

MACDONALD CONSULTANTS LTD.

SUITE 12 . 425 HOWE STREET. VANCOUVER 1, B.C.

Report

on

1967 Exploration Program

of

CANOL MINES LTD.

and

Recommendations

for the

1968 Exploration Program

by

MacDonald Consultants Ltd.

H. Wober, P. Eng.

November, 1967

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INTRODUCTION

Canol Mines Ltd. carried out an extensive exploration program from June 15, to the end of October, 1967 on its silver-lead prospect east of Seagull Lakes, Yukon Territory, at latitude 61° 38' and longitude 132° 48'. The program was supervised in the field by Mr. P. Gillis. The writer, who directed the exploration program visited the property frequently during the season, advising on changes in the program as the results emerged.

The program came to a halt towards the end of October because the increasingly severe weather conditions made the operation difficult and costly to carry on with the summer equipment on the site.

PROPERTY

A program of surveying and tagging the claim posts was carried out by Mr. Gillis who will also prepare a detailed map of the claim locations.

Twelve additional claims were staked to the west adjoining the Ben #1 - 12 group of mineral claims comprising the following claims:

<u>Name</u>	<u>Record Number</u>
AG #9	Y19979
AG #10	Y19980
AG #11 - 16 incl.	Y19995 - Y20000
BEN #25	Y19981
BEN #26	Y19982
BEN #27	Y19993
BEN #28	Y19994

Four additional claims, Trime #1-4, Y17789 - Y17792 were staked along side the Canol Road.

The original claims were inspected by the claims inspector of the Mining Recorder's office at Whitehorse and found to be in good order.

ROADS

The access road to the property has been improved by work with the John Deere tractor and the D7E Cat.

Frequent repairs on the access road were necessary during the season due to heavy rains and a cat road was established to lower Seagull Lake where fixed wing aircraft can land on floats or skis.

PROSPECTING AND HANDTRENCHING

The western part of the property and, in particular, the area of Snowwhite #4 - 8 and Ben #1 - 12 was prospected in detail in order to locate the showings mentioned in Dr. Aho's report on the property of 1956. Several of the showings were located and the 'N' Showing of Dr. Aho's report was found most promising so a handtrenching program was started. The trenching amounted to a total of 82 cu. yards when heavy permafrost was encountered and made further handtrenching impossible for the time being.

SOIL SAMPLING

The soil sampling was completed prior to August 15; the grid started in 1966 was extended to the North into the valley of Galena Creek and to the East covering the Snowwhite and AG 1 - 8 claims. The initial soil sampling grid was laid out on lines 400 feet apart and samples were taken at 200 foot intervals along the lines. In several areas where anomalous high lead values were encountered "fill in" soil sampling was carried out on one-half the above spacing. A total of 744 soil samples were shipped to Bondar-Clegg & Co., 1500 Pemberton Avenue, North Vancouver for geochemical assaying by the hot aqua regia extraction and atomic absorption method.

TRENCHING BY BULLDOZER

A D7E Cat with ripper was used for stripping on the #1 Showing and trenching on several of the geochemical anomalies found in the grid area. Four hundred hours of bulldozer work was carried out on this part of the program. The John Deere tractor was used mainly for road repair.

DIAMOND DRILLING

Diamond drilling, which was contracted to Arsenault Diamond Drilling Company, Whitehorse, amounted to a total of 741 feet in five holes on Showing #1.

RESULTS

Showing #1 - This showing consists of several veins with splits and parallel stringers and is situated at the edge of a high plateau with a fairly steep slope below it. It was stripped with the D7E Tractor on two benches. A third bench for diamond drilling was established later on. (See Map 211-7).

On the lower bench massive galena mineralization was exposed in a steep dipping vein striking N 10° E. The average width of the massive galena is 1.5 feet with the widest part reaching 3 feet across and it is continuous over a strike length of 195 feet with both ends still open. Indications from fracturing, oxidation and galena float are that it will extend at least another 100 feet in either direction.

The average value obtained by sampling over the 195 feet of length was 45.4 oz. of silver and 71.1% lead.

Approximately 85 feet from the north end of the galena mineralization a split occurs in the vein striking N 15° E. The split portion of the vein

is about 1 foot wide massive galena but is exposed for only a few feet before it disappears in the overburden.

The upper bench of stripping exposed a short shoot of galena mineralization 3-4 inches wide, 16 feet long and consisting of fine grained sheared galena. A character sample of this vein assayed 33.45 oz. of silver and 77.45% lead.

Thawing action in the frozen talus on the north end of the upper bench exposed some rusty vein material and galena. The small tractor was used to trench this area and it exposed a portion of a vein approximately 10 feet long consisting of almost massive galena. A chip sample across the width of 2.5 feet assayed 41.7 oz. of silver and 74.15% lead.

The vein is covered by frozen talus material on both ends and it could be connected with the vein split on the main vein on the bench below. A vertical cliff face and topographic lineament in the north extension of this indicated the probable continuity of this structure for at least two hundred feet to the north of the exposure.

Six diamond drill holes were laid out as per attached map and sections (Nos. 211-7,8,9,10) of which five were drilled to intersect the vein at approximately 60 feet and 120 feet below surface, in order to investigate the continuity of the mineralization down dip.

Diamond drill holes A1 (-30°) and A2 (-55°) intersected the vein structure at the expected hole depth but no mineralization was encountered. The vein consisted of fractured dolomite with abundant limonite. (See section Map 211-8).

Diamond drill hole B1, 50 feet north of and parallel to A1 intersected 2.5 feet of vein material which assayed 8.35 ozs. silver per ton and 18.9% lead. This intersection had excellent core recovery. At the end of drill hole B1 a strong fracture zone was intersected which had all indications of a vein structure. Core recovery was very poor in this intersection and no

core was recovered of the last 3 feet of drill hole. This structure will have to be further investigated.

Drill hole B2 (-55°) drilled from the same station with the same bearing located the veinstructure widening with depth and containing blebs of galena. Core recovery of the vein was very good.

Drill hole C1 (-30°), approximately 50 feet north of B1 and parallel to it, intersected the vein zone 3.5 feet wide of which 2.7 feet recovered assayed 12.70 oz. of silver and 32.60% lead. The vein was very oxidized and broken, and it is likely that some of the mineralization was not recovered in the core. It was intended to deepen this hole in order to intersect the downward extension of the veinsplit occurring on surface, but the rods froze in the hole.

The work on and around Showing #1 clearly indicated the following facts:

- 1.) The area has a good potential for the occurrence of steep dipping veins containing massive galena mineralization of ore grade and continuity.
- 2.) The host rock,--massive dolomite--forms a competent wall rock which should require little or no support in any mining operations so costs would be reasonable.
- 3.) The residual soil and the lower layers of talus covering the bed-rock surface are permanently frozen. Float trains and gossan zones from the veins are almost completely disrupted and obscured by solifluction and talus movement. This means that even very small amounts of float on the surface can be significant. This was also experienced on the showing on Ben #4 claim as described further below.

Showing #2 and the Adjacent Geochemical Anomalies - Two of the trenches excavated in the fall of 1966 were connected and cleaned out to bedrock. Two additional trenches, Nos. VII and VIII were excavated on promising looking anomalies nearby. All these anomalies turned out to be "transported anomalies" caused by streaks of oxidized vein material in glacial till ridges although cliffs of dolomite are outcropping near Trench VII, VIII and IX. These cliffs of dolomite were found to be localized isolated blocks, representing remnants of the dolomite overlaying the black thinbedded phyllites. Some of the unconform contacts were exposed in the trenches. The main mass of dolomite lies east and west of the N-S running valley and contains the other showings of the property.

Fill-in soil sampling at close spacing and a study of the local topography indicate the possibility that the float of massive fine grained galena found at showing #2 (See map 211-11, Line 28N, West of Base line), originates from the veinstructure uncovered in Trench VI.

Trench VI - This trench was dug on a good geochemical anomaly which reaches from line 28N to 40N, a length of 1200 feet. The anomaly is located approximately 2700 feet southwest of the #1 Showing and 250 feet lower in elevation on the west facing slope of the same mountain.

A vein zone 30 feet wide was uncovered below approximately 20 feet of overburden in thick bedded dolomite, striking approximately north-south. The vein material consists mainly of soft crumbling limonite, some dolomite breccia and blebs of galena in a highly oxidized mass. Samples over 3 foot sections were taken across the full width of the vein zone and although no high assay results were expected as little galena was visible in the trench,

the samples ran to 3.26 ozs. silver per ton and 5.8% lead, which is considered to be good values considering the amount of oxidation on the surface.

The width of this strong vein zone, the strike length indicated by soil sampling and the possibility that it is the source of the float found on Showing #2 make it a very encouraging discovery and further work is planned.

Showing on B #3 & 4 Claim - Float of coarse grained massive galena was already mentioned as "Locality N" in Dr. Aho's report of 1956.

Handtrenching in the immediate area of the showing along the location line of Ben #3 and #4 Claims uncovered about one half ton of galena float, assaying 60.65 oz. of silver and 76.70% lead per ton. Handtrench #3 (See Map 211-13) uncovered a rusty gossan zone in heavily frozen overburden under the more loose surface material. Float of galena and of tetrahedrite in quartz is quite widespread on the same southfacing slope.

Further handtrenching was very difficult in the frozen material and it is recommended that a bulldozer with a ripper be brought on the showing to carry out further trenching. The underlying rock in this area is massive dolomite as on Showing #1 and the presence of so much good grade float, requires a detailed follow-up to locate the source.

GEOPHYSICAL TEST SURVEY

A geophysical test survey was carried out by C. V. Dyson of MacDonald Consultants Ltd. on Showing #1 and over the geochemical anomaly and vein-structure in the area of Trench VI in October.

A Crone dual frequency JEM instrument was used with horizontal coil configuration.

Showing #1 was reflected in a distinct cross over from negative to positive resultant dip angles in low range of only 3 to 4°.

Any conductivity within the veinstructure of Trench VI caused by sulphides was masked by the strong conductivity of the black phyllites underlying the dolomite. The phyllite-dolomite contact is only a few hundred feet west of this vein structure and the phyllites underlying the divide between Silver Creek and Galena Creek, which is also the area of the transported geochemical anomalies are highly conductive and the results of an EM survey would be very deceiving.

However, in areas of a greater thickness of underlying dolomites the instrument can be used for the detection of vein structures, especially since it has the advantage of not being influenced by the rather rough topography of the area. After a preliminary survey of these areas, the instrument should be converted and used as a vertical loop unit for detailing on any cross overs encountered. The conversion of this instrument only requires a few minutes.

This survey should be carried out at an initial line spacing of 100 feet with picketed stations every 50 feet.

The area east and north of Showing #1 comprising the claims Caribou #1 and Ben #13 - 18 are promising target areas for this type of survey, where solifluction and talus movement conceal float trains and gossan zones from mineralized veins as described above.

RECOMMENDATIONS FOR THE 1968 EXPLORATION PROGRAM

A.) Mapping, Surveying and Prospecting

Mapping and prospecting should be continued on to the newly acquired ground comprised by Ben #25 - 28 and AG #9 - 16.

A map compilation from air photographs taken at low elevations should be done on a scale of 1" = 1000 feet in order to obtain faster and

better survey control on all the claims and workings. The existing government air photographs dating back to 1948 and 1949 are not of sufficient quality for this type of map compilation. An area of approximately 6 by 5 miles would have to be covered by new air photography.

B.) Handtrenching

This type of work should be confined to areas which are not accessible by bulldozer on new showings discovered by further prospecting, since the efficiency is very low.

C.) Soil Sampling

"Fill-in" soil sampling at 200 foot line spacing and 100 foot sample intervals on and in between existing lines in the following areas:

Line 48N to 68N east of the base line.

Line 74N to 92N west of the base line to all stations 12W.

The existing line grid should be extended to the west, south of line 16N by E-W running lines spaced at 200 foot intervals and sample stations at every 100 feet. This is the area towards the pass to Groundhog Creek and on the slopes below the Showing on Ben #3 and #4.

D.) Geophysical Work

Establish a line grid by picketing east and north of Showing #1 on claims Caribou #1 and 2, and Ben #13 to 18. The grid should extend over all areas covered by overburden and/or talus with lines 100 feet apart and stations every 50 feet.

Use a Crone EM dual frequency instrument with a 200 foot coil separation. Do detailed surveys using the instrument as a vertical loop unit over all conductive areas and "cross overs" encountered.

Numerous small stringers of galena and smaller pieces of float were found in the area outlined for this survey making it a good exploration

target. All conductive zones and "cross overs" showing even small resultant dip angles should be followed up by bulldozer trenching.

The same type of survey should be carried out on Ben #3 and #4 claims and on parts of Ben #6 and #5.

E.) Trenching by Bulldozer

1.) The first target for further bulldozer trenching should be to detail the vein structure in Trench VI. The first trench will be located immediately south of line 32N.

2.) Further stripping and trenching is required in the north extension of the veinsplit located on Upper Bench on Showing #1, this very promising looking target should also be followed to depth by further diamond drilling.

3.) Trenching on Ben #3 and #4 claims to further investigate the float and gossan zone uncovered by handtrenching.

4.) The area east and north of Showing #1 on claims Caribou #1 and Ben #13 - 18 has a very good potential for further vein structures and will require extensive bulldozer work after the geophysical survey is completed.

5.) The area west of Trench IX from line 40N to 48N should be further explored by trenching. The west end of Trench IX reached the base of the big dolomite complex to the west. The geochemical expression on lines 36N to 48N west of Galena Creek is most likely derived from mineralization under the steep talus slope off the west ends of these lines and coming from an area of massive blockly dolomite.

6.) The same applies to the west ends of lines 16N to 20N. Float of Galena was found on the steep talus slope above this geochemical anomaly.

It would be preferable if the soil sampling south of Line 16N could be completed before this trenching is started.

7.) Due to the large amount of Trenching and the requirements for a cat on the property for road and other work the Board of Directors should give serious consideration to the purchase or rental-purchase of a tractor unit. The economics are such that the unit can be re-sold at a later date if applicable for a resultant lower costs. The program will be modified if the results require so as they emerge.

F.) Diamond Drilling

Showing #1 - The 1967 drill program which could not be completed should be continued and extended in view of the new information obtained.

Drill diamond drill hole C1 and continue to explore the main vein structure and its split further to the north and to depth.

1000 feet of drill holes will be required initially for this program.

Trench VI and Related Vein Structure - After the trenching is completed on this vein structure it should be explored to depth by diamond drilling. The estimated total footage required is 1000 feet. The highly oxidized but strong vein structure will require drilling to depth even if the trenches do not locate high sulphides at bedrock surface.

It is generally recommended that the core diameter on all drilling be reduced from this year's NQ size to BQ wireline. This core size is cheaper to drill and will probably give as good core recovery as NQ size.

G.) Road Construction

In order to provide better access from the Canol Road to the property the existing 10 mile road should be improved. Heavy rainfall had several times made the property almost inaccessible during the last season and costly bulldozer transportation of equipment and supplies had to be resumed again.

Parts of the road have to be rerouted because of steep grades and swampy areas. In several places gravel, which is available nearby from along the Canol Road, should be spread on several stretches of road.

It is estimated that an expenditure of \$1,500.00 per mile will make the present road usable under all weather conditions.

H.) Possible Underground Program

If the results of the diamond drilling on the main vein or the vein-split of Showing #1 and the vein in Trench VI indicate the continuity of economically significant mineralization to a depth of at least 100 feet below surface or if a separate ore shoot is outlined by drilling at this depth, then an adit and drift can be planned on either one of these targets.

It is estimated at this time that approximately 200 feet of adit and 500 feet of drifting would be required to investigate the mineralization initially at an elevation of 100 feet below surface.

The cost for this work would amount to \$100.00 per foot of drifting or a total of \$70,000.00 including mobilization, demobilization and overhead.

COST ESTIMATE FOR THE 1968 EXPLORATION PROGRAM

1.) Surface Exploration

Bulldozer Trenching, D8 or equivalent, \$35.00/hour, 800 hours	\$ 28,000.00
John Deere Tractor for local transportation of equipment, fuel and supplies, moving of diamond drills, etc.	6,000.00
Diamond Drilling, 3000 feet BQ Wireline, \$12.00/ft.	36,000.00
Road Improvement, 10 miles	15,000.00
Camp and food, 10 men, 5 months \$7.50 per man day	11,700.00
Cook	3,500.00

Engineering and Supervision, 1 Field manager-surveyor, 1 Geologist, 5 months	\$ 10,000.00
Airphotography and Map Compilation	3,000.00
Soil Sampling and picketing	3,000.00
Handtrenching + Operation of Cobra to assist D8	3,000.00
Geophysical Survey	2,000.00
Assaying	1,500.00
Truck Rental, 5 months, 1 ton 4x4	3,000.00
Truck operation, fuel and lubricants, spare parts and repairs	2,000.00
Radio and Communications	1,500.00
Cobra Drill and Steel	1,500.00
Explosives	800.00
Mobilization, Demobilization, Freight	8,000.00
Consultants Fees and Expenses	4,000.00
Contingencies @ 10%	<u>12,000.00</u>
	<u>\$145,000.00</u>

2.) Underground Program

Depending on positive results of diamond drilling on Showing #1 or vein in Trench VI.

700 feet of Adit and Drift, \$100.00/foot including mobilization, demobilization and overhead	<u>\$ 70,000.00</u>
	<u><u>\$225,500.00</u></u>

SUMMARY AND CONCLUSIONS

Canol Mines Ltd. carried out an extensive surface exploration program in 1967 on its silver-lead prospect west of Seagull Lakes in Yukon. The program, consisting of geochemical, geophysical and geological surveys, hand and bulldozer trenching and diamond drilling was successful in locating

good-grade mineralization and a very promising looking vein structure on its Showing #1. A new wide and strong vein structure was discovered in Trench VI. This vein is supported by a 1,200 foot long geochemical anomaly and float of fine grained galena mineralization.

Additional targets were outlined by soil sampling, prospecting and handtrenching in the western part of the property. Mineralization in this area, which is also underlain by massive grey dolomite, is wide spread as indicated by float, surface showings, gossan and geochemical anomalies.

The results of the 1967 program were very encouraging and warrant follow-up as recommended for the 1968 exploration season.

Respectfully submitted,

MACDONALD CONSULTANTS LIMITED

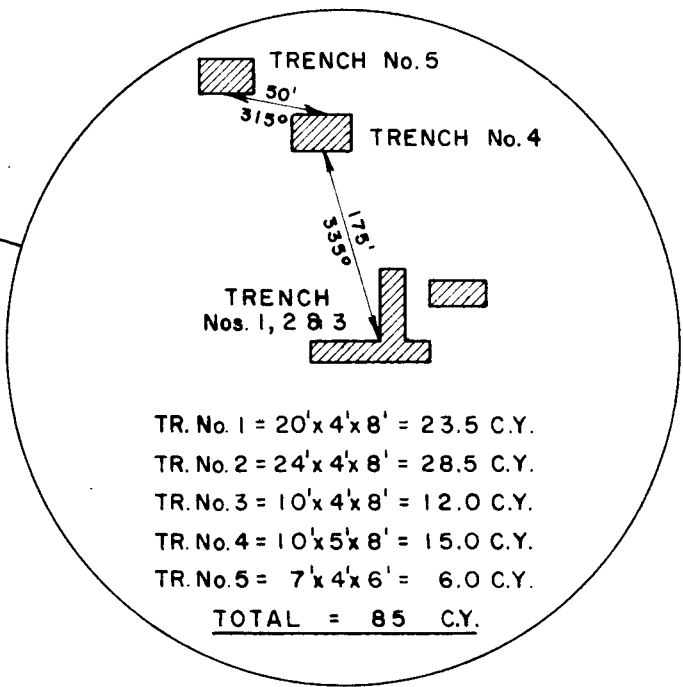


H. Wober, P. Eng.

HW/st

TR. No.5
TR. No.4

TRENCH
Nos. 1, 2 & 3



BEN No. 3

BEN No. 4

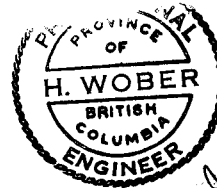
ACCESS ROAD
TO BEN No.3

BEN No. 1

BEN No. 2

CANOL ROAD

MAIN ACCESS ROAD



H. Wober

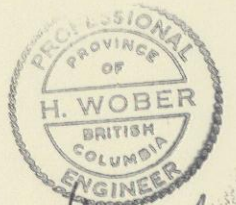
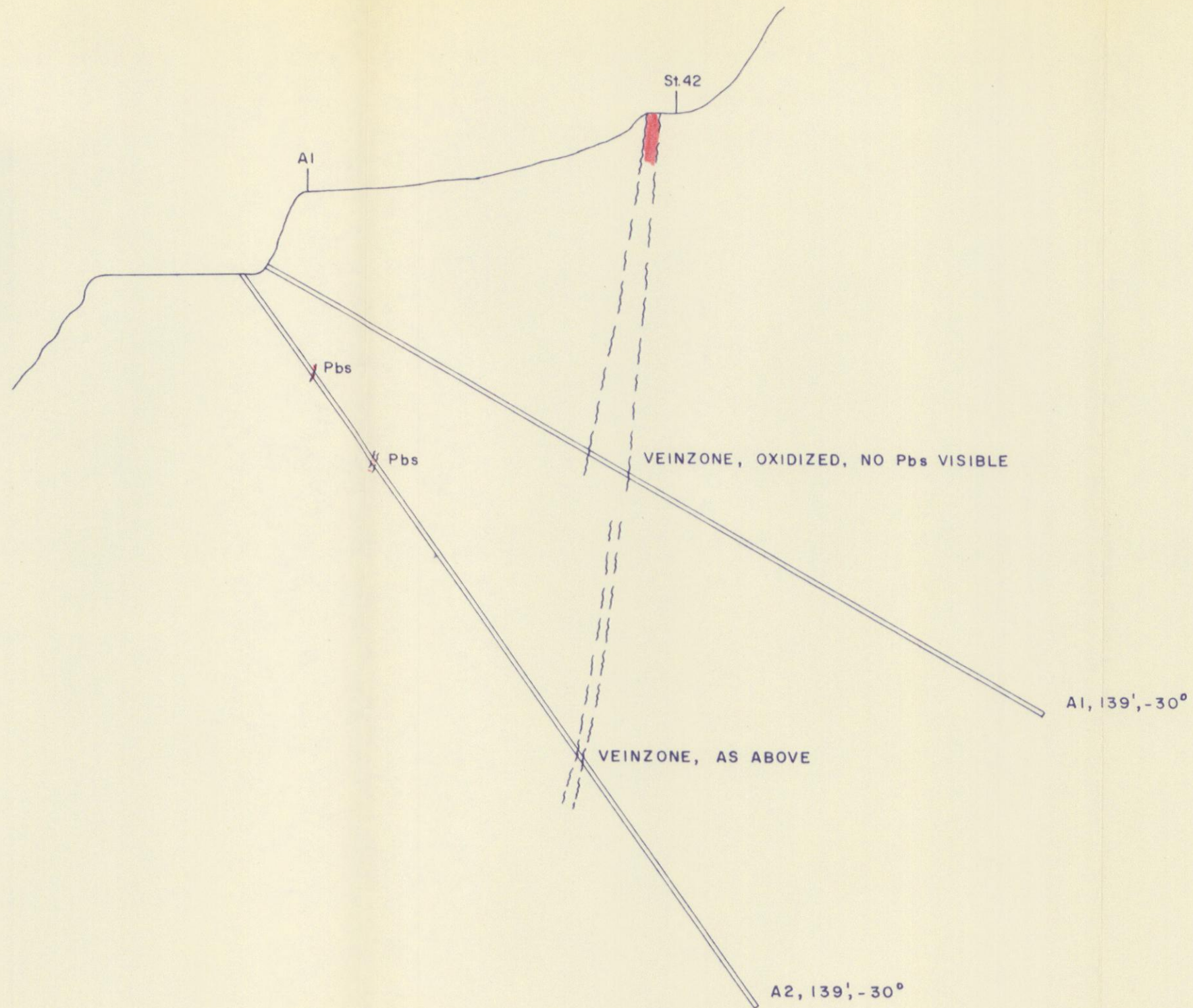
CANOL MINES LTD. (N.P.L.)

MacDonald Consultants Ltd.

SHOWING BEN No. 3 & 4 M.C.s.

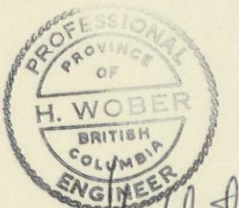
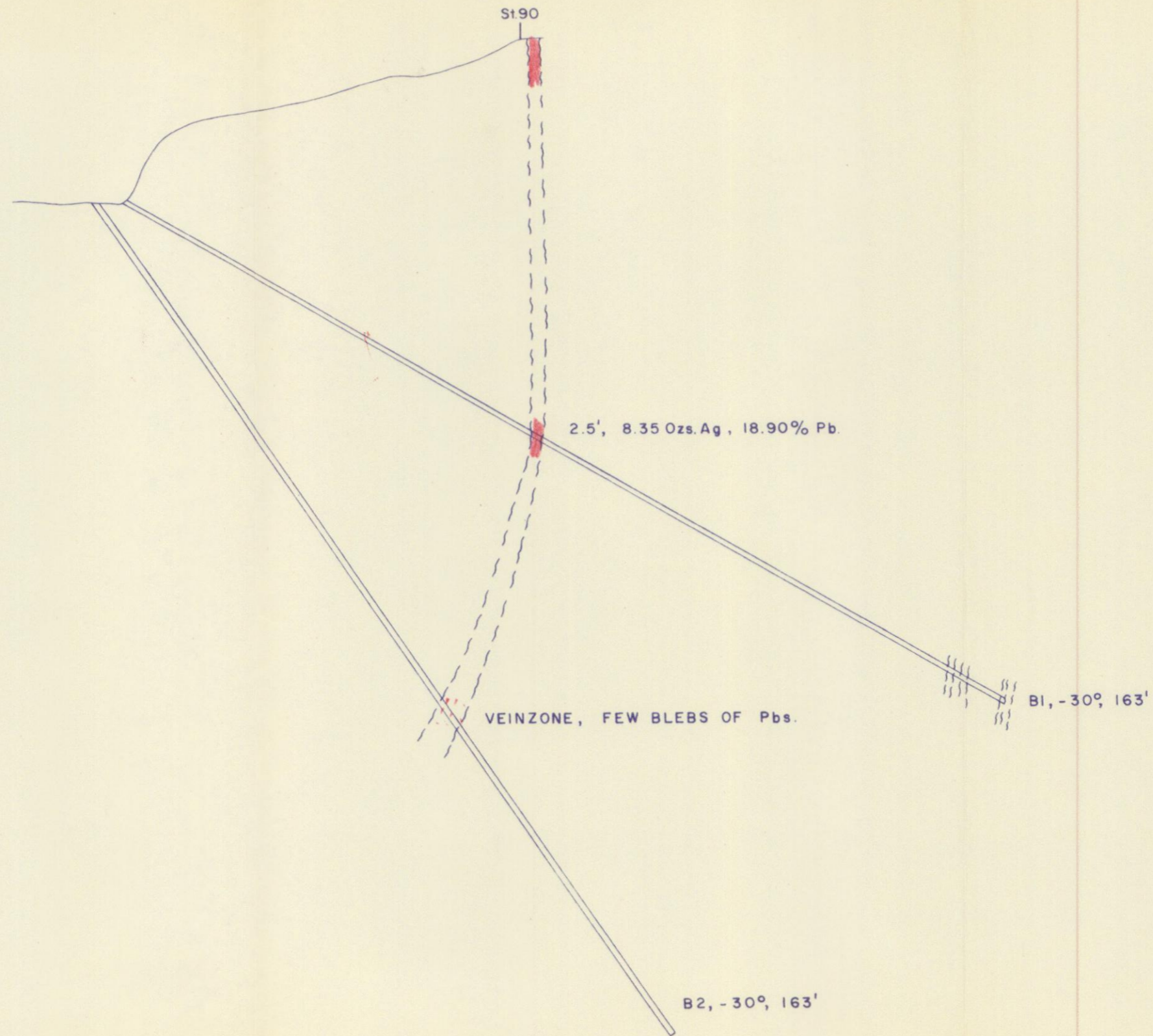
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DRAWN	P. G.
DATE	NOV. '67
NO.	211-13

HAND TRENCHING



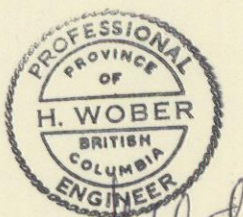
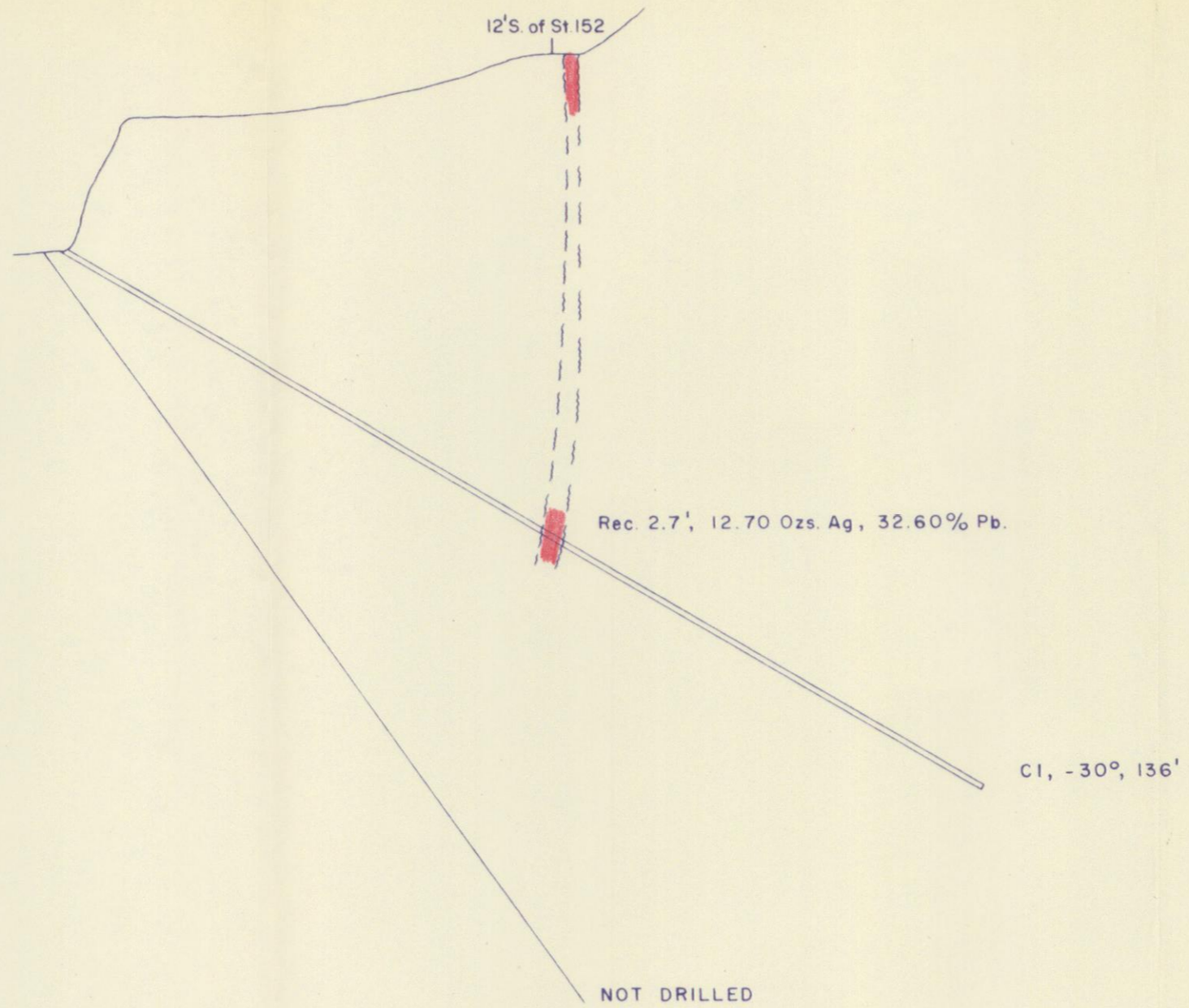
H. Wober

CANOL MINES LTD. (N.P.L.)		
MacDonald Consultants Ltd.		
DIAMOND DRILL SECTION		
SCALE	1" = 20'	GEOLOGY SECTION 'A'
DRAWN	H. W.	
DATE	OCT. 1967	
NO.	211-8	



H. Wober

CANOL MINES LTD. (N.P.L.)		GEOLOGY SECTION 'B'
MacDonald Consultants Ltd.		
DIAMOND DRILL SECTION		
SCALE	1" = 20'	
DRAWN	H. W.	
DATE	OCT. 1967	
NO.	211- 9	



H. Wober

CANOL MINES LTD. (N.P.L.)		GEOLOGY SECTION 'C'
MacDonald Consultants Ltd.		
DIAMOND DRILL SECTION		
SCALE	1" = 20'	
DRAWN	H. W.	Core: NQ, WL.
DATE	OCT. 1967	
NO.	211-10	

2.5', 41.7 Ozs. Ag. 74.15% Pb

4", 33.45 Ozs. Ag. 77.45% Pb

Av. 1.5', 45.4 Ozs. Ag. 71.1% Pb

St. 203

St. 152

St. 90

St. 142

St. 00

DDH. C1

D.D.H. B1, B2

D.D.H. A1, A2

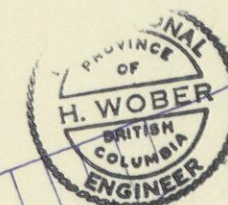
DIAMOND DRILL BENCH

UPPER BENCH

LOWER BENCH

BEDROCK OVERBURDEN

BEDROCK OVERBURDEN



H. Wober

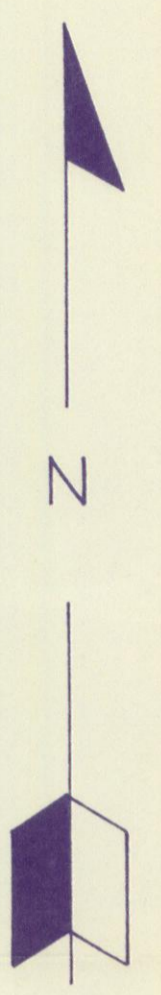
CANOL MINES LTD. (N.P.L.)

MacDonald Consultants Ltd.

SHOWING No. 1

SCALE	1"=20'
DRAWN	H. W.
DATE	OCT. 1967
NO.	211-7

GEOLOGY AND
PLAN OF DIAMOND
DRILL HOLES

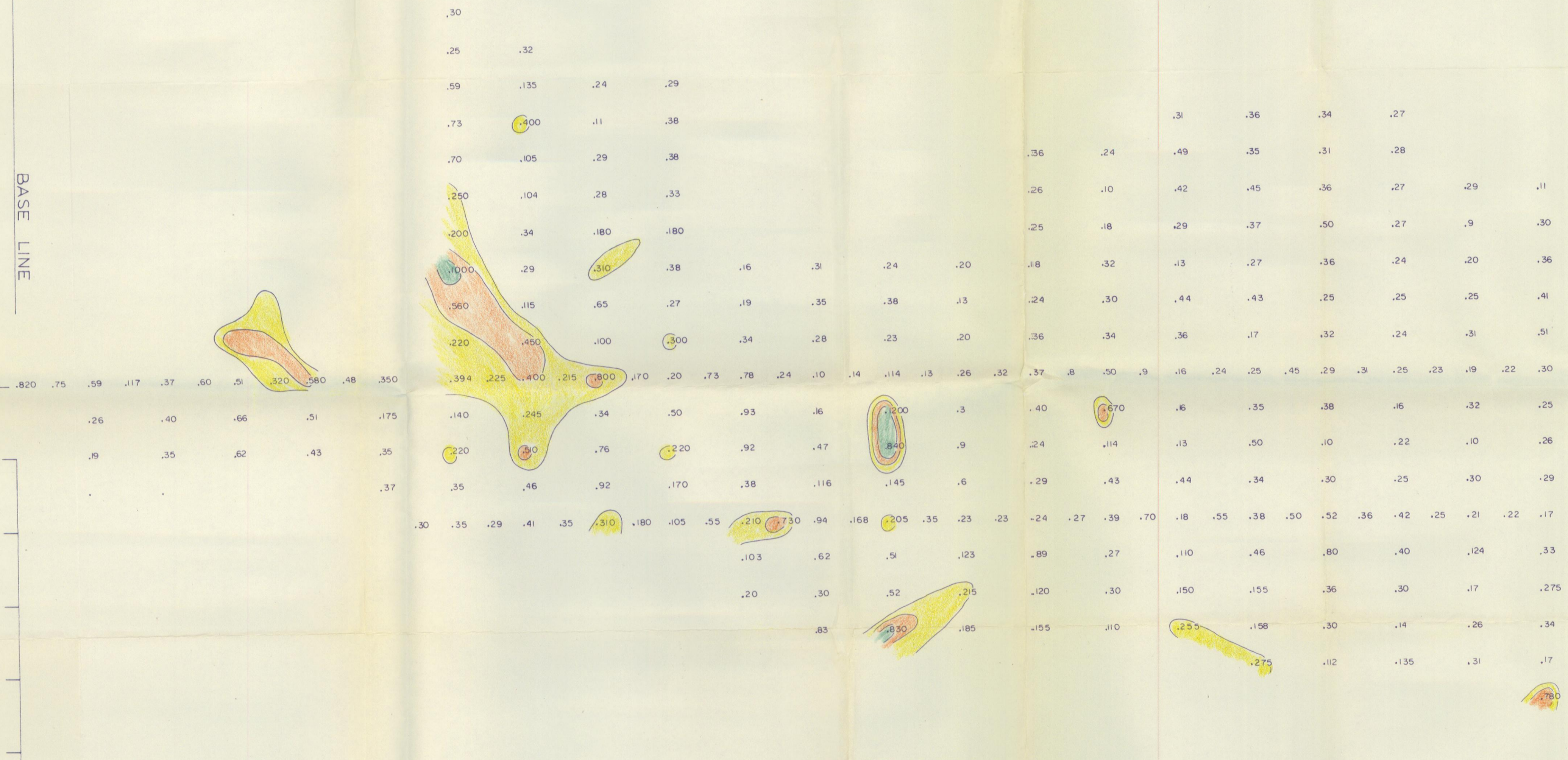


4 E —
8 E —
12 E —
16 E —
20 E —
24 E —
28 E —
32 E —
36 E —
40 E —
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72 E —
76 E —
80 E —
84 E —

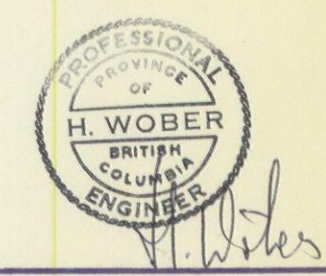
BASE LINE

BASE LINE

4 S
8 S
12 S
16 S
20 S



	0 — 100	PPM
	101 — 200	"
	201 — 400	"
	401 — 800	"
	801 — 1600	"
	1601 —	"

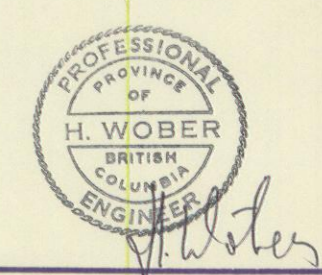
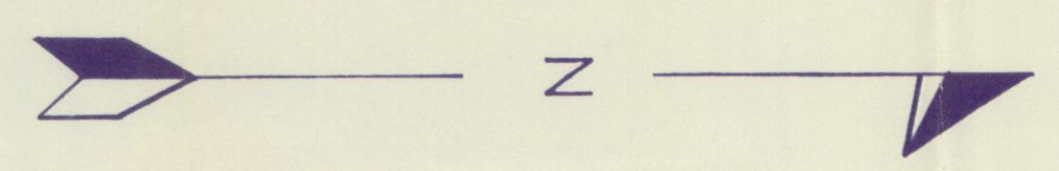
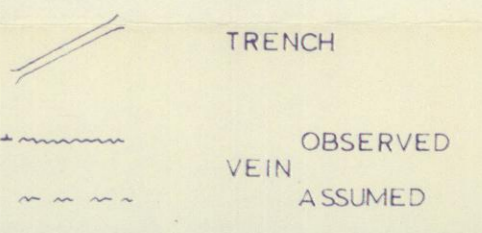
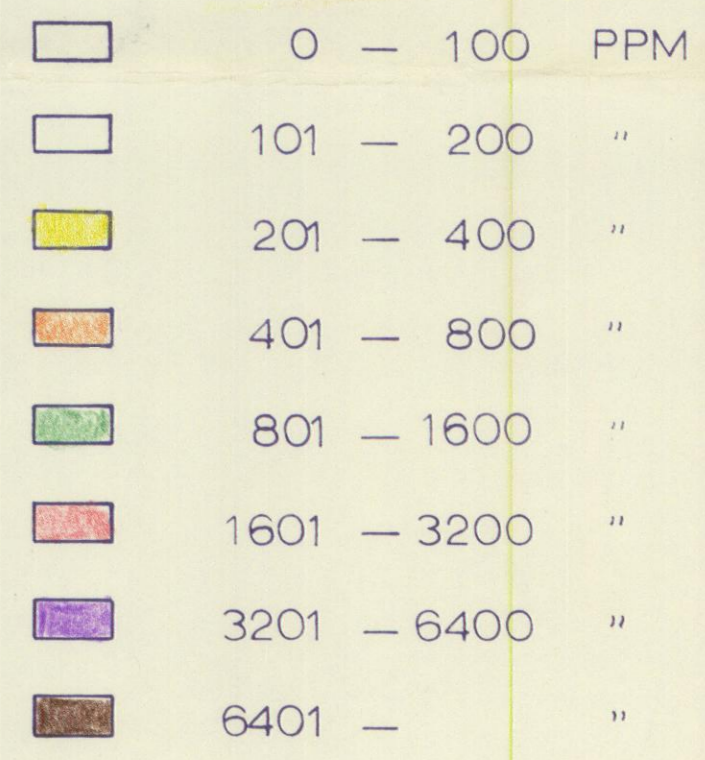
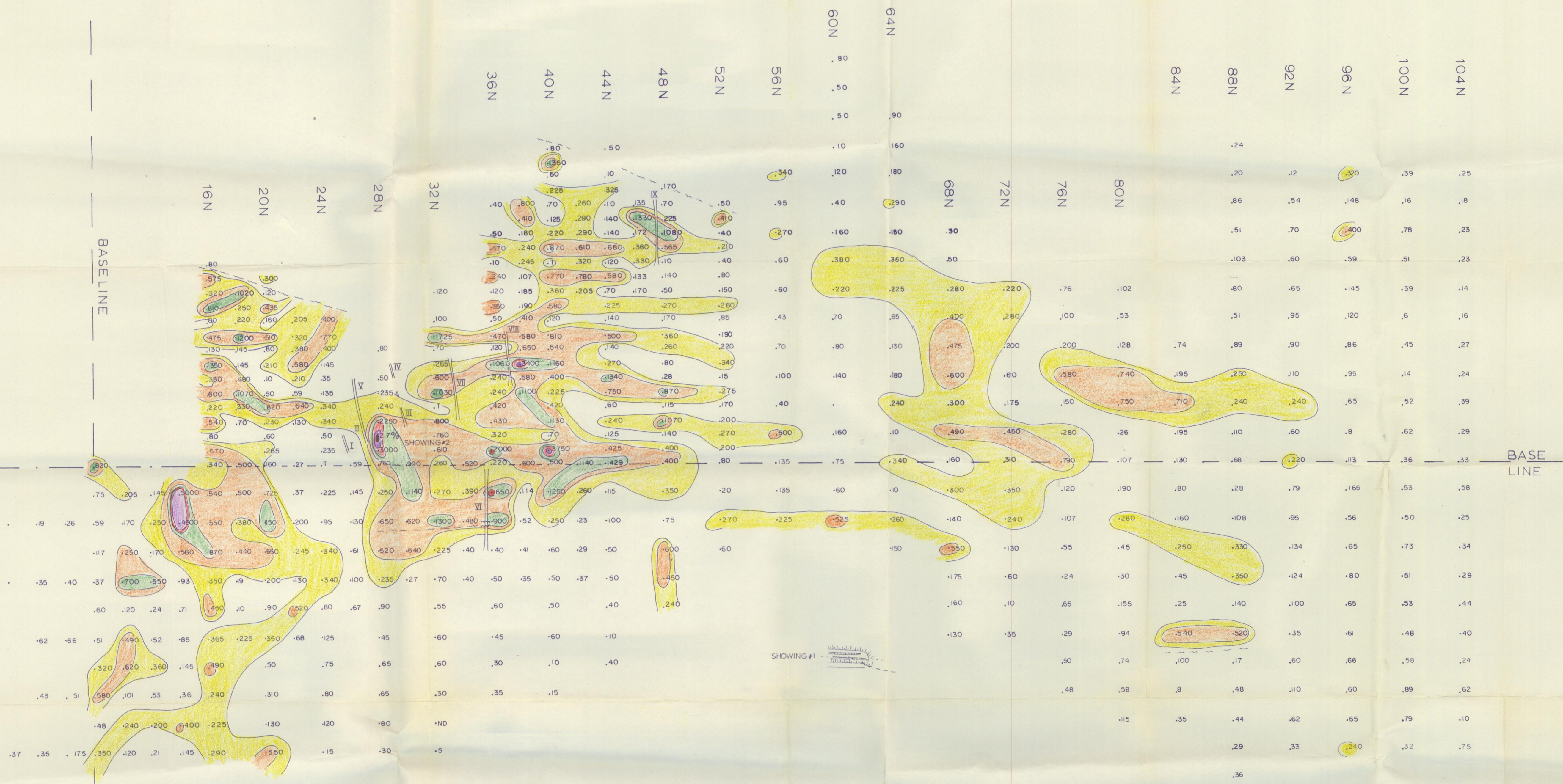


CANOL MINES LTD

MacDONALD CONSULTANTS LIMITED
11 — 425 HOWE ST. VANCOUVER 1, B.C.

GEOCHEMICAL MAP

SCALE 1" = 400'	LEAD PLOT (EXTENSION EAST)
DRAWN TMW - HW	
DATE AUG 67	
NUMBER 211-12	



CANOL MINES LTD
 MacDONALD CONSULTANTS LIMITED
 11 — 425 HOWE ST. VANCOUVER 1, B.C.
 GEOCHEMICAL MAP
 SCALE 1" = 400'
 DRAWN TMW:HW
 DATE AUG 67
 NUMBER 211 - //

LEAD PLOT