

GM 02567

GEOLOGICAL REPORT

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Énergie et Ressources
naturelles

Québec 

GEOLOGICAL REPORT

ON THE

HOLDINGS OF

OKA OIL LTD.

H. R. MORRIS

GEOLOGICAL CONSULTANT

1932 - 26 AVE. S. W.

CALGARY, ALBERTA

Ministère des Richesses Naturelles, Québec

SERVICE DES GITES MINÉRAUX

No. GM-

2567

H. R. Morris, Geological Consultant

*Remis par Desrosiers
7-2-54*

GEOLOGICAL REPORT

on the

HOLDINGS OF

OKA OIL LTD.

Table of Contents

- A. Description of Acreage
 - 1. Table No. 1 - Gas and Mineral Oil Rights under claim by Oka Oil Ltd from Quebec Provincial Government by License Number.
 - 2. Table No. 2 - Gas and Mineral Oil rights under claim by Oka Oil Ltd from Quebec Provincial Government by Claim Number.
 - 3. Exact description of Licenses.
- B. Accessibility
- C. Topography
- D. Stratigraphy
 - 1. Glacial Drift
 - 2. Chazy
 - 3 Beekmantown
 - 4. Potsdam
- E. Structure
- F. Economic Geology
- G. Recommendations

H.R. Morris, Geological Consultant

The President and Directors,
Oka Oil Ltd.,
57 St. James Street W.,
Suite 200,
Montreal, Quebec.

Attention: Mr. Earnest Lafontaine

Dear Sirs:

In reply to your request, I submit herewith
the "Geological Report on the Holdings of Oka Oil Ltd."

A. Description of Acreage

Oka Oil Ltd. has a total of 24,006.22 acres
of gas and mineral oil rights in the province of Quebec,
under claim from the Provincial Government of Quebec. The
claims form almost a solid block, approximately six miles
by six miles; with St. Hermas located on the northwest
boundary; with St. Placide located two miles west of the
southwest boundary; with St. Benoit located approximately
one mile north of the southeast boundary; and with Ste.
Scholastique located approximately two miles east of the
northeast boundary. The block of gas and mineral oil
rights have been tabulated in two lists as follows:

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TABLE NO. 1

GAS AND MINERAL OIL RIGHTS UNDER CLAIM BY
OKA OIL LIMITED FROM QUEBEC PROVINCIAL GOVERNMENT
BY LICENSE NUMBER

| | <u>License No.</u> | <u>Claim No.</u> | <u>Acres</u> |
|-----|--------------------|------------------|------------------|
| 1. | 57860 | Q-72973 | 973.44 |
| 2. | 57861 | Q-72971 | 1084.98 |
| 3. | 57862 | Q-72970 | 1024.14 |
| 4. | 57863 | Q-72974 | 1027.52 |
| 5. | 60912 | Q-72956-72957 | 1107.79 |
| 6. | 60916 | Q-72967-72969 | 1151.94 |
| 7. | 60917 | Q-72960-72961 | 1082.86 |
| 8. | 60918 | Q-72958-72959 | 1511.16 |
| 9. | 60919 | Q-72954-72955 | 1090.05 |
| 10. | 60926 | Q-72972 | 1059.63 |
| 11. | 60941 | Q-73062-73063 | 1254.82 |
| 12. | 60942 | Q-72976 | 1064.70 |
| 13. | 60943 | Q-73061 | 1280.00 |
| 14. | 60944 | Q-72964-72966 | 993.71 |
| 15. | 60945 | Q-72962-72963 | 1470.30 |
| 16. | 60946 | Q-72980 | 1054.56 |
| 17. | 60947 | Q-72975 | 1064.70 |
| 18. | 60948 | Q-72977 | 1380.00 |
| 19. | 60949 | Q-72979 | 1044.42 |
| 20. | 60950 | Q-72978 | 1005.50 |
| 21. | 60961 | Q-73060 | 1280.00 |
| | | TOTAL | <u>24,006.22</u> |

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TABLE NO. 2

GAS AND MINERAL OIL RIGHTS UNDER CLAIM BY
OKA OIL LIMITED FROM QUEBEC PROVINCIAL GOVERNMENT
BY CLAIM NUMBER

| | <u>Claim No.</u> | <u>License No.</u> | <u>Acres</u> | <u>Staked</u> |
|-----|------------------|--------------------|------------------|------------------|
| 1. | Q-72954 | 60919 | 35.49 | Juin 30, 1952 |
| 2. | Q-72955 | 60919 | 1054.56 | Juillet 24, 1952 |
| 3. | Q-72956 | 60912 | 53.23 | Juin 30, 1952 |
| 4. | Q-72957 | 60912 | 1054.56 | Juillet 24, 1952 |
| 5. | Q-72958 | 60918 | 461.77 | Juin 30, 1952 |
| 6. | Q-72959 | 60918 | 1049.39 | Juillet 24, 1952 |
| 7. | Q-72960 | 60917 | 51.96 | Juin 30, 1952 |
| 8. | Q-72961 | 60917 | 1030.90 | Juillet 24, 1952 |
| 9. | Q-72962 | 60945 | 828.10 | Juillet 24, 1952 |
| 10. | Q-72963 | 60945 | 642.20 | Juillet 24, 1952 |
| 11. | Q-72964 | 60944 | 468.97 | Juillet 24, 1952 |
| 12. | Q-72965 | 60944 | 266.17 | Juillet 24, 1952 |
| 13. | Q-72966 | 60944 | 258.57 | Juillet 24, 1952 |
| 14. | Q-72967 | 60916 | 44.36 | Juin 30, 1952 |
| 15. | Q-72968 | 60916 | 25.98 | Juin 30, 1952 |
| 16. | Q-72969 | 60916 | 1081.60 | Juillet 24, 1952 |
| 17. | Q-72970 | 57862 | 1024.14 | Juillet 24, 1952 |
| 18. | Q-72971 | 57861 | 1084.98 | Juillet 24, 1952 |
| 19. | Q-72972 | 60926 | 1059.63 | Juillet 24, 1952 |
| 20. | Q-72973 | 57860 | 973.44 | Juillet 24, 1952 |
| 21. | Q-72974 | 57863 | 1027.52 | Juillet 24, 1952 |
| 22. | Q-72975 | 60947 | 1064.70 | Juillet 24, 1952 |
| 23. | Q-72976 | 60942 | 1064.70 | Juillet 24, 1952 |
| 24. | Q-72977 | 60948 | 1380.00 | Juillet 24, 1952 |
| 25. | Q-72978 | 60950 | 1005.50 | Juillet 24, 1952 |
| 26. | Q-72979 | 60949 | 1044.42 | Juillet 24, 1952 |
| 27. | Q-72980 | 60946 | 1054.56 | Juillet 24, 1952 |
| 28. | Q-73060 | 60961 | 1280.00 | July 31, 1952 |
| 29. | Q-73061 | 60943 | 1280.00 | July 31, 1952 |
| 30. | Q-73062 | 60941 | 739.37 | July 31, 1952 |
| 31. | Q-73063 | 60941 | 515.45 | July 31, 1952 |
| | | TOTAL | <u>24,006.22</u> | |

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An exact description of the acreage included under the various license numbers is as follows:

"Licence no-57860 - Claim number Q-72973

Le Ministère de Mines a reconnu un claim de 973.44 acres marqué le 24 juillet 1952, sur les lots entiers 415 a 425, de la Paroisse de St-Benoit, et sur les lots entiers 1 a 8, de la Paroisse de St-Hermas, Seigneurie du Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.Q. Quebec, le 18 Aout 1952 (Pour Gaz et huile minerale)".

"Licence no-57861 - Claim number Q-72971

Le Ministère des Mines a reconnu un claim de 1084.98 acres marqué le 24 juillet 1952, sur les lots 70 & 76, de la Paroisse de St-Hermas, sur les lots entiers 172 & 177 de la Paroisse de St-Placide, et sur les lots entiers 466, et 465, de la Paroisse de St-Benoit, Seigneurie du Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.Q. QUEBEC, le 18 aout 1952. (Pour Gaz et huile minerale)".

"Licence no-57862 - Claim number Q-72970

Le Ministère des Mines a reconnu un claim de 1024.14 acres marqué le 24 juillet 1952, sur les lots entiers 63 a 69, de la Paroisse de St-Hermas, et sur les lots entiers 457 a 464, de la Paroisse de St-Benoit, Seigneurie du Lac des Deux Montagnes, district electoral des Deux-Montagnes, P.Q. QUEBEC, Le 18 aout 1952. (Pour gaz et huile minerale)".

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"Licence no-57863 - Claim number Q-72974

Le Ministère des Mines, a reconnu un claim de 1027.52 acres marqué le 24 juillet 1952, sur les lots entiers 426 a 436, de la Paroisse de St-Benoit, et sur les lots entiers 9 a 19, de la paroisse de St-Hermas, Seigneurie de Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.Q.
QUEBEC, le 18 aout, 1952. (Pur gaz et huile minerale)".

"Licence no-60912 - Claims numbers Q-72956-72957.

Le Ministère des Mines a reconnu deux claims de 53.23, et 1054.56 acres respectivement marqués le 30 juin 1952 pour le premier claim et le 24 juillet 1952 pour le deuxième claim, sur le lot entier 236 sur les lots entiers 190 a 200 et lots 211 a 220, du cadastre officiel de la Paroisse de St-Placide, Seigneurie du Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.Q.
QUEBEC, le 18 aout 1952 (Pour gaz et huile minerale)".

"Licence no-60916 - Claims numbers Q-72967-72969.

Le Ministère des Mines a reconnu trois claims de 44.36, 25.98, et 1091.60 acres respectivement marqués le 30 juin 1952 pour les premier et deuxième claim, et le 24 juillet 1952, pour le troisième claim, sur la demie-sud-est du lot 237, sur la demie-nord-ouest du lot 249, e la Paroisse de St-Placide, pour les premier et deuxième claim; sur les lots entiers 227 a 234, sur la demie-nord-ouest

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des lots 235 a 237, 244,245,246, sur le demie-sud-est due lot
249 lots entiers 250 a 262, de la Paroisse de St-Placide, pour
le troisieme claim, Seigneurie de Lac des Deux-Montagnes,
district electoral des Deux-Montagnes, district electoral
des Deux-Montagnes, P.W.

QUEBEC, le 16 aout 1952

(Pour Gaz et huile minerale)".

"Licence number 60917 - Claims numbers Q-72960-72961.

two claims of 51.96 and 1030.90 acres respect-
ively staked for the first claim the 30th June 1952 and
July 24th 1952 for the second claim, on the whole lot 248
of the Parish of St-Placide, on the whole lot 437 and 449 of the
Parish of St-Benoit and on the whole lot 20 and 32 of the
Parish of St-Hermas, Seigneurie of the Lake of Two Mountains,
electoral district of Two Mountains, Quebec, (For Gas and
Mineral Oil.)"

"Licence no-60918 - Claims numbers Q-72958-72959.

Le Ministere des Mines a reconnu deux claims
de 461.77 et 1049.39 acres respectivement marques le 30 juin
1952 pour le claim no.1 et le 24 juillet 1952 pour le claim
no.2, sur le lot entier 247 de la Paroisse de St-Placide, sur
les lots entiers 450[√] a 456[√] de la Paroisse de St-Benoit, et
sur les lots entiers 33 a 62, de la Paroisse de St-Hermas,
Seigneurie de Lac des Deux-Montagnes, district electoral des
Deux-Montagnes, P.Q.

QUEBEC, le Aout 1952

(Pour gaz et huile minerale)".

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"Licence no-60919 - Claims numbers Q-72954-72955.

Le Ministère des Mines a reconnu deux claims de 35.49 et 1054.56 acres respectivement marqués le 30 juin 1952 pour le premier claim et le 24 juillet 1952 pour le deuxième claim, sur la demie sud-est du lot 235, de la Paroisse de St-Placide, sur les lots entiers 346 a 359, de la Paroisse de St-Benoit, et sur les lots entiers 178 a 189 et lots 221 a 224, de la Paroisse de St-Placide, Seigneurie du Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.W. QUEBEC, le 18 aout 1952 (Pour Gaz et huile minerale)".

"Licence no-60926 - Claims number Q-72972.

Le Ministère des Mines a reconnu un claim de 1059.63 acres marqué le 24 juillet 1952, sur les lots entiers 77a83, de la Paroisse de St-Hermas, et sur les lots entiers 162 a 171, de la Paroisse de St-Placide, Seigneurie de Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.Q. QUEBEC, le 18 aout 1952. (Pour Gaz et huile minerale)".

"Licence no-60941 - Claims numbers Q-73062-73063.

The Bureau of Mines has admitted two claims of 739.37 and 515.45 acres respectively, marked out July 31st 1952, on lots 291 to 304 for the first claim, and on lots 351 to 358 for the second claim, Cote St-Joachim, of the cadastral lots, of the parish of Ste-Scholastique, Seigniorie of Lac des Deux-Montagnes, electoral district of Deux-Montagnes, P.Q.

QUEBEC, August 28th, 1952. (Gas and Mineral Oil)".

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"Licence no-60942 - Claim Number Q-72976.

Le Ministère des Mines a reconnu un claim de 1064.70 acres marqué le 24 juillet 1952, sur les lots entiers 328 a 356 et les lots 106 a 123, du Cadastre Officiel, de la Paroisse de St-Benoit, Seigneurie du Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.Q.
QUEBEC, le 18 Aout 1952 (Pour Gaz et huile minerale)".

"Licence No-60943 - Claim Number Q-73061.

The Bureau of Mines has admitted one claim of 1280 acres, marked out July 31st, 1952, on cadastral lots nos. 326 to 350, Cote St-Joachim, of the parish of Ste-Scholastique, Seigniorie of Lac des Deux-Montagnes, electoral district of Deux-Montagnes, P.Q.
QUEBEC, August 28th, 1952. (Gas and Mineral Oil)".

"Licence no-60944 - Claims numbers Q-72964-72966.

Le Ministère des Mines a reconnu trois claims de 468.97, 268.17 et 258.57 acres respectivement marqués le 24 juillet 1952, sur la demie-nord des lots 98 a 106, de la Paroisse de St-Benoit sur la demie-nord des lots 1 a 7, de la Paroisse de L'Annonciation pour le premier claim; sur les lots entiers 225, 226, 263 a 278 de la Paroisse de St-Placide pour le deuxieme claim; et sur les lots entiers 245 a 247, de la Paroisse de St-Benoit pour le troisieme claim, Seigneurie du Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.Q.
QUEBEC, 18 aout 1952. (Pour gaz et huile minerale)".

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"Licence no-60945 -

Claims numbers Q-72962-72963.

Le Ministère des mines a reconnu deux claims de 828.10 et 642.20 acres respectivement marqués le 24 juillet 1952, sur les lots entiers 219 a 222, 227, 231, 233, 234, 240, Partie au nord du Chemin des lots 223, 225, 226, 228, 232 et 241 pour le premier claim, sur les lots entiers 159 a 162, 224, 229, 230, 235 a 239, 242, 248 a 250, 255, 256, 261, 262, 269, 270, 278 a 287, sur partie au nord du chemin des lots 223, 225, 226, 228, 232, 241, 266, 274 a 276, pour le deuxième claim, du cadastre officiel, de la Paroisse de St-Benoit, Seigneurie du Lac des Deux-Montagnes, district électoral des Deux-Montagnes, P.Q.

QUEBEC, le 18 Aout 1952.

(Pour gaz et huile minérale)".

"Licence No. 60946 -

Claim number Q-72980.

Le Ministère des Mines a reconnu un claim de 1064.56 acres marqué le 24 juillet 1952, sur les lots entiers 337 a 345, 360 a 375, du cadastre officiel, de la Paroisse de St-Benoit, Seigneurie du Lac des Deux-Montagnes, district électoral des Deux-Montagnes, P.Q.

QUEBEC, le 18 aout 1952

(Pour Gaz et huile minérale)".

"Licence no-60947 -

Claim number Q-72975.

Le Ministère des Mines a reconnu un claim de 1064.70 acres marqué le 24 juillet 1952, sur les lots entiers 124 a 158, 300 a 311, 320, sur Partie au sud du Chemin des lots 314 a 319, 321 a 326 du cadastre officiel, de la Paroisse de St-Benoit, Seigneurie du Lac des Deux-Montagnes, district électoral des Deux-Montagnes, P.Q.

QUEBEC, le 18 Aout 1952

(Pour Gaz et huile minérale)".
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"Licence No-60948 -

Claims number Q-72977.

Le Ministère des Mines a reconnu un claim de 1380 acres marqué le 24 juillet, 1952, sur les lots entiers 251 a 254, 257 a 259, 260 a 268, 270 a 277, 289 and 290 a 294 du Cadastre officiel de la Paroisse de St-Benoit, Seigneurie du Lac des Deux-Montagnes, district electoral des Deux Montagnes, P.Q. QUEBEC, le 18 Aout 1952 (Pour gaz et huile minerale)".

"Licence no-60949 -

Claim number Q-72979.

Le Ministère des Mines a reconnu un claim de 1044.42 acres marqué le 24 juillet 1952, sur les lots entiers 327, 376 a 386, sur partie au nord du chemin des lots 319, 321 a 326, du cadastre officiel, de la Paroisse de St-Benoit, Seigneurie du Lac des Deux-Montagnes, district electoral des Deux-Montagnes, P.Q. QUEBEC, le 18 Aout 1952. (Pour Gaz et huile minerale)".

"Licence no-60950 -

Claim number Q-72978.

Le Ministère des Mines a reconnu un claim de 1005.50 acres marqué le 24 juillet 1952, sur les lots entiers 295 a 299, lots 312, 313, 387 a 396, sur la partie au nord du Chemin des lots 314 a 318 du Cadastre officiel, de la Paroisse de St-Benoit, Seigneurie du Lac des Deux-Montagnes, District electoral des Deux-Montagnes, P.Q. QUEBEC, le 18 aout 1952. (Pour gaz et huile minerale)".

H.R. Morris, Geological Consultant

"License No-60961 - Claim number Q-73060.

One claim of 1280 acres, marked out July 31st, 1952, on cadastral lots nos. 305 to 317, Cote St-Joachim, of the parish of Ste-Scholastique, on cadastral lots nos 397 to 414, Cote St-Vincent Sud, of the parish of St-Benoit, Seigneurie of Lac des Deux-Montagnes, electoral district of Deux-Montagnes, P.Q.

(Gas and Mineral Oil)".

H.R. Morris, Geological Consultant

B. Accessibility

The block of acreage consists mainly of farm lands and is well traversed with gravel and paved roads. In addition the acreage is roughly bisected by the Canadian National Railway which joins St. Placide with Montreal.

C. Topography

The block of acreage occupies a flat valley between a Precambrian hill at St. Placide and a Precambrian hill at St. Benoit. The valley rises to the east from the shores of Lake of Two Mountains in a series of wave-cut terraces that are from fifteen to thirty feet in height and extend from a fraction of a mile to a mile in length. Although most of the soil consists of a thin layer of loam overlying grey, silty, soil or sand there are several areas that display abundant glacial drift. The drift consists of small to large boulders, some of which are ten feet square, whose origin is from the Precambrian Shield and the Paleozoic rocks of the St. Lawrence Lowlands.

D. Stratigraphy

At only one locality in the block of acreage was any outcrop noted and that was in the vicinity of St. Hermas where approximately one acre of nearly flat-lying quartzite was exposed. It is assumed that the outcrop was Upper Cambrian in age, being Potsdam Formation, and it is of interest to note

H. R. Morris, Geological Consultant

that the surface showed abundant evidence of glaciation with striation and chatter marks. The only other rocks that were exposed in the immediate vicinity of the block of acreage were the Precambrian hills at St. Placide and St. Benoit.

The following stratigraphic section is representative of the Montreal-north area:

| <u>System</u> | <u>Group</u> | <u>Lithology</u> | <u>Thickness</u> |
|-------------------|--------------|--|------------------|
| Cenozoic | Quaternary | Glacial Drift | 0'-200' |
| Ordovician | Chazy | Crystalline limestone sandstone shale | 380' |
| | Beekmantown | Dolomite, silty dolomite, siltstone, shale | 1055' 1423' |
| Upper Cambrian | Potsdam | Sandstone | 0'-1700' |
| Precambrian | Grenville | granite-gneiss | |

Glacial Drift:

Several sections on the block of acreage show abundant glacial drift which consists of small to large boulders of Precambrian and Paleozoic rocks. It is thought that these areas are terminal moraines which accounts for their localness.

H. R. Morris, Geological Consultant

Chazy

Near Montreal, in the western part of the Quebec basin, the Chazy rocks are all represented by the Laval formation, and subdivided into two members, the lower, the Ste. Therese, and the upper, the Caughnawaga (Clark 1944, p. 29). The Lower Ste. Therese member consists of fine to coarse, clean, quartz sandstones, usually with a calcareous cement. These grade upwards through calcareous sandstones and interbedded sandstones and limestones, with some interbedded shales, to the overlying Caughnawaga limestone member. The Caughnawaga member is composed mainly of limestones. These are predominantly grey, and vary from finely to coarsely crystalline, the latter appearing to be largely recrystallized coquinoid limestones. These are in some places slightly dolomitic or silty.

Beckmantown

The lower part of the Beckmantown consists of 280 to 500 feet of interbedded sandstones and dolomites and beds showing all gradation between them. The sandstones are grey, fine to coarse grained rocks, commonly composed of quartz with dolomitic cement. The dolomites are grey, fine

H. R. Morris, Geological Consultant

to medium crystalline and commonly sandy.

The middle division of the Beekmantown consists of 500 feet of clean, crystalline and granular dolomites.

The upper division consists of 280-450 feet of limestones, dolomites and silt with all gradations in between.

Potsdam

The Potsdam formation forms the oldest Paleozoic sediments penetrated in that part of the St. Lawrence Lowlands in the Province of Quebec and consist of a series of sandstones which overlie the Precambrian basement rocks. Because the Potsdam was layed down over an erosion surface the thickness varies from 0 to 1700 feet as penetrated in the Mallet test hole. The Potsdam consists of white grey to white, clean, well indurated sandstones composed chiefly of quartz.

E. Structure

The one small outcrop on the company's acreage in the vicinity of St. Hermas shows a very slight dip to the east. The remainder of the company's acreage is covered with glacial drift and lake deposits which successfully hide all the underlying formations and thus there is no way of knowing whether or

H.R. Morris, Geological Consultant

not, one or more structures underly the company's acreage without the use of a core drill.

It is recommended that a diamond core drill program be inaugurated, which should drill at regular points throughout the company's acreage, to a sufficient depth to core the top fifty feet of bedrock. The results would not only disclose what formations underlay the extent of the valley, but would give some indication as to the structural attitude of the formation.

F. Economic Geology

Although the one outcrop near St. Hermas appears to be Potsdam Formation and would tend to indicate that all the company's acreage is underlain by Potsdam Formation, the lack of outcrops throughout the company's acreage leaves the general geology and structural aspects very much a question mark.

The presence of natural gas seepages and occurrences in the St. Lawrence Lowlands is most prominent where the bedrock consists of Paleozoic shales and somewhat less prominent in areas underlain by Paleozoic carbonates. However, Clark states in his report "Montreal Area, Laval and Lachine Map-Areas" as follows:

"The Potsdam sandstone, on account of its high porosity, would act as a competent reservoir rock though its relatively great depth below the Trenton limestone (source rock) reduces the chances of its having received any oil from that source.

H. R. Morris, Geological Consultant

There is always the possibility that organic remains within the Potsdam sandstone itself might have yielded oil, though this seems, in quantity at least, to be very remote. The only available analyses of the hydrocarbon content of this formation were made during the drilling of the Mallet well, and, coming from samples from the horizons whence came the greatest flow of gas, 973 feet below the top of the formation, showed 0.504 and 0.450 per cent free hydrocarbons, negligible amounts in terms of the requirements for commercial production."

I would differ slightly with Mr. Clark in his opinion of the possibilities of commercial gas production from the Potsdam formation. The reported flows of gas from the Potsdam formation in the Mallet hole, in my opinion, originated from fractures in the formation and the fact that the flows followed the usual pattern of fracture reservoirs, namely low volume-high pressure, is to be anticipated. The importance of the Mallet hole is the reported flows of natural gas from both the Beekmantown and the Potsdam formations thus proving that these beds have suitable reservoir conditions although apparently lacking in source beds for hydrocarbons, and further the hydrocarbon analyses of the formations have little or no bearing on the productive possibilities of the formation.

In view of the evidence from gas seepages and gas flows from wells drilled in the St. Lawrence Lowlands, the

H. R. Morris, Geological Consultant

evidence of gas flows from the Beekmantown and Potsdam formations in the Mallet Test hole and the evidence that the company's acreage is underlain by at least Potsdam formation if not Beekmantown, I am forced to recommend drilling on the acreage under claim by Oka Oil Ltd.

It is further, my opinion, that the commercial production of natural gas from the sediments in the St. Lawrence Lowlands is assured if proper drilling and completion techniques are used. The natural gas reservoirs will be of the fracture type rather than the normal porosity type and the reservoirs may thus be found in synclines as well as anticlines.

G. Recommendations

1. All drilling on the acreage under claim by Oka Oil Ltd., should be done with a diamond drill in order to avoid the expensive moving-in-and-out charges of a rotary rig and to avoid slow and expensive drilling with rock bits. Under no consideration should the use of rotary tools be considered until the production of natural gas or oil has been found.
2. That the present drilling location of Oka Oil Ltd. be drilled to a depth not to exceed 1000 feet in order to ascertain whether or not the Potsdam Formation underlies this location and if the Potsdam contains a natural gas, fracture-reservoir as at the Mallet Test Hole

H. R. Morris, Geological Consultant

3. That five test holes be drilled, each to a depth of approximately 300 feet on the company's acreage at the following locations:

| <u>No.</u> | <u>Claim No.</u> | <u>Lot</u> |
|------------|------------------|------------|
| 1. | C 60919 (cl.2) | 180 |
| 2. | C 60918 (cl.2) | North 482 |
| 3. | C 60943 (cl.3) | West 340 |
| 4. | C 60961 (cl.1) | West 311 |
| 5. | C 60950 (cl.1) | South 315 |

These holes should be cased to the bedrock and cored from the top of the bedrock to 300 feet. The purpose of these holes is to disclose what formations underly the area and in addition the cores will show the attitude of the beds. The total cost of the five holes should not exceed \$10,000.

Respectfully submitted

H. R. Morris.

H. R. MORRIS



H. R. Morris, Geological Consultant

C E R T I F I C A T E

I, Harry R. Morris, of Calgary, in the Province of Alberta,
Consulting Petroleum Geologist, hereby certify as follows:

- A. I reside at Calgary in the Province of Alberta, and am by profession a Consulting Petroleum Geologist.
- B. I graduated as a Geological Engineer from the University of British Columbia with a degree of Bachelor of Applied Science in the year 1943. I am a member of the Engineering Institute of Canada, of the Alberta Association of Professional Engineers, and of the Alberta Society of Petroleum Geologists.
- C. I have no interest directly or indirectly, nor do I expect to have any interest directly or indirectly in the properties described in the attached report, or in any securities of Oka Oil Ltd.,
- D. The attached report is based on personal field examination of the described properties from October 15 to October 19, 1953; on literature from the Geological Survey of Canada and the Quebec Department of Mines; on literature of the Petroleum Industry; and on ten years personal experience in the petroleum industry in Alberta.

(Signed)

H. R. Morris

H. R. Morris
Geological Consultant

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