

175-#394-#6977

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R. H. SERAPHIM ENGINEERING LIMITED  
GEOLOGICAL ENGINEERING

316 - 470 GRANVILLE STREET  
VANCOUVER, B.C. V6C 1V5

GEOLOGICAL, GEOCHEMICAL AND RADIOMETRIC REPORT

ON THE

RUST 1 TO 5 MINERAL CLAIMS

ATLIN MINING DIVISION

104N/11W

LAT. 59°45'      LONG. 133°15'

OWNER: UNITED RAYORE GAS LTD.

OPERATOR: SERAPHIM ENGINEERING LTD.

by

T.E. Lisle, P.Eng. & R.H. Seraphim, Ph.D., P.Eng.

October 26, 1978.

6977

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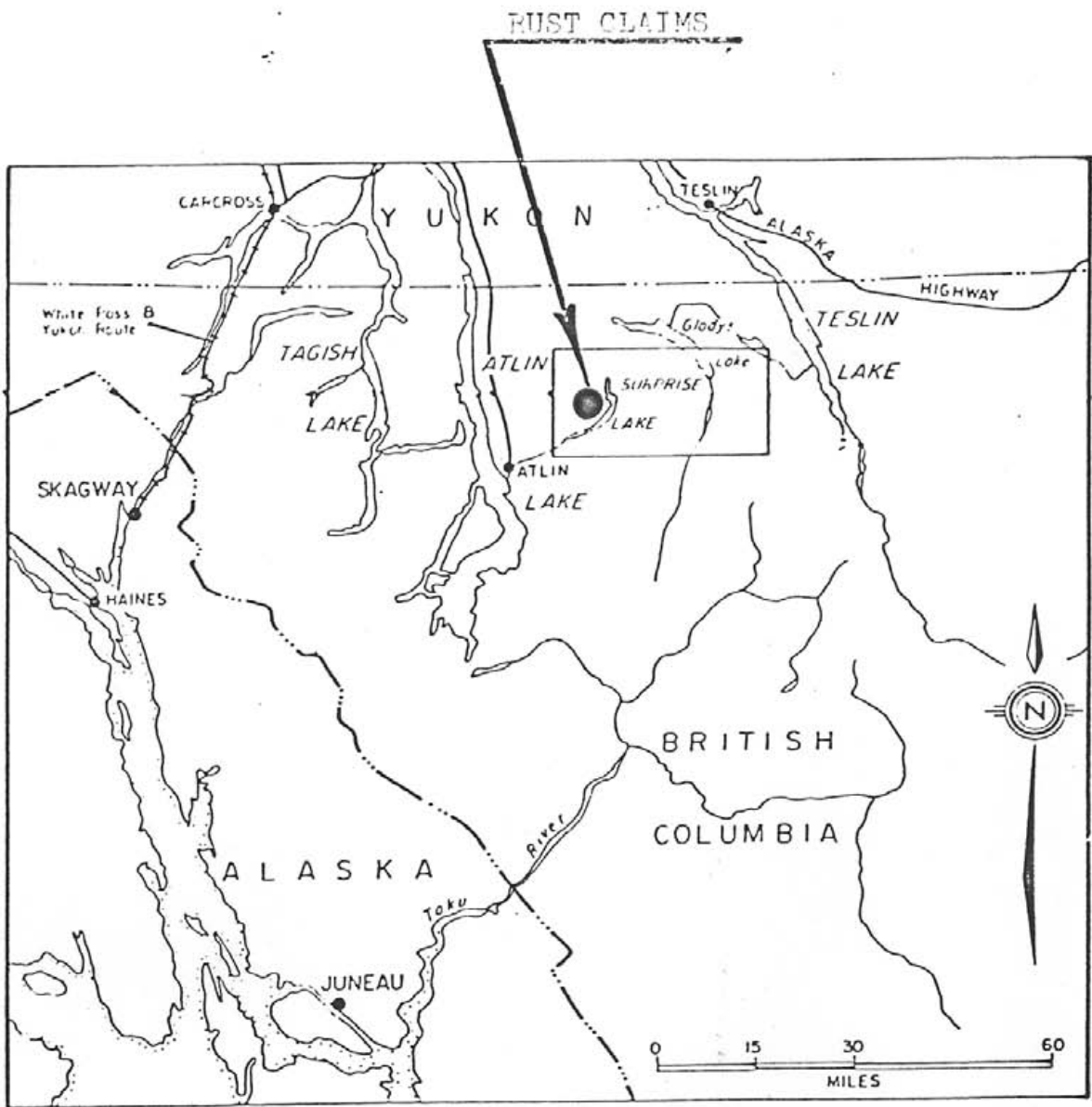
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**6977**



R.H. SERAPHIM ENGINEERING LTD.  
 LOCATION MAP, RUST CLAIMS  
 ATLIN MINING DIVISION, NTS 104N

OCTOBER, 1978. Map 1

## SUMMARY AND CONCLUSIONS

United Rayore Gas Limited acquired the Rust mineral claims in 1977. The claims are in the Cracker Creek drainage area about 30 kilometers northeast of Atlin, B.C.

R.H. Seraphim Engineering Ltd. undertook radiometric, geochemical and geological surveys of the claims during September, 1978 to evaluate their potential for uranium. The program is only partially complete.

The claims lie near the western margins of the Surprise Lake alaskite batholith, and are underlain by alaskite and older Paleozoic rocks. Kasolite, a secondary uranium mineral, was found on quartz float in the cirque near the northwestern boundary of the Rust claims. The quartz float is believed to have originated in a zone of quartz and silicified alaskite near the contact between alaskite and ultramafic rocks. One or two limonitic areas that are associated with malachite in the zone are also radioactive, about twice background over a few square centimeters. Uranium mineralization is associated with quartz at other locations in the batholith.

The radiometric survey revealed a uranium + thorium count ranging from about 20 to 66, for the areas underlain by alaskite. Some of the higher counts may be important, and those, particularly in areas with higher

uranium geochemistry ( $>10$  ppm U.), should be examined more closely.

The amount of leaching, i.e. removal of radioactive material from surface, remains a problem which might be partially solved by trenching.

#### RECOMMENDATIONS

The survey work completed to date covers only part of the Rust claims. Other radioactive occurrences are known in the vicinity of the claims, therefore the survey work should be extended, where practicable, to cover the remaining ground.

The lower end of the quartz vein stockwork in the cirque area should be drilled and blasted to obtain a better appreciation of the nature of the mineralization and amount of surface leaching. The vicinity of the quartz stockwork, and the indicated areas of geochemical and radiometric interest should be prospected further.

#### INTRODUCTION

United Rayore Gas Limited acquired the Rust mineral claims in 1977. A program of geological, geochemical and radiometric surveys was initiated during September 1978 to evaluate the property's potential for uranium.

The exploration target on the claims is tabular vein-type deposits similar to those being mined in Western Europe and more particularly in France. Uranium mineralization in these deposits is present in silicified veins within the granite and is in many places accompanied by fluorite and minor carbonate. The principal uranium mineral is pitchblende which is commonly associated with minor pyrite, marcasite and iron oxides.

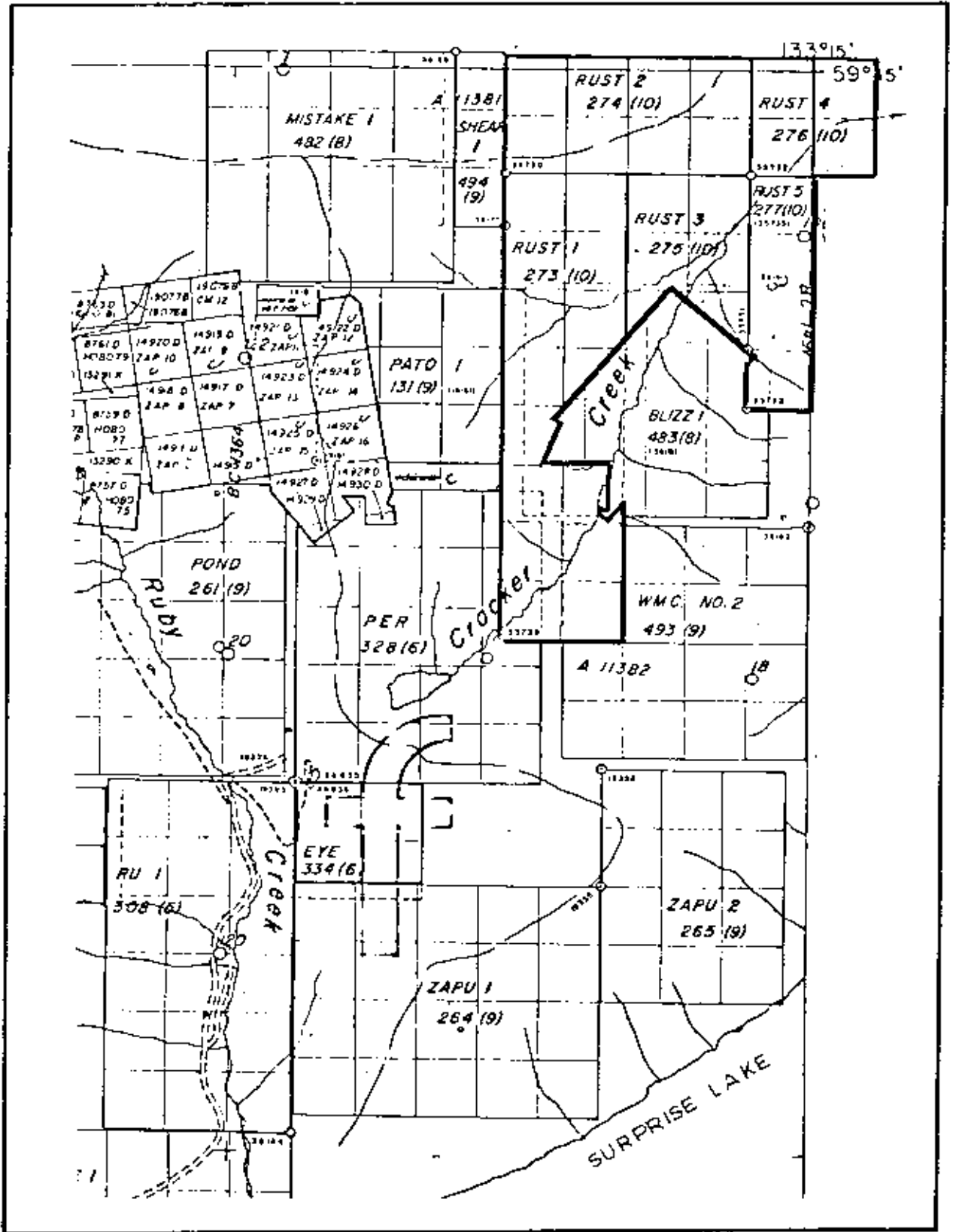
Due to the lateness of the season and inclement weather, the full program was not completed. The results of the work completed to date are described herein and presented on maps 3 to 5 at scale of 1 : 4000.

#### LOCATION AND ACCESS

The Rust claims are located in the Cracker Creek drainage area approximately 30 kilometers northeast of Atlin. Access is by good gravel road from Atlin to Pine and Ruby Creeks, thence by a rough four-wheel drive road northeast along the Cracker Creek Valley.

The northernmost Rust claims are centered roughly on Latitude  $59^{\circ} 45'$ , Longitude  $133^{\circ} 15'$  and most of the claim block is in N.T.S. 104W/11W.

Elevations range from about 900 to 1800 meters above sea level. The terrain is marked by broad valleys,



RUST CLAIMS \_ INDEX MAP.

R.H. SERAPHIM ENGINEERING LTD.

SCALE, 1:50,000

OCTOBER, 1978

Map 2

subdued upland glaciated surfaces and moderate to steep valley slopes. Some of the creeks' headwater in steep precipitous cirques.

### CLAIMS

The property, owned by United Rayore Gas Limited, is comprised of the following claims in the Atlin Mining Division:-

<u>Name</u>	<u>Record</u>	<u>Units</u>	<u>Group</u>	<u>Anniversary</u>
Rust 1	273 (10)	16	Rust	October 5/78
Rust 2	274 (10)	8	"	"
Rust 3	275 (10)	6	"	"
Rust 4	276 (10)	4	"	"
Rust 5	277 (10)	4	"	"

The claims have not been surveyed.

### HISTORY AND BACKGROUND

Barymin Company investigated radioactive occurrences on claims near the head of Cracker Creek in 1955. Barymin's claims covered rusty weathering alaskite containing secondary uranium minerals zeunerite and meta-zeunerite. The mineralization is in kaolinized fracture zones up to 4.5 meters wide which are present in and near the marginal finer grained phases of the intrusion. A number of quartz veins are present and the mineralized



area is locally marked by fluorite, pyrite, arsenopyrite and chalcopyrite. The highest grade sample selected from one of the zones investigated yielded 0.088%  $U_3O_8$  and 0.0117%  $MoS_2$ .

Much of the recent exploration in the Cracker Creek - Ruby Creek area has been for tungsten and molybdenum. The Adanac molybdenum deposit has reserves of 94 million tonnes grading 0.16% molybdenite. A number of other smaller deposits, including the Pit copper prospect on the Rust claims, have also been investigated.

A resurgence of interest in uranium prompted the federal and provincial governments to undertake, jointly, a multielement geochemical survey of Atlin map sheet 104N in 1977. The data produced from this work showed that the Surprise Lake alaskite intrusion contains highly anomalous uranium, in relation to surrounding formations.

From 1976 to 1978, other companies investigated radioactive occurrences near Cracker Creek, and at other locations underlain by alaskite. One drill program was recently completed in the Trout Lake area east of Cracker Creek.

### WORK PROGRAM

Radioactive float was found near the western boundary of the Rust 2 mineral claim. An irregular grid was established by hip chain and compass to survey this area in detail.

A base line was run north and south from the legal corner post of Rust 2 mineral claim. Grid lines 100 meters and 200 meters apart were run easterly with stations marked at 50 meter centers. One line at 100S had stations marked at 100 meter centers. Approximately 15 line kilometers of geological, geochemical and radiometric surveys were completed.

### RADIOMETRIC SURVEY

A radiometric survey was carried out over the grid with a Scintrex GIS 4 gamma-ray spectrometer, Serial number 704128.

The survey procedure involved placing the instrument on the ground next to the station and taking three sets of readings of 10-second duration. The readings were for (1) total count, (2) uranium and thorium, and (3) thorium. All of the records shown on Map 4 are the average of three readings.

Readings for uranium and thorium recorded in areas underlain by alaskite vary from about 20 to 66. The variability is due in part to contained radioactive material and to the amount of surface cover. Some of the higher readings near the northwest corner of the claims, and, on and near line 250 south might be rechecked as they occur in the general area of weak geochemical anomalies.

The intruded rocks display a much lower radiometric profile than the alaskite and the survey consequently is useful in interpreting geology.

#### GEOCHEMICAL SURVEY

Soil and silt samples were collected from the grid stations shown on Map 5. Some stations were not sampled because they are either on outcrop or in areas covered by talus or boulders. These areas are more prevalent at the upper elevations.

Soil horizons on the upper slopes are not well developed and "B" horizon soils are uncommon. A typical sample from these areas might consist of brown fine to coarse sandy soil mixed with minor amounts of surface "A" horizon soil if it is present.

The soils in the valleys are usually darker, contain an assemblage of clay, silt and sand and are in most places more organic.

Samples were collected with grub hoe or soil auger. The samples were packaged in standard brown kraft soil envelopes and shipped to Chemex Laboratory in North Vancouver. Details on the type, depth of sample and sample description are shown in Appendix 2.

At Chemex the samples are dried and screened. A portion of the -80 mesh fraction is ashed and digested in hot nitric acid, and evaporated to dryness. The residue is leached with a known volume of dilute nitric acid. It is then mixed, and a small aliquot pipetted into a platinum dish for evaporation and fusion with a carbonate-fluoride flux for measurement of uranium fluorescence. The detection limit is 0.5 ppm. In some instances, as shown on the certificates of analyses, the detection limit varied due to fluorescence quenching caused by high concentration of interfering metals.

Most of the samples yielded less than 5 ppm U. The area underlain by alaskite displays a much greater geochemical variation than the intruded rocks. Samples yielding greater than 5 ppm U are generally scattered within the grid and isolated.

A number of samples collected by auger along Cracker Creek, and silt samples on Line 1100 south yielded between 11 and 95 ppm U. Field data indicates that many of these samples contain some organic debris which might provide the higher uranium content.

GENERAL GEOLOGY

The Rust claims are located near the western margins of the Surprise Lake alaskite batholith. The geology near the western end of the intrusion is complex. The batholith is Cretaceous (?) in age but the Adanac molybdenum deposit occurs in a complex Early Tertiary stock a few kilometers southwest of the Rust claims. The batholith intrudes Cache Creek sedimentary and volcanic rocks, and ultramafic rocks of the Atlin intrusions. Remnants of Tertiary and Quaternary volcanic rocks are evident in the Ruby Creek area near the headwaters of Cracker Creek.

The alaskite is comprised mainly of potash feldspar, plagioclase and quartz with up to 5% biotite. Textures vary from fine to coarse grain in porphyritic and non-porphyritic rocks. The fine grained alaskite locally has sharp boundaries and occurs as narrow dikes, elsewhere contacts are gradational. Quartz porphyry, quartz feldspar porphyry and green volcanic dikes up to a few meters wide are also present in some areas.

The alaskite contains abundant smoky quartz, minor amounts of muscovite, fluorite, apatite, beryl, and rare topaz and allanite. Quartz veining is locally evident and small zones of simple pegmatite are present. The alaskite forms soft crumbly outcrops in many places and is locally limonitic due to the weathering of minor

pyrite, arsenopyrite, chalcopyrite, and magnetite; and to the decomposition of biotite.

#### GEOLOGY OF RUST CLAIMS

Remnants of Cache Creek volcanic and sedimentary rocks are closely associated with larger masses, possibly remnants, of serpentized ultramafic rocks around the cirque area on the Rust 2 mineral claim. Radiometric and geochemical data indicate that these rocks may underlie a larger area than that shown on the maps.

The main easterly trending creek in the cirque probably marks the northern contact of the southern mass of ultramafic rock. This contact, likely fault controlled, includes a complex zone of quartz and silicification trending easterly. This zone is believed to be the Pitt copper prospect shown on mineral inventory map 104N (XI).

The quartz zone is incompletely exposed, has been traced along the valley bottom about 85 meters, and at one place is about 12 meters wide. The individual quartz veins in the zone are in many places vuggy, locally more than one-half meter wide and of different strikes. Near the western end, most of the veins strike  $N15^{\circ} - 20^{\circ}E$  with some at  $N30^{\circ}W$ . Quartz stringers striking  $N50^{\circ}E$  are prominent in the central section as are thick quartz veins with parallel stringers trending about  $N70^{\circ}-80^{\circ}E$  and dipping  $70^{\circ}S$ .  $N70^{\circ}E$  vertical veining is the more pronounced

at the easterly end of the zone. The stockwork is cut by late N20<sup>o</sup>-30<sup>o</sup>W steeply dipping fractures and may be locally offset by them.

The zone is weakly limonitic with minor manganese and hematite. It is more limonitic towards the eastern end where minor malachite is also present. One or two of these limonitic areas with malachite are radioactive, about twice background, over a few square centimeters.

A 40 centimeter slab of quartz float was found about 50 meters downslope. A slickensided face on this slab is partly coated with kasolite (lead uranyl silicate). The slab probably originated in the lower part of the quartz zone, particularly in the area of larger veins.

A better appreciation of the value of this zone would be gained initially by drilling and blasting a trench across the limonitic material near the bottom exposure. Although bedrock is obscured downslope from the quartz, the trace of the zone might be followed by carefully prospecting the valley bottom with geiger counters.

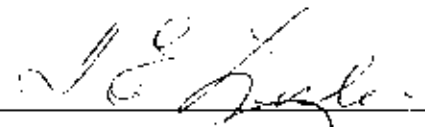
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October 26, 1978.

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October 26, 1978.

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G.F. Lisle, P. Eng.

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R.H. Seraphim, Ph.D., P. Eng.

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APPENDIX I

STATEMENT OF EXPENDITURES

United Rayore Gas Ltd.  
Assessment Costs, 1978  
Rust Claims Atlin M.D.

Wages: D.Kronig, Geologist, \$1925.00/mo Sept. 3-28, 1978	\$1925.00
T. Lisle, Project Supervisor, \$2500.00/mo. Sept. 4, 16, 19, 22, 23, 25( $\frac{1}{2}$ ), 27. One Quarter Month	625.00
D.Fennings, Line cutter, soil sampler. Sept. 6-18, $\frac{1}{2}$ mo at 950.00/mo.	475.00
J Taylor Soil sampler, Radiometric surveyor. Sept. 6-25. At 850.00/mo. $\frac{3}{4}$ mo.	637.50
Camp Costs; 64 man days at 13.00/day	832.00
GIS4 Spectrometer rental One Mo. at 300.00	300.00
Geochemical Analyses, 236 at 2.50	590.00
Helicopter Support, Sept 6&25 Approximately,	240.00
Truck Rental, Sept3-25 @ \$30.00/day	690.00

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6314.50

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*J. E. Lisle*

APPENDIX 2

GEOCHEMICAL RESULTS



# CHEMEX LABS LTD.

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 CANADA V7J 2C1  
 TELEPHONE 985-0648  
 AREA CODE 604  
 TELEX: 043-52597

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## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 45883

TO: R. H. Seraphim Engineering Ltd.,  
 #316 - 470 Granville Street,  
 Vancouver, British Columbia cc: Atlin, B.C.  
 ATTN: V6C 1V5 U.R.O. Project

INVOICE NO. 28257

RECEIVED Sept. 19, 1978

ANALYSED Sept. 26, 1978

SAMPLE NO.:	PPM U	DEPTH	HORIZON	DESCRIPTION
BL 0+00N	<0.5	8cm	C	Coarse sandy soil
0+50	<0.5	8"	AtC	Brown coarse mud.
1+00	0.5	10"	AtC	" " "
1+50	<0.5	30"	AtC	Black organic soil.
2+00	<0.5	25"	AtC	" " "
2+50	<0.5	8"	Silt.	Silt.
3+00	<0.5	10"	C	Light brown med. soil.
3+50	<0.5	13"	AtC	Light brown coarse med.
4+00	<0.5	15"	C	" " " "
4+50	<0.5	15"	C	" " fine muddy soil
BL 5+00N	<0.5	15"	C	Medium brown sandy soil
BL 500N 75W	<0.5	13"	C	Brown sandy soil.
BL 5+50N	<0.5	13"	AtC	Brown muddy soil.
6+00	7.0	13"	C	Med. brown coarse soil.
6+50	1.5	15"	C	Brown coarse soil.
7+00	8.5	15"	C	Med brown very coarse sand-some mica.
7+50	9.0	15"	C	Med. brown fine sandy soil
8+00	3.5	13"	C	Med. " coarse sand.
8+50	3.5	15"	C	" " very coarse soil.
9+00	8.0	15"	C	Very coarse silt.
9+50	12	13"	C	Very coarse sandy soil (Crush. & Muddy)
BL 10+00N	<0.5	13"	AtC	Coarse mud.
5+50N 0+50E	<0.5	8"	C	Crushed rock & soil
1+00	<0.5	13"	C	" " "
5+50N 1+50E	<0.5	13"	C	" " "
6N 0+50E	2.5	15"	C	Crushed Atlatite.
1+00	2.5	13"	C	Med. brown coarse sandy soil.
1+50	4.5	13"	C	" " " " "
2+00	2.0	15"	AtC.	" " fine " " "
2+50	3.0	13"	C	" " sandy soil. "
3+00	6.0	13"	E?	Med. brown sandy soil.
3+50	1.0	15"	C	Med " " "
4+00	2.0	15"	C	" " " " "
4+50	2.0	15"	C	Crushed rock and soil.
5+00	1.5	13"	C	" " " " "
5+50	3.5	15"	C	" " " " "
6+00	6.0	15cm	C	Note: U - Less than 4 detection limit due to fluorescence quenching caused by high concentration of the interfering metals. Description as above.
6+50	2.0	15cm	C	
7+00	1.0	13cm	AtC.	
6N 7+50	4.0	13"	AtC.	
STD. NO.	21			



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CERTIFIED BY: #P. [Signature]



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## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 45884

TO: R.H. Seraphim Engineering Ltd.,  
 316 - 470 Granville Street,  
 Vancouver, B.C.

INVOICE NO. 28257

RECEIVED Sept. 19, 1978

ANALYSED Sept. 26, 1978

ATTN: U.R.O. Project cc: Atlin, B.C.

SAMPLE NO. :	PPM U	DEPTH	HORIZON	DESCRIPTION.
6N 8+00E	<0.5	10cm	A+C	MODERATELY COARSE SOIL.
7N 1+00E	7.5	10"	A+C	COARSE SANDY SOIL
1+50	2.0	8"	C	" " " "
2+00	28	13"	A	FINE MUDDY SOIL.
2+50	12	15"	A+C	VERY COARSE SANDY SOIL.
3+00	4.5	13"	C	Med. brown crushed rock.
3+50	7.5	13"	A+C	" " " "
4+00	4.0	10"	A+C	" " SANDY SOIL.
4+50	1.5	10"	C	" " " "
5+00	4.0	13"	C	" " CRUSHED ROCK.
5+50	9.0	15"	C	" " " "
6+00	4.5	18"	C	" " " "
6+50	1.5	15"	A+C	" " SANDY SOIL.
7+00	5.0	15"	C	" " " "
7+50	1.0	15"	A+C	" " " "
8+00	6.0	18"	A+C	" " VERY COARSE SANDY SOIL.
8+50	1.0	18"	A+C	" " " "
7N 9+00E	<0.5	15"	C	" " COARSE SANDY SOIL.
9N 0+50E	6.0	10cm	C	ROCKY COARSE SOIL
1+00	1.5	18"	C	Lt. brown coarse mud.
1+50	3.0	15"	A+C	Brown coarse soil.
2+00	3.5	15"	C	Med. brown mud soil.
2+50	2.5	18"	A+B+C	Brown organic muddy soil.
3+00	1.5	18"	A+C	Med. brown muddy soil.
3+50	2.5	15"	C	" " VERY COARSE MUD.
4+00	25	18"	C	" " " "
4+50	3.0	13"	C	Tan - very coarse sandy soil.
5+00	2.0	15"	C	Med. brown very coarse sandy soil.
5+50	2.5	18"	A+C	Brown sandy soil.
6+00	1.0	18"	C	Lt. brown, very coarse rocky soil.
6+50	4.0	10"	A	Rock slide - Black organic.
7+50	3.0	13"	A+C	Black organic on rocks.
8+00	1.0	13"	C	Light brown very coarse sand.
8+50	2.0	15"	C	Lt. brown very coarse sandy soil.
9+00	1.5	18"	A+C	Med. brown coarse mud.
9+50	15cm	A+C	0.5	Note: U-less than 4 detection limit due to fluorescence quenching caused by high concen- tration of the interfering metals.
10+00	15cm	C	3.5	
10+50	15cm	C	1.0	
9N 11+00E	2.0	15cm	A+C	Med. brown very coarse sandy soil.
10N 0+50E	<0.5	18"	C	Coarse rocky muddy soil.
STD. NO.	20			



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## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 45885

TO: R.H. Seraphim Engineering Ltd.,  
 #316 - 470 Granville Street,  
 Vancouver, B.C. V6C 1V5.

INVOICE NO. 28257

cc: Atlin, B.C.

RECEIVED Sept. 19, 1978

ATTN:

U.R.O. Project

ANALYSED Sept. 26, 1978

SAMPLE NO. :	PPM U	Depth	Horizon	DESCRIPTION:
10N 1+00E	<0.5	13cm	C	Med brown coarse muddy soil.
1+50	<0.5	15"	A+C	" " muddy soil.
2+00	<0.5	15"	A+C	" " " "
2+50	<0.5	15"	C	Tan, coarse " "
3+00	<0.5	18"	A+C	Very dark coarse muddy soil
3+50	0.5	15"	A+C	Tan coarse med.
4+00	<0.5	15"	A+C	" Fine mud
4+50	<0.5	33"	A	Black organic soil, over rock
5+00	1.0	13"	A+C	Med brown coarse mud
5+50	5.0	15"	C	Very light brown coarse soil.
6+50	1.5	15"	C	Brown coarse mud (Rock slide).
7+00	3.0	15"	A+C	Very dark coarse mud
7+50	2.0	15"	A+C	Med. brown coarse sandy soil.
8+00	3.0	13"	C	Coarse sandy soil
8+50	1.0	13"	A+C	" Crushed rock.
9+00	1.5	15"	A+C	Coarse, dark brown soil.
9+50	3.0	15"	A+C	" very dark sandy soil.
10+00	1.5	15"	A+C	Very coarse, med. brown sandy soil
10+50	<0.5	18"	A+C	Coarse dark soil.
10N 11+00E	3.0	20"	C	Coarse sandy soil.
11+00S 1+00E	6.0	30"	B	Limonitic silty clay - some sand - m. org.
2+00	0.5	15"	C	Limonitic sand and silt. - NE slope.
3+00	4.0	15"	B	limonitic sand & silt, gentle NE slope.
3+40	26	15-30"	B	Bn clayey silt - High organic.
4+00	17	15"	-	Stream sediment Med. " sand, silt, clay
5+00	95	5"	-	Stream " moderately organic.
6+00	1.5	15"	C	Limonitic sand and silt.
7+00	1.0	15-20"	C	limonitic, sandy, flat slope - Aluskik Hill.
8+00	0.5	10"	C	limonitic sandy soil
9+00	1.5	15-20"	C	limonitic brown sandy soil.
10+00	<0.5	15-20"	A	Brown organic soil
11+00	3.5	15"	A-C	Sandy organic "
12+00	20	60"	B	Green-grey clay. - Clucker Ck. valley.
11+00S 13+00E	0.5	15"	B	limonitic sandy soil.
0+00N 0+50E	<0.5	15"	C	Dark brown soil.
1+00	<0.5	15cm	C	Notes: U - Less than 4 detection limit due to fluorescence quenching caused by high concentration of the interfering metals.
1+50	<0.5	15"	"	
2+00	<0.5	15"	"	
2+50	<0.5	15"	"	
0+00N 3+00E	1.0	15"	"	Brown soil - Aluskik
STD. NO.	22			



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 TELEPHONE: 985-0648  
 AREA CODE: 604  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 45886

TO: R.H. Seraphim Engineering Ltd.  
 #316 - 470 Granville Street,  
 Vancouver, British Columbia  
 V6C 1V5.

INVOICE NO. 28257

RECEIVED Sept. 19, 1978

ATTN:

cc: Atlin, B.C.

ANALYSED Sept. 26, 1978

U.R.O. Project

SAMPLE NO. :	PPM U	DEPTH	HORIZON	DESCRIPTION
0+00N 3+50E	7.0	15cm	C	Alaskite Area Brown Soil
1+00N 0+50E	0.5	15"	C	Organic soils - Atlin Intrusions
1+00	0.5	15"	C	" " "
1+50	0.5	15"	C	" " "
1+00N 2+00E	0.5	15"	C	" " "
2+00N 0+50E	0.5	15"	C	" " "
1+00	0.5	15"	C	" " "
1+50	0.5	15"	C	" " "
2+00N 2+00E	0.5	15"	C	" " "
3+00N 0+50E	0.5	15"	C	" " "
1+00	0.5	15"	C	" " "
3+00N 1+50E	0.5	15"	C	" " "
4+00N 0+50E	0.5	15"	C	" " "
8+00N 0+50E	21	15"	C	Limonitic weathered alaskite.
1+00	7.0	15"	C	Dark brown - highly organic - Alaskite.
1+50	7.5	15"	C	Limonitic brown soil - moderately organic.
2+00	3.5	15"	C	" " " " " "
2+50	2.0	15"	C	Brown soil, medium to high organics.
4+50	1.0	15"	C	Brown limonitic soil.
5+00	1.0	15"	A	Brown soil, high organics.
8+00N 5+50E	0.5	15"	A	Brown organic soil.

Note: U - Less than 4 detection limit due to fluorescence quenching caused by high concentration of the interfering metals.

STD. NO.

22



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY:

*[Signature]*



# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
 NORTH VANCOUVER, B.C.  
 CANADA V7J 2C1  
 TELEPHONE: 985-0648  
 AREA CODE: 604  
 TELEX 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO: R.H. Seraphim Engineering Ltd.,  
 316 - 470 Granville Street,  
 Vancouver, B.C.  
 V6C 1V5

ATTN:

CERTIFICATE NO. 46111

INVOICE NO. 28513

RECEIVED Oct. 2/78

ANALYSED Oct. 5/78

SAMPLE NO. :	PPM Uranium	DEPTH	HORIZON	DESCRIPTION
7N 9+50E	<0.5	10 cm.	C	DK. brown - coarse sandy soil.
10+00	2.0	18 "	C	Ochre - Very coarse sandy soil.
10+50	2.5	18 "	A+C	Med. brown " " "
11+00	2.0	15 "	C	light " " "
11+50	2.0	18 "	C	" " " muddy "
12+00	3.5	15 "	A+C	" " " " "
12+50	2.5	18 "	A+C	" " " " "
13+00	2.0	18 "	C	Medium brown rocky soil.
13+50	4.5	15 "	A+C	" " coarse sandy soil.
14+00	2.0	20 "	C	Tan coarse sandy soil.
14+50	2.0	15 "	C	" " " " "
15+00	1.5	18 "	A+C	Med. brown coarse sandy soil.
15+50	0.5	20 "	A+C	lt. brown coarse " "
16+00	2.0	15 "	A+C	" " " " "
16+50	2.0	15 "	A+C	" " " " "
17+00	1.5	15 "	A+C	" " fine " "
17+50	1.0	10 "	A+C	Med " coarse rocky soil.
18+00	<0.5	13 "	A+C	" " " sandy "
7N 18+50E	0.5	10 "	A+C	" " " " "

STD.

22



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*[Signature]*





# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
 NORTH VANCOUVER, B.C.  
 CANADA V7J 2C1  
 TELEPHONE: 985-0548  
 AREA CODE: 604  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 46112

TO: R.H. Seraphim Engineering Ltd.,  
 316 - 470 Granville Street,  
 Vancouver, B.C.  
 V6C 1V5

INVOICE NO. 28513  
 RECEIVED Oct. 2/78  
 ANALYSED Oct. 5/78

ATTN:

SAMPLE NO. :	PPM Uranium	DEPTH	NOTATION	Description.
7N 19+00E	1.5	13 cm.	A+C	Med. brown coarse sandy soil.
10N 11+50E	2.0	10 "	C	light brown very coarse "
12+00	2.0	15 "	A+C	Med. brown sandy soil.
12+50	2.0	20 "	C	lt. brown very coarse sandy soil.
13+00	2.0	20 "	C	" " " " " "
13+50	3.5	10 "	A+C	Med " fine sandy soil.
14+00	1.5	20 "	A+C	Ochre, medium sandy soil.
14+50	32	20 "	A+C	Black organic muddy soil
15+00	1.5	10 "	C	very coarse sand - Rocky soil.
15+50	1.5	15 "	A+C	Med. brown coarse muddy soil
16+00	1.5	15 "	A+C	Light " " sandy "
16+50	1.0	30 "	C	Med brown very coarse sandy soil.
17+00	2.0	20 "	A+C	" " " " " "
17+50	2.5	20 "	C	light brown coarse sandy soil.
18+00	2.0	15 "	C	" " " " " "
18+50	2.0	20 "	C	Med. " fine " "
19+00	1.0	18 "	C	" " coarse " "
19+50	1.0	20 "	A+B+C	Brown fine sandy soil.
20+00	2.0	25 "	A+C	Med brown sandy soil.
20+50	1.5	15 "	A+C	" " fine sandy soil.
21+00	2.5	18 "	A+B+C	Tan fine sandy soil.
21+50	3.5	18 "	C	Light brown fine sandy soil.
22+00	1.0	18 "	A+C	" " coarse " "
22+50	1.5	20 "	A+C	Dark brown very coarse soil
23+00	2.5	25 "	C	Ochre - very coarse soil - crushed rock
23+50	2.0	20 "	A+C	Medium brown soil.
24+00	1.5	10 "	A+C	Med. brown, very coarse soil.
24+50	1.5	13 "	A+C	Dark " coarse organic(?) soil.
25+00	1.5	13 "	A+C	" " " " " "
25+50	2.5	10 "	C	Tan sandy soil.
26+00	1.5	18 "	A+C	Med brown very coarse rocky soil.
27+50	1.0	15 "	C	" " " " " "
28+00	0.5	18 "	A+C	" " sandy soil.
28+50	0.5	20 "	C	Tan fine soil.
10N29+00E	0.5	20 "	C	light brown coarse sandy soil.
2+50S 0+50E	7.5	8 "	C	Tan coarse sandy soil
1+00	7.5	10 "	C	Tan rocky soil.
1+50	5.0	15 "	C	" mud and rocky soil.
2+50	14	13 "	C	" fine sandy soil
2+50S 3+00E	9.5	13 "	A+C	Dark brown muddy soil with rocks
STD.	20			



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 ASSOCIATION

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*[Handwritten Signature]*



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## CERTIFICATE OF ANALYSIS

TO: R.H. Seraphim Engineering Ltd.,  
 316 - 470 Granville Street,  
 Vancouver, B.C.,  
 V6C 1V5

ATTN:

CERTIFICATE NO. 46113

INVOICE NO. 28513

RECEIVED Oct. 2/78

ANALYSED Oct. 5/78

SAMPLE NO. :	PPM Uranium	DEPTH	HORIZON	DESCRIPTION
2+50S 3+50E	33	10cm.	C	Med brown muddy soil.
4+00	6.5	15 "	A+C	" " coarse sandy soil.
4+50	18	18 "	A+C	Light " fine sandy soil.
5+00	30	10 "	C	Tan coarse muddy soil.
6+00	18	23 "	C	Lt. brown very coarse sandy soil.
2+50S 6+50E	36	15 "	A+C	Dark brown very coarse sandy soil.
0+0 N 7+50E	6.0	20 "	C	Med. brown rocky soil.
00+50	3.5	18 "	C	Lt. brown coarse sandy soil.
1+00	9.5	20 "	C	" " fine muddy soil.
1+50	3.5	15 "	C	Tan very coarse sandy soil.
2+00	11	20 "	C	" " " " " "
2+50	15	18 "	A+C	Dark brown muddy soil and rock.
3+00	8.0	15 "	A+B+C	" " rocky soil.
3+50	15	18 "	A+C	" " soil.
4+50	1.5	15 "	A+C	Brown, partially organic soil.
5+50N	9.5	8 "	C	Stream - very coarse.
0+50S	9.0	18 "	C	limonitic, very coarse sandy silt.
1+00S	4.0	20 "	A+C	Black, very coarse organic?
2+00SW	5.5	18 "	A+C	Tan, fine sandy soil.
2+50SW	6.5	20 "	C	Tan - crushed olackite.
3+00SW	7.5	20 "	C	Tan - coarse mud/sand.
3+50SW	2.5	30 "	A+C	Med. brown coarse sandy soil.
4+00S	10	25 "	A+C	Med. brown organic soil.
4+50S	8.5	25 "	A+C	Med. brown fine sandy soil.
5+50S	1.5	30 "	C	Tan brown - coarse rocky soil.
6+00S 7+50E	3.0	5 "	A+C	Black organic soil.
1+00NE	36	60 cm	B	Grey brown-limonitic. Mod. organic.
2+00	13	60 "	B	" " " " " "
3+00	19	30 "	"	" " " " - Mod. organic.
4+00NE	32	45 "	"	" " " " - High organic.
1+00SW	37	60 "	A+B	Organic rich - grey-brown soil - swamp.
1+70	6.0	60 "	B	Grey - very fine silt? - low organic.
2+50	11	90 "	B	Grey " " " - med. organic.
3+00	11	90 "	B	" " " " " " " "
4+00	8.5	45 "	A+B	Brown silt - med-high organic.
5+00	27	45 "	A+B	" " " " " " " "
6+00SW	22	60 "	B	Grey med-high " - low organic.

CROCKER GREEN

STD.

21



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 ASSOCIATION

CERTIFIED BY:

*[Signature]*

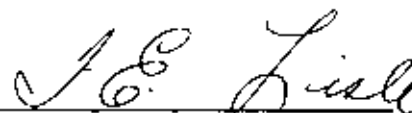
APPENDIX 3

STATEMENT OF QUALIFICATIONS

CERTIFICATE OF QUALIFICATION

I, T.E. Lisle of 145 West Rockland Road,  
North Vancouver, B.C. declare that:

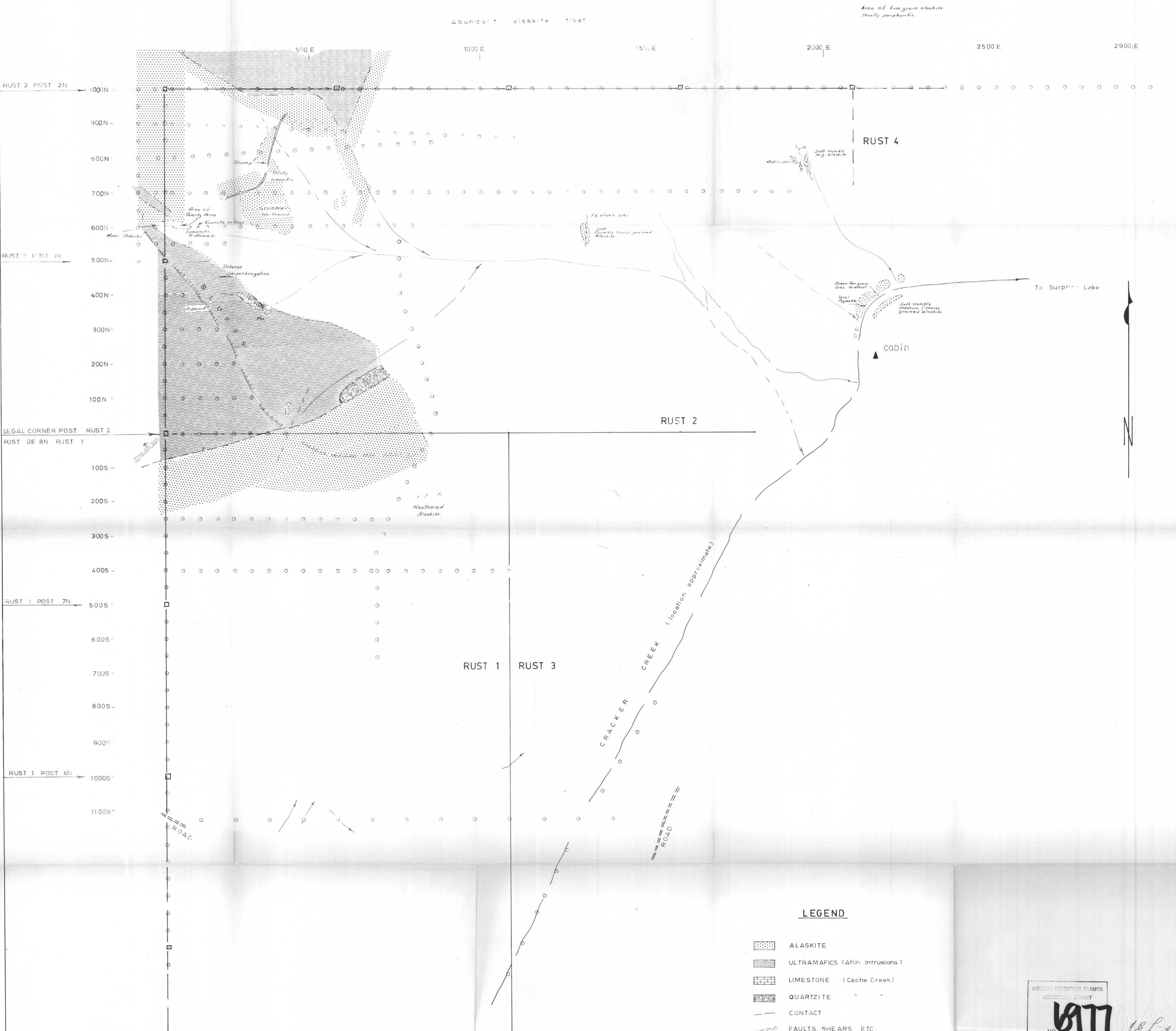
1. The work described in this report was carried out by me and by the personnel listed in Appendix I under my supervision during September, 1978
2. I am a graduate of the University of British Columbia with a B.Sc. 1964.
3. I have worked intermittently in exploration geology for several years prior to 1964, and have worked continuously in the same field since that date.
4. I am a member of the following organizations:
  - [a] Canadian Institute of mining & Metallurgy
  - [b] Geological Association of Canada
  - [c] Association of Professional Engineers of B.C.





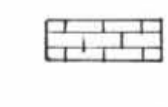



T.E. Lisle, P.Eng.

October, 20, 1978.

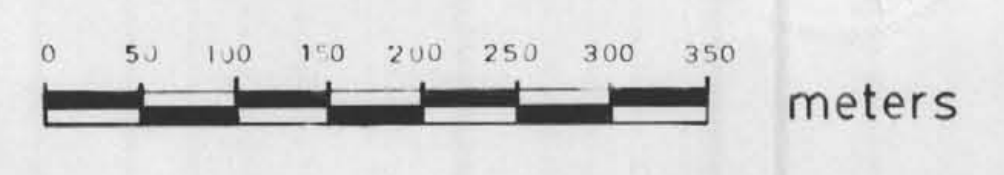




**LEGEND**

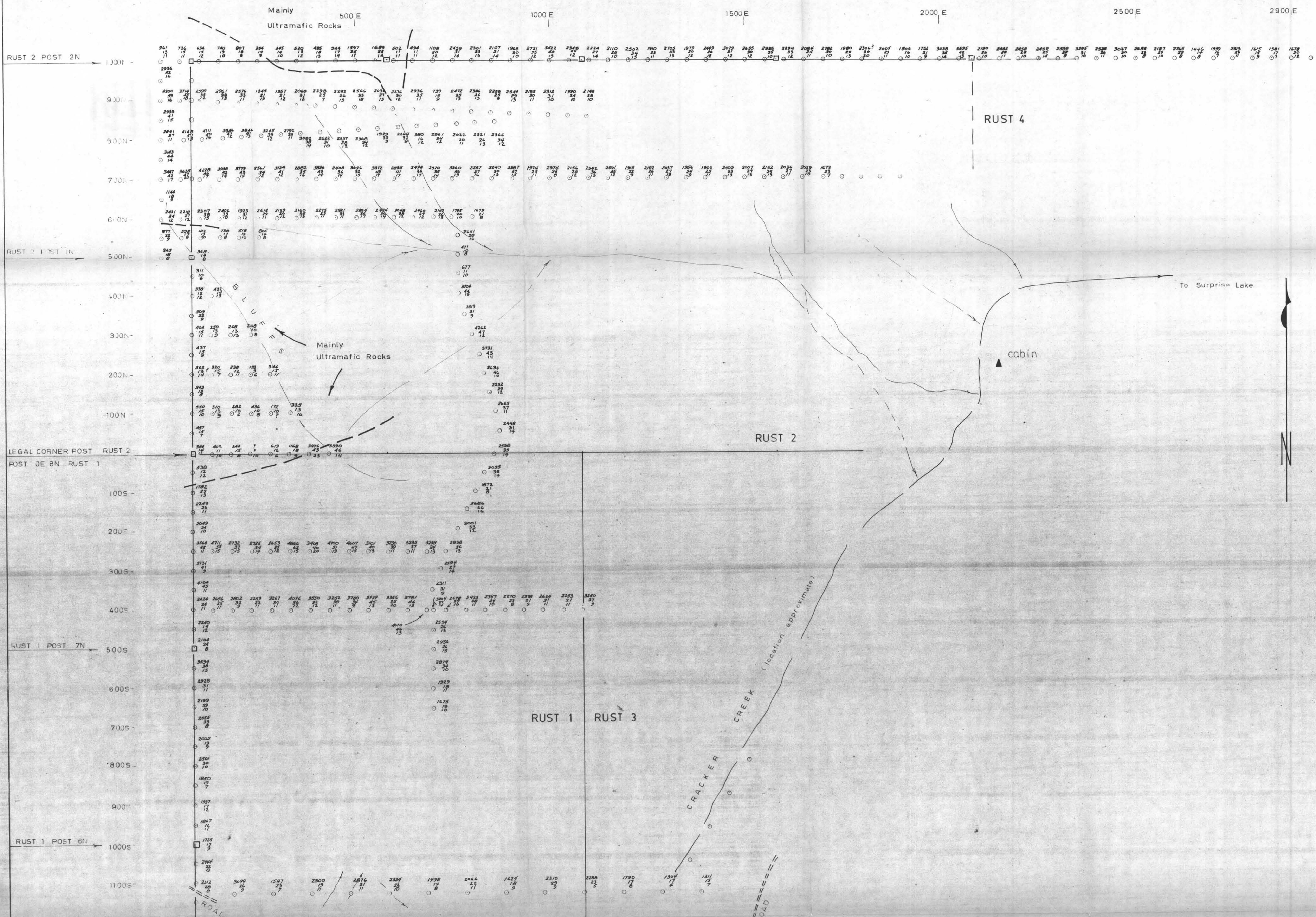
-  ALASKITE
-  ULTRAMAFICS (Atlin Intrusions)
-  LIMESTONE (Cache Creek)
-  QUARTZITE
-  CONTACT
-  FAULTS, SHEARS ETC.

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**6977**  
NO. *J.C. Hale*



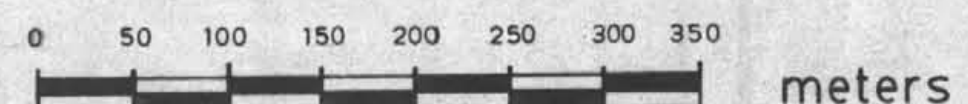
UNITED RAYORE GAS LIMITED.  
**RUST CLAIMS**  
GEOLOGY  
SCALE 1:4000      October, 1978





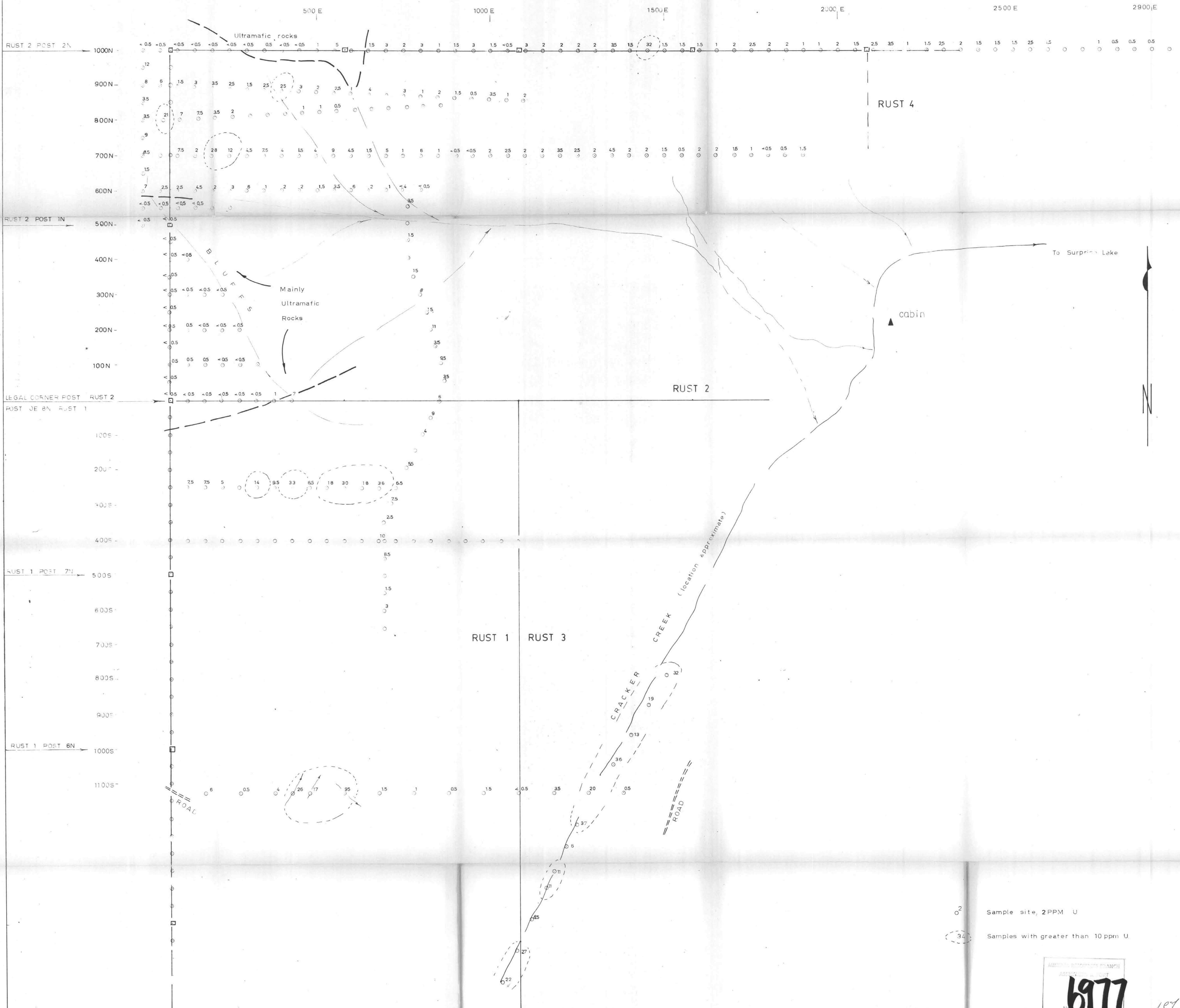
2945 TOTAL COUNT  
 34 URANIUM + THORIUM  
 7 THORIUM  
 VALUES SHOWN ARE AN AVERAGE OF THREE  
 READINGS ON 10 SECOND SCALE ON G154  
 GAMMA - RAY SPECTROMETER. SERIAL 704128

MINERAL REVENUE BRANCH  
 ASSESSMENT REPORT  
**6977**  
 NO.



UNITED RAYORE GAS LIMITED.  
 RUST CLAIMS  
 RADIOMETRIC SURVEY  
 SCALE 1:4000 October, 1978

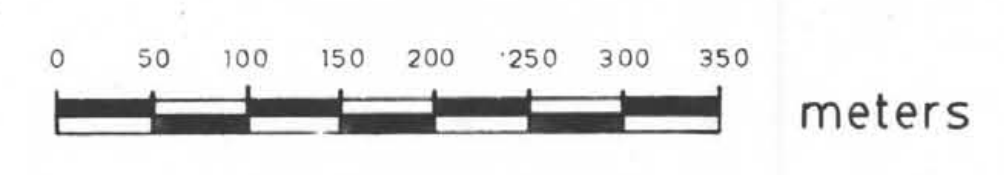




○<sup>2</sup> Sample site, 2PPM U  
 ○<sup>34</sup> Samples with greater than 10 ppm U

AMERICAN ECONOMIC PLANNING  
 ASSOCIATION  
**6977**  
 N. W. 1/4

*J. E. Hall*



UNITED RAYORE GAS LIMITED.	
RUST CLAIMS	
URANIUM	GEOCHEMISTRY
SCALE 1:4000	October, 1978