

REPORT ON 1977 FIELD PROGRAMME
HASL 1-88 CLAIMS

DAWSON MINING DISTRICT, Y.T.
CLAIM SHEETS 115 J/15, 115 O/2

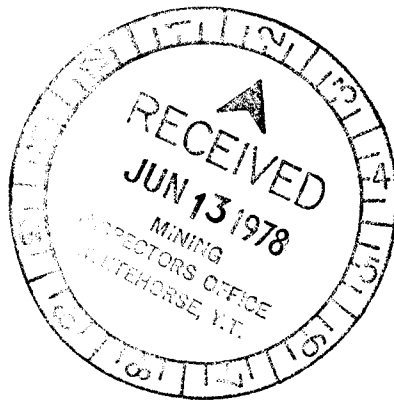
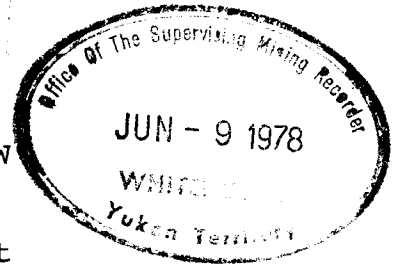
Lat. $62^{\circ}58'N$

Long. $138^{\circ}50'W$

November, 1977

W.J. Olsson


Geologist



090339

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

\$ 10,000.00


Assistant Geologist or
Resident Mining Engineer

Considered as representative work under
Section 53 (3) of the Quarries Mining Act

Commissioner of the _____

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1. - INTRODUCTION

1.1 - Location and Access

The Hasl property consists of Hasl 1-88 claims and is situated in the Dawson Range at the headwaters of Pedlar Creek (138°50'W long. 62°58'N lat.) in the Yukon Territory (NTS ref. 115 J/15, 115 O/2).

Access to the area is by all-weather gravel road to Minto and from there by float-equipped, fixed-wing aircraft to the mouth of Britannia Creek on the Yukon River. From that point, the property can be reached by helicopter. Approximately 40 kilometers to the southwest, an abandoned dirt airstrip is located adjacent to the Casino Mines porphyry copper deposit. Aircraft up to DC-3 in size have used this strip. The Hasl property is approximately equidistant (120 km) from the supply centers of Dawson, Mayo and Carmacks. An old winter road originating near Dawson, comes within 10 km of the northern perimeter of the property.

1.2 - Outcrop and Vegetation

The Dawson Range is an area of unglaciated mountain terrain. Outcrop exposure is less than 5%. Slopes are thickly covered with alder and poplar on the south faces with pine and thick moss covering the permafrost areas facing north. The area above tree line is heavily covered with buckbrush as are most of the stream valleys. Well used game trails are common along most creeks.

1.3 - Previous Work

The geology of the Pedlar Creek area is reported by D.J. Tempelman-Kluit in GSC Paper 73-41 entitled "Reconnaissance Geology of Aishihik Lake, Snag and part of Stewart River Map-Areas, West Central Yukon". The area is basically underlain by the Yukon Group - a term used to collectively refer to Precambrian and Paleozoic metamorphic rocks present in central Yukon. The rock units on the property consist of quartz-mica schist intermixed with gneiss and intruded by a small body of Cretaceous Granite (Coffee Creek Granite).

The schists and gneisses of the Yukon Group are metamorphosed to the upper green schist facies and have a well developed foliation. The age of these rocks is unknown but the unit was metamorphosed with other rocks and therefore is Paleozoic and/or older.

The Coffee Creek Granite is considered to be Cretaceous in age. Several bodies of this unit are found within the Snag map-area of the Yukon but the small granitic body located at the headwaters of Pedlar Creek was not detected by GSC field crews. The Coffee Creek Granite is homogeneous, massive, coarse-grained and equigranular. Equal amounts of smokey quartz and feldspar are present. Biotite comprises less than 5% of the unit and occurs as small euhedral flakes interstitial to the quartzo-feldspathic constituents.

2. - 1977 FIELD PROGRAMME

2.1 - Introduction

Reconnaissance work over the summer resulted in the staking of 88 mineral claims in 5 stages as results became available. A follow-up programme was initiated towards the end of the season to obtain information regarding the anomaly in order that a detailed programme for 1978 may be made.

Personnel involved with the initial phases of the work carried out were: Colin Riley, Senior Geologist, William Olsson, geologist, Eric Onasick, geologist and Jack Dennett, prospector. A Bell 47G3B helicopter on contract from Trans North Turbo Air Ltd., Whitehorse, was piloted by Ron Dennett.

The project was managed by Archer, Cathro and Associates, Consulting Geologists, under the supervision of A. Archer. The crew was mobilized from Carmacks by DHC-2 Beaver to the Casino airstrip. Accommodation in the vacated bunkhouse facilities was obtained through the permission of Ray McKarney.

Ground prospecting - sampling traverses were carried out by personnel equipped with either a Scintrex BGS-1L scintillometer or a McPhar TV-1A spectrometer. Water, stream sediment and soil samples were obtained on traverse and were submitted to Chemex Labs Ltd., in North Vancouver for analysis. Values for U, F, Mo, Cu and LOI

were obtained from soil and sediment samples while U, HCO_3 , SO_4 , and pH determinations were carried out on the water samples.

The uranium analysis for water were obtained by a standard fluorimetric method on an acidified, 100 ml sample. Values for uranium in soils were determined by a standard fluorimetric method on a .25 gm sample of ashed, double acidified, minus 80 mesh fraction. The Copper and molybdenum content of samples were obtained using atomic absorption spectrometry of a nitric perchloric extraction of a minus 80 mesh fraction.

TABLE I

Claim	Grant Number	Date Staked	Staker
Hasl 1-8	YA 10292-YA 10299	17 June 1977	E. Onasick
Hasl 9-16	YA 10397-YA 10404	25 July 1977	W.J. Olsson
Hasl 17-24	YA 10405-YA 10412	25 July 1977	E.Jensen
Hasl 25-32	YA 10513-YA 10520	22 Aug. 1977	R. Dennett
Hasl 33-40	YA 10521-YA 10528	22 Aug. 1977	H. Krueger
Hasl 41-48	YA 10551-YA 10558	12 Sept.1977	J. Dennett
Hasl 49-56	YA 10559-YA 10566	12 Sept.1977	R. Warner
Hasl 57-64	YA 10567-YA 10574	12 Sept.1977	M. Phillips
Hasl 65-72	YA 10575-YA 10582	12 Sept.1977	U. Schmidt
Hasl 73-80	YA 10583-YA 10590	12 Sept.1977	C. Riley
Hasl 81-88	YA 10744-YA 10751	19 Sept.1977	A. Archer

Airborne hound-dogging over anomalous areas was carried out utilizing a Scintrex 113 cubic inch crystal connected to a Scintrex GAD-4 spectrometer. The unit was mounted in the helicopter and was connected to a Fisher 2-channel chart recorder capable of recording any two of Th, U, K and total count.

Some water and stream sediment samples obtained during the first ground traverse on Pedlar were high in uranium content (304 ppb and .047% U308 respectively). These samples were obtained downstream from a drainage pattern which intersects Pedlar Creek at right angles. This feature is attributed to a fault and/or geological contact. Due to the apparent association of high uranium values in silts and waters to the cross cutting drainage feature, a total of 88 claims (HASL 1-88) were staked through the course of the summer. A list of the claims, their corresponding grant number, the dates on which they were staked and by whom is presented as Table I.

2.2 - Objectives

In early September, a three-man crew was sent into the Hasl claims to run a soil geochemistry and radiometric survey over as much of the claim group as was possible. The purpose was to obtain sufficient data that would localize targets and allow a detailed follow-up programme for 1978 to be designed.

2.3 - Logistics

Mobilization of men and equipment was to Britannia Creek by DHC-3 Otter, and to the campsite on Pedlar Creek by Bell 206-B helicopter. Logistical support was provided by Archer, Cathro and Associates while the work was carried out under the supervision of William Olsson, geologist. Jack Dennett and Rob Warner, prospectors, provided field assistance.

Two baselines were established by chaining (slope-corrected) and compass along the claim lines Hasl 1-8 - Hasl 33-40, and Hasl 8-16 - Hasl 25-31. Stations were located at 100 meter intervals from which cross-lines were run by topofil and compass. (When cross-lines were established between 24 00W and 35 00W, personnel noticed the presence of a magnetic anomaly which tended to skew some of the lines.) Soil samples and radiometric readings were taken along these lines at 100 m and 25 m spacings, respectively. Rock chips were obtained from the C-horizon at over 90% of the soil stations sampled. These chips are to provide a nucleus for establishing a preliminary geological map of the area.

2.4 - Geophysics - Radiometric

A scintillometer survey was carried out in conjunction with a geochemical survey. Readings were taken at 25 meter intervals using for the most part, Scintrex BGS-IL's. Near the completion of the survey, one of the

Scintrex units began to read erratically. Its use was discontinued and a SRAT SPP-2 scintillometer was used. Generally, the SPP-2 readings were 30-40 cps higher than those of the Scintrex units. This did not appear to interfere with the overall results. (SPP-2 readings were obtained along 29 + 00W (19 + 00S-28 + 00S), 27 + 00W (19 + 00S-28 + 00S), and 28 + 00W (19 + 00S-28 + 00S)). Due to the uncertainty of the operation of one of the BGS-1L's, data from 33 + 00W to 37 + 00W between 15 + 00S and 19 + 00S is questionable. (It is felt the readings in this area are 40-60 cps too low.)

2.5 - Geochemistry - Soils

Soil samples were taken at 100 metre spacings along the cross lines, with a total of 467 samples obtained. Soil cover varied from 15 cm to over 1m thick. The organic content of the samples tends to be high for those obtained on north facing slopes (perma-frost covered) and in areas influenced by stream sediments. The southern exposed slopes are generally sandy with little or no obvious organic content to them.

All samples were submitted to Chemex Labs Ltd. in North Vancouver, B.C. for uranium analysis by x-ray fluorescence. The lower detection limit of the method is .5 ppm U while the upper limit is 400 ppm U. Samples greater than 400 ppm U were automatically submitted for chemical analysis. Copies of the sample number with the analytical result is submitted as Appendix "A".

3. - RESULTS

3.1 - Geophysics - Radiometric

The radiometric survey data, when contoured delineated several trends to the basement around the west end of the Hasl Grid. Contour intervals were arbitrarily set based on observations in the field. They are as follows:

0 - 50 cps
50 - 100 cps
100 - 150 cps
150 - 200 cps
200 cps

On first glance, the plotted data indicates a "radioactive high" in the upper 2/3's of the grid area and a low to the south. Examination of rock chips obtained during the geochemical sampling of the grid has shown the interface between the radioactive high and low areas corresponds to the contact between a body of Coffee Creek Granite and a gneiss-schist complex belonging to the Yukon Group. The radiometric low situated north of 19 + 00S between 32 + 00W and 37 + 00W has been attributed to erratic readings experienced with one of the BGS-1L units. The "tongue-like" feature at the north corner of the grid is due to underlying rocks of the Yukon Group.

Threshold values for the Yukon Group rocks are considered to be 75 cps while that for the Coffee Creek Granite are 130 cps.

There are no positive anomalies within the Yukon Group but several areas of low radioactivity are due to thick, moss-covered, perma-frost zones. Some radioactive highs are present associated with streams. These will be dealt with separately.

The contour map of data obtained from the granitic body has a distinctive south-east to north-west trend. This trend probably reflects the drainage pattern within the area. It may also be indicative of structure within the bedrock. A shear zone trending north-west to south-east and dipping 80° to the west was observed along line 45 00W at station 23 35S. Radioactivity in the shear zone, peaked at 300 cps.

There are numerous radioactive high areas on the grid. Most of them are related to seepage anomalies found associated with the drainage systems in the area. There are, however, some areas that are not related to a drainage system. The anomalies at the following locations are considered the most important: (21 + 00W, 20 + 00S), (22 + 00W, 18 + 00S), (22 + 00W, 22 + 00S), (36 + 00W, 20 + 00S).

Locations of anomalies which seem to be related to seepage are: (21 + 00W, 24 + 50S), (24 + 00W, 19 + 50S), (24 + 00W, 22 + 00S), (37 + 00W, 21 + 75S), (37 + 00W, 26 + 75S), (37 + 00W, 28 + 00S), (37 + 00W, 30 + 00S), (38 + 00W, 25 + 50S), (42 + 00W, 27 + 50S).

3.2 - Geochemistry - Soil

The geochemical data was contoured using the following intervals:

.5 ppm U	
.5 ppm U - 5 ppm U	mean value at 3.8 ppm U
5 ppm U - 10 ppm U	threshold value at 5 ppm U
7 ppm U	

A statistical evaluation of the data produced contour values within a similar range. (See Appendix "B").

An immediate step was to compare the geochemical and radiometric data. Detection limits of the geochemical analytical technique did not allow discrimination between the granite and enclosing schists but there is a good correspondence between radiometric and geochemical anomalies.

Of significance is the weak soil anomaly between 30 + 00W and 32 + 00W south of 29 + 00S. All the other data obtained from the Yukon Group returned analyses of less than .5 ppm U (ignoring those anomalies that occurred in the streams). Therefore, this area requires further investigation.

Several strong anomalies (ie. (42 + 00W, 28 + 00S), (44 + 00W, 20 + 00S), (35 + 00W 25 + 00S), (37 + 00W, 28 + 00S), (36 + 00W 33 + 00S), (25 + 00W 17 + 00S), (24 + 00W, 21 + 00S)) are present on the Hasl grid. They are all attributed to seepage with concentrations of uranium

occurring in organic-rich silts. There are however, two significant anomalies which cannot be directly attributed to drainage pattern. They are at (27 + 00W, 22 + 00S) and at (22 + 00W, 17 + 00S). It is important to note that there is a corresponding radiometric anomaly related to the area around (22 + 00W 17 + 00S).

The widely dispersed zone bounded by 31 + 00W and 37 + 00W between 15 + 00S and 27 + 00S is attributed to organic enrichening of uranium in the heavily moss-covered north slope.

3.3 - Discussion

The sharpest anomalies obtained from both the radiometric and the geochemical survey coincide with major or significant drainage systems at a place where the drainage system crosses the granite-gneiss contact. In these areas there are corresponding geochemical and radiometric anomalies with the geochemical anomalies the more dispersed of the two. Elsewhere, there are locations outside the influence of drainage pattern that have radiometric anomalies and no geochemical anomalies. Similarly there are stations with geochem anomalies and no radiometric anomalies. There is only one location outside of the streams that has a strong radiometric and geochemical anomaly. This is at station (22 + 00W, 17 + 00S).

The full effect of permafrost on geochemical and radiometric surveys for uranium is not fully understood. Obvious trends of radiometric data over permafrost areas suggest some merit to the technique. Geochemical

anomalies over similar areas are not as evident and the presence of permafrost plus the high organic nature of the moss cover may tend to inhibit the true pattern of the geochemical nature of the bedrock.

4. - CONCLUSIONS

Based on work done on the Hasl claims in 1977, the following conclusions are made:

1. A radiometric survey in the Dawson Range can differentiate granite bodies from older gneisses and schists.
2. Most of the radiometric and geochemical anomalies detected on the Hasl Grid can be partially attributed to organic enrichment in the silts.
3. Additional geochemical and geophysical studies must be carried out to appriase the full effect of permafrost on the data obtained.
4. The geochemical and radiometric anomalies on the Hasl Grid are spatially related to the Coffee Creek Granite - Yukon Group contact.

5. - RECOMMENDATIONS

Recommendations based on the above discussions and conclusions are:

1. The geochemical-radiometric survey over the Hasl Grid be extended to cover the entire claim block.
2. All radiometric and geochemical anomalies be investigated further with areas which has both a geochemical and radiometric anomaly of prime importance.
3. Additional geochemistry be carried out to further assess the influence of permafrost on the geochemical cycle.

W.J. Olsson

APPENDIX A

Certificate of Analysis, Chemex Labs Ltd.
for HASL Grid



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

ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

Client: Archer Cathro & Assoc. Ltd.,
1016 - 510 W. Hastings St.,
Vancouver, B.C.

CERTIFICATE NO. 42196
INVOICE NO. 22212
RECEIVED Sept. 28/77
ANALYSED Oct. 6/77

MPLE NO. :	'EYP' PPM Uranium
H 13503	<0.5 ✓
13504	1.0 ✓
13505	0.5 ✓
13506	<0.5 ✓
13507	0.5 ✓
13508	1.0 ✓
13509	1.0 ✓
13510	0.5 ✓
13511	1.0 ✓
13512	0.5 ✓
13513	2.5 ✓
13514	2.0 ✓
13515	4.0 ✓
13516	6.0 ✓
13517	4.0 ✓
13518	1.0 ✓
13519	3.0 ✓
13520	2.0 ✓
13521	2.0 ✓
13522	2.0 ✓
13523	1.5 ✓
13524	1.0 ✓
13525	4.6 ✓
13526	<0.5 ✓
13527	1.0 ✓
13528	16 ✓
13529	4.6 ✓
13530	1.0 ✓
13531	<0.5 ✓
13532	1.5 ✓
13533	0.5 ✓
13534	2.0 ✓
13535	<0.5 ✓
13536	<0.5 ✓
13537	<0.5 ✓
13538	1.8 ✓
13539	4.0 ✓
13540	10 ✓
13541	11 ✓
H 13542	1.5 ✓
Std.	19



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CERTIFICATE NO. 42195
 INVOICE NO. 22212
 RECEIVED Sept. 28/77
 ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM Uranium
H 13463	<0.5 ✓
13464	<0.5 ✓
13465	<0.5 ✓
13466	0.5 ✓
13467	1.0 ✓
13468	<0.5 ✓
13469	<0.5 ✓
13470	0.5 ✓
13471	<0.5 ✓
13472	<0.5 ✓
13473	<0.5 ✓
13474	<0.5 ✓
13475	2.0 ✓
13476	0.5 ✓
13477	1.0 ✓
13478	<0.5 ✓
13479	<0.5 ✓
13480	<0.5 ✓
13481	<0.5 ✓
13482	<0.5 ✓
13483	<0.5 ✓
13484	<0.5 ✓
13485	<0.5 ✓
13486	<0.5 ✓
13487	21 ✓
13488	<0.5 ✓
13489	<0.5 ✓
13490	<0.5 ✓
13491	<0.5 ✓
13492	<0.5 ✓
13493	<0.5 ✓
13494	<0.5 ✓
13495	<0.5 ✓
13496	<0.5 ✓
13497	<0.5 ✓
13498	<0.5 ✓
13499	<0.5 ✓
13500	<0.5 ✓
13501	<0.5 ✓
H 13502	<0.5 ✓
Std.	21



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CERTIFICATE NO. 42194
 INVOICE NO. 22212
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 ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM Uranium
H 13423	<0.5 ✓
13424	<0.5 ✓
13425	<0.5 ✓
13426	<0.5 ✓
13427	1.0 ✓
13428	1.0 ✓
13429	<0.5 ✓
13430	0.5 ✓
13431	2.0 ✓
13432	<0.5 ✓
13433	<0.5 ✓
13434	<0.5 ✓
13435	<0.5 ✓
13436	<0.5 ✓
13437	<0.5 ✓
13438	<0.5 ✓
13439	<0.5 ✓
13440	<0.5 ✓
13441	<0.5 ✓
13442	<0.5 ✓
13443	<0.5 ✓
13444	<0.5 ✓
13445	<0.5 ✓
13446	<0.5 ✓
13447	<0.5 ✓
13448	<0.5 ✓
13449	5.5 ✓
13450	1.0 ✓
13451	4.0 ✓
13452	1.0 ✓
13453	<0.5 ✓
13454	0.5 ✓
13455	1.0 ✓
13456	4.0 ✓
13457	0.5 ✓
13458	5.5 ✓
13459	0.5 ✓
13460	1.0 ✓
13461	<0.5 ✓
H 13462	<0.5 ✓
Std.	18



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CERTIFICATE NO. 42192
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 RECEIVED Sept. 28/77
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ATTN: 'EYP'

SAMPLE NO. :	PPM Uranium
H 13321	<0.5 ✓
13322	<0.5 ✓
13323	<0.5 ✓
13324	<0.5 ✓
13325	<0.5 ✓
13326	<0.5 ✓
13327	<0.5 ✓
13328	<0.5 ✓
13329	<0.5 ✓
13330	<0.5 ✓
13331	55 ✓
13332	<0.5 ✓
13333	<0.5 ✓
13334	7.0 ✓
13335	<0.5 ✓
13336	<0.5 ✓
13337	<0.5 ✓
13338	<0.5 ✓
13339	<0.5 ✓
13340	<0.5 ✓
13341	<0.5 ✓
13342	<0.5 ✓
13343	<0.5 ✓
13344	<0.5 ✓
13345X	>400 ✓ <i>0.056% U3O8</i>
13346	2.0 ✓
13347	3.0 ✓
13348	1.0 ✓
13349	3.0 ✓
13350	<0.5 ✓
13351	8.0 ✓
13352	8.0 ✓

CERTIFICATE OF ASSAY

TO: Archer Cathro & Assoc. Ltd.,
 1016 - 510 W. Hastings St.,
 Vancouver, B.C.

CERTIFICATE NO. 33121
 INVOICE NO. 22469
 RECEIVED October 6, 1977
 ANALYSED October 31, 1977

ATTN: V6B 1L8

EYP

SAMPLE NO. :	%	WASL GMD
H 13345X	0.056	



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CERTIFICATE NO. 42191
 INVOICE NO. 22212
 RECEIVED Sept. 28/77
 ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM Uranium
H 13281	1.0 ✓
13282	<0.5 ✓
13283	<0.5 ✓
13284	<0.5 ✓
13285	<0.5 ✓
13286	<0.5 ✓
13287	<0.5 ✓
13288	<0.5 ✓
13289	<0.5 ✓
13290	<0.5 ✓
13291	<0.5 ✓
13292	<0.5 ✓
13293	<0.5 ✓
13294	<0.5 ✓
13295	<0.5 ✓
13296	<0.5 ✓
13297	<0.5 ✓
13298	<0.5 ✓
13299	<0.5 ✓
13300	<0.5 ✓
13301	<0.5 ✓
13302	<0.5 ✓
13303	<0.5 ✓
13304	<0.5 ✓
13305	<0.5 ✓
13306	<0.5 ✓
13307	<0.5 ✓
13308	<0.5 ✓
13309	<0.5 ✓
13310	<0.5 ✓
13311	<0.5 ✓
13312X	0.5 ✓
13313	7.0 ✓
13314	<0.5 ✓
13315	<0.5 ✓
13316	1.0 ✓
13317	1.0 ✓
13318	<0.5 ✓
13319	240 ✓
H 13320	<0.5 ✓
	19



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CERTIFICATE NO. 42190
 INVOICE NO. 22212
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 ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM Uranium
H 13241	1.0 ✓
13242	2.0 ✓
13243	1.0 ✓
13244	<0.5 ✓
13245	2.0 ✓
13246	8.0 ✓
13247	1.5 ✓
13248	1.0 ✓
13249	16 ✓
13250	<0.5 ✓
13251	<0.5 ✓
13252	<0.5 ✓
13253	1.0 ✓
13254	1.0 ✓
13255	1.0 ✓
13256	2.0 ✓
13257	<0.5 ✓
13258	1.0 ✓
13259	4.5 ✓
13260	1.0 ✓
13261	<0.5 ✓
13262	1.0 ✓
13263	2.0 ✓
13264	<0.5 ✓
13265	<0.5 ✓
13266	2.0 ✓
13267	1.0 ✓
13268	<0.5 ✓
13269	<0.5 ✓
13270	<0.5 ✓
13271	<0.5 ✓
13272	<0.5 ✓
13273	<0.5 ✓
13274	<0.5 ✓
13275	1.0 ✓
13276	<0.5 ✓
13277	0.5 ✓
13278	<0.5 ✓
13279	<0.5 ✓
H 13280	0.5 ✓
Std.	20



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CHEMEX LABS LTD.

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

ANALYTICAL CHEMISTS GEOCHEMISTS REGISTERED ASSAYERS

CERTIFICATE OF ANALYSIS

TO: Archer Cathro & Assoc. Ltd.,
 1016 - 510 W. Hastings St.,
 Vancouver, B.C.

CERTIFICATE NO. 42189
 INVOICE NO. 22212
 RECEIVED Sept. 28/77
 ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM
	Uranium <i>MSL</i>
H 13201S	>400 ← <i>.068</i>
13202	3.0 ✓
13203	0.5 ✓
13204	<0.5 ✓
13205	2.0 ✓
13206	1.5 ✓
13207	<0.5 ✓
13208	<0.5 ✓
13209	3.0 ✓
13210	1.5 ✓
13211	4.0 ✓
13212	3.0 ✓
13213	2.0 ✓
13214	<0.5 ✓
13215	2.5 ✓
13216	<0.5 ✓
13217	13 ✓
13218	<0.5 ✓
13219	<0.5 ✓
13220	30 ✓
13221	1.0 ✓
13222	1.5 ✓
13223	<0.5 ✓
13224	4.5 ✓
13225	1.0 ✓
13226	0.5 ✓
13227	0.5 ✓
13228	0.5 ✓
13229	<0.5 ✓
13230	5.0 ✓
13231	<0.5 ✓
13232	19 ✓
13233	2.5 ✓
13234X	1.5 ✓
13235	3.5 ✓
13236	1.0 ✓
13237	1.0 ✓
13238	3.0 ✓
13239	1.5 ✓
H 13240	1.5 ✓
Std.	21



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CERTIFICATE OF ANALYSIS

TO: Archer Cathro & Assoc. Ltd.,
 1016 - 510 W. Hastings St.,
 Vancouver, B.C.

CERTIFICATE NO. 42188
 INVOICE NO. 22212
 RECEIVED Sept. 28/77
 ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM
	Uranium
H 13161S	1.5 ✓
13162S	2.5 ✓
13163S	2.0 ✓
13164S	<0.5 ✓
13165S	0.5 ✓
13166S	<0.5 ✓
13167	<0.5 ✓



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CERTIFICATE OF ASSAY

TO: Archer Cathro & Assoc. Ltd.,
 1016 - 510 W. Hastings St.,
 Vancouver, B.C.

CERTIFICATE NO. 33115
 INVOICE NO. 22469
 RECEIVED October 5, 1977
 ANALYSED October 31, 1977

ATTN: W6B 1L8

EYP

SAMPLE NO. :	%
	U ₃ O ₈
H 13134X	0.110 <i>FMSC GMP</i>
H 13201S	0.068

H
St



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CERTIFICATE OF ANALYSIS

TO: Archer Cathro & Assoc. Ltd.,
 1016 - 510 W. Hastings St.,
 Vancouver, B.C.

CERTIFICATE NO. 42187
 INVOICE NO. 22212
 RECEIVED Sept. 28/77
 ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM Uranium
H 13121S	<0.5 ✓
13122S	<0.5 ✓
13123S	<0.5 ✓
13124B	<0.5 ✓
13125S	<0.5 ✓
13126S	<0.5 ✓
13127S	<0.5 ✓
13128S	<0.5 ✓
13129S	8.0 ✓
13130S	<0.5 ✓
13131S	2.0 ✓
13132S	<0.5 ✓
13133S	<0.5 ✓
13134X	>400 ← .110 %
13135S	4.5 ✓
13136S	<0.5 ✓
13137S	<0.5 ✓
13138S	<0.5 ✓
13139S	<0.5 ✓
13140S	<0.5 ✓
13141S	<0.5 ✓
13142S	<0.5 ✓
13143S	1.0 ✓
13144S	<0.5 ✓
13145S	<0.5 ✓
13146S	0.5 ✓
13147S	<0.5 ✓
13148S	<0.5 ✓
13149S	0.5 ✓
13150S	<0.5 ✓
13151S	1.5 ✓
13152S	1.0 ✓
13153S	13 ✓
13154S	1.0 ✓
13155S	<0.5 ✓
13156S	<0.5 ✓
13157S	<0.5 ✓
13158S	<0.5 ✓
13159	0.5 ✓
H 13160S	250 ✓
Std.	21



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TO: Archer Cathro & Assoc. Ltd.,
 1016 - 510 W. Hastings St.,
 Vancouver, B.C.

CERTIFICATE NO. 42186

INVOICE NO. 22212

RECEIVED Sept. 28/77

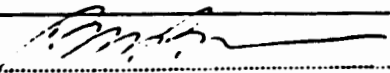
ATTN: 'EYP'

ANALYSED Oct. 6/77-

SAMPLE NO. :	PPM Uranium
H 13081S	1.5 ✓
13082S	<0.5 ✓
13083	1.0 ✓
13084S	1.0 ✓
13085S	1.5 ✓
13086S	1.5 ✓
13087S	0.5 ✓
13088S	<0.5 ✓
13089S	15 - ✓
13090S	1.5 ✓
13091S	6.5 ✓
13092S	3.0 ✓
13093S	8.5 ✓
13094S	0.5 ✓
13095S	2.0 ✓
13096S	<0.5 ✓
13097S	<0.5 ✓
13098S	14 - ✓
13099S	<0.5 ✓
13100S	<0.5 ✓
13101S	2.0 ✓
13102S	0.5 ✓
13103S	<0.5 ✓
13104S	2.0 ✓
13105S	2.5 ✓
13106S	0.5 ✓
13107S	0.5 ✓
13108S	<0.5 ✓
13109S	0.5 ✓
13110S	<0.5 ✓
13111S	<0.5 ✓
13112S	<0.5 ✓
13113S	<0.5 ✓
13114S	9.5 - ✓
13115S	<0.5 ✓
13116S	0.5 ✓
13117S	<0.5 ✓
13118S	<0.5 ✓
13119S	<0.5 ✓
H 13120S	1.0 - ✓
Std.	18



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AREA CODE: 604
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TO: Archer Cathro & Assoc. Ltd.,
1016 - 510 W. Hastings St.,
Vancouver, B.C.

CERTIFICATE NO. 42185
INVOICE NO. 22212
RECEIVED Sept. 28/77
ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM Uranium
H 13041S	<0.5 ✓
13042S	<0.5 ✓
13043S	<0.5 ✓
13044S	<0.5 ✓
13045S	<0.5 ✓
13046S	<0.5 ✓
13047S	<0.5 ✓
13048S	<0.5 ✓
13049S	1.0 ✓
13050S	<0.5 ✓
13051S	<0.5 ✓
13052S	<0.5 ✓
13053S	<0.5 ✓
13054S	<0.5 ✓
13055S	<0.5 ✓
13056S	<0.5 ✓
13057S	<0.5 ✓
13058S	<0.5 ✓
13059S	<0.5 ✓
13060S	<0.5 ✓
13061S	<0.5 ✓
13062S	<0.5 ✓
13063S	<0.5 ✓
13064S	<0.5 ✓
13065S	<0.5 ✓
13066S	1.5 ✓
13067S	<0.5 ✓
13068S	<0.5 ✓
13069S	<0.5 ✓
13070S	<0.5 ✓
13071S	<0.5 ✓
13072S	<0.5 ✓
13073S	<0.5 ✓
13074S	<0.5 ✓
13075S	1.5 ✓
13076S	<0.5 ✓
13077S	0.5 ✓
13078S	1.5 ✓
13079S	1.0 ✓
H 13080S	<0.5 ✓
Std.	21



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

ANALYTICAL CHEMISTS

CERTIFICATE OF ANALYSIS

TO: Archer Cathro & Assoc. Ltd.,
 1016 - 510 W. Hastings St.,
 Vancouver, B.C.

HASL grid

120 *unc*
 CERTIFICATE NO. 42184
 INVOICE NO. 22212
 RECEIVED Sept. 28/77
 ANALYSED Oct. 6/77

ATTN: 'EYP'

SAMPLE NO. :	PPM Uranium
H 13001 ✓	380 — ✓
13002S ✓	380 —
13003S ✓	400 —
13004S ✓	0.5 ✓
13005 ✓	<0.5 ✓
13006S ✓	<0.5 ✓
13007S	<0.5 ✓
13008S	<0.5 ✓
13009X	<0.5 ✓
13010S	<0.5 ✓
13011S	<0.5 ✓
13012S	<0.5 ✓
13013	<0.5 ✓
13014S	280 — ✓
13015S	1.0 ✓
13016S	<0.5 ✓
13017S	<0.5 ✓
13018S	<0.5 ✓
13019S	<0.5 ✓
13020S	<0.5 ✓
13021S	<0.5 ✓
13022S	<0.5 ✓
13023S	<0.5 ✓
13024S	<0.5 ✓
13025S	<0.5 ✓
13026S	<0.5 ✓
13027S	<0.5 ✓
13028S	<0.5 ✓
13029S	<0.5 ✓
13030S	<0.5 ✓
13031S	<0.5 ✓
13032S	<0.5 ✓
13033S	<0.5 ✓
13034S	<0.5 ✓
13035S	<0.5 ✓
13036S	<0.5 ✓
13037S	<0.5 ✓
13038S	<0.5 ✓
13039S	<0.5 ✓
H 13040S	<0.5 ✓
Std.	19



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APPENDIX B

A Statistical Evaluation of Geochemical Data,
HASL Grid, Yukon Territory

APPENDIX B

A Statistical Analysis of Geochemical Data, Hasl Grid, Yukon Territory

No. Samples = N = 467
Mean of Samples = \bar{x} = 3.80 ppm
Standard Deviation = σ = 1.05

$\bar{x} + 2\sigma$ = 5.90 threshold
 $\bar{x} + 3\sigma$ = 6.95 possibly anomalous
 $\bar{x} + 4\sigma$ = 8.00 probably anomalous
 $\bar{x} + 5\sigma$ = 9.05 definitely anomalous

NB: Any data over 100 ppm U was not included in the above calculations due to their obvious anomalous nature. Any data reported as <.5ppm U was given an arbitrary value of .2ppm U for this calculation.

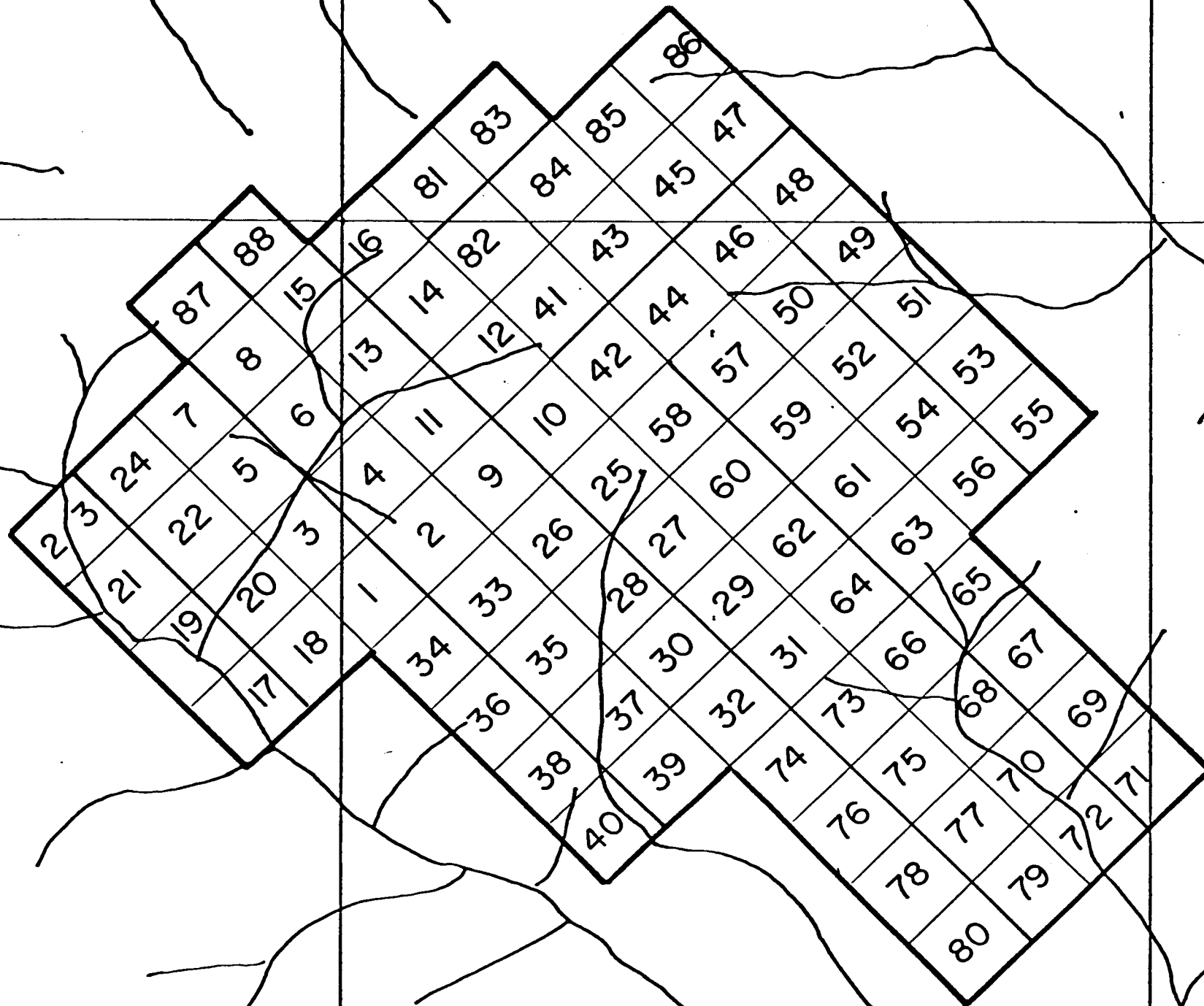


FIG. 2

PROJECT 522
 Pedlar Showing
 (HASL 1-88 Claims)

SCALE 1"=1/2 MILE

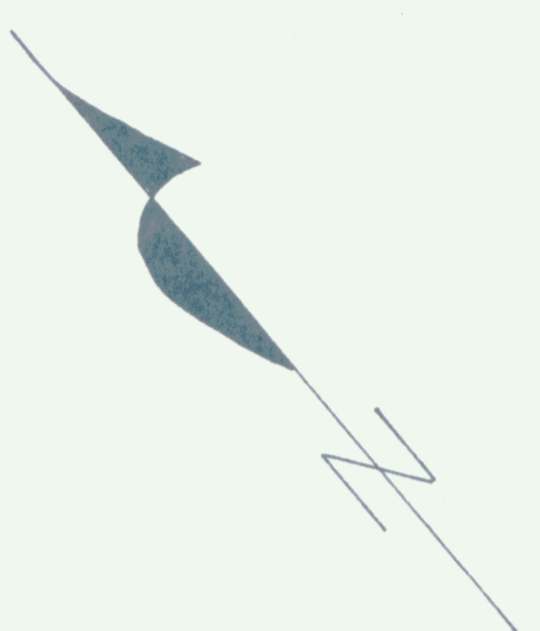


FIG. 3

PROJECT 522
Pedlar Showing
(HASL 1-88 Claims)

HASL GRID AREA

SCALE 1" = 1/2 MILE



LEGEND

- BASELINE
- SAMPLE LOCATION
- STREAM
- CLAIM POSTS
- X CAMP LOCATION

FIG. 4

PROJECT 522
 HASL GRID
 Yukon Territory
 RELIEF - DRAINAGE MAP
 CONTOUR INTERVAL 100 FEET
 SCALE: 1:5000
 SEPT. 1977

46W 45W 44W 43W 42W 41W 40W 39W 38W 37W 36W 35W 34W 33W 32W 31W 30W 29W 28W 27W 26W 25W 24W 23W 22W 21W

15S
16S
17S
18S
19S
20S
21S
22S
23S
24S
25S
26S
27S
28S
29S
30S
31S
32S
33S

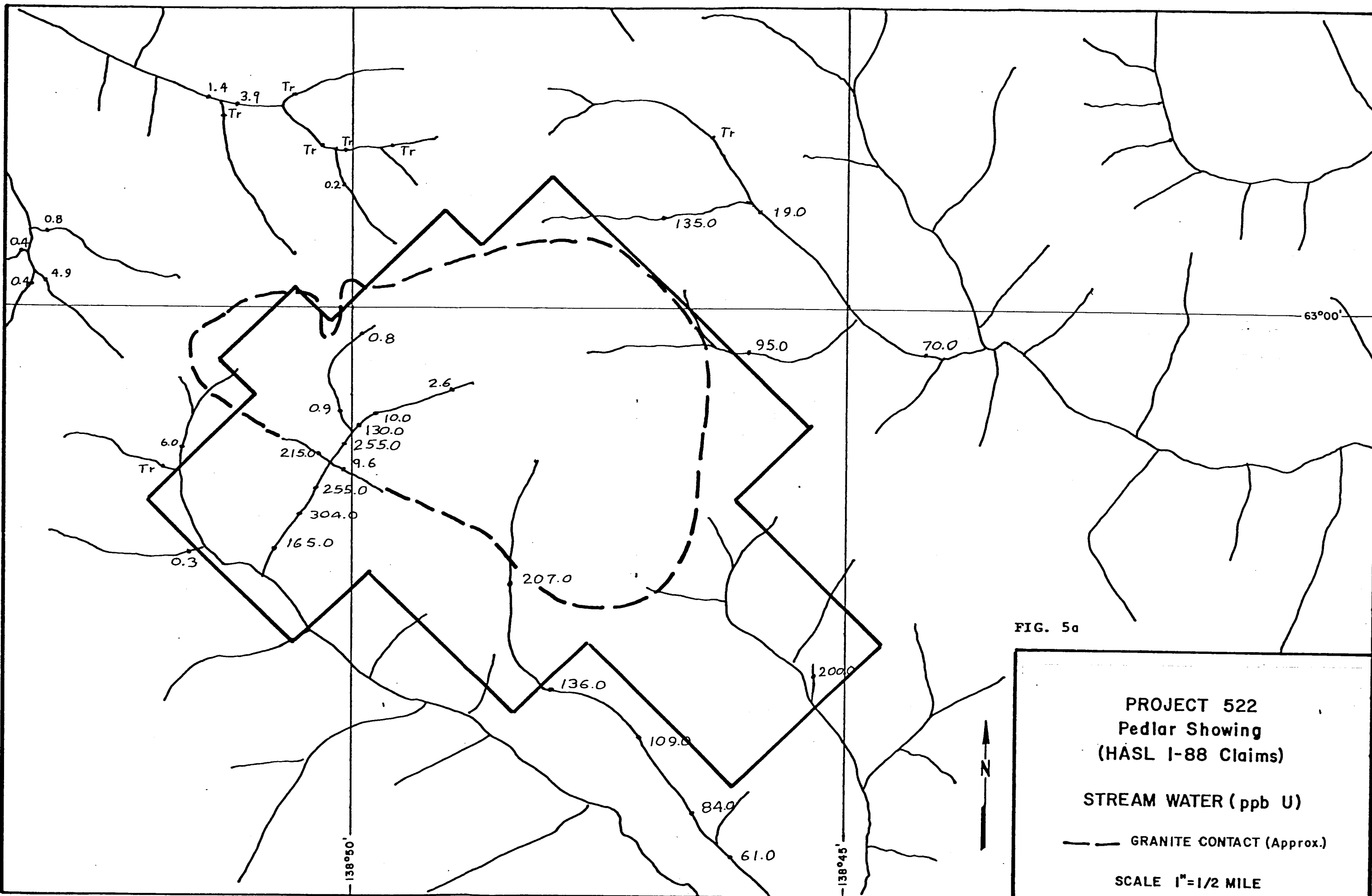


FIG. 5a

PROJECT 522
Pedlar Showing
(HASL I-88 Claims)

STREAM WATER (ppb U)

— — — GRANITE CONTACT (Approx.)

SCALE 1"=1/2 MILE



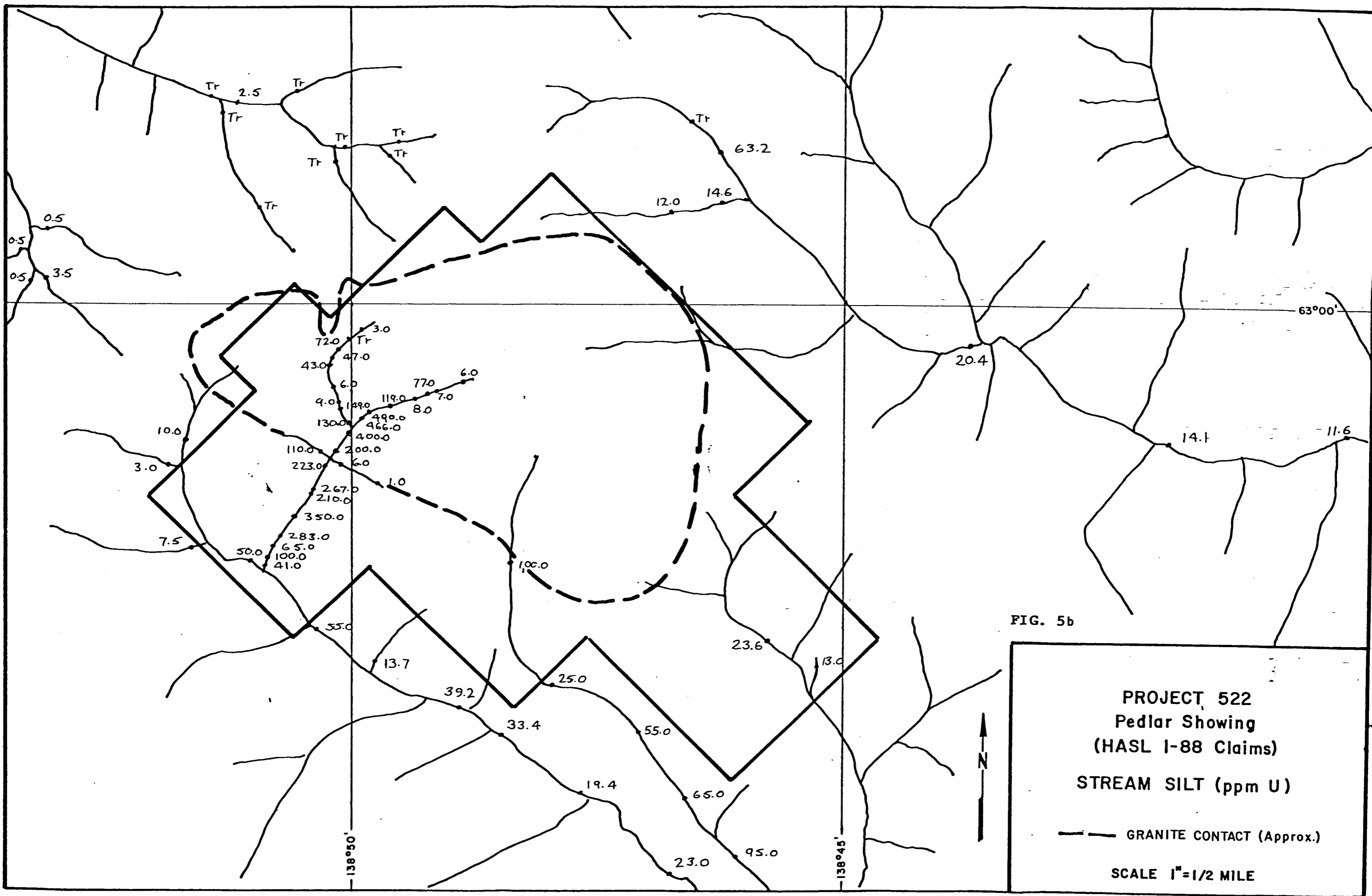
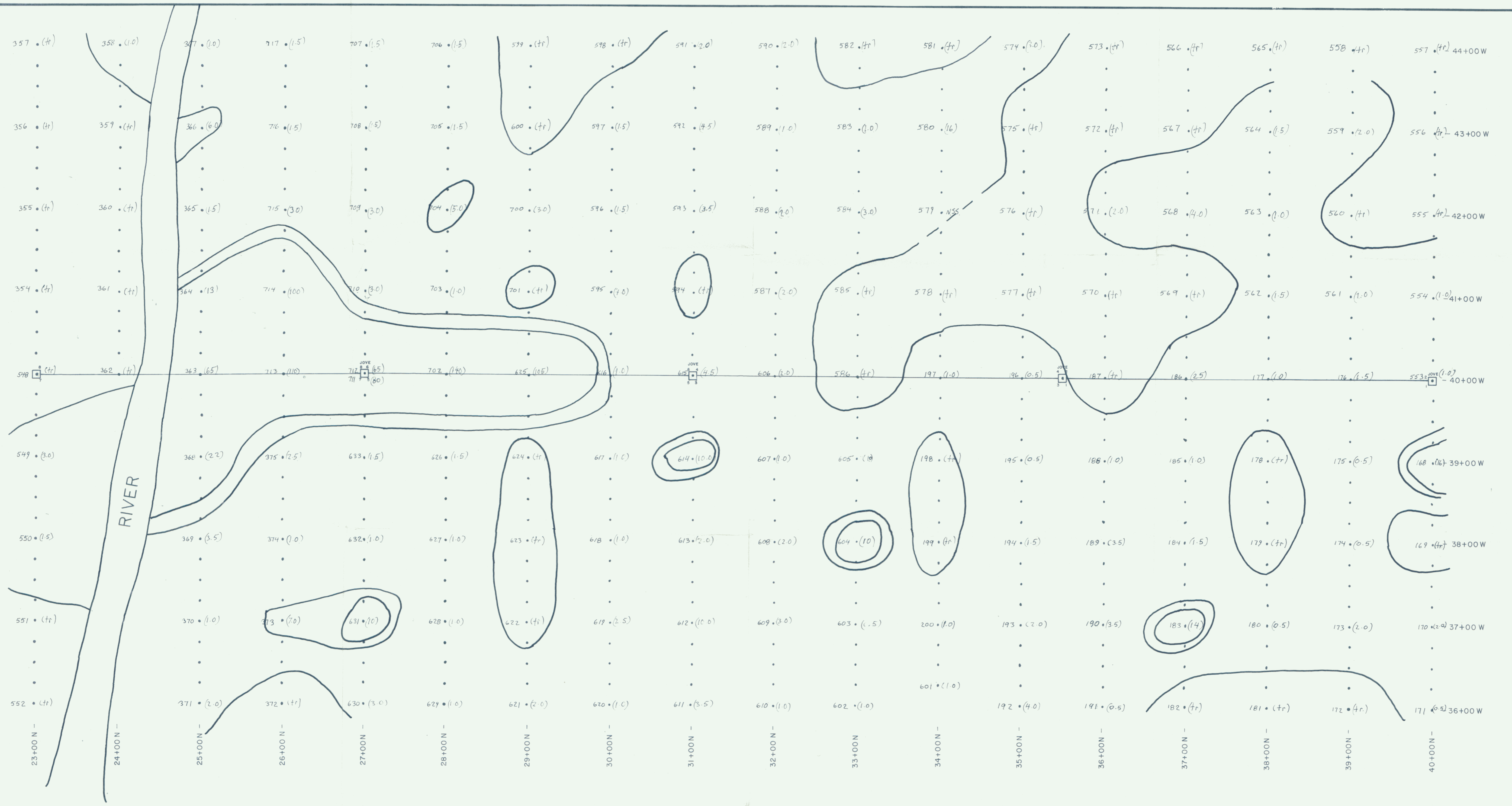


FIG. 5b

PROJECT 522
 Pedlar Showing
 (HASL 1-88 Claims)
 STREAM SILT (ppm U)

— GRANITE CONTACT (Approx.)

SCALE 1" = 1/2 MILE



GEOCHEMICAL CONTOURS

- < .5 ppm U
- .5 - 5 ppm U
- 5 - 10 ppm U
- > 10 ppm U

LEGEND

- baseline
- claim posts
- 199 sample number
- (1.0) sample value (ppm U)

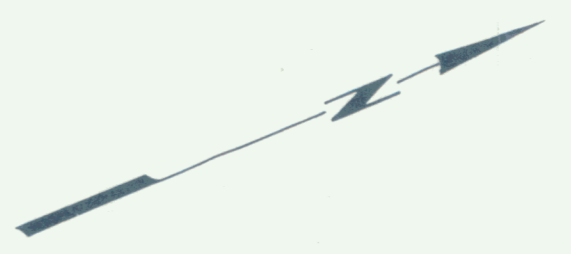


FIG. 6

PROJECT 522
 JOVE GRID
 Yukon Territory
 GEOCHEMISTRY - SOILS
GEOPHYSICS - Radiometric
 SCALE 1:2,500



CONTOUR INTERVAL
 TR - .5 ppm U
 .5 - 5 ppm U
 5 - 10 ppm U
 > 10 ppm U

- LEGEND
- BASELINE
 - SAMPLE LOCATION
 - ~ STREAM
 - CLAIM POSTS
 - 157. SAMPLE NUMBER
 - (1.5) SAMPLE VALUE (ppm U)
 - X CAMP LOCATION

FIG. 7

PROJECT 522
 HASL GRID
 Yukon Territory
 GEOCHEMISTRY - SOILS

SCALE: 1:5000

SEPT. 1977

46 W 45 W 44 W 43 W 42 W 41 W 40 W 39 W 38 W 37 W 36 W 35 W 34 W 33 W 32 W 31 W 30 W 29 W 28 W 27 W 26 W 25 W 24 W 23 W 22 W 21 W

15 S
 16 S
 17 S
 18 S
 19 S
 20 S
 21 S
 22 S
 23 S
 24 S
 25 S
 26 S
 27 S
 28 S
 29 S
 30 S
 31 S
 32 S
 33 S