303	0.5
8304	1.0
8305	3.0
8306	1.0
8307	0.5
8308	0.5
8309	2.0
8310	4.5
8311	0.5
8312	4.0
8313	1.5
8314	0.5
8315	0.5
8317	1.0
8318	10.5
8319	57
8320	15.5
8321	1.5
8322	3.5
8323	1.5
8324	5.0
8325	1.0
8326	7.0
8327	24.5
8328	7.5
8329	2.5
8330	18.0
8331	0.5
79PR8332	<0.5

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ATTN: PROJECT: Prinic-Fred Claims-Soil CC: J. Hill

CERTIFICATE NO. 49935
INVOICE NO. 32385
RECEIVED Aug. 20/79
ANALYSED Sept. 4/79

SAMPLE NO. :	PPM U
79PR8333	<0.5
8334	<0.5
8335	0.5
8336	<0.5
8337	15.0
8338	28
8339	<0.5
8340	<0.5
8341	0.5
8342	<0.5
8343	5.5
8344	0.5
8345	<0.5
3846	0.5
8347	17.5
8348	75
8349	1.0
8350	4.0
8351	22.0
8352	1.0
8353	7.5
8354	2.5
8355	14.5
8356	0.5
8357	7.5
8358	30
8359	18.0
8360	1.5
8361	1.0
8362	69
8363	1.5
8364	0.5
8365	<0.5
8366	<0.5
8367	207
8368	8.5
8369	0.5
8370	<0.5
8371	1.0
79PR8372	1.0

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AREA CODE: 604
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Rexdale, Ont. M9W 5X8

ATTN:

PROJECT: Prinic-Fred Claims-Soil CC: J. Hill

CERTIFICATE NO. 49936
INVOICE NO. 32385
RECEIVED Aug. 20/79
ANALYSED Sept. 4/79

SAMPLE NO. :	PPM U
79PR8373	5.0
8374	1.0
8375	7.5
8376	<0.5
8377	0.5
8378	0.5
8379	0.5
8383	3.5
8384	4.5
8385	1.5
8386	1.5
8387	0.5
8388	0.5
8389	0.5
8390	0.5
8391	5.0
8392	0.5
8393	0.5
8394	<0.5
8395	<0.5
8396	1.5
8397	0.5
8398	0.5
8399	0.5
8400	<0.5
8401	3.5
8402	33
8403	34
8404	45
8405	33
8406	31
8407	5.0
8408	<0.5
8409	6.0
8410	1.0
8411	3.5
8412	1.0
8413	1.0
8414	0.5
79PR8415	0.5

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Minerals Division
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Rexdale, Ont. M9W 5X8
ATTN:
PROJECT: Prinic-Fred Claims-Soil CC: J. Hill

CERTIFICATE NO. 49937
INVOICE NO. 32385
RECEIVED Aug. 20/79
ANALYSED Sept. 4/79

SAMPLE NO. :	PPM U
79PR8416	1.0
8417	0.5
8418	1.0
8419	1.0
8420	<0.5
8421	0.5
8422	0.5
8423	0.5
8424	<0.5
8425	1.0
8426	0.5
8427	1.0
8428	3.0
8429	1.0
8430	2.0
8431	1.0
8432	0.5
8433	0.5
8434	1.0
8435	1.5
8436	1.0
8437	1.0
8438	0.5
8439	1.5
8440	1.0
8441	0.5
8442	1.5
8443	1.0
8444	1.0
8445	1.0
8446	1.0
8447	0.5
8448	1.5
8449	1.0
8468	5.5
8501	0.5
8502	2.0
8503	8.5
8504	<0.5
79PR8505	0.5

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY:

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: [redacted] 984-0221
AREA CODE: 604
TELEX: 043-52597

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49938
INVOICE NO. 32385
RECEIVED Aug. 20/79
ANALYSED Sept. 4/79

TO: Canadian Occidental Petroleum Ltd.
Minerals Division
Ste. 311 - 215 Carlingview Dr.
Rexdale, Ont. M9W 5X8
ATTN:
PROJECT: Prinic-Fred Claims-Soil CC: J. Hill

SAMPLE NO. :	PPM U
79PR8506	<0.5
8507	0.5
8508	1.0
8509	<0.5
8510	3.5
8511	1.0
8512	19.5
8513	83
8514	0.5
8515	13.5
8516	1.5
8517	1.0
8518	0.5
8519	1.5
8520	13.0
8521	0.5
8522	0.5
8523	1.0
8524	0.5
8525	1.0
8526	1.0
8527	1.0
8528	5.5
8529	3.5
8530	10.5
8531	1.0
8532	1.0
8533	1.0
8534	1.0
8535	1.0
8536	1.0
8537	1.0
8538	1.0
8539	1.0
8540	<0.5
8601	1.0
8602	<0.5
8603	<0.5
8604	0.5
79PR8605	0.5

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: Hart Bichler

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TELEX: 043-52597

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CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 49939
INVOICE NO. 32385
RECEIVED Aug. 20/79
ANALYSED Sept. 4/79

TO: Canadian Occidental Petroleum Ltd.
Minerals Division
Ste. 311 - 215 Carlingview Dr.
Rexdale, Ont. M9W 5X8

ATTN: PROJECT: Prinic-Fred Claims-Soil CC: J. Hill

SAMPLE NO. :	PPM U
79PR8606	0.5
8607	0.5
8608	5.0
8609	0.5
8610	0.5
8611	<0.5
8612	0.5
8613	0.5
8614	0.5
8615	<0.5
8616	0.5
8617	<0.5
8618	9.5
8619	0.5
8620	4.0
8621	0.5
8622	0.5
79PR8623	1.5

CTA
MEMBER
CANADIAN TESTING
ASSOCIATION

CERTIFIED BY: Hart Bichler

APPENDIX IV

LABORATORY GEOCHEMICAL RESULTS

ROCKS

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J2C1
TELEPHONE: 984-0221
AREA CODE: 604
TELEX: 04-352597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: Canadian Occidental Petroleum Ltd.
Minerals Division
Ste. 311 - 215 Carlingview Dr.
Rexdale, Ont. M9W 5X8

ATTN:

PROJECT: Fred Claims - Rock

ROCKS

CC: J. Hill

CERTIFICATE NO. 49929
INVOICE NO. 32359
34009 - Th only
RECEIVED Aug. 20/79
ANALYSED Sept. 3/79

SAMPLE NO. :	PPM U	PPM Th	U/Th Ratio
8902	2.0	12	.17
8903	2.5	9	.28
8904	4.5	7	.64
8905	3.0	9	.33
8906	1.5	7	.21
8907	2.0	8	.25
8908	6.5	10	.65
8951	2.5	6	.42
8952	2.5	7	.36
8953	11.0	7	1.57
8954	2.5	6	.42
8955	4.5	7	.64
8956	3.0	9	.33
8957	2.0	9	.22
8958	1.5	7	.21
8959	2.5	9	.28
8960	0.5	8	.06
8961	1.5	9	.17
8962	1.0	4	.25
8963	2.0	6	.33
8964	0.5	9	.05
8965	2.0	6	.33
8966	2.0	4	.50
8967	8.0	10	.80
8968	3.0	7	.43
8969	3.5	10	.35

CTA MEMBER CANADIAN TESTING ASSOCIATION

CERTIFIED BY: D.G. Maclean

APPENDIX V

Report by C. F. Gleeson, PhD., P.Eng.

Geochemical Consultant

October 19, 1979

FRED

Geology: Leucocratic biotite granodiorite - geology map incomplete.
Several rocks range from 4 to 11 ppm, 28 - 42 cps.

Scint survey shows increase (+20 cps) on the east side of the property. This probably defines a different rock type or phase of the granodiorite or outcrop areas.

Geochemistry: Some very high U in soils on this property. There are at least 3 major anomalous zones trending N-S and enclosing values ranging from 10 to +400 ppm U. The largest one has a strike length of 7000 feet and varies in width from 200 to 500', it traverses the central part of the claims. This central anomaly appears to parallel the western margin of a 20 cps scintillometer anomaly. The soil anomaly may represent U in a structure or phase of the granodiorite.

Conclusions: Large and intense N-S trending soil anomalies have been defined in the central and western portion of the FRED claims which are underlain by granodiorite. These zones should be thoroughly prospected.

Author's Qualifications

Johannes R. Hill

Education - Graduated Queen's University,
Kingston, Ontario
B.Sc. Honours in Geology, 1975

Work Experience - Employed as Canadian Occidental Petroleum Ltd. field exploration geologist since 1975. Carried out and supervised geological programs across Canada based out of Minerals Division office, Toronto, Ontario.

STATEMENT OF EXPENDITURES

CLAIMS FRED 1-5

RECORD NUMBERS 1249-1250 & 1432-34

	Pro-rated Costs
Salaries and Benefits	$ 3,113.83
Travel and Accommodation	438.83
Drafting and reproduction	236.24
Consultant	113.61
Camp costs and supplies	943.00
Rental of equipment	1,063.56
Administration @ 10%	590.93
SUB TOTAL	6,500.00

Linecutting 23.8 km	$5,180.00 [2]	
Geochemical analyses	1,204.96 [3]	
PAC	–	6,384.96
TOTAL		$ 12,884.96

Notes

1) Pro-rated on basis of 20 man-days worked on claims conducting geological/geochemical/geophysical surveys out of a total of 798 man-days spent on these surveys during Project Prinic (see attached breakdown on following sheet)

2) Linecutting completed by Futura DevelopmentsReg'd.,Penticton, B.C.

3) Geochemical analyses completed by Chemex Labs, Vancouver, B.C.

PROJECT PRINIC EXPENDITURES- 1979

Geological, Geochemical/Geophysical Surveys
Excl. linecutting, drilling, staking and geochemical analyses

Salaries and Benefits	$ 124,242
Travel and Accommodation	17,509
Drafting and Reproduction	9,426
Consultant	4,533
Camp Costs and Supplies	37,626
Rental of Equipment	42,436
Administration @ 10%	23,578
TOTAL	$ 259,350[1]

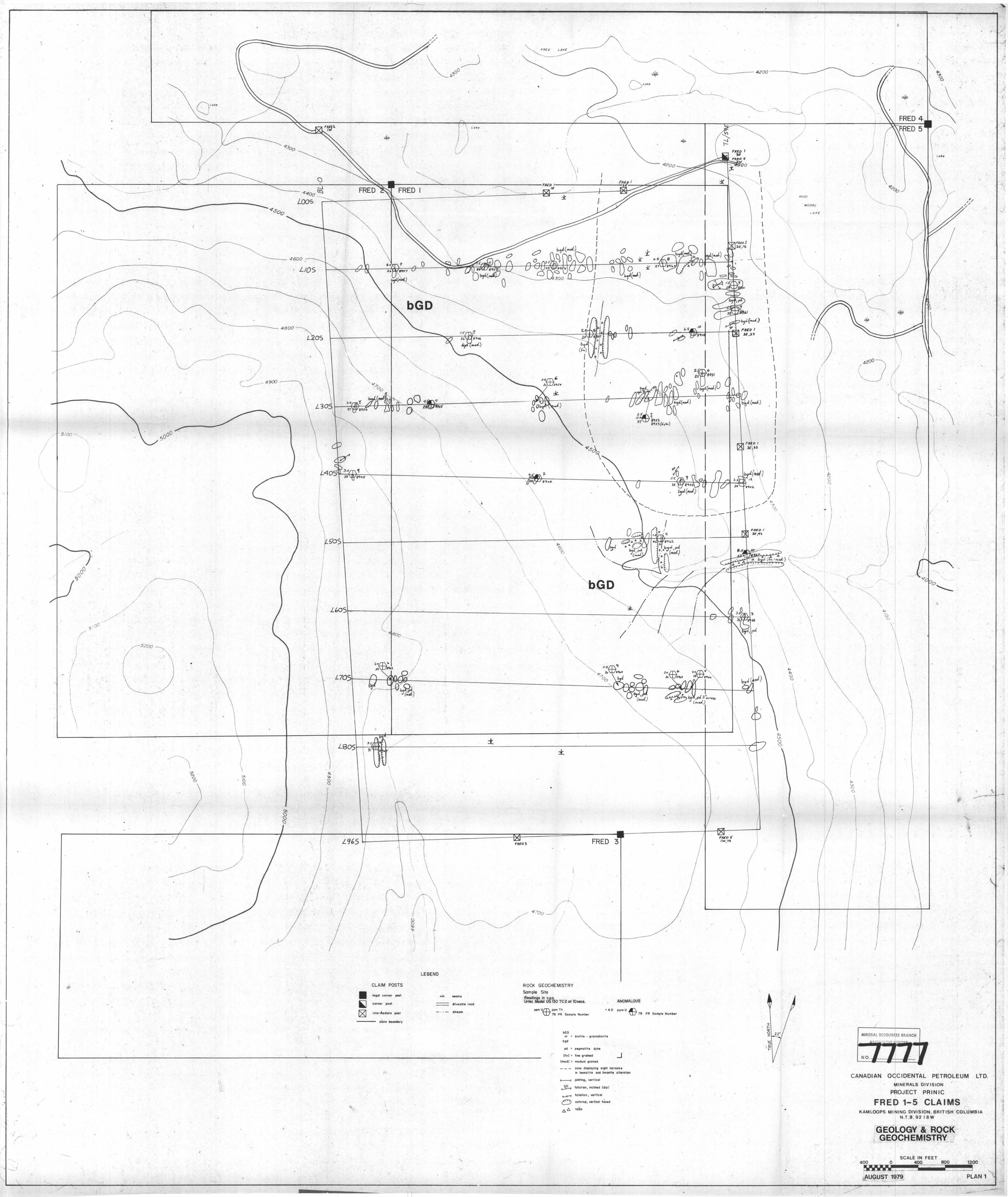
Note:

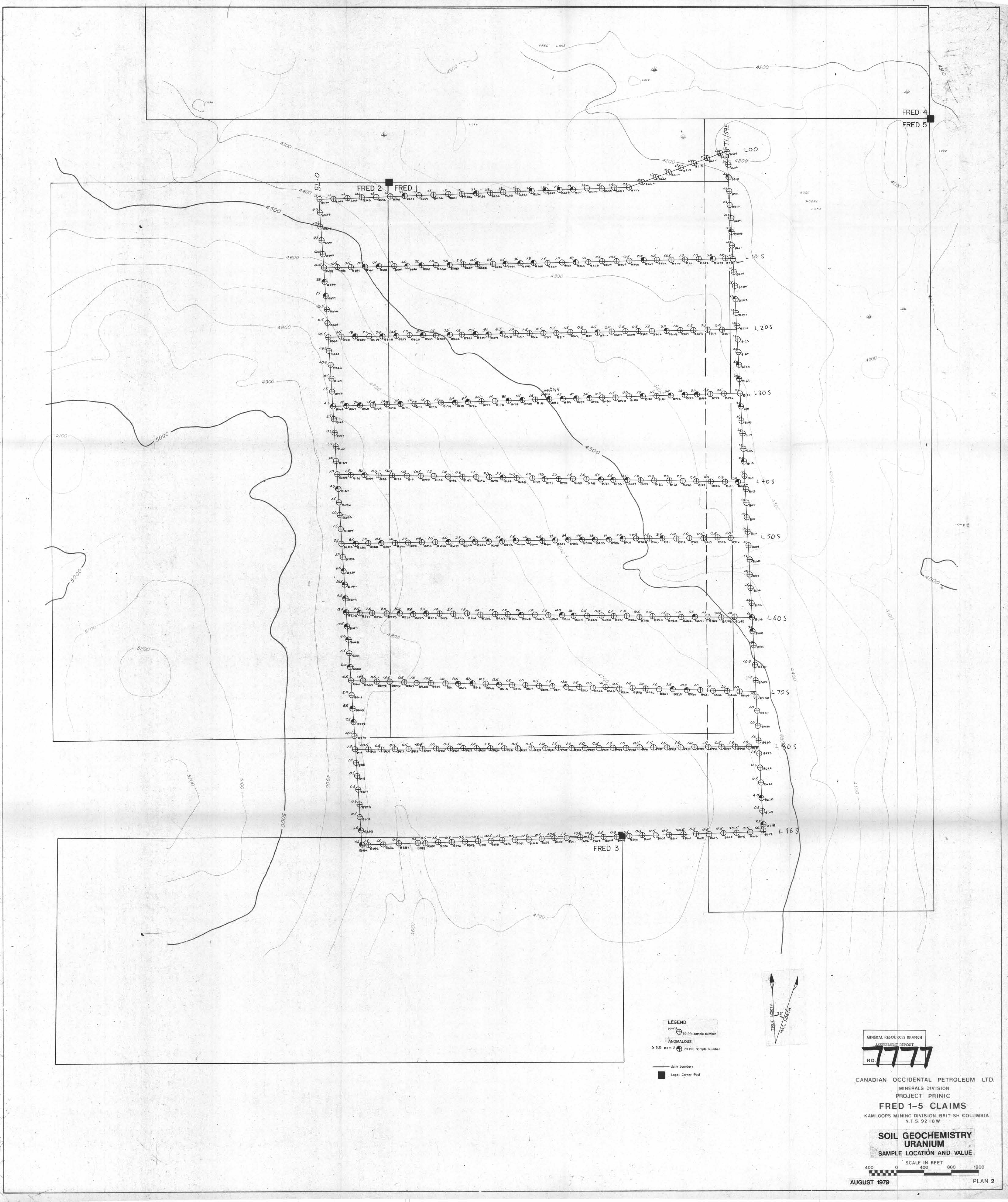
[1] A total of 798 man-days was spent carrying out geological/geochemical/ geophysical surveys during summer 1979 on Project Prinic (refer attached man-day breakdown)

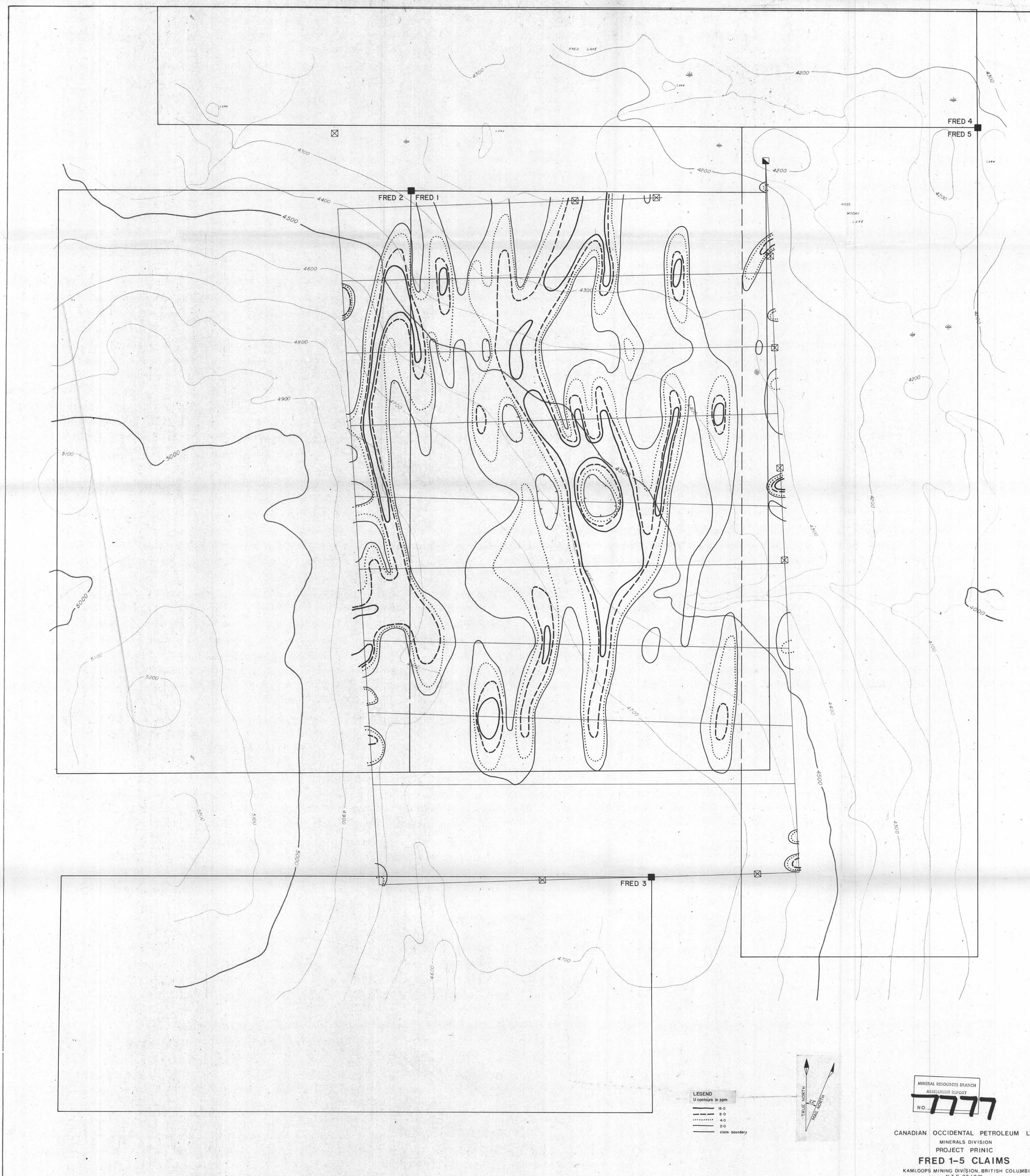
.OJECT PRINIC EXPENDITURES

1979 FIELD WORK (excluding drilling, geochem analyses staking)

	Claim	No. of Man-Days Work	Pro-rated Survey[1] cost @$325/man-day	No. of miles(km) of linecutting	Linecutting Cost @$350/l.m.(or $218/km)
1)	MAR 1-2	35	$ 11,375	5.5(8.9)	$. 1,925
2)	WAS 1-2	15	4,875	9.1(14.6)	3,185
3)	GLAD 1-4) 5-10)	11	3,575	–	–
4)	SEC 1	20	6,500	8.5(13.7)	2,975
5)	FIN 1-2	10	3,250	-	-
6)	NIC	50	16,250)		
		45	14,625)	28.2(45.4)	9,870
		40	13,000)		
7)	FRED 1-2) 3-5)	20	6,500	14.8(23.8)	5,180
8)	LINK 1-3	144	46,800	33.5(53.9)	11,725
9)	BALD 1-4	55	17,875	36.6(58.9)	12,810
10)	ENEAS 1-5	44	14,300	11.1(17.9)	3,885
11)	TOK 1-4	70	22,750	41.8(67.3)	14,630
12)	DEMUTH 1	10	3,250	5.4(8.7)	1,890
13)	DARK 1-5	32	10,400	32.4(52.1)	16,524
14)	COMA 1-3	2	650	-	-
15)	FOX 1	10	3,250	4.2(6.8)	1,470
16)	MEL 1-2	20	6,500	6.4(10.3)	2,240
17)	SHORT 1	-	-	-	-
18)	SHIN 1-2	-	-	-	-
19)	CLARK 1-6	125	40,625	19.4(31.2)	6,790
20)	DROP 1	15	4,875	3.4(5.5)	1,190
21)	STAKE 1-2	25	8,125	5.4(8.7)	1,890
	TOTAL	798	$259,350	233.3(375.4)	$98,179


FRED LAKE
FRED 4
FRED 5
TL 59E
FRED 2
FRED 1
BL 0
L00S
L10S
L20S
L30S
L40S
L50S
L60S
L70S
L80S
L96S
bGD
bGD
FRED 3
ROSS MOORE LAKE
LEGEND
CLAIM POSTS
legal corner post
corner post
intermediate post
claim boundary
swamp
driveable road
stream
ROCK GEOCHEMISTRY
Sample Site
Readings in c.p.s.
Urtec Model UG 130 TC 2 at 10 secs.
ppm U
ppm Th
79 PR Sample Number
ANOMALOUS
> 4.0 ppm U
79 PR Sample Number
bGD or bgd = biotite - granodiorite
pd = pegmatite dyke
(fn) = fine grained
(med) = medium grained
zone displaying sight increase in hematite and limonite alteration
jointing, vertical
foliation, inclined (dip)
foliation, vertical
outcrop, vertical faced
talus
TRUE NORTH
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7777
CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT PRINIC
FRED 1–5 CLAIMS
KAMLOOPS MINING DIVISION, BRITISH COLUMBIA
N.T.S. 92 I 8W
GEOLOGY & ROCK GEOCHEMISTRY
SCALE IN FEET
400 0 400 800 1200
AUGUST 1979
PLAN 1


FRED 4
FRED 5
FRED 2
FRED 1
FRED 3
BL-0
TL 59E
L00
L10S
L20S
L30S
L40S
L50S
L60S
L70S
L80S
L96S
TRUE NORTH
MAG NORTH
LEGEND
ppm U
79 PR sample number
ANOMALOUS
≥ 3.0 ppm U
79 PR Sample Number
claim boundary
Legal Corner Post
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7777
CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT PRINIC
FRED 1-5 CLAIMS
KAMLOOPS MINING DIVISION, BRITISH COLUMBIA
N.T.S. 92 I 8W
SOIL GEOCHEMISTRY
URANIUM
SAMPLE LOCATION AND VALUE
SCALE IN FEET
400 0 400 800 1200
AUGUST 1979
PLAN 2



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7777

CANADIAN OCCIDENTAL PETROLEUM LTD.

MINERALS DIVISION

PROJECT PRINIC

FRED 1–5 CLAIMS

KAMLOOPS MINING DIVISION, BRITISH COLUMBIA

N.T.S. 92 I 8 W

SOIL GEOCHEMISTRY URANIUM

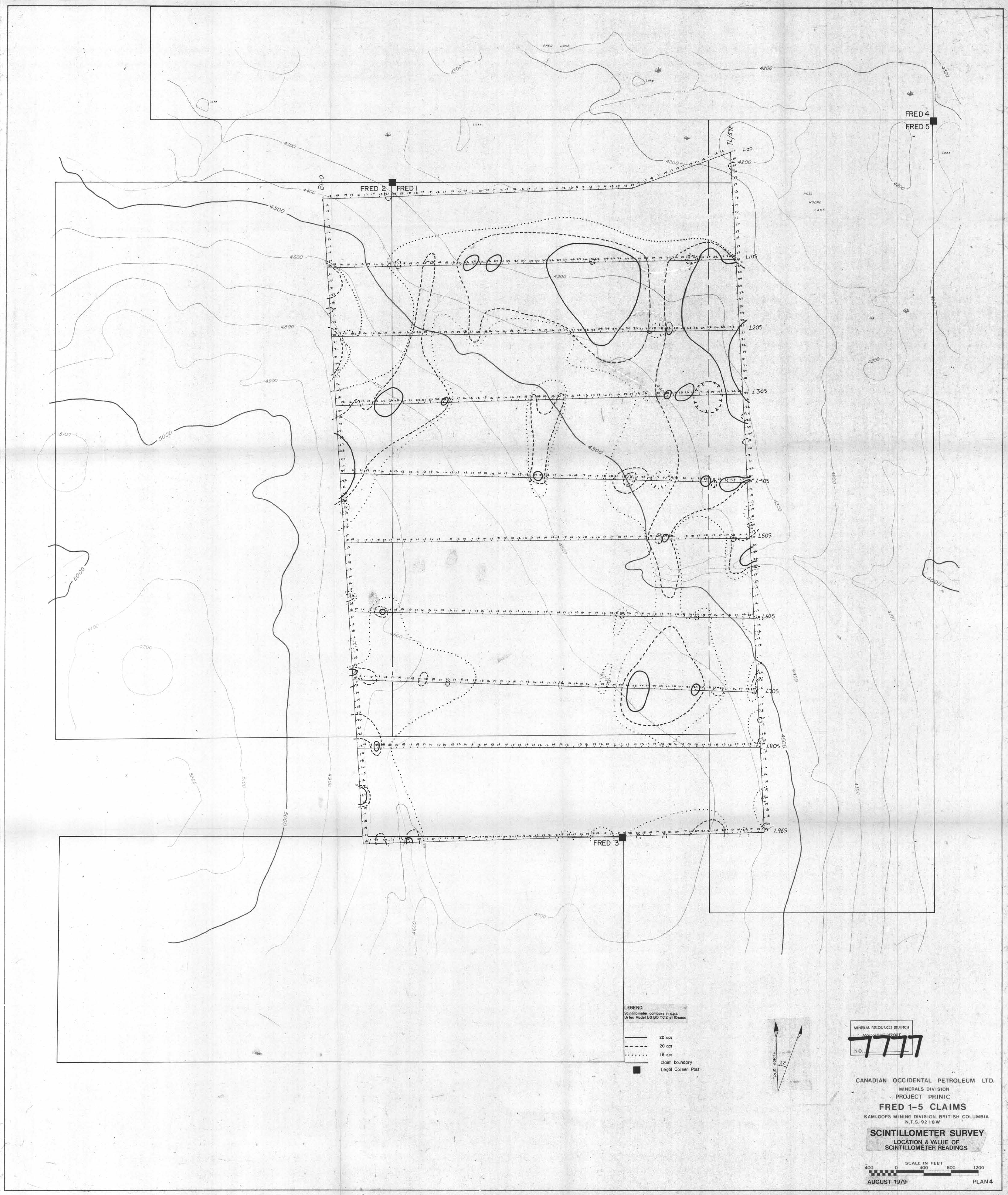
CONTOURED VALUES

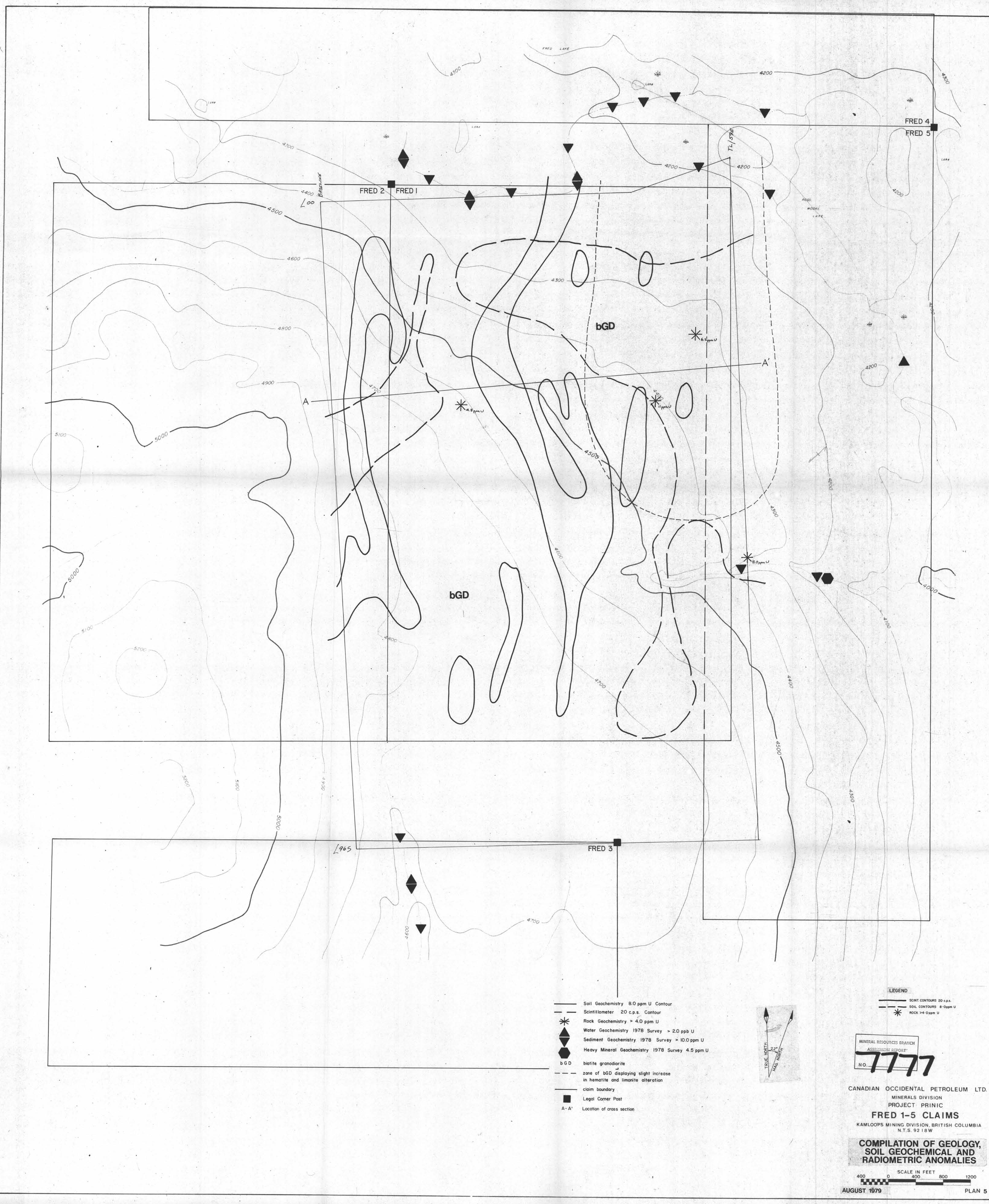
SCALE IN FEET

400 0 400 800 1200

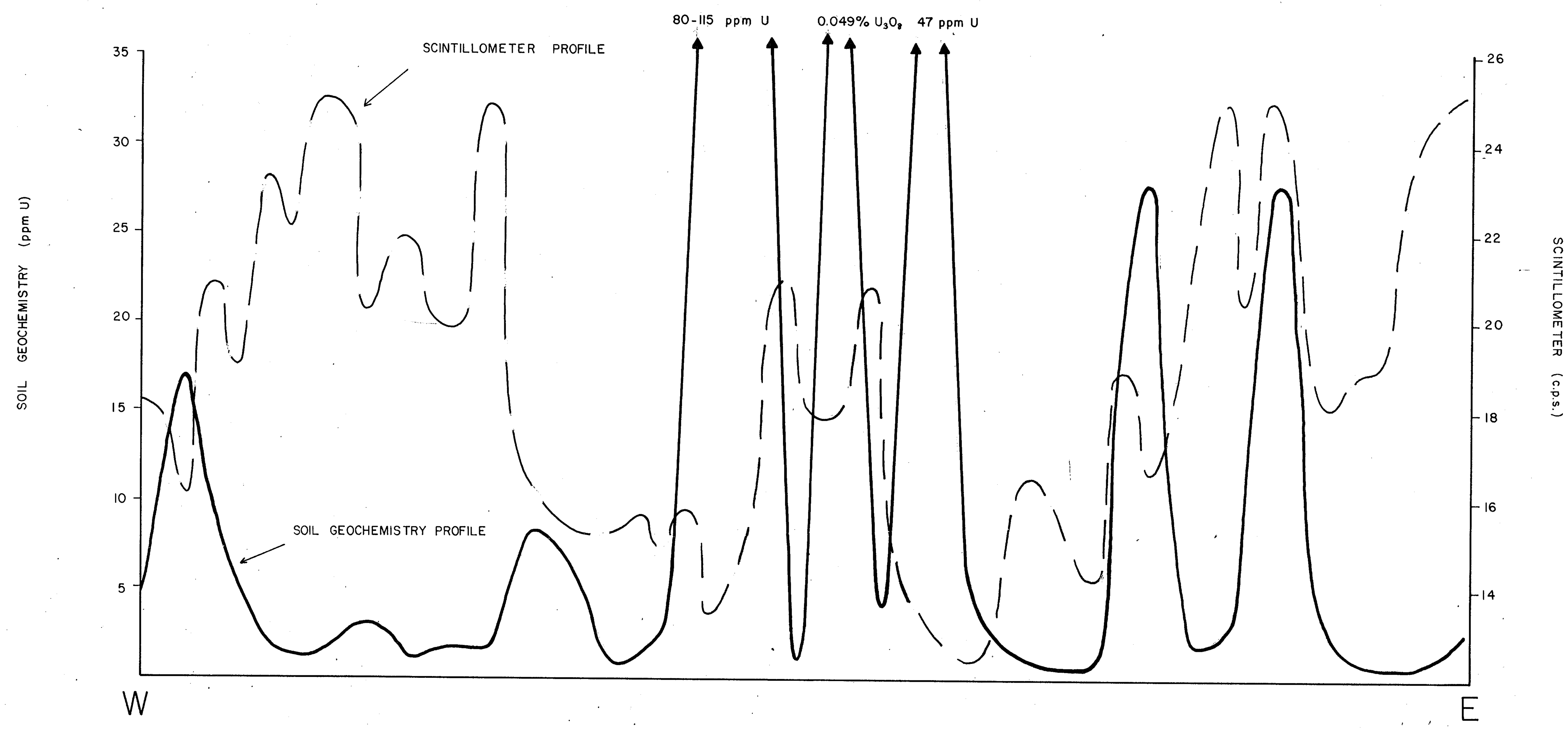
AUGUST 1979

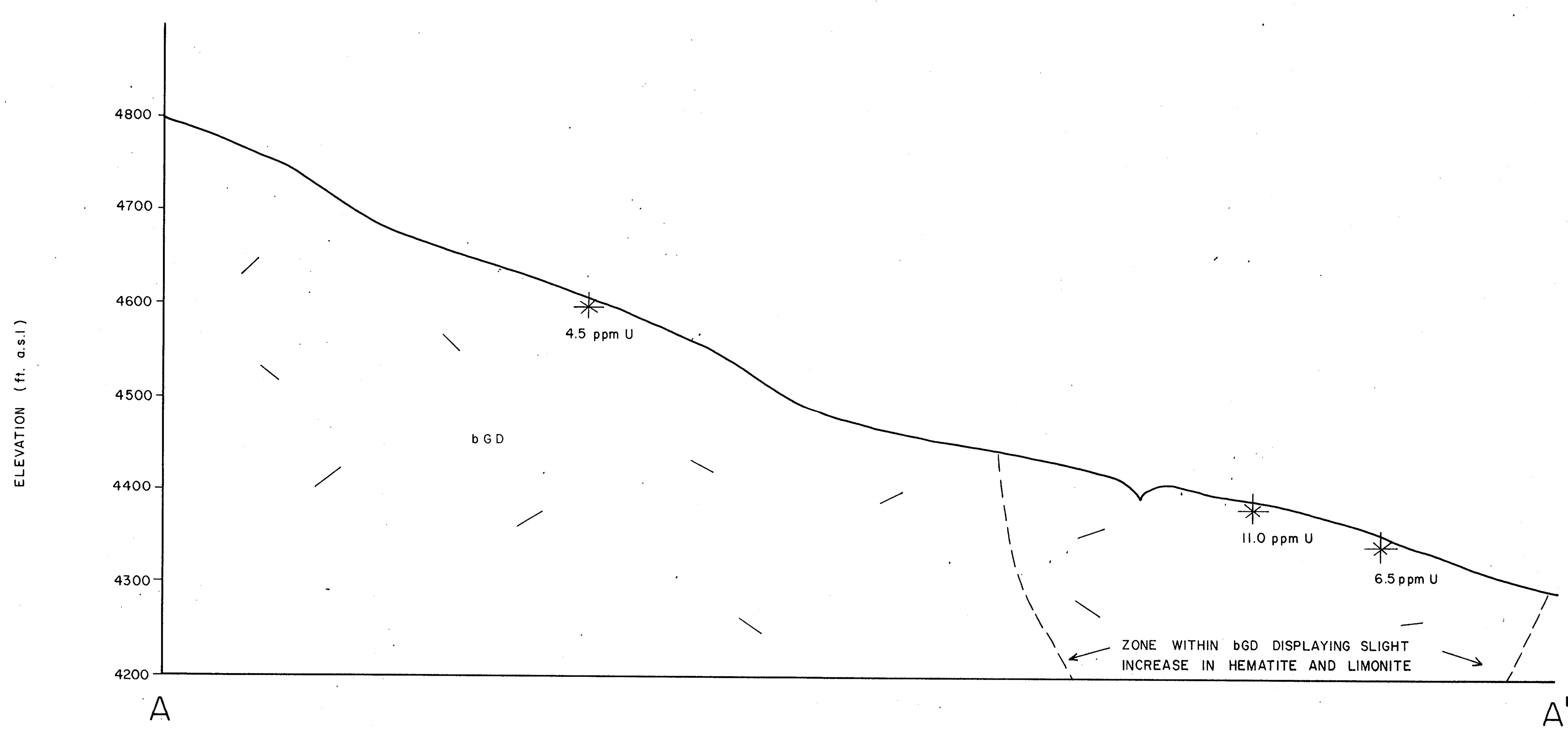
PLAN 3


FRED LAKE
FRED 4
FRED 5
FRED 2
FRED 1
FRED 3
BL 0
TL 15+9E
L00
L10S
L20S
L30S
L40S
L50S
L60S
L70S
L80S
L96S
4000
4100
4200
4300
4400
4500
4600
4700
4800
4900
5000
5100
5200
LEGEND
Scintillometer contours in c.p.s.
Urtec Model UG130 TC2 at 10secs.
22 cps
20 cps
18 cps
claim boundary
Legal Corner Post
TRUE NORTH
22°
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7777
CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT PRINIC
FRED 1–5 CLAIMS
KAMLOOPS MINING DIVISION, BRITISH COLUMBIA
N.T.S. 92 I 8 W
SCINTILLOMETER SURVEY
LOCATION & VALUE OF
SCINTILLOMETER READINGS
SCALE IN FEET
400 0 400 800 1200
AUGUST 1979
PLAN 4


FRED LAKE
FRED 4
FRED 5
FRED 2
FRED 1
FRED 3
BASELINE
L00
L96S
TL 15+00
MOORE LAKE
bGD
bGD
A
A'
6.5ppm U
4.8ppm U
8.0ppm U
4200
4300
4400
4500
4600
4700
4800
4900
5000
5100
5200
4100
4000
TRUE NORTH
MAG NORTH
22°
Soil Geochemistry 8.0 ppm U Contour
Scintillometer 20 c.p.s. Contour
Rock Geochemistry > 4.0 ppm U
Water Geochemistry 1978 Survey > 2.0 ppb U
Sediment Geochemistry 1978 Survey > 10.0 ppm U
Heavy Mineral Geochemistry 1978 Survey 4.5 ppm U
bGD biotite granodiorite
zone of bGD displaying slight increase in hematite and limonite alteration
claim boundary
Legal Corner Post
A-A' Location of cross section
LEGEND
SCINT. CONTOURS 20 c.p.s.
SOIL CONTOURS 8·0ppm U
ROCK >4·0ppm U
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7777
CANADIAN OCCIDENTAL PETROLEUM LTD.
MINERALS DIVISION
PROJECT PRINIC
FRED 1-5 CLAIMS
KAMLOOPS MINING DIVISION, BRITISH COLUMBIA
N.T.S. 92 I 8W
COMPILATION OF GEOLOGY, SOIL GEOCHEMICAL AND RADIOMETRIC ANOMALIES
SCALE IN FEET
400 0 400 800 1200
AUGUST 1979
PLAN 5

SCHEMATIC CROSS-SECTION (AA')





MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 7777