

PROJECT 522



Assessment Report on 1979 Field Program

Hasl 25-40 Claims

Lat 62° 58'

Long 138° 48'

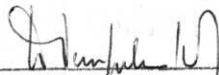


090 602

W.J. Olsson  
Project Geologist

This report has been examined by the Geological Evaluation Unit and is recommended to the Commission to be considered as representation work of the amount of

\$ 2,000




Resident Geologist or  
Resident Mining Engineer

Considered as representation work under  
Section 53 (4) Yukon Quartz Mining Act.



B. R. BAXTER  
Supervising Mining Recorder

 Commissioner of Yukon Territory

# Table of Contents

	<u>Page</u>
Summary.....	(i)
1. GENERAL.....	
1.1 Introduction.....	1
1.2 Previous Work.....	1
1.3 Claims.....	2
2. 1979 FIELD PROGRAM.....	2
2.1 Introduction.....	2
2.2 Logistics.....	3
2.3 Geology.....	4
2.4 Radiometric Survey.....	4
2.5 Geochemical Survey.....	5
2.5.1 Hydrogeochemistry.....	5
2.5.2 Soil Geochemistry.....	6
3. RESULTS.....	6
3.1 Geology.....	6
3.2 Radiometric Survey.....	7
3.3 Geochemical Survey.....	8
4. DISCUSSION.....	11
5. CONCLUSIONS.....	14
6. RECOMMENDATIONS.....	15

Appendix A - Certificates of Analysis  
HASL Grid, 1979.

## List of Figures

Figure Number	Description	Opposit page
1	Location-Map, HASL Claims	1
2	HASL Claims, Area of Grid	3
3	Radiometric Data	in pocket
4	Radiometric Histogram	7
5	Hydrogeochemistry, Sample Location Map	in pocket
6	Hydrogeochem Data	in pocket
7	Soil Geochemistry	in pocket
8	Soil Geochemistry Histogram	14

Summary

In 1979, a bulk water, bulk silt, and a heavy mineral sampling programme was carried out along with a detailed radiometric-soil geochemical survey to further evaluate the Hasl claims.

Waters are generally "chemically clean" with insufficient variation in dissolved solids to account for the variation in uranium content. The composition of silts and rocks are basically the same with the chemical variation attributed to the usual concentrating mechanisms present in the geochemical environment.

The uranium content of the heavy mineral samples indicates uranium is being mechanically transported along the highly anomalous tributary of Pedlar Creek.

A total of 17 soil geochemical anomalies and 13 radiometric anomalies were delineated by grid work over the zone of mineralization found in 1977. Only one radiometric anomaly and 1 soil geochemical anomaly coincide with one another.



FIG. 1

<p><b>ELDORADO NUCLEAR LIMITED</b></p>
<p><b>LOCATION MAP</b> <b>HASL CLAIMS</b></p>
<p><b>SCALE: 1" = 120 mi</b></p>



## 1. GENERAL

### 1.1 Introduction

The HASL property is comprised of 118 quartz mineral claims situated at the headwaters of Pedlar Creek, straddling claim sheet areas 115 J/15 and 1150/2. Mineral claims HASL 25 to 40 inclusive are contiguous and form an area 4 claims by 4 claims in the south central area of the property (see figures 1 and 2)

Attention was brought to the area in 1977 following the analysis of stream sediment data. Follow-up work confirmed the presence of several anomalies and through the course of the 1977 field season, a total of 88 claims were staked. An additional 30 claims were added to the property in 1978.

### 1.2 Previous Work

The regional geology of map sheet area 115J was mapped by D.J. Tempelman-Kluit and reported in Geological Survey of Canada Paper 73-41 entitled "Reconnaissance Geology of Aishihite Lake, Snag and Part of Stewart River Map Areas, West Central Yukon."

Field investigations in 1977 carried out under the direction of Eldorado Nuclear Ltd., located streams with highly anomalous silt and water samples. These streams drain a previously unmapped body of granite.

A total of 88 claims were staked in 1977. Subsequent ground delineated several soil geochemical anomalies. Intense airborne hound dogging over the granite located a one inch-wide vein of mineralized material cutting the granite.

In 1978, the soil/radiometric work started in 1977 was extended to cover 60% of the property. Additional soil anomalies were delineated at this time and a geological map based on rock chip sampling, was drawn up.

### 1.3 Claims

The HASL 1 to 118 mineral claims were staked in 6 steps. Initially, 8 claims were staked to cover the most anomalous area. Later, 16 claims were added to cover the drainage basin. A further 16 claims were added to the group along with an additional 40 claims following some limited reconnaissance work. Eight claims were added late in the 1977 season to cover the edge of the granite. In May of 1978, 30 claims were staked to cover a suspected extension to the granite. A list of grant numbers and expiry dates for the HASL claims is presented as Table 1.

T A B L E I

CLAIM	GRANT NO.	EXPIRY DATE
HASL 1 - 8	YA 10292 - 99	24 June, 1980
HASL 9 - 24	YA 10397 - 412	29 July, 1980
HASL 25 - 40	YA 10513 - 28	26 August, 1979
HASL 41 - 80	YA 10551 - 90	13 Sept, 1982
HASL 81 - 88	YA 10744 - 51	20 Sept, 1982
HASL 89 - 118	YA 29693 - 722	24 May, 1981

## 2. 1979 FIELD PROGRAM

### 2.1 Introduction

Work on the Hasl claims in 1979 involved a detailed soil geochemical/radiometric survey, collecting heavy mineral

concentrates from all major drainage systems and bulk silt and water sampling from the main anomalous stream.

All sample locations are identified by 4 digits which appear on prenumbered Kraft sample bags. A 2 digit prefix was assigned to the 4 digit number to identify the sample type. (i.e. 22 for rock, 40 for soil, 41 for silt, 42 for water and 44 for heavy mineral).

A compass oriented, slope-corrected baseline was established in a north-south direction extending for 200 metres along strike on both sides of the mineralization located in 1977. Crosslines were run at 10 metre intervals for the first 100 metres and at 25 metre intervals for the second 100 metres. Stations were 10 metres apart along these crosslines. These lines extended for a distance of 40 metres on either side of the baseline.

Technical advice and direction to the programme was given by Dr. C.F. Gleason, Consulting Geochemist.

## 2.2 Logistics

The work on the HASL claims was carried out by an 8 man party operating from a 10-man base camp established at the mouth of Britiannia Creek on the Yukon River. Mobilization of field personnel and equipment was carried out by river boat, owned and operated by W. Harris of Minto, on June 16, 1979. Access to the property was by Hughes 500C helicopter under seasonal contract with Liftair International out of Calgary. The bulk silt and water sampling took place on June 19, 1979, the grid work on June 22, 1979 and the heavy mineral panning on June 29, 1979.

Operations of the base camp were carried out under Land Use Permit YB 9J451, issued to Eldorado Nuclear Limited by the Renewable Resources Division of the Department of Indian Affairs and Northern Development.

A list of the names of the personnel involved with working the HASL property is given as Table II

T A B L E II

NAME	CLASSIFICATION	STATUS	DATES
W.J. OLSSON	PROJECT GEOLOGIST	PERMANENT	June 19, 1979 June 29, 1979
G. DELANEY	GEOLOGIST	TEMPORARY	June 19, 1979
B. DUNCAN	SR. ASSISTANT	TEMPORARY	June 22, 1979
A. PASITSCHENIAK	SR. ASSISTANT	TEMPORARY	June 22, 1979
G. OWSIACKI	JR. ASSISTANT	TEMPORARY	June 22, 1979
B. SKELLY	JR. ASSISTANT	TEMPORARY	June 22, 1979
J. CRUX	JR. ASSISTANT	TEMPORARY	June 22, 1979
E. CONNEL	JR. ASSISTANT	TEMPORARY	June 22, 1979
C.F. GLEASON	CONSULTING GEOCHEMIST		June 19, 1979 June 22, 1979

### 2.3 Geology

Rock chip samples were collected at most soil sample sites on the grid. These samples will subsequently be submitted for analysis.

### 2.4 Radiometric Survey

Scintillometer readings were obtained at ground level at each soil sample location using a Scintrex BSG-ISL total count scintillometer. Readings were recorded in counts per second

(cps). A contoured map of this survey is enclosed.

## 2.5 Geochemical Survey

### 2.5.1 Hydrogeochemistry

The hydrogeochemical work on the HASL property consisted of bulk silt and bulk water sampling of the main anomalous creek along with heavy mineral sampling of all drainage systems originating on the property. This work was carried out under the direction of Dr. C.F. Gleason.

Two bulk silt and bulk water samples were obtained from the highly anomalous tributary of Pedlar Creek. One sample location is situated 100 metres inside the granite from the granite-gneiss contact. The second sample site is at the granite-gneiss contact. In each location approximately 1 kg of silt was taken along with 1 litre of water. A heavy mineral pan sample was obtained from the bottom of a pit dug at the granite-gneiss contact. A bulk rock sample was also taken from the pit. The silts were submitted for a 30 element quantitative spec analyses as was the rock sample. The water samples were submitted for total dissolved solids analysis.

Heavy mineral pan concentrates were obtained at distances of 1 to 5 km. downstream from the headwaters of all drainage systems originating within the granite complex. Samples were coarsely sieved in the field to a - 1/4" fraction. A resulting 20-lb. sample was then panned to a 2 lb. concentrate.

All samples were submitted to Chemex Labs in North Vancouver, B.C. for analysis. Appendix A details the analytical

technique used for each sample type.

#### 2.5.2 Soil Geochemistry

Soil samples were obtained at 10 metre intervals along all crosslines established on the grid. In all instances, the B-horizon was sampled. At stations located along the baseline, samples of the A-horizon were taken along with the B-horizon. All of this work was carried out under the direction of Dr. C.F. Gleason. The soils were submitted to Chemex Labs in North Vancouver B.C. for analysis. A detailed description of the analytical technique is given in Appendix A.

### 3. RESULTS

#### 3.1 Geology

Overall, outcrop is very scarce on the HASL claim group. One of the few areas where it is present is in the vicinity of the grid.

Granitic rocks underlie the HASL claims. Tempelman-Kluit (1973) did not map this particular plug as tors do not form on the hilltop as they do elsewhere.

The grid area is underlain by a medium grained quartz monzonite which consists of subhedral, tabular crystals of plagioclase surrounded by interstitial anhedral grains of quartz and K-feldspar. Minor biotite, magnetite, zircon, apatite, and hornblende are present as well. Secondary sericite, chlorite and limonite have been identified. Crystals of muscovite are present in the zones of sericitization. Microscopic work on samples of this granite suggest a magmatic origin.

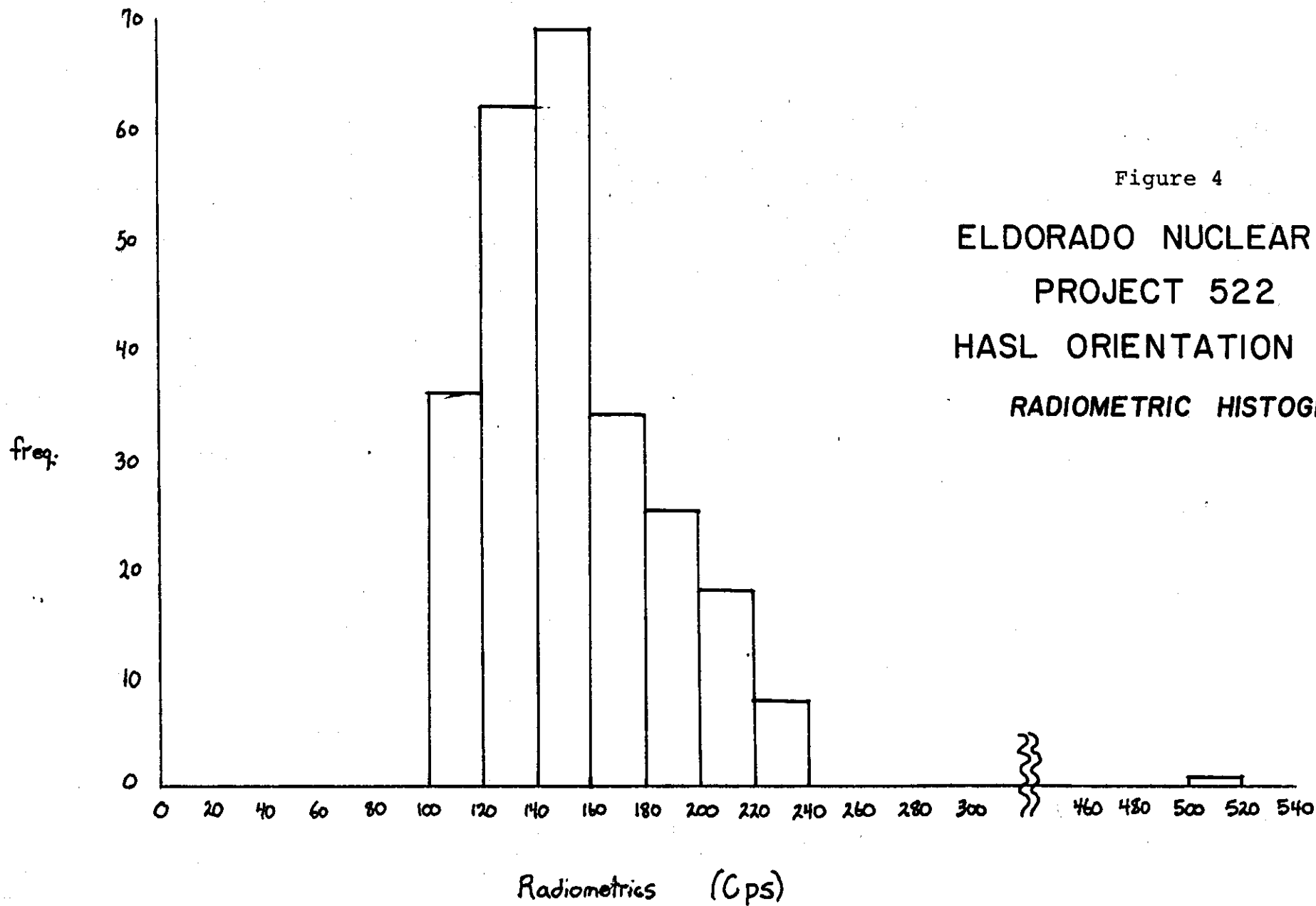


Figure 4

ELDORADO NUCLEAR LTD.  
 PROJECT 522  
 HASL ORIENTATION GRID  
 RADIOMETRIC HISTOGRAM

### 3.2 Radiometric Survey

A frequency distribution curve of the radiometric readings taken over the grid is skewed to the low reading side. Past work on the claims has indicated the threshold scintillometer values for the granite to be 100 cps while average readings for the granite are in the 140 to 160 cps range. The work carried out in 1979 correlates with these observations.

Radiometric results from the 1979 field season have been contoured on a map (See Figure 4) Contour intervals are

100 - 120 cps

120 - 140 cps

140 - 160 cps

160 - 180 cps

180 - 200 cps

200 - 250 cps

+ 250 cps

The contoured data indicates 2 trends to the radiometric response over the grid. One lies in a north-south direction on the east half of the grid while the second trends to the northwest in the central portion of the grid. There is a slight northeast-southwest divergence to this second trend.

Radiometric values for the north-south trend peak at 230 cps with readings averaging 150 to 200 cps. The orientation of this anomaly parallels the trend of the mineralized vein discovered in float 40 metres to the west.

Values for the second anomaly peak at 500 cps (0+30N, 0+10W) and average between 170 and 200 cps. Indications are the

anomaly may extend further to the northwest off the grid.

There is very little topographic relief in the grid suggesting the radiometric readings are representative of the underlying rock.

Table I documents the radiometric anomalies.

T A B L E I  
Radiometric Anomalies  
Hasl Orientation Grid

Anomaly No.	Location	Maximum Value	Size
1	1+87N 0+50E	210 cps	30M open to the east and north
2	2+00N 0+30W	230 cps	on extreme northwest corner of grid
3	1+50N 0+30W	220 cps	spot value on west edge of grid
4	0+90N 0+40E	220 cps	spot anomaly
5	0+90N 0+10W	200 cps	spot anomaly
6	0+80N 0+30W	200 cps	spot anomaly on west edge of grid
7	0+30N 0+10W	500 cps	oblong 30M x 15M
8	0+30N 0+40E	230 cps	spot anomaly
9	0+10N 0+10W	210 cps	spot anomaly
10	0+05S 0+10E	220 cps	oblong 30M x 10M
11	0+20S 0+40E	220 cps	35M x 10M
12	0+20S 0+20W	200 cps	spot anomaly
13	0+90S 0+10W	200 cps	spot anomaly

### 3.3 Geochemical Survey

#### 3.3.1 Bulk Set and Water Samples

Two sample locations (1028 and 1029) were established along the highly anomalous tributary of Pedlar Creek. Bulk silts were collected at each and submitted for semi-quantitative, spectrographic analysis. Bulk waters were submitted for uranium analysis and total solids content. A pit was also dug at location 1029 and a rock and heavy mineral sample (1029-1) was obtained from this location. The rock was submitted for semi-quantitative, spectrographic analysis, and the heavy minerals for uranium, thorium, lead, tungsten and tin analysis.

Analytical results for these bulk samples are presented on certificates SP0893, 47892, 47896, and 48062.

The two bulk silt samples are almost identical based on the spectrographic results. The differences are

(1) more chromium, copper, zirconium, and nickel at location 1029.

(2) more manganese at location 1028.

The rock sample taken at location 1029 has a geochemical makeup identical to that of the silt. The main difference between the rock and the silts is the relatively low amount of manganese (200 ppm) in the rock compared with the silt (700 ppm)

The water samples have values of 120.0 ppb U (location 1028) and 49.0 ppb U (location 1029). The total solids analysis for the two samples indicate a higher Eh with higher amounts of

calcium and carbonate in the sample from location 1028. These differences are not extreme and do not totally account for the large differences in the uranium content of the two samples.

Heavy mineral samples taken at location 1029 have uranium values of 485 ppm U (taken from a pit) and 850 ppm U (taken from the stream). Sample 1029-1 has lower amounts of lead, tungsten, tin, uranium and thorium than sample 1029-2. This can be attributed to the tendency of the flowing stream to concentrate these elements. A comparison of the total heavies with the total sample weight for each sample supports this hypothesis. (See certificate #47896

### 3.3.2 Heavy Mineral Concentrates

A total of 9 heavy mineral pan samples were obtained from drainages originating on the Hasl claims (see figure ). Values ranged from 2.0 ppm to 850.0 ppm for uranium, 1.0 ppm to 7.0 ppm for tin, 1.0 ppm to 70.0 ppm for tungsten, from 2.0 ppm to 152 ppm for lead, and 13.0 ppm to 470.0 ppm for thorium.

The highest values were from samples obtained from the highly anomalous tributary of Pedlar Creek. The remaining samples (with the exception of 1064 which is 2.5 km downstream from the highly anomalous values) contain background values in uranium. Sample 1064, although not highly anomalous, does contain 21.0 ppm uranium which is 3 to 4 times the background level.

### 3.3.3 Soil Geochemistry

A contoured map of the soil geochemical data is presented as figure 6 of this report. Contour intervals chosen were:

- 0.0 - 2.0 ppm U
- 2.0 - 4.0 ppm U
- 4.0 - 5.0 ppm U
- 5.0 - 10.0 ppm U
- + 10.0 ppm U

The background values for U in soils over the grid is 2.0 ppm to 3.00 ppm. Anomalous values tend to be in the 5.0 ppm to 8.0 ppm range with the exception of the extreme north end of the grid where values are 10.00 ppm U to 21.0 ppm U. The anomalies follow a north-south lineament for the length of the grid. This pattern coincides with the attitude of the mineralized zone.

Table II documents the individual soil geochemical anomalies.

T A B L E II

## Soil Geochemical Anomalies

Anomaly No.	Location	Maximum Value	Size
1	1+80N 0+10E	21.0 ppm	30M x 40M open to the north
2	1+75N 0+40E	6.5 ppm	spot value
3	1+25N 0+10E	7.0 ppm	spot value
4	1+15N 0+50E	8.0 ppm	open to the east
5	0+70N 0+00	7.0 ppm	25M x 5M
6	0+70N 0+30W	7.0 ppm	open to the west
7	0+50N 0+15W	9.5 ppm	10M x 5M
8	1+40N 0+10E	6.5 ppm	spot value
9	0+20N 0+05E	6.5 ppm	10M x 5M
10	0+00 0+05E	5.5 ppm	10M x 5M
11	0+20S 0+10W	11.0 ppm	spot value
12	0+40S 0+25W	10.5 ppm	5M-open to the west
13	0+40S 0+10E	5.0 ppm	spot value
14	0+40S 0+50E	5.0 ppm	spot value open to the east
15	0+60S 0+30W	8.0 ppm	spot value open to the west
16	0+60S 0+10W	8.0 ppm	spot value
17	0+75S 0+05W	6.0 ppm	15M x 5M

#### 4. DISCUSSION

##### 4.1 Radiometric Results

The contoured radiometric data shows a long narrow north-south trending radiometric low in the north central portion of the grid. It extends to the north off the grid. Anomalies 4, 8 and 11 outline this trend. A second wider and shorter linear trend is present in the data from the central and west areas of the grid. This trend has a northwest-southeast direction, is defined by anomalies 7, 9, and 10, and intersects the north-south lineament in the vicinity of anomaly 11.

Although topographic relief over the grid is very low (a maximum change of elevation of 25M over the length of the grid) the high point is in the vicinity of anomaly 7, suggesting the 500 cps present in anomaly 7 may be directly related to bedrock. The long, low radioactive lineament in the north-central area may in part be due to an increase in overburden cover which occurs to the north. Spot anomalies 4 and 8 possibly reflect frost-heaved boulders exposed through the moss and overburden cover.

##### 4.2 Geochemistry

###### 4.2.1 Bulk, Silt Water and Rock and Heavy Minerals

The semi-quantitative spectographic analysis in the silt and rock samples produced similar results. Only manganese and magnesium are significantly higher in the silt than in the rock. This is attributed to concentrating mechanisms within the drainage system. Of note is the lack of zinc and zirconium in the rock while both are present in appreciable amounts in both silts.

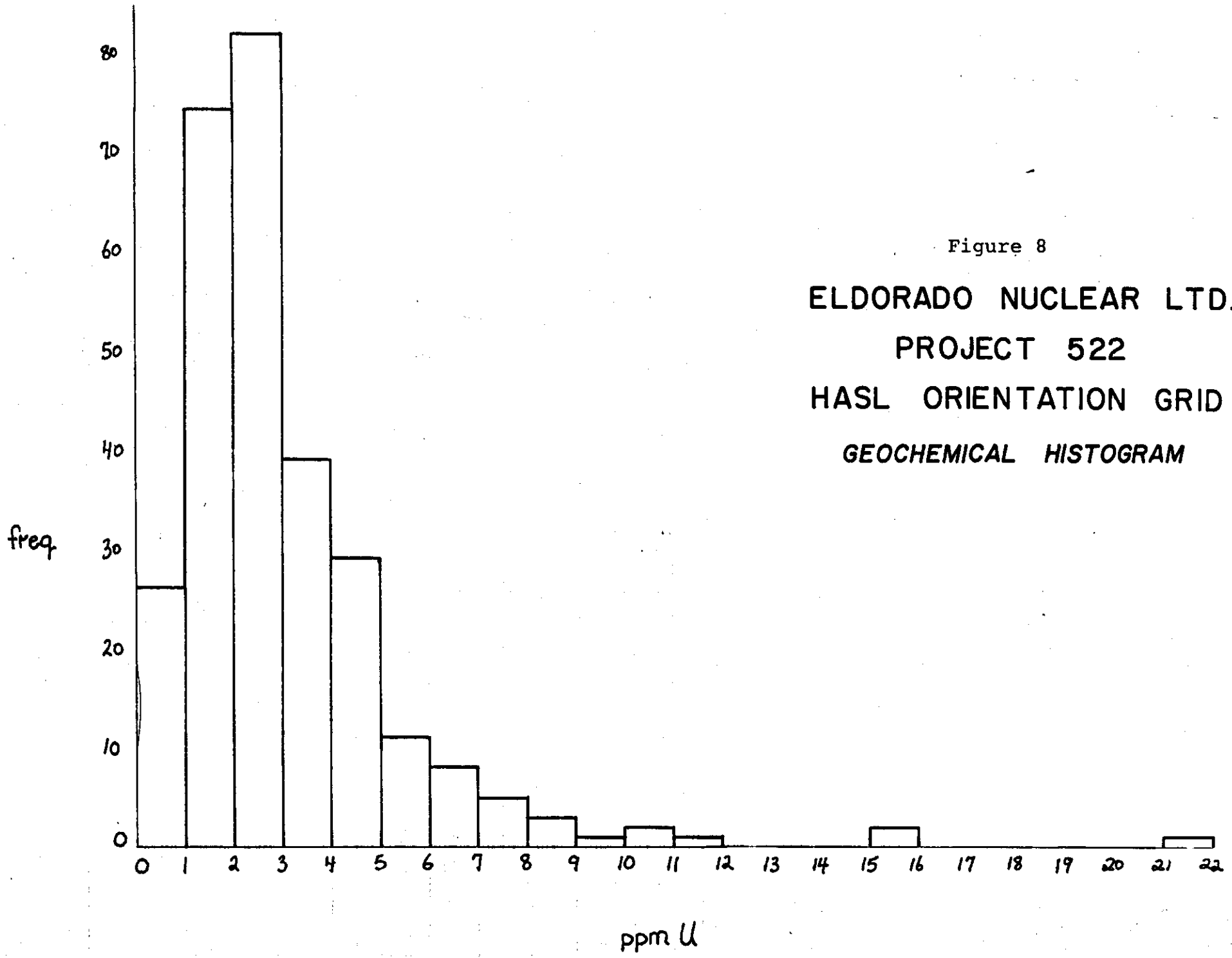


Figure 8

**ELDORADO NUCLEAR LTD.  
PROJECT 522  
HASL ORIENTATION GRID  
GEOCHEMICAL HISTOGRAM**

This may be in part due to concentrating mechanisms in the streams, however a source upstream is equally possible.

Although the two bulk water samples have contrasting uranium contents, the total solids analysis indicates they are quite similar. The higher Ca and CO<sub>3</sub> content of sample 1028 accounts for only part of the additional amount of uranium in the sample. The rest of the uranium is attributed to the fact sample 1028 was taken closer to the source than sample 1029.

Heavy mineral samples taken from the highly anomalous tributary of Pedlar Creek are themselves highly anomalous, indicating uranium is being transported mechanically in the stream. The high values of uranium in the water and silts obtained from the same location suggests uranium is also being transported chemically. The rapid drop-off in uranium values between sample 1029-2 and 1064 (from 850 ppm U to 21.0 ppm U in 2.5 Km) tends to imply 1029-2 is closer to the source.

#### 4.2.2 Geochemistry - Soils

A long, linear trend to the soil geochemistry data lies in a north-south direction through the central portion of the grid. Anomalies 1, 3, 5, 8, 9, and 10 follow this pattern. In addition there are 4 northwest to southeast trending anomalies in the south-central area of the grid. Anomaly 5 defines one, anomalies 6, 7 and 8 define another, anomalies 11 and 13 define the third, while anomalies 12, 16 and 17 define the fourth.

The two trends outlined by the soil geochemistry, parallel the lineaments defined by the contoured radiometric data, but are not super imposed on each other. The exception is

geochemical anomaly 10 and radiometric anomaly 10 which correspond to the vicinity of the mineralized showing:

The highest geochemical values were obtained from anomaly 1 located at the northend of the grid. The lack of a high radiometric signature to this anomaly may be due to:

- (1) The uranium is very young and therefore is out of equilibrium.
- (2) The moss cover may be substantial enough to filter out any significant radiometrics originating from the bedrock.

#### CONCLUSIONS

The following conclusions are based on data obtained from the Hasl claims in 1979:

- (1) The geochemistry of silt samples does not radically differ from the geochemistry of rocks obtained in the same location.
- (2) Only one drainage system with its origin in the Hasl claims is anomalous in uranium in heavy mineral concentrates.
- (3) Uranium from the Hasl claims is being transported both mechanically and chemically.
- (4) The total solids analysis of 2 water samples from the main anomalous drainage on the Hasl property does not fully explain the high variation in uranium in waters.
- (5) The source of the uranium in the main anomalous tributary of Pedlar Creek is in the vicinity of sample location 1028 and 1029.

(6) The mineralized showing located on the Hasl claims in 1977, does not have a strong geochemical signature to it.

(7) There is a lack of correlation between the radiometric anomalies and the geochemical anomalies outlined from an orientation grid carried out over the mineralized showing.

(8) The strong geochemical anomalies outlined by previous work carried out on the Hasl claims are not due to the geochemical response of mineralization similiar to the magnetite-bearing uraniferous vein located in 1977.

## 6 RECOMMENDATIONS

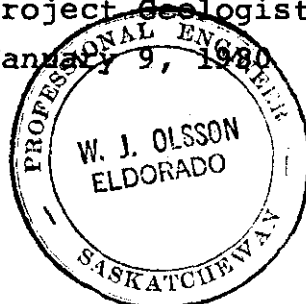
The following recommendation pertain to the Hasl claims:

(1) A detailed heavy mineral sampling programme be carried out along the highly anomalous tributary of Pedlar Creek to delineate any sharp cut off in uranium values.

(2) Trenching of all significant soil geochemical anomalies be done to investigate them at depth.

(3) The orientation grid be extended to close off all radiometric and geochemical anomalies. Trench the most significant of these anomalies.

*William Olsson*  
William Olsson,  
Project Geologist  
January 9, 1980



Appendix A

Certificates of Analysis  
HASL Grid - 1979



# CHEMEX LABS LTD.

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

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO: Eldorado Nuclear Ltd.  
 Ste. 400 - 255 Albert St.  
 Ottawa, Ont.  
 K1P 6A9  
 ATTN: Area Hasl

CC: W. Olsson

CERTIFICATE NO. SP0893  
 INVOICE NO. 30859  
 RECEIVED June 28/79  
 ANALYSED July 4/79

SAMPLE NO. :	Lower Concentration Limit (PPM)	41-1028	41-1029	22-1029
Antimony	50	bcl	bcl	bcl
Arsenic	50	bcl	bcl	bcl
Barium	5	500	500	500
Beryllium	5	bcl	bcl	bcl
Bismuth	5	bcl	bcl	bcl
Boron	20	bcl	bcl	bcl
Cadmium	20	bcl	bcl	bcl
Calcium	0.05%	2%	2%	0.5%
Chromium	10	20	50	50
Cobalt	10	bcl	bcl	bcl
Copper	1	7	15	5
Gallium	5	10	10	10
Germanium	20	bcl	bcl	bcl
Indium	50	bcl	bcl	bcl
Iron	0.05%	1.5%	1.5%	1%
Lead	5	50	50	30
Magnesium	0.02%	0.5%	0.7%	0.2%
Manganese	5	1000	700	200
Molybdenum	10	bcl	bcl	bcl
Nickel	5	bcl	10	5
Niobium	50	bcl	bcl	bcl
Silver	1	bcl	bcl	bcl
Strontium	2	100	100	70
Tellurium	200	bcl	bcl	bcl
Thorium	200	<200	<200	<200
Tin	10	bcl	bcl	bcl
Titanium	5	1000	1000	1000
Vanadium	20	<20	<20	<20
Zinc	50	50	50	bcl
Zirconium	20	20	70	bcl

### SEMI QUANTITATIVE SPECTROGRAPHIC ANALYSES

>5000 ppm => 5000 ppm      50 ppm = 25-100 ppm  
 5000 ppm = 2500-10000 ppm      20 ppm = 10-50 ppm  
 2000 ppm = 1000-4000 ppm      10 ppm = 5-20 ppm  
 1000 ppm = 500-2000 ppm      5 ppm = 2-10 ppm

500 ppm = 250-1000 ppm      2 ppm = 1-4 ppm  
 200 ppm = 100-400 ppm      1 ppm = 0.5-2 ppm  
 100 ppm = 50-200 ppm      bcl = below concentration limit  
 Ranges for Iron, Calcium & Magnesium are reported in %



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY: .....





# CHEMEX LABS LTD.

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

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 47896

TO: Eldorado Nuclear Ltd.,  
 Ste. 400 - 255 Albert St.,  
 Ottawa, Ont.  
 K1P 6A9

CC. W. Olsson

INVOICE NO. 31440

RECEIVED June 25/79

ATTN: HASL - H.M.

HEAVY LIQUID SEPARATIONS

ANALYSED July 27/79

SAMPLE NO. :	PPM Pb	PPM W	PPM Sn	PPM U	PPM Th	Tot. Wt. Gm	Tot. Wt. Heavies
44 - 1029-1	60	37	5	485		668	9.4
44 - 1029-2	152	70	7	850		400	9.6



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY:

*J. G. [Signature]*



# CHEMEX LABS LTD.

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

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 47898

TO: Eldorado Nuclear Ltd.,  
 Ste. 400 - 255 Albert St., CC. Mr. William Olsson  
 Ottawa, Ont.  
 K1P 6A9

INVOICE NO. 30870

RECEIVED June 25/79

ATTN: HASL - Soil

ANALYSED July 3/79

SAMPLE NO. :	PPM
U	
PREF IX 40	
2138	4.5
2139	-0.5
2140	3.0
2141	-0.5
2142	-0.5
2143	1.5
2144	1.5
2145	3.0
2146	2.0
2147	1.5
2148	8.0
2149	5.0
2150	1.5
2151	2.0
2152	1.5
2153	2.5
2154	6.5
2155	2.5
2156	3.5
2157	1.5
2158	2.5
2159	3.0
2160	1.5
2161	1.0
2162	1.0
2163	0.5
2164	1.5
2165	1.5
2166	2.5
2167	2.0
2168	1.0
2169	0.5
2170	3.0
2171	9.5
2172	1.5
2173	3.0
2174	7.0
2175	4.5
2176	2.0
2177	2.0



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY: *William F. [Signature]*



# CHEMEX LABS LTD.

212 BROOKSBANK AVE.  
 NORTH VANCOUVER, B.C.  
 CANADA V7J 2C1  
 TELEPHONE: ~~995-0640~~ 984-0221  
 AREA CODE: 604  
 TELEX: 043-52597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 47899

TO: Eldorado Nuclear Ltd.,  
 Ste. 400 - 255 Albert St., CC. Mr. William Olsson  
 Ottawa, Ont.  
 K1P 6A9

INVOICE NO. 30870

RECEIVED June 25/79

ATTN: HASL - Soil

ANALYSED July 3/79

SAMPLE NO. :	PPM
U	
PREF IX 40.	
2178	1.0
2179	4.0
2180	1.5
2573	1.0
2574	1.0
2575	2.0
2576	1.0
2577	3.5
2578	3.5
2579	2.0
2580	1.5
2581	2.0
2582	1.5
2583	4.0
2584	3.5
2585	2.0
2586	2.5
2587	5.5
2588	2.5
2589	4.0
2590	1.0
2591	4.5
2592	2.0
2593	4.0
2594	2.5
2595	5.0
2596	4.5
2597	1.5
2598	3.5
2599	1.5
2600	2.0
2601	1.5
2602	4.0
2603	3.5
2604	0.5
2605	0.5
2606	1.0
2607	2.0
2608	7.0
2609	3.5



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY: *Norman F. Walden*



# CHEMEX LABS LTD.

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

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO: Eldorado Nuclear Ltd.,  
 Ste. 400 - 255 Albert St., Mr. William Olsson  
 Ottawa, Ont.  
 K1P 6A9  
 ATTN: HASL - Soil

CERTIFICATE NO. 47900  
 INVOICE NO. 30870  
 RECEIVED June 25/79  
 ANALYSED July 3/79

SAMPLE NO. :	PPM
U	
PRE-IX 40	
26 10	2.5
26 11	2.5
26 12	1.5
26 13	0.5
26 14	2.5
26 15	3.0
3020	1.0
3020A	1.0
302 1	1.5
302 1A	2.5
3022	1.5
3022A	2.0
3023	0.5
3023A	2.0
3024	4.0
3024A	1.5
3025	2.5
3025A	2.5
3026	5.0
3026A	3.0
3027	3.0
3027A	2.5
3028	4.0
3028A	1.5
3029	2.5
3029A	2.5
3030	2.5
3030A	6.0
3031	4.5
3031A	2.5
3032	2.0
3032A	3.0
3033	3.5
3033A	2.5
3034	2.5
3034A	3.0
3035	1.5
3036	1.0
3037	1.5
3038	1.5



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY:

*William F. [Signature]*



# CHEMEX LABS LTD.

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

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 47901

TO: Eldorado Nuclear Ltd.,  
 Ste. 400 - 255 Albert St., CC. Mr. William Olsson  
 Ottawa, Ont.  
 K1P 6A9

INVOICE NO. 30870

RECEIVED June 25/79

ATTN: HASL - Soil

ANALYSED July 3/79

SAMPLE NO.	PPM
U	
PREF IX 40	
3039	2.0
3040	5.0
3041	1.5
3042	2.0
3043	1.5
3044	0.5
3045	3.5
3046	1.5
3047	2.0
3048	5.5
3049	4.0
3050	2.0
3051	4.5
3052	4.5
3053	4.0
3054	2.0
3055	4.5
3056	0.5
3057	3.0
3521	1.0
3522	2.0
3523	3.0
3524	2.0
3525	4.0
3526	3.0
3527	0.5
3528	1.5
3529	2.0
3530	2.0
3531	3.0
3532	2.5
3533	3.0
3534	2.0
3535	1.0
3536	2.5
3537	2.0
3538	2.0
3539	2.0
3540	2.0
3541	1.0



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY:

*James F. [Signature]*



# CHEMEX LABS LTD.

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

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 47902

TO: Eldorado Nuclear Ltd.,  
 Ste. 400 - 255 Albert St., CC. Mr. William Olsson  
 Ottawa, Ont.  
 K1P 6A9

INVOICE NO. 30870

RECEIVED June 25/79

ATTN: HASL - Soil

ANALYSED July 3/79

SAMPLE NO. :	PPM
U	
PREFIX 40	
3642	1.0
3643	2.0
3644	3.0
3645	2.5
3646	2.0
3647	1.5
3648	2.5
3649	2.0
3650	0.5
3651	0.5
3652	0.5
3653	1.0
3654	10.5
3655	1.0
3656	8.0
3657	1.5
3658	4.0
3659	4.0
3660	4.0
3661	3.0
3662	1.5
3663	1.0
3664	5.5
4058	5.0
4059	0.5
4060	-0.5
4061	2.0
4062	1.0
4063	6.5
4064	0.5
4065	2.0
4066	0.5
4067	3.5
4068	0.5
4069	2.5
4070	0.5
4071	4.5
4072	0.5
4073	6.5
4074	3.0



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY:

*Thomas F. [Signature]*



# CHEMEX LABS LTD.

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

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

TO: Eldorado Nuclear Ltd.,  
 Ste. 400 - 255 Albert St., CC. Mr. William Olsson  
 Ottawa, Ont.  
 KLP 6A9

CERTIFICATE NO. 47903  
 INVOICE NO. 30870  
 RECEIVED June 25/79  
 ANALYSED July 3/79

ATTN: HASL - Soil

SAMPLE NO. :	PPM
PREFIX 40 U	
40 75	3.0
40 76	3.0
40 77	4.0
40 78	0.5
40 79	4.5
4080	2.0
4081	2.5
4082	6.0
4083	7.5
4084	10.0
4085	2.1
4086	4.5
4087	7.0
4088	4.0
4089	4.0
4090	2.0
4091	5.0
4092	3.0
4093	1.5
4094	6.5
4095	1.5
4096	5.0
4097	1.5
4098	5.5
4099	2.5
4100	2.0
4101	11.0
4102	3.0
4103	2.0
4104	2.0
4105	8.0
4106	3.0
4107	6.0
4108	3.0
4109	6.0
4110	2.0
4111	2.0
4112	2.0
4113	2.0
4550	1.0



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY: *Norma G. Windsor*



# CHEMEX LABS LTD.

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

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

## CERTIFICATE OF ANALYSIS

CERTIFICATE NO. 47904

TO: Eldorado Nuclear Ltd.,  
 Ste. 400 - 255 Albert St., CC. Mr. William Olsson  
 Ottawa, Ont.  
 K1P 6A9

INVOICE NO. 30870

RECEIVED June 25/79

ATTN: HASL - Soil

ANALYSED July 3/79

SAMPLE NO. :	PPM
	U
PREFIX 40.	
4551	1.5
4552	1.0
4553	2.5
4554	1.5
4555	3.0
4556	0.5
4557	2.5
4558	1.5
4559	1.5
4560	2.5
4561	3.5
4562	15
4563	15
4564	1.0
4565	2.5
4566	-0.5
4567	2.0
4568	1.5
4569	-0.5
4570	2.5
4571	3.5
4572	1.0
4573	3.5
4574	1.0
4575	1.0
4576	2.0
4577	2.5
4578	0.5
4579	1.5
4580	1.5
4581	1.5
4582	7.0
4583	2.5
4584	1.5
4585	3.5
4586	4.0
4587	2.0
4588	1.5
4589	1.0
4590	1.5



MEMBER  
 CANADIAN TESTING  
 ASSOCIATION

CERTIFIED BY:

*William F. [Signature]*













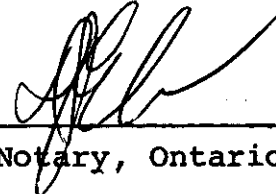
AFFIDAVIT

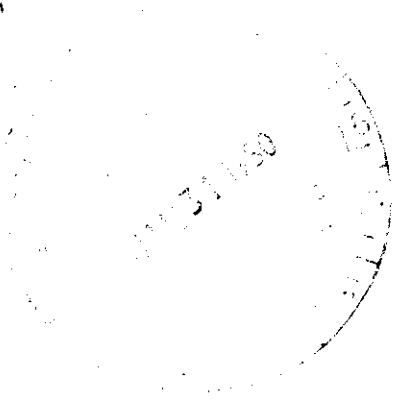
I, Colin J. Riley, of Ottawa, Ontario, make oath and say:

That to the best of my knowledge the attached Statement of Expenditures for exploration work on the HASL ~~18~~<sup>25</sup>-40 Mineral Claims on Claim Sheet 115J/15 is accurate.

  
Colin J. Riley

Sworn before me at Ottawa,  
Ontario this 21<sup>st</sup> day  
of August, 1979.

  
Notary, Ontario Canada



Statement of Expenditures  
 HASL ~~18~~-40 Claims  
 1979

Labour

C.F. Gleeson	Consulting Geochemist	1 day	\$ 380.00
W.J. Olsson	Project Geologist	1 "	150.00
G. Delaney	Geologist	1 "	100.00
B. Duncan	Geologist	1 "	100.00
G. Owsiak	Assistant	1 "	85.00
E. Connell	Assistant	1 "	85.00
B. Shelly	Assistant	1 "	85.00
J. Crux	Assistant	1 "	85.00
A. Pasitchniak	Assistant	1 "	85.00
			\$1125.00

Expenses

Helicopter - 1.7 hours @ \$250.00	\$ 425.00
Camp expenses, Room & Board - 9 man days @ \$30.00	270.00
	695.00

Analysis Costs

280 soil samples @ \$3.20	2.55	729.30
10 heavy mineral samples @ \$30.25	29.25	242.50
3 silt samples @ \$3.20	2.55	7.65
2 water samples @ \$2.75	2.20	4.40
		\$ 983.85

Total \$2803.85

*Celine D. Riley*

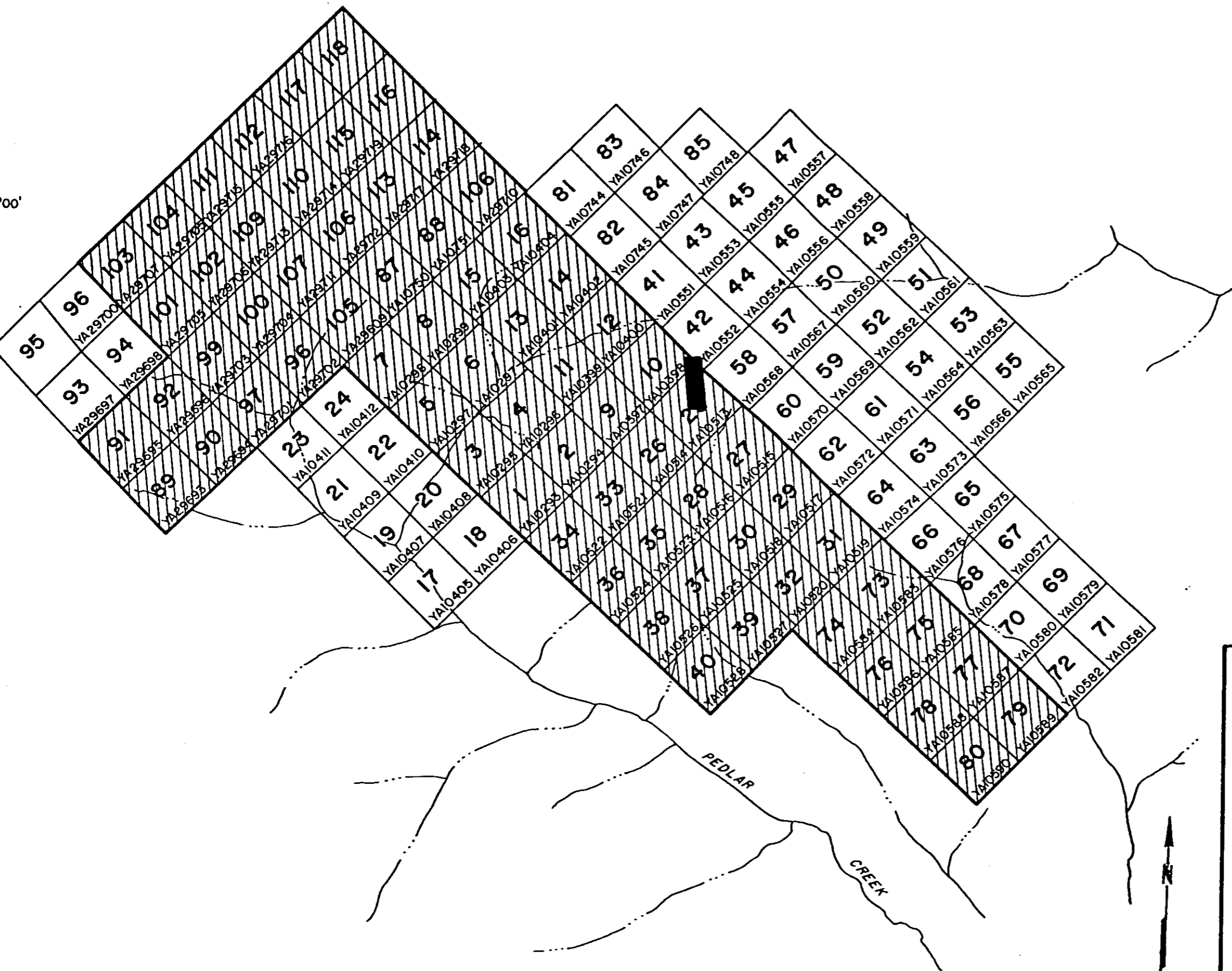
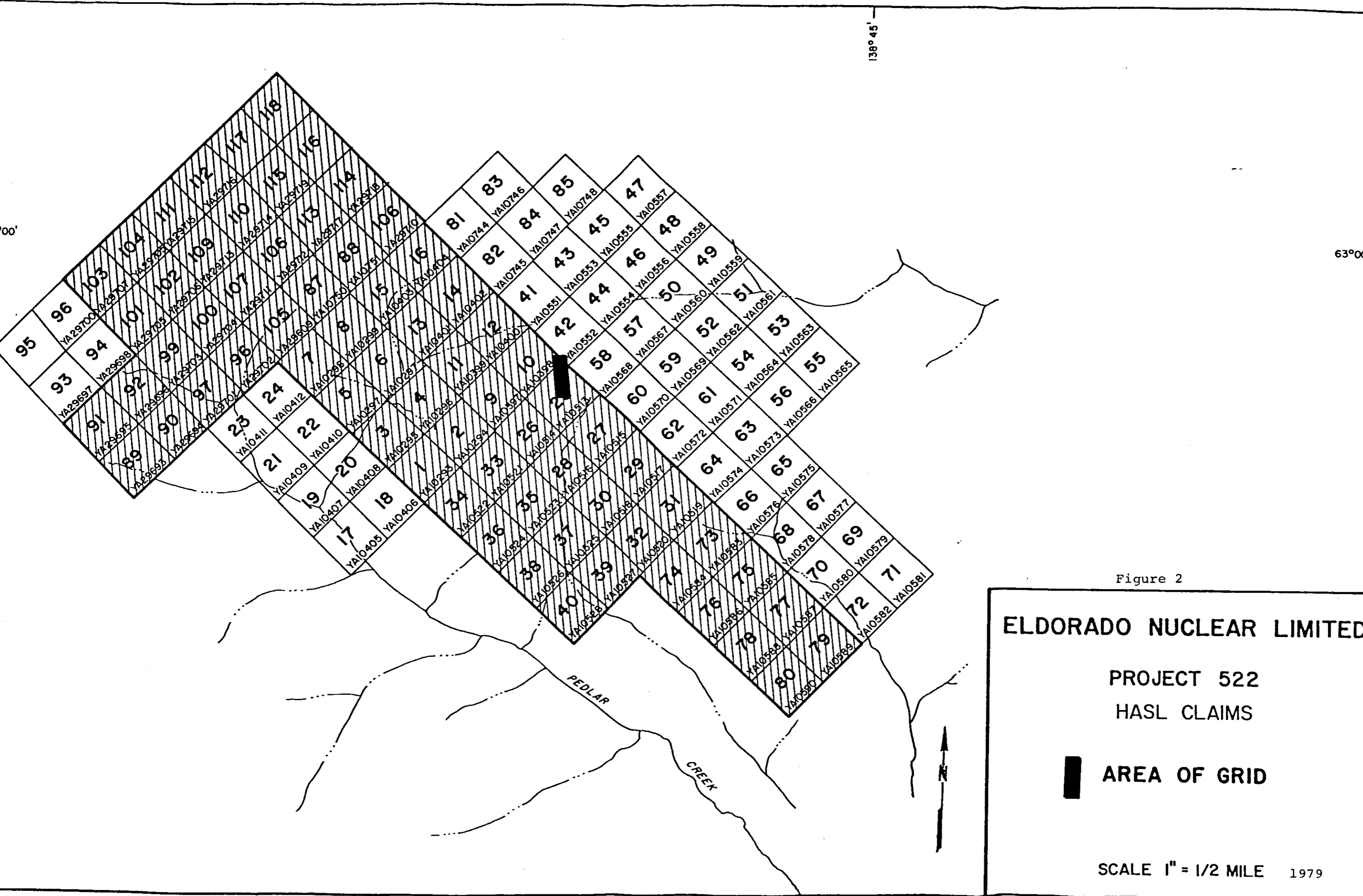


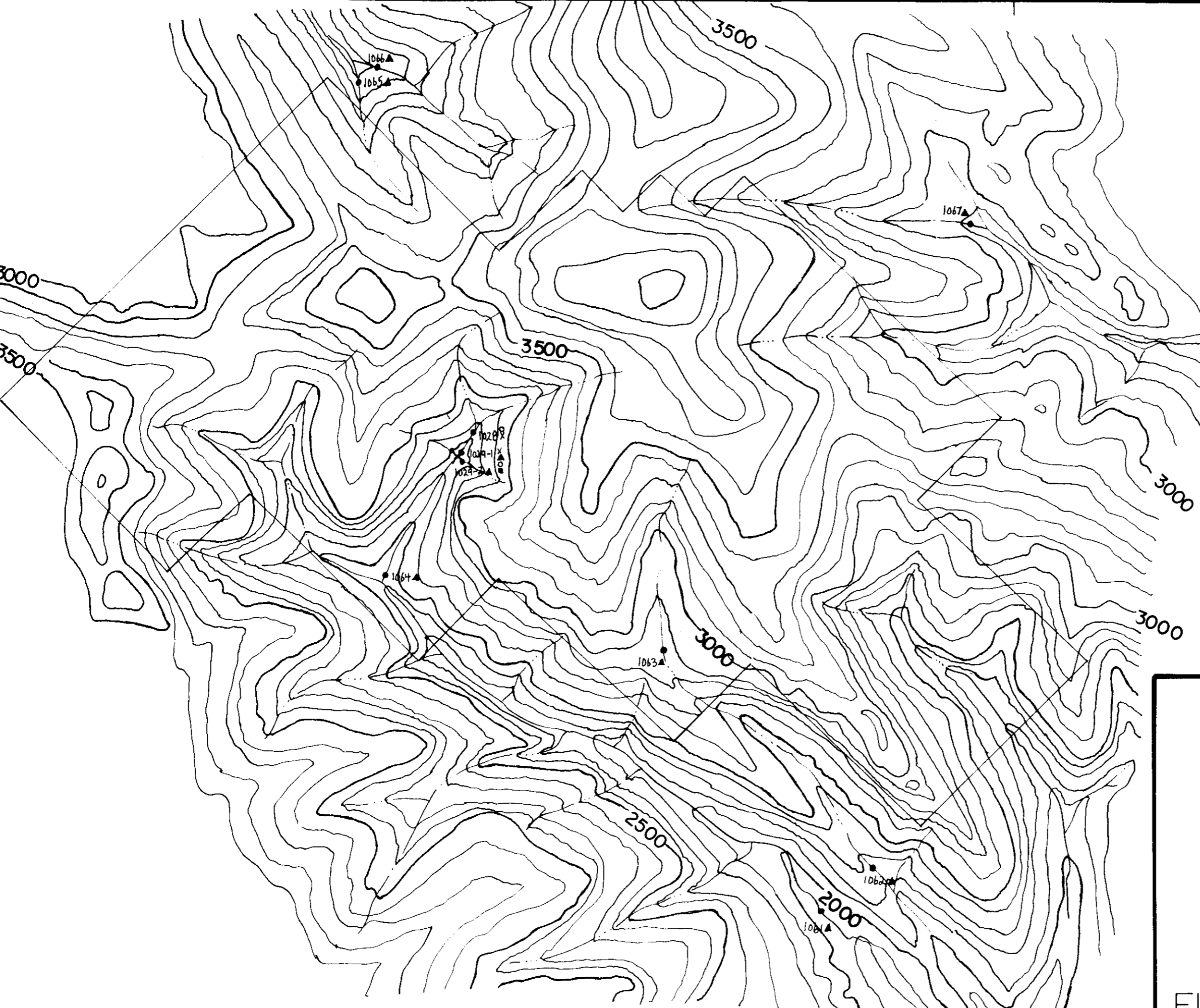
Figure 2

**ELDORADO NUCLEAR LIMITED**

PROJECT 522  
HASL CLAIMS

■ AREA OF GRID

SCALE 1" = 1/2 MILE 1979



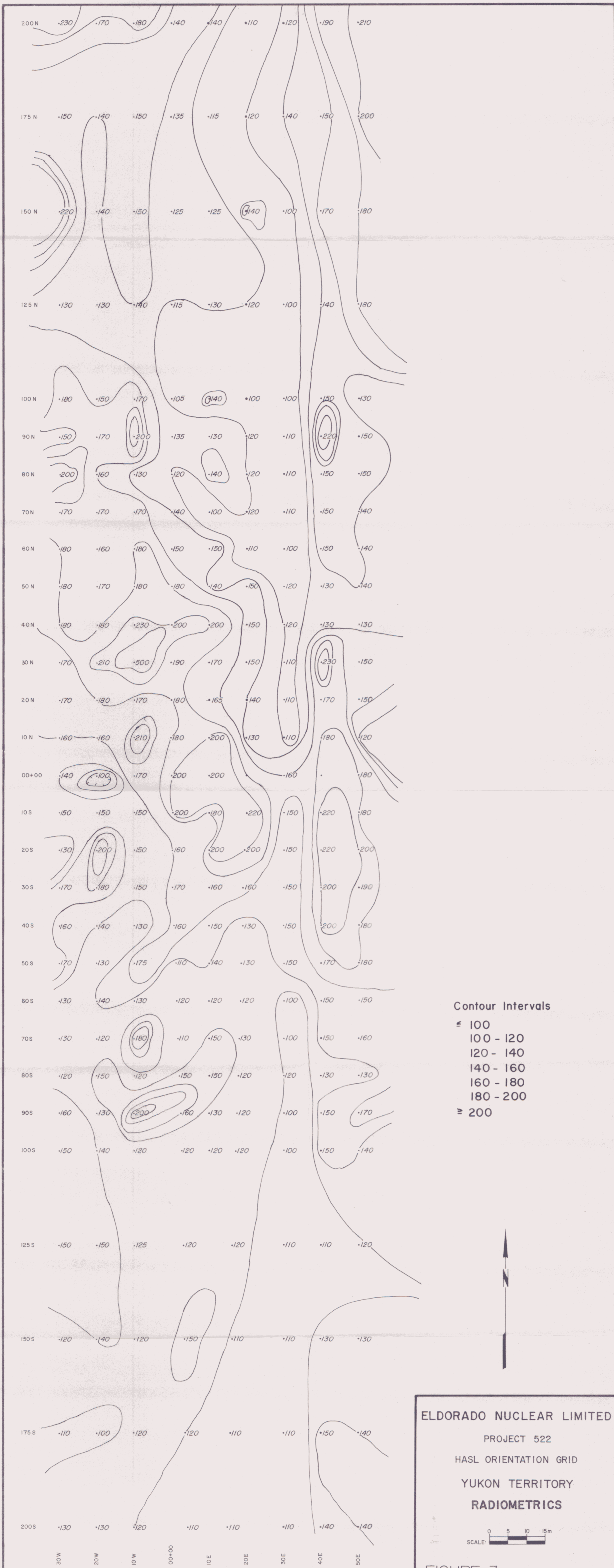
SYMBOLS

- ▲ heavy mineral
- × water sample
- silt sample
- rock sample
- sample location

ELDORADO NUCLEAR LTD.  
 HASL CLAIMS  
 PROJECT 522

*SAMPLE LOCATION*

FIGURE 5



Contour Intervals

- ≤ 100
- 100 - 120
- 120 - 140
- 140 - 160
- 160 - 180
- 180 - 200
- ≥ 200

ELDORADO NUCLEAR LIMITED  
 PROJECT 522  
 HASL ORIENTATION GRID  
 YUKON TERRITORY  
 RADIOMETRICS

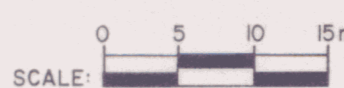
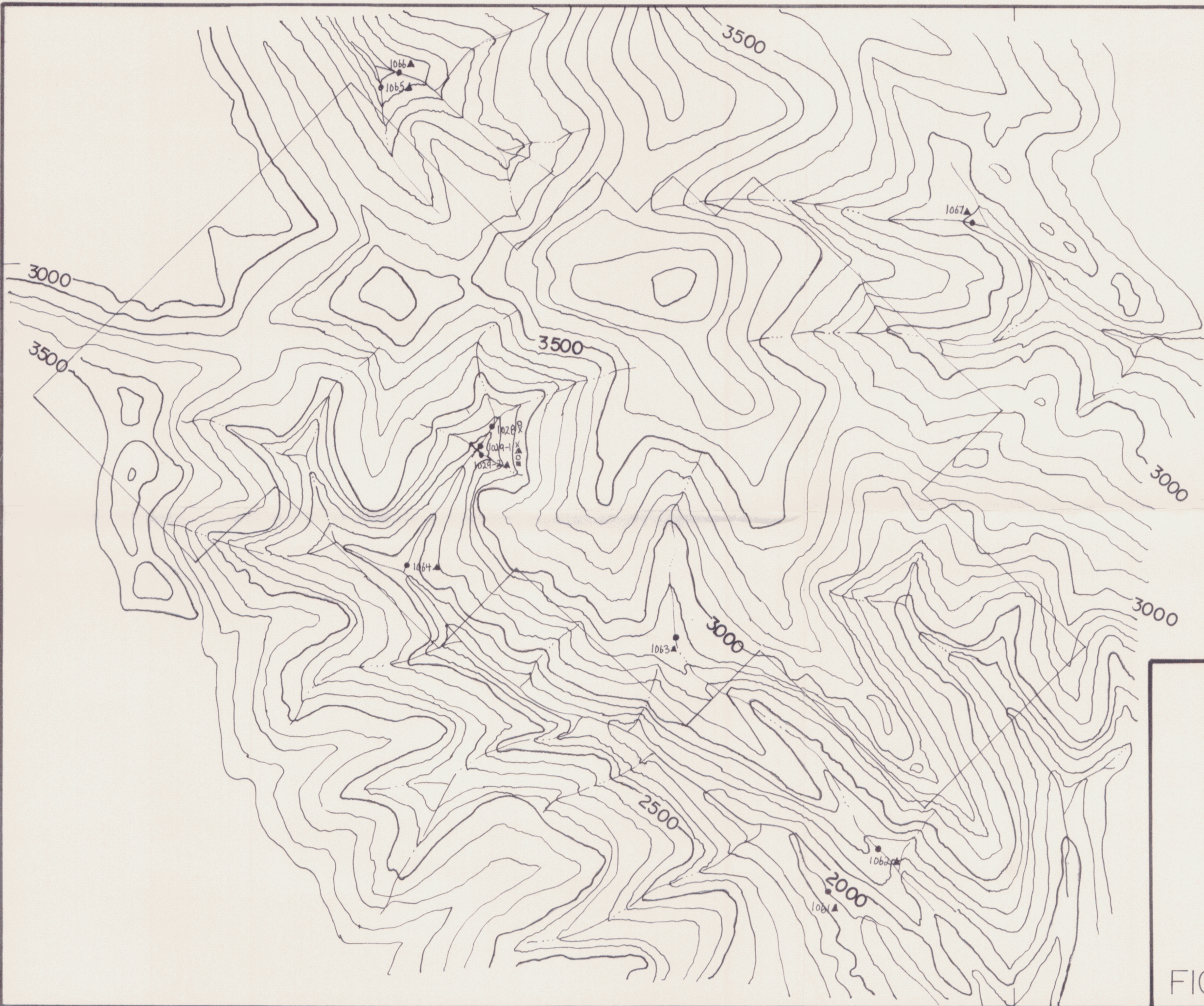


FIGURE 3



- SYMBOLS
- ▲ heavy mineral
  - × water sample
  - silt sample
  - rock sample
  - sample location

ELDORADO NUCLEAR LTD.  
 HASL CLAIMS  
 PROJECT 522

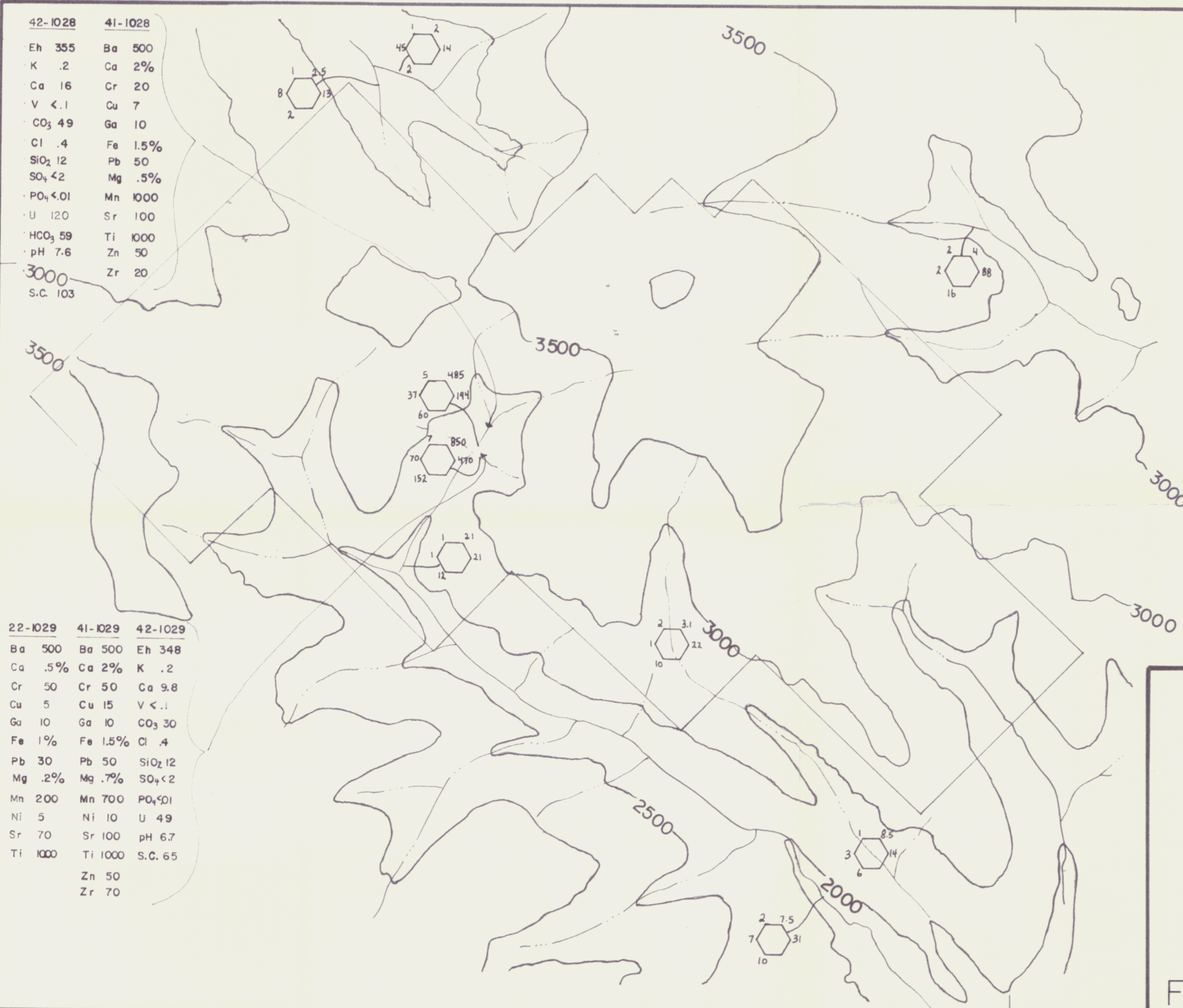
*SAMPLE LOCATION*

FIGURE 5

1979  
 Scale: 1"=1/2mi.

42-1028	41-1028
Eh 355	Ba 500
K .2	Ca 2%
Ca 16	Cr 20
V <.1	Cu 7
CO <sub>3</sub> 49	Ga 10
Cl .4	Fe 1.5%
SiO <sub>2</sub> 12	Pb 50
SO <sub>4</sub> 42	Mg .5%
PO <sub>4</sub> <.01	Mn 1000
U 120	Sr 100
HCO <sub>3</sub> 59	Ti 1000
pH 7.6	Zn 50
	Zr 20
S.C. 103	

22-1029	41-1029	42-1029
Ba 500	Ba 500	Eh 348
Ca .5%	Ca 2%	K .2
Cr 50	Cr 50	Ca 9.8
Cu 5	Cu 15	V <.1
Ga 10	Ga 10	CO <sub>3</sub> 30
Fe 1%	Fe 1.5%	Cl .4
Pb 30	Pb 50	SiO <sub>2</sub> 12
Mg .2%	Mg .7%	SO <sub>4</sub> <2
Mn 200	Mn 700	PO <sub>4</sub> <.01
Ni 5	Ni 10	U 49
Sr 70	Sr 100	pH 6.7
Ti 1000	Ti 1000	S.C. 65
	Zn 50	
	Zr 70	



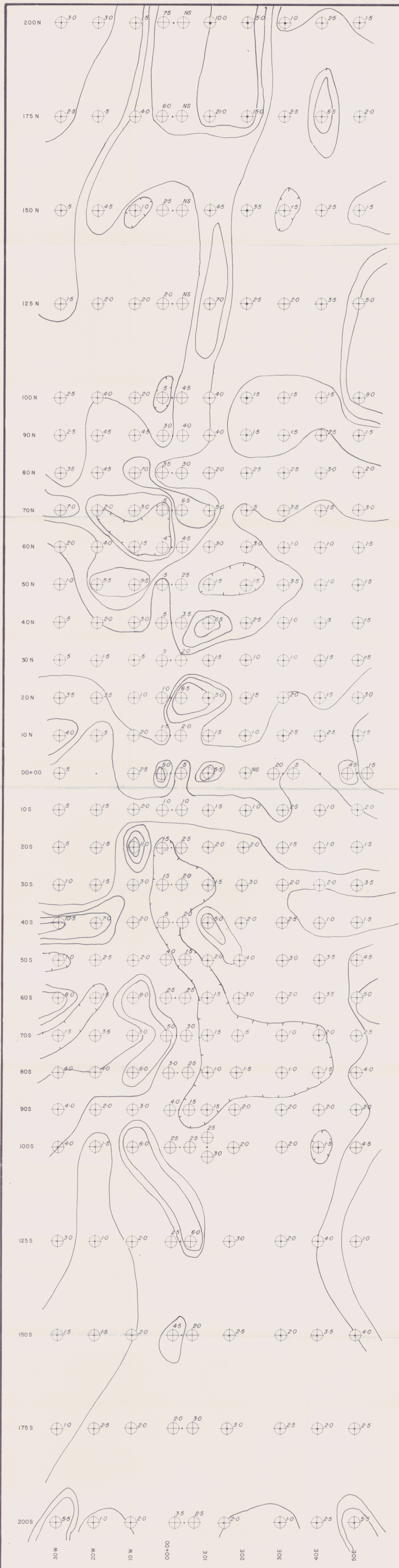
ELDORADO NUCLEAR LTD.  
 HASL CLAIMS  
 PROJECT 522

GEOCHEM DATA

ppm

1979  
 Scale: 1"=1/2mi.

FIGURE 6



Contour Intervals  
 ≤ 2  
 2-4  
 4-5  
 5-10  
 ≥ 10

LEGEND

- SINGLE READING Site
- DOUBLE READINGS Site
- VALUES 0.5 U PPM



ELDORADO NUCLEAR LIMITED  
 PROJECT 522  
 HASL ORIENTATION GRID  
 YUKON TERRITORY  
**SOIL GEOCHEMISTRY**

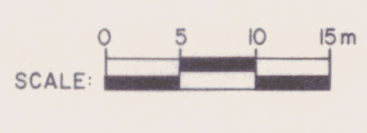


FIGURE 7