**Chevron Standard Limited**
400 - Fifth Ave. S.W., Calgary, Alberta T2P 0L7

R. A. Park
Manager - Production

1979-10-29

Representative Change
Operating Committee
Routledge Unit No. 1

The Oil and Natural Gas Conservation Board
Province of Manitoba
310 Legislative Building
Winnipeg, Manitoba
R3C 0V8

Gentlemen:

We wish to advise you that as of October 1, 1979, the representative of Chevron Standard Limited on the Operating Committee for the subject unit will be:

D. A. Zeeuwen
Chevron Standard Limited
P.O. Box 100
Virden, Manitoba
ROM 2CO

The alternates are Messrs. P. Pisio and D. R. Henderson who are located at the letterhead address.

Yours very truly,

R. A. PARK

DRH/njs

cc: Mr. D. A. Zeeuwen

INTER-DEPARTMENTAL MEMORANDUM

PROVINCE OF MANITOBA

DATE December 6, 1974

FROM H. C. Moster
Chief Petroleum Engineer
Mineral Resources Division

TO R. W. Winstone
Chief of Operations
Lands Section

Department of Mines and Environment

DEC 6 1974

DIRECTOR OF MI

SUBJECT RE: PETROLEUM LEASE CLEAN-UP

Licence No. 1778 - Rundle Routledge Prov. SWD 16-29-9-25

The above well is included in Routledge Unit No. 1 and was abandoned by the Unit Operator, Chevron Standard Limited, in August, 1972.

The lease was inspected on August 23, 1972 by the District Petroleum Engineer, Mr. Grady Johnson, and the lease clean-up was found unsatisfactory (see attached copy of inspection certificate). On October 24, 1974 the lease was re-inspected by Mr. Johnson and was at that time given a satisfactory inspection (see attached copy of inspection certificate).

Well Site Inspections

Manitoba Revised Regulation M160 - R1P (Section 115) requires a cash deposit or bond for $3,000 be posted with the Department for all non-abandoned wells in the Province. The purpose of the deposit is to guarantee the proper drilling, or completion, or suspension, or abandonment of the well and restoration of the surface to the satisfaction of the minister. When the abandonment of the well and the restoration of the well site surface area has been approved and a release from the surface owner filed with the Department, the cash deposit or bond is released. If it is of the Minister's opinion that a release from the surface owner is being withheld unreasonably, the deposit may be released in whole or in part.

The Mining Recording Section is responsible for administering the above regulation which became effective August 4, 1973. To date only wells not included in Units have been required to have bonds.

The Petroleum Section is responsible for insuring the proper abandonment of wells. Well abandonment operations must be approved by the Director and are witnessed by our field personnel. The Petroleum Section is responsible for recommending to the Recording Section when a cash deposit or bond should be released for any given well. Before recommending such release the Petroleum Section conducts an inspection of the well site to determine if the clean-up is satisfactory. The Petroleum Section also requires a properly executed surface release from the land owner before recommending release of the bond by the Recording Section.

2 . . . . . .

The Petroleum Section's well site inspection entails checking the following items:

1. The well site has been reasonably levelled to conform with the original landscape.
2. All equipment, machinery, rubbish and depris pertaining to the petroleum operation has been properly disposed of or removed.

Areas of concern to the land owner which the above inspection do not cover are:

1. Removal and restoration of lease access roads if such is the wish of the land owner.
2. Restoration of the site to insure the topsoil ends up on the surface.
3. Re-vegetation of the site affected.

Conclusion

The above is a very general description of how petroleum lease clean-ups are being handled. There has been very few occurrences where both the Section's satisfactory inspection and the surface owner's release have not been obtained. If the present inspection carried out by our staff shall be adequate for your responsibility as surface owner on Crown land, then we shall be happy to forward a copy of our well site inspection forms to you for wells on Crown land. Confirmed agreement by your Section by sending us a copy of a surface release to the company, would satisfy our requirements for recommending bond release.

If the above procedure does not meet with your approval, I would recommend a meeting be set up with all inter-government sections involved, to attempt to come to an agreeable procedure for handling same.

Original signed by H. C. Moster

H. C. Moster

HCM/evh
Attachments
c.c.: I. Haugh
J. D. Russell
G. E. Johnson
J. M. Hodgkinson

PROVINCE OF MANITOBA

DEPARTMENT OF MINES AND NATURAL RESOURCES
PETROLEUM ENGINEERING DIVISION
BOX 1359
VIRDEN, MANITOBA

# WELL SITE INSPECTION

LIC. NO. # 1778

WELL NAME Rundle Routledge Prov. SWD 16-29-9-25

COMPANY Rundle Petroleums Limited.

DATE OF INSPECTION August 23, 1972.

INSPECTED BY G.E. Johnson.

WELL SITE CLEAN-UP — SATISFACTORY ☐

NOT SATISFACTORY ☒

REMARKS Not good clean up. Pipe and rubbish still on location.

District Petroleum Engineer

PROVINCE OF MANITOBA

DEPARTMENT OF MINES AND NATURAL RESOURCES
PETROLEUM ENGINEERING DIVISION
BOX 1359
VIRDEN, MANITOBA

# WELL SITE INSPECTION

LIC. NO. #1778

WELL NAME Rundle Routledge Prov. SWD 16-29-9-25

COMPANY Chevron Standard Limited

DATE OF INSPECTION October 24, 1974

INSPECTED BY G.E. Johnson

WELL SITE CLEAN-UP — SATISFACTORY ☒

NOT SATISFACTORY ☐

REMARKS Clean up was found to be satisfactory.

(well abandoned in August, 1972).

OCT 28 1974

District Petroleum Engineer

Province of Manitoba

# inter-departmental memo

To: Clair Moster,
Petroleum Engineer,
Dept. of M.R.E.M.,
Mines & Dept'l Services Div.

Date December 2, 1974.

From R.W. Winstone,
Chief of Operations,
Lands Section.



Subject: L.S. 16 of Section 29-9-25 W.P.M.

Murphy Oil have applied to abandon the well site on this location. You indicated that they originally requested the right to abandon in 1972 and Grady Johnson of your Virden office inspected it in August of 1972 and turned down the request because of debris and unsatisfactory clean-up.

Further to our discussion I phoned Grant McLeod of Environmental Protection Branch and he requested that you have Mr. Johnson re-inspect the area and submit a report. If you would then make a copy of that report available to Grant McLeod, he would advise within 5 working days of receipt of same, whether or not they were in agreement.

I trust this is satisfactory and would seem like a workable clearance procedure on all such requests on either private or Crown land before any release or refund of security bond is made.

R.W. Winstone

RWW/dp
c.c. Dale Stewart
Grant McLeod

## UNDER THE MINES ACT

### ROUTLEDGE UNIT No. 1

**Schedule "A"**

**Tract Numbers and the Prima Facie Working Interest Owners of the Tracts in Routledge Unit No. 1**

**as of September 1, 1974**

| Tract No. | Working Interest Owner | Percentage Working Interest Ownership |
|---|---|---|
| 1-9 | Murphy Oil Company Ltd. | 100 |
| 6-9 | Chevron Standard Limited | 100 |
| 8-9 | Murphy Oil Company Ltd. | 100 |
| 9-9 | Chevron Standard Limited | 100 |
| 10-9 | Chevron Standard Limited | 100 |
| 11-9 | Chevron Standard Limited | 100 |
| 14-9 | Chevron Standard Limited | 100 |
| 15-9 | Chevron Standard Limited | 100 |
| 16-9 | Chevron Standard Limited | 100 |
| 5-10 | Murphy Oil Company Ltd. | 100 |
| 12-10 | Murphy Oil Company Ltd. | 100 |
| 13-10 | Murphy Oil Company Ltd. | 100 |
| 14-10 | Murphy Oil Company Ltd. | 100 |
| 14-15 | Murphy Oil Company Ltd. | 100 |
| 1-16 | Murphy Oil Company Ltd. | 100 |
| 2-16 | Murphy Oil Company Ltd. | 100 |
| 3-16 | Chevron Standard Limited | 100 |
| 4-16 | Chevron Standard Limited | 100 |
| 5-16 | Chevron Standard Limited | 100 |
| 8-16 | Murphy Oil Company Ltd. | 100 |
| 9-16 | Murphy Oil Company Ltd. | 100 |
| 10-16 | Murphy Oil Company Ltd. | 100 |
| 12-16 | Murphy Oil Company Ltd. | 100 |
| 13-16 | Murphy Oil Company Ltd. | 100 |
| 14-16 | Murphy Oil Company Ltd. | 100 |
| 15-16 | Murphy Oil Company Ltd. | 100 |
| 16-16 | Murphy Oil Company Ltd. | 100 |
| 8-17 | Chevron Standard Limited | 100 |
| 9-17 | Murphy Oil Company Ltd. | 100 |
| 10-17 | Murphy Oil Company Ltd. | 100 |
| 13-17 | Murphy Oil Company Ltd. | 81.250 |
| | Ben Ober | 18.750 |
| 14-17 | Murphy Oil Company Ltd. | 81.250 |
| | Ben Ober | 18.750 |
| 15-17 | Chevron Standard Limited | 100 |
| 16-17 | Chevron Standard Limited | 100 |
| 1-19 | Chevron Standard Limited | 100 |
| 1-20 | Chevron Standard Limited | 100 |
| 2-20 | Chevron Standard Limited | 100 |
| 3-20 | Chevron Standard Limited | 100 |
| 4-20 | Chevron Standard Limited | 100 |
| 5-20 | Chevron Standard Limited | 100 |
| 6-20 | Chevron Standard Limited | 100 |
| 7-20 | Chevron Standard Limited | 100 |
| 8-20 | Chevron Standard Limited | 100 |
| 9-20 | Chevron Standard Limited | 100 |
| 11-20 | Chevron Standard Limited | 100 |
| 12-20 | Chevron Standard Limited | 100 |
| 1-21 | Chevron Standard Limited | 100 |
| 3-21 | Chevron Standard Limited | 100 |
| 4-21 | Chevron Standard Limited | 100 |
| 5-21 | Chevron Standard Limited | 100 |
| 7-21 | Chevron Standard Limited | 100 |
| 8-21 | Chevron Standard Limited | 100 |
| 9-21 | Chevron Standard Limited | 100 |
| 10-21 | Chevron Standard Limited | 100 |
| 11-21 | Murphy Oil Company Ltd. | 100 |
| 12-21 | Murphy Oil Company Ltd. | 100 |
| 13-21 | Murphy Oil Company Ltd. | 100 |

| Tract No. | Working Interest Owner | Percentage Working Interest Ownership |
|---|---|---|
| 14-21 | Murphy Oil Company Ltd. | 100 |
| 16-21 | Chevron Standard Limited | 100 |
| 2-22 | Chevron Standard Limited | 100 |
| 3-22 | H. J. Schlafly | 9.375 |
| | Murphy Oil Company Ltd. | 90.625 |
| 4-22 | H. J. Schlafly | 9.375 |
| | Murphy Oil Company Ltd. | 90.625 |
| 5-22 | H. J. Schlafly | 9.375 |
| | Murphy Oil Company Ltd. | 90.625 |
| 6-22 | H. J. Schlafly | 9.375 |
| | Murphy Oil Company Ltd. | 90.625 |
| 7-22 | Chevron Standard Limited | 100 |
| 11-22 | Chevron Standard Limited | 100 |
| 12-22 | Chevron Standard Limited | 100 |
| 13-22 | Chevron Standard Limited | 100 |
| 14-22 | Chevron Standard Limited | 100 |
| 3-27 | Chevron Standard Limited | 100 |
| 4-27 | Chevron Standard Limited | 100 |
| 5-27 | Chevron Standard Limited | 100 |
| 1-28 | Chevron Standard Limited | 100 |
| 2-28 | Chevron Standard Limited | 100 |
| 3-28 | Chevron Standard Limited | 100 |
| 6-28 | Chevron Standard Limited | 100 |
| 7-28 | Chevron Standard Limited | 100 |
| 8-28 | Chevron Standard Limited | 100 |
| 9-28 | Chevron Standard Limited | 100 |
| 10-28 | Chevron Standard Limited | 100 |
| 11-28 | H. L. & V. E. Berry | 50.0000 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | F. R. Brown | 12.5000 |
| | G. A. Pierson | 12.5000 |
| | I. Leavell | 4.6875 |
| | S. Weill | 1.5625 |
| | G. R. Arbuckle | 6.2500 |
| | M. J. Post | 7.8125 |
| 12-28 | H. L. & V. E. Berry | 50.0000 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | F. R. Brown | 12.5000 |
| | G. A. Pierson | 12.5000 |
| | I. Leavell | 4.6875 |
| | S. Weill | 1.5625 |
| | G. R. Arbuckle | 6.2500 |
| | M. J. Post | 7.8125 |
| 13-28 | H. L. & V. E. Berry | 50.0000 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | F. R. Brown | 12.5000 |
| | G. A. Pierson | 12.5000 |
| | I. Leavell | 4.6875 |
| | S. Weill | 1.5625 |
| | G. R. Arbuckle | 6.2500 |
| | M. J. Post | 7.8125 |
| 14-28 | H. L. & V. E. Berry | 50.0000 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | F. R. Brown | 12.5000 |
| | G. A. Pierson | 12.5000 |
| | I. Leavell | 4.6875 |
| | S. Weill | 1.5625 |
| | G. R. Arbuckle | 6.2500 |
| | M. J. Post | 7.8125 |
| 15-28 | Chevron Standard Limited | 100 |
| 16-28 | Chevron Standard Limited | 100 |

| Tract No. | Working Interest Owner | Percentage Working Interest Ownership |
|---|---|---|
| 1-29 | 3 Sons Investments Ltd. | 75 |
| | Murphy Oil Company Ltd. | 25 |
| 8-29 | 3 Sons Investments Ltd. | 75 |
| | Murphy Oil Company Ltd. | 25 |
| 9-29 | 3 Sons Investments Ltd. | 75 |
| | Murphy Oil Company Ltd. | 25 |
| 16-29 | 3 Sons Investments Ltd. | 75 |
| | Murphy Oil Company Ltd. | 25 |
| 1-32 | H. L. & V. E. Berry | 50.0000 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | S. Weill | 1.5625 |
| | I. Leavell | 4.6875 |
| | G. A. Pierson | 12.5000 |
| | F. R. Brown | 12.5000 |
| | M. J. Post | 7.8125 |
| | G. R. Arbuckle | 6.2500 |
| 2-32 | H. L. & V. E. Berry | 50.0000 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | S. Weill | 1.5625 |
| | I. Leavell | 4.6875 |
| | G. A. Pierson | 12.5000 |
| | F. R. Brown | 12.5000 |
| | M. J. Post | 7.8125 |
| | G. R. Arbuckle | 6.2500 |
| 6-32 | Chevron Standard Limited | 100 |
| 7-32 | H. L. & V. E. Berry | 50.0000 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | S. Weill | 1.5625 |
| | I. Leavell | 4.6875 |
| | G. A. Pierson | 12.5000 |
| | F. R. Brown | 12.5000 |
| | M. J. Post | 7.8125 |
| | G. R. Arbuckle | 6.2500 |
| 8-32 | H. L. & V. E. Berry | 50.0000 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | S. Weill | 1.5625 |
| | I. Leavell | 4.6875 |
| | G. A. Pierson | 12.5000 |
| | F. R. Brown | 12.5000 |
| | M. J. Post | 7.8125 |
| | G. R. Arbuckle | 6.2500 |
| 9-32 | H. L. & V. E. Berry | 43.7500 |
| | F. R. Brown | 15.6250 |
| | G. A. Pierson | 15.6250 |
| | I. Leavell | 4.6875 |
| | M. J. Post | 7.8125 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | S. Weill | 1.5625 |
| | G. R. Arbuckle | 6.2500 |
| 10-32 | H. L. & V. E. Beery | 43.7500 |
| | F. R. Brown | 15.6250 |
| | G. A. Pierson | 15.6250 |
| | I. Leavell | 4.6875 |
| | M. J. Post | 7.8125 |
| | P. Holsborg | 3.1250 |
| | H. Holsborg | 1.5625 |
| | S. Weill | 1.5625 |
| | G. R. Arbuckle | 6.2500 |
| 11-32 | Chevron Standard Limited | 100 |
| 14-32 | Chevron Standard Limited | 100 |

| Tract No. | Working Interest Owner | Percentage Working Interest Ownership |
|---|---|---|
| 15-32 | H. L. & V. E. Berry | 48.2641 |
| | F. B. Brown | 14.3711 |
| | G. A. Pierson | 14.3711 |
| | I. Leavell | 4.3113 |
| | M. J. Post | 7.1856 |
| | P. Holsborg | 2.8742 |
| | H. Holsborg | 1.4371 |
| | S. Weill | 1.4371 |
| | G. R. Arbuckle | 5.7484 |
| 16-32 | H. L. & V. E. Berry | 51.5266 |
| | F. R. Brown | 13.4648 |
| | G. A. Pierson | 13.4648 |
| | I. Leavell | 4.0395 |
| | M. J. Post | 6.7324 |
| | P. Holsborg | 2.6930 |
| | H. Holsborg | 1.3465 |
| | S. Weill | 1.3465 |
| | G. R. Arbuckle | 5.3859 |
| 3-33 | H. L. & V. E. Berry | 46.8750 |
| | G. A. Pierson | 23.4375 |
| | A. M. & V. M. Kerik | 6.2500 |
| | F. R. Brown | 23.4375 |
| 4-33 | H. L. & V. E. Berry | 46.8750 |
| | G. A. Pierson | 23.4375 |
| | A. M. & V. M. Kerik | 6.2500 |
| | F. R. Brown | 23.4375 |
| 5-33 | H. L. & V. E. Berry | 46.8750 |
| | G. A. Pierson | 23.4375 |
| | A. M. & V. M. Kerik | 6.2500 |
| | F. R. Brown | 23.4375 |
| 6-33 | H. L. & V. E. Berry | 46.8750 |
| | G. A. Pierson | 23.4375 |
| | A. M. & V. M. Kerik | 6.2500 |
| | F. R. Brown | 23.4375 |
| 12-33 | H. L. & V. E. Berry | 46.8750 |
| | G. A. Pierson | 46.8750 |
| | A. M. & V. M. Kerik | 6.2500 |
| 13-33 | Mineraloid (Developments) Ltd. | 38.2906 |
| | H. L. & V. E. Berry | 18.8906 |
| | G. A. Pierson | 37.7813 |
| | A. M. & V. M. Kerik | 5.0375 |
| 3-5 | Chevron Standard Limited | 100 |

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## ROUTLEDGE UNIT No. 1
### Schedule "B"

**Prima Facie Working Interest Owners and Their Participating Interest in Routledge Unit No. 1 as of September 1, 1974**

| Working Interest Owner | Participating Interest |
|---|---|
| Chevron Standard Limited | 54.77844 |
| Murphy Oil Company Ltd. | 32.26483 |
| H. L. & V. E. Berry | 4.65303 |
| G. A. Pierson | 2.80655 |
| Ben Ober | 1.26445 |
| F. R. Brown | 0.99255 |
| Mineraloid (Developments) Ltd. | 0.62887 |
| 3 Sons Investments Ltd. | 0.54632 |
| H. J. Schlafly | 0.46603 |
| M. J. Post | 0.40060 |
| G. R. Arbuckle | 0.32048 |
| A. M. & V. M. Kerik | 0.31700 |
| I. Leavell | 0.24036 |
| P. Holsborg | 0.16023 |
| H. Holsborg | 0.08013 |
| S. Weill | 0.08013 |
| 8001—43 | 100.00000 |

Manitoba Regulation 284/73 - Dec. 6, 1973 (p. 749)

Manitoba Gazette - December 29, 1973

The Oil and Natural Gas Conservation Board
Order No. PM 23 - An Order pertaining to
Pressure Maintenance by Water Flooding
Routledge Field

**Manitoba Regulation 284/73**

*being*

THE OIL AND NATURAL GAS CONSERVATION BOARD

ORDER NO. PM 23

An Order pertaining to Pressure Maintenance by Water Flooding

ROUTLEDGE FIELD

*Made and passed pursuant to "The Mines Act", R.S.M., 1973, and amendments thereto, by The Oil and Natural Gas Conservation Board, of Manitoba*

*(Filed December 12, 1973)*

WHEREAS, subsection (9)(d) of Section 62 of "The Mines Act", as enacted by Chapter M160, R.S.M., 1973, provides as follows:

"62(9) Without restricting the generality of subsection (8) the board, with the approval of the minister, may make orders

(d) requiring the repressuring, recycling, or pressure maintenance, of any pool or portion thereof where it is economical so to do, and for that purpose where necessary requiring the introduction or injection into any pool or portion thereof of gas, air, water, or other substance;"

AND WHEREAS, Unitization Order No. 8 approved by Order-in-Council No. 406/70, provides that a certain part of the Routledge Field be operated as a Unit in accordance with the Plan for Unit Operation Governing the Unitized Management Operation and Further Development of Routledge Unit No. 1 dated December 4, 1969.

AND WHEREAS, Section 2.04 of the said Plan provides in part as follows:

"without limiting the generality of the foregoing but subject to "The Mines Act", the Working Interest Owners are hereby authorized to inject oil, gas, water, or other substances, or any combination of them into the Unitized Strata and from time to time to convert and use as injection wells any well now drilled or hereafter drilled into the Unitized Strata."

AND WHEREAS, Chevron Standard Limited as operator of Routledge Unit No. 1 has requested on behalf of the Working Interest Owners, permission to convert the well

Chevron Routledge Prov. 13-22-9-25

to a water injection well.

NOW, THEREFORE, the Board orders:

1. (a) Chevron Standard Limited shall conduct a pilot water flood by the injection of produced water from the Mississippian Lodgepole formation to the Unitized Strata of the Routledge Unit No. 1.

(b) The water flood operations shall be in accordance with and subject to the following rules:

PRESSURE MAINTENANCE RULES

1. (1) Mississippian formation water, produced from the wells in the Routledge Unit shall be injected to the Mississippian formation in the well

Chevron Routledge Prov. 13-22-9-25

(2) Injection pressure shall not exceed 1,500 p.s.i.

(3) After commencement, the operator shall, subject to any remedial work required to be performed on the well, endeavor to maintain continuous injection.

(4) Not withstanding the provisions of subclause (3) the Board may, upon application by the operator, approve the suspension of water injection.

2. Before any change is made in the source of water being injected, the Unit operator shall satisfy the Board as to the source, suitability, and method of treatment of the water to be injected.

3. The Unit operator shall immediately report to the Board any channelling or breakthrough of injected water to producing wells, or any indication of other detrimental effects that may be attributable to pressure maintenance operations.

4. The Unit operator shall, not later than the 25th day each month file with the Mines Branch, a report of the quantity, source and maximum pressure at which water was injected during the preceding month, into the well referred to in clause 1 hereof.

5. Unless otherwise authorized in writing by the Board, the Unit operator shall within six weeks of the expiration of each calendar year, file with the Mines Branch a report of the pressure maintenance program, setting out graphically such interpretative information necessary to evaluate the performance and efficacy of the water flood.

Oil and Natural Gas Order No. PM 23 made and passed this 6th day of December, A.D., 1973, at the City of Winnipeg, in the Province of Manitoba, by The Oil and Natural Gas Conservation Board.

Approved:

*"S. Green"*
Sidney Green,
Minister of Mines, Resources
and Environmental Management.

*"Jas. T. Cawley"*
Jas. T. Cawley, P. Eng.,
Chairman,
The Oil and Natural Gas
Conservation Board.

*"J.S. Roper"*
J.S. Roper,
Deputy Chairman,
The Oil and Natural Gas
Conservation Board.

Printed by R. S. Evans – Queen's Printer for the Province of Manitoba

**Chevron Standard Limited**
400 - Fifth Ave. S.W., Calgary, Alberta T2P 0L7



August 30, 1973

BF Oct 15/73
OKyk Oct 17/73



phoned L D Brown Oct 5/73. Re: applicat. Board members not available.

The Oil and Natural Gas Conservation Board
Department of Mines, Resources
and Environmental Management
Room 310, Legislative Building
Winnipeg, Manitoba
R3C 0V8

Attention: Mr. J. T. Cawley, P.Eng.
Chairman

Gentlemen:

Chevron Standard Limited, as Unit Operator of Routledge Unit No. 1, under and pursuant to the Mines Act, being Chapter M160 of the Revised Statutes of Manitoba 1970, and amendments thereto, hereby requests the Board consider for approval an "Application for Implementation of Enhanced Recovery; Routledge Unit No. 1," pursuant to Section 62 of the Mines Act.

The following information is offered in support of this application:

I. General

The feasibility of instituting a waterflood scheme was considered during unitization proceedings of Routledge Unit No. 1. This investigation indicated that waterflooding on a field-wide basis had little chance of success because of the high reservoir pressure and high water cut shown by the majority of producing wells in the field.

Figure 1 shows the number and location of Unit wells cutting over 85% water as of year end 1972. Figure 2 shows the average fluid production rates and associated fluid levels for Unit wells as of December 1972. Figure 3 is a composite of Figures 1 and 2 that represents areas that have relatively high production rates and water cuts and are believed to be influenced by an active water drive. Figure 4 shows the only areas believed capable of responding to waterflooding.

II. Flooding Considerations

In view of the high reservoir pressure and high water cuts, the chances of a successful waterflood in the Routledge Unit appear limited. It is, therefore, proposed that a single well pilot flood be initiated to investigate the feasibility of flooding.

The Chevron Routledge Prov. 13-22-9-25 well is proposed as the pilot well since it is in the most promising area based on the productivity and water cuts of the surrounding wells. The original oil in place represented by the 8,760 acre-feet of the pilot flood area outlined in Figure 5 is 4,337,000 stock tank barrels of oil. The primary decline curve of the subject area shows remaining reserves of 235,000 STBO. Cumulative production to December 31, 1972 was 1,064,606 STBO. Ultimate recovery, estimated by a decline curve extrapolation, is 1,300,000 STBO, or 30% of the original oil in place. An increase in the recovery factor to 35% would result in the recovery of an additional 105,000 STBO from the 4,242 acre-feet in the water floodable area, as outlined on Figure 5.

Reservoir parameters used are the same as presented in the original Routledge unitization proposal, and are attached as Table 1.

## III. Summary

Chevron Standard Limited believes that the proposed pilot flood should be attempted to determine the feasibility of increasing oil recovery from Routledge Unit No. 1. If the pilot flood is successful and expansion of the flood is economic, Chevron proposes to submit at that time additional information as would be required by the Board.

Chevron Standard Limited, as Operator of Routledge Unit No. 1, hereby requests on behalf of the Working Interest Owners of Routledge Unit No. 1, permission to convert Chevron Routledge Prov. 13-22-9-25 WPM to a water injection well and to inject to the well at a pressure sufficiently high so that an injection rate in the order of 200 BWPD to the formation is sustained, but in no case will the pressure exceed 1500 psi.

The injection system will consist of water storage facilities and a reciprocating injection pump. Injection lines will be 2-3/8" cement lined pipe. The well will be converted to injection by pulling the pump, rods and tubing, running a casing scraper followed by the installation of cement lined tubing and packer. Reperforation and acidization may be necessary to assure that all productive zones are open.

If any additional information is required, please contact Mr. A. Hamberg at the above letterhead address. An early consideration of this request would be greatly appreciated.

Respectfully submitted,

A. Hamberg

for L. D. BROWN, Chairman
Routledge Unit No. 1
Operating Committee

AHamberg/mff
Attach.
cc: Messrs. J. S. Roper & M. J. Gobert

## TABLE 1

### SUMMARY OF RESERVOIR PARAMETERS
### ROUTLEDGE UNIT NO. 1

| | |
|---|---|
| Est. Average Porosity (%) | 12.3 |
| Est. Average Water Saturation (%) | 45 |
| Est. Average Initial Oil Saturation (%) | 55 |
| Formation Volume Factor (Res. Bbls./S.T.B.) | 1.06 |
| Est. Original Oil-in-place (Bbls./Ac.-Ft.) | 495 |

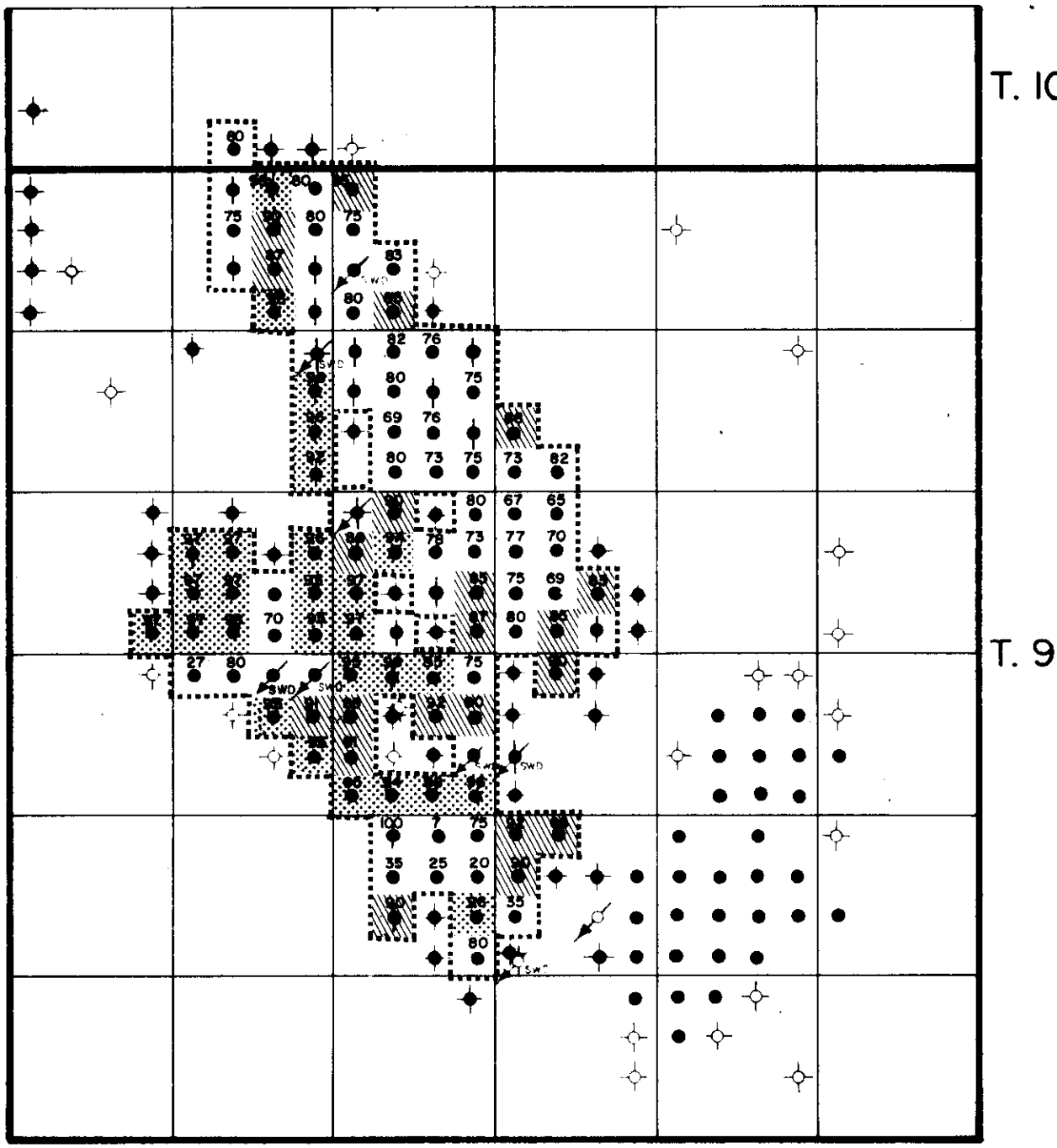


FIGURE 1

LEGEND

- AREA PRODUCING AT OVER 95% W.C.
- AREA PRODUCING BETWEEN 85% - 94% W.C.
- AREA PRODUCING AT LESS THAN 85% W.C.

ROUTLEDGE UNIT No. 1
SHOWING
WATER CUT %
AS OF DECEMBER 1972

0 1 2
SCALE IN MILES

SEPT. 1973

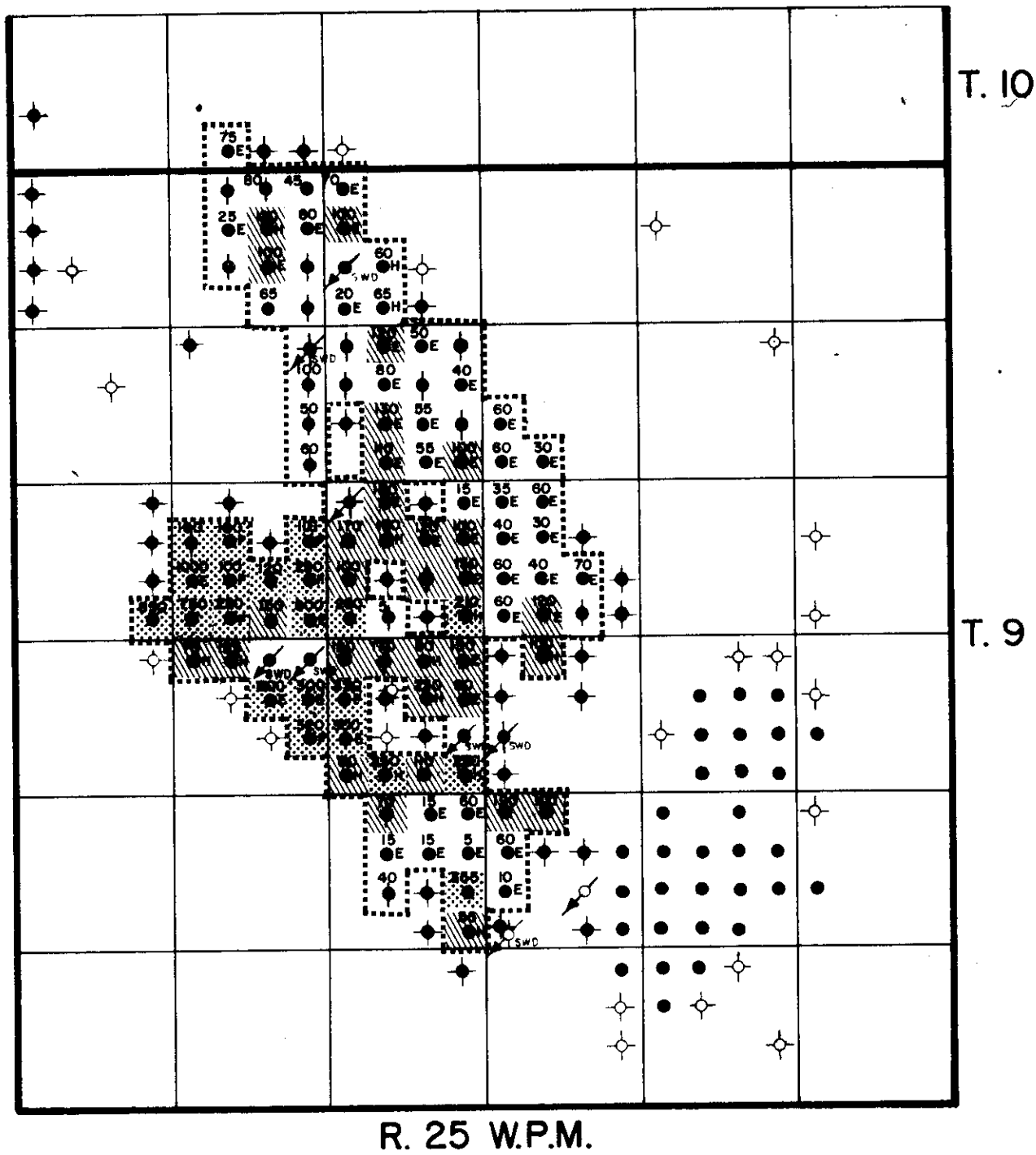


FIGURE 2

LEGEND

- UNIT BOUNDARY
- S. W. D. WELL
- SUSPENDED WELL
- ABANDONED WELL

ROUTLEDGE UNIT No. 1
AVERAGE FLUID RATES & LEVELS
AS OF DECEMBER 1972

0 1 2
SCALE IN MILES

800 CURRENT FLUID PRODUCTION RATE
E WELL PUMPED OFF WHILE PRODUCING
H WELL HALF FULL WHILE PRODUCING
F WELL FULL WHILE PRODUCING

WELLS CAPABLE OF PRODUCTION OVER 500 BFPD

WELLS CAPABLE OF PRODUCTION BETWEEN 100 – 500 BFPD

WELLS CAPABLE OF PRODUCTION LESS THAN 100 BFPD

SEPT. 1973

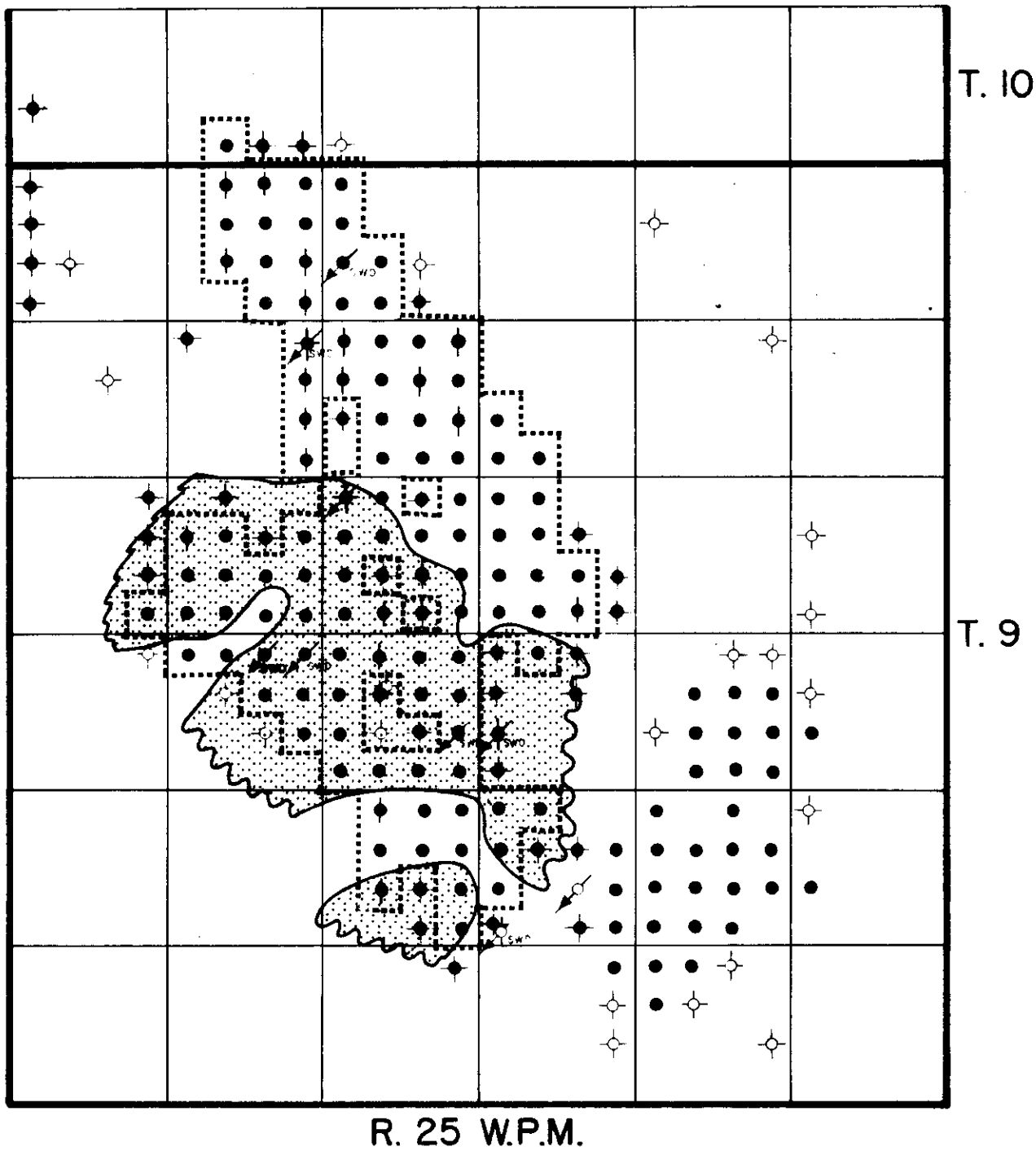


FIGURE 3

LEGEND

- UNIT BOUNDARY
- S. W. D. WELL
- SUSPENDED WELL
- ABANDONED WELL

ROUTLEDGE UNIT No. 1
SHOWING
ACTIVE WATER DRIVE AREA

0 1 2
SCALE IN MILES

AREA WITH WELLS CAPABLE OF OVER 100 BFPD AT W.C. OF OVER 85 %

SEPT. 1973

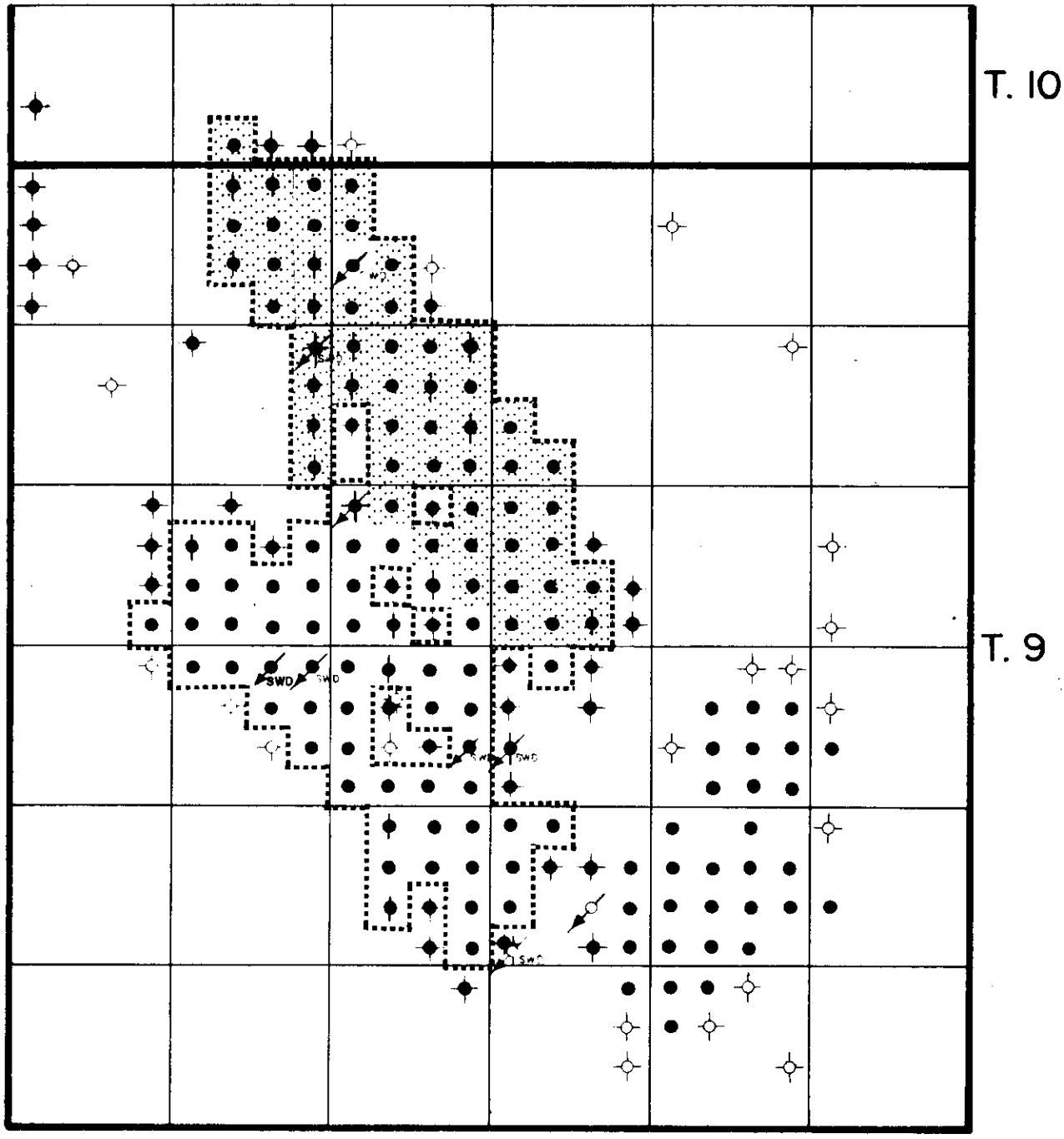


FIGURE 4

LEGEND

- UNIT BOUNDARY
- S. W. D. WELL
- SUSPENDED WELL
- ABANDONED WELL

ROUTLEDGE UNIT No. 1

POTENTIAL WATERFLOOD AREAS

POTENTIAL WATER FLOOD AREA

SEPT. 1973

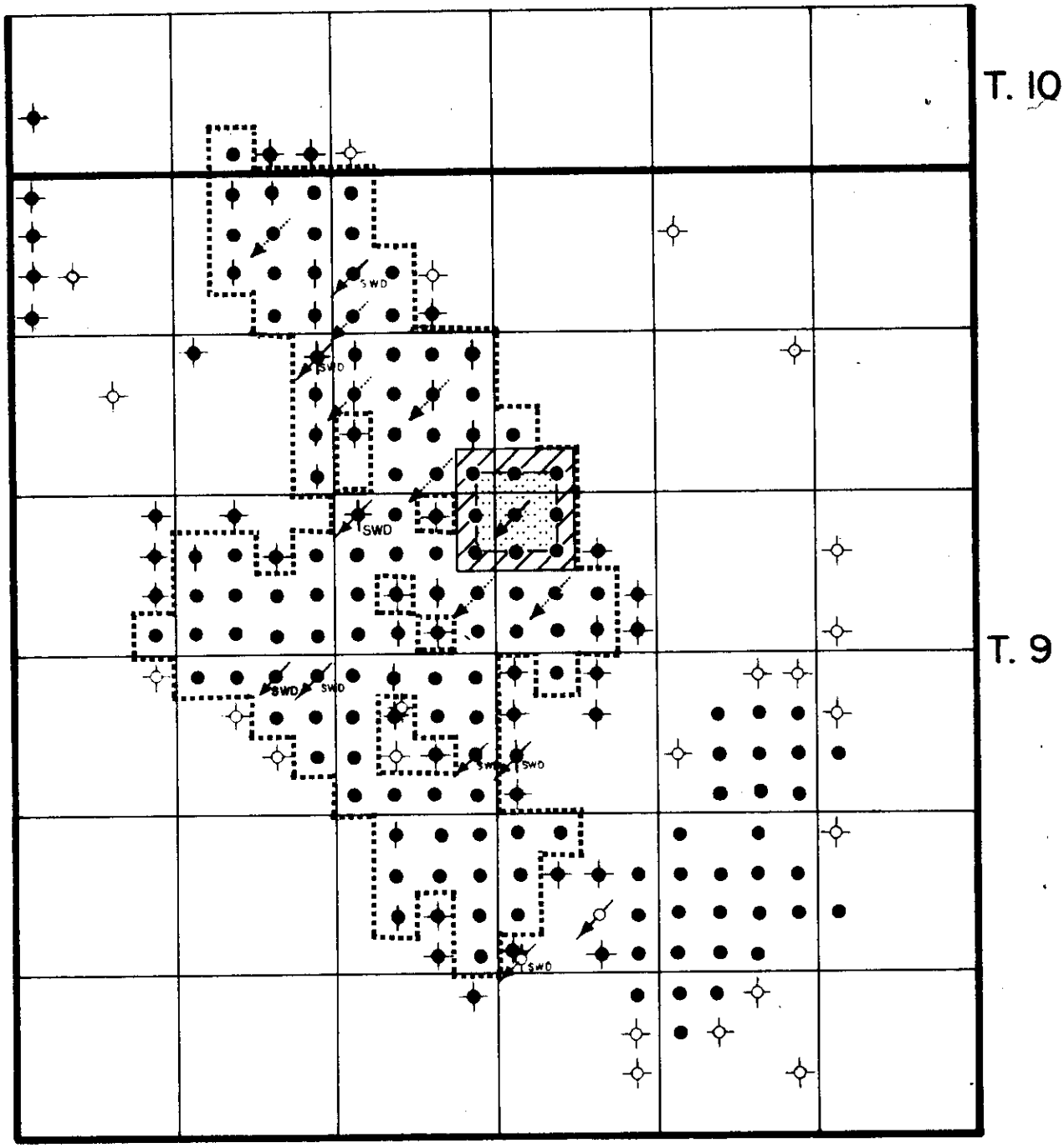


FIGURE 5

LEGEND

- UNIT BOUNDARY
- S. W. D. WELL
- SUSPENDED WELL
- ABANDONED WELL

ROUTLEDGE UNIT No. 1
PROPOSED PILOT FLOOD
AND
POTENTIAL FLOOD EXPANSION

0 1 2
SCALE IN MILES

- PILOT FLOOD WELL AREA
- WATER FLOODABLE AREA
- PROPOSED PILOT FLOOD INJECTOR
- POTENTIAL EXPANSION INJECTORS

SEPT. 1973

INTER-DEPARTMENTAL MEMORANDUM

PROVINCE OF MANITOBA

DATE April 16, 1973

FROM S. Gamey
Reservoir Engineer

TO J. S. Roper
Director of Mines



SUBJECT Re: Routledge Unit Phone call from Lindsey Brown - April 16, 1973

Chevron Standard - Virden, Manitoba

Lindsey Brown phoned for an opinion as to instituting a "one" well pilot flood in the Routledge Unit. The well to be considered as an injection well is 13-22-9-25.

I thought it best that they should get the approval of the Working Interest Owners, and then approach the Board as to whether a full scale hearing was required or if a Pressure Maintenance Order could be issued by the Board without a further hearing. My interpretation of section 2.04 of the approved "plan" is that they can convert and use as injection wells any well now drilled into the Unitized Strata.

This Unit is showing a very high water cut — about 90% — and pressure maintenance could only be attempted in limited locations and would only be a "last resort" to obtain more oil. For this reason Chevron would be hesitant to go to the extent of a full scale hearing for the purpose of a "one well" pilot flood.

F. S. Gamey

FSG/evh

Attached: 1 copy of 2.04 of Plan
1 copy of Pisio testimony re: waterflood

Authority for Operations

2.04 The Working Interest Owners are hereby collectively authorized to develop and operate the Unitized Strata without regard to the separate Leases or the boundary lines of separate Tracts within the Unit Area, and to drill, use and produce such wells at the Operating Committee deems advantageous to operations on or production from the Unitized Strata, to abandon such wells as they deem unnecessary and in general to do all other things that the Operating Committee deems advisable for the purpose of accomplishing the most efficient and most economical development and operation of the Unitized Strata. Without limiting the generality of the foregoing but subject to The Mines Act, the Working Interest Owners are hereby authorized to inject, Oil, Gas, water, or other substances, or any combination of them into the Unitized Strata and from time to time to convert and use as injection wells any Well now drilled or hereafter drilled into the Unitized Strata.

Royalty Owners Not Obliged to Pay Unitization Costs, Etc.

2.05 Nothing contained in this Plan shall be construed as imposing upon any Royalty Owner any obligation to pay for any of the expenses of the unitization herein provided for or for any of the costs and expenses incurred in operations hereunder unless such Royalty Owner is obligated to pay for same by the terms of any Lease.

Routledge Unit Hearing
Dec. 4 / 1969.



So you'll see that this plot is extrapolated by the curve rather than a straight line - a slight curve. So, the difference between the two operations then yields an increment of oil of 4 million barrels. This represents the area between the two plots. In the process of studying the area, consideration was given - perhaps I might ask if there are any questions on this at this time -

GOBERT: Mr. Hughes.

HUGHES: I have several questions that I think would best be covered by a summary question - if that is alright.

PISIO: OK. During the study, consideration was given to the possibility of waterflooding in the area and it became apparent from the high existent bottomhole pressures as well as the high water production throughout the major portion of the field - that the area was working under a very active natural waterdrive. We have a figure in the appendix which shows the bottom hole pressures - figure 4 - and starting from the top we see a pressure of 852 psi - 2 of 5 - this survey was conducted about mid-June 1969 - or 16-28 - the pressure was 834 pounds - on 6 of 28 it was 873, on 13 of 22 it was 780 pounds - over on 5 of 20, 968 pounds, on 15 of 17, 968; down on section 9, - 14 of 9 is 960 pounds. The average virgin pressure for the area was perhaps 950 to 1,000 pounds. So, there is generally very little pressure depletion in the area, If we compared this with - say - Virden-Roselea or North Virden where the estimated pressure at the time of unitization was perhaps 200 to 400 pounds -

GOBERT: How were these bottom hole pressures determined? Bottom hole survey or -

PISIO: These were the bomb runs - in most cases on suspended wells - so that there was adequate shut-in time. I think there was one well shut in before -

In addition to the high bottom hole pressure, we have the high water cuts generally throughout the area - we see this - based on the production of March 1969 - a copy of which is included in the submission - we see that the 80% water-cut runs across through here (figure 5) and essentially from here - on over is in excess of 90%. There are little areas where the production is less wet. Over to the east there is a slight reduction in water-cut - still very high. There is one small section with 60% on one well - the rest is 70, 80 and 90%. So,

generally, taking the area - it is very wet - the average water-cut for the entire area is in the neighborhood of 86%. There are isolated sections where it is lower than that - but not an area of any magnitude at all. The conclusion from this - was that waterflooding in the area was neither necessary nor was it economically feasible. Consideration will, however, be given to the disposal of produced water into specifically chosen disposal well, particularly at such time as additional disposal may be required.

GOBERT: Into the formation?

PISIO: Into the producing horizon - right. That concludes the presentation on the consolidation and the engineering study. My next item would be the participation formula.

HUGHES: Perhaps I could ask some questions now - on one of your tables - Table No. 1 - in the submission - the battery operation costs - comparison of battery operating costs -

PISIO: You're referring to an article entitled "Proposed Routledge Unit No. 1 - Discussion of Improved Economic Limit under Unitized Operations"?

HUGHES: Yes.

PISIO: This is an unofficial comparison of the response that we might anticipate for the saving, really, in the battery handling portion of the total field operated costs. It does not include the cost for the gathering system or the actual pumping.

HUGHES: So the seventy-three thousand - could be a separate and additional cost?

PISIO: That is our overhead cost and we - sixty-one hundred dollars per month for the operation. These two should not be related - should not be computed one with the other. This is different, and it is intended to show how the economics can be improved by unitizing. We feel that there is a saving -

HUGHES: Well, this is not - .

PISIO: No.

HUGHES: Do you anticipate that there would be an increase in the overall work-over cost - maintenance cost - or a decrease under the unitized operation?

R3C OP8

April 20, 1972.

Mr. R.R. McDaniel,
800 Western Union Building,
640 - 8th Avenue, S.W.,
Calgary, Alberta.

Dear Mr. McDaniel:

Re: Progress Report No. 2 - 1970 -
Routledge Unit No. 1

We are forwarding a copy of the above noted Progress Report, prepared by the Unit Operator.

We would appreciate receiving any comments that you may have on the report.

Yours sincerely

JSR/gh

1 Copy to FSG
1 " to Vinden

INTER - DEPARTMENTAL MEMORANDUM

PROVINCE OF MANITOBA

DATE January 29, 1971

FROM F. S. GAMEY
Reservoir Engineer

TO THE OIL AND NATURAL GAS CONSERVATION BOARD
J. S. ROPER - Deputy Chairman
M. J. Gobert - Member

SUBJECT Conversion of a well, namely: Chevron Routledge CPR 15-17-9-25 in the Routledge Unit, to a salt water disposal well

I have been informed by Mr. Dennis Moylan, Senior Crown Counsel, that the Unit Plan entered into by the Royalty Owners and Working Interest Owners, gives the Unit Operator permission to convert wells to water injection, into the Unitized Strata (Mississippian formation), and that any publication of "notice of application" or "public hearing" by the Board is unnecessary for salt water disposal to the Unitized Strata. Mr. Moylan is to confirm this information in writing.

It is suggested that, when conversion to salt water disposal has been completed, the Board issue a Salt Water Disposal Permit, outlining requirements for the operation of the said well.

The company must also comply with the Pipe Line Act and make application, under Section 23 (1), for Minister's permission to construct a pipe line from Lsd. 16-17 to Lsd. 15-17-9-25.

F. S. Gamey

File No. 800/M-43

INTER-DEPARTMENTAL MEMORANDUM

PROVINCE OF MANITOBA

DATE January 29th, 1971.

FROM D. W. MOYLAN, Q. C.,
Acting Director of Civil Litigation

TO Mr. F. S. Gamey,
Reservoir Engineer.

DEPARTMENT OF MINES & NATURAL RESOURCES
FEB 1 1971
DIRECTOR OF MINES
223

SUBJECT Converting Producing Well to Salt Water Disposal Well in a Unit Area

Assuming that the well to be converted to salt water disposal is located in the Unit Area of Routledge Unit No. 1, and assuming that injection is to be into the unitized strata, it would appear to me that such conversion is a matter within the authority of the working interest owners as provided in Section 2.04 of the Unit Plan. In these circumstances, there is no need for a hearing by the Oil and Natural Gas Conservation Board. I return the copy of the Unit Plan which accompanied your memorandum.

D. W. Moylan

D. W. Moylan,
Acting Director of Civil Litigation.

Encl.

DEPARTMENT OF MINES & NATURAL RESOURCES
FEB 2 1971
PETROLEUM ENGINEERING DIVISION

INTER-DEPARTMENTAL MEMORANDUM

PROVINCE OF MANITOBA

DATE January 15, 1971

FROM F. S. GAMEY
RESERVOIR ENGINEER

TO D. W. MOYLAN
SENIOR CROWN COUNSEL
ATTORNEY-GENERAL'S DEPARTMENT

SUBJECT CONVERTING PRODUCING WELL TO SALT WATER DISPOSAL WELL IN A UNIT AREA

DIRECTOR OF MINES

Attached is a copy of letter and application from Chevron Standard Limited to convert a well (15-17-9-25) to a salt water disposal well in the Routledge Unit.

If the company has the right to convert this well under the Unit Agreement "Plan", then it would not be necessary for the Board to advertize the "Notice", etc., and proceed in the usual manner. The application could be approved by the Director and the Board could issue a Salt Water Disposal Permit when the conversion is completed.

Attached is a copy of the Routledge Unit "Plan" and you are referred to Section 2.04, page 8, re-converting and use as injection wells. "Injection well" is not defined in the definitions of the Plan.

The application to convert is satisfactory, from an engineering standpoint, and the water would be injected into the Mississippian formation which is in the unitized strata.

F S Gamey

cc: J. S. Roper

# CHEVRON STANDARD LIMITED

Box 100
VIRDEN, Manitoba
January 13, 1971

JAN 14 1971

File: 666.20

Mr. J. S. Roper
Director of Mines
Room 901 Norquay Building
401 York Avenue
WINNIPEG 1, Manitoba

Dear Sir:

Re: Proposed Salt Water Disposal Well
Routledge Unit # 1

Attached is an Application to Convert to Salt Water Disposal the well Chevron Routledge CPR 15-17-9-25.

This well was completed in March 1958 in the Crinoidal section of the Mississippian Lodgepole. It produced 81,683 barrels of oil and 208,614 barrels of water and was suspended in February of 1967 with a water cut of 97.5%.

While drilling ahead prior to running the 4½" production casing, lost circulation was encountered at 2138 ft. We propose drilling out the cement in the shoe joint, the open hole bridge plug set at 2126 ft and drilling ahead 5 feet to ensure that this lower section is well able to take water.

The present plant located at Lsd 16-17-9-25 will be used to pump the disposed water into both the present S.W.D. well on Lsd 16-17 and this proposed S.W.D. well on 15-17. The line from the plant at 16-17 to the disposal well at 15-17 would be a cement lined steel line.

This proposal was recently discussed with Mr. M. J. Gobert of your Department and he advises that upon receipt of our application he will seek legal advice as to the requirements for this well conversion in the Routledge Unit.

Yours truly,

L. D. BROWN, P. Eng.
Area Supervisor

LDB/jl

cc Trowell/Pisio

5-69-5M

Field Routledge Unit # 1

Original Drilling License No. 1630

PROVINCE OF MANITOBA

# MINES BRANCH

APPLICATION TO { ~~SUSPEND DRILLING~~ ~~RESUME DRILLING~~ ~~RECONDITION~~ ~~PLUG BACK~~ ~~SUSPEND PRODUCTION~~ ~~ABANDON~~ } A WELL

CONVERT TO S.W.D.

(Stroke Out Operations Which Do Not Apply)

Approval is hereby applied for as required by the Regulations under "The Mines Act" R.S.M. 1954, Cap. 166, of the following operations to be commenced on or about

the 1 day of February 19 71, on the well known as

Chevron Routledge CPR 15-17

located on Lsd. 15 Sec. 17 Twp. 9 Rge. 25 ~~E~~ W of First Meridian,

being on Lease No. standing in the name of

## CASING RECORD

| | Size O.D. | Weight | Amount | Set | Sacks Cement | Method |
|---|---|---|---|---|---|---|
| 1st String | 8 5/8" | 24# | 293.45 | 309.50 | 200 sacks + 2% $CaCl_2$ | Howco |
| 2nd String | 4 1/2" | 9.5# | 2080.48' | 2102 | 160 sacks + 4% Gel | Howco |
| 3rd String | | | | | | |

## CONDITION OF WELL (Depths)

Total Depth of Well 2138 PBTD 2088

Perforations: From 2079.5 TO 2087.5

Open Hole: TO

Name of Producing Zone Mississippian

Date of last production February 9, 1967

Date of last production test October 22, 1966 G.O.R.

W.O.R. 34:1 Daily Production 3.5 BOPD 118 BWPD

Reason for Operations Proposed To provide additional salt water disposal facilities for Routledge Unit No. 1.

OUTLINE OF OPERATIONS PROPOSED: (Showing proposed plugs, and whether or not casing is to be pulled; if Plug Back show new interval to be perforated).

1. Drill out cement and bridge plug at 2126 ft. 2. Clean out to TD and drill ahead to 2143 ft. 3. Run injectivity test and acidize if necessary. 4. Run tension packer on 2½" plastic lined tubing. 5. Fill annulus with oil and set packer. 6. Tie in wellhead to line from SWD plant at Lsd 16-17. 7. Place well on disposal

Operations to be carried out by: S & A Servicing Address Virden, Manitoba

Responsible agent in field L. D. Brown Address Box 100 Virden, Manitoba

Responsible agent, Co. office J. G. TROWELL Address Chevron Standard Bldg. Calgary, Alberta

Signed by [signature] Title Area Supervisor

Company Chevron Standard Limited at Virden this 13 day of January 1971.

## APPROVAL

This application has been examined and programme of operations approved, subject to the following conditions:

1. Please advise our Virden office before proposed operations are commenced.
2.

Approved: Date 19

Director of Mines Petroleum Engineering Division

FORMS TO BE PREPARED IN QUADRUPLICATE AND FORWARDED TO THE DIRECTOR OF MINES

**CHEVRON STANDARD LIMITED**

400 FIFTH AVENUE S.W., CALGARY 1, ALBERTA

May 5, 1970

Routledge Unit No. 1
Our File No. 55,479-1

Mr. F. S. Gamey,
Reservoir Engineer,
Mines Branch,
Department of Mines and Natural Resources,
Province of Manitoba,
Norquay Building,
Winnipeg 1, Manitoba.

Dear Sir:

We wish to acknowledge with thanks receipt of your letter of May 1, 1970 and the four copies of Unitization Order No. 8, forwarded under separate cover.

Yours very truly,

E. H. GAUDET, Chairman,
Routledge Unit No. 1
Legal Committee.

EHG/ps

May 1, 1970

Mr. E. H.Gaudet, Chairman
Routledge Unit No. 1 - Legal Committee,
Chevron Standard Limited,
400 Fifth Avenue S.W.,
Calgary 1, Alberta.

Re: Certified copies of "Plan"
Routledge Unit No. 1

Dear Sir:

We are forwarding, under separate cover -

4 copies of "Plan for Unit Operation Governing the Unitized Management Operation and Development of Routledge Unit No. 1" certified correct by the Deputy Chairman of the Board.

This is in accordance with Section 15.01 of the Plan regarding the filing of same by the Unit Operator.

Yours very truly,

F. S. Gamey,
Reservoir Engineer.

FSG/h

**CHEVRON STANDARD LIMITED**

400 FIFTH AVENUE S.W., CALGARY 1, ALBERTA

May 1, 1970

Routledge Unit No. 1
Our File No. 55,479-1

Mr. W. Winston Mair, Chairman,
The Oil and Natural Gas Conservation Board,
Department of Mines and Natural Resources,
Province of Manitoba,
901 Norquay Building,
401 York Avenue,
Winnipeg 1, Manitoba.

Dear Sir:

As you know Chevron Standard Limited, as Operator of the subject Unit, is required to file copies of the "Plan" with The Department of Mines and Natural Resources and in the appropriate Land Titles Office. We would be pleased therefore if you would let us have four (4) certified copies of the Unitization Order covering the Routledge Unit No. 1. We will remit your fee upon your advice as to the amount of same.

Yours very truly,

E. H. GAUDET, Chairman,
Routledge Unit No. 1
Legal Committee.

EHG/ps

January 21, 1970

Chevron Standard Limited,
400 Fifth Avenue S.W.,
Calgary 1, Alberta,

Attention: Mr. A. H. Gaudet

**Re: Routledge Unit #1**

Dear Sir:

This will acknowledge receipt of the amended Royalty Owner's Consent Form for Crown Tracts in the above Unit; also, the ten copies of the Royalty Owner's brochure.

Yours very truly,

F. S. Gamey,
Reservoir Engineer.

FSG/h

**CHEVRON STANDARD LIMITED**

400 FIFTH AVENUE S.W., CALGARY 1, ALBERTA

January 19, 1970

Proposed Routledge Unit No. 1

Mr. F. S. Gamey,
Reservoir Engineer,
Mines Branch,
Department of Mines and Natural Resources,
Province of Manitoba,
911 Norquay Building,
401 York Avenue,
Winnipeg 1, Manitoba.

Dear Sir:

As requested in your letter of January 16th we enclose ten (10) copies of the Royalty Owners brochure. If you would like further copies please let us know.

Yours very truly,

E. H. GAUDET, Chairman,
Proposed Routledge Unit No. 1
Legal Committee.

EHG/ps
Encls.

January 16, 1970

F. S. Gamey

The Oil & Natural Gas Conservation Board
W. Winston Mair, Chairman
J. S. Richards, Deputy Chairman
M. J. Gobert, Member

ROUTLEDGE UNIT NO. 1 - Corrected Plan

I have received 35 copies of the "corrected" plan for Unit Operation Governing the Unitized Management Operation and Furthe Development of Routledge Unit No. 1.

Will I proceed to have this Plan printed and the galley proofs corrected for future Unitization Order, or shall we wait for final application from Chevron to file their Royalty Owners' consents with the Board?

January 16, 1970

Chevron Standard Limited,
400 Fifth Avenue S.W.,
Calgary 1, Alta.

Attention: Mr. L. H. Gaudet, Chairman
Proposed Routledge Unit No. 1
Legal Committee

Re: Your file 55,479

Dear Sir:

This will acknowledge receipt of 35 copies of the corrected plan for the proposed Routledge Unit No. 1.

Do you think you could spare us a few copies of the Routledge Unit No. 1 - Unitization Proposal (booklet) which was prepared for the Royalty Owners?

Yours very truly,

F. S. Gamey,
Reservoir Engineer.

FSG/h

**CHEVRON STANDARD LIMITED**

400 FIFTH AVENUE S.W., CALGARY 1, ALBERTA

January 9, 1970

Proposed Routledge Unit No. 1
Our File No. 55,479

Mr. F. S. Gamey,
Reservoir Geologist,
Mines Branch,
Department of Mines and Natural Resources,
Province of Manitoba,
911 Norquay Building,
401 York Avenue,
Winnipeg 1, Manitoba.

Dear Sir:

Under separate cover we are sending to you thirty-five (35) copies of the corrected Plan herein. We have corrected the Plan in accordance with the changes suggested at the Hearing and as set out in your letter and enclosure of December 9, 1969. In addition we have added the date of December 4, 1969 to the Title Page and have changed a portion of Clause 1.02 (r) to read "all of the heavy dashed black outline".

If you require further copies of the Plan please let us know.

Yours very truly,

E. H. GAUDET, Chairman,
Proposed Routledge Unit No. 1
Legal Committee.

EHG/ps

**CHEVRON STANDARD LIMITED**

400 FIFTH AVENUE S.W., CALGARY 1, ALBERTA

January 16, 1970

Proposed Routledge Unit No. 1
Our File No. 55,479

Mr. F. S. Gamey,
Reservoir Geologist,
Mines Branch,
Department of Mines and Natural Resources,
Province of Manitoba,
911 Norquay Building,
401 York Avenue,
Winnipeg 1, Manitoba.

Dear Sir:

Pursuant to our telephone conversation today we have amended the Royalty Owner's Consent Form for the Crown by deleting reference to Tract No. 11-16. We enclose four (4) copies of the amended Consent Form.

Yours very truly,

E. H. GAUDET, Chairman,
Proposed Routledge Unit No. 1
Legal Committee.

EHG/ps
Encls.

W. Winston Mair
~~xxxxxxxxxx~~

December 23, 1969

Mr. P. Piaio,
Chairman Protem,
Proposed Routledge Unit No. 1 Operating Committee,
400 Fifth Avenue S.W.,
Calgary 1, Alberta.

Dear Sir:

This is to advise that the Board approves, in principle, the "Plan for Unit Operation Governing the Unitized Management Operation and Further Development of Routledge Unit No. 1" as presented at the Public Hearing held in Virden, Manitoba, on December 4, 1969, subject to the amendments subsequently agreed upon.

Further that when the Working Interest Owners and the Royalty Owners have agreed, in writing, to the proposed plan of unit operation, and affidavits supported by exhibits listing the Working Interest Owners and Royalty Owners by individual Tract have been submitted to the Board, the hearing will be reconvened.

Yours very truly,

J. S. Richards,
Deputy Chairman.

F.G/h

**CHEVRON STANDARD LIMITED**

400 FIFTH AVENUE S.W., CALGARY 1, ALBERTA

November 6, 1969

The Oil and Natural Gas Conservation Board
Department of Mines and Natural Resources
Province of Manitoba
901 Norquay Building
401 York Avenue
Winnipeg 1, Manitoba

Attention: Mr. W. W. Mair, Chairman

Gentlemen:

1. Chevron Standard Limited, in its capacity as Unit Operator of the North Virden Scallion Unit No. 1 and Virden-Roselea Units Nos. 1, 2 and 3, respectfully requests that Orders Nos. PM1, PM4, PM5, PM7 and PM8 be amended to permit the interruption of injection into the wells affected by the above Orders for stimulation, reworks, repairs, and other reasons necessary for the prudent operation of the pressure maintenance schemes in the aforementioned Units.

2. Clause 1 (2) of each of the above Orders requires uninterrupted injection once injection has commenced, thereby creating an unintentional conflict between the subject Orders and prudent Unit operation.

3. A desirable amendment to the Orders would permit the Unit Operator of the Units involved to suspend injection wells for stimulation, reworks, repairs and other reasons which would not result in a prolonged interruption in injection, without special permission being required from the Conservation Board. Where a prolonged interruption is anticipated, it would be desirable to be able to obtain Conservation Board approval for the suspension without the necessity of a public hearing.

An early consideration of our request will be greatly appreciated.

Yours very truly,

for P. ENG.

J. G. TROWELL
Division Superintendent
Producing Department
Calgary Division

PP/cs

cc Mr. J.S. Roper

October 28, 1969.

Mr. J.G. Trowell,
Division Superintendent,
Chevron Standard Limited,
400 Fifth Avenue, S.W.,
Calgary 1, Alberta.

Dear Sir:

Re: Board Order PM 1 Water Injection Well 12-24-11-26

Regarding the temporary discontinuance of water injection to the above well, it will be necessary to make application to the Board for an amendment to Order No. PM 1 to permit any shut-down of injection. This would necessitate a public hearing.

As an alternative to the above, it is suggested that the water injected to the well could be reduced to a token amount or a volume not likely to influence pressure maintenance.

Since a Board hearing will be held in the near future to consider the proposed Routledge Unit, would it not be advisable to consider at that time some amendment to Pressure Maintenance Rule 1 (2) of Order No. PM 1, ~~PM 4~~, PM 5, PM 7, and PM 8 which would permit the shut-down of injection wells for reworks, repairs, or approved shut-in periods for other purposes?

Please advise if an application for an amendment can be made to coincide with the Routledge hearing.

Yours sincerely,

ORIGINAL SIGNED BY
W. W. MAIR

W. Winston Mair,
Chairman.

FSG:ia

**DEPARTMENT OF MINES AND NATURAL RESOURCES**
**ROUTE SLIP**

| TO | FROM |
|---|---|
| Mr M.J. Gobert | F.S. Gamey |
| TO | FROM |
| | |

- [x] For your approval or revision
- [ ] For your information
- [ ] Please take action
- [ ] Extracts of minutes for your information and action
- [ ] Please draft reply for signature of
- [ ] Reply direct with copy to me
- [ ] Please supply data for my reply
- [ ] Return with comments and/or recommendations
- [ ] Investigate and report
- [ ] Please sign
- [ ] Please return
- [ ] Please see me
- [ ] Please phone

Date October 23, 1969 Subject

Message

Please it and pass back

DEPARTMENT OF MINES AND NATURAL RESOURCES
OCT 23 1969
ASSISTANT DEPUTY MINISTER'S OFFICE

MNR-A-94 **Use reverse side if necessary**

**DEPARTMENT OF MINES AND NATURAL RESOURCES**
**ROUTE SLIP**

| | |
|---|---|
| TO F. S. Gamey | FROM J. Koper |
| TO | FROM |

- ☐ For your approval or revision
- ☐ For your information
- ☐ Please take action
- ☐ Extracts of minutes for your information and action
- ☒ Please draft reply for signature of
- ☐ Reply direct with copy to me
- ☐ Please supply data for my reply
- ☐ Return with comments and/or recommendations
- ☐ Please investigate and report
- ☐ Please sign
- ☐ Please return
- ☐ Please see me
- ☐ Please phone

to Mr. Trowell's letter N. J. Gobert.

Date

Subject

Message

MNR-A-94

**Use reverse side if necessary**

INTER - DEPARTMENTAL MEMORANDUM

PROVINCE OF MANITOBA

DATE October 21, 1969.

FROM Mr. F. S. Gamey,
Reservoir Engineer.

TO Mr. J. S. Roper,
Director of Mines.

SUBJECT Memo from D. Moylan -
Injection Well 12-24-11-26.

DEPARTMENT OF MINES & NATURAL RESOURCES
OCT 2 1969
DIRECTOR OF MINES

Regarding the "Token Injection" suggested by Mr. Moylan to comply with Board Order No. PM 1, the Petroleum Engineering Division has no objection to a reduced volume of water being injected to the formation from the above well. This well was placed on water injection in 1963. To date, the offsetting oil producing wells have shown little or no response to pressure maintenance.

Water injection reports submitted for the North Virden Scallion Unit indicate that water injection into 12-24-11-26 has already been reduced from 377 bbls. per day during August to 135 bbls. per day during September. Providing no operational problems are encountered, injection volumes could be reduced to a token amount, say to 20 bbls. per day.

?

F. S. Gamey.

FSG:db

**DEPARTMENT OF MINES AND NATURAL RESOURCES**
**ROUTE SLIP**

TO F.S. Gamey

TO

FROM J. Roper

FROM

- ☐ For your approval or revision
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- ☐ Please take action
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- ☐ Please see me
- ☐ Please phone

N. Vinden Section

Date Oct 21/69

Subject Unit

Message

is taken injection eg. bet. a day practical if not you will have to call a hearing.

J

MNR-A-94

Use reverse side if necessary

800/M-43

INTER-DEPARTMENTAL MEMORANDUM

PROVINCE OF MANITOBA

DATE October 17, 1989

FROM D.W. Moylan

TO Mr. I. S. Roper
Director of Mines

SUBJECT Temporary discontinuance of water injection
Well 12-24 North Virden Scallion Unit #1

I suggest that injection be reduced to a token injection. If this is impracticable, a fresh hearing would be necessary for the purpose of varying Board Order No. PM 1.

Permission could be granted to empower the mines branch [illegible]
[illegible]

**DEPARTMENT OF MINES AND NATURAL RESOURCES**
**ROUTE SLIP**

TO D. M. Moylan

TO

FROM C. Roper

FROM

- ☐ For your approval or revision
- ☐ For your information
- ☐ Please take action
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- ☐ Reply direct with copy to me
- ☐ Please supply data for my reply
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- ☐ Please sign
- ☐ Please return
- ☐ Please see me
- ☐ Please phone
- ☐ Please draft reply for signature of C & N.G.

Date Oct 17/69

Subject Board Color T.M.L.

Message

May we have your advice on the attached please.

MNR-A-94

Use reverse side if necessary

**DEPARTMENT OF MINES AND NATURAL RESOURCES**
**ROUTE SLIP**

TO E. Rafter | FROM [illegible]

TO ~~Estimey~~ (Copy) | FROM [illegible]

- ☐ For your approval or revision
- ☐ For your information
- ☐ Please take action
- ☐ Extracts of minutes for your information and action
- ☐ Please draft reply for signature of
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DEPARTMENT OF MINES & NATURAL RESOURCES
OCT 15 1969
DIRECTOR OF MINES

Date October 15, 1969 | Subject

Message D. W. Mayfair should be able to give us an opinion.

Denis
(1) Would you advise us on contraction or otherwise re paragraph 3.
(2) May we have your views on parag. 4 if required.

[illegible]

MNR-A-94 | Use reverse side if necessary

Chevron Standard Limited
400 Fifth Avenue S.W.
Calgary 1, Alberta
October 10, 1969



Mr. M. J. Gobert
c/o Department of Mines and Natural Resources
1010 Norquay Building
401 York Avenue
Winnipeg 1, Manitoba

Dear Sir:

Some time ago we suggested that during 1969 there would be an application submitted for the enlargement of North Virden Scallion Unit No. 1. Additional drilling since that time has made concrete enlargement negotiations difficult. An Engineering Committee has considered the enlargement and has agreed that additional production history on recent wells is required for realistic evaluation of the enlargement tracts.

From the considerations to date, it has become apparent that the well on the proposed enlargement tract LSD 14-24-11-26 WPM is exhibiting an abnormally high productivity. One's immediate reaction might be that the well's production is being influenced by the pressure maintenance scheme within the Unit. This, however, is questionable, since the two Unit producers between the 14-24 well and the nearest injector (LSD 12-24) have shown negligible waterflood response to date. We feel, however, that it would be prudent to cease injection into 12-24 WIW at least until such time as the participation factor for 14-24 has been established. The Engineering Committee concur with the proposed shut-in of 12-24 WIW.

Board Order No. PM1 states, in part, that injection into the injection wells shall continue after the commencement. It is our interpretation that it is not the intent of the Board Order to prevent any and all disruptions in injection inasmuch as it must be expected that, during the life of the project, it will be necessary to cease injection, intermittently at least, for mechanical and remedial purposes. We are not certain, however, that Board Order PM1 does not prevent our ceasing injection into 12-24 for a period of approximately six months. If this is so, it is our opinion that there is an unintentional conflict between the Board Order and prudent operation in the Unit.

Inasmuch as we wish to continue prudent operations in the Unit in accordance with the Board Order, we would appreciate your views on whether there is a conflict and what procedures might be followed to remedy the situation if there is a conflict.

Yours very truly,

for J. G. TROWELL
Division Superintendent
Producing Department
Calgary Division

PP/cs

Roper, J. S.
XXXXXXX

May 15, 1969.

Mr. R. R. McDaniel,
President,
McDaniel Consultants (1965) Ltd.,
640 - 8 Avenue, S.W.,
Calgary,
Alberta.

Dear Mr. McDaniel:

Enclosed are Tract Factor Calculations for the Routledge-West Routledge Unit No. 1, submitted by Chevron Standard Limited. I understand this is a preliminary calculation.

Yours very truly,

F. S. Gamey,
Reservoir Engineer.

FSG:db

Encs.

J. S. Roper
XXXXXXXX

May 14, 1969.

Mr.R. R. McDaniel,
President,
McDaniel Consultants (1965) Ltd.,
640 - 8 Avenue, S.W.,
Calgary,
Alberta.

Dear Mr. McDaniel:

For your information, we are attaching the following:

1. North Virden Scallion Unit No. 1 - Notice of Meeting and Minutes of March 28, 1969, meeting of the Engineering Committee.

2. Proposed Routledge-West Routledge Unit

   (a) Notice of Meeting and Minutes of the March 12, 1969, meeting of the Operating Committee;

   (b) Draft of "Plan" for unit operation;

   (c) Data for the calculation of tract participation factors.

Yours sincerely,

J. S. Roper,
Director of Mines.

:DB

Encs.

1 copy of all above material to: Mr. F. S. Gamey.

# CHEVRON STANDARD LIMITED

400 FIFTH AVENUE S.W., CALGARY 1, ALBERTA

May 8, 1969

Department of Mines and Natural Resources
1010 Norquay Building
401 York Avenue
Winnipeg 1, Manitoba

Attention: Mr. M. J. Gobert

Gentlemen:

Enclosed are copies of the following:

1. North Virden Scallion Unit No. 1 - Notice of meeting and minutes of March 28, 1969 meeting of the Engineering Committee.

2. Proposed Routledge-West Routledge Unit

   (a) Notice of meeting and minutes of the March 12, 1969 meeting of the Operating Committee;

   (b) Draft of "Plan" for unit operation;

   (c) Data for the calculation of tract participation factors.

Yours very truly,

for

J. G. TROWELL
Division Superintendent
Producing Department
Calgary Division

PP:mg
Encl.