

GM 05365-C

Diamond drilling, lac La Trêve property, Daine township

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Énergie et Ressources
naturelles

Québec 

PUBLIC

EMPIRE OIL AND MINERALS INC.

Diamond Drilling

LAC LA TREVE PROPERTY

Daine Township

Abitibi County East

QUEBEC.

QUEBEC DEPARTMENT OF MINES R. C. Cunningham
Geologist

MAR 17 1958

MINERAL DEPOSITS BRANCH May 29, 1957.

No G M-

5365-0 C

EMPIRE OIL AND MINERALS INC.

Diamond Drilling Report

Lac La Treve Property

Daine Township

Abitibi County East

Quebec.

INTRODUCTION

The Lac La Treve Property of Empire Oil and Minerals Inc. consists of thirty claims arranged in a "U" shape around the western end of Geneveive Bay on Lac La Treve. The "U" is tilted with the open top toward the north and east.

The claims were staked in June 1956 after fairly good nickel assays were obtained from the northward dipping gabbro-diabase dike. This dike lies in a band of greywacke and conglomerate some half mile to the south of a band of Keewatin type lavas.

The dike would appear to be conformable with the bedding of the sediments and on the Empire Oil and Minerals property dips to the north at angles of 69 to 73°.

Location

The claims are located in the southern and eastern portion of the township of Daine, Abitibi County East, Quebec. They lie about three quarters of a mile to the north of the 75 mile post, on the boundary between Daine and La Ribourde townships.

The group of claims consists of the following:

- Cert. - 112349, claim 5. - *Empire 12/6/57*
- Cert. - 112361, claim 5 *OK*
- Cert. - 112362, claims 1 to 5 inclusive *OK*
- Cert. - 112363, claims 1 to 4 inclusive *(cls 1 & 3 - Expires 11/6/57) cl 4 - 11/6/58*
- Cert. - 112375, claims 2 to 5 inclusive - *Expires 14/6/57*
- Cert. - 112376, claims 1 to 5 inclusive - *Expires 14/6/57*

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Sketch Map of the Claims -----	In envelope at back.

Cert. - 112377, claims 1 to 5 inclusive. *E.H. 13/6/57*

Cert. - 112391, claims 1 to 5 inclusive. *C.K.*

For the most part the claims lie to the south of the New Jersey Zinc ground but a strike length of 3500 feet along the dike has been obtained.

A group of claims three wide from east to west lie to the north of the New Jersey Zinc ground and so cover the dike down the dip from its outcropping on that property.

Work Accomplished

16.07 miles of line were cut on the property during the summer of 1956 and over a portion of the lines a preliminary magnetometer survey was run.

Lines 100 feet apart were surveyed over the outcrop area of the dike. The continuance of the dike on the Empire Oil and Minerals property was by this means established and a program of trenching and drilling with a "Pack Sack" drill was carried out.

Surface showings were uncovered and assays as high as 1.453% nickel were received. The range of the assay values may be seen in this writer's report dated Jan. 12, 1957.

The "Pack Sack" drilling was inconclusive as the lower contact of the dike could not be reached and it was to follow up this work that the heavy drilling was recommended.

The drill, a Boyles P4, was moved in to the property on February 24th, 1957, and Advance Drilling Corp. of North Bay started drilling on March 11th. Thirteen holes were drilled through the dike and into the underlying sediments and by May 2nd 4,273.5 feet of "A.X.T." drilling had been completed.

Moving the equipment out to Lac La Treve was commenced on May 3rd and after taking down all the equipment for flying out and building a dock the crew moved out May 12th, the first day the Lake was free of ice.

DIAMOND DRILLING

DIAMOND DRILLING

Diamond drill hole 57 - 1 was put down to check on the highest magnetic area of the property as may be seen from the magnetic profiles of the picket lines and the magnetic profiles along the drill holes. The collar is well to the north of the northern contact of the dike and the greatest magnetic intensities would seem to have been caused by the magnetite and pyrrhotite of the sediments, principally found in the conglomerate.

Traces of nickel and copper were found in sample 8606 just below the upper contact of the gabbro. There is no magnetic manifestation of the mineralization.

Drill Hole 57- 2 was put down closer to the contact of the gabbro dike and traces of copper were found near the lower contact of the gabbro in sample 8616.

Hole 57 - 3 was placed three hundred feet to the west of 57-2 and in this hole the best mineralization of the drilling was obtained. Samples 8618, 8619 and 8620 gave the best results with traces of copper in sample 8621. The best mineralized width was 13.2 feet and the best assay was 8619 which gave 0.46% Ni, 0.41% Cu. and 0.06% Co. over a width of five feet.

The pentlandite and chalcopyrite was in the form of blebs and was accompanied by barren pyrrhotite and pyrite. The zone lies just above the bottom contact of the gabbro and would seem to have been formed by gravitational settling of the sulphides in the molten gabbro magma.

Hole 57 - 3B was drilled at 70° immediately beneath 57 - 3 and cut the mineralized zone at a vertical depth of about 330 feet. Sample 8627 across five feet gave the best results but these were quite low; 0.13% Ni, 0.10% Cu. and nil cobalt. The mineralization was still near the lower contact of the gabbro but in this instance at a greater distance than in the hole above. The mineralization, still in the form of blebs would constitute about 5% of the rock.

Drill hole 57 - 4 was moved back eastward 100 feet and about fifteen feet above the bottom contact of the gabbro gave low values in nickel with traces of copper across 6.1 feet. All mineralization, both pentlandite, barren pyrrhotite and pyrite were less concentrated than in hole #3.

Hole 57 - 4 B at 70° and immediately beneath #4 gave only 0.20% Ni. across 3.9' with minor barren pyrrhotite for twelve feet below. The mineralized zone was up to twenty feet above the bottom gabbro contact.

57 - 5 was placed fifty feet to the west of the #3 and 3B set-up. It cut the mineralized zone near the bottom of the gabbro but only traces of nickel were to be found in two narrow distinct zones. The hole was carried on well past the lower contact of the gabbro so as to investigate the 500 foot long anomaly lying about 125 feet past the contact. This anomaly proved to be caused by barren pyrrhotite and minor pyrite and magnetite in the sediments. Heavy shearing was found to underly the low ground to the south.

Hole 57 - 6 was drilled 50 feet to the west of #5 hole cut only barren pyrrhotite and traces of copper near the lower contact of the gabbro.

57 - 6B at 70° and immediately beneath #6 hole cut only barren sulphides of a minor nature in the mineralized zone.

Hole 57 - 7 was located 200 feet to the west of 57 - 6 and cut only minor barren sulphides as did 57 - 7B immediately beneath it. Both holes however, cut a heavily broken zone in the gabbro which would seem to be transverse to the strike of the dike and had no great amount of serpentine as did the strike slips which were commonly found in the other holes. This fracture zone or fault is probably the reason for the sharp discontinuation of the magnetics in that particular area as may be seen on the magnetometer map.

Hole 57 - 8 was placed so as to pass directly down the dip of the mineralized zone and to check the vertical extent of the mineralized lenses. The collar was placed on the small anomaly at 250 feet north on line 8W which

was thought to be the magnetic manifestation of the mineralized zone. The hole was drilled to a depth of 358 feet and no mineralization was cut. From the plotting of the drill hole it would seem that the hole must have been a foot or so above the mineralized zone and only strike slips in the gabbro dike showed in the core.

57 - 9 was drilled 300 feet to the west of hole 57 - 7 and would appear to be situated on the west side of the transverse fault. The collar should have been in the sediment to the north of the gabbro but as it turned out it was in the gabbro. From this it would seem that the block to the west of the transverse fault was tilted or moved to the northward.

CONCLUSIONS AND RECOMMENDATIONS

After the interpretation of the drilling and the interpreted geology was placed on the map the following conclusions were arrived at:

(1) The dike depicted on the maps as passing through the Lac La Treve area and extending to the west and far to the east is a complex structure and would seem to have been of the multiple injection type. The dike is composed of both gabbro and olivine diabase and the latter rock type would seem to have been injected at a slightly later date than the gabbro, probably while the gabbro was still in a molten or semi-molten state.

In some areas the sediments contacting the gabbro or diabase have been highly altered and recrystallized and have taken on the appearance of a diorite. This altered rock type has been called meta-diorite. Where pieces of the sediments have been stoped off into the gabbro and not completely assimilated it may now be seen as meta-diorite. The more common occurrence however is along the contact of the dike.

(2) The copper-nickel mineralization as seen in hole 57 - 3 would appear to be the result of gravitational settling in the basic magma.

The mineral zone does not lie directly adjacent to the bottom contact

as this part of the dike was in all probability partly solidified at the time of the settling out of the sulphides. Faster cooling at the contacts of the dike would account for this though true chilled contacts were only seen in two instances.

(3) The copper mineralization and nickel along the upper contact of the dike could have been deposited either through injection along a zone of weakness or may have been given off by the slightly later diabase magma. Since the lower parts of the gabbro were probably partially crystallized the copper mineralization along with the nickel may have been emplaced either by filter pressing or through convection. Channel ways into the upper parts of the dike are not apparent to the eye. As seen in showing #2 the mineral still appears as blebs and is not unlike the deeper mineralization.

(4) Some of the higher magnetic anomalies are caused by the presence of minor magnetite and pyrrhotite in the sediments. The conglomerate would appear to have a higher percentage of these sulphides.

The pyrrhotite is in all probability secondary, that is the magnetite was deposited in the conglomerate as detritus along with other heavy minerals at the time of the formation of the sediment and sulphide juices either from the dike or from the sediments themselves altered some of the magnetite to pyrrhotite.

(5) The greywacke and conglomerate would seem to be lenticular in shape and to be interfingering. They would seem to have been laid down in a sea which fluctuated greatly as the deposits vary from strand type to close in-shore type. The erosional province at the time of deposition was highly felspathic as both the sediments are almost arkosic in composition. Very little chlorite or mafic material is present in the sediments.

In addition to the above conclusions it is the writer's opinion that if the sulphide mineralization is the result of magmatic segregation in the basic dike then the chances of an economic ore body in a body of such

small size are very small. The dike has a true depth of scarcely 170 feet and for such a depth to produce enough copper-nickel mineralization to support a mine would be unusual.

If, however, the mineralization were the result of an injection as some of the mineralization along the upper contact would appear to be then there could be chances for a sufficiently large concentration to form a mine. It is because of this very long chance that the writer would recommend holding on to some of the claims.

The gabbro seen on the south part of the property and to the eastward would seem to be of an older age than the dike which was drilled. This older gabbro has been a prolific source rock for the deposition of barren sulphides. This is evident in many places in the Lac La Treve area but no noteworthy assays of economic type mineralization have been obtained from the sulphides.

From the above conclusions the writer would recommend that the twelve claims on the claim map outlined in red be held for a time and the work so far done be applied to these claims. There is an outside chance that more information may be gained from additional work being done in the immediate area and this might shed a new light on the Company ground. The best ground would seem to be that which was drilled and the downward extension of the dike. The chances of an economic deposit do not however appear to be good,

Respectfully submitted

(SIGNED) R. C. CUNNINGHAM,

Geologist

May 29, 1957.

Assessment Work

	<u>Man days</u>
"Pack Sack" drilling -----122 feet -----	122 days
"A.X.T." drilling -----4237.5 feet -----	4237 "
Level Survey ----- 4 days for two men --8 x 7	56 "
Report Writing ----- 1 day ----- 1 x 7	7 "
	<u>4422 days</u>

Surveying, logging, etc. - R.C. Cunningham,
Talbotville, Ont.

Rod man ----- Remi La Fortune,
St. Charles, Ont.

(SIGNED) R. C. CUNNINGHAM

GEOLOGICAL RECORD :

EMPIRE OIL AND MINERALS INC. Lac La Treve, Daine Township, Quebec.

HOLE NUMBER **T 1**

DATE STARTED **October 24, 1956**

TOTAL DEPTH **10'**

DATE FINISHED **October 24, 1956**

BEARING **180°**

DIP **80°**

ELEVATION

CO ORDINATES

LAT **420' North**

DEPT **967' West**

DEPTH		FORMATION
From	To	
00'	10.0'	<p>"KRP" hole by Advance Drilling Corp. Ltd..</p> <p>Very massive and dense gabbro, fresh appearing and with about 1% very finely disseminated pyrrhotite. Almost negligible gossan. Hole used as a blast hole after the core was obtained.</p> <p>R.C. Cunningham</p>

PUBLIC

QUEBEC DEPARTMENT OF MINES
JUL 11 1957
 MINERAL DEPOSITS BRANCH
 No G M- 5365-0 C

GEOLOGICAL RECORD :

~~EMPIRE OIL AND MINERALS INC. Lac La Trove, Daine Township, Quebec.~~HOLE NUMBER **T 2** DATE STARTED **Oct. 25, 1956**TOTAL DEPTH **10'** DATE FINISHED **Oct. 25, 1956**BEARING **180°** DIP **30°** ELEVATIONCO ORDINATES LAT **412' north** DEPT **972' west**

DEPTH		FORMATION
From	To	
00'	10.0'	<p>"X.R.P." Hole by Advance Drilling Corp. Ltd..</p> <p>Very massive medium grained Gabbro, fresh appearing and carrying about 1% very finely disseminated pyrrhotite.</p> <p>Relatively little or no gassan.</p> <p>Sample T-25 (00' to 5.0')</p> <p>Sample T-26 (5.0' to 10.0')</p> <p>Hole used as a blast hole after the core was recovered.</p> <p>R.C. Cunningham</p>

GEOLOGICAL RECORD :

EMPIRE OIL AND MINERALS INC. Lac La Treve, Daine Township, Quebec.

HOLE NUMBER

T 3

DATE STARTED

Oct. 25, 1956

TOTAL DEPTH

60.0'

DATE FINISHED

Oct. 27, 1956

BEARING

180°

DIP

66°

ELEVATION

CO ORDINATES

LAT 414' north

DEPT 968' west

DEPTH

"X.R.P." Hole drilled by Advance Drilling Corp. Ltd..

From

To

FORMATION

00'

60.0'

Very massive medium grained gabbro with negligible fine disseminated pyrite and pyrrhotite.

00' - 5.0' massive gabbro showing some segregation of the feldspar and ferromagnesian constituents.

5.0' - 10.0' as above , very little to zero mineralization.

10.0' - 15.0' as above.

15.0' - 20.0' very massive with labradorite feldspar crystals showing distinctly.

20.0' - 30.0' as above.

30.0' - 40.0' very massive, no noteworthy mineralization.

40.0' - 50.0' as above and with minor sections showing distinct ophitic texture. (diabase)

50.0' - 60.0' as above with some ophitic sections up to eight inches wide.

60.0' - bottom of the hole.

Rock very hard and at times no more than two feet were obtained to the bit.

R.C. Cunningham

GEOLOGICAL RECORD :

EMPIRE OIL AND MINERALS INC. Lac La Trove, Daine Township, Quebec.

HOLE NUMBER	T - 4	DATE STARTED	Oct. 27, 1956
TOTAL DEPTH	31.0'	DATE FINISHED	Oct. 29, 1956
BEARING	100°	DIP	53°
CO ORDINATES	LAT 490' north	DEPT	950' west

DEPTH		FORMATION
From	To	
00'	31.0'	<p>"X.R.P." Hole drilled by Advance Drilling Corp. Ltd..</p> <p>Very dense and hard conglomerate, dark grey to greenish in colour and with boulders of porphyritic granite distributed throughout. Great variation in the size of the boulders.</p> <p>00' - 5.0' porphyritized conglomerate with occasional fine quartz stringers and negligible sulphide mineralization. Occasional blue quartz eye of secondary quartz.</p> <p>5.0' - 6.0' granite boulder, cracked and with the cracks filled by solutions from the gabbro beneath the conglomerate.</p> <p>6.0' - 10.0' conglomerate, porphyritized in part, contains some very fine epidote stringers and red feldspathic alteration. Very dense, negligible mineralization.</p> <p>10.0' - 15.0' occasional small fragment of granite and blue quartz eyes in the dense, hard greywacke type matrix. Minor pyrrhotite and epidote.</p> <p>15.0' - 20.0' as above, highly altered, some red granite fragments and some epidote veins with red feldspar alteration.</p> <p><u>Sample T-23</u> minor sulphide mineralization, mostly pyrite.</p> <p>20.0' - 25.0' fine grained conglomerate cut by numerous fine quartz-epidote veins and with minor pyrite and pyrrhotite disseminated throughout. Very minor chalc. <u>Sample T-24.</u></p> <p>25.0' - 31.0' highly altered conglomerate with quartz-epidote stringers and negligible fine sulphides. Many large 4 to 6 inch granite boulders.</p> <p>31.0' - bottom of the hole caving, could be a slightly faulted area along the top contact of the gabbro dyke.</p>

R.C. Cunningham

REFINE OIL AND MINERALS INC. Lac La Treve, Daine Township, Quebec

Hole Number F - 5

Date Started Oct. 29, 1956

Total Depth 11.0'

Date Finished Oct. 29, 1956

Bearing 130° Astro

Dip 75°

Co ordinates Lat. 490.5' north

Dept. 950' west

Depth

"I.R.P." Hole drilled by Adams Drilling Corp.

From

to

Formation

00'

11.0'

Comglomerate, very hard and dense, cut by numerous stringers of epidote and quartz and full of various size boulders of granite and feldspar porphyry. Some recrystallization is evident and some small sections could almost be called a meta-diorite.

7.0' - 7.5' feldspar porphyry boulder.

11.0' - bottom of the hole.

This hole was stopped as the plane came in to take the men out for the freeze-up.

R.C. Dunnington

EMPIRE OIL and MINERALS INC.,

Daine Township Property - Lac La Treve Area P.Q.

Diamond Drill Hole 57-1

(57-1 d 57-9)

Location: 650'N, 300'W
Strike: 145° Astronomic
Dip: Collar - 45°, 200' - 43°, 420' - 44°
Length: 440.9'
Started: March 11, 1957
Finished: March 15, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp.
Drilled By: Advance Drilling Corp. Ltd..

PUBLIC

QUEBEC DEPARTMENT OF MINES

JUL 11 1957

MINERAL DEPOSITS BRANCH

No G M-5365-C

00' - 5.0' Casing

4.0' - 5.0' Hornblende granite, probably a boulder.

5.0' - 75.0' Dark grey feldspathized greywacke cut by occasional minor white to milky quartz with some serpentine. Occasional very fine pyrite and pyrrhotite such as at 20.8'. Very hard and indurated and with faint indication of bedding at 75 to 80° to the core.
Very minor pyrite at 36.5' for 2".
33.6' - smear of chalcopryite on fracture face.
36.9' - 39.0' shows prominent feldspar crystals
41.0' - 42.3' as above.
46.6' - 51.9' very fine grained, dense, hard, greywacke with 2% pyrite and chalco. and pyrrhotite in very minor amounts. Sample 8604
72.5' - 75.0' minor pyrite and pyrrhotite as above.

75.0' - 91.5' Dark dense conglomerate with sub-rounded pebbles of granite and feldspar porphyry up to 2" in diameter, much epidote and some chlorite around pebble edges. The matrix is the same as the greywacke. Lower contact is gradational.

91.5' - 142.5' Dark grey dense greywacke with indistinct bedding or lineation at 75 to 80°. Fine stringers of quartz-epidote and quartz-chlorite are prominent, mostly parallel to the bedding.
102.0' - 106.4' slightly coarser greywacke.
106.4' - 118.0' prominently veined by fine red feldspar and quartz veinlets.
112.0' - 117.1' evenly distributed and very fine py. and pyrr. (2%) in greywacke. Sample 8605
121.0' - 124.5' rich in epidote.
125.0' - 127.0' badly broken.

- 132.1'- 142.5' coarse grained greywacke with some chloritized seams and minor stringers of pink feldspar.
- 142.5' - 171.0' very fine grained conglomerate or greywacke-conglomerate. Intermediate in grain and particle size between the two rock types. Dark grey matrix with small fragments of quartz and granite. Best termed a fine conglomerate. Some fragments are up to $\frac{3}{4}$ " in length. Very minor pyrite and pyrrhotite with erratic distribution, generally related to fine quartz and red feldspar stringers. Minor chlorite along the stringer borders.
- 171.0' - 200.0' Very dark grey, generally massive greywacke with minor quartz and red feldspar veinlets and stringers, at 75° to the core.
- 178.0'- 182.6' coarse greywacke.
- 182.6'- 185.0' very fine conglomerate.
- 185.0'- 200.0' coarse greywacke with red feldspar stringers as above. Some recrystallization of the feldspar has occurred and a few opalescent quartz eyes are present. (secondary)
- 200.0' - 226.1' Conglomerate, fine grained to 210'. 210.8' - 3" feldspar porphyry boulder.
- 210.0'- 212.7' coarse conglomerate.
- 212.7'- 226.1' fine conglomerate.
- 226.1'- 238.7' Coarse grained greywacke, lighter grey in colour than the above. Feldspar fragments are very prominent, probably some recrystallization has taken place.
- 238.7' - 245.3' Medium grained diorite with minor fragments of included greywacke.
- 245.3' - 248.5' Greywacke.
- 248.5' - 250.0' Diorite.
- 250.0' - 253.0' Fine to medium grained greywacke.
- 253.0' - 272.7' Gabbro, very massive and medium grained.
- 267.8'- 272.7' very minor pyrrhotite. Sample 8608
- 272.7'- scattered pyrrhotite.
- 272.7' - 275.5' Large fragments of greywacke in gabbro, minor pyrrhotite scattered throughout. Sample 8607
- 275.5' - 315.7' Gabbro, coarse, massive, dark green and fresh appearing.
- 275.5'- 279.4' 3 to 4% erratically scattered pyrrhotite with very minor chalcopyrite. Sample 8606
- 279.4'- 284.4' negligible mineralization - check sample 8609
- 315.7' - 324.4' Massive gabbro with diabasic texture. Prominent oophitic texture. Nil mineralization.
- 324.4' - 409.8' Massive, very fresh appearing, coarse grained gabbro, non oophitic texture and nil mineralization. Very massive and fresh appearing.
- 409.8' - 427.1' Massive, dark green and fresh appearing diabasic gabbro.
- 410.1'- several crystals of pentlandite and chalcopyrite.
- 417.9'- " " " " " "
- 424.9'- one crystal " " " "

427.1' - 429.0' Very fine grained contact of the gabbro dyke.

429.0' - 430.0' Core lost.

430.0' - 431.9' Fine grained selvage edge of the gabbro dyke.

431.9' - 1 $\frac{1}{8}$ " coarse grained dykelet, gabbro.

432.1' - 440.9' Greywacke.

433.0' - 433.4' granite dykelet.

434.0' - 434.6' irregular granite dykelet.

440.9' - Bottom of the Hole.

<u>Sample</u>	<u>From</u>	<u>To</u>	<u>Ni.</u>	<u>Cu.</u>	<u>Co.</u>	<u>Au.</u>	<u>Ag.</u>
8604	46.6'	51.9'	---	---	---	---	---
8605	112.0'	117.1'	---	---	---	---	---
8606	275.5'	279.4'	---	---	---	---	---
8607	272.7'	275.5'	---	---	---	---	---
8608	267.8'	272.7'	---	---	---	---	---
8609	279.4'	284.4'	---	---	---	---	---
		Σ					

W. C. Cunningham

11/10/07

EMPIRE OIL AND MINERALS INC.

Daine Township Property - Lac La Treve Area, Quebec. D.D.H. 57 - 2

Location: 490' North, 600' West
Strike: 145° Astronomic
Dip: Gallar - 45°, 140' - 42°, 290' - 40°
Length: 305.0'
Started: March 17, 1957
Finished: March 21, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp.
Drilled By: Advance Drilling Corp. Ltd..

"" ""

00.0' - 5.0' Casing

5.0' - 25.0' Massive, very dense and hard conglomerate. Medium grey in colour
5.0' - 8.2' fine grained conglomerate
16.8' - 17.5' granite boulder
18.8' - 19.2' several feldspar boulders - porphyritic.
20.0' - 25.0' medium to fine grained conglomerate

25.0' - 56.3' Coarse feldspathic greywacke. This rock is impregnated by very fine grained sulphides composed of from 1% to 1½% pyrite with very minor pyrrhotite. The mineralized area in the sediments stretches from 20.0' to 56.3' with no appreciable difference in amount or type of mineralization.

25.0' - 30.0' 1% fine pyrite and very minor pyrrhotite Sample 8610

30.0' - 35.0' as above.

35.0' - 40.0' as above Sample 8611

45.0' - 45.5' core lost.

40.0' - fine grained pyrite and minor pyrrhotite. Rock very hard and feldspathic, could be called either a very fine conglomerate or a coarse feldspathic greywacke.

56.3' - 90.6' Light greyish olivine diabase with a very high percentage of plagioclase feldspar. The olivines are highly altered and the rock contains a uniform dissemination of pyrrhotite and minor pyrite constituting about ¼ of 1% of the rock. The feldspars show quite a high degree of development of ophitic texture. In some localities the texture is granophyric. In these instances there is alteration of the feldspar.

70.0' - 75.0' Check Sample 8612

65.0' - 70.0' as above Sample 8613

The mineralization is more or less uniform from 56.3' to 90.6'

85.0' - 88.2' core badly broken and cut by seams of serpentine and chlorite.

90.6' - 91.6' Core lost

91.6' - 291.4' Massive, basic gabbro.

100.0' - 106.0' numerous serpentine slips parallel to the core. Slight bleaching in the gabbro.

Some diabasic segregations in the gabbro with very minor pyrrhotite at 108.0' to 115.0'

115.0' - 123.4' very badly broken with many serpentinized slips, many of these are parallel to the core.

123.4' - 143.3' massive gabbro, negligible sulphides.

142.0' - 143.3' slightly bleached.

143.3' - 149.0' slightly bleached and with serpentinized slips parallel to the core.

151.0' - 153.5' broken and with serpentinized seams.

168.2' - 169.5' " " " " " "

170.0' - 193.3' becoming gradually richer in feldspar - lighter grey in colour, pyroxenes are more altered.

206.8' - 209.2' mid seam.

202.9' - 203.2' aplite dyke.

200.0' - 225.0' fairly massive gabbro.

225.0' - 232.0' core badly broken, much serpentine on the fracture faces, very blocky.

232.0' - 234.2' core lost.

234.2' - 237.0' blocky ground.

238.4' - 239.3' blocky ground, serpentinized slips.

240.0' - 241.6' " " " "

248.0' - 249.5' " " " "

250.4' - 251.0' " " " "

252.3' - 253.5' " " " "

255.0' - 256.8' " " " "

256.8' - 271.5' slightly bleached.

270.0' - 272.4' blocky ground, serpentine on the slips.

273.5' - 274.0' " " " " " "

274.0' - 275.0' core lost

272.9' - 273.2' a 1/4" crystal of pentlandite and chalcocopyrite and three smaller ones. Also small crystals of pentlandite at 276.0', 276.3', 277.0', 277.2', 273.9', 279.1', 280.5', and 284.48

Minor sulphides of pyrrhotite and chalcocopyrite constituting less than 1% of the rock are evenly disseminated throughout the core from 269.0' to 290.0'

269.0' - 274.0' Sample 8614

275.0' - 280.0' Sample 8615

280.0' - 285.0' Sample 8616

285.0' - 290.0' Sample 8617

291.4' - 304.0' Fine to medium grained light greyish conglomerate. Upper two feet are altered to a very black colour. Conglomerate cut by a few epidote stringers and very minor stringers of aplite.

294.8' - 295.1' quartz vein, adjacent conglomerate contains very minor sulphide mineralization.

300.0' - 304.2' core badly broken.

304.2' - 305.0' core lost.

305.0' - bottom of the hole

Sample #	From	To	Fe	Ca	Al	Mg	Si
8610	25.0'	30.0'	---	---	---	---	---
8611	25.0'	40.0'	---	---	---	---	---

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>Ht.</u>	<u>Cu.</u>	<u>Au.</u>	<u>Ag.</u>	<u>Co.</u>
8612	70.0'	75.0'	---	---	---	---	---
8613	65.0'	70.0'	---	---	---	---	---
8614	269.0'	274.0'	---	---	---	---	---
8615	275.0'	280.0'	---	---	---	---	---
8616	280.0'	285.0'	---	---	---	---	---
8617	285.0'	290.0'	---	---	---	---	---

R.C. Cunningham

EMPIRE OIL AND MINERALS LTD.

Daine Township Property - Lac du Trevo Area, Quebec.

Diamond Drill Hole 57 - 3

Location: 500' North, 900' West
Strike: 145° Astronomical
Dip: Collar 45°, 140' - 47½°, 280.0' - 45°.
Length: 285.0'
Started: March 21, 1957.
Finished: March 24, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp..
Drilled By: Advance Drilling Corp. Ltd..

" " "

00.0' - 8.0' Casing

00.0' - 5.0' Overburden

- 5.0' - 56.8' Conglomerate, medium grey in colour, very hard, and contains minor pyrite.
5.0'-14.6' fine grained conglomerate, minor very fine pyrite.
14.6'-56.8' coarse grained conglomerate with pebbles over 2" in diameter and predominantly feldspar porphyry. Matrix is darker than the above and finer material and has numerous opalescent quartz eyes. Very minor scattered pyrite 14.6' to 56.8'
15.4'-20.4' Check Sample 8622
39.3'-40.3' pink granite boulder.
42.3'-44.0' core badly broken and oxidized - forced to cement.
44.0'-45.5' core lost
54.0'-56.8' altered by contact with diabase, minor pyrite Sample 8624
- 56.8'-77.9' Bleached Olivine diabase - now rich in feldspar. Olivines are highly altered and some granophyric texture is present.
56.8'-59.0' very highly bleached, very minor pyrite. Sample 8625
- 77.9'-274.3' Gradational change to massive, medium grained gabbro.
87.0'- 88.5' blocky - serpentinized chips
91.7'- 92.5' " " "
100.0' - 125.0' massive, uniform, nil mineralization.
129.0'-130.0' serpentinized chips.
130.5'-131.4' " " "
132.7'-133.2' " " "
150.0'-175.0' massive gabbro.
175.0'-179.0' badly broken, serpentinized chips.

178.9'-181.0' core lost.
 190.0'-196.0' diabasic segregations, ophitic texture.
 200.0'-225.0' massive and with slight bleaching at 203.0' to 204.5'.
 247.2'-249.0' slight bleaching of gabbro.
 251.5'-255.3' Check sample - negligible sulphide in gabbro.
Sample 8623
 254.4'- 1 1/2" mud seal.
 255.0'-255.3' serpentine zone
 255.3'-260.0' 7 to 8% sulphides as blebs in the gabbro. 1% chalcocite
 the remainder pentlandite crystals with very good cleavage.
Sample 8618
 260.0'-265.0' as above Sample 8619
 265.0'-268.5' approximately 3 to 4% sulphide in massive gabbro.
 Finer grained than the above sulphide. Sample 8620
 268.5'-274.3' Minor to negligible sulphides in gabbro. Check Sample.
Sample 8621
 274.3' - bottom contact of the gabbro.
 274.3'-285.0' Fine grained conglomerate
 285.0' - bottom of the hole

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>Ni.</u>	<u>Cu.</u>	<u>Au.</u>	<u>Ag.</u>	<u>Co.</u>
8618	255.3'	260.0'	<u>0.32</u>	<u>0.46</u>	<u>TR</u>	<u>0.20</u>	<u>0.03</u>
8619	260.0'	265.0'	<u>0.46</u>	<u>0.41</u>	<u>TR</u>	<u>0.46</u>	<u>0.06</u>
8620	265.0'	268.5'	<u>0.06</u>	<u>0.10</u>	<u>TR</u>	<u>0.60</u>	<u>0.03</u>
8621	268.5'	274.3'	<u>Ni</u>	<u>TR</u>	<u>TR</u>	<u>0.20</u>	<u>TR</u>
8622	15.4'	20.4'	<u>Ni</u>	---	<u>TR</u>	<u>0.20</u>	---
8623	251.5'	255.3'	<u>Ni</u>	---	<u>TR</u>	<u>0.15</u>	---
8624	54.0'	56.8'	<u>Ni</u>	---	<u>TR</u>	<u>TR</u>	---
8625	56.8'	59.0'	<u>Ni</u>	---	<u>TR</u>	<u>TR</u>	---

R.C. Cunningham.

EMPIRE OIL AND MINERALS INC.Daine Township
REPORTSDaine Township Property - Lac La Trove Area, Quebec.Diamond Drill Hole 57 - 3B

Location: 501' North, 900' West
 Strike: 145° Astronomic.
 Dip: Cellar - 70°, 200' - 69°, 380' - 65°.
 Length: 393.1'
 Started: March 24, 1957
 Finished: April 1, 1957
 Logged By: R.C. Cunningham
 Assayed By: Eastern Mining and Smelting.
 Drilled By: Advance Drilling Corp. Ltd.

" " "

00' - 5.0' Casing in Overburden

5.0' - 78.0' Conglomerate, very hard and rich in feldspar with an arkosic type matrix

5.0'-8.4' fine grained conglomerate.

8.4'-47.0' coarse grained conglomerate

12.3'-73.0' negligible very fine disseminated pyrite in coarse conglomerate, has some opalescent quartz eyes and is cut by minor stringers of epidote. Contains boulders up to 2" in diameter of granite and quartz-feldspar porphyry.

46.1'-46.8' granite boulder.

47.0'-50.0' fine grained conglomerate

50.0'-78.0' coarse grained conglomerate

52.7' - very fine stringer of sphalerite.

73.0'-74.6' slight increase in pyrite.

75.0'-78.0' conglomerate altered by the adjacent gabbroic intrusive.

78.0' - 79.3' Core lost.

79.3' - 107.8' Olivine Diabase, medium to coarse grained with some granophyric texture -

79.3'-80.3' very fine grained diabase, contact phase.

80.3'-107.8' much of diabase has the pyroxene altered to a fibrous amphibole.

82.0'-89.0' 1% to 1½% fine pyrite.

82.0'-85.0' 1% to 1½% fine pyrite. Sample 862985.0'-89.0' 1½% to 2% fine pyrite. Sample 8630

89.0'-107.8' rich in olivines which for the most part are highly altered. Higher in feldspar content and lighter grey in colour than the average gabbro.

- 107.8' - 391.0' Gabbro, massive coarse to medium grained, dark grey in colour.
 126.0'-127.0' badly broken and with serpentine seams.
 141.2'- heavy serpentine for 2".
 150.0'-175.0' fairly massive with an occasional serpentine, stringer.
 175.0'-197.4' very massive, uniform gabbro
 197.4'-198.8' diabasic segregation, oophitic texture.
 221.2'-222.0' broken ground, serpentine seam.
 223.4'-225.0' " " " "
 225.0'-275.0' massive, uniform, dark grey in colour.
 274.5'- serpentine seam.
 275.0'-285.2' slightly bleached, massive.
 285.2'-286.5' highly altered fragment of conglomerate. (inclusion)
 286.5'-328.3' dark grey massive coarse grained gabbro. Cut by an occasional serpentine stringer, very uniform.
 328.3'-329.0' broken ground with serpentine seams.
 330.8'-333.8' numerous serpentine seams, ground badly broken.
 333.8'-375.0' massive, uniform, dark grey gabbro with an occasional serpentine seam.
 350.0'-353.5' 2% mixed sulphides in massive gabbro. Sample 8626
 353.5'-358.5' 5% mixed sulphides pentlandite to chalco: 8 to 1.
Sample 8627
 358.5'-362.5' minor pyrrhotite-pentlandite. Sample 8628
 365.0'-367.0' badly broken - serpentine slips.
 375.0'-381.8' slightly bleached.
 381.8'-386.3' very massive coarse grained gabbro, dark grey in colour.
 386.3'-388.0' slightly finer grained gabbro with 1% sulphides.
Sample 8631
 388.0'-391.0' chilled edge of the gabbro.
 391.0' - 393.1' Highly altered greywacke with less than 1% minor sulphides, mostly pyrite.
 393.1' - bottom of hole.

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>Ni.</u>	<u>Cu.</u>	<u>An.</u>	<u>Ag.</u>	<u>Co.</u>
8626	350.0'	353.5'	<u>NIL</u>	<u>TR</u>	<u>NIL</u>	<u>TR</u>	<u>NIL</u>
8627	353.5'	358.5'	<u>.13</u>	<u>.10</u>	<u>NIL</u>	<u>TR</u>	<u>NIL</u>
8628	358.5'	362.5'	<u>NIL</u>	<u>TR</u>	<u>NIL</u>	<u>.07</u>	<u>NIL</u>
8629	82.0'	85.0'	<u>"</u>	<u>---</u>	<u>"</u>	<u>.17</u>	<u>---</u>
8630	85.0'	89.0'	<u>"</u>	<u>---</u>	<u>"</u>	<u>TR</u>	<u>---</u>
8631	386.3'	388.0'	<u>"</u>	<u>---</u>	<u>"</u>	<u>TR</u>	<u>---</u>

R.C. Cunningham

EMPIRE OIL AND MINERALS INC.,Daine Township Property - Lac La Treve Area, QuebecDiamond Drill Hole 57 - 4

Location: 500' North , 800' West
 Strike: 145° Astronomic.
 Dip: Cellar - 45°, 140.0'-46°, 280' - 46°
 Length: 281.4'
 Started: April 2, 1957
 Finished: April 5, 1957
 Logged By: R.C. Cunningham
 Assayed By: Eastern Mining and Smelting Corp. Ltd..
 Drilled By: Advance Drilling Corp. Ltd..

" " "

00' -7.5' Casing

7.5' - 33.6' Conglomerate, dark grey with opalescent quartz eyes. Rock has a minor lamination at about 70° to the core and minor, fine, scattered pyrite throughout. Appreciable epidote as stringers. 7.5'-33.6' fine grained conglomerate.

33.6' - 40.7' Chloritic greywacke, very soft and with some graphite. Minor but well defined lamination at 70° to the core.

40.7' - 41.2' Quartz-chlorite vein with minor pyrite.

41.2' - 58.0' Very hard, fine grained conglomerate with quartz eyes and cut by numerous epidote stringers.

58.0' - 68.8' Very highly altered rock best described as a meta-diorite and probably formed by the partial assimilation of feldspar-rich conglomerate by the basic intrusive.

61.3'-62.1' core lost.

65.0'-66.1' core lost.

68.8' - 89.3' Slightly bleached and altered olivine diabase. Much of the pyroxene has been altered to fibrous amphibole. Blocky in places with serpentine on the slip faces.

75.9'- several small grains of pyrrhotite and chalcopyrite.

89.3' - 272.0' Very massive dark greenish grey gabbro, uniform in texture and grain size, occasional serpentized slip.

100.0'-125.0' very massive with occasional serpentine slip.

125.0'-143.0' " " " " " " " " " " " "

143.0'-143.6' broken ground, serpentized .
 145.0'-145.8' " " "
 148.0'-148.5' " " "
 162.0'-167.5' bleached, badly broken and with serpentine seams parallel to the core.
 182.0'-184.0' as above.
 200.7'-201.7' as above.
 205.0'- 206.6' core lost.
 225.0'-251.1' relatively massive, dark gabbro, medium grained.
 251.1'-255.0' Sample 8632 occasional large crystal of pentlandite and chalcopryite - 1% combined.
 253.0'-255.0' Soft chloritized and serpentized shear.
 255.0'-257.2' Sample 8633 Pentlandite and chalcopryite crystals as above.
 267.58'-267.8' grey aplite dike at 60° to the core.
 270.0'-272.0' very fine grained gabbro - contact phase. 1" serpentine seam at the very contact.
 272.0' - 281.4' Very dark grey, massive, hard, highly altered fine grained conglomerate, impregnated with very fine negligible pyrite.
 273.3'-273.7' gabbro dikelet.
 281.4'- bottom of hole.

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>Ni.</u>	<u>Cu.</u>	<u>Au.</u>	<u>Ag.</u>	<u>Co.</u>
8632	251.1'	255.0'	---	---	---	---	---
8633	255.0'	257.2'	---	---	---	---	---

R.C. Cunningham

EMPIRE OIL AND MINERALS INC.,

Daine Township Property - Lac La Pevre Area, Quebec.

Diamond Drill Hole 57 - 4B

Location: 501' North, 300' West
Strike: 145° Astronomic.
Dip: Collar - 70° , 190.0' - 69° , 300.0' - 69°
Length: 385.00'
Started: April 5, 1957
Finished: April 8, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp. Ltd..
Drilled By: Advance Drilling Corp. Ltd..

— — —

00' - 3.0' Casing

00.0' - 7.2' Overburden

7.2' - 51.0' Fine grained conglomerate, dark grey, hard, feldspathic and with boulders of feldspar porphyry up to 1½" in diameter. Minor stringers of epidote. Minor to negligible pyrite.
47.6'-48.5' feldspar porphyry boulder.

51.0' - 82.0' Very coarse grained greywacke with innumerable pink feldspar fragments.
62.0'-74.0' ground very badly broken, had to cement.
63.4' - 2" epidote vein.

82.0' - 90.0' Very fine conglomerate.

90.0' - 109.2' Very coarse greywacke, lighter in colour than the upper conglomerate.
91.5'-94.2' core lost.
101.3'-2" boulder of granite.
104.2'-105.0' minor very fine pyrite.

109.2' - 112.0' Meta-diorite lower contact gradational, probably a product of alteration in the sediments caused by hydrothermal juices from the basic intrusive below.

112.0' - 137.9' Bleached, feldspar-rich, olivine diabase. The olivines are highly altered and there is some granophyric texture present.
114.0'-115.0' core lost.
117.2'-very minor pyrite for 2".
120.0'-124.0' core badly broken, many serpentine slips and stringers.

- 137.9' - 370.4' Gabbro, very massive, dark greenish grey, medium grained, and with much of the pyroxenes altered to hornblende. Cut by occasional serpentine stringers and slips.
- 137.9'-185.0' very massive.
- 168.9'-169.7' diabasic segregation.
- 166.5'- flow texture 2" wide at 60° to the core.
- 185.0'-187.5' serpentine slips parallel to the core.
- 190.0'-192.1' numerous serpentine slips, ground very blocky.
- 234.2'-238.1' serpentine slips, gabbro bleached.
- 255.0'-270.0' slightly lighter in colour.
- 284.0'-284.5' inclusion of conglomerate in the gabbro.
- 318.7'-321.7' core badly broken.
- 305.8'-306.4' diabasic segregation.
- 303.5'- 2" thick inclusion of greywacke or conglomerate.
- 335.7'- $\frac{1}{2}$ " crystal of pentlandite and chalcopyrite.
- 341.1'-345.0' slightly less than 1% chalco and pentlandite scattered throughout the gabbro. Sample 8634
- 345.0'-350.0' minor to negligible sulphides. Check Sample 8635
- 350.0'-355.0' as above. Sample 8636
- 355.0'-357.2' as above Sample 8637
- Lower 15' of the gabbro cut by heavy serpentine slips and seams up to $\frac{1}{2}$ " wide.
- 370.4' - 2" and seam
- 370.4' - 375.0' Meta-diorite, probably contact phenomenon of the gabbro with the sediments. Rock very badly broken and cut by serpentine seams.
- 375.0' - 385.0' Very dark grey, hard greywacke, upper contact gradational, very blocky.
- 385.0' - bottom of the hole.

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>Hls.</u>	<u>Gls.</u>	<u>Als.</u>	<u>Acs.</u>	<u>Co.</u>
1/8							
8634	341.1'	345.0'	---	---	---	---	---
8635	345.0'	350.0'	---	---	---	---	---
8636	350.0'	355.0'	---	---	---	---	---
8637	355.0'	357.2'	---	---	---	---	---

R.C. Cunningham

EMPIRE OIL AND MINERALS INC.

Daine Township Property - Les La Trove Area, Quebec.

Diamond Drill Hole 57 - 5

Location: ^{600'} 550' North, 950' west
Strike: 145° Astronomic
Dip: Collar - 45°, 180' - 43°, 380' - 41°.
Length: 388.3'
Started: April 9, 1957
Finished: April 12, 1957
Logged By: E.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp. Ltd.
Drilled By: Advance Drilling Corp. Ltd..

--- 1000 --- 1000 ---

- 00' - 5.0' Overburden
- 00' - 8.0' Casing
- 5.0' - 49.7' Coarse Conglomerate with prominent red granite and feldspar porphyry boulders up to 4". Matrix dark grey feldspar greysacke type, with minor scattered pyrite throughout.
 - 32.0'-33.6' very blocky.
 - 35.5'-36.2' granite boulder with much epidote.
 - 36.8'-37.5' " " "
 - 37.5'-37.7 quartz vein
 - 45.9'-46.4' much epidote.
- 49.7' - 54.2' Meta-diorite, minor evenly distributed pyrite.
 - 52.1'-53.4' very blocky, serpentine stringers.
- 54.2' - 68.6' Bleached olivine diabase, very rich in white feldspar. Altered.
- 68.6' - 236.9' Medium greenish grey gabbro with much of ferre-magnesian content changed to hornblende and some chlorite. Massive and medium grained.
 - 64.6' gabbro assuming usual darker greenish grey colour, very massive.
 - 107.5' - 113.5' occasional thin serpentine stringer.
 - 113.5' - 155.0' very massive, uniform grain and texture.
 - 155.0' - 175.0' occasional serpentine stringer, relatively massive.
 - 182.4' - 189.1' serpentine stringers, blocky.
 - 191.0' - 193.5' spotty diastatic segregations.
 - 200.0' - 230.0' very massive dark greenish grey gabbro, uniform

in texture and grain.

237.7' - 241.2' 1 to 1½ combined pentlandite and chalcopyrite in a ratio of 5 to 1. Sample 8638

241.2' - 245.0' very minor scattered pentlandite and chalcopyrite. Sample 8639.

245.0' - 248.5' 1% combined chalcopyrite and pentlandite. Ratio 1 to 5. Sample 8640

248.5' - 251.5' negligible scattered sulphides.

250.0' - 251.5' badly broken and bleached.

256.3' - 257.0' Aplite.

257.0' - 262.2' Meta-diorite.

257.2' - 257.4' pyrite with very minor sphalerite. Pyrite continues scattered to 258.0'.

257.0' - 258.0' Sample 8641

262.2' - 287.1' Light grey conglomerate cut by stringers of epidote and with negligible scattered pyrite. Occasional narrow section of greywacke. Banded at 70° to the core.

296.0' - bedding becoming increasingly more prominent, minor scattered pyrite.

287.1' - 315.3' Very hard, dense grey greywacke, banded at 70° to the core. Occasional bluish quartz eyes and minor epidote.

296.0' - bedding becoming increasingly more prominent, minor scattered pyrite.

303.0' - 315.3' massive coarse grained greywacke.

314.0' - 314.5' veinlets of epidote and red feldspar.

315.3' - 334.2' Fine grained conglomerate with fragments up to ½".

322.2' - 323.0' dark grey quartz vein with minor pyrite.

323.0' - 323.6' red pyrite, probably a boulder.

323.6' - 323.9' white quartz.

323.9' - 334.2' dark reddish grey fine grained conglomerate.

334.2' - 388.3' Massive coarse grained greywacke, very minor scattered minor pyrite. Very hard and dense. Cut by an occasional stringer of quartz and/or epidote.

356.5' - becoming lighter grey in colour, minor scattered pyrite.

363.8' - 365.0' probably old fault now filled by red feldspar and epidote.

365.0' - 374.0' very blocky, about 1% scattered pyrite.

374.0' - 375.0' core lost.

376.6' - 377.9' core lost.

377.9' - 379.5' well banded, blocky.

379.5' - 380.6' massive greywacke.

380.6' - 381.5' badly broken.

381.5' - 383.4' lighter colour, massive, some epidote.

383.4' - 385.0' badly fractured.

385.0' - 385.8' core lost.

388.3' - Bottom of hole

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>Ni.</u>	<u>Cu.</u>	<u>Au.</u>	<u>Ag.</u>	<u>Co.</u>
8638	237.7'	241.2'	_____	_____	_____	_____	_____
8639	241.2'	245.0'	_____	_____	_____	_____	_____
8640	245.0'	248.5'	_____	_____	_____	_____	_____
8641	257.0'	258.0'	_____	_____	_____	_____	_____

R.C. Cunningham

EMPIRE OIL AND MINERALS INC.

Daine Township Property - Lac La Trave Area, Quebec.

Diamond Drill Hole 57 - 6

Location: 500' North, 1000' West.
Strike: 145° Astronomic.
Dip: Collar - 45°, 140' - 44°, 250' - 38½°.
Length: 257.5'
Started: April 13, 1957
Finished: April 14, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp. Ltd..
Drilled By: Advance Drilling Corp. Ltd..

— — — — —

00' - 22.0' Casing.

22.0' - 26.0' Fine grained conglomerate with much epidote in the upper 1½'.

26.0' - 66.3' Coarse grained conglomerate with numerous feldspar porphyry boulders, very dark, fine grained matrix with bluish quartz eyes. Very minor epidote and scattered pyrite.
33.5' - 34.2' large boulder with quartz.
46.0' - 46.4' cut by irregular quartz.
53.0' - 57.3' core lost.

66.3' - 81.7' Olivine diabase, bleached and highly altered, very sharp upper contact, no chilled edge.

81.7' - 87.0' Massive, olivine gabbro, medium grained.

87.0' - 92.0' Olivine diabase.

92.0' - 95.4' Massive olivine gabbro.

95.4' - 96.8' Olivine diabase.

96.8' - 168.6' Massive gabbro, medium grained, very uniform in texture and appearance.
133.2' - 135.3' diabasic segregation in the gabbro.

168.6' - 172.4' Meta-diorite, probably a fragment of very highly altered sediment in the gabbro.

172.4' - 174.1' Diabase, rich in greyish feldspar.

173.1' - very minor pyrite on seam.

174.1' - 249.2' Massive gabbro.

176.6' - 178.0' badly broken.

181.4' - 182.5' badly broken.

194.0' - 202.1' blocky ground, very minor and occasional serpentine stringer.

205.3' - 207.5 blocky ground.

229.9' - 234.0' scattered large crystals of pentlandite and chalcopyrite, up to $\frac{1}{2}$ " across. Sample 8642

234.0' - 235.6' very minor sulphides. Sample 8644

235.6' - 238.8' scattered large crystals of chalcopyrite and pentlandite. Sample 8643

238.8' - 241.2' very minor sulphides in massive gabbro. Sample 8645

249.2' - 251.0' Meta-diorite.

251.0' - 257.5' Fine grained conglomerate with some feldspar porphyry boulders.

Highly altered and impregnated by gabbroic juices.

257.5' - bottom of the hole.

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>Ni.</u>	<u>Cu.</u>	<u>Au.</u>	<u>Ag.</u>	<u>Co.</u>
1 8642	229.9'	234.0'	_____	_____	_____	_____	_____
8643	235.6'	238.8'	_____	_____	_____	_____	_____
8644	234.0'	235.6'	_____	_____	_____	_____	_____
8645	238.8'	241.2'	_____	_____	_____	_____	_____

R.C. Cunningham

Daine Township Property - Lac La Treve Area, Quebec

Diamond Drill Hole 57 - 68

Location: 502' North, 1000' West
Strike: 145° Astronomic
Dips: Cellar - 70°, 100' - 67°, 350' - 67°
Length: 369.0'
Started: April 15, 1957
Finished: April 17, 1957
Legged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp. Ltd..
Drilled By: Advance Drilling Corp. Ltd..

000 000 000

00' - 12.0' Overburden

00' - 14' Casing

12.5' - 17.4' Sheared meta-diorite with minor pyrite and chalcoppyrite. The chalcoppyrite is associated with very thin quartz stringers.
Sample 8648

17.4' - 100.2' Coarse conglomerate with boulders of feldspar porphyry and appreciable pyrite distributed throughout. Variable amounts of epidote in stringers and as replacement of some of the matrix.

47.5' - 48.5' blocky

51.9' - 71.2' finer grained conglomerate, more massive and less blocky. Negligible pyrite, very hard and dense.

71.2' - 72.7' blocky

72.7' - 75.0' Coarse conglomerate

75.0' - 85.0' fine grained conglomerate.

Blocky in part.

83.0' - 85.0' core lost.

85.0' - 100.2' fine conglomerate, relatively massive.

100.2' - 101.4' Meta-diorite, very minor pyrite.

101.4' - 132.2' Coarse olivine diabase, bleached and rich in light grey feldspar. Olivines and pyroxenes highly altered, very massive.

132.2' - 139.0' Olivine gabbro, medium grained.

139.0' - 144.7' Diabasic segregation, gradational contacts.

144.7' - 359.1' Medium grained gabbro, massive.
 171.5' - 173.0' minor serpentine, blocky.
 218.8' - 219.3' altered fragment of conglomerate.
 226.4' - 226.7' " " " "
 223.0' - 224.5' " " " " with the one contact
 parallel to the core.
 225.3' - 225.5' altered " " " " with some epidote.
 251.5' - 254.5' heavily sheared gabbro.
 346.0' - 348.7' very heavily sheared and altered to chlorite
 and serpentine.
 332.5' - a crystal of chalc and pentlandite.
 335.8' - " " " " " "
 336.4' - " " " " " "
 351.2' - 355.0' minor pentlandite and chalcopyrite. Sample 8649

359.1' - 367.9' Meta-diorite.
 367.9' - 369.0' Conglomerate, altered.
 369.0' - bottom of hole.

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>Mt.</u>	<u>Cu.</u>	<u>Ag.</u>	<u>Fe.</u>	<u>Zn.</u>
861R			-----	-----	-----	-----	-----
8649	351.2'	355.0'	-----	-----	-----	-----	-----

R.C. Cunningham

EMPIRE OIL AND MINERALS INC..

Daine Township Property - Les La Trove Area, Quebec

Diamond Drill Hole 77 - 7

Location: 500' North, 1200' West
Strike: 145° Astronomic
Dip: 45° at Collar, 140' - 41°, 230' - 41½°
Length: 2401
Started: April 18, 1957
Finished: April 20, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp. Ltd..
Drilled By: Advance Drilling Corp. Ltd..

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00' - 15.0' Overburden

00' - 17.00' Casing

15.0' - 32.2' Very coarse conglomerate with minor scattered pyrite and boulders of pink feldspar porphyry up to 5" in diameter.

32.2' - 74.5' Very fine conglomerate and minor very coarse greywacke, blocky in part, cut by epidote stringers - very dark grey and contains very minor pyrite.

42.7' - 45.0' core lost.

70.3' - 73.0' meta-diorite

73.0' - 74.5' altered and impregnated conglomerate.

74.5' - 76.7' meta-diorite

76.0' - 76.7' minor pentlandite and very minor chalcocite.

76.7' - 93.0' Olivine diabase, bleached and rich in light grey feldspar.

80.0' - 84.0' minor pyrite, pentlandite and chalcocite

Sample 8646

80.0' - 83.0' oxidized fractures.

93.0' - 230.0' Olivine gabbro, massive and medium grained.

104.5' - 115.0' blocky and with serpentine stringers.

125.0' - 165.0' massive, occasional serpentine stringer.

165.0' - 173.5' very blocky, altered, and serpentinized - bleached.

173.7' - 175.6' core lost

175.6' - 177.6' core lost

178.7' - 180.0' core lost

very bleached and broken 180.0' to 190.5' and serpentinized on slips and fractures, bleached.

196.4'- 197.0' minor serpentine.
 198.5'- 200.0' more massive.
 200.0'- 210.0' numerous serpentine slips generally parallel to the
 core.
 212.0'- 219.5' very minor scattered chalc. and pentlandite.
Sample 8647
 222.0'- 223.3' serpentine slips parallel to the core.

230.0' - 233.5' Meta-diorite.

233.5' - 240.0' Highly altered and impregnated conglomerate, minor pyrite.
 240.0'- bottom of hole.

<u>Sample #</u>	<u>From</u>	<u>To</u>	<u>M.</u>	<u>Qu.</u>	<u>Au.</u>	<u>Ag.</u>	<u>Co.</u>
<u>1-3</u>							
8646	80.04	84.0'	---	---	---	---	---
8647	212.0'	219.5'	---	---	---	---	---

B.C. Cunningham

EMPIRE OIL AND MINERALS INC.,

Daine Township Property - Les La Treve Area, Quebec

Diamond Drill Hole 57 - 7B

Location: 502' North, 1200' West
Strike: 145° Astronoms
Dip: Collar 70°, 150' - 69°30', 350' - 69°.
Length: 368.3'
Started: April 20, 1957
Finished: April 26, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp. Ltd.;
Drilled By: Advance Drilling Corp. Ltd..

DBB HHH WTH

- 00' - 12.0' Overburden
00' - 14.0' Casing in boulders and sand.
12.2' - 42.8' Very coarse conglomerate with boulders up to 10" and composed mostly of feldspar porphyry.
 18.4' - 19.2' boulder of pink rhyolite.
 24.1' - 24.8' feldspar porphyry boulder.
42.8' - 84.3' Fine conglomerate, dark grey, massive and with minor epidote.
84.3' - 96.6' Coarse conglomerate.
 86.0' - 86.7' boulder of pink rhyolite and epidote.
96.6' - 96.9' Quartz vein.
96.9' - 101.3' Meta-diorite.
 100.0' - 101.3' minor pyrrhotite and pyrite, less than 1%.
101.3' - 108.5' Olivine Diabase.
 101.3' - 108.5' very minor fine grained disseminated pyrite and pyrrhotite distributed throughout.
108.5' - 111.1' Meta-diorite, mineralized as above.
111.1' - 123.4' Olivine diabase, rich in light grey feldspar, altered.
 111.1' - 111.1' very minor fine grained disseminated pyrite and pyrrhotite.

123.4' - 359.5' Gabbro, upper 10' quite fine grained.

140.0' - 150.0' small diabasic segregations in the gabbro.

123.4' - 231.5' very massive, uniform in texture.

231.5' - 232.8' blocky and broken.

241.1' - 243.5' serpentine slips at acute angle to the core, blocky.

252.0' - 271.3' very badly broken, numerous serpentine slips, highly serpentinized, some chlorite.

282.5' - 300.0' very numerous serpentine slips at all angles, many at 30° to the core.

300.0' - 303.3' very badly broken and serpentinized, probable fault.

303.3' - 305.0' core lost.

305.0' - 310.7' very badly broken and serpentinized.

310.7' - 314.8' core lost.

314.8' - 316.1' very badly broken and serpentinized.

316.1' - 317.7' core lost.

317.7' - 323.5' very badly broken and serpentinized.

323.5' - 331.0' blocky and serpentinized.

331.0' - 332.2' very badly broken and serpentinized.

332.2' - 335.0' core lost.

335.0' - 344.0' very badly broken and serpentinized.

300.0' - 344.0' probable fault some of post Keweenaw age.

344.0' - 359.5' numerous serpentine and chlorite slips at 30° to the core.

346.5' - very minor sulphides for three inches.

359.5' - 361.7' Meta-diorite.

361.7' - 368.3' Dark altered conglomerate, very badly broken..

362.5' - 363.1' core lost.

365.0' - 366.7' core lost.

368.3' - bottom of the hole.

R.C. Cunningham

EMPIRE OIL AND MINERALS INC..

Daine Township Property - Lac La Treve Area, Quebec

Diamond Drill Hole 57 - 8

Location: 250' North, 800' West.
Strike: 325° Astronomic.
Dip: 70° , 170' - 69° 30', 332' - 66°
Length: 358.0'
Started: April 27, 1957
Finished: April 29, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp Ltd..
Drilled By: Advance Drilling Corp. Ltd.;

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00' - 27.0' Casing

00.0' - 25.0' Overburden

25.0' - 358.0' Gabbro, relatively massive and of uniform texture, occasional fine stringers of serpentine.

32.1' - 32.5' pink aplite.

45.0' - 186.0' massive gabbro of uniform texture.

80.0' - 82.5' serpentine stringers parallel to the core.

186.0' - 187.5' " " " " " "

223.0' - 225.0' " " " " " "

227.0' - 230.5' " " " " " "

241.0' - 243.0' " " " " " "

247.0' - 248.0' " " " " " "

252.0' - 253.5' " " " " " "

263.9' - 265.6' core lost.

307.0' - 309.0' serpentine stringer parallel to the core.

315.0' - 316.0' " " " " " "

336.1' - 337.9' core lost.

358.0' - bottom of the hole.

R.C. Cunningham

EMPIRE OIL AND MINERALS INC.

Daine Township Property, Les La Treve Area, Quebec.

Diamond Drill Hole 57 - 9

Locations 500' North, 1500' West
Strike: 145° Astro.
Dips Collar 45°, 100' - 44°, 190' - 43°
Length: 202.0'
Started: April 30, 1957
Finished: May 2, 1957
Logged By: R.C. Cunningham
Assayed By: Eastern Mining and Smelting Corp. Ltd..
Drilled By: Advance Drilling Corp. Ltd..

*** *** ***

00' - 50.0' Casing in boulders and clay.

50.0' - 88.8' Gabbro.

50.0' 52.5' blocky and broken with serpentine on the slips.
68.0' - 71.2' " " " " " " " " "
72.0' - 73.5' " " " " " " " " "
81.0' - 82.0' " " " " " " " " "

88.8' - 95.6' Coarse grained diabase.

95.6' - 191.9' Gabbro, with minor serpentine slips and stringers.

100.0' - 108.3' moderately fractured.

108.3' - 110.0' core lost.

110.0' - 137.3' mostly massive and uniform.

122.5' $\frac{1}{2}$ " long bleb of chalcocyanite and pentlandite.

137.4' - 141.0' broken, serpentinized and bleached.

141.0' - 155.0' massive gabbro.

155.0' - 158.7' broken with serpentinized veins parallel to the core.

158.7' - 183.4' massive gabbro.

171.0' - 174.0' minor fine blebs of chalcocyanite and pentlandite with pentlandite 3 to 1, combined, less than 1%. Sample 3050

174.0' - 179.0' very minor pyrrhotite, pentlandite and chalco.

183.4' - 191.9' badly broken, serpentinized.

191.9' - 196.5' Metz-diorite. Some granite pebbles evident.

196.5' - 202.0' Altered and impregnated conglomerate

200.4' - 202.0' very badly broken, bottom of hole

R. C. Cunningham