

MICROFILMED

TO .....

HERE .....

*June 1979.*

PROVINCE OF MANITOBA

I hereby certify that the assignment execut-

ed by .....

.....

in favour of .....

.....

of the within Lease was recorded in the Mines Branch of the Department of Mines and Natural Resources, this.....day of

..... 19.....

CHIEF MINING RECORDER

PROVINCE OF MANITOBA

I hereby certify that the within assignment is registered in the Mines Branch, Department of Mines and Natural Resources under

No. 795-D this 8 day of Sept

A. D. 1969

*P. Taylor*  
CHIEF MINING RECORDER

DATED

A. D. 1969

BETWEEN:

CITY SAVINGS & TRUST COMPANY

- and -

NEW NORTH MINERALS LTD. and  
MISSION OIL DEVELOPMENT LTD.

T R A N S F E R

AND the Transferees hereby accept this Transfer and Assignment.

AND the Post Office address of the Transferees are as follows:

New North Minerals Ltd.,  
c/- Bessemer, McKillop & Tompkins,  
#201, 627 - 6th Avenue S.W.,  
CALGARY 1, Alberta.

Mission Oil Development Ltd.,  
210 - 10405 - 100th Avenue,  
EDMONTON, Alberta.

DATED this 12<sup>th</sup> day of AUGUST, A.D. 1969.

CITY SAVINGS & TRUST COMPANY

Per: T.A. Cron

Per: [Signature]

NEW NORTH MINERALS LTD.

Per: William G. Cook

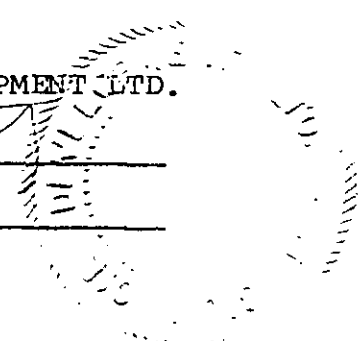
Per: [Signature]

MISSION OIL DEVELOPMENT LTD.

Per: W. Lutz

Per: \_\_\_\_\_

Approved  
Howard J. Brown  
Minister of Mines & Natural Resources



TRANSFER OF EXPLORATORY PERMITS OF  
OIL AND NATURAL GAS RIGHTS

BETWEEN:

CITY SAVINGS & TRUST COMPANY, a body corporate incorporated under the laws of the Province of Alberta, having its head office in the City of Edmonton, Alberta (hereinafter called "the Transferor")

AUG 25-69 <sup>MINE</sup>/<sub>BRES</sub> 3789 \*\*\*\*\*20.00  
L 89784

- and -

NEW NORTH MINERALS LTD., a body corporate incorporated under the laws of the Province of Alberta, having its head office in the City of Calgary, and registered to carry on business in the Province of Manitoba, and  
MISSION OIL DEVELOPMENT LTD., a body corporate incorporated under the laws of the Province of Alberta, having its head office in the City of Edmonton and registered to carry on business in the Province of Manitoba (hereinafter called "the Transferees")

The Transferor, being the holder of the Exploratory Permits of Oil and Gas Rights issued by the Director of Mines, Department of Mines and Natural Resources on behalf of Her Majesty the Queen in the right of the Province of Manitoba, particulars of which are set out as follows:

<u>Permit No.</u>	<u>Date</u>	<u>Designation</u>	
		<u>N. Latitude</u>	<u>W. Longitude</u>
47	May 10/67	56° 40'	91° 00'
49	May 10/67	56° 50'	91° 00'

in consideration of the sum of \$1.00 (ONE DOLLAR) and other good and valuable consideration, payment of which is hereby acknowledged by the Transferor, HEREBY TRANSFERS AND ASSIGNS unto the said Transferees as follows:

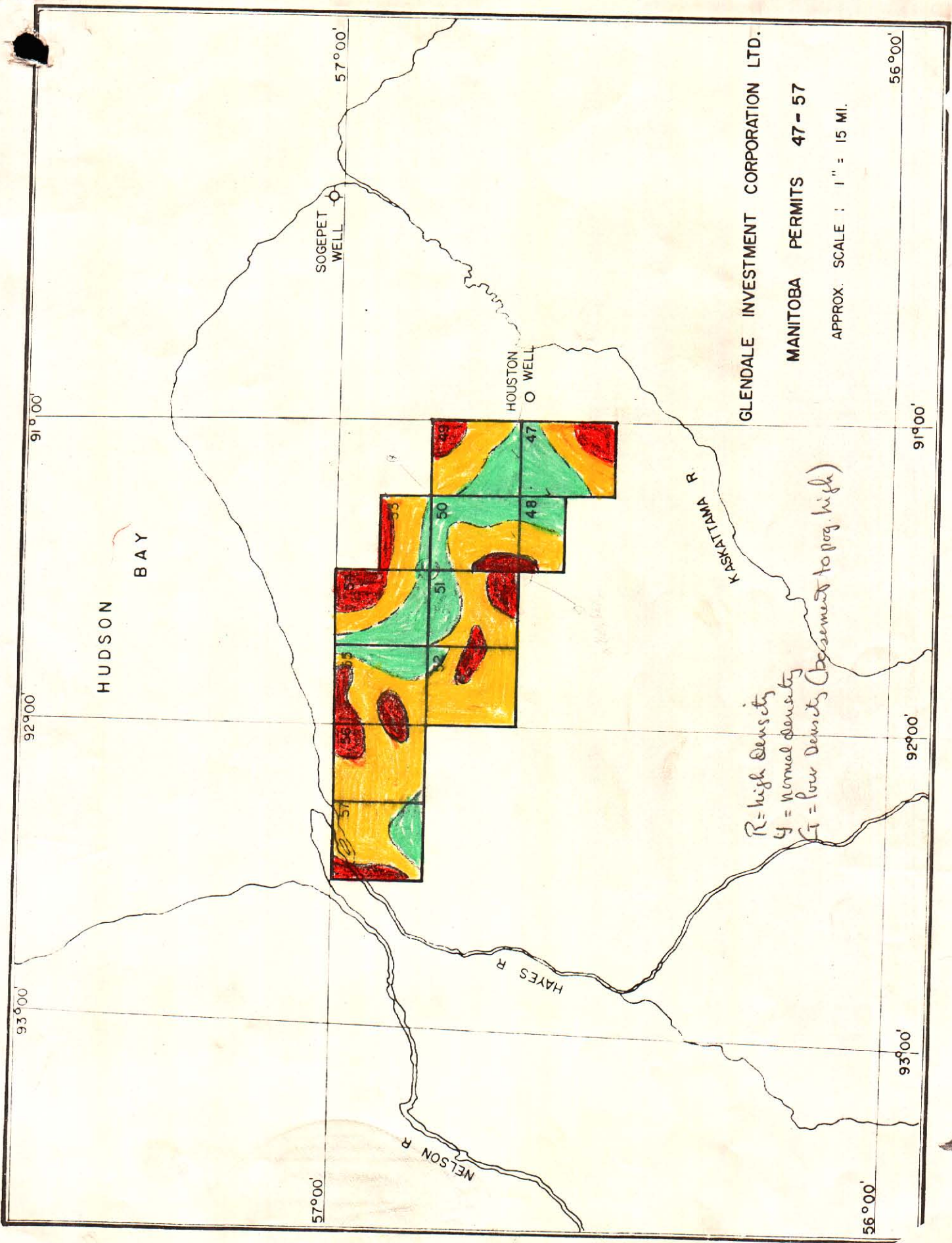
As to New North Minerals Ltd., an undivided Ten per cent (10%) interest;

As to Mission Oil Development Ltd., an undivided Ninety per cent (90%) interest;

in each of the said Permits above described.

3.58

By cheque \$20.00  
117 Killeop, Tomkins & Park



GLENDALE INVESTMENT CORPORATION LTD.

MANITOBA PERMITS 47-57

APPROX. SCALE : 1" = 15 MI.

R = high density  
 Y = normal density  
 G = low density (assumed to prog. high)

93°00' 92°00' 91°00' 57°00' 56°00'

Darlene Joy Liwak to Darlene Joy  
Liwak

Date: March 24, 1969  
2160-14

Loewen to Loewen

Lena Loewen to Helen Loewen  
Date: March 18, 1969  
2161-14

Mateush to Mathews

Patricia Lynn Mateush to Patricia  
Lynn Mathews  
Date: March 18, 1969  
2162-14

McMunn to Beck

Michael Ross McMunn to Michael  
Ross Beck  
Date: March 24, 1969  
2163-14

Melnyk to Melnyk

Edward Roman Melnyk to Ronald Ed-  
ward Melnyk  
Date: March 18, 1969  
2164-14

Mulley to Taylor

Ida Lorraine Mulley to Ida Lorraine  
Taylor

All of the above dated at the office of the Provincial Secretary, this 26th day  
of March, 1969.

Date: March 21, 1969  
2165-14

Petraszku to Peterson

Katie Petraszku to Catherine Peterson  
Date: March 18, 1969  
2166-14

Shura to Shurraw

Walter Shura to Walter Hall Shurraw  
Date: March 21, 1969  
2167-14

Sobkovich to Scott

Michael Richard Sobkovich to Michael  
Richard Scott  
Date: March 24, 1969  
2168-14

Tabe to Tabe

Takeshi Tabe to Thomas Takeshi Tabe  
Date: March 21, 1969  
2169-14

Wade to Wade

Neil Garnett Wade to Neil Graham  
Wade  
Date: March 25, 1969  
2170-14

J. B. CARROLL, Provincial Secretary.

#### UNDER THE HIGHWAY TRAFFIC ACT

Notice is hereby given that the follow-  
ing applications have been received by  
the Motor Transport Board:

Canadian Pacific Transport Co. Ltd.,  
Canadian Pacific Station,  
104-150 Henry Avenue,  
Winnipeg 2, Manitoba.

Application for approval of the pur-  
chase of certain assets and the granting  
of the extra-provincial rights held by  
Gardewine & Sons Ltd., as follows: Auth-  
orized to transport: (1) general freight  
from Hudson Bay, Hinchcliffe, Melfort,  
Canora, Yorkton and Prince Albert, Sask.  
to and from The Pas, Flin Flon and  
Cranberry Portage, Manitoba, (2) beer  
from Yorkton and Prince Albert to  
Creighton and Denare and empties in re-  
turn to above points.

Paul Halwas,  
o/a Russell Transfer,  
Russell, Manitoba.

Application for approval of the pur-  
chase of certain assets and the granting  
of any of the rights held under P.S.V.  
2024 by Edwin Fingas, Box 50, Inglis,  
Manitoba, o/a Inglis Transport.

Any person wishing to make repre-  
sentation or oppose the granting of any  
of the above applications must notify  
the Secretary in writing on or before  
April 14th, 1969.

Subsequent to the above date, the  
Board will set the date the applications  
will be heard and notify the applicants  
and those opposing of the time and place  
of the hearing.

H. P. PENWARDEN,  
Secretary,  
Motor Transport Board.

#### UNDER THE MINES ACT

DEPARTMENT OF MINES AND  
NATURAL RESOURCES  
CANCELLATION OF EXPLORATORY  
PERMITS

In accordance with requirement of  
Section 273 of the Regulations Under

The Mines Act governing the disposal of  
Oil and Natural Gas Rights on Crown  
Lands, I hereby advise the Exploratory  
Permit No. 48, and Permit Nos. 50 to  
57, inclusive, have been cancelled.

J. S. ROPER  
Director of Mines.

**Zawidoski Memorial Funeral Home**  
 Proprietor: Clark Leatherdale (1968)  
 Limited  
 Nature of Business: funeral directors  
 Place of Business: Winnipeg  
 Date of Registration: March 24, 1969  
 2150-14

**ERRATUM**

The Notice of Registration of Furniture (Rentals) Enterprises under The Business Names Registration Act, which appeared in Gazette No. 9, Page 228, dated March 1, 1969, should read as follows:

**Future (Rentals) Enterprises****CHANGE OR ALTERATION IN MEMBERSHIP**

**Bill's Auto Sales (Brandon)**  
 Former Partners: Basil William Antoniuk, Harry Carcary  
 Sole Partner: Basil William Antoniuk  
 Date of Change: September 1, 1966  
 Date of Registration: March 24, 1969  
 2151-14

Sole Partner: Robert Francis Fleming  
 Date of Change: March 15, 1969  
 Date of Registration: March 18, 1969  
 2153-14

**Doctors' Directory**  
 Former Partners: John Keanie Murdoch, Evelyn Helen Murdoch  
 Sole Partner: International Utilities Corporation  
 Date of Change: January 1, 1969  
 Date of Registration: March 20, 1969  
 2152-14

**Scott's Cleaners**  
 Former Partners: S. & S. Investments Ltd., Mindy Enterprises Ltd.  
 New Partner: Mindy Enterprises Ltd.  
 Date of Change: January 14, 1965  
 Date of Registration: March 24, 1969  
 2154-14

**Fleming Realty**  
 Former Partners: Robert Francis Fleming, Michael Pochynok

**Trans-Canada Agencies**  
 Former Partners: Taras Diachun, Arthur M. Steiman  
 Sole Partner: Taras Diachun  
 Date of Change: April 1, 1969  
 Date of Registration: March 24, 1969  
 2155-14

All of the above dated at the office of the Provincial Secretary, this 26th day of March, 1969.

J. B. CARROLL, Provincial Secretary.

**UNDER THE CHANGE OF NAME ACT**

Public notice is hereby given by the Honourable John B. Carroll, Provincial Secretary, that certificates of change of name have issued as follows:

**Anderson to Anderson**  
 Juleus Kjarten Anderson to Carl Jules Anderson  
 Date: March 25, 1969  
 2156-14

**Jagger to Dorset**  
 Donald Edwin Jagger to Donald Edwin Dorset  
 Dorothy Irene Jagger to Dorothy Irene Dorset  
 Brent Ross Jagger to Brent Ross Dorset  
 Loreen Dawn Jagger to Loreen Dawn Dorset  
 Date: March 18, 1969  
 2159-14

**Dowhejko to Dowhayko**  
 Dymtro Dowhejko to Dmytro Dowhayko  
 Nadija Dowhejko to Nadija Dowhayko  
 Paul (Palvo) Dowhejko to Paul Dowhayko  
 Wladimir Dowhejko to Wladimir Dowhayko  
 Michael George Dowhejko to Michael George Dowhayko  
 Date: March 18, 1969  
 2157-14

**Liwak to Lywak**  
 Ilija Liwak to Alex Lywak  
 Dorothy Elsie Liwak to Dorothy Elsie Lywak  
 Diane Ethel Liwak to Diane Ethel Lywak  
 Barry Marcell Liwak to Barry Marcell Lywak  
 Darrell Lynn Liwak to Darrell Lynn Lywak  
 Alex George Liwak to Alex George Lywak  
 Donna Irene Liwak to Donna Irene Lywak

**Holenski to Hollens**  
 Arnold Frank Holenski to Arnold Frank Hollens  
 Stella Holenski to Stella Hollens  
 Graig Douglas Holenski to Graig Douglas Hollens  
 Date: March 18, 1969  
 2158-14

October 1, 1969.

City Savings & Trust Company,  
c/o D. U. Pekarsky,  
204, Baltzan Building,  
10156 - 101st Street,  
Edmonton 15, Alberta.

Dear Sir,

Enclosed, Province of Manitoba cheque T 13574 payable to the order of City Savings & Trust Company, in the amount of \$21,090.60.

Promissory note for \$21,090.60 payable to Provincial Treasurer of Manitoba with letter of Guarantee completed by The Royal Bank of Canada was received to replace the deposit returned in attached cheque.

Yours truly,

T. Morgan,  
Chief Mining Recorder.

/hs  
encl.

Register

CANCELLED

11 DAY OF May 19 71

Sec 213

By Sept 2/72



September 17, 1969

McKillop, Tomkins & Park  
201 Bow Valley Building  
627 - 6th Avenue S.W.  
Calgary 1, Alberta

Gentlemen:

Your File No. 1145 DLM

Attached transfer of Exploratory Permits Nos. 47 and 49 from City Savings & Trust Company to New North Minerals Ltd. undivided 10% interest, Mission Oil Development Ltd. undivided 90% interest. This document was registered September 8, 1969 under Document 785-0.

Your copies of the permits are returned endorsed as to the registration of the assignments. Official Receipt is attached L 89784 covering registration fees of \$20.00.

Yours truly,

T. Morgan  
Chief Mining Recorder

PT/sb  
Enc.

September 3, 1969

Chief Mining Recorder

Chief of Financial Services

Attention: Mr. Ron Poczernick

Exploratory Permit Nos. 47 and 49

Attached a promissory note for \$21,090.00 payable to the Provincial Treasurer of Manitoba and signed by Mission Oil Development Ltd. together with letter of Guarantee completed by The Royal Bank of Canada.

These are deposited in connection with work performance on Exploratory Permit Nos. 47 and 49.

These permits are now being assigned from City Savings and Trust Company. On registration of the assignment a refund will be requested of the cash deposit presently held in respect to these permits.

T. Morgan

PT/sb  
Enc.

INTE DEPARTMENTAL MEMORANDUM



PROVINCE OF MANITOBA

DATE September 3, 1969

FROM Chief Mining Recorder

TO Mr. M. J. Gobert

Assistant Deputy Minister

SUBJECT Assignment of Exploratory Permit Nos. 47 and 49

DEPARTMENT OF MINES & NATURAL RESOURCES  
SEP 5 - 1969  
DIRECTOR OF MINES

Attached for the signature of the Minister of Mines and Natural Resources, Assignments of Exploratory Permit Nos. 47 and 49 from City Savings & Trust Company to New North Minerals Ltd. as to 10% interest and Mission Oil Development Ltd. as to 90% interest.

The signature of the Minister is required under Section 274 of the regulations covering the disposal of Oil and Natural Gas Rights.

T. Morgan

PT/sb

cc: Mr. J. S. Roper  
Director of Mines

RECOMMENDATION APPROVAL  
  
DIRECTOR OF MINES

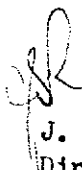
DEPARTMENT OF MINES AND NATURAL RESOURCES  
SEP 4 1969  
ASSISTANT DEPUTY MINISTER'S OFFICE

DEPARTMENT OF MINES AND NATURAL RESOURCES

CANCELLATION OF EXPLORATORY PERMITS

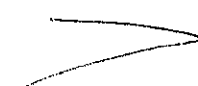
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In accordance with requirement of Section 273 of the Regulations Under The Mines Act governing the disposal of Oil and Natural Gas Rights on Crown Lands, I hereby advise that Exploratory Permit No. 48, and Permit Nos. 50 to 57, inclusive, have been cancelled.

  
J. S. Roper,  
Director of Mines.

c. c. to: Mr. T. Morgan,  
Chief Mining Recorder.

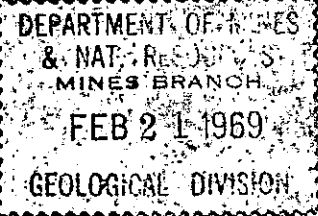
Mr. F. S. Gamey,  
Reservoir Engineer.

 Dr. H. R. McCabe,  
Geologist.

J. S. Roper  
~~Director~~

February 19, 1969.

Mr. D. U. Pekarsky,  
Miller, Miller, Witten, Pekarsky,  
Vogel & Pollock,  
Barristers & Solicitors,  
204 Baltzan Building,  
10156 - 101st Street,  
EDMONTON 15, Alta.



Dear Mr. Pekarsky:

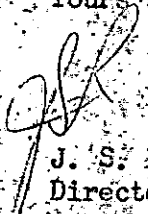
Re: Exploratory Permits Nos. 47 to 57  
Permittee - City Savings & Trust Company

Further to our letter of January 30 and yours of January 24, we advise that the corrected reports, which have been submitted, are acceptable as a photogeologic or photogeophysical study. We also advise that in this instance, and because of previous agreements, we will accept the reports submitted as fulfillment of the work requirements on the above permits up to November 10, 1968. We further advise that this approval should not, under any circumstance, be considered a precedent for acceptance of future photogeologic or photogeophysical studies as part of a work requirement.

As you must be aware, we are most reluctant to grant the amount you requested as a work requirement because our experience has raised considerable doubt that such work should constitute more than a partial fulfillment of the obligations for the 1st 18-month period. We would be most appreciative of any comments or specific expense breakdowns from you or Mr. Crook, in order that future applications on work of this type may be handled in an objective and realistic manner.

We are instituting action for the return to you of the \$35,027.60 we are presently holding on deposit.

Yours sincerely,

  
J. S. Roper,  
Director of Mines.

JSR/or

c. c. to: > Dr. H. R. McCabe, Geology Division. 

January 31, 1969

Dr. H. R. McCabe

Mr. J. S. Roper

Geologist


Director of Mines

Fracture Analysis Survey - Permits 47-57 - Rayalta Petroleum Ltd.

The corrected maps and text supplied by Rayalta have been checked and placed in the previously submitted reports. The reports are now at least consistent and are acceptable as a photogeologic or photogeophysical study.

In this particular case, however, it would seem that approval would in fact indicate approval of the study to the indicated valuation of \$35,028. If this is the case I could not, on the basis of presently available information, approve this study as acceptable for fulfilling all exploration obligations in respect to the above permits. I could not indicate approval for any amount in excess of \$5,000 without a detailed statement for expenditures as required under Section 251-3 of the Mines Act. As I pointed out to you, the statutory declaration is to verify the statement of expenditures, and we have in fact received no such statement. In view of the fact that the Minister and our Branch indicated that the photogeological study would be accepted "only as a partial fulfillment" of their obligation, we would seem to have every right to require a detailed statement of costs before allowing the study as a complete fulfillment of obligation.

If possible, it would be advisable to submit this report to a consultant, such as Red MacDaniel, for his comments and valuation, so that we will be in a better position to evaluate any future programs of this type.

  
H. R. McCabe

HRM/hf

Note: Company - commenced study (indefinite) Aug 30.  
Report sent Rev. 5 - Total max time - 65 days @ \$35000 = \$338. day.  
Technical indicates 100/Day/Man. max. This would mean, essentially,  
5 men full time. Total # of photos is only 100. - & this could well  
occupy 5 men for 65 days. (2300 man days for 100 photos).

J. S. Roper  
~~XXXXXXXX~~

February 19, 1969.

Mr. D. U. Pekarsky,  
Miller, Miller, Witten, Pekarsky,  
Vogel & Pollock,  
Barristers & Solicitors,  
204 Baltzan Building,  
10156 - 101st Street,  
EDMONTON 15, Alta.


Dear Mr. Pekarsky:

Re: Exploratory Permits Nos. 47 to 57  
Permittee - City Savings & Trust  
Company

You have deposited \$21,090.60 covering the 30-month period to May 10, 1971, on Exploratory Permits Nos. 47 and 49. Exploratory Permit No. 48 and Permits Nos. 50 to 57, inclusive, have been cancelled.

For your information, we refer you to Sections 258, 259, and 260 of the Regulations under The Mines Act for the Disposal of Oil and Natural Gas Rights for guidance in the work requirements for Exploratory Permits Nos. 47 and 49.

Yours sincerely,

  
J. S. Roper,  
Director of Mines.

JSR/or

c. c. to: Dr. H. R. McCabe, Geology Division.



**LOCKWOOD SURVEY CORPORATION LTD.**

FORMERLY HUNTING SURVEY CORPORATION LIMITED

1450 O'CONNOR DRIVE  
TORONTO 16, ONTARIO  
TELEPHONE 755-1141  
CABLES: CANLOCK

May 7th, 1968

Mr. H. R. McCabe,  
Geological Division, Mines Branch,  
Dept. of Mines & Natural Resources,  
900 Norquay Building,  
401 York Avenue,  
Winnipeg 1, Manitoba.

Dear Mr. McCabe,

Thank you for your letter of May 7th. I would agree that a photogeological study should rank with any other method of geological map making when submitted as a work commitment for a particular area.

The work we did for you was not however, a normal photo interpretation of the area. You will recall that we were required to locate any existing Pre Cambrian or Palaeozoic outcrops in the area and try to deduce where we thought the Pre Cambrian was near the surface. Naturally we added any obvious faults etc. as we went along, but we were really only looking for outcrop and near-outcrop and were able to work through the photographs much quicker than we would for a complete photo study, otherwise we could not possibly have done it in the time and hence for the money charged.

In calculating costs, bear in mind that a good photo interpreter can complete an average of 10 stereo models per day. This is largely independant of scale. For this work we would charge a professional fee of \$100.00 per day for small jobs, with a reduction for larger areas. To this must be added the cost of compilation on (say) a mosaic base which normally takes about half as much time and money again. Finally there is the cost of writing and producing a report plus the cost of the photos and mosaic. As a realistic example we have just produced a photo geological map of an area of 35 square miles in British Columbia.

continued . . . . .



Mr. H. R. McCabe

Page 2.

This was costed as follows:

Interpretation of 40 prints, 4 days @ \$100.00	\$ 400.00
Compilation onto mosaic	\$ 200.00
Report writing and production	\$ 100.00
Cost of photos and mosaic (approximately)	\$ 150.00
	<hr/>
	\$ 850.00
	<hr/> <hr/>

98-49 A900  
 2500  
 10700  
 100  
 15000

This works out at about \$24.00 per square mile or 3.7¢ per acre, and is a more realistic estimate than the work we did for you.

I am glad that our batting average has worked out so far and hope that you will be able to prove or disprove some more localities. It would be interesting to see if the airborne magnetic maps can show the subsurface trends when they are available.

We will be very happy to resolve the problem areas for you. Just send us the photos and mosaics.

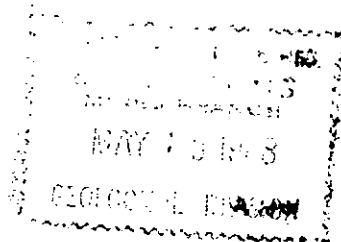
Yours very truly,

*Bennie*

/hr

B. E. Manistre P. Eng.  
Chief Geologist

$$\frac{440}{109,000}$$
 Total photo coverage of permit area 47-57 = 98 photos.  
 @ approx 1 mi scale (1"=5000').



Net model gain - 1 mile photos = 20.33 sq. mi.

1/4 mile photos = 1.41 sq. mi

$\approx 250$  sq mi @ 2640  

---

 $\approx 500$                       1320  
 $\frac{31}{20} = 200$                       5280

1100 sq. mi @  
 $\frac{5}{}$   
 $\$3500$

+ 16 x 2000 = 32,000  
 $\$37,500$

1100  
 $\frac{200}{}$   
 $\$2750.00$

+ 4 x 2000 = 8000  
 $\$10,750$

## INTER-DEPARTMENTAL MEMORANDUM

FROM H.A.M.PROVINCE  
OF  
MANITOBADATE May 14 / 68.TO KAP.

Memo check  
by H.A.M. May 14.  
COP to D. Jones.

SUBJECT Photogeologic Survey - Permits 47-57 incl., H.B. Area

A check of the available photo coverage for the above permit area shows  
at approx 5000'  
a total number of approximately 100 photos. This would require  
100 stereo models. At \$100 per day and 10 models per day,  
photogeologic interpretation would cost approximately \$1000.  
If cost of transfer & mosaic and writing report are equal to about 3/4 the  
cost of interpretation, as indicated by Mr. Manisthe, this cost would  
amount to approximately \$750. Cost of 2 sets of photos (200)  
at 60¢ each = \$120.

Total cost of photogeologic study would be only about \$2,000.

[ Cost of flying area would be about \$5/sq. mi @ 1320' or \$2.50/sq. mi @ 2640'  
with 4x or 16x the above indicated costs ]

## INTER - DEPARTMENTAL MEMORANDUM

FROM \_\_\_\_\_

PROVINCE  
OF  
MANITOBA

DATE \_\_\_\_\_

TO \_\_\_\_\_

K.A.P.

J.S.R.

SUBJECT Photogeologic Survey

Phone call from Lockwood Survey indicates that the cost for Lake St. Martin study was not typical, and costs could run to as much as 5<sup>+</sup> per acre in certain cases. Mr. Manistre indicated the cost of <sup>study as</sup> 3.74 for a small and rather detailed study using 1320 scale photos. Cost for larger areas and smaller scale photographs (i.e. fewer photographs) would lower the price.

Cost diff. to determine - 3-5<sup>+</sup> possibly depending hely a time req'd. - i.e. # photos, details decipherable etc. <sup>prob.</sup> 3<sup>+</sup> or less for M.R. Area with presently avail 1 mi photos.

small projects @ 100/day & 10 setups.

OK. by K.A.P.

? → Don C. re. release L. St. Martin Data

**RAYALTA PETROLEUMS LTD.**

1347-12TH AVENUE S.W.  
CALGARY 3, ALBERTA  
PHONE 403-244-2101

January 24th, 1969

Mr. J.S. Roper  
Director of Mines  
Department of Mines &  
Natural Resources  
Mines Branch  
Director's Office  
901 Norquay Building  
401 York Avenue  
WINNIPEG 1, Manitoba

Dear Mr. Roper:

Re: Manitoba P.&N.G.  
Permits 47-57 inclusive

Further to my letter of January 10th, 1969, I am this day forwarding you under separate cover, air-express (Air Canada), corrected aerial mosaics and fracture analysis maps for each of the captioned Permits.

Three copies of each map and mosaic are sent to replace the sets in the reports you now have. In addition to the maps the following replacement pages for the reports are enclosed.

"P.&N.G. PERMIT NO. 55"

- \* Appropriate replacement pages are sent for this report to correct the errors outlined in our previous correspondence.

" ALL PERMITS " (47-57)

- \* Corrected copies of the final pages for all copies of all reports are also included and should be inserted in the appropriate place.


Mr. J.S. Roper  
Dept. of Mines &  
Natural Resources

January 24th, 1969

I trust that all of the above will satisfy your  
department.

Yours very truly,

RAYALTA PETROLEUMS LTD.

  
\_\_\_\_\_  
William G. Crook  
P. Geol.

WGC/jp

cc: Mr. D. Pekarsky  
Miller, Miller, Witten,  
Pekarsky, Vogel & Pollock  
10156 - 101st Street  
EDMONTON 15, Alberta

Mr. W. Lutsky  
Room 202  
10405 - 100th Avenue  
EDMONTON 14, Alberta

MILLER, MILLER, WITTEN, PEKARSKY, VOGEL & POLLOCK

BARRISTERS & SOLICITORS

ABE W. MILLER, O.C. (1897-1964)

TEVIE H. MILLER, O.C.  
(ALSO MEMBER N.W.T. BAR)  
BARRY VOGEL, B.A., LL.B.

NORMAN L. WITTEN, B.A., LL.B.  
DANIEL U. PEKARSKY, B.A., LL.B.  
LEONARD J. POLLOCK, B.A., LL.B.

TELEPHONE 429-6211

A.C. 403

204 BALTZAN BUILDING  
10156-101ST STREET

EDMONTON 15, ALBERTA

IN REPLY PLEASE REFER TO FILE NO. 11,292 DUP

January 24, 1969.

AIR MAIL - SPECIAL DELIVERY

Department of Mines and Natural  
Resources,  
Mines Branch,  
901 Norquay Building,  
401 York Avenue,  
Winnipeg 1, Manitoba.

Attention: Mr. J.S. Roper

Dear Sir:

Re: Manitoba Petroleum and Natural Gas  
Permits Nos. 47 to 57 inclusive

Enclosed herewith please find the Statutory Declaration of William Lutsky of Glendale Investment Corporation Ltd. in triplicate, together with the Auditors' Certificate in triplicate regarding the expenditures incurred in connection with the above. We trust that by this time Rayalta Petroleum Ltd. will have satisfactorily answered the questions of your Department with respect to the reports previously filed and that these reports taken together with the enclosed material will be sufficient to enable you to process the return of the deposit herein.

As mentioned in our earlier correspondence regarding the renewal of Permits Nos. 47 and 49, our client would appreciate the Department applying sufficient of the Bonds on deposit for Permits Nos. 47 to 57 first period requirement to cover the deposit requirement for Exploratory Permits 47 and 49 for the second period and return the surplus Bonds and the cash previously filed for the two Permits which have been renewed.

We look forward to hearing from you at an early time.

Yours truly,

MILLER, MILLER, WITTEN, PEKARSKY,  
VOGEL & POLLOCK

Per: 

DUP/kc  
Enc.

**ZOLF AND MILLER**

CHARTERED ACCOUNTANTS

510 MCLEOD BUILDING, EDMONTON, ALBERTA

PHONE 424-6185

MICHAEL ZOLF, C.A.  
LEON E. MILLER, C.A.  
C. C. VAN STEENBERGEN, C.A.

January 24, 1969.

Director of Mines,  
Department of Mines and Natural Resources,  
Mines Branch,  
901 Norquay Building,  
401 York Avenue,  
Winnipeg 1, Manitoba.

Dear Sir:

Re: Manitoba Petroleum and Natural Gas  
Permits Nos. 47 to 57 inclusive

The expenditure totalling \$35,028.00 referred to in the Statutory Declaration of William Lutsky of Glendale Investment Corporation Ltd. in connection with this matter has been checked by me to the invoices of Rayalta Petroleum Ltd. To the best of my knowledge and belief these expenses were incurred by Glendale Investment Corporation Ltd. in connection with Manitoba Petroleum and Natural Gas Permits Nos. 47 to 57 inclusive and have been paid by the said company. I am not an employee of nor do I have any financial interest in Glendale Investment Corporation Ltd.

ZOLF AND MILLER  
Chartered Accountants

Per: 



RAYALTA PETROLEUMS LTD.

1347-12TH AVENUE S.W.  
CALGARY 3, ALBERTA  
PHONE 403-244-2101

December 30th, 1968

DEPARTMENT OF MINES  
& NATURAL RESOURCES  
JAN 2 - 1969  
DIRECTOR OF MINES

Mr. J. S. Roper  
Director of Mines  
Department of Mines &  
Natural Resources  
901 Norquay Building  
401 York Avenue  
WINNIPEG 1, Manitoba

Dear Mr. Roper:

Re: Manitoba P.&N.G.  
Permits - 47 to 57  
inclusive

I have the following reply to your list of queries concerning the General Geology and Fracture Analysis Survey conducted on the captioned Permits.

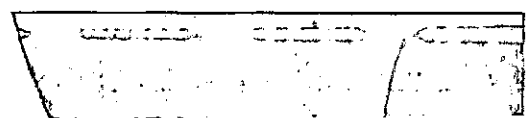
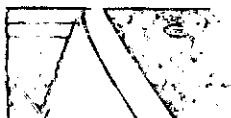
1. Error in latitude line.

It is impossible to construct an uncontrolled mosaic, especially one of the size necessary for this present study, without incurring some topographic location error. Each vertical aerial photograph has some distortion at its edge and the only "true scale" portion of any photograph is at its exact center. Even the centre will not be "true" unless the aircraft was exactly level with the ground at the moment the picture was taken.

*consist - but there should be consistency between maps regardless of any inherent potential or absolute error. For one thing, because of errors in uncentrally mosaic as noted - the maps could not be rectangular as has been shown.*

.....(Cont'd).....

Mr. L. R. Foub  
Director, Management Services



The photos used in the construction of this mosaic were taken from an altitude of 20,000 feet and thus you will realize that if the aircraft were only a fraction of a degree off horizontal a further distortion will be introduced. All the above distortion is further complicated by the inherent problems involved in projecting the curved surface of the earth on to the flat surface of a map.

As far as the present mosaic is concerned the position of the Permit borders was hung on 57° 00' and since we received your letter we have discovered a positional error at the eastern end of this line. To remedy this situation we have re-drafted the Permit outlines and have hung the work on the 56° 50' N. latitude.

2. There is indeed a "low fracture density" area on Permit No. 55. I have prepared a new section for this report and will forward it to you for insertion.
3. The discrepancy you mentioned are entirely drafting errors and have been corrected.

✓ OK.

???. Really ??? could discuss  
of ~ 50% of lines in a draft  
error.

..... (Cont'd) .....

4. (a) "the general interpretation is that the low fracture intensity area is underlain by topographic highs on the Basement.

The incidence may be normal off-structure but at no place is the statement made that a "low incidence" is present off-structure.

The basis we use is the results of the survey we have conducted in northern Alberta where drilling has established the presence of considerable Basement topography. Here, we discovered that areas of low fracture intensity were underlain by high areas on the Basement. We have projected the same situation to be present under the captioned area and justify this projection because of:

- i) Similarity of general appearance of the fracture pattern and distribution of high and low areas.
- ii) Probable absence of any feature within the sedimentary section which could cause this distribution.

(b) A Basement fault would cause a "fracture low" area over the up-thrown side of the fault as the Basement would be higher. In areas where subsurface control is available we know that faults produce an "up-thrown" low fracture area the width of which has not yet (in our experience) exceeded one mile

*OK - my mistake -  
- for this temp - could  
require both fracture low  
and fringes high.*

*OK -*

*ended,*

Dept. of Mines & - 4 - December 30th, 1968  
Natural Resources

(c) "high fracture area" should  
read "Basement topographic high".

*substitution?*

By this substitution the presence  
or absence of Granite Wash Sand  
is explained. I am preparing  
corrected pages.

I trust that the above will answer all questions raised  
in your letter.

Yours very truly,

RAYALTA PETROLEUMS LTD.

*William G. Crook*  
\_\_\_\_\_  
William G. Crook, P. Geol.

WGC/jp

cc:

Mr. D. Pekarsky  
Miller, Miller, Witten,  
Pekarsky, Vogel & Pollock  
10156 - 101st Street  
EDMONTON 15, Alberta

*Non-clarification  
of facts - 4/1/68.*

Fracture Analysis Survey, Permits 47-57, Glendale Investment Corp. Ltd.

The following items in the above report require correction or clarification:

- 1) Error in latitude lines. A discrepancy of 1/2" to 1 3/4" (1/3 mile to 1 1/4 miles) is evident along longitude 91° 31'. This is the amount of mismatch between the map sheets for permit areas 50 and 51. The indicated position of latitude line 56° 50' is incorrect on Permit 51, by comparison with NTS map 54-B.
- 2) The conclusions in the report for Permit 55 appear incorrect. It is stated that there are no areas of basement high (low fracture density), but a low-fracture-density area is shown on the map.

- 3) Why is there, in some instances, a great discrepancy between adjacent map areas as to number of fractures and delimitation of areas of high, normal, and low fracture density. The discrepancy is most apparent between permit areas 50 and 57, in the overlap area.

- 4) Clarification of the following statements taken from the final two pages of the reports is requested.

- a) ".... the general interpretation is that the low fracture intensity area is underlain by topographic highs on the basement."

This is one possible interpretation, based on what was stated in the text of the report, but it is also stated that off-structure or structurally low areas also show low or (normal) fracture density. On what basis is it possible to determine if the low-fracture-intensity areas is a basement high or a basement low?

- b) "A fault is unlikely as the causative feature as the high area is over one and one-half miles in width. If a fault caused the fracture low, the width of the low would be about one mile or less."

Why would a fault give rise to a zone of low fracture density?

- c) "Granite Wash sand is probably absent on the top of this high fracture area, but will probably be present along the flanks of this feature."

Should this not read "low fracture area" or "area of low fracture density" or alternatively "basement topographic high"? The problem remains as to whether the low fracture density areas represent basement highs or lows. If the "low fracture area" reflects a basement low, granite wash could be present.

p. c. to: Dr. K. A. Phillips,  
Chief Geologist.

MILLER, MILLER, WITTEN, PEKARSKY, VOGEL & POLLOCK

BARRISTERS & SOLICITORS

ABE W. MILLER, O.C. (1897-1964)

TEVIE H. MILLER, O.C.  
(ALSO MEMBER N.W.T. BAR)  
BARRY VOGEL, B.A., LL.B.

NORMAN L. WITTEN, B.A., LL.B.  
DANIEL U. PEKARSKY, B.A., LL.B.  
LEONARD J. POLLOCK, B.A., LL.B.

TELEPHONE 429-6211  
A.C. 403

204 BALTZAN BUILDING  
10156-10157 STREET  
EDMONTON 15, ALBERTA

IN REPLY PLEASE REFER TO FILE NO. 13,349 DUP

November 29, 1968.

Director of Mines,  
Department of Mines and Natural  
Resources,  
Mines Branch,  
901 Norquay Building,  
401 York Avenue,  
Winnipeg 1, Manitoba.

RECEIVED  
NOV 29 1968

Attention: Mr. J.S. Richards  
Special Assistant to the  
Assistant Deputy Minister

Dear Sir:

Re: Manitoba Petroleum & Natural Gas  
Permits Nos. 47 to 57 inclusive,  
Permitee - City Savings & Trust Company

With further regard to the above matter and particu-  
larly Mr. Roper's letter to ourselves of November 8th, 1968,  
our client has asked us to advise that it is now awaiting final  
invoices from the geologist following which the required  
Statutory Declaration and auditor's statement will be submitted.

In the meanwhile, perhaps you could advise whether  
your geological department has had an opportunity to appraise  
the reports submitted and if so would you please advise whether  
they have been approved.

Yours truly,

MILLER, MILLER, WITTEN, PEKARSKY,  
VOGEL & POLLOCK

Per: 

DUP/kc

p. c. to: Dr. K. A. Phillips,  
Chief Geologist.

Mr. T. Morgan,  
Chief Mining Recorder.

*See Minister  
letter of 11/15/68  
To Mr. Morgan*

MILLER, MILLER, WITTEN, PEKARSKY, VOGEL & POLLOCK

BARRISTERS & SOLICITORS

ABE W. MILLER, O.C. (1897-1954)

TELEPHONE 429-6211

TEVIE H. MILLER, O.C.  
(ALSO MEMBER N.W.T. BAR)

NORMAN L. WITTEN, B.A., LL.B.  
DANIEL U. PEKARSKY, B.A., LL.B.  
LEONARD J. POLLOCK, B.A., LL.B.

A.C. 403

204 BALTZAN BUILDING  
10156-101ST STREET

EDMONTON 15, ALBERTA

IN REPLY PLEASE REFER TO FILE NO. 11,292 DUP

November 5, 1968.

Mr. J.S. Roper,  
Director of Mines,  
Government of the Province of Manitoba,  
9th Floor,  
Norquay Building,  
WINNIPEG, Manitoba.

NOV 7 - 1968

Dear Sir:

Re: Manitoba Petroleum & Natural Gas Permits  
Nos. 47 to 57 inclusive, Permittee -  
City Savings & Trust Company

We are forwarding to you today by express three copies of a report entitled "General Geology and Fracture Analysis Survey" for each of the captioned permits. We trust that they will meet with your approval.

We understand that you require a statement of the expenditures made verified by statutory declaration. As we have not had any experience in filing such material with the government of your province we would be most obliged if you could arrange to forward to us the form of statement and statutory declaration which you normally require.

It is our information that the permittee now has a period of grace of 90 days during which it can file with you the next period deposit requirements should it elect to retain the subject permits. Would you kindly confirm.

Yours truly,

MILLER, MILLER, WITTEN, PEKARSKY,  
VOGEL & POLLOCK,

Per: *[Signature]*

DUP/cb to: Mr. T. Morgan,  
Chief Mining Recorder.

Dr. K. A. Phillips,  
Chief Geologist.

*copies of P.N.G.  
rec'd Nov 8/68  
H McCabe for assessment*

November 20, 1968.

Dr. H. R. McCabe

Mr. J. S. Roper

Geologist

Director of Mines

Fracture Analysis Survey, Permits 47 - 57, Glendale Investment Corporation Ltd.

The above "Photogeological" or "Photogeophysical" report can probably be rated as acceptable, provided that several corrections are made. I do not believe that this is a quantitative or statistically accurate study, but a rather simple (almost superficial) study which probably should not have cost more than the \$2,000 - \$3,000 estimate indicated by Lockwood for this type of study. The attached copy of a more detailed analytical method by Blanchet is for comparison. This is one of the references referred to in the Rayalta reports, and provides most of the technical background included in the Rayalta reports.

The presentation is very attractive (and probably expensive) but is 98% duplication, and largely of published information. One extra page would have eliminated the necessity of the 10 extra reports, although they may have construed the regulations to require separate reports on each individual permit. The presentation of individual reports for each permit has also showed up discrepancies in interpretations and geographic co-ordinates of several permit areas.

The features requiring correction are:

- 1) error in latitude lines. A discrepancy of  $1/2''$  to  $1 3/4''$  ( $1/3$  mile to  $1 1/4$  miles) is evident along longitude  $91^{\circ} 31'$  (e.g. sheets 50 and 51).
- 2) the Report for Permit 55 is incorrect. It states that there are no areas of basement high (low fracture density) whereas the map does show a low density area. The final paragraph does not make any sense.

In addition, there are slight to glaring discrepancies between adjacent map areas as regards to number of fractures and delimitation of areas of high, normal, and low fracture density. These could be purely interpretational, but such large variations, as especially between sheets 50 and 57 suggest a rather low degree of "accuracy" for the study. The discrepancies between map sheets have been pencilled in red on one copy of the maps. We should probably request explanation for these discrepancies as well as correction of the above errors.

Also, I would be interested in clarification of the following statements from the reports:

(Page A) "A fault is unlikely as the causative feature for these high areas if the high is over one and one half miles in width". I would think that a fault would give rise to a zone of high fracture density rather than low fracture density such as is associated with basement highs.



Mr. J. S. Roper

- 2 -

November 20, 1968.

(Page B) "Granite Wash sand is probably absent on the top of this high fracture area; but will probably be present along the flanks of this feature". Presumably he must mean an area of basement topographic high and low fracture density, but this is not the way it reads.

A composite map is attached (please return).



H. R. McCabe

HRM/hf

Encl.

c. c. to: Mr. J. S. Richards

Dr. K. A. Phillips

fracture system and to present some idea of what a fracture-analysis survey consists, the ten steps involved are enumerated and outlined by use of a typical example, the Wizard Lake Upper Devonian biohermal reef mass in central Alberta.

1. The best obtainable aerial photography of the project area is procured. The scale of photography selected is governed by the degree of accuracy and amount of detail required in the end product. We have found that photography, taken with the new, R.C. 5 or R.C. 8 Swiss camera, to be ideal. This camera, which has a 6-inch focal length, essentially distortion-free lens, yields photography with the high resolution of fine detail essential for good fracture interpretation.

2. Template-controlled mosaics are prepared to ensure essentially true, relative orientation between all photographs. Uncontrolled mosaics for fracture analysis have a tendency to create false anomalies at each join between photographs.

3. Each photograph is interpreted for fractures. This is an exacting task because the great ma-

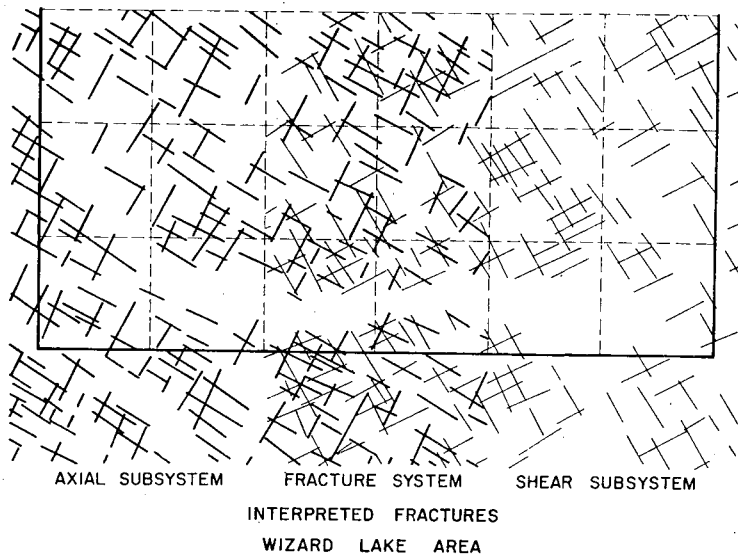


FIG. 6

majority of micro-fractures are by no means obvious. A well trained and experienced interpreter (a person with, among other qualifications, exceptionally good visual acuity) requires 5-7 hours to interpret each photograph. His interpretation is then checked by another interpreter and finally rechecked and edited by a supervisor.

4. The annotated fractures are then posted to transparent overlays on the controlled mosaics. Figure 6 shows a part of the fracture compilation in the Wizard Lake area. The small squares, outlined in broken lines, are square miles. The blank area, in which fractures are absent, in the southern row of sections, is Wizard Lake itself, just beyond the southern end of the Wizard Lake field. In this figure, only axial subsystem fractures are shown in the west part of the area, only shear subsystem fractures in the east part, and all fractures are shown in the central part of the area.

So long as the project area is essentially free of topographic relief, this posting of fractures is a simple, straightforward procedure. However, in areas where significant relief is present, all fractures which are not radial from the photo center have to be azimuth-corrected. This is done by using stereo-plotting instruments such as the Kail plotter.

5. The bearing of each fracture is determined; its length measured; and the co-ordinates of its center recorded.

6. The fractures are then analyzed to determine to which of the four sets each belongs.

Several photos used not done

not done originally  
map, some contours etc.  
to fractures etc.

apparently not done

7. Regional norms for each fracture set are then determined for the project area, or for several parts of the area, if large. This is accomplished by plotting a *fracture-azimuth frequency diagram*, similar to many such diagrams used in connection with faults, joints, and dikes. Figure 7 shows eight such frequency diagrams for eight areas more or less equally distributed throughout Alberta and western Saskatchewan. Each diagram represents a sample area of about 300 square miles. Each shows four sectors.

There is general consistency in direction of each sector throughout the whole region; for example, the azimuths of the regional norms for the NNE set: east to west across the top, 25°, 28°, and 30°; across the center, 24°, 26°, and 29°; and across the southern part, 25° and 27°. These gradual changes reflect two main factors. One is the gradual increase in azimuth of the NNE set with increasing latitude; that is, farther north. The other is the presence of regional structure.

8. The *statistical mean direction* of each fracture set is next calculated at each section corner, or closer, throughout the project area. This is accomplished by taking circular samples centered at each

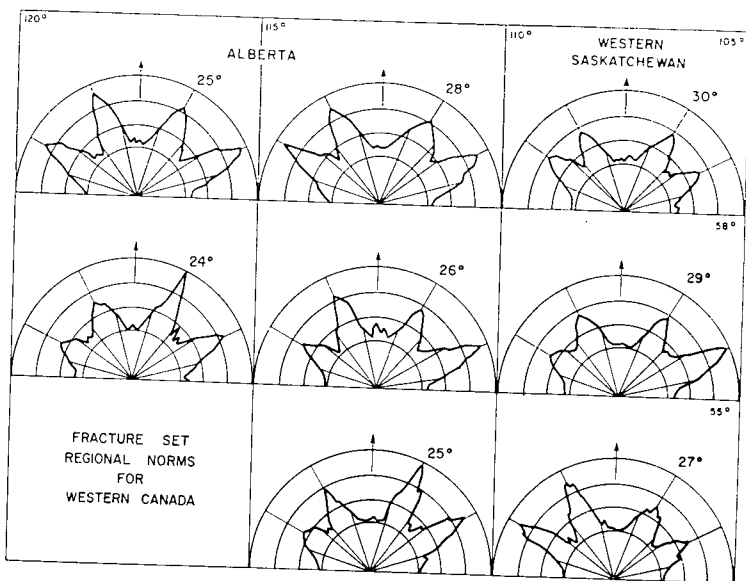


FIG. 7

section corner in turn. The diameter of a sample area is several miles. The sample diameter used depends on the depth of investigation required, the correct diameter to use being determined on the basis of empirical data. Appropriate weightings are applied, the greatest weight being given to fractures closest to the center point. This procedure yields *local mean directions* for each fracture set at each section corner. These values are analyzed and the *local deviations* are thereby obtained. These local deviations are then entered into empirical equations to yield what is known as the *structure intensity* of that point.

9. These structure intensity values are then contoured to yield the *structure intensity map* (Fig. 8), which is partly simplified for the present purpose. The area of the map is about one township. Below the map is a *structure intensity profile* along the line of section, CD. And below this, across the bottom of the figure, is the structure cross section, CD, showing the reef and its relative position with respect to the structure intensity data.

10. And lastly, this structure map is then structurally interpreted. As an aid to the structure interpretation, a *fracture-incidence map* is prepared in contour form. This map is based on a statistical count of the fractures present and shows the number of unit fractures per unit area. Further, maximum disturbance overlays are prepared and additionally, drainage anomaly studies are carried out to serve as additional confirmatory evidence of structure.

Figure 9 is the structure interpretation, shown by means of form lines and culmination axis, superimposed on the structure intensity data from Figure 8.

*ms. Ques*

*ms. Ques*

*ms. Ques*

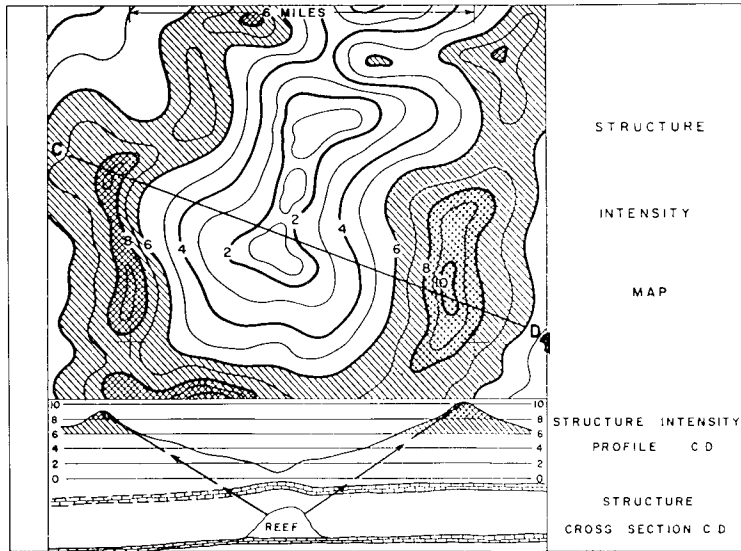


FIG. 8

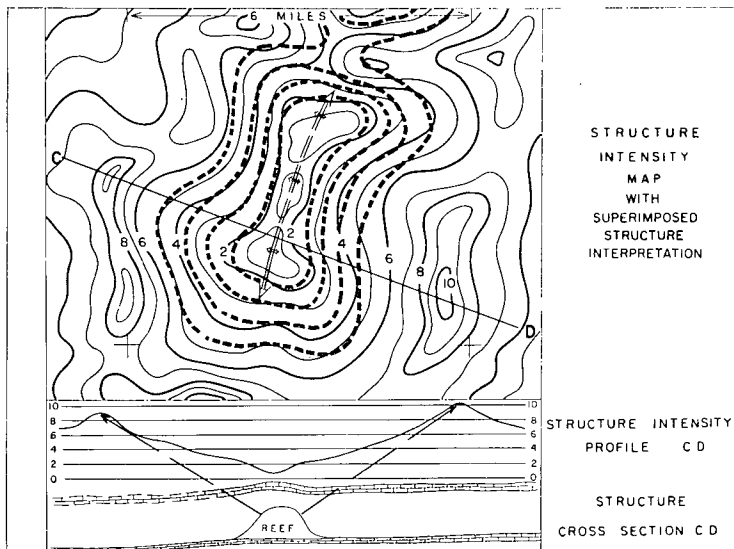


FIG. 9

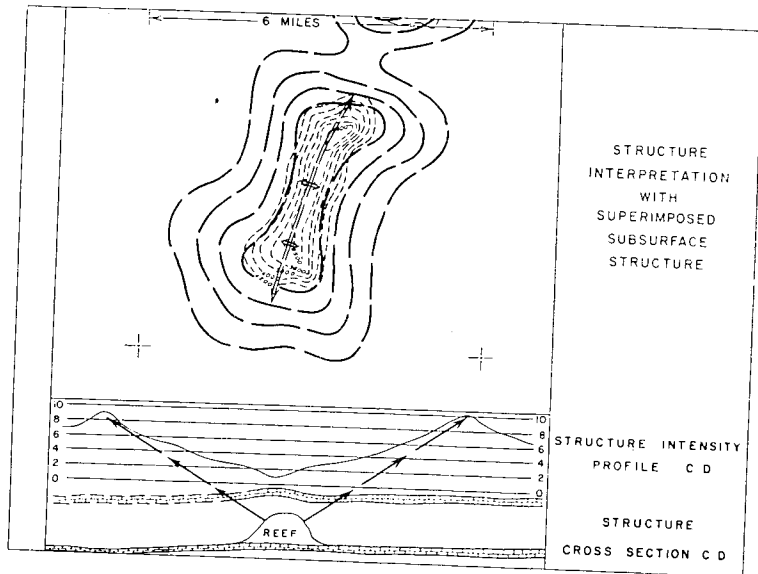


FIG. 10

Finally, Figure 10 shows a comparison between this interpretation and the bioherm as revealed by the drill. The bioherm is here shown structure-contoured in fine, broken lines. The structure interpretation of the intensity data is 2-2½ times the size of the anomaly it reflects from depth. This is usual, and is comparable with the areal expansion found in near-surface structures which are the result of supra-tenuous folding or draping by differential compaction over deep-seated structure.

That concludes the ten steps. The Wizard Lake biohermal reef mass was selected to illustrate the effectiveness of fracture analysis because this is one of our own test areas for developing empirical data. Because they would perhaps serve as better illustrations of the method and, at the same time, have been possibly more convincing, it would have been preferable to have shown and discussed reefs, domes, fault traps, and other structures that have been found *first* by fracture analysis and *second* by the drill. Unfortunately, such examples are shrouded in the cloaks of confidential security.

REFERENCES

- BLANCHET, P. H., "Theoretical Basis of Fracture Analysis," *Manual of Photo Interpretation*, American Society of Photogrammetry, to be published during 1957.
- NISHIMURA, E., 1950, "On Earth Tides," *Trans. Amer. Geophys. Union*, Vol. 31, No. 3 (June), p. 359.
- VORSTER, W. H., 1956, "Generation of Electric Power from Hot Water Spring," *South African Mech. Engineer*, Vol. 5, No. 9 (April). Johannesburg, South Africa.

OK.

present over Basement hills. These folds are anticlines in every sense and could form traps for oil or gas.

(2) REEFS

Reefs strongly affect the fracture pattern and control the occurrence of gas and oil in the overlying beds. However, only small reefs have been found in outcrops near the Permit and such small masses as these probably do not greatly affect the fracture pattern.

? also?

(3) TECTONIC FOLDING AND FAULTING

The presence of tectonic folds is very unlikely, but some normal faulting could be present.

? on which basis?

(4) TOPOGRAPHIC RELIEF ON AN  
INTRA-SEDIMENTARY UNCONFORMITY

Unconformity, is a possible source of fracture intensity anomalies, but within the Permit area it is unlikely that the relief on any unconformities within the sedimentary section is great enough to affect the fracture pattern.

Reference to the Total Fracture Pattern Map which accompanies this report will show that there is one

area of "high" fracture intensity, and one area of "low" fracture intensity (green). The general interpretation is that the low fracture intensity area is underlain by topographic highs on the Basement. With this established, the deduction is that the Basement is high in the northeast corner of Permit No. 47.

This Basement high feature is most interesting from the oil and gas point of view. The general shape of this feature is such that the causative feature must be a hill on the Basement surface. A fault is unlikely as the causative feature as the high area is over one and one-half miles in width. If a fault caused the fracture "low" the width of the low would be about one mile or less.

Granite Wash sand is probably absent  
on the top of this high fracture area, but will probably  
be present along the flanks of this feature.

Respectfully submitted by:

RAYALTA PETROLEUMS LTD.

*William G. Cook*

WGC/jp



MCS matching Pal lines by up to 3 mi. along long 91°30'

47-48 OK - fairly good scale match. - fract pattern & density OK.

47-48 OK

50-49 Scale match etc OK - some fract missing - low normal contact missing NE corner.

48-50 slight scale diff - a few fractures missed with corner - contacts OK

50-53. few fract missing - scale good - normal/low contact NE of map area is missing red ink. MK (include message) - but this would mix with sheet 49

50-51 0 Extreme mismatch of long & lat - (fract can be matched & corner points are about 2" (+/-) off)

- Extreme mismatch of high fract areas even if fract. "palatini"  
§ should be as far as I can see.

- some mismatch for normal/low contact as well

- large nos of fractures omitted on east edge of sheet 51

51-54 - good scale match - a few fract. missing north edge # 51

54-53 0 - long & lat extremely poor - cut by ~3 mi on lat line  
- al mismatch of high fract density (red areas)

51-52. Scales & corners OK - high density area (red) fairly close - considerable mismatch normal/low contact NE corner 52.

52-55 Scales & corners OK - considerable mismatch normal/low contact (quartz)

55-54 Scale & long & lat corners OK - density match OK - fract OK.

55-56 ✓ Scales & corners OK - density match OK - fract OK

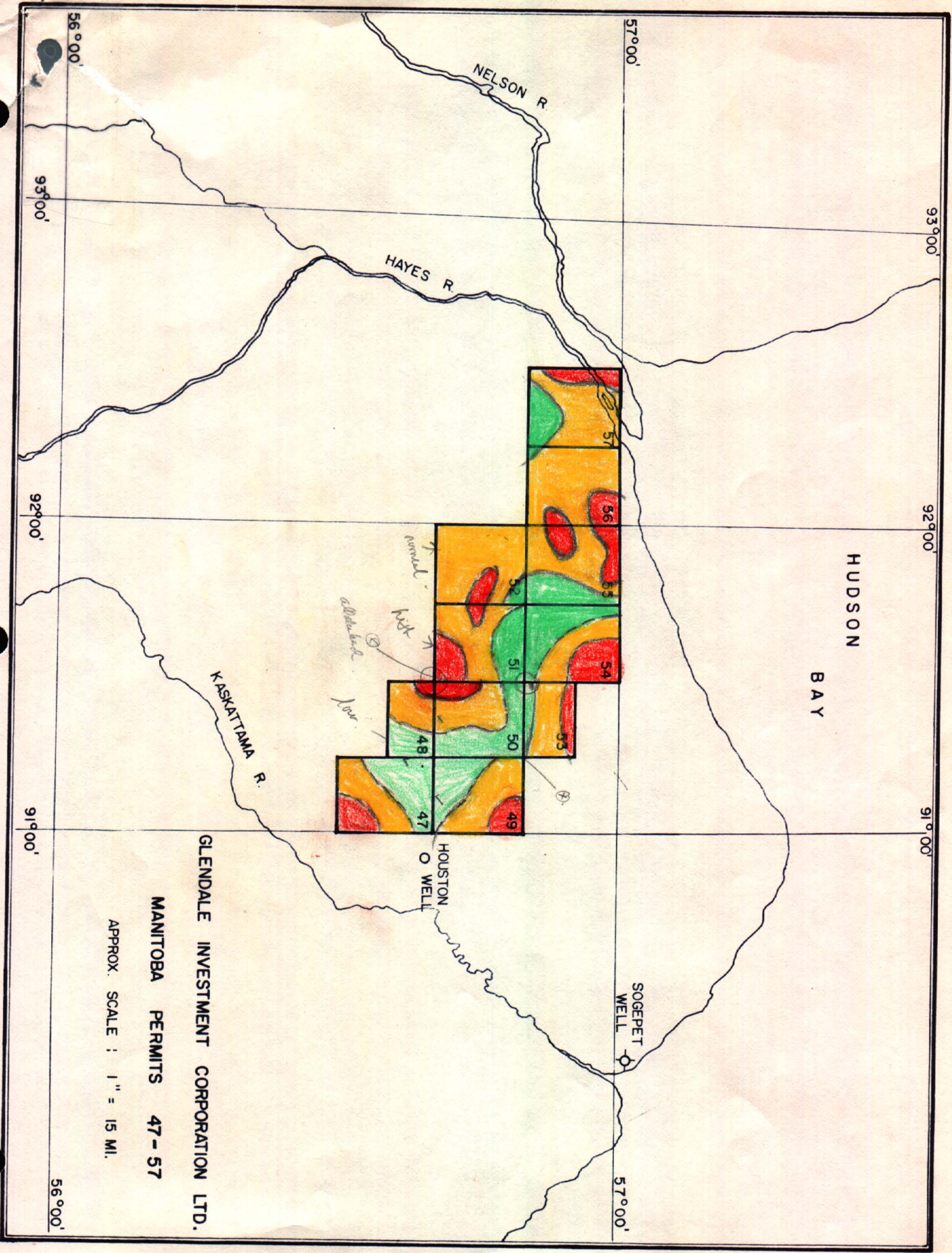
56-57 Corners OK - considerable fract missing east border # 57 - contacts OK

inconsistency between map sheets in some areas & some features  
which are not shown but not in other (e.g. bed between 51-50)

- mismatch of some low density high density areas, although generally not too bad. (unit is 50-51 & NW 51)
- major discrepancy of latitude lines (to 3 miles along  $29^{\circ}30'$   
can match fracture patterns but indicated basins of lat lines  
 $56^{\circ}40'$  and  $56^{\circ}50'$  are out by  $1/2''$  (1/4 mile) and  $1 3/4'' = 1 1/4$  mi)
- mosaics are uncontrolled and fracture densities must be somewhat  
distorted although this should not affect fracture density.
- data should appear to have been prepared critically or uniformly (equally  
considered by discrepancy in features along some map boundaries  
and mismatching of density patterns - some no relative work  
to statistical treatment?) to some "normal" areas in one map  
as many or more fractures ex more than  $1/2$  of those on other maps  
e.g. compare #50 with other maps #51
- mistake: descrip. indicates no low area (basement high)  
in Perm 55 but bed map shows map fits with  
with adjacent sheets: 52, 51, 54 (approximately)

(e.g. 50 has much more low density part than 51, 52, 54)  
"Perm 55" is probably a result of the top of this high fracture area  
does this mean grain wash absent over area of basement top high (i.e. packments).  
Perm 55 discussion makes no sense at all and is also incorrect?

map borders 50/51 down of water.



HUDSON BAY

GLENDALE INVESTMENT CORPORATION LTD.

MANITOBA PERMITS 47 - 57

APPROX. SCALE : 1" = 15 MI.

56°00' 93°00' 92°00' 91°00' 56°00'

57°00' 93°00' 92°00' 91°00' 57°00'

(A)

sedimentary section is great enough to affect the fracture pattern.

Reference to the Total Fracture Pattern Map which accompanies this report will show that there are two areas of "high" fracture intensity, but no areas of "low" fracture intensity. The general interpretation is that the "low" fracture intensity areas are underlain by topographic highs on the Basement. With this established, the deduction is that the Basement is low in the areas shown in red on the map. There are no areas of "high" Basement topography on the Permit.

*There is a low fracture*

These Basement high features where present are most interesting from the oil and gas point of view. A fault is unlikely as the causative feature for these high areas if the high is over one and one-half miles in width. If a fault caused the fracture "low" the width of the low would be about one mile or less.

*not applicable  
since in history it*

*would fault cause a fracture "low" ???*

(B)

*This does not make sense at all.  
?? right or wrong??  
of other permits*

Granite Wash sand is probably absent on the top of this high fracture area; but will probably be present along the flanks of this feature. As there are no Basement "high" areas within the Permit the whole of the "normal" area has potential for Granite Wash sand.

Respectfully submitted by:

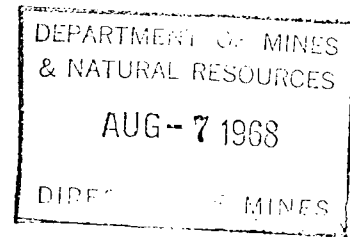
RAYALTA PETROLEUMS LTD.

*William G. Cook*

WGC/jp



MINISTER OF MINES AND NATURAL RESOURCES



August 1, 1968.

Thorvaldson & Company,  
Barristers, Solicitors; etc.,  
209 Bank of Nova Scotia Building,  
Portage Avenue and Garry Street,  
Winnipeg 1, Manitoba.

Att: Mr. Michael J. Mercury

Dear Mr. Mercury:

Re: City Savings & Trust Company

I have discussed with my Mines officers your letter relative to your above mentioned client.

Your statement that a photogeology study or photogeophysical work would be acceptable to the department in lieu of cash is correct with the qualification that such work would be accepted only as a partial fulfillment of your client's obligation. A letter dated May 10, 1967 from the Director of Mines to your client (copy attached) refers.

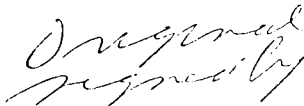
In view of this, we are prepared to accept a report of a photogeology study prepared by a registered professional engineer, "verified by a statutory declaration", as required by subsection (3) of Section 251 of the Mining regulations. The part of the company's deposit equal to the fee charged for this report will be returned. Any deficiency should be made up by some other form of approved exploration.

.... 2.

Should the company be unable to complete this expenditure during the first 18 month period which terminates November 10, 1968, the regulations allow the permits to be maintained by the posting of an additional 15 cents per acre as a guarantee that work costing a total of 20 cents per acre will be expended prior to May 10, 1971.

I trust that this procedure will be satisfactory to your client.

Yours sincerely,



Donald W. Craik,  
Minister.

JJOB/pc

b.c. Mr. M.J. Gobert  
Mr. J.S. Richards

p. c. to: Mr. T. Morgan,  
Chief Mining Recorder.

→ Dr. K. A. Phillips,  
Chief Geologist.

June 7, 1967

City Savings & Trust Company  
McLeod Building  
Edmonton, Alberta

Attention: Mr. S. P. Adams

Dear Sir:

Enclosed herewith Exploratory Permit Nos. 47 to 57 inclusive, issued under Part VI of the Regulations under "The Mines Act" for the disposal of oil and natural gas rights.

Also enclosed Official Receipt Nos. H 16172 in the amount of \$2,750.00 covering application fee for the 11 permits and Official Receipt No. H 16173 in the amount of \$27.60 covering balance of deposit for the 11 permits.

Yours truly,

T. Morgan  
Chief Mining Recorder

T1/one  
Encls.



D. H. McCabe

City Savings  
Permits 47-57

Propose. Photogeologic Survey. WJ

February 7, 1968.


Mr. William G. Crook,  
Consulting Geologist Ltd.,  
621 - 4th Avenue S.W.,  
CALGARY, Alberta.

Dear Mr. Crook:

I regret the unavoidable delay in replying to your letter relative to the acceptance of a photogeology study of two of the permits held by City Savings and Trust Company. Such work is quite acceptable as a partial fulfillment of the exploration obligation in respect of these permits. However, we do not see how such a program could satisfy the exploration requirements for the entire group. The regulations require an expenditure of 5 cents per acre during the first 18-month period of the permits which aggregate 700,552 acres. Consequently, an expenditure of \$35,027.60 will be required.

Information available to us indicates that the cost of a photogeology study of the entire group would only be a fraction of the above figure. We would be pleased to receive any comment you would care to make.

Yours very truly,

  
J. S. Richards,  
Director of Mines.

JSR/or

p. c. to: Mr. T. Morgan,  
Chief Mining Recorder.

RCW.  
Dr. K. A. Phillips,  
Chief Geologist.

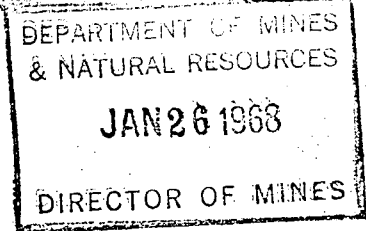
WILLIAM G. CROOK  
CONSULTING GEOLOGIST LTD.

RESIDENCE:  
2344 LONGRIDGE DRIVE  
CALGARY, ALBERTA, CANADA  
PHONE 242-4356

OFFICE:  
621 - 4TH AVENUE S.W.  
CALGARY, ALBERTA, CANADA  
PHONE. 262-4904

January 25th, 1968

Mr. J. S. Richards  
Director of Mines  
Dept. of Mines & Natural Resources  
901 Norquay Building  
401 York Avenue  
Winnipeg, Manitoba



Dear Mr. Richards:

Re: P. & N. G. Permits -  
47 to 57 inclusive  
Hudson 's Bay

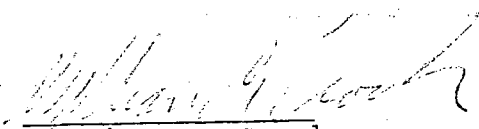
I have been retained by City Savings and Trust Co. to conduct an exploration program on the captioned permits that will satisfy your government's work commitments requirements.

It is my clients intention to group the permits then conduct a photogeology study of two of them. In this study we would incorporate the general geology (structure and stratigraphy) geomorphology and a photogeophysical survey of the two permits.

Will you please advise me if it is possible to so group these permits and if the photographic study of two permits as outlined in the preceding paragraph will satisfy the exploration requirements of your Government for the entire group.

Thank you.

Yours very truly,

  
William G. Crook

WGC/jp

p. c. to: Mr. T. Morgan, Chief Mining Recorder.  
Dr. K. A. Phillips, Chief Geologist.

DEPARTMENT OF MINES AND NATURAL RESOURCES

GROUPING NOTICE

To be submitted in triplicate to the Director of Mines

I/we C. T. Savings Trust Company being the holders of the permits/leases listed below, hereby apply for the formation of a group for the purpose of applying approved expenditure.

Permit/Lease-Numbers	Operator	Date of Issue	Gross Acres
47	C. T. Savings Trust Co.	1 Feb. 1918	70 148
48	" "	" "	35 190
49	" "	" "	70 148
50	" "	" "	70 148
51	" "	" "	70 148
52	" "	" "	70 148
53	" "	" "	34 959
54	" "	" "	69 239
55	" "	" "	69 239
56	" "	" "	69 239
57	" "	" "	69 239
			700552

p. c. to: Mr. T. Morgan,  
Chief Mining Recorder.  
Dr. K. A. Phillips,  
Chief Geologist.

Grouping Approved \_\_\_\_\_  
Director of Mines

Effective Date \_\_\_\_\_

Grouping Cancelled \_\_\_\_\_

Noted by \_\_\_\_\_

Permittee/Lessee \_\_\_\_\_

**FILE BACK COVER NO.** \_\_\_\_\_

FROM

TO

*Correspondence*

SUBJECT:--

*City Savings - Rayalta.*

*For North Permits 47-57*

**RAYALTA PETROLEUMS**

*Exploration Permits Nos 47-57*

*General Correspondence*