

2442  
part 1

GEOCHEMICAL AND GEOPHYSICAL REPORT

SAM GROUP OF MINERAL CLAIMS

ENDAKO MINES LTD. (N. P. L.)

OMINECA MINING DIVISION

ENDAKO, B. C.

(Latitude  $54^{\circ}$ , Longitude  $125^{\circ}$ )

Field work undertaken during period  
13 August 1969 - 11 November 1969

E. T. Kimura

12 March 1970

GOVERNMENT AGENT  
RECEIVED  
APR 15 1970

SMITHERS. B. C.

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Department of  
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ASSESSMENT REPORT

NO. 2442 MAP

## INTRODUCTION

Soil geochemical, ground magnetometer, induced polarization and resistivity surveys were conducted over Sam Group of Mineral Claims during period 13 August 1969 to 11 November 1969. The work was undertaken as part of commitments for assessment work on mineral claims which are owned by Endako Mines Ltd. (N.P.L.), and are located approximately 12 miles due west of Endako Village.

## SUMMARY

Soil geochemical survey showed that the area is predominantly negative for molybdenum content.

Slight variations are indicated for magnetometer results, but none of the slightly higher than average response is considered as being anomalous.

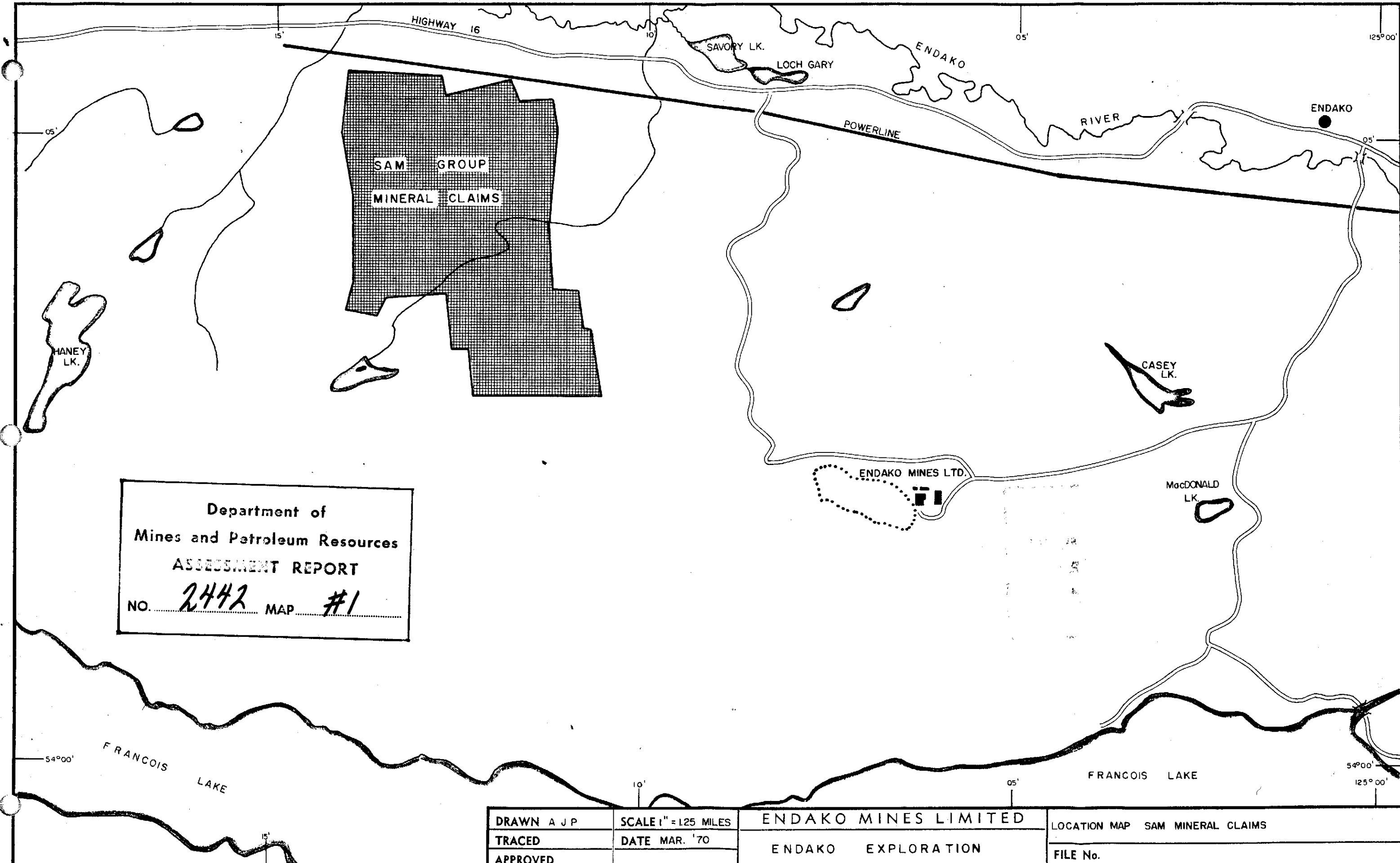
Induced polarization and resistivity survey recorded several widely-scattered responses which were slightly higher than background.

## MINERAL CLAIM GROUP

The Sam Group of Mineral Claims are located about 12 miles due West of Endako Village in the Omineca Mining Division. The property is geographically located in the southeast quadrant of quadrilateral, Latitude 54° and Longitude 125°.

The mineral claims are grouped as follows:

<u>Mineral Claim</u>	<u>Record Number</u>	<u>Grouping</u>
Sam 3 & 4	73888 & 73889	Elk 6
Sam 5 - 10	73890 - 73895	Tan 4
Sam 11 - 16	73896 - 73901	Elk 5
Sam 17,19,21,23 &25	73902,04,06,08 &10	Tan 4
Sam 18,20,22 & 24	73903,05,07 & 09	Elk 6
Sam 26 - 32	73911 - 73917	Elk 6
Sam 35 - 44	73920 - 73929	Tan 4
Sam 45 & 46	73930 & 73931	Elk 5
Sam 48 - 51	73933 - 73936	Tan 4
Sam 52 - 54	73937 - 73939	Elk 5
Sam 80,82 & 84	80200,02 & 04	Tan 4
Sam 81,83,85-87	80201,03,05 - 07	Elk 5



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ASSESSMENT REPORT  
NO. 2442 MAP #1

DRAWN AJP	SCALE 1" = 1.25 MILES	ENDAKO MINES LIMITED	LOCATION MAP SAM MINERAL CLAIMS
TRACED	DATE MAR. '70	ENDAKO EXPLORATION	FILE No.
APPROVED			

Part of field work, as covered in this report, was conducted over nine other mineral claims namely Sam 1, 2, 33, 34, 60 - 62 and 69 Mineral Claims which are located adjacent and north of above groups.

All mineral claims were surveyed by chain and compass method with the aid of aerial photographs. An appended map (Appendix III) shows the spatial location of mineral claims.

#### TOPOGRAPHY AND ACCESS

The topography over northerly two-thirds of claim group is relatively flat undulating terrain in which low-lying areas are frequently occupied by swamps. The southerly portion of claim group lies along a fairly steep side-hill which forms the north slope of a local topographically high and prominent Savory Ridge.

The mineral claim area is located approximately 12 miles west of Endako Village along Highway 16. Several subsidiary roads turn off the Highway and serve as access to mineral claims.

#### GENERAL GEOLOGY

Coarse crystalline Endako quartz monzonite of the Topley Intrusions underlies much of the mineral claims. Younger Tertiary volcanic rocks overlie quartz monzonite along southerly fringe of mineral claim group; volcanic rocks consist primarily of light-coloured to dark green porphyritic and basaltic flow rocks and tuffs. Outcrops are essentially non-existent over low-lying areas whereas well-exposed Tertiary volcanic rocks and a few quartz monzonite outcrops are encountered along steeper slopes.

No significant faults can be interpreted for the area. Several discontinuous east-west trends can be inferred from drainage and swamp patterns, but these have undoubtedly been influenced by glaciation.

#### SURVEY CONTROL

The B.C. Hydro right-of-way for transmission line was conveniently utilized as an east-west baseline.

## SURVEY CONTROL Cont'd

Soil geochemical sampling and geophysical stations were established along north-south compass lines. Aerial photographs from a recent flight were also utilized for ground location control.

## SOIL GEOCHEMICAL SURVEY

### Introduction

A soil geochemical survey was conducted over entire claim group. North-south sample lines were spaced about 600 to 2000 feet apart, and samples were collected at 200 foot intervals.

Soil is largely composed of glacial-transported material and consists of light to medium brownish-grey clayey silt with variable content of pebbles and boulders. Brownish-red silt to sand is locally developed. Depth of overburden in flat low-lying area is probably in excess of 50 to 100 feet; it is considerably shallower with local bed-rock exposures on steeper topography.

Vegetation over the claim group is variable. The flat area is covered by dense second growth jackpine, more mature growth of spruce, balsam, jackpine and poplar stands. Alder and willow are common in swampy and poorly-drained areas. Immature to mature spruce and balsam are common on steep side hills.

### Sampling

Soil samples were collected from small holes which were dug to depths of at least four to six inches below the humus. In most cases samples averaging 150 grams were obtained from B-horizon.

### Assay Method

All soil samples were assayed for molybdenum content by Canex Aerial Exploration Laboratory at Vancouver, B.C.

### Assay Method Cont'd

Samples were dried in a hot air dryer, then sifted in -80 mesh nylon sieves. Portions of -80 mesh fractions were weighed with a precision torsion balance. Samples were digested in a hot solution of perchloric acid, and then prepared for analysis by atomic absorption spectrophotometry. A Techtron AA4 instrument was used for analysis of molybdenum content.

### Results

The entire claim group can be considered as geochemically negative. Majority of soil samples assayed -2 to 2 ppm. Mo. Several isolated and spotty anomalous values of comparatively low tenor were recorded, however little significance is rendered to these higher values as many of them frequently occurred in or adjacent to low-lying swampy and small drainage systems.

The values as shown on an appended map were not contoured due to rather erratic and isolated occurrence of any anomalous values.

### MAGNETOMETER SURVEY

#### Introduction

A ground magnetometer survey was conducted over claim group. The soil geochemical survey lines and sample locations were utilized for magnetometer survey control.

#### Instrumentation

Field readings were taken with a Jalander Fluxgate Magnetometer Type 46-65 with sensitivity of five gammas. The light-weight oil-dampened fluxgate magnetometer is carried on a strap around the operator's neck; after the instrument is roughly levelled with aid of a level bubble, a rapid convertible reading is obtainable by engaging current push button. The instrument was calibrated daily to correspond with magnetic susceptibility at several established stations.

#### Results

Interpretation of magnetometer results is difficult and possibly meaningless as only slight variations were noted across entire claim group. An indication of magnetic

Instrumentation Cont'd

susceptibility of underlying material is suggested by an average background reading of 2500 gammas with local variations ranging from 300 to 600 gammas.

A map showing magnetometer results is appended; results were not contoured as no significant variations were recorded.

INDUCED POLARIZATION SURVEY

Canadian Aero Mineral Surveys Limited conducted an induced polarization and resistivity survey over a part of Sam Mineral Claims. A report by K. Hendry covering results of this survey is being submitted with this report for purposes of fulfilling assessment work application.

A map showing location of induced polarization lines is appended.

STATEMENT OF EXPENSES

The following expenses were incurred by Endako Mines Ltd. (N.P.L.) for conducting soil geochemical, magnetometer and induced polarization surveys over Sam Mineral Claims.

I Geochemical survey

<u>Personnel</u>	<u>Period Employed</u>	<u>Rate</u>	<u>Cost</u>
E. T. Kimura	7 Aug-4 Sept/69	48 Hr. @\$8	\$ 384.00
W. W. Klassen	13-20 Aug/69	40 Hr. @\$3	120.00
W. H. Mykatyn	13-18 Aug/69	32 Hr. @\$3	96.00
A. J. Peters	13 Aug-4 Sept/69	122 Hr. @\$3	366.00
W. D. VanDamme	22-29 Aug/69	48 Hr. @\$3	144.00
			<u>\$1,110.00</u>



STATEMENT OF EXPENSES    Cont'd.

	<u>Cost</u>
Head Office overhead @ 50% of \$1,110	\$ 555.00
Vehicle Costs: 14 days @ \$20/day	280.00
Geochemical assaying: 380 determinations @ \$2.00	760.00
Map compilations: A.J. Peters 16 Hrs. @\$3	48.00
Head Office overhead @ 15% of \$1088.00	<u>163.20</u>
Subtotal Geochemical Survey Expenses	<u>\$2,916.20</u>

II Magnetometer Survey

<u>Personnel</u>	<u>Period Employed</u>	<u>Rate</u>	<u>Cost</u>
G.P. Huck	16 & 17 Oct/69	16 Hr. @\$3.	\$ 48.00
E.T. Kimura	8 Aug-17 Oct/69	52 Hr. @\$8.	416.00
A.J. Peters	8 & 9 Sept/69	16 Hr. @\$3.	<u>48.00</u>
			<u>\$ 512.00</u>
Head Office overhead @50% of \$512.00			256.00
Vehicle costs: 4 days @ \$20/day			80.00
Map compilations: A.J. Peters 10 Hrs. @\$3.			30.00
Head Office overhead @ 15% of \$110.			<u>16.50</u>
Subtotal Magnetometer Survey Expenses			<u>\$ 894.50</u>

III Induced Polarization Survey

<u>Personnel</u>	<u>Period Employed</u>	<u>Rate</u>	<u>Cost</u>
G.P. Huck	5-11 Nov 1969	62 Hr. @\$3.	\$ 186.00
E.T. Kimura	13 Aug-11Nov/69	20 Hr. @\$8.	\$ 160.00
A.J. Peters	5-11 Nov 1969	62 Hr. @\$3.	<u>\$ 186.00</u>
			<u>\$ 532.00</u>

STATEMENT OF EXPENSES Cont'd

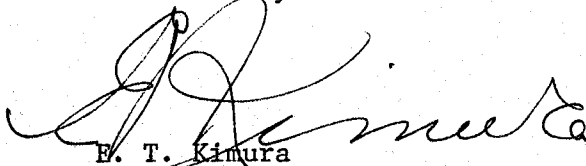
III Induced Polarization Survey

	<u>Cost</u>
Head office overhead @ 50% of \$532.00	\$ 266.00
Vehicle Costs: 6 days @ \$20/day	120.00
Line-cutting cost: J.M. Hartman & M. Bibby	480.00
Canadian Aero Mineral Surveys Ltd. invoices	
Survey cost: 6 days @ \$195.00	\$1,170.00
Helper's Wage: 6 days @ \$25.00	150.00
Truck Rental: 6 days @ 24.50	147.00
Board & Room: 2 men 6 days @ 18.00	108.00
Mobilization Cost: In and Out	<u>781.41</u>
	2,356.41
Head Office overhead @ 15% of \$2,956.41	443.00
Subtotal Induced Polarization Survey Expenses	<u>4,197.87</u>
<u>Total Geochemical and Geophysical Expenses</u>	<u>\$8,008.57</u>

CONCLUSION

Soil geochemical and magnetometer surveys indicated no significant anomalous areas on Sam Mineral Claim Group. No significant response was detected by an induced polarization survey over westerly part of claim group.

Submitted by:



E. T. Kimura  
Senior Geologist  
Endako Mines Ltd. (N.P.L.)  
Endako, B. C.

ETK:b

APPENDICES

- I        Certification
- II       Statement of Qualification
- III      Mineral claim map of Sam Group of Mineral  
         Claims on 1" - 1000' scale (in pocket).
- IV      Map showing soil geochemical survey results  
         on 1" - 1000' scale (in pocket).
- V        Map showing magnetometer survey results  
         on 1" - 1000' scale (in pocket).
- VI      Map showing location of three induced  
         polarization survey lines on 1" - 1000'  
         scale (in pocket).

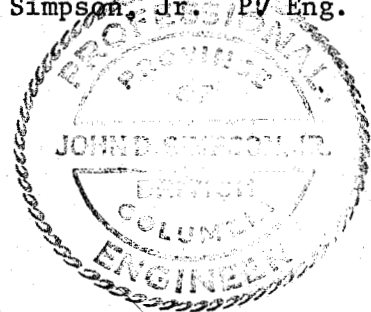
APPENDIX I

CERTIFICATION

I, J. D. Simpson, Jr. of Endako Mines Ltd.,  
(N.P.L.), Endako, B.C., do hereby certify that:

1. I am a registered Professional Engineer in the Province of British Columbia.
2. I have carefully reviewed the data and examined the report by E. T. Kimura on exploration work which was undertaken during 1969 on Sam Group of Mineral Claims. The mineral claims belong to Endako Mines Ltd. (N.P.L.) and are located in the Omineca Mining Division near Endako, B.C. (Latitude 54°, Longitude 125°).
3. To the best of my knowledge the interpretation of data, conclusions and expenditures which are claimed for the performance of work are valid.

*J. D. Simpson Jr.*  
J. D. Simpson, Jr. P. Eng.

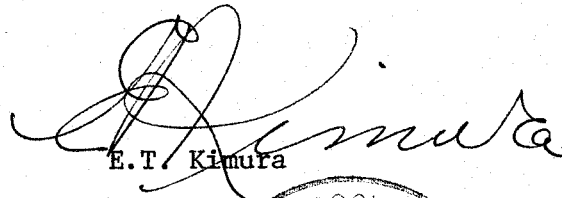


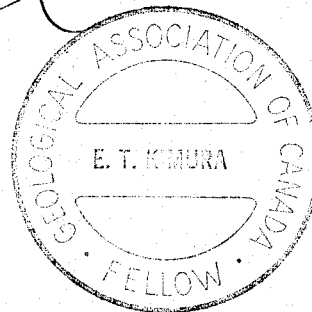
APPENDIX II

STATEMENT OF QUALIFICATION

I, E.T. Kimura of Endako Mines Ltd. (N.P.L.)  
Endako, B.C. do hereby certify that:

1. I am a geologist.
2. I am a graduate of University of British Columbia with a BA degree in Geology and Physics in 1955.
3. From 1954 until the present I have been engaged in mining geology, both in underground and open pit operations, and in exploration geology in British Columbia, Saskatchewan and Yukon Territory.
4. I personally supervised and participated in the field work and have reviewed and assessed the data resulting from this work.

  
E.T. Kimura











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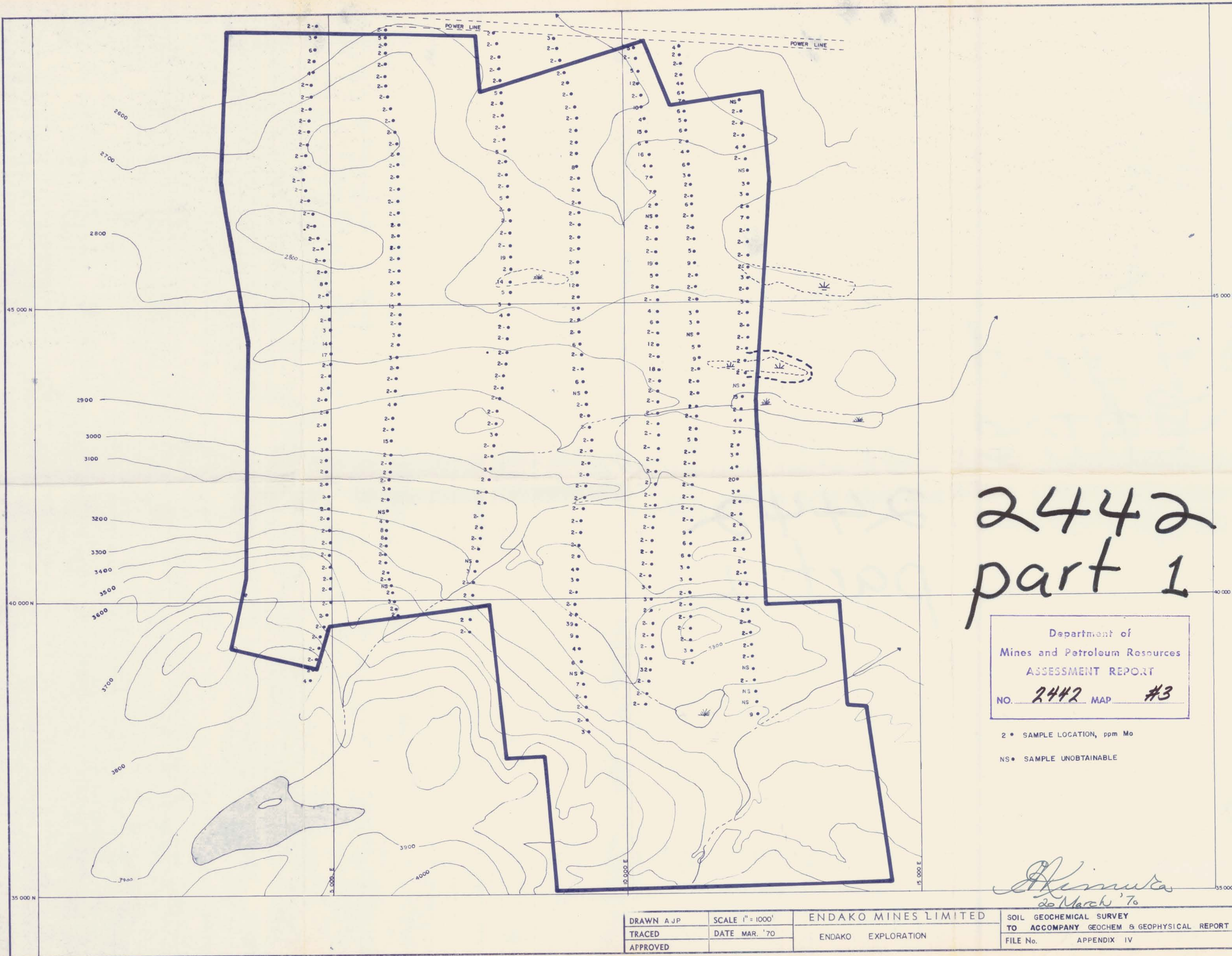
*Handwritten signature*  
20 March '70

DRAWN AJP	SCALE 1" = 1000'	ENDAKO MINES LIMITED	INDUCED POLARIZATION SURVEY
TRACED	DATE MAR. '70	ENDAKO EXPLORATION	TO ACCOMPANY GEOCHEM & GEOPHYSICAL REPORT
APPROVED			FILE No. APPENDIX VI









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2 • SAMPLE LOCATION, ppm Mo  
NS • SAMPLE UNOBTAINABLE

*H. K. M.*  
20 March '70

DRAWN AJP	SCALE 1" = 1000'	ENDAKO MINES LIMITED	SOIL GEOCHEMICAL SURVEY
TRACED	DATE MAR. '70	ENDAKO EXPLORATION	TO ACCOMPANY GEOCHEM & GEOPHYSICAL REPORT
APPROVED			FILE No. APPENDIX IV