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OVERBURDEN GEOCHEMISTRY
AND
DRILLING REPORT

SLAVE PROJECT, NORTHEAST ALBERTA
QUARTZ MINERAL EXPLORATION PERMITS 6878020001 and 6878020002
TWP 125, 126, R 10-13, W4M
N.T.S. 74-M-13, 84-P-16

on behalf of
MARLINE OIL CORPORATION
CALGARY, ALBERTA

by
TAIGA CONSULTANTS LTD.
#301, 1300 - 8th Street S.W.
CALGARY, ALBERTA
T2R 1B2

JUNE 30, 1979

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INTRODUCTION

The 1978 field program of lake sediment and water geochemistry, prospecting, geological mapping, and soil geochemistry delineated five significant uranium anomalies within the permit boundaries.

During the winter of 1979, 26.5 km of cut, chained and picket grid lines were established in three select areas.

In view of the complex surficial environment of the property, three of the uranium anomalies were subjected to a detailed overburden geochemical profiling by means of a "Pionjar" drill test. This work was undertaken by R. Cormier & Associates Ltd., of Bécancour, Quebec, during the period March 21 to April 6, 1979. Fifty samples were retrieved from 26 holes.

The Pionjar sampling technique proved to be inadequate in those areas where the overburden exceeded 30 meters in thickness. Subsequently, a reverse-circulation rotary drill contract was let to McAuley Drilling Ltd., of Sherwood Park, Alberta. Nine holes, totalling 436.5 m, were drilled during the period April 14 to 23, 1979.

Geochemical analysis of the continuous overburden profile and drilled subcrop indicated no significant uranium values.

Pending a detailed review of the project in its entirety, no further field investigations appear warranted at this time.

1978 FIELD RESULTS

The reader is referred to the writer's report entitled "A Preliminary Geological and Geochemical Evaluation of the Slave Project, Northeast Alberta" dated November 15, 1978, for a summary of the geologic environment and results of the two previous field examinations by Marline Oil Corporation. A subsequent review and statistical presentation of the geochemical survey data by C. F. Gleeson & Associates Ltd., February 14, 1979, is presented for reference in the appendix of this report.

PIONJAR DRILL OVERBURDEN SAMPLING

Technique

In order to investigate the nature of the source of the surficial geochemical anomalies, Pionjar drill sampling of the overburden profile and basal till were undertaken. The work was conducted by R. Cormier & Associates Ltd., under the direct supervision of the writer.

The sampling equipment consisted of two portable gasoline-powered Pionjar hammer drills (approximately the size of a hand-held jack hammer).

The hammer drill utilizes light-weight, solid, 1' diameter, thread-joined extension rods with a piston-type stainless steel sampler. The sampler is driven into the overburden by the jackhammer-like percussion action of the Pionjar to the desired depth. The sampler end has a retractable point which is then opened by turning the string of extension rods. The sampler is again driven into the overburden, thereby compression filling the open piston end. The resultant sample is approximately 6" in length and 3/4" in diameter.

The rods and sampler are extracted from the hole using a 10-ton manual jack at shallow depths, or a 20-ton hydraulic puller.

The entire retrieved sample was analyzed fluorometrically for uranium by Bondar-Clegg & Company Ltd.

Drill hole sites were established on cut and picket grids. Mobilization of the drill equipment was accomplished by snowmobile on hand-cut trails.

Results

Three uranium in lake water anomalies were investigated by the Pionjar overburden sampling techniques. These are briefly described below:

1. Hill South Grid (c.f. Map 78-3, Sheet 2 of 4; DWGS. 79-1, 79-2)
   16 overburden samples, most of which were obtained from the base of the alluvial till (basal till), were retrieved from 13 holes. The holes almost uniformly penetrated 0.5m to 1.0m of muskeg, 8m to 11m of silty clay (lacustral deposits), and 0.1m to 1.0m of alluvial till.

   Three 250m spaced grid lines were cut, picketed, and chained over the anomaly. The grid was unsuccessfully surveyed twice with a proton magnetometer, both sets of data being rendered useless by intense magnetic storms.

2. Four Mile Lake Grid (c.f. Map 78-3, Sheet 3 of 4; DWG. 79-3)
   17 overburden samples were obtained from 6 holes, none of which penetrated to the subcrop. The overburden profile consists of 0.5m to 2.0m of muskeg, 37m to 50m of lacustral silty clay, and 0 to 1.0m of alluvial till.

   Four holes not shown on Section C-C (DWG. 79-3) were abandoned at depths in the order of 20m without retrieving a sample. All of the holes indicated on DWG. 79-3 were abandoned at depths of 21m to 40m due to either drilling or rod-retrieval limitations.

   14.5 km of picket grid lines were cut and chained in preparation for a proton magnetometer survey. The survey was not undertaken due to intense magnetic storms at the time of the drill program.

3. 4 km southwest of Ft. Smith (c.f. Map 78-3, Sheet 3 of 4; DWG 79-5)
   One Pionjar hole was attempted in this locale and was abandoned without retrieving a sample at 36.5m.

4. Peace Point Road (southwest of Four Mile Lake; c.f. Map 78-3, Sheet 4 of 4; DWG 79-4)

   A series of 6 holes along the Peace Point Road, starting southwest of the property and progressing northeast toward Four Mile

Lake, were intended as a cross-section of the subcrop topography and to geochemically probe several NE and NW trending lineaments.

The first five holes reached the subcrop at depths of 7m to 17m; the sixth hole in the sequence was abandoned in lacustral silty clay at the drilling limit of 36m. An additional planned 12 holes were subsequently deleted from the program.

ROTARY DRILL PROGRAM

Technique

A truck-mounted Failing 1500 dual-wall reverse-circulation drill with 4" diameter pipe was utilized for the final examination of the above noted sites. Drilling was undertaken with an air-water mixture, as air alone failed to yield an adequate return in the high clay component overburden. Sample return in the top 1m to 3m of muskeg was poor to nonexistent as the pressure simply "pushed" the indurated organic material out beneath the ground-frost cover. The drill was outfitted with a deck drive (as opposed to a top drive) which resulted in caving problems during drill string addition and subsequent contamination of drill cuttings.

Generally, a 99-100% drill cutting return was achieved from a depth of 2m or 3m to T.D. Minor cutting loss was also encountered in the thin (0 to 1.5m) alluvial till which occurs at the Paleozoic-Precambrian unconformity.

Cutting returns were caught in 40 mesh, 2' diameter cones set beneath a cyclone. Cuttings were not washed due to the prevailing sub-freezing temperatures.

The cuttings were bagged at an average of 10 pounds per meter (or two meters). Subsequently, the samples were dried and split into two 8 to 16 ounce portions; one retained for future reference and one analyzed fluorometrically for uranium by Loring Laboratories Ltd., of Calgary. All of the 10-lb sample bags were radiometrically screened with a SRAT SPP2 scintillometer at the drill site.

Two-inch PVC pipe was left in all holes for future down-hole radiometric logging.

A total of 6.5 km of drill access road was cut with a D-7 Caterpillar.

Results (drill logs included in appendix)

No significant radioactivity was noted on site with the scintillometer. Nevertheless, all of the drill cuttings were submitted for uranium geochemical analysis.

Geochemical values ranged from nil to 4.7 ppm U (average less than 2 ppm) with a single sample in hole RT-3 returning 11.2 ppm U over the interval 38-39m (basement granite). All holes T.D.'d in granite.

The Paleozoic stratigraphic succession encountered, from top to bottom, is tenuously correlated with the Middle Devonian regionally described section as follows:

KEG RIVER FM.	light buff to grey, fine-grained, fetid, gypsiferous limestone (fossiliferous in outcrop). 0-15m thick.
UPPER CHINCHAGA	a dominantly evaporitic sequence of anhydrite, gypsum, with minor mudstone and siltstone. 15-25m thick.
CHINCHAGA- HAY CAMP MEMBER	buff to light brown limestone, occasionally silty. Generally fetid plus bitumen seams on bedding planes. Possibly brecciated. 1.5-3.0m thick.
LOWER CHINCHAGA	a rapidly alternating sequence of dark red and pale green siltstones, minor mudstone, gypsum and anhydrite. Commonly fetid; bitumen seams to 1/4" thick prevalent throughout. 6.5-9.5m thick.
FITZGERALD FM.	cryptocrystalline to aphanitic, light buff dolomite; very minor underlying siltstone (occasionally incorporating angular granitic clasts) 1.0-6.5m thick.

unconformity?

ALLUVIAL TILL	coarse sand to cobble size; well rounded to sub-rounded (rarely sub-angular). Composed predominantly of granite, granite gneiss, and amphibolite pebbles with a minor variable Paleozoic component. No cementing evident. 0-3 m thick (average 0.5m)

major unconformity

GRANITE	felsic granite, pale orange to pink, 5-10% amphibole, trace biotite (10-20% c.g. muscovite in hole RT-5). Intensely weathered and friable for 0.5 meters.

No Paleozoic section was encountered in holes RT-7 and RT-9.

There is no evidence of La Loche Formation or regolithic development.

CONCLUSIONS & RECOMMENDATIONS

The rotary drilling program was terminated prior to an intended fence of holes along the Peace Point - Four Mile Lake road as a consequence of the discouraging results obtained to date.

Although one abnormally high background value was encountered (11.2 ppm U in granite in hole RT-3), the anomalous uranium in lake water and sediments appears to be exclusively related to the surficial environment. Uranium in muskeg waters is probably concentrated by salt springs and continual evaporation in ponds that average less than 5' deep.

No further work is warranted at the present time.

PROFESSIONAL GEOLOGIST ALBERTA
RUPERT ALLAN

J. R. Allan, P.Geol

THE ASSOCIATION OF PROFESSIONAL ENGINEERS, GEOLOGISTS and GEOPHYSICISTS OF ALBERTA
PERMIT NUMBER P 2399
TAIGA CONSULTANTS LTD.

APPENDIX

SUMMARY OF PERSONNEL MARCH-JUNE 1979

SLAVE PROJECT, NORTHEAST ALBERTA

Personnel		Address	Man Days
J.R. Allan, P.Geol.	Supervisor	Taiga Consultants Ltd.	41.25
C.H. Aussant	Geologist	"	10
R. Cormier	Drill Supervisor	R. Cormier & Associates Ltd Bécancour, Quebec	13
A. Mercier	Line Cutter	"	17
F. Mercier	Line Cutter	"	17
C. Sylvestor	Line Cutter	Buffalo Narrows, Sask.	20
J. Thibault	Driller	R. Cormier & Associates Ltd Bécancour, Quebec	20
C. Poulain	Driller	"	17
R. Lacoursiere	Driller	"	13
M. Lessard	Driller	"	13
D. McAuley	Drill Supervisor	McAuley Drilling Sherwood Park, Alta.	14
D. MacBeth	Driller	"	14
W. Dayman	Driller	"	14
		TOTAL	223.25

SUMMARY OF EXPENDITURES MARCH-JUNE 1979

SLAVE PROJECT, NORTHEAST ALBERTA

TAIGA CONSULTANTS LTD.		
Professional Services/Supervision		$ 11,812.50
Travel and Transportation		4,596.58
Accommodation		5,814.20
Road Clearance, Drill Site Preparation		1,581.00
Rotary Drill Contract: McAuley Drilling Ltd.		18,953.34
Geochemical Analyses		1,464.75
Office Expenses; Disposable Field Supplies		414.55
Service Charges		1,723.41
	Sub-Total	$ 46,360.33
R. Cormier & Associates Ltd.		
Pionjar Drilling and Line-Cutting Crew		14,600.00
France Quebec Geophysique Inc.		
Magnetometer Rental		622.00
Computer Applications & Systems Engineering Ltd.		
Statistical treatment of geochemical data and map contouring		4,800.00
C. F. Gleeson & Associates Ltd.		
consulting geochemist		700.00
Loring Laboratories Ltd.		
freight on samples		65.80
J & M Enterprises Ltd.		
diesel fuel		102.16
Freight and courier service		
Marline Oil Corporation		89.75
Mobilization and demobilization of		
Pionjar drill crew		2,721.55
Travel expenses		
Marline geologist		501.00
Marline geologist		
2 days field time @ $150/day		300.00
	Sub-Total	$ 24,502.26
	TOTAL	$ 70,862.59
MARLINE OIL CORPORATION		
Office expenses, communications and administration: @ 10% x $70,862.59		7,086.26
	GRAND TOTAL	$ 77,948.85

HOLE

HOLE RT-1 APR. 15/79 HILL SOUTH GRID Line 1N @ 0+00 - 10m N
Elevation ≈216m (709')

0	- 8.0m	Overburden
8.0	- 15.2	Lt. brn. gypsiferous limestone, fossiliferous. Poor recovery due to lost circulation. Considerable chip contamination.
15.2	- 15.9	Gypsum - white, fibrous.
15.9	- 27.0	Anhydrite - translucent, massive.
27.0	- 28.0	Anhydrite - light brown, massive.
28.0	- 31.0	Siltstone - light brown; limey upper contact.
31.0	- 32.0	Limestone - light brown.
32.0	- 32.6	Limestone - light buff color with numerous seams of bitumen stain.
32.6	- 34.2	Siltstone - dark grey with numerous seams of anhydrite; inc % Of anhydrite toward lower contact.
34.2	- 35.5	Siltstone - green with numerous seams of anhydrite; inc % of anhydrite toward lower contact.
35.5	- 35.7	Anhydrite - translucent, massive.
35.7	- 35.8	Bitumen seam.
35.8	- 36.3	Anhydrite - as above.
36.3	- 37.4	Siltstone - dark red.
37.4	- 37.5	Siltstone - green.
37.5	- 38.1	Siltstone - dark red.
38.1	- 38.7	Siltstone - green.
38.7	- 38.9	Siltstone - dark red.
38.9	- 39.2	Siltstone - green.
39.2	- 40.4	Dolomite; aphanitic, siliceous, light buff color. Traces bitumen on fractures and bedding planes.
40.4	- 40.5	Siltstone - dark red.
40.5	- 40.8	Till: mixed red siltstone, anhydrite and rounded granite pebbles.
40.8	- 41.5	Granite: upper 0.5m intensely fractured and friable; last 0.2m fresh granite. Orange to light pink, 10% dark green amphibole.

41.5m END

HOLE RT-2 APR. 16/79 HILL SOUTH GRID Line 1N - 250m E.
Elevation ≈216m (709')

0	- 11.2m	Overburden.
11.2	- 15.0	Gypsum - white, fibrous.
15.0	- 16.2	Till - rounded, very coarse-grained predominantly granitic sand and same pebbles (sink hole?).
16.2	- 17.6	Gypsum; trace interbedded anhydrite.
17.6	- 26.0	Gypsum; minor interbedded anhydrite.
26.0	- 27.9	Anhydrite; minor interbedded gypsum.
27.9	- 29.7	Anhydrite; minor interbeds of light brown siltstone.
29.7	- 29.9	Anhydrite; minor interbeds of light brown siltstone with bitumen partings.
29.9	- 30.8	Limestone; anhydritic, light buff to brown, minor bitumen partings.
30.8		1" thick black shale seam with trace f.g. euhedral pyrite.
30.8	- 31.1	Limestone; anhydritic, light buff to brown with tr. bitumen.
31.1	- 31.8	Grey siltstone.
31.8		1" seam Gypsum.
31.8	- 32.7	Grey siltstone.
32.7	- 33.7	Green siltstone.
33.7	- 33.8	Red siltstone (shaley).
33.8	- 34.4	Anhydrite, light pink.
34.4	- 34.8	Red siltstone with up to 50% anhydrite.
34.8	- 36.5	Red siltstone, fining downward to red silty shale.
36.5	- 37.0	Green siltstone.
37.0	- 37.2	Red siltstone.
37.2	- 37.5	Green siltstone.
37.5	- 37.6	Dolomite; aphanitic, siliceous, light buff color.
37.6	- 37.7	Gypsum - white, fibrous.
37.7	- 38.9	Dolomite; aphanitic, siliceous, light buff color. 37.8 bitumen seams and stringers on irregular fractures. 38.7 1" thick seam of yellow anhydrite.
38.9	- 39.3	Granite; highly altered contact or 0.5m of angular coarse sand and pebbles of till. Sparse xtls of yellow anhydrite.
39.3	- 39.6	Fresh Granite; orange to light pink; 10% dk. green amphibole.

39.6m END

HOLE RT-3 APR. 17/79 HILL SOUTH GRID Line 1N - 500m E.
Elevation ≈216m (709')

0	- 16.0	Overburden.
16.0	- 17.8	Till with silty matrix; composed predominantly of coarse grained sand and rounded granitic pebbles, minor gypsum clasts.
17.8	- 21.5	Gypsum with minor anhydrite.
21.5	- 23.7	Gypsum with up to 50% anhydrite, inc to 75% anhydrite at lower contact.
23.7	- 25.5	Light brown anhydritic siltstone.
25.5	- 28.5	Light brown siltstone.
28.5	- 29.9	Light brown silty limestone with bitumen seams on bedding planes
39.9	- 31.5	Grey siltstone.
31.5	- 31.9	Green siltstone.
31.9	- 32.4	Light brown dolomitic siltstone.
32.4	- 32.5	Pink anhydrite.
32.5	- 33.8	Red siltstone with occasional seams of pink anhydrite.
33.8	- 33.9	Anhydrite with 25% seams gypsum.
33.9	- 35.8	Red siltstone.
35.8	- 35.9	Light green siltstone.
35.9	- 36.2	Green siltstone breccia with sparse angular clasts of red siltstone.
36.2	- 36.5	Red siltstone.
36.5	- 36.6	Pink siltstone.
36.6	- 36.8	Green siltstone with up to 50% gypsum as thin seams and traces of white and yellow anhydrite.
36.8	- 38.2	Dolomite; aphanitic, siliceous, light buff color.
38.2	- 38.5	Till; 50% sub-angular dolomitic pebbles; 50% weathered sub-angular to rounded granitic sand and pebbles.
38.5	- 39.0	Granite; weathered, fractured and friable; fresh orange/pink granite at 39m.

39.0m END

HOLE RT-4 APR. 18-19/79 FOUR MILE LAKE GRID Line - - 800m E
Elevation ≈207m (680').

0	- 37.5	Overburden.
37.5	- 38.0	Fine sand with sparse, rounded granitic pebbles.
38.0	- 38.8	Coarse till, predominantly rounded granitic pebbles (no water).
38.8	- 40.0	Dolomite; light buff, siliceous, v.f.g. to aphanitic; intensely fractured (50 gal/min water).
40.0	- 40.6	Dolomite; light buff, f.g. to v.f.g.; gradational lower contact.
40.6	- 42.4	Dolomite; light buff, f.g. to v.f.g. with interbeds of light grey, siliceous siltstone.
42.4	- 43.1	Pale green siltstone with traces disseminated fine-gr pyrite.
43.1		Thin seam of gypsum.
43.1	- 43.6	Pale green siltstone with tr diss f.g. Py.
43.6	- 43.7	Gypsum.
43.7	- 45.2	Light brown siltstone.
45.2	- 45.4	Light green siltstone.
45.4	- 45.9	Granite; upper contact slightly weathered and friable. Light grey, 10% dark green amphibole.
45.9m END		Fresh granite at 45.9m.

HOLE RT-5 APR. 20/79 FOUR MILE LAKE GRID Line 0 - 400m E
Elevation ≈206m (677')

0	- 46.8	Overburden.
46.8	- 47.1	Dolomite; light buff, aphanitic, siliceous.
47.1	- 48.0	Dolomite; light buff, aphanitic, siliceous with 5% gypsum as thin seams.
48.0	- 50.0	Grey granite; moderately weathered, soft and friable for first meter. 10-20% coarse-grained muscovite. 49.0-50.0 fresh granite.

50.0m END

HOLE RT-6 APR. 20/79 FOUR MILE LAKE GRID 25m SE of Line 0 at 75m E of road
Elevation ≈209m (683')

0	- 50.5	Overburden.
50.5	- 50.9	Medium to coarse grained, predominantly granitic sand. Lost circulation, poor return.
50.9	- 52.5	Reddish-brown siltstone.
52.5	- 53.1	Reddish-brown siltstone with 10-20% granitic fragments (<1/10") and minor gypsum.
53.1	- 54.0	Granite; pale orange. Slightly weathered at upper contact, soft, friable. Fresh granite at 54m.

54.0m END

HOLE RT-7 APR. 21-22/79 4.0km SW of HWY #5, SW of Ft. Smith
Elevation ≈206m (677')

0	- 47.4	Overburden.
47.4	- 50.4	Till; well rounded granitic and gneissic pebbles and boulders.
50.4	- 51.7	Grey granite; highly fractured, slightly weathered.
51.7	- 52.0	Grey granite; fresh.

52.0m END

HOLE RT-8 APR. 23/79 Peace Point Rd at station #505 (SW of DND Monitor)
Elevation ≈207m (680')

0	- 17.2	Overburden.
17.2	- 18.8	Fine till; mixed granitic and sedimentary sand and pebbles with hard-packed clay and silt seams.
18.8	- 19.9	Limestone; dark to medium brown with numerous thick bitumen seams.
19.9	- 23.5	Limestone; light buff color.
23.5	- 24.2	Limestone; 10-20% white, fibrous gypsum.
24.2	- 25.0	Limestone; 30% white, fibrous gypsum.
25.0	- 27.0	Limestone; 10-20% white, fibrous gypsum.
27.0	- 27.5	Limestone; 30-40% white, fibrous gypsum.
27.5	- 28.0	Limestone; 50% white, fibrous gypsum.
28.0	- 28.6	Limestone; 50-60% white, fibrous gypsum.
28.6	- 29.0	Limestone; 30-40% white, fibrous gypsum.
29.0	- 31.5	Limestone; 20-30% white, fibrous gypsum.
31.5	- 32.0	Pale grey-green, slightly limey mudstone. Soft friable.
32.0	- 32.1	Gypsum.
32.1	- 35.5	Pale grey-green, slightly limey, soft, friable mudstone with 20% seams of gypsum.
35.5	- 36.3	80% gypsum with 20% thin seams pale grey-green mudstone.
36.3	- 36.8	Pale grey-green mudstone with 10% thin seams gypsum.
36.8	- 38.0	Light red-brown, soft, friable mudstone.
38.0	- 38.6	Grey-green, soft, friable mudstone.
38.6	- 42.0	Light red-brown, silty mudstone.
42.0	- 42.3	Grey-green mudstone with 10% thin seams gypsum.
42.3	- 48.0	Grey-green mudstone with very minor thin seams gypsum and occasional thin seam light red-brown siltstone. Becomes harder and more silty toward lower contact.
48.0	- 57.0	70% anhydrite (translucent, light-brown to cream to clear) and 30% gypsum at upper contact grading to 95% anhydrite and 5% gypsum at 49m through to 57m. Minor bitumen on bedding planes; increasing content toward 57m.
57.0	- 60.0	Limestone; grey-brown; gradational upper and lower contacts.
60.0	- 63.0	Dolomite; light buff to brown; fine to medium grained with numerous bitumen seams. Sharp lower contact.
63.0	- 65.6	Dolomite; light grey, fine grained.
65.6	- 66.0	Dolomite; light buff to brown; fine to medium grained with numerous bitumen seams.
66.0	- 67.0	Dolomite (as 65.6-66) with 5% pink gypsum as thin seams.
67.0	- 67.2	Dolomite (as 65.6-66).
67.2	- 69.0	Red siltstone.
69.0	- 69.5	Dolomite; light buff color with 5% thin seams of gypsum and occ thin seam of green siltstone.
69.5	- 69.7	Light buff to green siltstone.
69.7	- 70.3	Dolomite; very fine grained to aphanitic, siliceous, ligth buff.
70.3	- 70.6	Interbedded thin seams of Gypsum and Anhydrite.
70.6	- 71.0	Green siltstone with 10% gypsum as thin interbeds and 20% orange fld and quartz crystals (weathered granitic boulder?).
71.0	- 71.5	Till; predominantly well rounded granitic pebbles & coarse sand.
71.5	- 72.0	Granite; weathered & fractured for first 0.3m; fresh granite at 71.7m.

72.0m END

HOLE RT-9 APR. 24/79 N. of FOUR MILE LAKE 300m SW of Fitzgerald Hwy and 128m E of Peace Point Road. Elevation ≈212m (695')

0	- 41.2	Overburden.
41.2	- 41.7	Till; predominantly well rounded granitic pebbles and coarse sand. Water flow ≈1/2 gal/min.
41.7	- 42.5	Granite; fractured and weathered for first 0.3m; fresh granite at 42m.

42.5m END

A-77-2

To: TAIGA CONSULTANTS LTD.,
301, 1300 - 8th Street S.W.,
Calgary, Alberta T2R 1B2

ATTN: Mr. R.K. Netolitzky

File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U3O8
"Drill Chips"	
RT-1 1- 2	2.3
2- 3	1.1
3- 4	0.8
4- 5	5.1
5- 6	0.8
6- 7	0.5
7- 8	0.6
8- 9	0.5
9-10	0.2
10-11	0.8
11-12	0.5
12-13	0.5
13-14	0.2
14-15	0.2
15-16	0.2
16-17	0.2
17-18	0.2
18-19	0.2
19-20	0.2
20-21	0.2
22-23	NIL
23-24	0.2
24-25	NIL
25-26	0.2
26-27	0.2
27-28	0.2
28-29	0.2
29-30	0.2
30-31	0.5

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

[redacted]

Licensed Assayer of British Columbia

To: TAIGA CONSULTANTS LTD.,
301, 1300 - 8th Street S.W.,
Calgary, Alberta T2R 1B2

ATTN: Mr. R.K. Netolitzky

File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U308
RT-1 32-33	0.8
33-34	0.2
34-35	0.5
35-36	0.5
36-37	0.5
37-38	1.4
38-39	4.7
39-40	1.7
40-41	2.0
41-42	1.4
RT-2 11.2-12	NIL
12-13	NIL
13-14	NIL
14-15	0.2
15-16.2 A	0.9
16.2-17.6	0.2
17.6-18	0.7
18-19	NIL
19-20	NIL
20-21	0.2
21-22 A	NIL
21-22 B	NIL
22-23	NIL
23-24	NIL
24-25	NIL
25-26	0.2
26-27	NIL
27-28	0.2
28-29	0.2
29-30	0.7
30-31	1.1

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

[redacted]
Licensed Assayer of British Columbia

To: TAIGA CONSULTANTS LTD.,
301, 1300 - 8th Street S.W.,
Calgary, Alberta T2R 1B2

ATTN: Mr. R.K. Netolitzky

File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U308
RT-2 31-32 A	NIL
31-32 B	0.7
32-33	0.2
33-34 A	0.2
33-34 B	0.2
34-35	0.4
35-36	1.3
36-37	3.8
37-38	2.4
38-39	1.6
39-39.6	3.3
15-16.2 B	0.2
RT-3 3- 4	1.1
4- 5 *	-
5- 6 *	-
6- 7	1.6
7- 8	1.6
8- 9	1.6
9-11	1.6
11-12	1.3
12-13	1.1
14-15	0.7
15-16	1.1
16-17	0.7
17-18	0.7
18-19	NIL
19-20	NIL
20-21	NIL
21-22	NIL
22-23	NIL
23-24	NIL

* Samples Missing

I Hereby Certify THAT THE ABOVE RESULTS ARE THOSE ASSAYS MADE BY ME UPON THE HEREIN DESCRIBED SAMPLES . . . .

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ATTN: Mr. R.K. Netolitzky

File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U3O8
RT-3 24-25	NIL
25-26	0.2
26-27	0.2
27-28	0.2
28-29	0.2
29-30	1.6
30-31	0.2
31-32	0.2
32-33	0.2
34-35	0.7
35-36	2.4
36-37	3.6
37-38	2.9
38-39	11.2
RT-4 18-19	1.3
19-20	1.6
20-21	2.2
21-22	1.6
22-23	1.1
23-24	0.7
24-25	0.7
25-26	1.6
26-27	1.1
28-29	1.1
29-30	1.1
30-31	1.1
31-32	1.0
32-33	1.4
33-34	1.0
34-35	1.2
36-37	2.2

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File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U3O8
RT-4 37-38	1.0
38-39	0.8
39-40	0.6
40-41	1.0
41-42	0.6
42-43	1.8
43-44	1.0
44-45	0.6
45-46	6.8
RT-5 47-48	2.6
48-49	2.6
49-50	1.8
RT-6 6- 7	0.6
7- 8	0.6
8- 9	1.0
9-10	1.2
10-11	1.0
11-12	1.8
12-13	1.4
13-14	1.0
14-15	1.0
15-16	1.0
16-17	1.0
17-18	1.4
18-19	1.4
19-20	1.4
20-21	1.2
21-22	1.0
22-23	1.8
23-24	1.4
24-25	1.4

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Pulps Retained one month unless specific arrangements made in advance.

[redacted]

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Calgary, Alberta T2R 1B2

ATTN: Mr. R.K. Netolitzky

File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U3O8
RT-6 25-26	1.8
26-27	1.6
27-28	1.4
28-29	2.4
29-30	2.0
30-31	2.0
31-32	2.0
32-33	2.0
33-34	2.0
34-35	2.0
35-36	1.6
36-37	1.6
37-38	2.0
38-39	1.6
39-40	1.6
40-41	1.6
41-42	1.6
42-43	1.6
43-44	2.4
44-45	1.6
45-46	1.6
47-48	1.6
48-49	1.6
49-50	2.0
50-51	1.6
51.3	1.1
51-52	1.1
52-53	1.1
53-54	1.6
RT-7 2- 3	0.7
8-10	1.1

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[redacted]

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File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U3O8
RT-7 10-12	0.9
12-14	1.6
14-16	1.6
16-18	1.6
18-20	1.6
20-22	1.1
22-24	0.9
24-26	1.6
26-28	2.0
28-30	2.0
30-32	1.6
32-34	1.4
34-36	1.0
36-38	1.4
38-40	1.4
40-42	1.4
42-44	1.2
44-46	1.0
46-47.4	1.0
47.4-48	1.6
48-49	1.4
49-50	1.2
50-51	1.4
51-51.7	1.4
2-10	0.6
RT-7 3- 4	1.4
RT-8 4- 6	1.2
6- 8	1.2
8-10	1.2
10-12	1.4
12-14	1.4

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Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

[redacted]
Licensed Assayer of British Columbia

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Calgary, Alberta T2R 1B2

ATTN: Mr. R.K. Netolitzky

File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U308
RT-8 14-16	1.4
16-18	1.4
18-19	1.8
19-20	1.4
20-21	2.0
21-22	1.8
22-23	2.2
23-24	1.0
24-25	0.6
25-26	0.2
26-27	0.2
27-28	0.6
28-29	0.4
29-30	0.2
30-31	0.2
31-32	0.4
32-33	0.2
33-34	0.6
34-35	0.2
35-36	0.2
36-37	0.7
37-38	0.7
38-39	0.7
39-40	0.9
40-41	0.7
41-42	0.7
42-43	0.7
43-44	0.7
44-45	0.7
45-46	0.2
46-47	0.2

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[redacted]
Licensed Assayer of British Columbia

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Calgary, Alberta T2R 1B2

ATTN: Mr. R.K. Netolitzky

File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U3O8
RT-8 47-48	0.7
48-49	NIL
49-50	NIL
50-51	NIL
51-52	NIL
52-53	NIL
53-54	0.2
54-55	0.2
55-56	0.2
56-57	0.2
57-58	0.2
58-59	0.2
59-60	0.4
60-61	0.4
61-62	0.7
62-63	1.6
63-64	1.1
64-65	0.7
65-66	0.7
66-67	0.7
67-68	1.1
68-69	1.1
69-70	1.8
70-71	2.0
71-72	1.1
RT-9 6- 8	1.3
8-10	1.6
10-12	1.6
12-14	1.6
14-16	1.6
16-18	2.0

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Pulps Retained one month unless specific arrangements made in advance.

[redacted]
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Calgary, Alberta T2R 1B2

ATTN: Mr. R.K. Netolitzky

File No. 16964
Date May 21, 1979
Samples Drill Chips

Certificate of ASSAY

LORING LABORATORIES LTD.

SAMPLE No.	PPM U308
RT-9 18-20	1.6
20-22	1.6
22-24	1.5
24-26	1.6
26-28	1.6
28-30	1.6
30-32	1.6
32-34	1.8
34-36	1.6
36-38	1.3
38-40	1.3
40-41.6 A	2.0
40-41.6 B	1.6
41.2-42.2	1.6
42.2	3.5

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Rejects Retained one month.

Pulps Retained one month unless specific arrangements made in advance.

[redacted]
Licensed Assayer of British Columbia

BONDAR-CLEGG & COMPANY LTD.

764 BELFAST ROAD, OTTAWA, ONTARIO, K1G 0Z5 PHONE: 237-3110

Geochemical Lab Report

Extraction U-HNO_3 Report No. 410-79

Method Fluorimetric From Taiga Consultants Limited

Fraction Used -100 mesh- Whole rock reduced to -200 mesh Date April 26, 19 79

SAMPLE NO.		U ppm						REMARKS
SL-531		0.3		OVERBURDEN AND BASAL TILL SAMPLES				
32		0.9						
33		0.6						
9AT 2118		0.6						
19		0.6						
20		0.4						
21		0.6						
22		1.2						
23		1.0						
24		0.3						
25		0.5						
26		0.6						
27		0.6						
28		0.6						
29		0.7						
RA-28		1.9		ROCK SAMPLES				
29		1.7						
30		2.1						
31		1.5						
32		1.3						
33		2.4						
34		2.4						
35		2.1						
36		2.1						
37		2.2						

BONDAR-CLEGG & COMPANY LTD.
Vancouver, British Columbia
(verbal report)

Sample Number	U ppm
9AT2103	1.0
9AT2104	2.0
9AT2106	3.0
9AT2107	2.0
9AT2108	0.4
9AT2109	0.8
9AT2110	2.0
9AT2111	0.6
9AT2112	1.0
9AT2113	1.0
9AT2114	2.0
9AT2115	0.8
9AT2116	2.0
9AT2117	1.0

Sample Number	U ppm
9RL3201	1.0
9RL3202	0.6
9RL3203	0.6
9RL3204	0.6
9RL3205	0.6
9RL3206	3.0
9RL3207	1.0
9RL3208	0.8
9RL3209	0.8
9RL3210	<0.2
9RL3211	2.0
9RL3212	2.0
9RL3213	1.0

C. F. Gleeson & Associates Ltd. 764 Belfast Road, Ottawa K1G 0Z5, Ontario. Car
Phone (613) 232-0796 - (613) 652-4

SUMMARY OF GEOCHEMICAL REPORT ON SLAVE RIVER

In 1978 Taiga Consultants Ltd. on behalf of Marline Oil Corporation took some 239 sediment samples and 241 water samples from lakes and muskegs of the Slave River area. The former samples were analyzed geochemically for U, Cu, Pb, Zn, Ni, Mo and Ag; the latter were analyzed for U, pH and specific conductivity. The results were computer plotted, moving average and residual maps were drawn and basic statistical parameter calculated.

Generally most of the permits are underlain by Devonian limestones and dolomites unconformably overlying Precambrian granitic rocks. The contact between these rocks trends southeast-northwest along the east border of the permits. Air-photo lineaments are dominently northeast and northwest and probably represent major faults in the area.

Overlapping northeasterly geochemical trends for Pb-Ag-U and specific conductivity are dominent in the southeast part of the permits; in the northeast sector of the permits U-Pb-Mo-pH regional northwest trends are present and in the northwest corner of the permits overlapping northeast trending U-Zn-Cu-Mo regional trends occur. Devonian strata underlie all these areas.

Outside of the permits definitive northeast coincident regional U-Zn-Ni-Ag trends are present over Devonian terrane in the northwest corner of the surveyed area. The Precambrian granitic terrane in the east sector of the area is marked by north trending coincident regional increases in U-Zn-Ni, overlap with Ag occurs in the north and with specific conductivity in the south. Within the U-Ni regional highs there are northeast

trends coinciding with airphoto lineaments.

Significant U in water anomalies are present in the south part of the permits, in the vicinity of Four Mile Lake and southwest of Fort Smith. U anomalies have been found in humus samples in the vicinity of some of the anomalies in these areas. Near Fitzgerald U water anomalies occur in an area where high background granites (3-7.5ppm U) outcrop and limestones west of here also are abnormally high in U (1.5-3ppm over a background of < 0.4ppm).

To obtain better anomaly definition prior to drilling systematic (100m x 300m) soil sampling of the humus horizon should be carried out, all springs and outcrops should be sampled and analyzed for U. In follow-up work an effort should be made to selectively sample rocks enclosing fractures and micro-fractures.

[redacted]

February 14,1979

C.F. Gleeson PhD, P.Eng.

SALT RIVER

SECTION D-D

Surface powerline

buried phone/power line parallel to road N. to Fort Smith

cleared field

Dept. of Comm. Radio Monitoring Station 5 towers

Hole abnd. 36 m. Bedrock not reached.

Limestone bedrock, 16 m.

Limestone bedrock, 8 m.

Limestone bedrock, 7.5 m

Limestone bedrock, 10 m

Limestone bedrock, 7 m

Cabin

Campground

PERMIT 6878020001

RT-6

0 - 18.8 m	Overburden; silty clay
18.8 - 31.5	Keg River Fm. ?; limestone
31.5 - 57.0	D.Ch., Upper Member ?; mudstone & anhydrite
57.0 - 60.0	D.Ch., Hay Camp Member?; limestone.
60.0 - 69.7	D.Ch., Lower Member?; secondary dolomite + siltstone
69.7 - 71.0	Fitzgerald Fm. ?; primary dolomite + siltstone.
71.5 - 78.0 T.D.	Till
	Granite.

RA-28, <0.4 ppm U
18" thick limestone conglomerate; Up To 5% bitumen in matrix

RA-29, <0.4 ppm U, 50-60 c.p.s.
Brown, rel mass., fossiliferous limestone. Underlies RA-28. Less than 4' exposed.

RA-30, <0.4 ppm U, 50-60 c.p.s.
Overlies RA-29; N/S(k), fossiliferous limestone (algal balls, brachiopods) Fetid, + trace bitumen in fractures.

SL 531 @ 6", dk. brn., 8 ppm U soil 0.3 ppm
SL 532 @ 36", basal till, 10% rounded granitic pebbles, 0.9 ppm U.
RA-30, 2.1 ppm U. 4' exposed lt. brn. foss. limestone, weakly limonitic

SL-533 @ 36" basal till, 20% rounded granitic pebbles, 0.6 ppm U
RA-31, 1.4 ppm U, 3' exposed lt. brn. foss. limestone.
RA-32, 1.3 ppm U, " " " " "
RA-34, 2.1 ppm U, 15' lt. brn. foss. limestone
RA-37, 2.2 ppm U, 12' lt. brn. foss. limestone

RA-28, 1.9 ppm U 18 exposed of lt. brn. foss. limestone

RA-29, 1.7 ppm U 12' exposed limestone

RA-33, 2.4 ppm U

RA-34 2.4 ppm U Coarse breccia fragments to 15 cm diameter 6 to 20' wide

Beaver Dam Creek

SALT RIVER

WOOD BUFFALO NATIONAL PARK

SL: 222,224 N 225 300 m. due south

0 100m 500m 1 Km 2 Km

MAP NO. 78-3 Sheet 4 of 4
REFER TO SHEET I FOR LEGEND

1979013

MARLINE OIL CORPORATION

SLAVE PROJECT - ALBERTA

QUARTZ MINERAL EXPLORATION PERMITS

6878020001 & 6878020002

Twps. 125-126; R 10-13; W4M

SOIL GEOCHEMICAL SURVEY

November 15, 1978; Revised: June 1/79

Scale: 1:20,000

TAIGA CONSULTANTS LTD. - CALGARY

Map 78-3
Sheet 4 of 4

NORTHWEST TERRITORIES
ALBERTA

FORT SMITH

AVTC Training ground

SLAVE RIVER

drill road

1 km.
2 km.
3 km.
4 km.

SECTION E - E

RT-7
0 - 97.4 Overburden; silty clay
97.4 - 50.4 Till
50.4 - 52.5 T.D. Granite

RT-9
0 - 41.2 Overburden; silty clay
41.2 - 41.7 Till
41.7 - 42.5 T.D. Granite

RT-4
0 - 37.5 m Overburden; silty clay
37.5 - 38.8 Till
38.8 - 45.4 Fitzgerald Fm.?, primary dolomite & siltstone
45.4 - 47.5 T.D. Granite

RT-5
0 - 46.8 m. Overburden; silty clay
46.8 - 48.0 Fitzgerald Fm.?, primary dolomite
48.0 - 50.0 T.D. Granite

RT-6
0 - 50.5 m Overburden; silty clay
50.5 - 50.9 Till
50.9 - 52.1 Ordovician Lower Member?, siltstone
52.1 - 54.0 T.D. Granite

Air Radio non-directional beacon one tower

Line 14
Line 0
Line 15
Line 85

SECTION C-C

FOUR MILE LAKE (FLOATBASE)

buried phone/powerline parallel to road

PERMIT 6878020002

PERMIT 6878020001

SALT RIVER

19790013

MARLINE OIL CORPORATION
SLAVE PROJECT - ALBERTA
QUARTZ MINERAL EXPLORATION PERMITS
6878020001 & 6878020002
Twps. 125-126; R 10-13; W4M
SOIL GEOCHEMICAL SURVEY
November 15, 1978 Revised: June 1, 1979
Scale: 1:20,000
TAIGA CONSULTANTS LTD. - CALGARY

MAP NO. 78-3 Sheet 3 of 4
REFER TO SHEET I FOR LEGEND

0 100m 500m 1 Km 2 Km

Map 78-3
Sheet #3 of 4

19790013

MARLINE OIL CORPORATION

SLAVE PROJECT - ALBERTA

QUARTZ MINERAL EXPLORATION PERMITS

6878020001 & 6878020002

Twps. 125-126; R 10-13; W4M

SOIL GEOCHEMICAL SURVEY

November 15, 1978 Revised: June 1, 1979

Scale: 1:20,000

TAIGA CONSULTANTS LTD. - CALGARY

MAP NO. 78-3 Sheet 2 of 4

REFER TO SHEET I FOR LEGEND

0 100m 500m 1 Km 2 Km

SLAVE RIVER

GRAVELPIT & STOCKPILE

PERMIT 6878020001

RT - 3

0-16 m.	Ovbd
16 - 28.5	Gypsum, anhydrite
28.5 - 29.9	Limestone
29.9 - 34.8	Siltstone, anhydrite
34.8 - 38.2	Dolomite
38.2 - 38.5	Till
38.5 - 39.5	Granite

RT - 2

0 - 11.2 m.	Ovbd
11.2 - 29.9	Gypsum, anhydrite
29.9 - 31.1	Limestone
31.1 - 37.5	Siltstone, anhydrite
37.5 - 38.9	Dolomite
38.9 - 39.6	Granite

RT - 1

0 - 8 m.	Ovbd
8 - 15.2	Limestone
15.2 - 28	Anhydrite, siltstone
28 - 32.6	Limestone
32.6 - 39.2	Siltstone, anhydrite
39.2 - 40.5	Dolomite
40.5 - 40.8	Till
40.8 - 41.5	Granite

Line 3N

Line 2N

Line 1N

SECTION B-B

SECTION A-A

Overgrown cutline location approximate.

Overgrown cutline location approximate

Cemetary

FITZGERALD

Government Docks

Millpond

Abandoned Millsite

WOOD BUFFALO NATIONAL PARK

19790013

NOTE: BASEMAP COMPILED FROM UNCONTROLLED PHOTO-MOSAIC

Drill hole RT-9; Refer to Map 78-3, Sheet 3 of 4 and Drill Section E-E

MAG. DECL. 28°E

MARLINE OIL CORPORATION

SLAVE PROJECT - ALBERTA

QUARTZ MINERAL EXPLORATION PERMITS

6878020001 & 6878020002

Twps. 125-126; R 10-13; W4M

SOIL GEOCHEMICAL SURVEY

November 15, 1978 Revised: June 1, 1979

Scale: 1:20,000

TAIGA CONSULTANTS LTD. - CALGARY

MAP NO. 78-3 Sheet 1 of 4

0 1 Km 2 Km

LEGEND

- PROPERTY BOUNDARIES
- All-weather gravel road
- Winter roads, cutlines, trails
- Powerline

3.0 | 45 / C | 10"

URANIUM ppm | ZINC ppm

Composition | Sample depth

- c - clay
- st - silt
- s - sand
- sl - soil
- H - humus, organic rich

1978 Sample series — SL-1,2,....

#276 Sample location

SOIL GEOCHEMICAL SURVEY RESULTS

- 1.5 - 2.9 ppm U
- 3.0 - 4.5 "
- 4.6 - 10.0 "
- > 10.1 "

Pionjar drill hole location
R. Cormier & Associates Ltd.; Mar. 1979.

RT-4 Reverse-Circulation rotary drill hole
M°Auley Drilling; April, 1979.

CN Microwave Towers

cleared field

Line 0

Line 1S

Line 2S

SLAVE RIVER

PERMIT 6878020002

PERMIT 6878020001

#379 <0.4 | 40 / S | 6"
#380 <0.4 | 36 / S | 18"
#381 <0.4 | 38 / S | 27"
#382 <0.4 | 52 / S | 73"
#383 2.5 | 59 / H | 48"

15' thick laminated fine sand, no coarse fraction.

sand pit
379 @ 6"
380 - 12"
381 - 24"
382 - 72"

phone line parallel to road from Fort Smith to Fitgerald

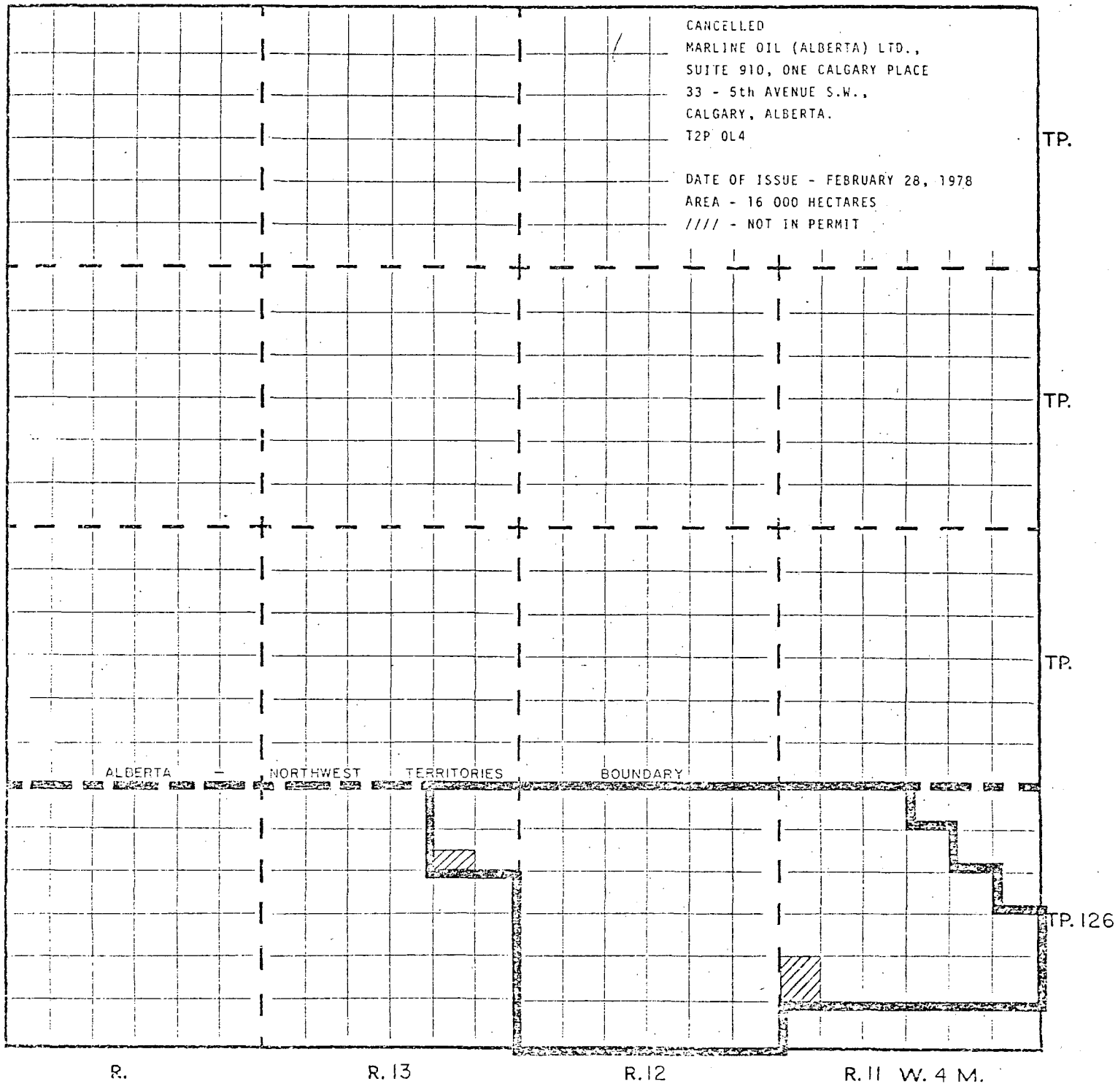
PH-299

PH-298

PH-297

sand pit

QUARTZ MINERAL EXPLORATION PERMIT NO. 6878020002



1979013

MARLINE OIL CORPORATION

SLAVE PROJECT - ALBERTA

QUARTZ MINERAL EXPLORATION PERMITS 6878020001, 2
TWP. 125, 126 R.10-13 W4M

BEDROCK GEOLOGY

JULY 25, 1978

TAIGA CONSULTANTS LTD. - CALGARY

SCALE: 1:50,000

1000m 0 1km 2km 3km 4 km

MAP NO. 78-1
REVISED: NOV. 15, 1978
JUNE 1, 1979

LEGEND

- PERMIT BOUNDARIES
- AIRPHOTO LINEAMENTS
- RAPIDS, SANDBARS
- POWERLINE
- ROADS
- CUTLINES & TRAILS

Basemap compiled from uncontrolled photo mosaic

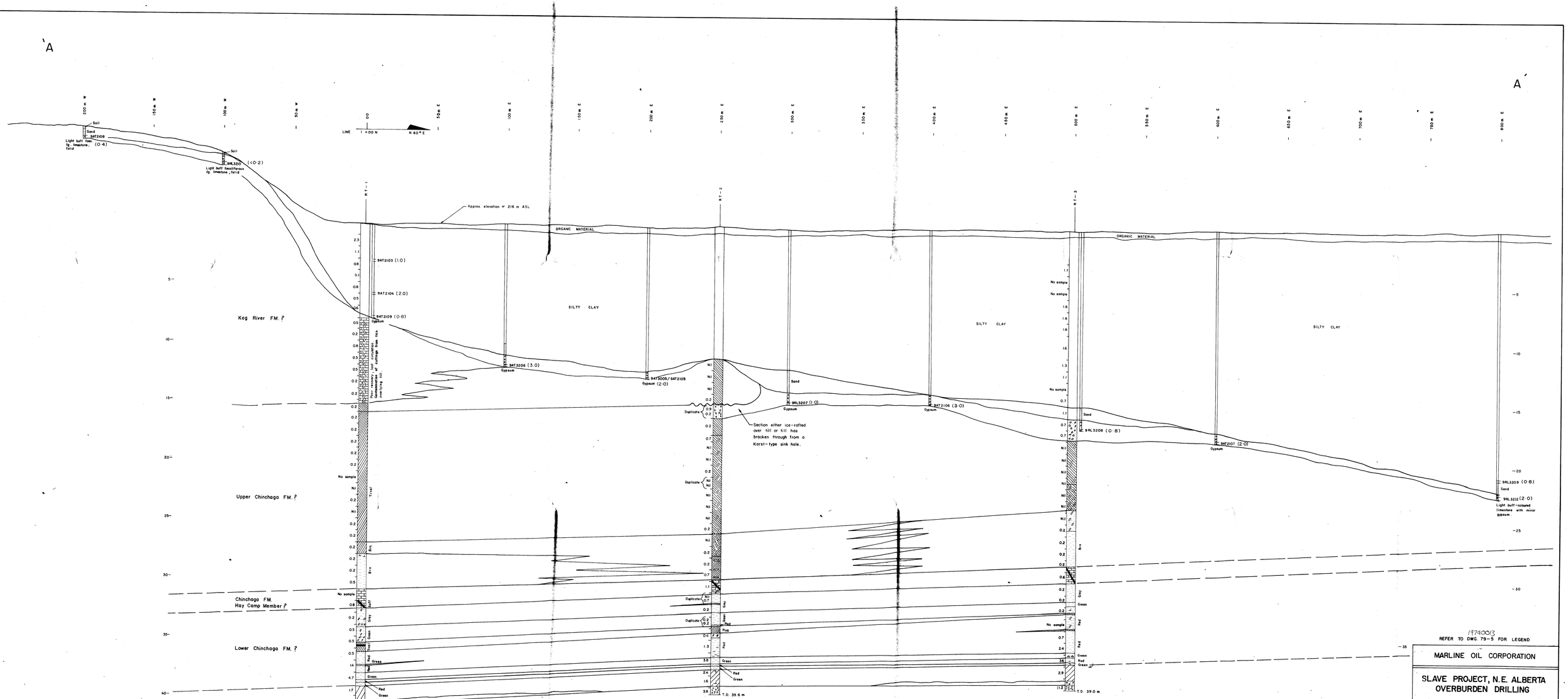
- INFERRED PRECAMBRIAN - PALEOZOIC CONTACT
- INFERRED GEOLOGIC CONTACT BENEATH PALEOZOICS
- INFERRED GEOLOGIC CONTACT BENEATH OVERBURDEN
- OUTCROPS
- RA-19 75 cps ROCK GEOCHEMICAL SAMPLE COUNTS/SECOND, BGS-ISL SCINTILLOMETER
- BEDROCK SUBCROP (inferred)
- RT-1 1979 ROTARY DRILL HOLE

SAWMILL ISLAND
CUNNINGHAM LANDING
HWY. 5 (to Hay River)
SLAVE RIVER
BELL ROCK
Dch HAY CAMP MEMBER
RAPIDS OF THE DROWNED
FORT SMITH
NORTHWEST TERRITORIES
ALBERTA
84-P-16 74-M-13
PERMIT 6878020002
PERMIT 6878020001
MOUNTAIN RAPIDS
FOUR MILE LAKE
PELICAN RAPIDS
FITZGERALD
RYAN ISLAND
SALT RIVER
SLAVE RIVER
WOOD BUFFALO NATIONAL PARK
TWP. 126
TWP. 125
Mag. Decl. 28°E

TABLE OF FORMATIONS *

ERA	PERIOD		MAP UNIT	FORMATION AND ASSUMED THICKNESS	LITHOLOGY	
CENOZOIC	RECENT & PLEISTOCENE		AL		Alluvium	
			GL		Glaciolacustrine Sands, Silt, Clay	
			AS		Aeolian Sands	
	major unconformity					
PALEOZOIC	DEVONIAN	ELK POINT GROUP MIDDLE	Dk	KEG RIVER FM (marine)	grey and brown fine- to medium-grained limestone, thin- to thick-bedded, locally richly fossiliferous and coarse-grained; grey medium-grained dolomite, locally vuggy (upper member)--fine-grained brown dolomite and laminated dolomite, locally vuggy; minor limestone; unit locally much brecciated and recemented (lower member); minor bitumen throughout exposures	
			(possible minor unconformity)			
			Dch	CHINCHAGA FM (evaporitic)	Upper Member 0-150'	white and grey gypsum, argillaceous and dolomitic gypsum and anhydrite; some dolomite, dolomitic limestone, red and green shale; some salt in subsurface
					Hay Camp Member 20-30'	limestone breccia, occasional fragments of dolomite. May contain bitumen seam to 2" thick.
					Lower Member 10-12'	thin-bedded white, grey or blue gypsum (selenite & satin spar), minor crypocrystalline dolomite
	MIDDLE DEVONIAN (?)		Df	FITZGERALD FM (marine) 10-26.4'	grey and brown fine- to medium-grained dolomite to sandy dolomite and dolomitic limestone, locally vuggy; grading down into sandstone, arkose and breccia (La Loche Formation); thin seam of carbonaceous dolomite (2") near the base; occasional thin interbeds of gypsum	PRESENCE EXTRAPOLATED FROM REGIONAL-SCALE MAPS.
	unconformity (?)					
	MIDDLE DEVONIAN (?) or PRECAMBRIAN		PR	PRECAMBRIAN REGOLITH or LA LOCHE FM 0-22.3'	breccia, conglomeratic sandstone, arkosic sand, sandstone, and sandy mudstone; matrix contains clay and iron oxide	NOT EXPOSED IN PROJECT AREA
	major unconformity					
PRECAMBRIAN	ARCHEAN (?)		PG		felsic granite, minor granite gneiss, occasional mafic lenses	
			PS		granite with metasedimentary remnants; and/or granite gneiss (Tazin Gp rocks?)	
			PM		mafic intrusives (?)	

* adapted after: Norris (1963), Norris (1965), Green (1972), and Pugh (1973)



19740013

REFER TO DWG. 79-5 FOR LEGEND

MARLINE OIL CORPORATION

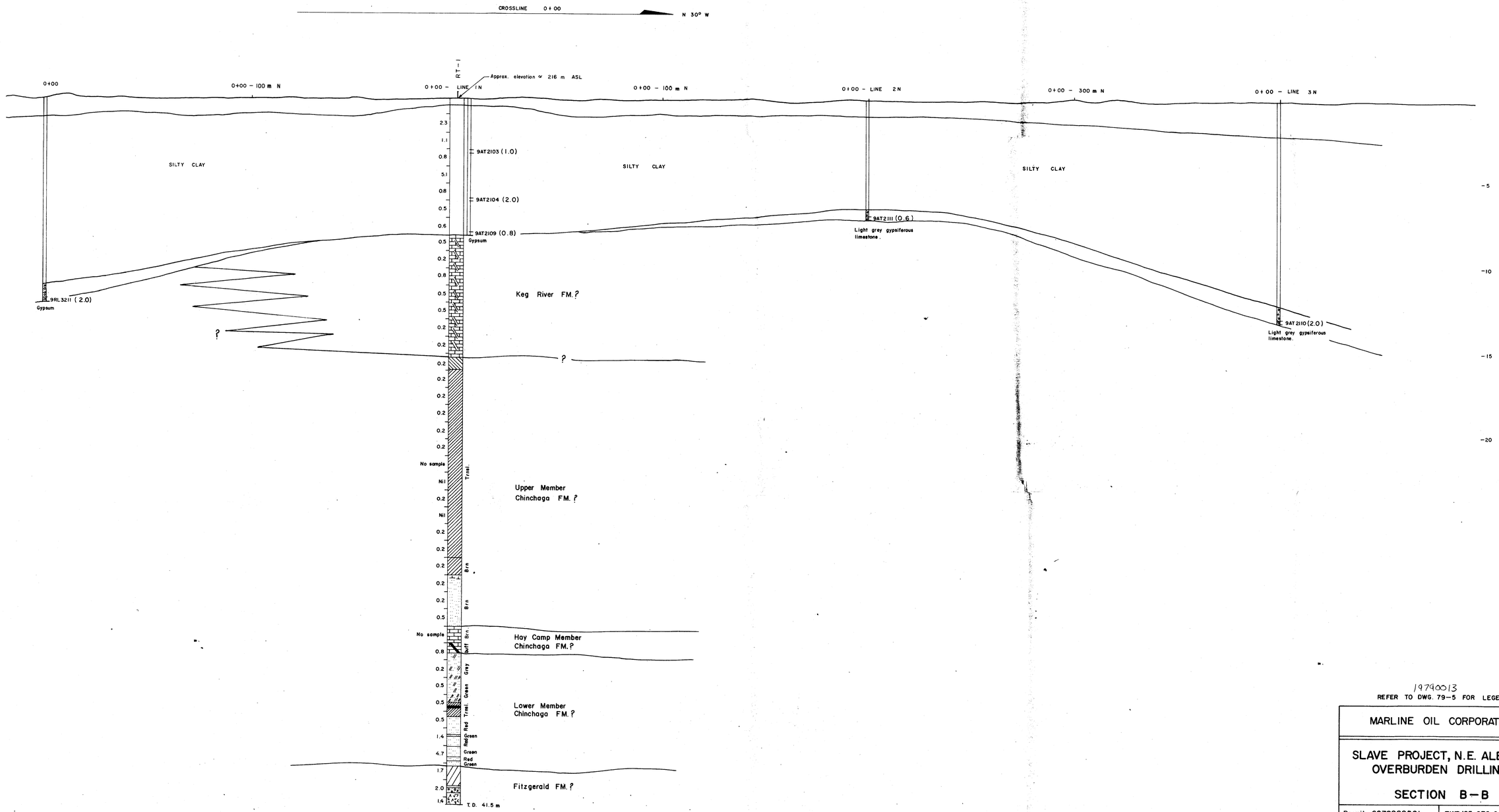
SLAVE PROJECT, N.E. ALBERTA
OVERBURDEN DRILLING

SECTION A-A

Permit : 6878020001	TWP. 125, SEC. 8; R10; W4M
Vertical Scale : 1cm = 1m	Horizontal Scale: 1cm = 8.33m
Date : June 1, 1979	Geology: J. R. Allan
TAIGA CONSULTANTS LTD.	DWG 79-1

B

B´



1979013

REFER TO DWG. 79–5 FOR LEGEND

MARLINE OIL CORPORATION

SLAVE PROJECT, N.E. ALBERTA
OVERBURDEN DRILLING

SECTION B–B

Permit: 6878020001	TWP. 125; SEC. 8; R10; W4M
Vertical Scale: 1cm = 1m	Horizontal Scale: 1cm = 8.33m
Date: June 1, 1979	Geology: J.R. Allan
TAIGA CONSULTANTS LTD.	DWG 79–2

C

C'

00 | RT-6 | 100 m E | 200 m E | 300 m E | 400 m E | RT-5 | 500 m E | 600 m E | 700 m E | 800 m E | RT-4

ROAD

Projected onto section from approx. 220 M NW. Sample site on road at site # 455

Projected onto section from approx. 400 M NW. Sample site on road at site # 454.

MUSKEG

MUSKEG

9AT2124 (0.3)

9AT2125 (0.5)

9AT2126 (0.6)

9AT2127 (0.6)

9AT2128 (0.6)

9AT2119 (0.6)

9AT2120 (0.4)

9AT2121 (0.6)

9AT2122 (1.2)

9AT2123 (1.0)

9RL 3204 (0.6)

9RL 3201 (1.0)

9RL3202 (0.6)

9RL3205 (0.6)

9RL3203 (0.6)

Overburden profile
Not sampled
Poor recovery with reverse circulation

SILTY CLAY

SILTY CLAY

0-18 poor recovery
Numerous silty sections resulting in lost circulation, Not sampled.

9RL 3213 (1.0)

9AT2112 (1.0)

Fitzgerald FM. ?

Lower member, Chinchaga FM. ?

Fitzgerald FM. ?

T.D. 54m

T.D. 50m

Intensely fract.

Green

Green

Light Grn.

Green

T.D. 45.9m

19790013

REFER TO DWG. 79-5 FOR LEGEND

MARLINE OIL CORPORATION

SLAVE PROJECT, N.E. ALBERTA
OVERBURDEN DRILLING

SECTION C—C

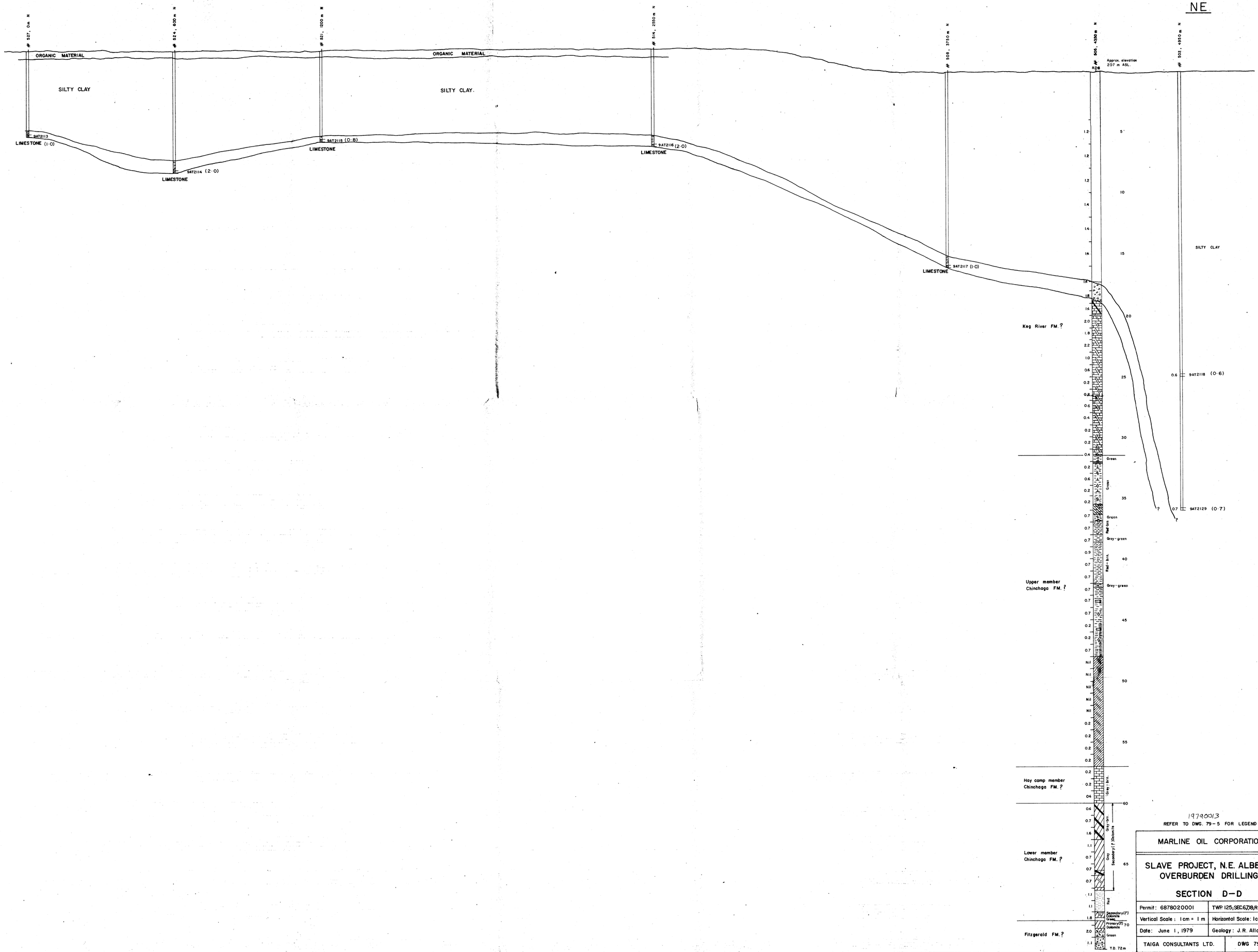
Permit: 6878020002	TWP 126; SEC. 20-21; R11W4M
Vertical Scale: 1cm = 1m	Horizontal Scale: 1cm = 8.33 m
Date: June 1, 1979	Geology: J.R. Allan
TAIGA CONSULTANTS LTD.	DWG 79—3

D

SW ← PEACE POINT ROAD →

D'

NE



1979013

REFER TO DWG. 79-5 FOR LEGEND

MARLINE OIL CORPORATION

SLAVE PROJECT, N.E. ALBERTA OVERBURDEN DRILLING

SECTION D-D

Permit: 6878020001	TWP 125, SEC 6, 7, 18, R 11, W4M
Vertical Scale: 1cm = 1 m	Horizontal Scale: 1cm = 50 m
Date: June 1, 1979	Geology: J.R. Allan
TAIGA CONSULTANTS LTD.	DWG 79-4

E

ppm U_3O_8

R.T. – 7

Approx 2 km W of Fort Smith & 4.0 km SW of highway No. 5.

Elevation : ≈ 206 m ASL

Organic Material

Muskeg & Clay

0.7

1.4

Composite Sample
0.6 ppm U_3O_8
(poor recovery, lost circulation)

1.1

10—

0.9

1.6

SILTY CLAY

1.6

1.6

20—

1.6

1.1

0.9

25—

1.6

2.0

2.0

30—

1.6

1.4

1.0

35—

9AT 2130 (Sample not recovered)

1.4

1.4

40—

1.4

1.2

1.0

45—

1.0

1.6

1.4

1.2

50—

1.4

Highly fractured & altered

Fresh

T.D. 52 m

2

Basement subcrop slope
approx 11.5 m over
a distance of 6,625 m.

E´

R.T. – 9

Location : 300 m SW of Fitzgeral highway & 128 m E of Peace Point Rd.

Elevation : ≈ 212 m ASL

Soil

1.3

1.6

– 10

1.6

1.6

1.6

2.0

1.6

– 20

1.6

SILTY CLAY

1.5

1.6

1.6

1.6

1.8

1.6

1.3

1.3

– 30

– 40

duplicate

2.0

1.6

1.6

3.0

T.D. 42.5 m

LEGEND

Pionjar percussion drill hole; 1" diameter R. Cormier & Associates LTD. Mar. 21 – Apr. 7, 1979.

9AT 2112 (1.2) Geochemical sample (approx. 6" in lenght x 1" diameter) U_3O_8 in parts per million.

R.T. – 6

Dual-wall reverse circulation drill hole. Failing 1500 truck-mounted drill; 4" diameter hole. McAuley Drilling LTD. Apr. 14 – 24, 1979

1.6

Geochemical sample (approx. 1lb. over 1 meter); value of U_3O_8 expressed in parts per million.

Limestone ; calcoreous

Dolomite ; dolomitic

Gypsum ; gypsiferous

Anhydrite ; anhydritic

Siltstone ; siltstone stringers

Mudstone (Claystone) ; argillaceous

Sand ; unconsolidated

Till

Granite

Bitumen ; generally restricted to bedding planes

Pyrite

19790013

MARLINE OIL CORPORATION

SLAVE PROJECT, N.E. ALBERTA OVERBURDEN DRILLING

SECTION E–E

Permit: 6878020002	TWP. 125; R. 11-12, W4M
Vertical Scale : 1cm = 1 m	Horizontal Scale: 1cm = 200 m
Date: June 1, 1979	Geology : J. R. Allan
TAIGA CONSULTANTS LTD.	DWG 79–5