

GEOLOGICAL, GEOCHEMICAL & GEOPHYSICAL REPORT

- on the -

TUPA #1 CLAIM

ATLIN MINING DIVISION

- for the -

GRANVILLE SQUARE JOINT VENTURE

Managed by: Union Oil Company of Canada Ltd.,
Box 999, Calgary, Alberta.

Work Completed: July 16, 1978.

Location: NTS 104N/14E.
59°48'N; 133°08'W.
43 km. NE of Atlin, B. C.

Prepared by:

KERR, DAWSON & ASSOCIATES LTD.,
#1 - 219 Victoria Street,
Kamloops, B. C.

John R. Kerr, P. Eng.,
October, 1978.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT

6908

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INTRODUCTION

General Statement:

The Tupa #1 claim was staked in September, 1976, to cover dry radioactive swamps containing significant contents of uranium. The claim was staked to the north to cover a two kilometer length of the Surprise Lake Batholith. The possibility of two types of mineral deposits exist within the claim block.

- (1). Contact type of uranium deposit (Midnite Mine Model) within the Cache Creek sediments along the contact of the Surprise Lake Batholith.
- (2). Polymetallic veins associated with major structural features within the batholith.

The 1978 field programme included detailed geochemistry and radiometrics over the area of a radioactive swamp in search of polymetallic veins, and reconnaissance geochemistry, radiometrics, and geology along the contact of the batholith. This report summarizes the results of this programme.

Location and Access:

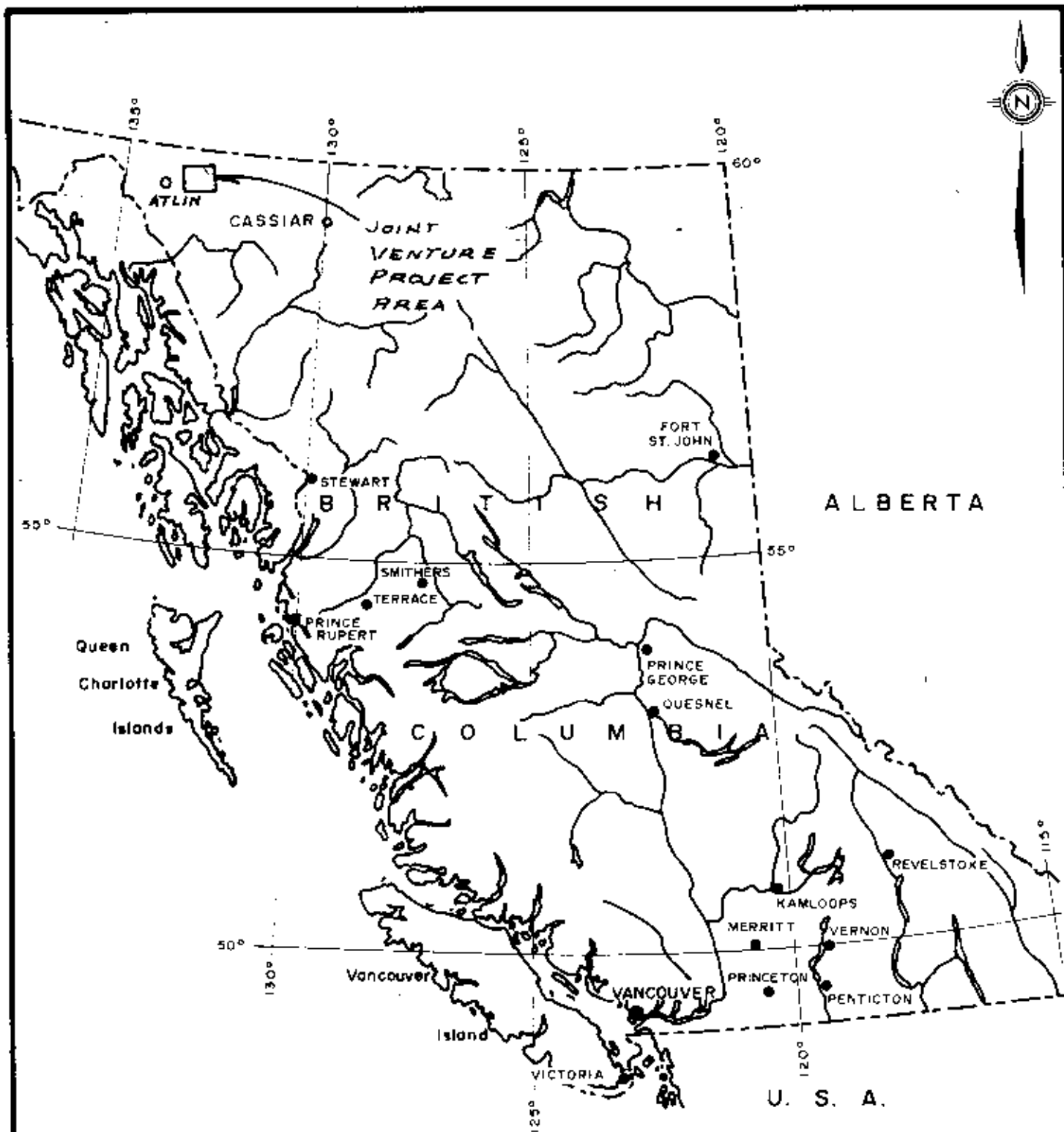
The claims are located on Windy Camp Creek, 6 km. northeast of Surprise Lake, 8 km. south of Gladys Lake, and 43 km. northeast of Atlin, B. C. Geographic coordinates of the property are 59°48'N, and 133°08'W.

Direct access to the property is possible only by helicopter. The Gladys Lake road, along 4th. of July and Consolation creeks provides vehicle access to within 4 km. of the northern claim boundary.

Topography and Vegetation:

The claim is located in alpine terraine. The local relief is moderate, elevations ranging from 1,340 m (a.s.l.) to over 1,580 m (a.s.l.). Terrace moraines along the north valley walls of Windy Camp Creek are evidence of valley glaciation in the creek.

Vegetation is limited to alpine growth, buckbrush, and scattered clumps of dwarf spruce.



GRANVILLE SQUARE JOINT VENTURE

LOCATION MAP
 PROJECT AREA
 ATLIN DISTRICT
 LIARD MINING DIVISION -
 BRITISH COLUMBIA

DATE: *Sept. 1978*

SCALE: 1 CM = 87 KM

TECH. WORK BY:
 Kerr - Dawson & Assoc.

DWG. No. 175-1

To Accompany A Report By *J. R. Kerr, P. Eng.*

Property:

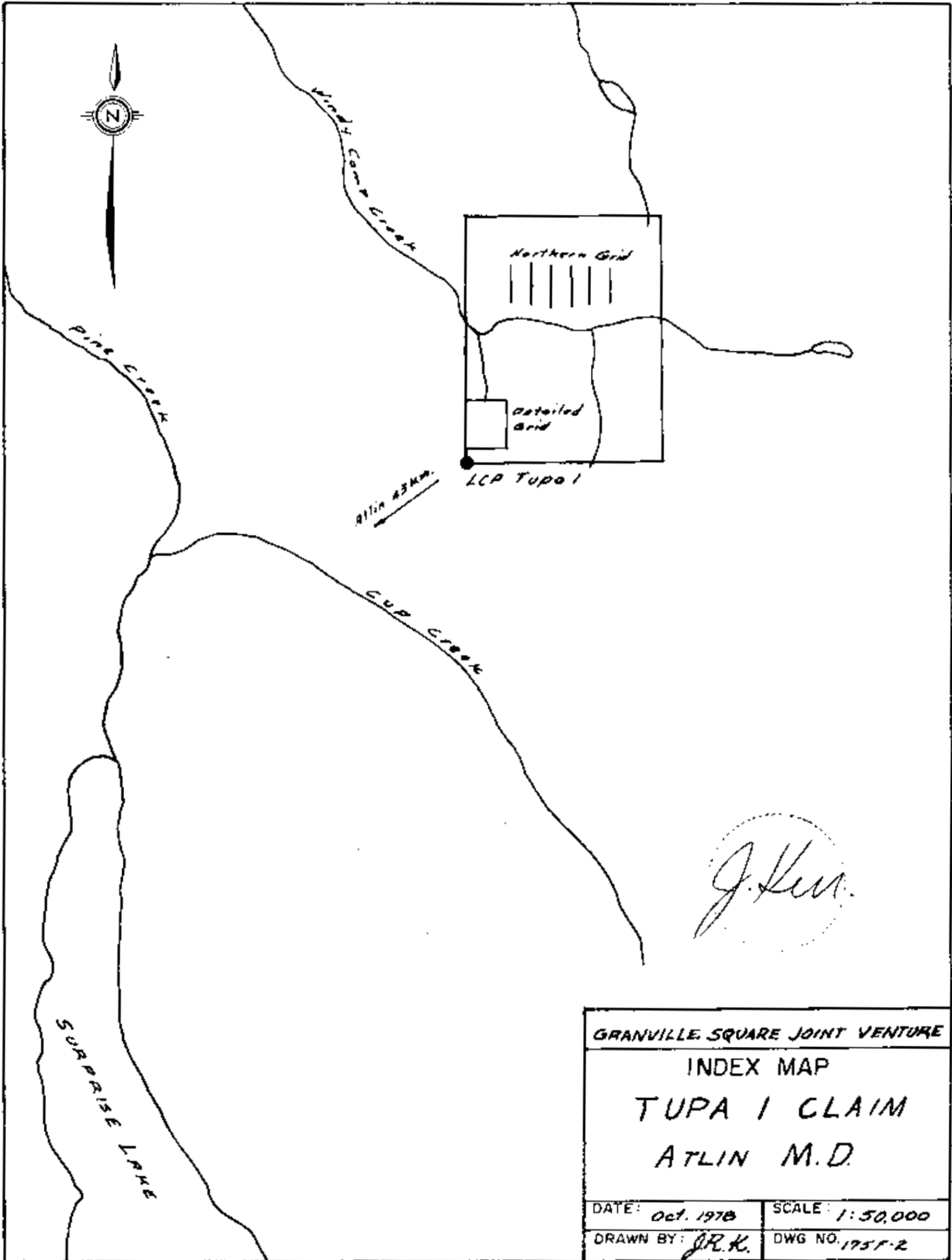
The property consists of one claim staked under the Modified Grid System.

<u>Claim Name</u>	<u>No. Units</u>	<u>Record No.</u>	<u>Mining Div.</u>	<u>Expiry Date</u>
Tupa #1	20	159	Atlin	October 8, 1979*

* On acceptance of this report.

The claim is recorded in the name of Union Oil Company of Canada Ltd. in trust for the Granville Square Joint Venture.

There is no evidence of previous work being completed on the property.



GRANVILLE SQUARE JOINT VENTURE	
INDEX MAP	
TUPA 1 CLAIM	
ATLIN M.D.	
DATE: Oct. 1978	SCALE: 1:50,000
DRAWN BY: J.R.K.	DWG NO. 175F-2

FIELD PROGRAMME (1978)

Two crews spent July 16, 1978 (one day) working in separate areas of the claim.

- (1). One two-man crew completed reconnaissance geochemistry, radiometrics, and geological mapping on a grid along the contact of the Surprise Lake batholith. Grid lines were spaced at 200 m intervals, and stations were established every 50 meters.

Soil samples were collected at all stations, from pits 5 - 20 cm. in depth. Attempts were made to obtain "B" horizon soil; however, soils are intermixed with talus in this area of the claim. Scintillometer readings were taken at every station with an Exploranium GRS-1 unit, (cps). The readings were calibrated to the McPhar TV-1 unit, and are expressed in cpm. All outcrops were tied into grid coordinates. Results are shown on the accompanying 1:5000 scale map, Figure 175F-3.

(2). One two-man crew completed detailed geochemistry, radiometrics, and mapping over a radioactive bog in the south-west corner of the claim. Lines were established at 50 and 100 meter intervals, and stations are at 25 and 50 meter intervals along all lines.

Soil samples were collected at all sample stations, from pits 10 - 25 cm deep. The soils were generally a good quality "B" horizon soil. Seven dry silt samples were collected from various dry wash areas within the grid. One water sample was collected from the only spring encountered in the survey. Scintillometer readings were taken at every station with a McPhar TV-1 (cpm). Outcrops were tied into grid coordinates. Results are shown on the accompanying 1:2000 scale map sheets (Figure 175F - 4 & 5).

To alleviate confusion, samples were identified with the letter "T" for samples collected from the northern reconnaissance grid, and the letter "Z" for

soils collected from the detailed grid. All samples were shipped to Min-En Laboratories in North Vancouver, B. C. The samples were dried and sieved, the -80 mesh fraction being digested in hot HNO_3 . The uranium content was determined by fusion-fluorometric methods, and is expressed in parts per million (ppm) uranium.

GEOLOGY

The geology of the Surprise Lake area is well documented in G. S. C. Memoir #307, Atlin Map Area (104X), by J. D. Aitken.

The claim covers a 2 km. length of the northern contact of the Surprise Lake batholith. The rocks of the batholith are best described as a medium-grained, occasionally porphyritic, biotite, rich (minor hornblende) quartz-monzonite or granite.

The batholith is in contact with thermally altered argillite, quartzite, and limestone of the Permian Cache Creek Group. Hornfels textures were observed in the argillaceous rocks, and the limestone has been recrystallized, in part to marble. Felsic dykes are mapped in the contact zone, probably related to the main batholith. It is within the contact aureole of the Surprise Lake batholith that detailed exploration was completed in search of contact-type uranium deposits.

Two main lineaments have been interpreted from airphotographs, both related to the main drainage systems on the claim.

- (1). E - W direction, following Windy Camp Creek.
- (2). N - S direction, in the western portion of the claim. This dry creek contains the radioactive swamp.

Both lineaments have been interpreted as possible structural features. It is the N - S lineament containing the radioactive swamp that detailed exploration was completed in search of polymetallic veins. Evidence of a fault was not found in this area.

GEOCHEMISTRY

The following tables summarize the statistical analyses of the soil sample results for each grid area.

Reconnaissance Grid (Northern Area):

No. of Samples	(n)	-	49	
Mean	(\bar{x})	-	2.71	ppm U
Std. Deviation	(s)	-	3.79	ppm U
Possibly Anomalous ($> \bar{x}$)		-	> 2.8	ppm U
Definitely Anomalous ($> \bar{x} + 2s$)		-	> 10.3	ppm U

Detailed Grid:

No. of Samples	(n)	-	76	
Mean	(\bar{x})	-	8.56	ppm U
Std. Deviation	(s)	-	15.50	ppm U
Possibly Anomalous ($> \bar{x}$)		-	> 8.5	ppm U
Probably Anomalous ($> \bar{x} + s$)		-	> 24.1	ppm U
Definitely Anomalous ($> \bar{x} + 2s$)		-	> 39.5	ppm U

Only one anomaly of significance was delineated in the northern reconnaissance grid (20.0 ppmU), within the Cache Creek sediments. It is very likely that this

uranium is related to a radioactive felsic dyke in this area. The anomaly is not worthy of further exploration.

Soil and silt geochemistry on the detailed grid confirmed the extremely high uranium content in the dry swamp (1500 ppmU). A broad anomalous pattern is developed to the south east of the swamp, with increasing content of uranium content in soils at the eastern edge of the grid (90 and 120 ppmU). This pattern probably reflects a downhill dispersion of uranium from a source on the gentle hill to the south-east of the grid area. The rather curious values (45 and 75 ppmU) on L2 & 3 N 2 1 + 50E may reflect the southwest extremity of the source.

RADIOMETRICS

In the northern reconnaissance grid area, scintillometer values assisted in interpretation of the granitic contact ($\sim 3,000$ cpm). Except for radiometric anomalies associated with the felsic dykes, areas of exploration interest were not located.

Radioactivity in the dry swamp is very high, values ranging from 7,500 cpm to 8,000 cpm. A similar radiometric pattern to the geochemical pattern was developed in the south-eastern portion of the grid. 6,000 and 7,000 cpm readings were common at the eastern extremities of the grid. These radiometric highs probably reflect the downhill dispersion of uranium in soil.

CONCLUSIONS AND RECOMMENDATIONS

The possibility of a contact type of uranium deposit occurring in the Cache Creek sediments is remote, and further work in this area is not justified. Uranium anomalies in soil (weak) are probably due to a low uranium content in felsic dykes, common in the contact aureole.

It is concluded that the N - S lineament containing the radioactive swamp is not a major structural feature (fault). Uranium values contained within the swamp were transported probably from a source to the southeast. Geochemistry and radiometrics proved worthwhile in tracing this downhill dispersion of uranium to the eastern portion of the grid area.

An area to the southeast of the existing grid is shown on Figure 175F-3, believed to contain the source of uranium mineralization. It is recommended that a detailed grid be established in this area to

trace the radiometric and geochemical dispersion patterns to the source. Electromagnetics and magnetics are also recommended to assist in pinpointing the potential target.

Respectfully Submitted By:

KERR, DAWSON & ASSOCIATES LTD.,



John R. Kerr

John R. Kerr, P. Eng.,
GEOLOGIST

APPENDIX A

STATEMENT OF COSTS

COST STATEMENT

Tupa 1 Claim, Atlin Mining Division

Labour: July 16, 1978

John R. Kerr, P. Eng.		
1 day @ \$175.00/day	\$175.00	
W. Gruenwald, Geologist		
1 day @ \$125.00/day	125.00	
B. Cross, Assistant		
1 day @ \$ 95.00/day	95.00	
R. MacArthur, Assistant		
1 day @ \$ 95.00/day	<u>95.00</u>	\$ 490.00

Transportation:

Helicopter Charter Bell 47G-3B1		
3.1 hrs. @ \$207.00/hr.	\$641.70	
Truck Rental - 1 day	<u>20.00</u>	661.70

Room and Board:

4 man days @ \$20.00/man/day	80.00	
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Geochemical Analysis:

130 soil samples @ \$4.15/sample (U)	539.50	
1 H ₂ O sample @ \$5.00/sample		
(U + Ph)	<u>5.00</u>	544.50

Prorated Cost - Mobilization and Field Programme:

(4.3% x 5470)	235.20	
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Supplies and Equipment Rental: 115.10

Report Preparation:

John R. Kerr, P. Eng.,		
2 days @ \$175.00/day	350.00	
Drafting	100.00	
Photo copying and Reproduction	<u>50.00</u>	<u>500.00</u>

TOTAL \$2,626.50

Certified Correct
John R. Kerr, P. Eng.
Atlin Mining Division
Atlin, B.C.

APPENDIX B

STATEMENT OF QUALIFICATIONS

JOHN R. KERR, P.ENG.
GEOLOGICAL ENGINEER

1 219 VICTORIA STREET
KAMLOOPS, B.C.

PHONE (604) 374-0544

CERTIFICATE

I, JOHN R. KERR, OF KAMLOOPS, B. C. DO HEREBY CERTIFY THAT:

- (1). I am a member of the Association of Professional Engineers of British Columbia and a Fellow of the Geological Association of Canada.
- (2). I am a geologist employed by Kerr, Dawson and Associates Ltd. of #1 - 219 Victoria Street, Kamloops, B. C.
- (3). I am a graduate of the University of British Columbia (1964), with a B. A. Sc. degree in Geological Engineering.
- (4). I have practised my profession continuously since graduation.
- (5). I supervised and assisted in the collection of data as compiled in this report. I am the author of this report which is based on the aforementioned data.



John R. Kerr, P. Eng.

October, 1978,

KAMLOOPS, B. C.

APPENDIX C

GEOCHEMICAL RESULTS

DATE July 25

1978.

J. Kerr

	U ppm
T0-0+00	1.8
0+50N	2.8
1+00N	0.8
1+50N	0.8
2+00N	2.3
2+50N	1.3
T2E0+00	1.3
0+50N	1.8
1+00N	5.0
1+50N	6.5
2+00N	1.8
2+50N	3.4
0+50S	1.3
T2E1+00S	1.3
T4E0+50N	0.8
1+00N	2.8
1+50N	2.3
0+00S	0.8
0+50S	0.8
T4E1+00S	0.8
T6E0+00	1.3
0+50N	4.5
1+00N	1.3
1+50N	3.4
0+50S	0.3
1+00S	1.3
1+50S	1.3
2+00S	1.3
2+50S	1.3
T6E3+00S	1.3

Duff

DATE July 25
1978.

NO. 100

NAME

J. Kerr

	U ppm
T8E0+00	0.8
0+50N	1.3
1+00N	0.3
1+50N	0.3
2+00N	0.8
0+50S	2.3
1+00S	2.3
1+50S	1.3
2+00S	1.3
2+50	1.3
3+00S	1.3
T8E2+50N	2.3
T10E0+50N	14.5
1+00N	1.8
1+50N	5.5
2+00N	20.0
2+50N	1.3
0+50S	1.3
T10E0+00	14.0
Z0-1+00E	1.8
1+50E	50.0
2+00E	90.0
0+00	1150.0
0+25W	17.0
0+50W	5.0
1+00W	4.0
1+50W	4.5
Z0-2+00N	2.3
Z0+50S0+25E	6.0
Z0+50S0+50E	6.0

R. M. C.

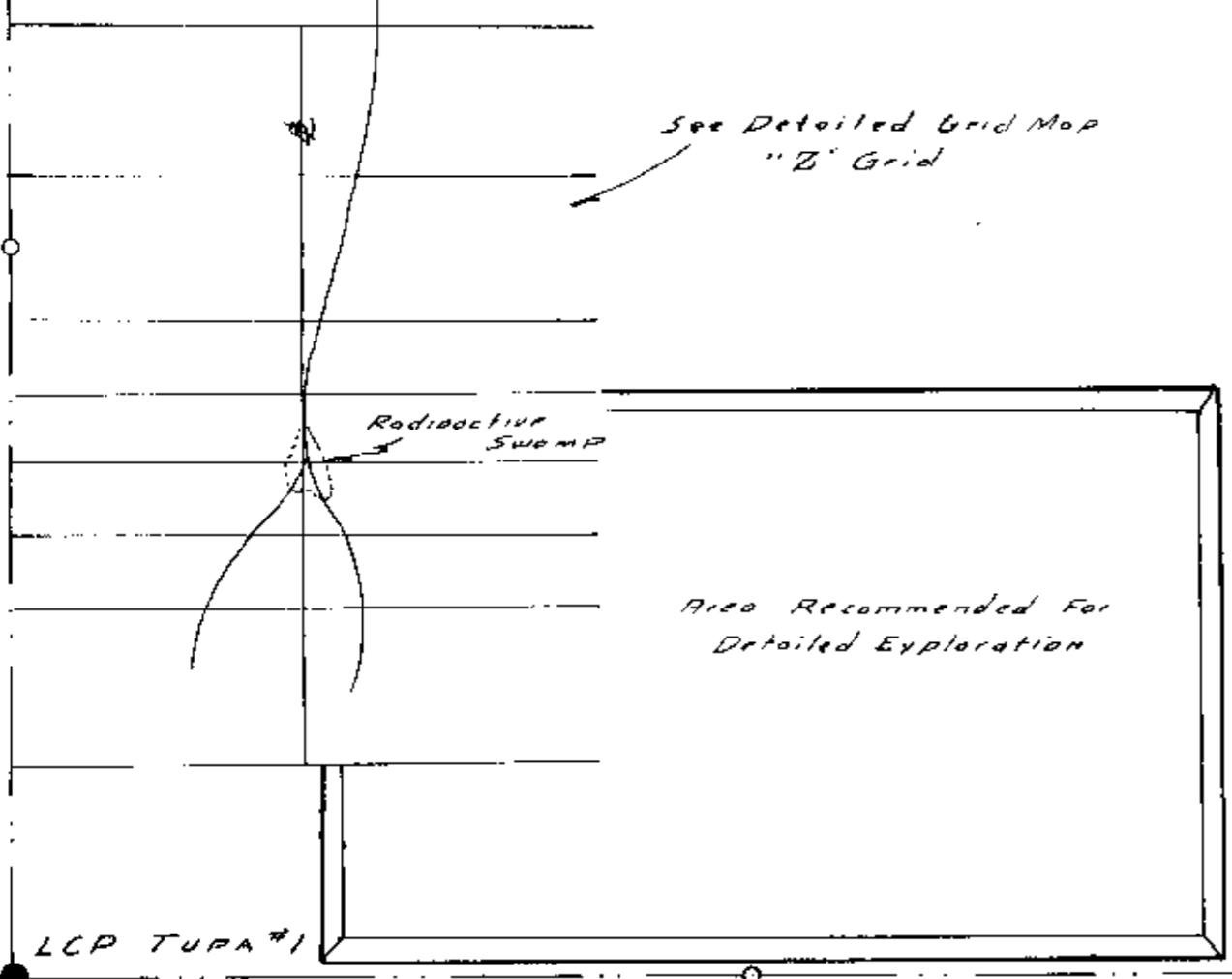
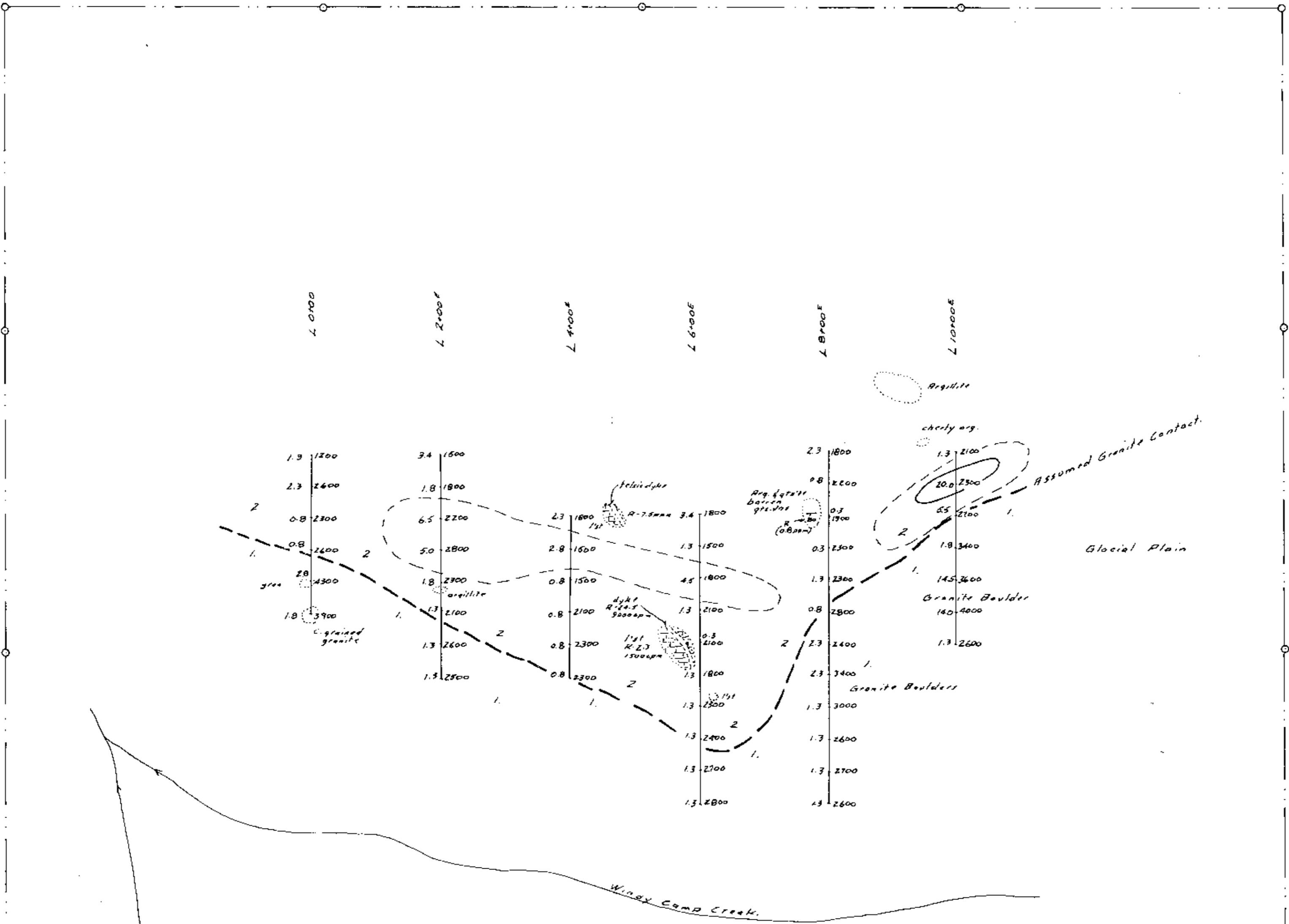
J. Kerr

	U ppm
Z1+00S1+50W	1.8
2+00W	2.8
Z1+00NO+00	2.3
0+50E	2.8
1+00E	2.8
1+50E	2.3
2+00E	5.0
0+50W	2.8
1+00W	2.3
1+50W	4.5
2+00W	9.5
Z2+00S0+50E	4.0
1+00E	5.0
1+50E	3.4
2+00E	4.5
0+00	27.5
0+50W	4.5
1+00W	5.5
1+50W	3.4
2+00W	2.8
Z2NO+00	1.8
0+40E	6.0
0+50E	500.0
1+00E	6.0
1+50E	5.0
2+00E	75.0
0+50W	3.4
1+00W	2.8
1+50W	3.4
Z2N2+00W	4.0

J. Kerr

	U ppm
Z0+50S1+00E	1.3
1+50E	29.5
2+00E	10.5
0+00	0.3
0+25W	1.8
0+50W	0.3
0+75W	0.3
1+00W	0.8
1+50W	0.8
2+00W	1.3
Z0+50N0+50E	7.0
1+00E	33.0
1+50E	1.8
2+00E	2.3
0+00	1.8
0+50W	2.3
1+00W	4.0
1+50W	2.3
2+00W	4.0
Z1+00S0+00	3.4
0+40E	600.0
0+50E	600.0
1+00E	10.5
1+50E	10.0
2+00E	26.5
Z1+50S2+00E	120.0
Z1+75S2+00E	60.0
Z1+00S0+50W	2.3
0+75W	6.0
Z1+00S1+00W	2.3

Handwritten signature



LEGEND

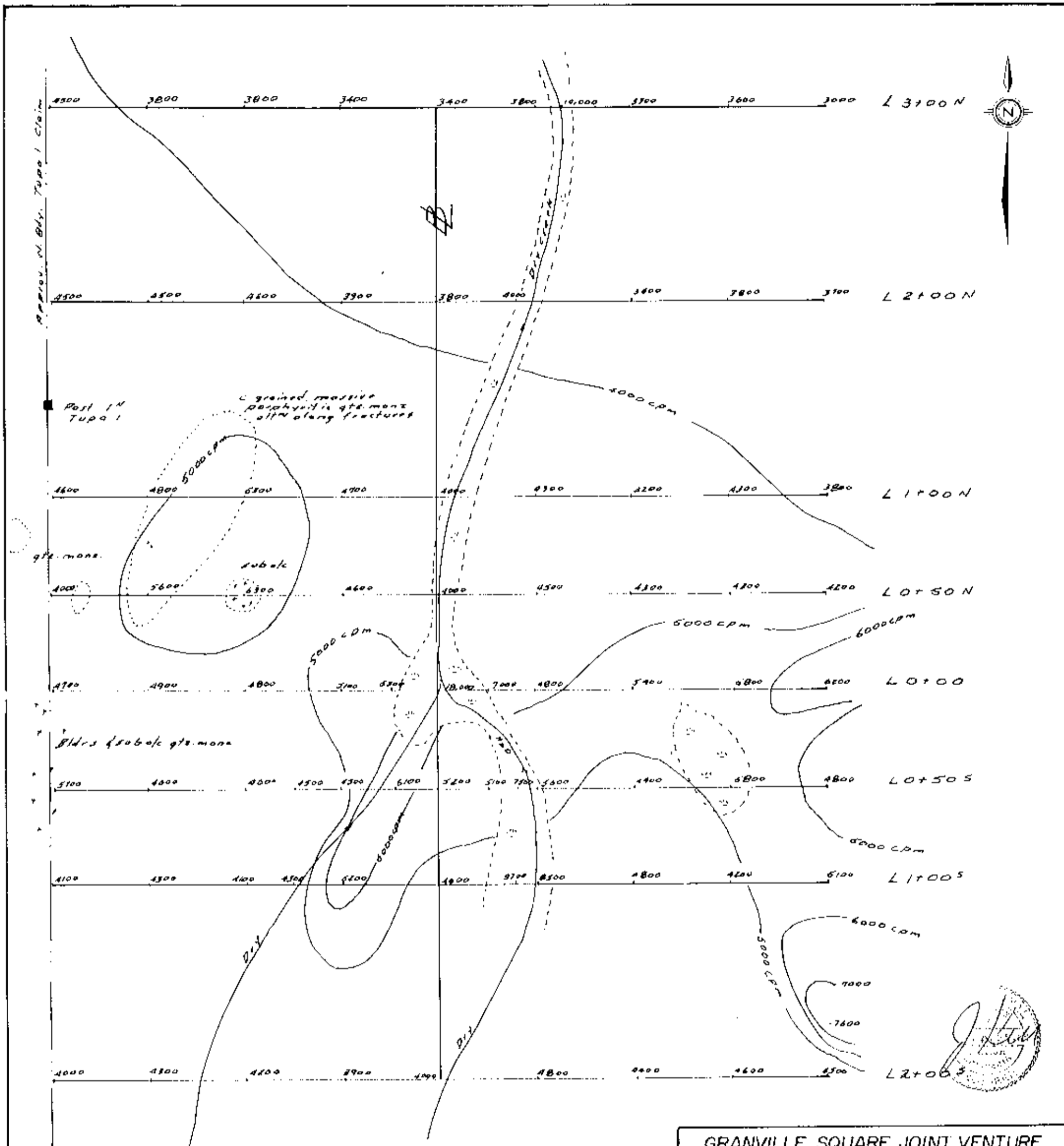
- Outcrop Area
- 2.8 2600** Sample Station
2.8 ppm U in soil
2600 cpm
- R(0.8)** Rock chip sample
0.8 ppm U
- Possibly Anomalous Contour 2.8-6.4 ppm U
- Probably Anomalous Contour 6.5-10.3 ppm U
- Definitely Anomalous Contour >10.3 ppm U
- 1/1** Assumed Geological Contact
 1. Surprise Lake Batholith
granite, qtz, monzonite
 2. Cache Creek Group
Argillite, gneiss
Limestone

J.K.K.

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
6908

GRANVILLE SQUARE JOINT VENTURE
TUPA CLAIM
(NORTHERN GRID)
GEOCHEMICAL, GEOLOGICAL
RADIOMETRIC PLAN

Tech Work by: Kerr Dawson Assoc Ltd.	Scale: 1:5,000	0 25 50 100m 150m
Drawn by: J.R.K.	Date: Sept. 1978	
Approved by: J.R. Kerr, P.Eng	Fig No 175 F 3	

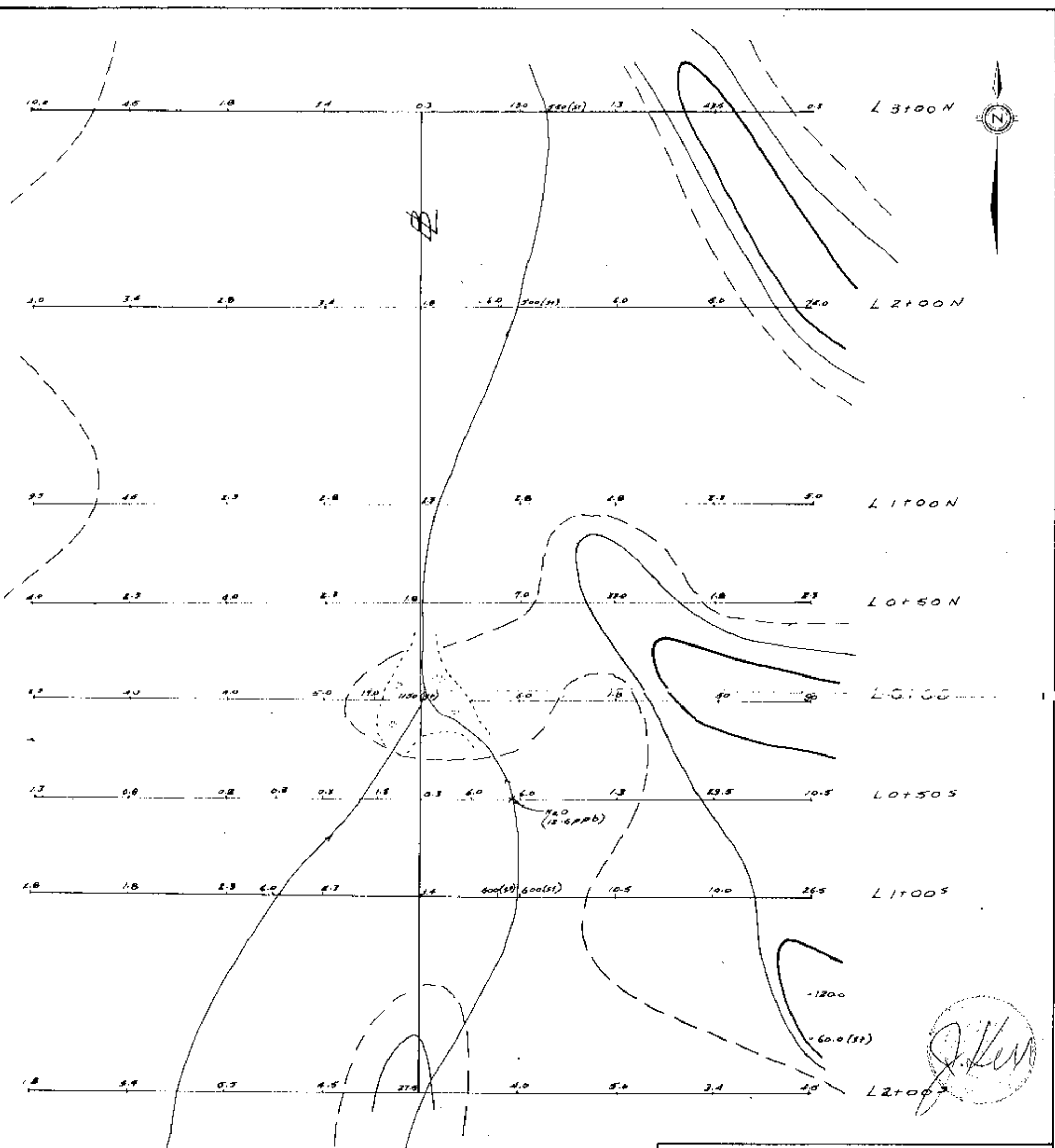


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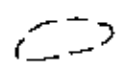

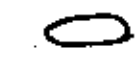
- Outcrop Area - SURPRISE LAKE BATHOLITH
Quartz Monzonite*
- Station (scintillometer rdg. (cpm)
M'Phar TV-1*
- Contour interval - 1000 cpm*
- Dry Swamp*

MINERAL RESOURCE BRANCH
ASSESSMENT REPORT
6908

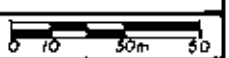
GRANVILLE SQUARE JOINT VENTURE	
TUPA CLAIM GEOLOGICAL PLAN & RADIOMETRIC SURVEY	
Tech Work by Kerr-Johnson Assoc. Ltd Drawn by J.H.K. Approved by J.H. Kerr, P.Eng.	Scale 1:2000 Date Sept, 1978 Fig No. 175 FA



LEGEND

-  Possibly Anomalous 8.5-24.1 ppm
-  Probably Anomalous 24.1-39.5 ppm
-  Definitely Anomalous >39.5 ppm

PART OF RESOURCES BRANCH
 GEOCHEMICAL UNIT
6908
 NO.

GRANVILLE SQUARE JOINT VENTURE	
TUPA CLAIM	
GEOCHEMICAL PLAN	
URANIUM DISTRIBUTION	
IN SOIL	
Tech Work by: Kerr, Dawson & Assoc. Ltd	Scale: 1:2000 
Drawn by: J.R.K.	Date: Sept, 1978.
Approved by: J.R. Kerr, P.Eng.	Fig No. 175-F 5