81-11-63-9919

REPORT ON

GEOLOGY, ROCK SAMPLING,

SOIL GEOCHEMISTRY AND I.P. SURVEY

1981 EXPLORATION PROGRAM

GOLD 1 GROUP
(MT. ROACH PROPERTY)
KAMLOOPS MINING DIVISION
N.T.S. MAP-AREA 92I/4
Lat. 50°13'N; Long. 121°42'W

Owned by

J.M. ASHTON, J.D. GRAHAM, R.E. HURLEY,
REA PETRO CORPORATION AND YUCANA OIL LTD.

Operated by

REA PETRO CORPORATION AND YUCANA OIL LTD.

Consultant

W.G. SMITHERINGALE & ASSOCIATES LTD.

Prepared by

W.G. SMITHERINGALE, P.Eng.

December 14, 1981

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INTRODUCTION

Location and Access

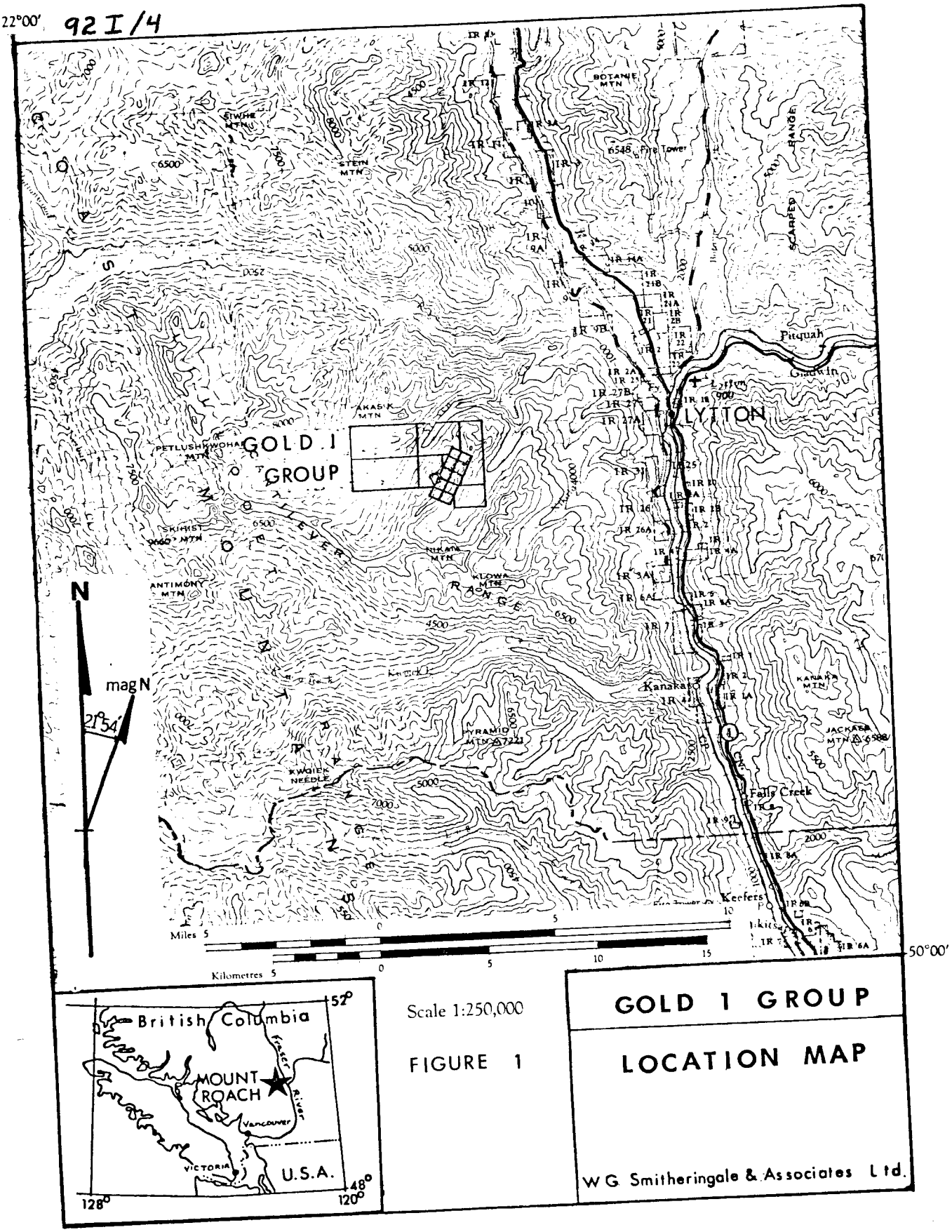
The Mount Roach property is located 10 km west of Lytton, B.C. at Lat. 50°13'N and Long. 121°42'W in the Kamloops Mining Division, NTS map-area 92I/4 (Figure 1). It is situated between elevations 1525m (5000 ft.) and 2640m (8670 ft.) in mountainous terrain. The property is accessible by helicopter and by an old trail that follows Stryen Creek.

Property Definition, Owners and Operators

The claims comprising the Mount Roach property are collectively known as the Gold 1 Group (Fig. 2) and consist of:

Claim	No. Units	Type	Owner
Gold Hill #2	1	2 post	R.E.Hurley
DJ 1	1	"	J.Donald Graham
2	1	"	" "
3	1	"	" "
4	1	"	" "
5	1	"	J.M.Ashton
6	1	"	"
7	1	"	"
8	1	"	"
9	1	"	J.Donald Graham
10	1	"	" "
Ultra I	18	metric grid	" "
II	18	"	J.M.Ashton
III	6	"	"
IV	12	"	J.Donald Graham
V	12	"	" "
VI	6	"	Yucana Oil Ltd.&
Fraction	1	fraction	Rea Petro Corporation
Akas V	6	metric grid	" "

The co-operators of the property are Rea Petro Corporation (60%) and Yucana Oil Ltd. (40%).



Scale 1:250,000

FIGURE 1

GOLD 1 GROUP

LOCATION MAP

W.G. Smitheringale & Associates Ltd.

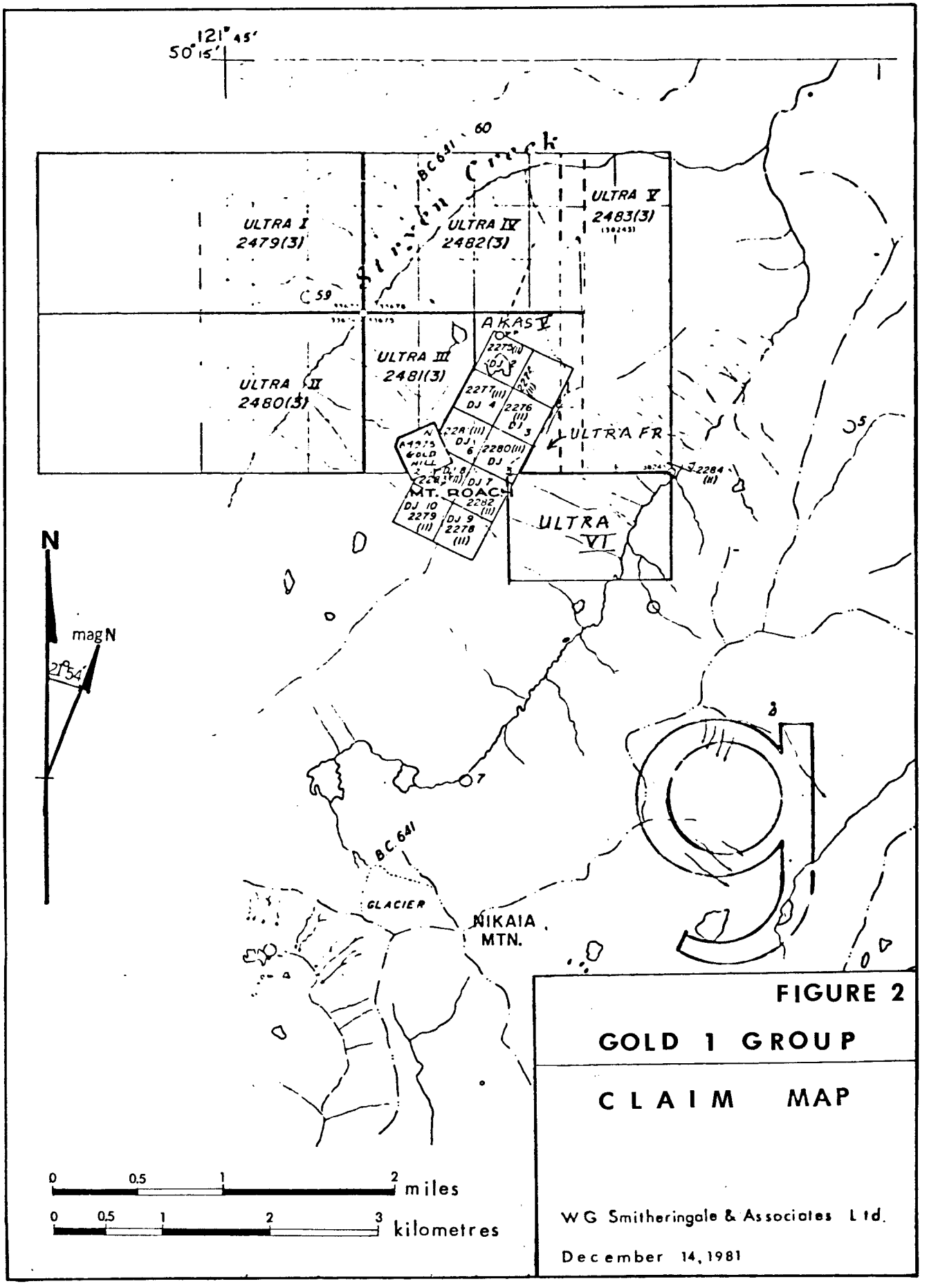


FIGURE 2

GOLD 1 GROUP

CLAIM MAP

W G Smitheringale & Associates Ltd.

December 14, 1981

History

M.Y. Williams (1934) examined the property in 1934 for Lytton Gold Mines Limited. He refers to claims already staked, to a Mr. E.F. Roach "who has spent the past few years in studying and developing these properties" and to a cut that "is on the old Independence Group, from which one ton of ore was shipped to a smelter about 20 years ago....". Although an 80-foot tunnel and various cuts mentioned in Williams' report can be seen today, there is no published record of when exploration in the area began or of the old "Independence Group". The property apparently received little or no attention until 1972 when it was examined by Conwest Exploration. The Gold Hill 2 claim was recorded in 1969 by R.E. Hurley, the DJ claims in 1979 by J.M. Ashton and J.D. Graham, the Ultra I to V in 1980, also by Ashton and Graham, the Akas IV and V in 1981 by L. Reaugh and J.M. Ashton and the Ultra VI and Ultra Fraction in 1981 by Rea Petro Corporation. Rea Petro Corporation optioned the property in January, 1981.

Economic Assessment

The property contains a persistent band of easterly striking quartz veins cutting granodiorite that are exposed for a strike length of 1700m and for a vertical distance of 400m. Preliminary surface sampling has defined a zone 135m long averaging 0.113 oz/ton Au over 1.2m width. Rock

sampling and soil geochemistry have indicated the presence of Au in other parts of the vein system as well. This strong structure warrants further exploration for higher grade material.

Summary of Work Done

The 1981 exploration program on the Gold 1 Group was conducted between August 10 and August 25. The crew was based in Lytton, and was transported daily to the property by helicopter. Work was conducted mainly on Gold Hill #2, DJ 5, 7, 8 & 9 and Ultra II, III, V, VI claims, and consisted of:

1. Geological mapping (Gold Hill #2, DJ 5, 7, 8, 9 & 10 and and Ultra III, V, VI, and Ultra Fraction):
   2 square km at 1:2,000 scale.
2. Rock sampling:
   58 samples, mostly of quartz veins but some of aplite bodies, were assayed for Au.
3. Soil geochemistry survey (DJ 7, 9 & 10 and Ultra II, III, V & VI):
   Orientation survey over known mineralization; 27 samples analysed Cu, Pb, Zn, Ag, Hg, As, Au and Sb.
   Three grid areas (Fig.3) from which 1005 B horizon samples were collected and analysed for Au, As and Zn.
4. Test I.P. survey (DJ 7 & 9):
   0.9 line km.

5. Topographic survey (all claims):

   Photogrammetrically produced topographic map, area 14 sq. km.

6. Helicopter pad construction.

TECHNICAL DATA AND INTERPRETATION

Geology (Figure 4)

Lithology: The Gold 1 Group is underlain mainly by a medium- to coarse-grained, biotite porphyritic granodiorite. It is usually light grey on both fresh and weathered surfaces, although in the southern part of the area weathered surfaces have a faint orange tinge. Large (7mm diameter), flat, pseudohexagonal biotite phenocrysts give the rock a distinct spotted appearance. Quartz phenocrysts up to 5mm across occur sporatically. The biotite phenocrysts define a foliation that trends northwesterly in a general sense. In detail, however, it is highly variable and in many places it forms large swirl-like patterns.

Dykes and pods of aplite and quartz-aplite are common, but form less than 2% of bedrock. Aplite is fine-to medium-grained, beige to pink in color and contains less than 5% mafics. Aplite dykes are commonly 2cm to 30cm wide and tend to strike about 160° and to dip vertically. Aplite pods are 10cm to 2 metres across and are very irregular in shape. These pods are bordered in places by biotite schist.

A distinct rusty weathering zone in Grid 2 is underlain by a body of medium-to coarse-grained, quartz-feldspar-mica schist. A very small amount of disseminated pyrite is responsible for the rusty weathering. The schistosity strikes 130° and dips vertically. The schist contains semi-pegmatitic pods and veins of quartz and feldspar ± biotite. Some 5cm thick quartz veins parallel the schistosity and one 50cm thick vein of massive quartz strikes 36° and dips 65°SE.

Mafic dykes occur sporatically within the map-area. They generally strike northeasterly or east-northeasterly and dip southeasterly or vertically. In several places mafic dykes cut quartz veins.

Structure:

The granodiorite is moderately well jointed. The main set strikes northwesterly ±35° and dips vertically.

Shear fractures that strike 90° to 160° and dip 25° to 90°NE (average 125°/65°NE) contain most of the mineralized quartz veins. Slickensides in these shear planes pitch northwestward at 0° to 40° (average about 15°). Tension fractures related to the shear fractures strike 35° to 70° and dip 30°NW to 65°SE (average about 55°/70°NW). They contain some small quartz veins.

Numerous cross faults offset the quartz veins. These strike 40° to 95° and dip 35° to 90°SE. The horizontal component of movement on most is sinistral, but on some it is dextral. The vein offset on most is a few metres or less, but on some it is 20m or more. Slickensides were seen on only one cross fault, and they were horizontal.

Veins:

A persistent band of quartz veins and associated alteration was traced in intermittent outcrop for a strike length of 1700m and through vertical distance of 400m (Figs.3 & 4). In places this structure consists of a single vein, but in many places two or more veins, at times arranged an echelon, are present in an interval 10-30m wide.

The veins occupy shear fractures that, on the average, have an attitude of 125°/65°NE. Locally, quartz stringers in tension fractures and subsidiary shear fractures form a stockwork between the main hangingwall and footwall veins. The veins range in thickness from a few centimetres to 1.7m, and an individual vein may pinch and swell rapidly.

The veins formed by fissure filling. Although some blocks of altered wall rock, crustification and vugs are present, the veins generally appear massive except for thin, discontinuous, dark partings that lie close to and parallel to the vein walls.

The vein filling is dominantly milky quartz. In places a carbonate is present (less than 20% of the vein), and

less commonly a few dark green blebs of chlorite or serpentine are present. The carbonate may be largely altered to limonite. Sericite, formed from biotite in altered wall rock fragments, may be present and in a few localities vein walls have a thin coating of black tourmaline. Sulfide minerals are scarce, seldom comprising more than 0.5% of the vein filling, even in gold bearing portions. They consist of pyrite, arsenopyrite and very sparsely distributed sphalerite and galena. Free gold has been reported. The sulfides are generally concentrated in dark coloured graphitic and/or chloritic partings near the vein walls, although an occasional lens of massive sulfide is present.

Alteration adjacent to the veins consists of sericitization and weak pyritization. It is variably developed, both in intensity and in width. In general the alteration is moderate and extends for less than a metre from any one vein. However, where footwall and hangingwall quartz veins are present with subsidiary veins or fractures between them the zone of alteration and quartz veining may be 10m or more wide. Fractures outside the band of quartz veining but belonging to the same set that contain the quartz veins may have thin alteration envelopes.

Rock Sampling

Description:

Fifty-eight continuous chip samples were collected by moil and hammer from quartz veins and aplite pods and were assayed for gold. The sample localities and assay results are shown on Fig.4, and the assay certificates are reproduced in Appendix I.

Sampling defined a zone in the main quartz vein on the western slope of Mt. Roach that is at least 135m long and averages 0.113 oz/ton Au over 1.2m (Fig.4). This zone contains an 80m interval averaging 0.136 oz/ton Au over 1.2m. The exact length of the zone is not known because samples were collected at wide intervals. In places a second vein is present, which was not sampled. The zone includes several old prospect pits, including cuts #1 and #2 described by M.Y. Williams (1934). Several other samples from the main quartz vein in this area returned encouraging gold assays, but the sampling interval was not close enough to define the zones.

Samples from the zone of quartz veins between lines 5 and 11 in Grid area 1 generally returned low values. This is at variance with high values reported from old exploration trenches in this area by M.Y. Williams. The quartz veins in these trenches are now rusty and it is possible, although not likely, that weathering has removed some gold.

Sampling in Grid 2 area returned an isolated high of 0.434 oz/ton Au across 2m of a small aplite body. The true width

of the body is probably less than 0.5m.

Interpretation:

1. Rock sampling has confirmed the presence of gold mineralization in the vein system.

2. The 135m long zone of 0.113 oz/ton Au requires more detailed sampling from fresh cut trenches to better define its length and grade. The other encouraging samples and also the veins not sampled in this area warrant follow-up sampling.

3. The old exploration cuts in Grid 1 should be resampled, taking large samples from freshly slashed faces.

4. The isolated high gold assay from the aplite pod in Grid 2 should be confirmed and followed up by sampling.

Soil Geochemistry Survey

Description:

An orientation survey was run over the old exploration pits in Grid 1. Twenty-seven samples were collected from the B horizon at 10m intervals along two parallel lines spaced 50m apart. The B horizon was found to be shallow (about 10cm to 20cm), thin and somewhat discontinuous. Nevertheless, it was possible to collect samples of consistent quality. The samples were analysed for Cu, Pb, Zn, Ag, Au, Hg, As and Sb. The results indicated that Au, As and Zn soil anomalies are associated with gold bearing

portions of the vein system.

A soil geochemistry survey was conducted in three grid areas (Fig. 3). Of the five soil samplers employed three were experienced, two having been trained in other projects by the writer. The two inexperienced men were teamed with experienced samplers for several days to learn the procedure. One thousand and five B horizon samples were collected at 20m intervals from lines spaced 80m (slope distance) apart. The samples were bagged in Kraft paper soil sample bags and were submitted to Min-En Laboratories Ltd., 705 West 15th Street, North Vancouver, for analysis.

The -80 mesh portions of the samples were analysed for Zn using a nitric-perchloric acid digestion and atomic absorption, for As by spectrophotometric techniques and for Au using an aqua-regia digestion and atomic absorption.

The data for each element were plotted in a log probability graph and a frequency distribution histogram. For practical purposes, the data for each element comprise a single population. The Zn data appear to have a normal frequency distribution but the As and Au data have log normal distributions that are highly skewed towards the low values. Threshold and anomalous points were calculated statistically, but the actual threshold and anomalous points used in the soil geochemistry maps were selected visually from the histograms with due consideration of the statistical points. The results are presented in Figs. 5, 6, 7, 8, 9 and 10. The assay certificates and data plots are presented in Appendix 2.

Interpretation:

1. Two anomalous areas were defined. On Grid 1 the anomalous area coincides with the zone of quartz veins exposed between lines 5 and 11. On Grid 3 the anomalous area lies about 400m west of and downslope from the westernmost exposure of the quartz vein. This anomaly is offset from the westward projection of the vein, suggesting that it is a reflection either of a faulted off extension of the vein or of a different vein, rather than being due to gravity dispersion from the vein exposed higher on the hillside.

2. There is one isolated anomalous sample site on Grid 2.

3. The anomaly on Grid 1 has already been followed up by vein sampling. The results so far are not encouraging, although more work remains to be done (see 'Interpretation' under 'Rock Sampling').

4. The anomaly on Grid 3 and the isolated high on Grid 2 warrant follow-up.

Test I.P. Survey

Description:

Two test I.P. lines were run in Grid 1 area. One line corresponds with grid line 2, which is higher on the hill than the zone of exposed quartz veins, and the other line corresponds with grid line 6, which cross the zone of exposed quartz veins.

A description of the methods and equipment employed is given in the appended report by Geotronics Surveys Ltd. (Appendix 3. Note: During fieldwork the Gold 1 claim group was referred to as the Mt. Roach property, hence the title on the Geotronics report.)

Interpretation:

Interpretation of the results is discussed in the Geotronics report. In summary:

1. The IP and SP responses were flat. These techniques are of no use on this property.
2. The resistivity data show two lows on line 6 about 125m apart that correspond with the principal quartz veins in this zone. The low resistivity is likely a reflection of sericitization adjacent to the quartz veins. A corresponding pair of resistivity lows occurs on line 2. These data suggest that two narrow zones of quartz veins are present in this area rather than one broad zone complicated by faulting.
3. Resistivity surveying appears to be a useful exploration tool on the Gold 1 Group.

Topographic Survey and Helicopter Pad Construction

A topographic map of the property was produced from photogrammetry by Integrated Resources Photography Ltd. of Vancouver. The area covered by the map is 14 sq.km, its scale is 1:2000 and its contour interval is 10m. This map and enlargements of portions of it were used as base maps for the exploration work.

Seven helicopter landing pads were constructed to facilitate the work. One is located in the valley bottom on the east side of Mt. Roach, one halfway up the east flank of Mt. Roach, two on the main ridge of Mt. Roach, one on the western ridge of Mt. Roach, one partway up the western side of Mt. Roach and one in the valley bottom on the west side of Mt. Roach (Fig.3). Two of the pads were constructed of timber, one of stonework and four required only clearing and levelling of ground and clearing of approaches. The dimensions of the pads are about 3m x 3m.

ITEMIZED COST STATEMENT

The following costs were incurred by the exploration program described in this report and are for work directly related to this program.

Wages and Consulting Fees

Name	No.of Days	Daily Rate	Dates Worked	Total Wages
R. Fuchs, soil sampler and geologist's assistant	12	$110	Aug.13-25	$ 1,320.00
G. Sinitsin, soil sampler and geologist's assistant	12	110	Aug.13-25	1,320.00
T. Spink, soil sampler	10.5	110	Aug.13-25	1,155.00
G. Sherwood, soil sampler	10.5	110	Aug.13-23	1,155.00
N. Ward, soil sampler	10.5	110	Aug.13-25	1,155.00
J. Pohoski, labourer	8	125	Aug.13-20	1,000.00

A. Nordwall, labourer				
	8	125	Aug.13-20	1,000.00
A. Garven, geologist				
	14.5	250	Aug.10-25	3,625.00
W.G. Smitheringale, consultant				
	21.95	375	Jul.10-Aug.27	8,231.25
				19,961.25

Food and Accommodation, Aug.12 to Aug.25

Meals, 96 man-days @ av. $18.82/day	$ 1,806.38	
Accomodation, 108 man-days @ av. of $18.44/day	1,991.01	3,797.39

Transportation

Car allowance, Pohoski & Nordwall, Vancouver to Lytton (to carry equipment)	$ 100.00	
Bus fare for three, Vancouver to Lytton, $10.65 ea.	31.95	
Truck rental, 2 weeks @ $202.44/week	404.87	
Gas for truck, 2 weeks	121.42	
Helicopter:		
55.8 hrs @ $390/hr.	21,762.00	
103.3 gal. fuel @ $1.70/gal.	175.61	
1183 " " @ $2.30/gal	2,720.90	
oil @ $1/hr.	55.80	
fuel delivery to Lytton	120.00	
room & board for pilot, 12 days @ $50.47/day	605.67	26,098.22

Test Induced Polarization Survey Aug.21 to Aug.25

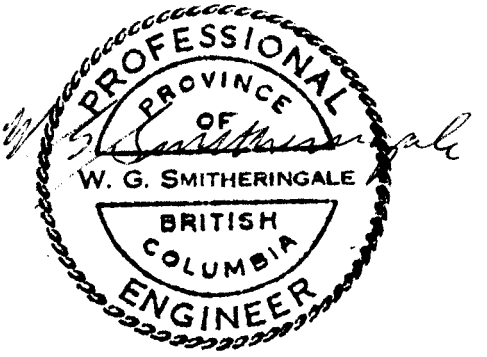
5-man crew & instrument, 4.5 days @ $1,250/day	$ 5,625.00	
Truck rental and gas	508.95	
Room & board	443.13	
Maps (data processing & interpretation, drafting and printing)	706.59	7,283.67

Analyses

27 soil samples analysed for Cu, Pb, Zn, Ag, Hg, As, Au & Sb @ $21.80 ea.	$ 588.60	
1005 soil samples analysed for Zn, As, Au @ $10.85 ea.	10,904.25	
58 rock samples assayed for Au @ $11.34 ea.	658.00	12,150.85

Report Preparation		
W.G. Smitheringale, consultant, 3.73 days @ $375/day	$1,398.75	
A.C. Garven, geologist, 20.5 days @ $250/day	5,125.00	
G. Sinitsin, geological technician, 1.5 days @ $110/day	165.00	6,688.75
Equipment Rental		
2 chain saws, 8 days @ $20 ea/day	$ 320.00	
Miscellaneous field equipment (mattocks, axes, ruck sacks, tarps, tents, hip chains, moils, compasses, etc.)	759.00	
Radio, 2 months minimum rental @ $368.32/mo.	736.64	1,815.64
Miscellaneous Costs		
Field supplies and materials	$ 652.05	
Topographic map of property produced by photogrammetry scale 1:5000 area 14 sq.km.	1,015.80	
Map reproduction	241.00	1,908.85
		$79,704.62

Respectfully submitted,



W.G. Smitheringale, P.Eng.
W.G. Smitheringale & Associates Ltd.

December 14, 1981

QUALIFICATIONS OF TECHNICAL PERSONNEL

A.C. Garven, Geologist

Is a practising geologist, resident at 6676 Cypress Street, Vancouver, B.C., employed by W.G. Smitheringale and Associates Ltd.

Is a graduate of the University of Southern California with a degree in Geological Sciences (B.Sc., 1975) and of the University of Regina with the degree Master of Science in Geology (M.Sc., 1978).

Has practised her profession continuously for four and one-half years as a field and research geologist with Exxon Minerals, Southwestern Exploration Associates, Shell Canada Minerals Ltd. and, since June 1981, with W.G. Smitheringale and Associates Ltd.

W.G. Smitheringale, Consultant

I, William G. Smitheringale, certify that:

I am a practising Professional Geological Engineer, resident at 219 - 145 West Keith Road, North Vancouver, B.C.

I am a graduate of the University of British Columbia with a degree in Geological Engineering (B.Ap.Sc., 1955) and of the Massachussetts Institute of Technology with the degree of Doctor Philosphy in Geology (Ph.D., 1962).

I have practised my profession continuously for eighteen years as geologist with the Geological Survey of Canada, as Assistant and Associate Professor, Department of Geology, Memorial University of Newfoundland, and since 1974, as a Consulting Geologist.

I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.

This report is based on work done by me or by geological personnel under my supervision on the Gold 1 claim group between August 10 and August 25, 1981.

I hold no interest, nor do I expect to acquire any interest, in the Gold 1 claim group, in Rea Petro Corporation or in Yucana Oil Ltd.

W.G. SMITHERINGALE, P.Eng.

December 14, 1981

REFERENCES

Williams, M.Y., 1934: Report on Properties of Lytton Gold Mines Limited; report prepared for Lytton Gold Mines Limited, reproduced unsigned in Prospectus, Rea Petro Corporation dated March 4, 1981.

A P P E N D I X I

Rock Assay Certificates

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET, NORTH VANCOUVER, B.C. V7M 1T2
PHONE: (604) 980-5814 OR (604) 988-4524

Certificate of Assay

TO: W.C. Smitheringale,
1328-510 W. Hastings St.,
Vancouver, B.C.

PROJECT No.

DATE: Sept.3/81.

File No. 1-787

SAMPLE No.	Au oz/ton	Type Width	Sample	Type		
16482	.075	—	Composite	Grab		
83	.130					
84	.056					
85	.110					
86	.140		"	"		
87	.208		"	"		
88	.050		"	"		
89	.063		"	"		
90	.003		"	"		
93	.036		"	"		
16494	.027		"	"		

MINE-EN Laboratories Ltd.

CERTIFIED BY:

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET, NORTH VANCOUVER, B.C. V7M 1T2
PHONE: (604) 980-5814 OR (604) 988-4524

Certificate of Assay

TO: W.G. Smitheringale,
1328-510 W. Hastings St.,
Vancouver, B.C.

PROJECT No.

DATE: Sept.22/81.

File No. 1-787

SAMPLE No.	Au oz/ton					
1701	.002					
02	.026					
03	.008					
04	.013					
05	.016					
06	.003					
07	.002					
08	.007					
09	.044					
10	.002					
11	.002					
12	.003					
13	.003					
14	.002					
15	.021					
16	.001					
17	.001					
18	.001					
19	.007					
20	.001					
21	.434					
22	.002					
23	no sample					
24	.002					
25	.001					
1726	.001					
16475	.002					
76	.021					
77	.012					
16478	.008					

MINE-EN Laboratories Ltd.

CERTIFIED BY:

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET, NORTH VANCOUVER, B.C. V7M 1T2
PHONE: (604) 980-5814 OR (604) 988-4524

Certificate of Assay

TO: W.G. Smitheringale,
1328-510 W. Hastings St.,
Vancouver, B.C.

PROJECT No.

DATE: Sept.22/81.

File No. 1-787

SAMPLE No.	Au oz/ton
16479	.260
80	.012
81	.003
91	.009
92	.009
95	.002
96	.009
97	.007
16498	.002
1727	.002
28	.001
29	.001
30	.001
31	.001
32	.001
33	.001
34	.006
1735	.020

MINE-EN Laboratories Ltd.

CERTIFIED BY:

MIN-EN LABORATORIES LTD.
705 WEST 15TH STREET, NORTH VANCOUVER, B.C. V7M 1T2
PHONE: (604) 980-5814 OR (604) 988-4524

Certificate of Assay

TO: W.G. Smitheringale,
1328-510 W. Hastings St.,
Vancouver, B.C.

PROJECT No.

DATE: Sept.30/81.

File No. 1-787R

SAMPLE No.	Au oz/ton
1721	.401

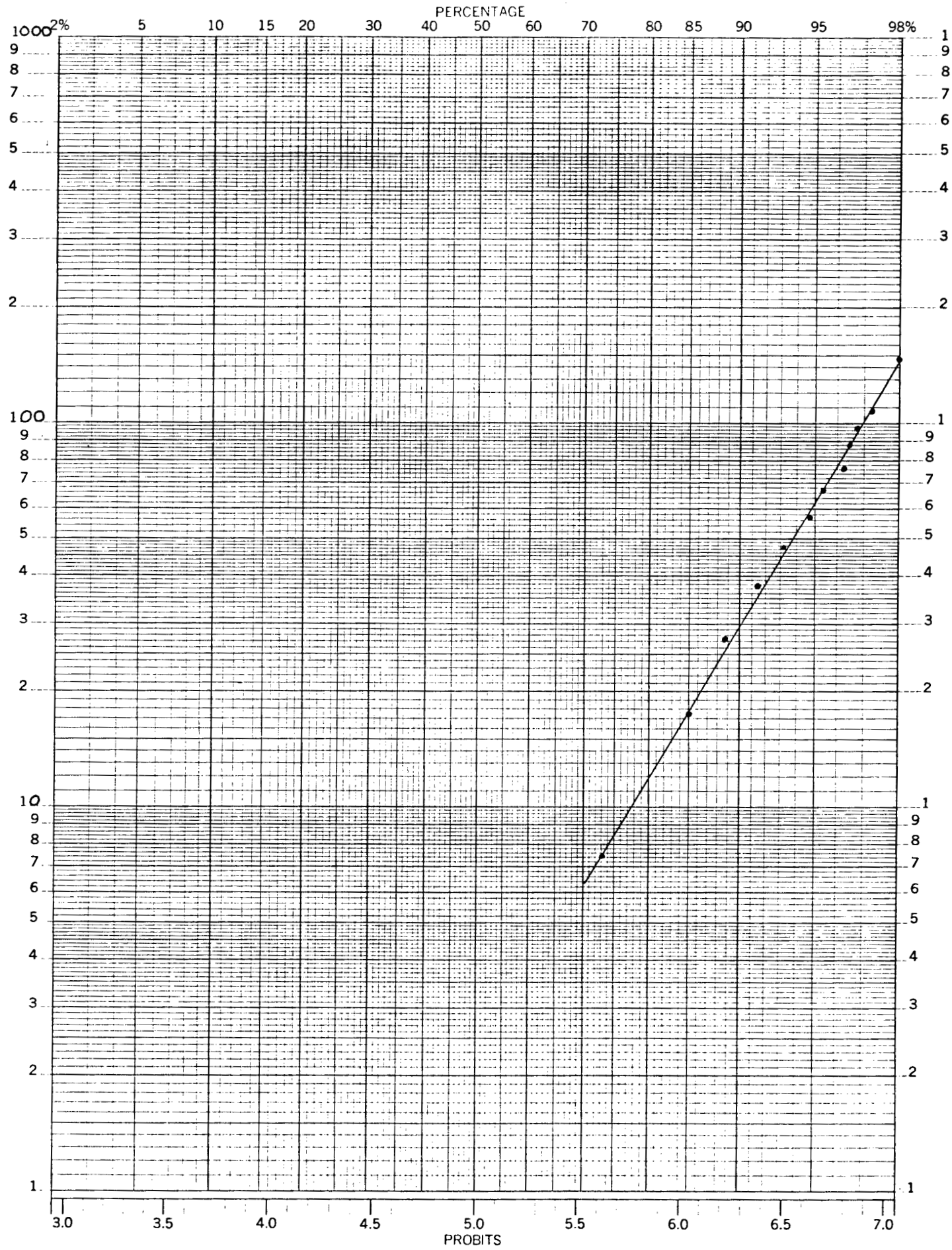
MINE-EN Laboratories Ltd.

CERTIFIED BY:

A P P E N D I X II

Soil Geochemistry Graphs
and Analysis Certificates

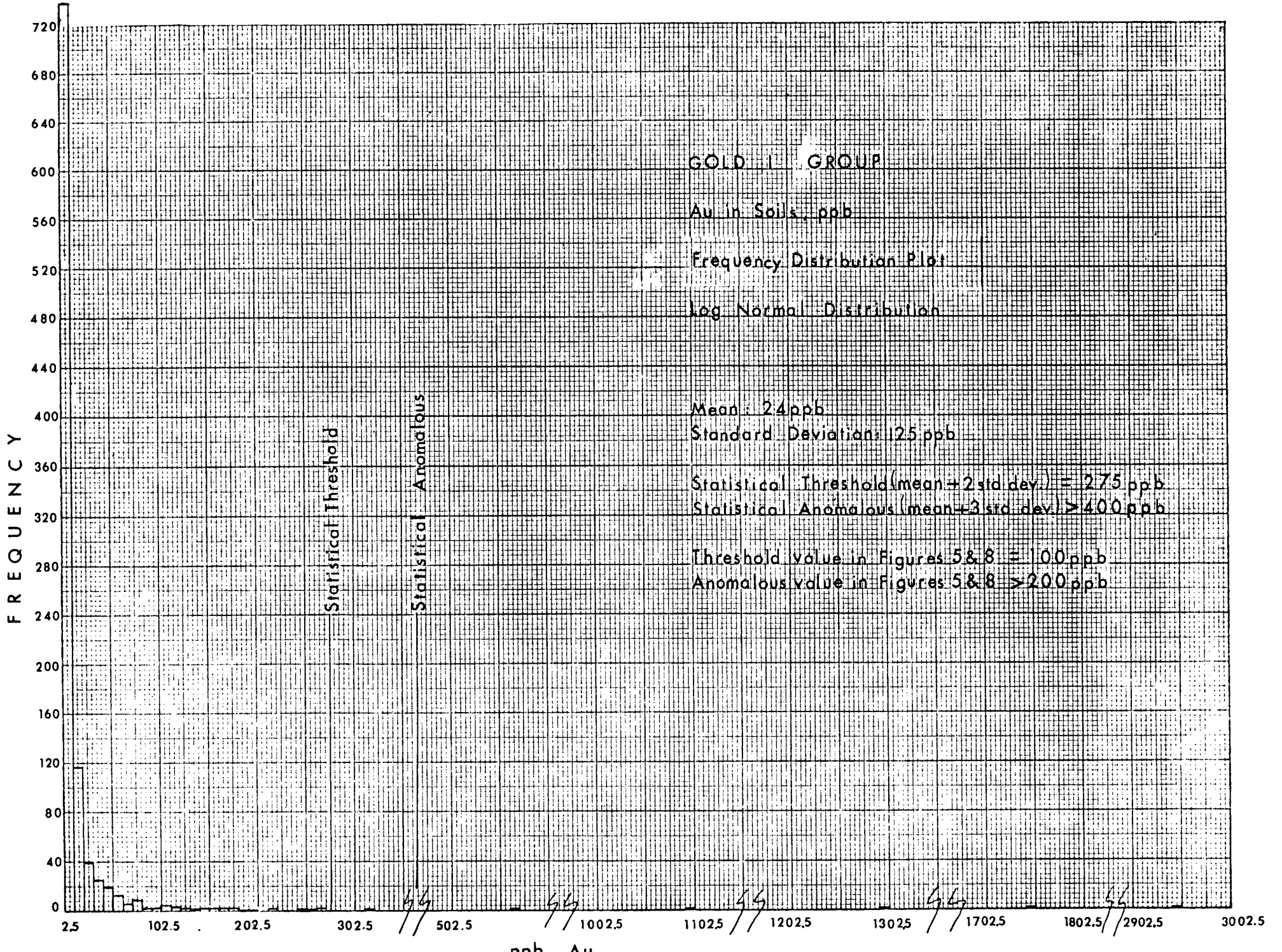
Log Probability Plot - Au Soil Geochemistry, Gold 1 Group



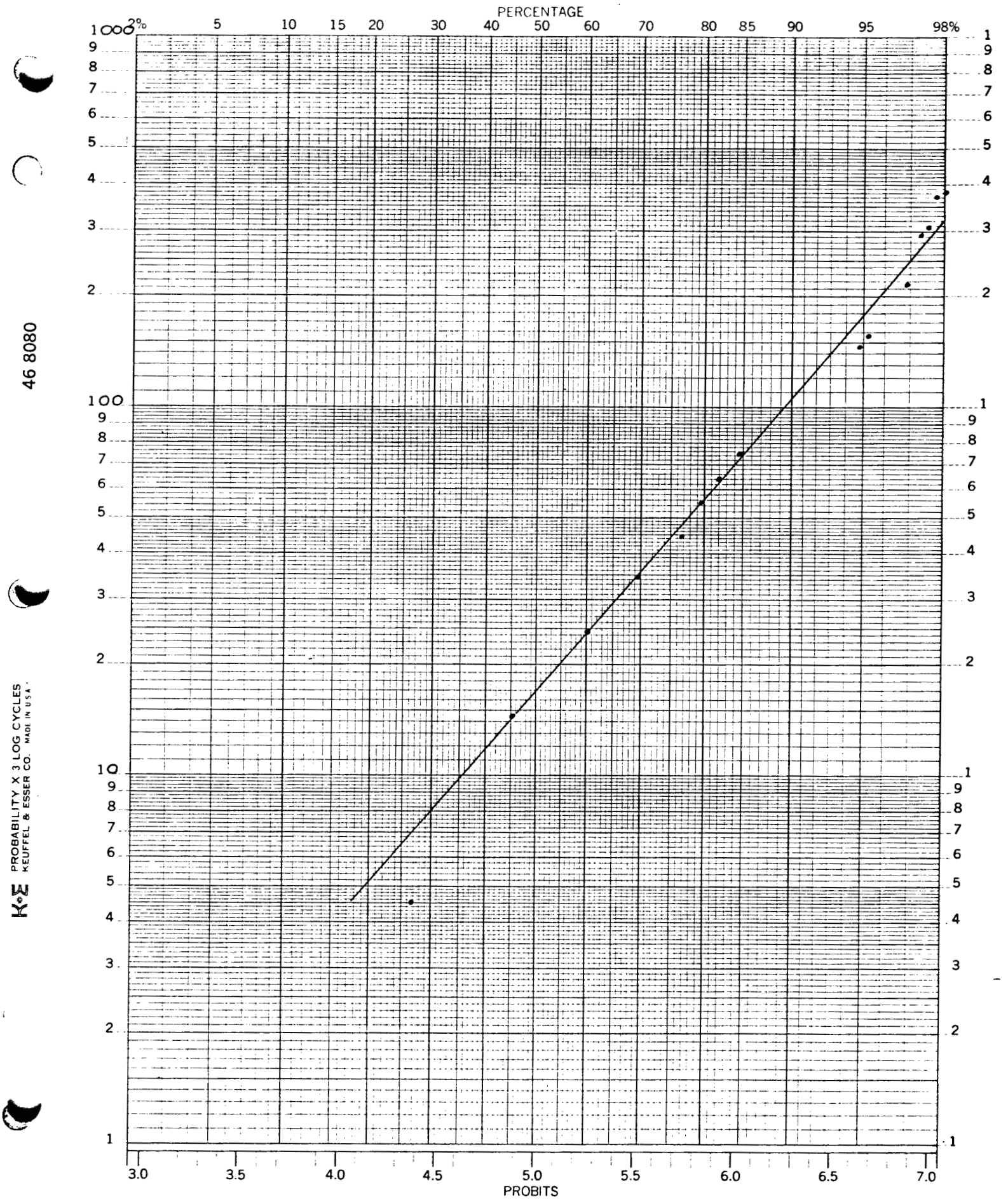
46 8080

K&E PROBABILITY X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

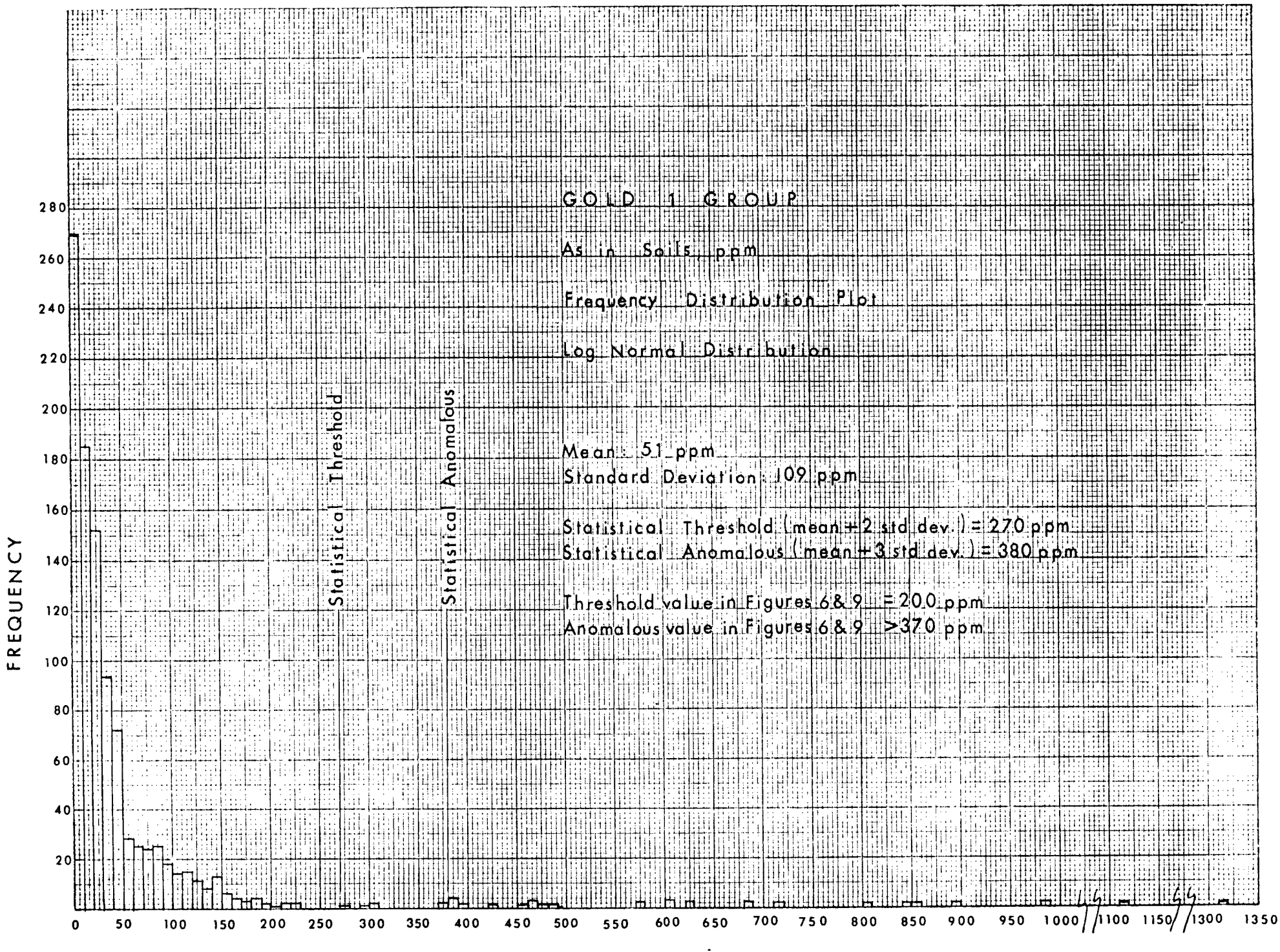
Au


GOLD I GROUP
Au in Soils, ppb
Frequency Distribution Plot
Log Normal Distribution
Mean : 24ppb
Standard Deviation: 125 ppb
Statistical Threshold (mean + 2 std dev.) = 275 ppb
Statistical Anomalous (mean + 3 std dev.) > 400 ppb
Threshold value in Figures 5 & 8 = 100 ppb
Anomalous value in Figures 5 & 8 > 200 ppb
Statistical Threshold
Statistical Anomalous
FREQUENCY
720
680
640
600
560
520
480
440
400
360
320
280
240
200
160
120
80
40
0
2.5
102.5
202.5
302.5
502.5
1002.5
1102.5
1202.5
1302.5
1702.5
1802.5
2902.5
3002.5
ppb Au

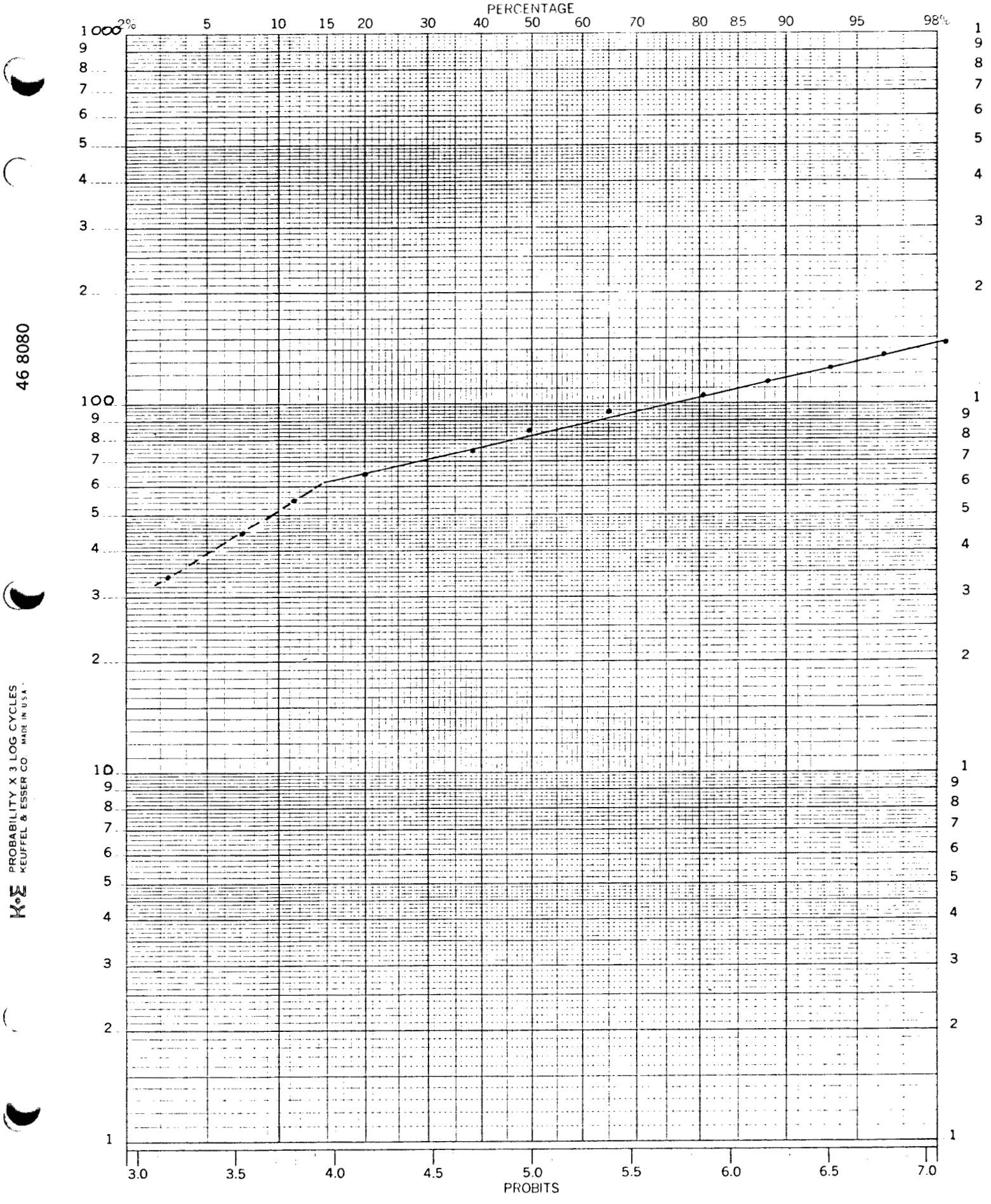
Log Probability Plot - As Soil Geochemistry, Gold 1 Group

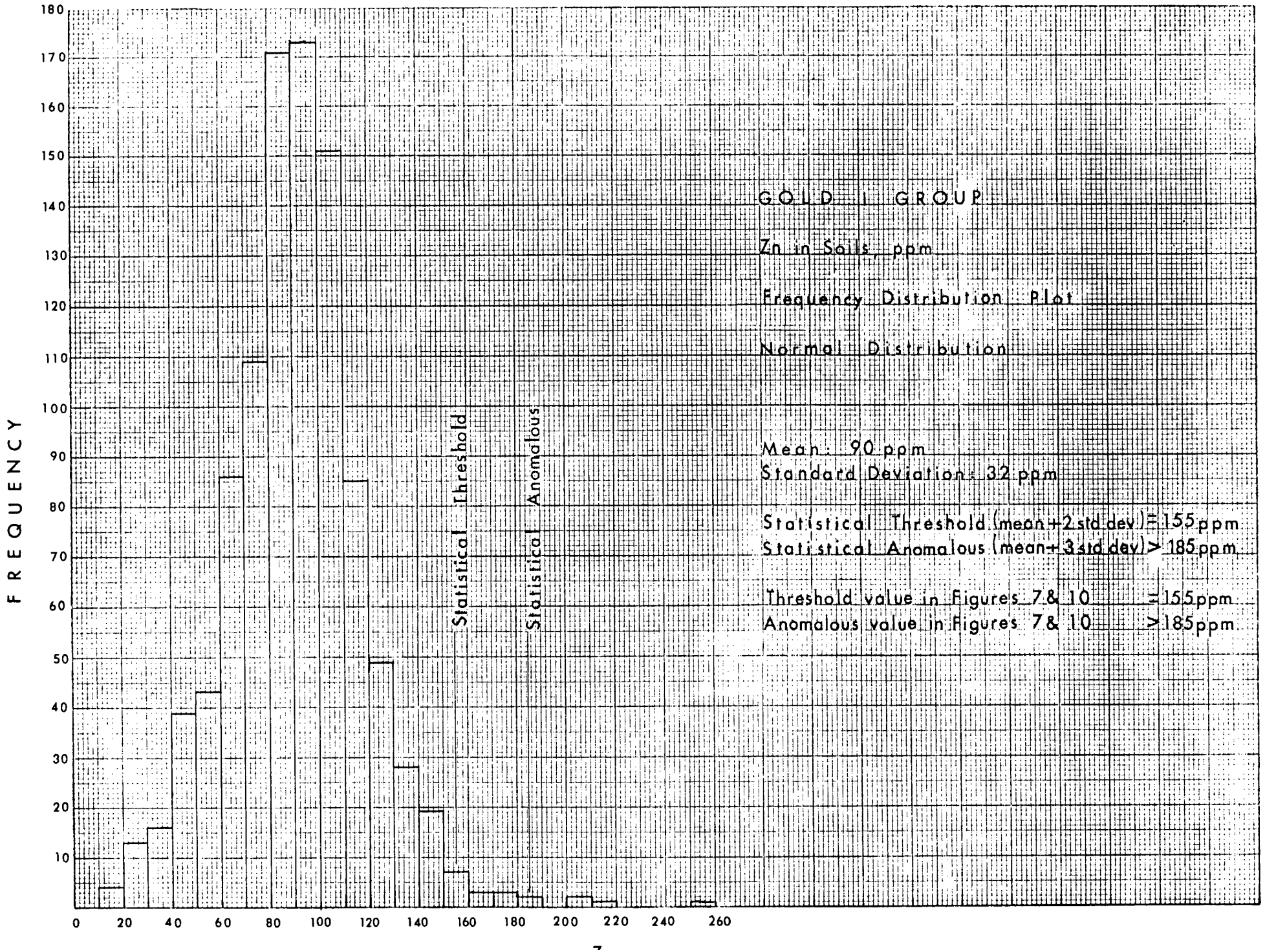


A5


GOLD 1 GROUP
As in Soils, ppm
Frequency Distribution Plot
Log Normal Distribution
Mean: 51 ppm
Standard Deviation: 109 ppm
Statistical Threshold (mean + 2 std dev.) = 270 ppm
Statistical Anomalous (mean + 3 std dev.) = 380 ppm
Threshold value in Figures 6 & 9 = 200 ppm
Anomalous value in Figures 6 & 9 > 370 ppm
Statistical Threshold
Statistical Anomalous
FREQUENCY
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1000
1100
1150
1300
1350

Log Probability Plot - Zn Soil Geochemistry, Gold 1 Group




GOLD I GROUP
Zn in Soils, ppm
Frequency Distribution Plot
Normal Distribution
Mean: 90 ppm
Standard Deviation: 32 ppm
Statistical Threshold (mean+2 std dev) = 155 ppm
Statistical Anomalous (mean+3 std dev) > 185 ppm
Threshold value in Figures 7 & 10 = 155 ppm
Anomalous value in Figures 7 & 10 > 185 ppm
Statistical Threshold
Statistical Anomalous
FREQUENCY
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
20
40
60
80
100
120
140
160
180
200
220
240
260

COMPANY: Rae Petro Corp.

PROJECT No.: Mt. Roach

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

ORIENTATION SURVEY

DATE: Aug. 25 1981.

No. 1-682

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb	Sb ppm
MRX-L-A1S		13	13	104			0·8		45	66		20	8
2		17	8	78			0·6		10	107		5	26
3		13	10	85			0·9		5	470		30	14
4		15	12	115			0·8		35	340		30	8
5		14	9	108			0·7		55	146		30	14
6		12	11	112			1·4		10	380		5	22
7		14	33	375			0·8		5	400		415	28
8		15	23	159			0·9		35	980		470	35
9		15	15	92			1·1		85	121		115	42
10		13	12	91			1·3		70	86		80	10
11		15	22	95			1·1		60	194		50	12
MRX-L-A12S		11	11	96			0·8		60	370		100	18
MRX-L-B1S		11	13	87			1·1		65	560		5	42
2		9	17	92			1·1		65	59		30	38
3		7	7	71			0·8		35	14		5	20
4		10	15	78			0·7		50	31		5	18
5		12	12	84			0·7		30	54		20	14
6		24	16	93			0·9		15	181		20	22
7		10	17	101			1·2		20	2550		340	20
8		10	16	80			0·8		5	117		110	16
9		12	17	95			1·0		20	310		20	15
10		65	25	113			1·0		25	320		165	25
11		9	14	97			1·1		30	197		820	30
12		13	10	81			0·8		15	63		5	20
13		12	14	91			0·9		25	45		25	18
14		14	10	81			1·0		25	84		70	20
MRX-L-B15S		14	9	80			0·9		5	46		30	15
							•						
							•						
							•						

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.11 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L37-5+20				76			•			4		10
	40			29			•			<1		15
	60			no sample			•					
MR-L37-5+80				23			•			1		5
MR-L46-0+00N				90			•			45		5
	0+20			83			•			27		5
	0+40			70			•			7		5
	0+60			113			•			10		5
	0+80			70			•			15		10
	1+00			85			•			21		10
	1+20			107			•			18		5
	1+40			74			•			14		5
	1+60			104			•			28		10
	1+80			88			•			12		5
	2+00			106			•			22		5
	2+20			83			•			4		5
	2+40			110			•			27		5
	2+60			65			•			<1		10
	2+80			73			•			19		5
	3+00			82			•			17		5
	3+20			67			•			77		5
	3+40			98			•			<1		10
	3+60			44			•			11		5
	3+80			66			•			<1		5
	4+00			69			•			2		10
	4+20			86			•			2		5
	4+40			70			•			<1		5
	4+60			83			•			13		5
MR-L46-4+80N				83			•			<1		10
MRN-L39-0+00				135			•			31		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 11 1981.

Sample Number	Mo ppm	W ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MRN-L39-0+20				116			•			31		20
		40		125			•			40		5
		60		120			•			42		5
		80		142			•			26		30
	1+00			97			•			13		5
		20		134			•			135		20
		40		83			•			25		20
		60		no sample			•					
		80		125			•			28		10
	2+00			92			•			10		5
		20		126			•			33		5
		40		62			•			27		5
		60		83			•			20		5
MRN-L39-2+80				110			•			32		5
MRN-L42-0+20				47			•			13		5
	0+40			46			•			6		5
	0+60			101			•			18		15
	0+80			96			•			12		10
	1+00			76			•			<1		5
	1+20			35			•			12		5
	1+40			50			•			10		5
	1+60			31			•			<1		5
	1+80			77			•			15		5
	2+00			106			•			17		5
	2+20			60			•			6		5
	2+40			173			•			3		<5
	2+60			69			•			<1		<5
	2+80			78			•			13		5
MRN-L42-3+00				80			•			23		5
MR-L1-0+00				123			•			69		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2

PHONE (604) 980-5814

No. 1-787

DATE: Sept.11 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L1-0+20				113			•			110		20
0+40				102			•			50		5
0+60				112			•			51		45
0+80				76			•			20		65
1+00				77			•			24		5
1+20				85			•			47		20
1+40				108			•			28		5
1+60				109			•			22		30
1+80				116			•			42		35
2+00				130			•			38		20
2+20				127			•			53		15
2+40				100			•			27		40
2+60				156			•			429		95
2+80				102			•			73		15
MR-L1-3+00				109			•			30		5
MR-L2-0+00				104			•			198		95
0+20				93			•			27		10
0+40				67			•			9		5
0+60				70			•			23		5
0+80				82			•			32		5
1+00				117			•			23		5
1+20				89			•			32		5
1+40				106			•			44		25
1+60				113			•			33		60
1+80				89			•			96		55
2+00				111			•			30		10
2+20				136			•			25		5
2+40				102			•			116		100
2+60				112			•			16		5
MR-L2-2+80				111			•			14		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.11 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L2-3+00				94						79		5
3+20				100						72		15
3+40				98						<1		5
3+60				143						2		5
3+80				101						3		5
4+00				109						<1		5
4+20				102						12		15
4+40				94						<1		5
4+60				90						24		15
4+80				106						15		35
5+00				104						<1		45
5+20				97						<1		5
5+40				97						5		5
5+60				93						<1		5
5+80				98						19		5
MR-L2-6+00				96						4		5
MR-L31-0+00				100						47		5
0+20				85						30		10
0+40				97						18		5
0+60				150						20		5
0+80				104						32		15
1+00				63						68		5
1+20				91						49		50
1+40				104						20		5
1+60				111						24		5
1+80				84						25		15
2+00				82						37		10
2+20				155						72		5
2+40				171						91		5
MR-L31-2+60				208						64		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.11, 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L31-2+80				186			•			114		10
3+00				117			•			15		5
3+20				110			•			47		5
3+40				136			•			15		5
MR-L31-3+60				105			•			31		10
MR-L39-0+00				136			•			51		5
0+20				97			•			46		30
0+40				60			•			<1		5
0+60				104			•			79		35
0+80				72			•			45		5
1+00				130			•			35		40
1+20				121			•			104		35
1+40				87			•			56		30
1+60				106			•			110		5
1+80				83			•			6		5
2+00				47			•			6		5
2+20				51			•			5		5
2+40				49			•			<1		5
2+60				61			•			12		10
2+80				57			•			<1		5
3+00				78			•			100		40
3+20				56			•			2		5
3+40				27			•			5		10
3+60				64			•			7		10
3+80				72			•			106		15
4+00				98			•			38		10
4+20				50			•			9		5
4+40				106			•			15		5
4+60				85			•			<1		5
MR-L39-4+80				95			•			13		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.11 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L39-5+00				107			•			<1		5
5+20				86			•			9		25
5+40				94			•			10		5
5+60				102			•			99		5
5+80				123			•			144		25
MR-L39-6+00				99			•			89		20
MR-L18-0+00S				98			•			25		10
0+20				77			•			42		15
0+40				89			•			74		5
0+60				105			•			93		5
0+80				93			•			179		10
1+00				94			•			43		5
1+20				56			•			42		5
1+40				49			•			14		5
1+60				63			•			<1		10
1+80				31			•			58		5
2+00				102			•			51		5
2+20				48			•			79		10
MR-L18-2+40S				69			•			49		5
MR-L17-0+00S				112			•			58		15
20				86			•			21		5
40				85			•			23		5
60				104			•			83		20
80				86			•			82		15
MR-L-17-1+00S				77			•			85		5
MR-L17-1+80S				122			•			84		5
2+00				64			•			111		5
20				77			•			80		15
MR-L17-2+40S				102			•			147		40
MR-L16-0+00S				87			•			37		5

COMPANY: W.G. Smitheringale

PROJECT No.: _____

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.11 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L16-0+20S				96			•			47		5
0+40				93			•			72		10
0+60				80			•			184		15
0+80				64			•			149		5
1+00				102			•			52		5
1+20				107			•			37		10
1+40				94			•			45		5
1+60				97			•			46		5
1+80				123			•			42		10
2+00				71			•			30		5
2+20				75			•			42		5
2+40				89			•			35		5
2+60				no sample			•					
2+80				97			•			61		15
3+00				81			•			32		5
3+20				92			•			34		10
3+40				89			•			53		10
3+60				92			•			31		5
3+80				88			•			66		5
MR-L16-4+00S				96			•			74		10
MR-L38-0+00				109			•			20		20
0+20				106			•			24		5
0+40				105			•			3		5
0+60				66			•			20		5
0+80				84			•			30		5
1+00				88			•			72		15
1+20				115			•			66		60
1+40				103			•			107		25
1+60				98			•			83		10
MR-L38-1+80				101			•			81		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN-EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 11, 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L4-	2+20S			110			•			24		10
	2+40			71			•			33		60
	2+60			73			•			20		15
	2+80			66			•			17		15
	3+00			128			•			11		5
	3+20			92			•			10		5
	3+40			85			•			17		5
	3+60			102			•			17		10
	3+80			86			•			11		25
	4+00			84			•			2		5
	4+20			98			•			7		10
	4+40			84			•			<1		10
	4+60			107			•			9		15
	4+80			93			•			<1		30
	5+00			90			•			1		10
	5+20			81			•			8		10
	5+40			90			•			2		5
	5+60			101			•			2		5
	5+80			89			•			4		20
MR-L4-	6+00S			71			•			3		15
MR-L26	-0+00N			102			•			25		5
	0+20			104			•			20		10
	0+40			92			•			14		5
	0+60			93			•			11		5
	0+80			75			•			21		5
	1+00			108			•			12		10
	1+20			79			•			14		15
	1+40			76			•			12		5
	1+60			101			•			8		5
MR-L26	-1+80N			96			•			11		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 11 1981.

Sample Number	Mn ppm	Mo ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L26-2+00N				81			•			10		5
20				83			•			19		5
40				70			•			24		10
MR-L26-2+60N				105			•			38		5
MR-L19-0+00N				140			•			17		5
20				126			•			59		5
40				101			•			23		5
60				76			•			58		5
80				47			•			154		<5
1+00				93			•			12		5
MR-L19-1+20N				62			•			80		10
MR-L48-0+00N				121			•			44		5
0+20				76			•			16		5
0+30				no sample			•					
0+40				56			•			21		5
0+60				60			•			23		<5
0+80				116			•			9		10
1+00				80			•			7		5
1+20				80			•			28		<5
1+40				70			•			15		15
1+60				110			•			6		5
1+80				85			•			16		5
2+00				53			•			9		5
2+20				109			•			9		5
2+40				84			•			9		25
2+60				65			•			15		5
2+80				72			•			30		5
3+00				61			•			5		5
3+20				47			•			<1		<5
MR-L48-3+40N				44			•			2		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.11 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L45-4+00N				116			•			7		10
2 0				110			•			17		5
MR-L45-4+40N				115			•			25		10
MRS-L47 0+00				123			•			26		5
0+20				91			•			15		10
0+40				82			•			97		5
0+60				91			•			23		10
0+80				57			•			4		5
1+00				106			•			12		5
1+20				72			•			15		10
1+40				103			•			19		10
1+60				117			•			7		30
1+80				129			•			1		10
2+00				90			•			18		15
2+20				87			•			43		10
2+40				78			•			13		5
2+60				109			•			5		5
2+80				114			•			8		5
3+00				124			•			38		5
3+20				121			•			42		5
3+40				143			•			12		5
3+60				94			•			1		5
3+80				144			•			12		5
4+00				70			•			<1		5
4+20				117			•			9		5
4+40				87			•			<1		15
MRS-L47-4+60				163			•			5		10
MR-L41-0+00N				128			•			17		5
0+20				91			•			4		5
MR-L41-0+40N				72			•			11		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 14 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L42-1+80S				40			•			18		5
2+00				46			•			4		5
2+20				60			•			7		5
2+40				63			•			3		5
2+60				19			•			<1		5
2+80				55			•			<1		5
3+00				27			•			<1		5
3+20				28			•			4		<5
3+40				47			•			2		5
3+60				51			•			2		10
3+80				53			•			1		5
4+00				52			•			6		5
4+20				25			•			8		5
4+40				40			•			<1		<5
4+60				37			•			12		5
4+80				70			•			13		5
5+00				48			•			20		10
5+20				40			•			7		5
5+40				38			•			2		5
5+60				39			•			9		5
MR-L42-5+80S				32			•			3		5
MR-L4-0+40S				96			•			300		5
0+60				118			•			980		190
0+80				87			•			113		15
1+00				91			•			121		30
1+20				74			•			370		15
1+40				83			•			146		5
1+60				101			•			33		5
1+80				87			•			43		5
MR-L4-2+00S				83			•			64		10

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.14 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L36-4+20S				126			•			135		15
4+40				61			•			20		5
4+60				74			•			11		5
4+80				79			•			11		10
5+00				68			•			36		5
5+20				95			•			25		10
5+40				90			•			14		5
5+60				62			•			5		5
5+80				79			•			69		15
MR-L36-6+00S				132			•			15		5
MR-L45-0+00N				105			•			32		5
0+20				86			•			23		5
0+40				94			•			78		5
0+60				113			•			34		10
0+80				71			•			87		5
1+00				72			•			25		5
1+20				81			•			52		5
1+40				84			•			97		5
1+60				78			•			121		5
1+80				no sample			•					
2+00				94			•			12		5
2+20				81			•			57		5
2+40				83			•			39		5
2+60				97			•			13		5
2+80				115			•			29		5
3+00				111			•			22		10
3+20				70			•			29		5
3+40				58			•			29		5
3+60				116			•			10		<5
MR-L45-3+80N				110			•			26		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 14 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L42-6+00				40			•			<1		5
MR-L25-0+00N				125			•			294		1750
0+20				97			•			53		5
0+40				107			•			14		10
0+60				90			•			37		40
0+80				94			•			48		25
1+00				101			•			49		5
MR-L25-1+20N				98			•			47		5
GIA-L20-S1				113			•			51		55
2				62			•			18		15
GIA-L20-S3				73			•			49		15
GIA-L21-0-15				106			•			40		25
GIA-L21-0+00				78			•			21		5
GIA-L21-0+20W				98			•			37		5
GIA-L22-0+20W				96			•			37		5
0+00				54			•			27		5
0+20E				93			•			18		5
GIA-L22-0+38				97			•			18		15
GIA-L23-0+00				74			•			14		10
GIA-L23-0+20				73			•			<1		5
GIA-L23-0-20				72			•			2		5
GIA-L24-0+00				99			•			69		5
GIA-L24-0+20				92			•			81		5
MR-L27-0+00N				86			•			22		15
0+20				95			•			42		15
0+40				91			•			86		5
0+60				98			•			88		5
0+80				110			•			33		5
1+00				65			•			94		5
MR-L27-1+20N				86			•			126		5

COMPANY: W.G. Smitheringale

PROJECT No.: _____

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 15 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L27-1+40N				104			•			7		5
1+60				105			•			14		5
1+80				37			•			7		5
MR-L27-2+00N				90			•			18		5
MR-L37-0+00				132			•			4		<5
0+20				146			•			20		10
0+40				64			•			2		5
0+60				215			•			23		5
0+80				139			•			36		15
1+00				71			•			18		5
1+20				172			•			56		20
1+40				137			•			160		80
1+60				109			•			119		30
1+80				98			•			74		5
2+00				125			•			95		15
2+20				109			•			44		10
2+40				95			•			46		5
2+60				131			•			27		30
2+80				136			•			99		75
3+00				61			•			14		5
3+20				64			•			21		15
3+40				95			•			36		35
3+60				99			•			41		25
3+80				142			•			248		230
4+00				120			•			304		150
4+20				125			•			137		80
4+40				89			•			84		5
4+60				54			•			88		65
4+80				75			•			5		5
MR-L37-5+00				106			•			27		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 15 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L38-2+00				123			•			69		30
2+20				no sample			•					
2+40				125			•			60		15
2+60				76			•			218		5
2+80				68			•			22		5
3+00				33			•			2		5
3+20				25			•			5		5
3+40				66			•			23		10
3+60				57			•			28		15
3+80				21			•			13		5
4+00				37			•			14		5
4+20				77			•			38		125
4+40				40			•			1		5
4+60				18			•			<1		5
4+80				86			•			97		10
5+00				63			•			9		5
5+20				70			•			31		35
5+40				27			•			4		80
5+60				28			•			12		5
5+80				94			•			11		5
MR-L38-6+00				110			•			9		5
MR-L42-0+00S				79			•			10		5
0+20				44			•			7		5
0+40				62			•			14		5
0+60				18			•			5		5
0+80				17			•			4		5
1+00				66			•			7		5
1+20				28			•			8		5
1+40				72			•			28		5
MR-L42-1+60S				46			•			5		<5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2

PHONE (604) 980-5814

No. 1-787

DATE: Sept.15 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L3-4+40S				95			•			8		10
4+60				103			•			7		15
4+80				121			•			9		5
5+00				104			•			20		5
5+20				114			•			5		5
5+40				103			•			2		5
5+60				110			•			15		5
5+80				88			•			1		10
MR-L3-6+00S				115			•			<1		5
MR-L36-0+00S				89			•			22		15
0+20				56			•			20		15
0+40				67			•			20		5
0+60				98			•			18		30
0+80				140			•			42		10
1+00				118			•			15		5
1+20				62			•			13		20
1+40				no sample			•					
1+60				137			•			132		45
1+80				130			•			154		30
2+00				106			•			49		25
2+20				143			•			145		30
2+40				112			•			52		20
2+60				148			•			222		120
2+80				80			•			24		5
3+00				149			•			22		5
3+20				102			•			34		10
3+40				142			•			270		125
3+60				156			•			111		85
3+80				153			•			383		115
MR-L36-4+00S				142			•			850		180

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 1981.

Sample Number	Mo ppm	W ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L40-3+60S				50			•			<1		10
3+80				48			•			<1		15
4+00				52			•			<1		5
4+20				71			•			<1		5
4+40				47			•			<1		5
4+60				48			•			5		5
4+80				46			•			<1		35
5+00				57			•			18		5
5+20				38			•			11		5
5+40				43			•			<1		10
5+60				47			•			<1		5
5+80				60			•			2		5
MR-L40-6+00S				53			•			<1		5
MR-L41-0+00S				69			•			5		10
0+20				61			•			<1		5
0+40				70			•			5		5
0+60				52			•			<1		5
0+80				85			•			71		20
1+00				57			•			7		15
1+20				65			•			7		5
1+40				72			•			1		10
1+60				34			•			2		5
1+80				53			•			2		15
2+00				57			•			13		5
2+20				56			•			2		5
2+40				48			•			<1		5
2+60				75			•			5		5
2+80				43			•			1		5
3+00				54			•			1		5
MR-L41-3+20S				59			•			20		10

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.16 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Mo ppm	Au ppb
MR-L48-3+60N				73			•			7			65
3+80				78			•			55			5
4+00				66			•			18			15
4+20				123			•			19			5
4+40				161			•			15			5
4+60				86			•			18			10
4+80				91			•			30			5
MR-L48-5+00N				126			•			23			5
MR-L3-0+00S				no sample			•						
0+20				no sample			•						
0+40				91			•			39			45
0+60				85			•			141			1300
0+80				79			•			35			10
1+00				96			•			32			20
1+20				115			•			30			5
1+40				103			•			39			15
1+60				83			•			30			5
1+80				86			•			68			20
2+00				102			•			48			55
2+20				114			•			61			35
2+40				132			•			50			15
2+60				97			•			32			35
2+80				100			•			34			10
3+00				116			•			19			10
3+20				110			•			27			20
3+40				106			•			13			10
3+60				no sample			•						
3+80				86			•			14			40
4+00				95			•			14			5
MR-L3-4+20S				112			•			9			10

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 16 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb			
MR-L6-	2+00	S		98			•			43		35			
	2+20			107			•			25		45			
	2+40			119			•			15		5			
	2+60			106			•			12		5			
	2+80			117			•			11		10			
	3+00			109			•			4		<5			
	3+20			92			•			8		5			
	3+40			100			•			17		10			
	3+60			116			•			17		5			
	3+80			84			•			7		<5			
	4+00			93			•			6		5			
MR-L6-	4+20	S		89			•			8		5			
MR-L7-	2+40	S		101			•			9		<5			
	2+60			97			•			14		10			
	2+80			107			•			<1		<5			
	3+00			84			•			12		<5			
	3+20			110			•			4		5			
	3+40			102			•			6		35			
	3+60			98			•			2		5			
	3+80			102			•			9		5			
MR-L7-	4+00	S		96			•			7		<5			
MR-L28	-0+00			101			•			16		5			
	0+20			89			•			26		10			
	0+40			132			•			32		10			
	0+60			113			•			20		5			
	0+80			98			•			23		<5			
	1+00			97			•			48		20			
	1+20			64			•			35		5			
	1+40			75			•			17		<5			
MR-L28	-1+60			65			•			36		30			

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

FILE No. 1-787

DATE: Sept. 16 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb			
MR-L7-	1+20	S		92						111		35			
	1+40			83						11		55			
	1+60			108						12		5			
	1+80			89						18		5			
	2+00			107						8		<5			
MR-L7-	2+20	S		109						5		<5			
MR-L19	-1+40	S		63						72		5			
MR-L38	-2+60	(2)		117						42		15			
MR-NL-	L39-	3+00		100						41		5			
MRL-49	-4+00			73						15		5			
MRL-35	-0+80			93						20		15			

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 17 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb			
MR-L30-1+20N				76			•			840		10			
1+40				73			•			98		5			
1+60				98			•			15		10			
1+80				70			•			20		15			
2+00				88			•			43		5			
2+20				68			•			87		10			
2+40				115			•			53		5			
2+60				no sample			•								
2+80				204			•			89		5			
3+00				253			•			133		5			
3+20				101			•			19		10			
3+40				86			•			28		5			
3+60				82			•			4		5			
MR-L30-3+80N				98			•			9		10			
MR-L10-0+00S				101			•			22		5			
0+20				88			•			29		55			
0+40				91			•			43		10			
0+60				101			•			61		10			
0+80				92			•			119		250			
1+00				107			•			223		20			
1+20				110			•			171		180			
1+40				98			•			59		80			
1+60				70			•			6		5			
1+80				113			•			1		10			
2+00				85			•			<1		5			
2+20				106			•			<1		15			
2+40				105			•			22		5			
2+60				98			•			<1		5			
2+80				65			•			<1		5			
MR-L10-3+00S				78			•			<1		5			

COMPANY: W.G. Smitheringale

PROJECT No.: _____

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.17 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L5-3+80S				68			•			13		15
4+00				61			•			12		5
4+20				68			•			7		70
4+40				66			•			11		5
4+60				59			•			4		10
4+80				70			•			14		20
5+00				65			•			6		15
5+20				68			•			5		10
5+40				73			•			8		5
5+60				60			•			25		20
5+80				74			•			16		5
MR-L5-6+00S				65			•			5		10
MR-L37-1+00N				82			•			34		30
1+20				68			•			23		5
1+40				103			•			11		5
1+60				84			•			35		5
1+80				60			•			49		5
2+00				57			•			21		10
2+20				84			•			79		5
2+40				101			•			21		5
2+60				120			•			23		5
2+80				123			•			29		5
3+00				88			•			40		5
3+20				105			•			36		5
3+40				100			•			19		5
3+60				no sample			•					
3+80				137			•			9		5
4+00				98			•			8		5
4+20				83			•			4		5
MR-L37-4+40N				109			•			9		5

COMPANY: W.G. Smitheringale

PROJECT No.: _____

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 1 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L49-0+00				92			•			14		5
0+60				99			•			18		5
0+80				107			•			13		5
1+00				95			•			27		5
1+20				98			•			26		10
1+40				95			•			36		5
1+60				93			•			34		10
1+80				124			•			14		5
2+00				118			•			25		5
2+20				84			•			4		5
2+40				118			•			9		5
2+60				82			•			28		10
2+80				104			•			12		5
3+00				109			•			26		5
3+20				133			•			16		5
3+40				136			•			27		5
3+60				no sample			•					
MR-L49-3+80				101			•			36		5
MR-L35-0+00N				103			•			70		135
0+20				108			•			41		30
0+40				97			•			32		15
0+60				112			•			84		20
0+80				no sample			•					
1+00				122			•			36		30
1+20				78			•			26		50
1+40				146			•			60		30
1+60				149			•			116		25
1+80				152			•			136		5
2+00				143			•			105		155
MR-L35-2+20N				121			•			50		20

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 21, 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L13-1+80S				102			•			20		10
2+00				95			•			10		5
2+20				78			•			4		5
2+40				105			•			5		5
2+60				94			•			12		5
2+80				87			•			2		10
3+00				91			•			4		5
3+20				93			•			9		5
3+40				104			•			16		5
3+60				86			•			6		5
3+80				83			•			17		5
MR-L13-4+00S				86			•			6		10
MR-L5-0+20S				117			•			168		120
0+40				112			•			460		80
0+60				116			•			190		20
0+80				112			•			600		80
1+00				169			•			800		570
1+20				105			•			96		5
1+40				102			•			148		40
1+60				88			•			22		10
1+80				111			•			95		20
2+00				83			•			86		230
2+20				65			•			23		10
2+40				111			•			41		30
2+60				95			•			28		160
2+80				101			•			19		20
3+00				80			•			24		25
3+20				99			•			20		5
3+40				109			•			57		40
MR-L5-3+60S				121			•			28		60

COMPANY: W.G. Smitheringale

PROJECT No.: _____

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 21 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L28-1+80				84			•			26		5
2+00				101			•			470		5
2+20				95			•			24		5
2+40				93			•			37		5
2+60				106			•			63		10
2+80				80			•			20		5
3+00				84			•			20		10
3+20				78			•			44		5
MR-L28-3+40				66			•			17		35
MR-L29-0+00N				70			•			37		5
0+20				80			•			28		5
0+40				95			•			35		10
0+60				100			•			24		5
0+80				93			•			83		5
1+00				95			•			29		5
1+20				110			•			41		20
1+40				88			•			380		5
1+60				100			•			38		5
1+80				87			•			38		5
2+00				81			•			27		5
2+20				81			•			22		5
2+40				89			•			26		5
2+60				85			•			21		20
MR-L29-2+80N				92			•			38		60
MR-L30-0+00N				90			•			47		10
0+20				100			•			43		5
0+40				112			•			45		45
0+60				70			•			155		5
0+80S				73			•			101		10
MR-L30-1+00N				68			•			82		15

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 21 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L37	-4+60N			69			•			20		5
	4+80			70			•			9		5
MR-L37	-5+00N			55			•			3		10
MR-L38	-1+00N			71			•			30		5
	1+20			103			•			28		10
	1+40			65			•			4		5
	1+60			55			•			13		5
	1+80			82			•			5		15
	2+00			110			•			45		20
	2+20			106			•			16		10
	2+40			99			•			50		20
	2+60			140			•			38		5
	2+80			94			•			49		5
	3+00			112			•			13		5
	3+20			88			•			39		5
	3+40			123			•			25		5
	3+60			87			•			13		5
	3+80			102			•			30		10
	4+00			125			•			33		5
	4+20			110			•			20		5
	4+40			100			•			43		15
	4+60			85			•			18		10
	4+80			87			•			9		5
MR-L38	-5+00N			72			•			2		5
MR-L6	-0+80S			85			•			129		10
	1+00			78			•			157		20
	1+20			86			•			110		5
	1+40			83			•			99		10
	1+60			81			•			78		25
MR-L6	-1+80S			93			•			125		60

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 2 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L12-2+20S				96			•			<1		5
2+40				96			•			1		5
2+60				93			•			20		5
2+80				88			•			27		10
3+00				91			•			10		10
3+20				105			•			22		5
3+40				85			•			22		5
3+60				82			•			<1		5
3+80				93			•			3		5
MR-L12-4+00S				98			•			16		5
MR-11-0+00S				95			•			24		20
0+20				100			•			61		10
0+40				99			•			116		10
0+60				114			•			156		15
0+80				98			•			95		10
1+00				122			•			450		10
1+20				95			•			85		5
1+40				104			•			64		20
1+60				100			•			65		20
1+80				118			•			27		5
2+00				98			•			1		80
2+20				99			•			4		5
2+40				93			•			5		5
2+60				104			•			12		5
2+80				95			•			3		5
3+00				85			•			10		5
3+20				no sample			•					
3+40				101			•			30		10
3+60				85			•			7		5
MR-11-3+80S				68			•			19		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 22 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L11-4+00S				73			•			6		15
MR-L15-0+00S				91			•			92		15
0+20				92			•			103		5
0+40				87			•			60		10
0+60				101			•			60		20
0+80				130			•			1320		5
1+00				108			•			1120		10
1+20				123			•			890		5
1+40				69			•			27		5
1+60				92			•			34		5
1+80				71			•			26		10
2+00				73			•			20		5
2+20				76			•			31		10
2+40				87			•			106		15
2+60				100			•			146		15
2+80				122			•			188		5
3+00				82			•			124		35
3+20				93			•			93		50
3+40				104			•			112		5
3+60				79			•			148		5
3+80				85			•			59		5
MR-L15-4+00S				90			•			52		5
MR-L14-0+00S				136			•			101		40
0+20				86			•			91		5
0+40				95			•			74		5
0+60				115			•			49		5
0+80				98			•			710		15
1+00				107			•			620		5
1+20				96			•			28		65
MR-L14-1+40S				102			•			120		5

COMPANY: W.G. Smitheringale

PROJECT No.: _____

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.22 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L14-1+60S				79			•			46		5
1+80				78			•			30		5
2+00				114			•			10		5
2+20				64			•			18		10
2+40				66			•			61		10
2+60				70			•			100		20
2+80				82			•			17		60
3+00				83			•			60		10
3+20				69			•			370		5
3+40				76			•			72		5
3+60				90			•			30		5
3+80				86			•			164		5
MR-L14-4+00S				83			•			31		5
MR-L13-0+20W				86			•			12		5
0+40				82			•			22		5
0+60				78			•			22		5
0+80				no sample			•					
1+00				no sample			•					
1+20				75			•			21		5
1+40				35			•			12		5
MR-L13-1+60N				60			•			43		5
MR-L13-0+00S				67			•			13		10
0+20				66			•			36		5
0+40				68			•			64		40
0+60				76			•			100		80
0+80				85			•			101		20
1+00				88			•			390		70
1+20				80			•			42		5
1+40				84			•			47		5
MR-L13-1+60S				60			•			5		5

COMPANY: W.G. Smitheringale

PROJECT No.: _____

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.22 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L10-3+20S				76			•			13		5
3+40				102			•			8		5
3+60				85			•			12		5
3+80				87			•			16		5
MR-L10-4+00S				92			•			5		15
MR-L9-0+00S				112			•			88		45
0+20				84			•			120		20
0+40				83			•			185		90
0+60				89			•			140		110
0+80				87			•			71		5
1+00				115			•			480		260
1+20				98			•			126		65
1+40				105			•			173		110
1+60				90			•			70		5
1+80				101			•			30		320
2+00				84			•			2		5
2+20				106			•			16		15
2+40				91			•			<1		5
2+60				88			•			13		5
2+80				100			•			7		5
3+00				101			•			21		5
3+20				78			•			106		40
3+40				88			•			27		5
3+60				102			•			8		5
3+80				119			•			10		10
MR-L9-4+00S				109			•			<1		5
MR-L8-0+00S				83			•			79		5
0+20				98			•			115		20
0+40				98			•			460		50
MR-L8-0+60S				97			•			149		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.22 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L8-0+80S				91			•			42		25
1+00				80			•			47		45
1+20				82			•			43		25
1+40				101			•			380		150
1+60				78			•			44		170
1+80				89			•			42		55
2+00				87			•			45		20
2+20				89			•			<1		15
2+40				79			•			2		5
2+60				96			•			10		5
2+80				79			•			2		5
3+00				71			•			13		5
3+20				124			•			43		10
3+40				98			•			3		5
3+60				97			•			2		15
3+80				116			•			18		5
MR-L8-4+00S				91			•			4		5
MR-L-40-0+20				66			•			25		5
0+40				77			•			6		5
0+60				64			•			1		5
0+80				90			•			24		10
1+00				117			•			35		5
1+20				68			•			<1		5
1+40				24			•			2		5
1+60				132			•			4		5
1+80				124			•			9		5
2+00				95			•			9		5
2+20				86			•			21		10
2+40				75			•			14		5
MR-L40-2+60				78			•			6		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.

705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 22 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L40-2+80				67			•			<1		5
3+00				81			•			<1		5
3+20				112			•			15		5
3+40				119			•			25		10
3+60				no sample			•					
3+80				138			•			16		10
4+00				98			•			13		10
4+20				81			•			139		5
4+40				118			•			15		10
4+60				67			•			16		5
4+80				129			•			20		10
MR-L40-5+00				102			•			210		10
MR-L40-0+00S				105			•			33		30
0+20				82			•			25		10
0+40				54			•			9		15
0+60				43			•			33		10
0+80				67			•			21		5
1+00				102			•			162		40
1+20				104			•			151		30
1+40				41			•			30		5
1+60				87			•			128		5
1+80				61			•			5		5
2+00				48			•			9		5
2+20				28			•			4		5
2+40				60			•			1		10
2+60				44			•			31		5
2+80				53			•			1		5
3+00				35			•			2		10
3+20				54			•			<1		5
MR-L40-3+40S				53			•			<1		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 22 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L41-0+60N				83			•			23		5
0+80				88			•			21		10
1+00				104			•			46		45
1+20				90			•			1		10
1+40				103			•			6		10
1+60				127			•			8		5
1+80				111			•			10		5
2+00				80			•			13		5
2+20				118			•			25		5
2+40				80			•			11		5
2+60				109			•			8		5
2+80				113			•			14		5
3+00				106			•			9		5
3+20				128			•			32		5
3+40				no sample			•					
3+60				no sample			•					
3+80				157			•			33		10
4+00				102			•			55		5
4+20				69			•			13		5
4+40				89			•			2		5
4+60				51			•			4		5
4+80				126			•			22		5
5+00				129			•			21		5
5+20				no sample			•					
5+40				no sample			•					
5+60				no sample			•					
5+80				no sample			•					
MR-L41-5+00N				no sample			•					
MR-L49-0+00				131			•			40		5
MR-L49-0+20				121			•			28		5

COMPANY: W.G. Smitheringale

PROJECT No.:

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept.22 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L41-3+40S				46			•			<1		5
3+60				45			•			1		5
3+80				39			•			4		5
4+00				42			•			29		5
4+20				52			•			<1		5
4+40				65			•			13		10
4+60				49			•			<1		5
4+80				65			•			8		60
5+00				46			•			<1		5
5+20				58			•			10		5
5+40				44			•			2		10
5+60				54			•			13		5
5+80				74			•			1		5
MR-L41-6+00S				41			•			2		5
MR-L9-0+00XS				91			•			34		105
MR-L45-4+60				80			•			37		15
No Nbr A				80			•			11		10
No Nbr B				32			•			9		5
MR-L6-4+40S				92			•			5		5
4+60				83			•			27		5
4+80				91			•			60		5
5+00				98			•			5		5
5+20				94			•			14		5
5+40				98			•			4		5
5+60				74			•			4		45
5+80				100			•			26		20
MR-L6-6+00S				98			•			8		5
MR-L7-0+60S				100			•			133		20
0+80				97			•			182		2950
MR-L7-1+00S				91			•			72		50

COMPANY: W.G. Smitheringale

PROJECT No.: _____

ATTENTION: W.G. Smitheringale

GEOCHEMICAL ANALYSIS DATA SHEET

MIN - EN Laboratories Ltd.
705 WEST 15th ST., NORTH VANCOUVER, B.C. V7M 1T2
PHONE (604) 980-5814

No. 1-787

DATE: Sept. 22 1981.

Sample Number	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ni ppm	Co ppm	Ag ppm	Fe ppm	Hg ppb	As ppm	Mn ppm	Au ppb
MR-L35-2+40N				141			•			87		1100
2+60				119			•			31		45
2+80				137			•			35		105
3+00				129			•			68.0		170
3+20				137			•			8.6		50
3+40				139			•			10.7		270
3+60				no sample			•					
3+80				145			•			60.0		270
4+00				87			•			4.3		5
4+20				182			•			57.0		195
4+40				94			•			1.9		5
4+60				71			•			2.5		5
4+80				119			•			6		5
MR-L35-5+00N				52			•			1.3		5
MR-L12-0+00N				55			•			9		30
0+20				78			•			1.2		5
0+40				80			•			1.3		5
0+60				77			•			1.1		30
0+80				85			•			2		15
MR-L12-1+00N				82			•			6		5
MR-L12-0+20S				61			•			10		20
0+40				87			•			4.3		30
0+60				80			•			2.2		15
0+80				105			•			124		20
1+00				111			•			209		50
1+20				97			•			147		40
1+40				92			•			4.0		5
1+60				88			•			44		5
1+80				85			•			1.0		5
MR-L12-2+00S				90			•			6		5

A P P E N D I X III

GEOPHYSICAL REPORT
ON TEST IP SURVEY

by

DAVID G. MARK,
GEOTRONICS SURVEYS LTD.

Note: During the exploration program on the Gold 1 Group the property was referred to as the "Mt. Roach" property. Thus the Geotronics report uses the property name "Mt. Roach", rather than Gold 1 Group.

GEOPHYSICAL REPORT

ON AN

INDUCED POLARIZATION SURVEY

MT. ROACH PROPERTY

LYTTON AREA

KAMLOOPS MINING DIVISION

BRITISH COLUMBIA

MT. ROACH PROPERTY	: 10 km east of Lytton, B.C.
	: 50° 121° SW
	: N.T.S. 92I/4E
WRITTEN FOR	: REA PETRO CORPORATION 1-558 Howe Street Vancouver, B.C. V6C 2C9
WRITTEN BY	: David G. Mark, Geophysicist GEOTRONICS SURVEYS LTD. 403-750 West Pender Street Vancouver, B.C., V6C 2T7
DATED	: December 11, 1981

GEOTRONICS SURVEYS LTD.
Engineering & Mining Geophysicists
VANCOUVER, CANADA

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ILLUSTRATION

GEOPHYSICAL REPORT

ON AN

INDUCED POLARIZATION SURVEY

MT. ROACH PROPERTY

LYTTON AREA

KAMLOOPS MINING DIVISION

BRITISH COLUMBIA

INTRODUCTION

This report discusses the survey procedure, compilation of data and the interpretation of an induced polarization (IP) survey conducted over part of the Mt. Roach Property belonging to Rea Petro Corporation.

The property is located near Lytton, British Columbia in the Kamloops Mining Division.

The work was carried out between August 21st to the 25th, 1981 under the field leadership of J. Ashenhurst, Geophysical Technician.

The mineralization consists of gold and silver occurring within a quartz vein system which occur within shear fractures. The survey consisted of two lines, 400 m and 500 m, respectively, run across the strike of the vein system. The main purpose was, therefore, to determine whether the induced polarization

method was a viable exploration tool on this property.

This report is written as an addendum to one presently being prepared by Bill Smitheringale, Consulting Geologist to Rea Petro on the Mt. Roach property.

INSTRUMENTATION

The induced polarization transmitter was a Phoenix Instruments, model IPT-1, powered by a MG-2, 60 Briggs & Stratton generator. The transmitter current varied from 0.75 to 2.2A. The receiver was a Huntec Mark IV, operating in the time-domain mode. This is state-of-the-art equipment, with software-controlled functions, programmeable through the front panel.

Following current switch-off, a delay time of 300 ms was introduced before the voltage decay curve was sampled by ten 30 ms wide windows. The instrument readout was the charge-ability.

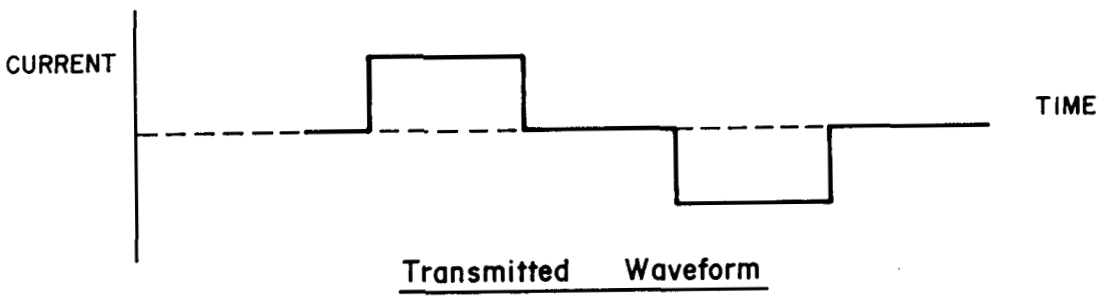
THEORY

When a voltage is applied to the ground, electric current flows, mainly in the electrolyte-filled capillaries in the rock. If the capillaries also contain certain mineral particles that transport current by electrons (most sulphides, some oxides and graphite), then the ionic charges build up at the particle-electrolyte interface, positive ones where the current enters the particle and negative ones where it leaves. This accumulation of charge creates a voltage that tends to oppose the current flow across the interface. When the current is switched off, the created voltage slowly decreases as the accumulated ions diffuse back into the electrolyte. This type

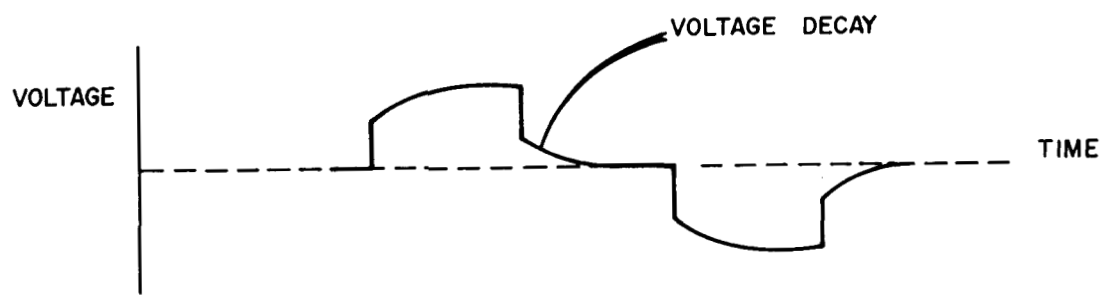
of induced polarization phenomenon is known as electrode polarization.

A similar effect occurs if clay particles are present in the conducting medium. Charged clay particles attract oppositely-charged ions from the surrounding electrolyte; when the current stops, the ions slowly diffuse back to their equilibrium state. This process is known as membrane polarization and gives rise to induced polarization effects even in the absence of metallic-type conductors.

Most IP surveys are carried out by taking measurements in the "time-domain" or the "frequency-domain".



Transmitted Waveform



Recorded Voltage

Time-domain measurements involve sampling the waveform at intervals after the current is switched off, to derive a dimensionless parameter, the chargeability, "M" which is a measure of the strength of the induced polarization effect. Measurements in the frequency-domain are based on the fact that the resistance produced at the electrolyte-charged particle interface decreases with increasing frequency. The difference between apparent resistivity readings at a high and low frequency is expressed as the percentage frequency effect, "PFE".

The two IP response parameters, M and PFE are nearly proportional at fairly low polarization values. In the absence of large membrane polarization effects, high M or PFE values may indicate the presence of disseminated sulphide mineralization.

In the process of carrying out an IP survey, two other sets of readings are taken; these are resistivity and self-potential "SP". The SP is a measured amount of the "battery-action" of the ground, caused by current flows set up by near surface oxidation processes. The resistivity is a measure of how well the ground conducts electricity, and depends mainly on saturation and the ionic and clay particle content of the pore waters.

SURVEY PROCEDURE

The pole-dipole electrical configuration was used for the work. In this array, one of the current electrodes is deployed a long distance from the other three electrodes, so that it has a negligible effect on the voltage recorded at the potential electrodes.

The two potential electrodes were kept 25 m apart; readings were then taken for the mobile current electrode 25 m, 50 m, 75 m and 100 m from the potential dipole (i.e. n values of 1, 2, 3 and 4).

Stainless steel stakes were used for current electrodes. The potential electrodes comprised metallic copper in copper sulphate solution, in non-polarizing, unglazed, porcelain pots.

Readings of IP responce, electrical resistivity and SP, were taken every 25 m along 2 northeasterly-trending lines about 250 m apart and following the topographic contours.

COMPILATION OF DATA

The chargeability values are read directly from the instrument and no data processing is therefore required prior to plotting. The resistivity values are derived from current and voltage readings taken in the field. These values are combined with the geometrical factor appropriate for the pole-dipole array, to compute the apparent resistivities.

The IP and resistivity data has been presented in the form of pseudo-sections where the figures are plotted at the intersection of lines drawn from a horizontal datum at 45^{o} from the current electrode and the nearer potential electrode. The IP values are plotted below the line and the resistivity values (as a mirror image), above the line.

The IP response was quite flat and therefore only one contour could be drawn in, being the 2.5 mv/V contour.

The resistivity data was contoured at a 1,000 ohm-m, and 5,000 ohm-m interval above the 10,000 ohm-m level.

The SP data was plotted and profiled on the same sheet as the IP and resistivity data was presented.

DISCUSSION OF RESULTS

The IP response, as mentioned above, was very flat with only a few values barely above background. Furthermore, none of these correlate with the known mineralization.

The resistivity values are quite high with the lowest reading being 2,612 ohm-m and the highest, 20,525 ohm-m. This is no doubt a reflection of the host rock being a granodiorite.

On each of the two lines occur two resistivity lows labelled A and B. Zone A is on strike with the main zone of mineralization and correlates with trenching. Zone B, according to Smitheringale, occurs in an area of quartz veining that he hasn't checked out.

It would therefore appear that the resistivity results are reflecting the mineralization. However, the writer feels that the lows are responding to the shear fractures and alteration associated with the gold-silver and sulphide mineralization rather than the mineralization itself. Nevertheless, resistivity surveying may still be quite useful as an exploratory tool on this property.

On Zone A, the resistivity low is fairly strong down to the fourth level indicating the zone has depth. The zone B low, however, weakens with depth.

The two resistivity lows appear to be dipping, to the southwest, whereas the quartz veining dips to the northeast. This discrepancy is no doubt caused by, (1) the topography causing the apparent dip of the quartz veins to be closer to vertical, and (2) the pole-dipole array causing any anomalies such as resistivity lows to appear to dip towards the current stake which in this case was to the southwest.

The resistivity highs on the property are usually caused by different rock types. But apparently on this property there is only the granodiorite, and therefore the highs may be caused by different intrusive phases.

The only SP response is a small anomaly at 2+00S on line 6 that correlates with resistivity zone B. This is not surprising since, generally, SP is an exploratory tool used for massive sulphides. The SP anomaly may simply be caused by water content that often occurs within shear zones.

CONCLUSIONS AND RECOMMENDATIONS

1. The IP response was quite flat and therefore is of no use as an exploration tool on this property. The SP data was only marginally better.

2. The associated resistivity data reflected the mineralized zones as resistivity lows. Resistivity surveying, therefore, could be very useful for tracing the mineralization. However, electromagnetics, which is usually less expensive than IP resistivity, may be a more useful method.

Respectfully submitted,
GEOTRONICS SURVEYS LTD.

David G. Mark,
Geophysicist

December 11, 1981

GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geophysicist of Geotronics Surveys Ltd., with offices at #403-750 West Pender Street, Vancouver, British Columbia.

I further certify:

1. I am a graduate of the University of British Columbia (1968) and hold a B.Sc. degree in Geophysics.

2. I have been practising my profession for the past 13 years and have been active in the mining industry for the past 16 years.

3. That I am an active member of the Society of Exploration Geophysicists and a member of the European Association of Exploration Geophysicists.

4. This report is compiled from data obtained from and IP-resistivity survey carried out under the direction of John Ashenhurst during the period of August 21st to 25th, 1981.

5. I do not hold any interest in the Mt. Roach property nor Rea Petro Corporation, nor do I expect to receive any interest as a result of writing this report.

David G. Mark,
Geophysicist

December 11, 1981

AFFIDAVIT OF EXPENSES

This is to certify that an induced polarization-resistivity survey was carried out on the Gold 1 Claim Group on Mt. Roach near Lytton in the Kamloops Mining Division, British Columbia from August 21st to 25th, 1981 to the value of the following:

FIELD

5-man crew and instrument, 4 ½ days at $1,250/day	$5,625
Truck rental and gas	510
Room and board	900
	$7,035

OFFICE

Geophysicist, 7 hours at $40/hour	$ 280
Geophysical technician, 27 hours at $25/hour	675
Drafting and Printing	150
Typing, photocopying and compilation	100
	$1,205

TOTAL $8,240

Respectfully submitted,
GEOTRONICS SURVEYS LTD.

David G. Mark, Manager
Geophysicist