

MOUNTCLIFF RESOURCES LTD.

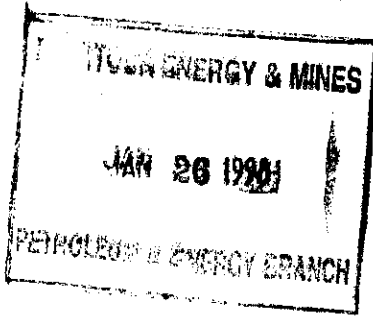
360, 717 - 7TH AVENUE S.W.

CALGARY, ALBERTA

T2P 0Z3

(403) 264 - 3288 OFF

(403) 269 - 8366 FAX



January 20, 1998

TO: Working Interest Parties

- * Brandon Professional Investments Ltd.
- * Freehold Resources Ltd.
- * Northrock Resources Ltd.
- * Tundra Oil & Gas

Manitoba Energy and Mines

RE: North Virden Scallion Unit #2 Unit Participation Exhibit D

To whom it may concern;

Please replace the list of parties and their respective unit participation (Exhibit D to the Unit Operating Agreement) with the attached revised list.

The change in the list occurs because of an administrative error in Freehold Resources Ltd. participation. The original list indicated a participation of 7.7088 % rather than the correct participation of 7.5088 %.

The correct participation has been used in all revenue and expense statements in the course of the unit business and in all production splits for Freehold for their "taken in kind" production.

Our apologies for any inconvenience that the error may have caused to any parties.

Yours Very Truly

A handwritten signature in black ink, appearing to read "Cliff Berg".

Cliff Berg
President

CB/kf
Encl.

*-checked
participations in
new unit brochure
matches these*

P.

EXHIBIT "D"

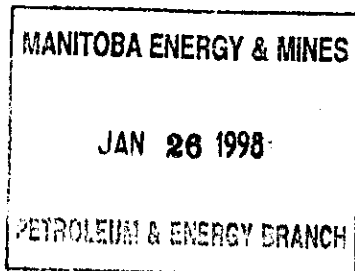
ATTACHED TO AND MADE PART OF AN AGREEMENT ENTITLED

"UNIT OPERATING AGREEMENT - NORTH VIRDEN SCALLION UNIT NO. 2"

List of Parties and their Respective Unit Participation

<u>Party</u>	<u>Unit Participation %</u>
Brandon Professional Investments Ltd.	1.7953 %
Freehold Resources Ltd.	7.5088 %
Northrock Resources Ltd.	10.8900 %
Mountcliff Resources Ltd.	31.8242 %
Tundra Oil & Gas Ltd.	47.9817 %
	<u>100.0000 %</u>

Effective: May 1st, 1995



May 11, 1990

H. Clare Moster
Deputy Chairman
The Oil and Natural Gas
Conservation Board

John N. Fox
Chief Petroleum Engineer
Petroleum Branch

RE: North Virden Scallion Unit No. 2
- Change in Unit Operation

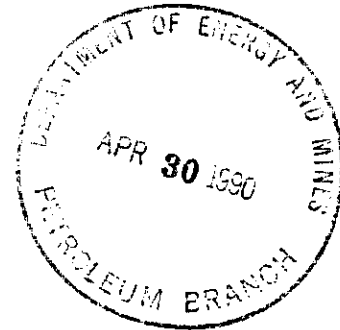
Please be advised that effective December 31, 1989 Saskatchewan Oil and Gas Corporation (Saskoil) replaced ICG Resources Ltd. as Unit Operator of the subject Unit.

John N. Fox

Orchid
file check out.
B

saskoïl

April 27, 1990



Manitoba Energy and Mines
555 - 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E3

Attention: Mr. Brad Thiessen
Manager, Petroleum Administration

Dear Sir:

RE: TRANSFER OF WELL LICENCES FROM ICG TO SASKOIL
NORTH VIRDEN SCALLION UNIT NO. 2 CHANGE OF OPERATOR

As requested in your letter of February 15, 1990, attached please find "Transfer of Well Licence" forms outlining transfers from ICG Resources Limited to Saskatchewan Oil and Gas Corporation for the following wells:

<u>LICENCE</u>	<u>LOCATION</u>	<u>STATUS</u>
2937	ICG et al Scallion 11-32-11-26 W1M	ST
2996	ICG et al Scallion 13-21-11-26 W1M	COOP
3097	ICGR et al Virden 04-28-11-26 W1M	COOP

The required cheque in the amount of \$150.00 is attached.

It should be noted that the following well locations were dry and abandoned by ICG on the noted dates:

<u>LICENCE</u>	<u>LOCATION</u>	<u>STATUS</u>	<u>DATE ABANDONED</u>
2992	ICG et al Scallion Prov. 02-32-11-26 W1	Abandoned	83-03-16
2957	ICGR et al Scallion 08-31-11-26 W1	Abandoned	83-02-06
3148	ICGR et al Virden 12-32-11-26 W1	Abandoned	83-10-13
3394	ICG Virden 05-05-12-26 W1	Abandoned	84-08-19

Saskoïl Tower
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan

Saskoil should not have to transfer these licences since the wells were immediately abandoned by ICG after drilling yielded no potential.

Also, as requested in your letter, please be informed that Saskoil is the new unit operator effective December 31, 1989 as noted in the attached copy of the "Certificate of Amalgamation".

If you have any questions concerning the subject matter, please contact the undersigned at (306)-781-8522.

Yours truly,
SASKATCHEWAN OIL AND GAS CORPORATION



D.F. Gallant,
Sr. Production Eng.

DFG/rr
encl.

cc: R. Molstad
G. Rowley
G. Thiessen
Wellfiles



N O T I C E

**TO ALL PARTIES having any agreements with
ICG Resources Ltd., 591213 Saskatchewan Ltd.
582562 Saskatchewan Ltd., 583563 Saskatchewan Ltd.
591548 Saskatchewan Ltd.**

Gentlemen:

This letter is to inform you that effective December 31, 1989 Saskatchewan Oil and Gas Corporation and its wholly-owned subsidiaries, ICG Resources Ltd., 591213 Saskatchewan Ltd., 583562 Saskatchewan Ltd., 583563 Saskatchewan Ltd. and 591548 Saskatchewan Ltd. have amalgamated and are now continued as Saskatchewan Oil and Gas Corporation. Attached for your information is a copy of the Certificate of Amalgamation for Saskatchewan Oil and Gas Corporation dated December 31, 1989.

Please direct all notices and correspondence normally addressed to ICG Resources Ltd., 591213 Saskatchewan Ltd., 583562 Saskatchewan Ltd., 583563 Saskatchewan Ltd. and 591548 Saskatchewan Ltd. to the following addresses:

1. FOR LAND CONTRACTS

Saskatchewan Oil and Gas Corporation
2500, 144-4th Avenue S.W.
Calgary, Alberta T2P 3S3

Attention: Supervisor Land Contracts

2. FOR ACCOUNTING PURPOSES

Saskatchewan Oil and Gas Corporation
Head Office
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan S4P 3C4

Saskoil Tower
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan

S4P 3C4 (306) 781-8200


3. FOR ALL OTHER DOCUMENTS

Saskatchewan Oil and Gas Corporation
Head Office
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan S4P 3C4

Attention: Supervisor Records and Agreements

We would request that you modify your records in
accordance with the above information.

Yours truly,
SASKATCHEWAN OIL AND GAS CORPORATION



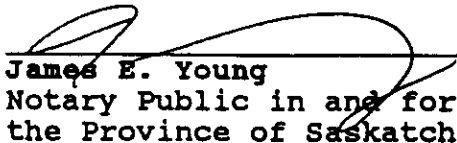
Jim E. Young
Assistant Secretary

/vb
[sog\icg]

CERTIFICATION

I, JAMES E. YOUNG, Barrister and Solicitor, do hereby certify the attached to be a true copy of the Certificate of Amalgamation of Saskatchewan Oil and Gas Corporation, ICG Resources Ltd./Les Resources ICG Ltee., 591213 Saskatchewan Ltd., 583562 Saskatchewan Ltd., 582563 Saskatchewan Ltd. and 591548 Saskatchewan Ltd.

DATED this 2nd day of January, 1990.


James E. Young
Notary Public in and for
the Province of Saskatchewan.
Being a Solicitor.



Saskatchewan
Consumer and
Commercial
Affairs

Corporations
Branch

592704

Corporation Number

Certificate of Amalgamation

The Business Corporations Act

I hereby certify that

SASKATCHEWAN OIL AND GAS CORPORATION

results this day from an amalgamation, under section 179 of the Act, of the
following corporations:

SASKATCHEWAN OIL AND GAS CORPORATION
IOG RESOURCES LTD./LES RESOURCES IOG LTEE.
591213 SASKATCHEWAN LTD.
583562 SASKATCHEWAN LTD.
583563 SASKATCHEWAN LTD.
591548 SASKATCHEWAN LTD.

Given under my hand and seal

this 31st day

of December 19 89

Director

A handwritten signature in dark ink, appearing to read "P.H. Long", written over a horizontal line.

October 25, 1990

Mr. G.A. Yeryk
Manager, Resource Recovery
Saskatchewan Oil and Gas Corporation
Saskoil Tower
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan
S4P 3C4

Dear Mr. Yeryk:

RE: North Virden Scallion Unit No. 2
Board Order No. PM 59

The Board has received letters from Saskoil and Ranchmen's requesting a six month extension on the submission of the joint report on the feasibility and desirability of expanding the unit to include Lsd's 11 and 14 in Section 30-11-26 (WPM).

The Board has approved your request for a six month extension. The joint report required pursuant to Clause 8(c) of Board Order No. PM 59 is now to be submitted by May 1, 1991.

If you have any questions in respect of this matter, please contact John N. Fox, Chief Petroleum Engineer, at (204) 945-6574.

Yours respectfully,

H. Clare Moster
Deputy Chairman

1

October 25, 1990

Mr. P.G. Maguire
Operations Engineer
Ranchmen's Resources Ltd.
Suite 1000
333 Eleventh Avenue S.W.
Calgary, Alberta
T2R 1L9

Dear Mr. Maguire:

RE: North Virden Scallion Unit No. 2
Board Order No. PM 59

The Board has received letters from Saskoil and Ranchmen's requesting a six month extension on the submission of the joint report on the feasibility and desirability of expanding the unit to include Lsd's 11 and 14 in Section 30-11-26 (WPM).

The Board has approved your request for a six month extension. The joint report required pursuant to Clause 8(c) of Board Order No. PM 59 is now to be submitted by May 1, 1991.

If you have any questions in respect of this matter, please contact John N. Fox, Chief Petroleum Engineer, at (204) 945-6574.

Yours respectfully,

H. Clare Moster
Deputy Chairman



Date: October 24, 1990

Action / Route Slip

To: H. Clare Moster

From: Bob Dubreuil

Telephone: _____

- | | | | | |
|---|---|---|--|--|
| <input type="checkbox"/> Take Action | <input type="checkbox"/> Per Your Request | <input type="checkbox"/> Circulate, Initial
and Return | <input type="checkbox"/> For Approval and
Signature | <input type="checkbox"/> Make _____ Copies |
| <input type="checkbox"/> May We Discuss | <input type="checkbox"/> For Your Information | <input type="checkbox"/> Return With Comments
or Revisions | <input type="checkbox"/> Draft Reply for
Signature | <input type="checkbox"/> Please File |

Comments: Attached are letters to Ranchmen's Resources Ltd. and Saskoil Inc. providing an
extension to the requirement in Board Order PM 59 of filing a joint report evaluating
the inclusion of Lsd's 11 and 14 of Section 30-11-26 in NVS Unit #2.



Date: October 1, 1990

Action / Route Slip

To: L.R. DUBREUIL

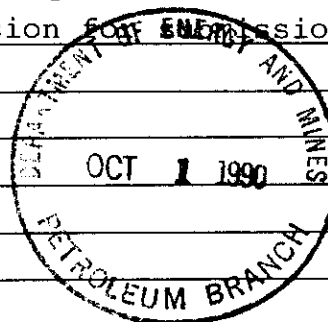
From: H. CLARE MOSTER

Telephone:

- | | | | | |
|---|---|--|---|--|
| <input checked="" type="checkbox"/> Take Action | <input type="checkbox"/> Per Your Request | <input type="checkbox"/> Circulate, Initial and Return | <input type="checkbox"/> For Approval and Signature | <input type="checkbox"/> Make _____ Copies |
| <input type="checkbox"/> May We Discuss | <input type="checkbox"/> For Your Information | <input type="checkbox"/> Return With Comments or Revisions | <input type="checkbox"/> Draft Reply for Signature | <input type="checkbox"/> Please File |

Comments: Draft letter to Saskoil acknowledging ^{accept} ~~request~~ of Ranchmen's letter and coonfirming 6 months extension for ~~ENERGY~~ ^{EMERGENCY} emission of joint report.

Attachment



Ranchmen's Resources Ltd.

SUITE 1000
333 Eleventh Avenue S.W.
CALGARY, Alberta T2R 1L9

TELEPHONE (403) 267-9400
10th Floor Fax (403) 267-9455
9th Floor Fax (403) 267-9444

September 21, 1990

The Oil and Natural Gas Conservation Board
Room 309, Legislative Building
Winnipeg, Manitoba
R3C 0V8

Attention: Mr. Clare Moster

Dear Sir:

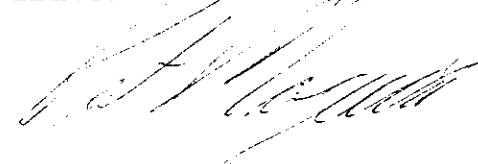
Re: North Virden Scallion Unit No. 2
Board Order No. PM 59, Clause 8(c)

After reviewing the production data from the two wells, 11 and 14 of Section 30-11-26 WPM, and that of the North Virden Scallion Unit No. 2, Ranchmen's feels that more time is required in order to observe the effects, if any, of Saskoil's A10-30 injection well. It is for this reason that Ranchmen's is requesting an additional six month extension on the submission of the subject report.

If you have any further questions, please contact the undersigned at 267-9463.

Yours truly,

RANCHMEN'S RESOURCES LTD.



P.G. Maguire
Operations Engineer

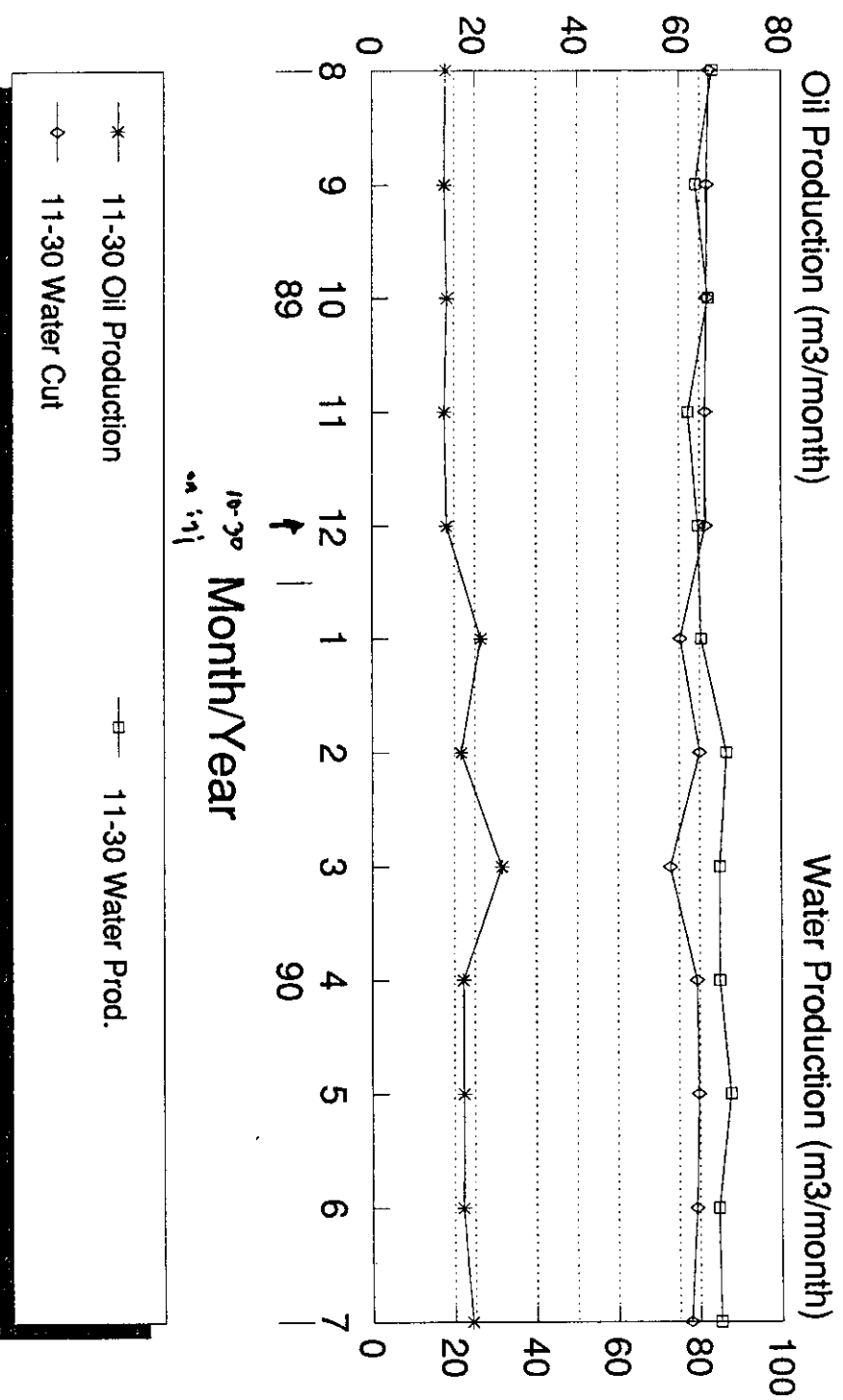
PGM:yp
Attachments

cc: Robert Kehrig - Saskoil
Kadri Kaleli - Saskoil



NORTH VIRIDEN SCALLION

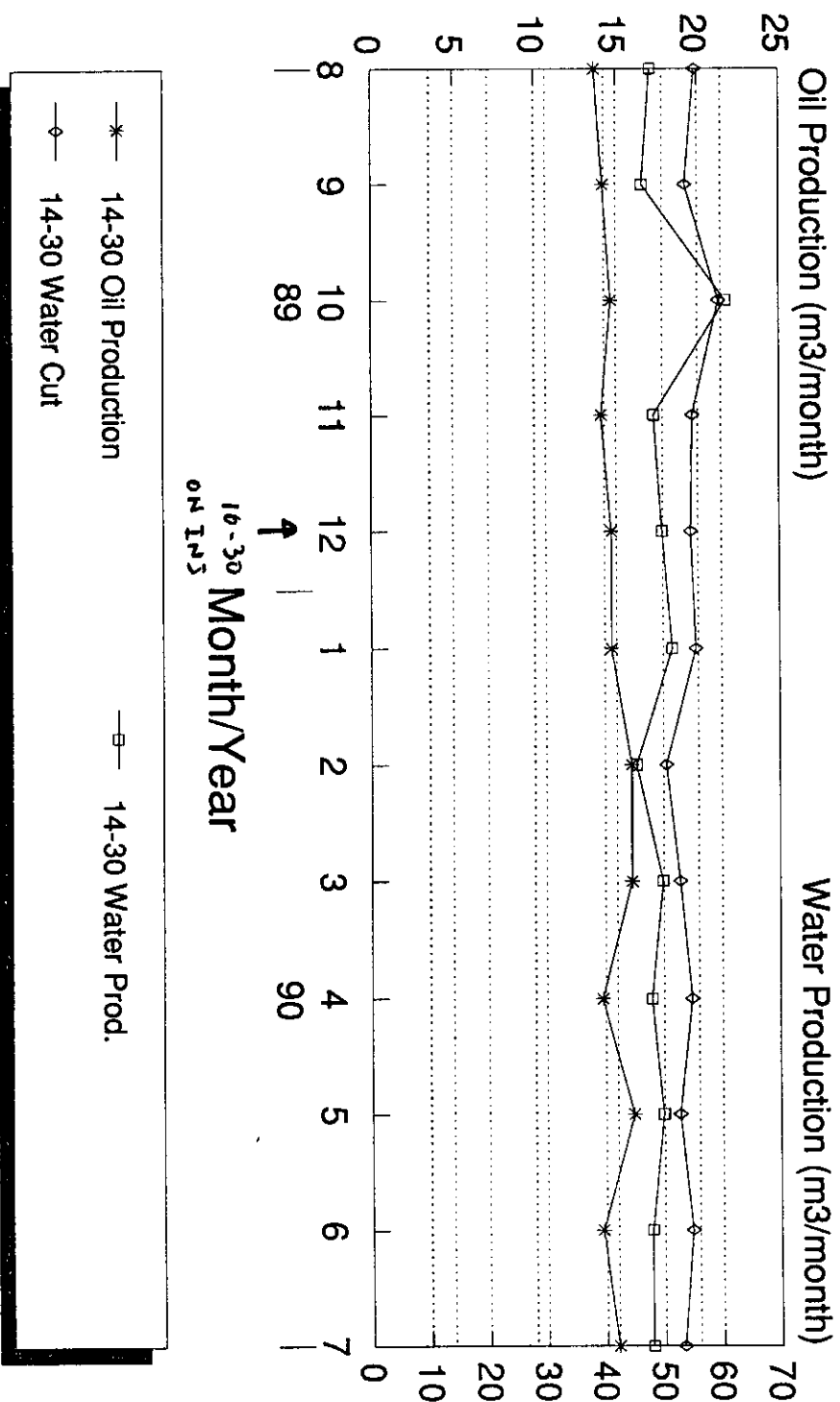
Production for 11-30-11-26WPM



Production in m3/month

NORTH VIRDEN SCALLION

Production for 14-30-11-26WPM



Production in m3/month

B. F.

Oct. 15th.

September 27, 1990

Mr. G.A. Yeryk
Manager, Resource Recovery
Saskoil
Saskoil Tower
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan
S4P 3G4

Dear Mr. Yeryk:

RE: North Virden Scallion Unit No. 2
Board Order No. PM 59

Your letter dated September 20, 1990 requesting a six (6) month extension of the submission of the detailed joint report described in Clause 8(c) of Board Order No. PM 59 is hereby acknowledged.

The Board is prepared to grant this request upon receipt in writing of a similar request by Ranchmen's Resources Ltd., which you have indicated is forthcoming.

If you have any questions in respect of the content of the joint report, please contact John N. Fox, Chief Petroleum Engineer, at (204) 945-6574.

Yours respectfully,

ORIGINAL SIGNED BY
H. CLARE MOSTER

H. Clare Moster
Deputy Chairman

cc: Ranchmen's Resources Ltd.
Attention: Mr. G. John Shand

August 17, 1990

Mr. G. John Shand
Production Superintendent
Ranchmen's Resources Ltd.
Suite 800, Sunlife Plaza III
112 - 4th Avenue S.W.
Calgary, Alberta
T2P 0H3

Dear Mr. Shand:

RE: North Virden Scallion Unit No. 2
Board Order No. PM 59

This letter is to remind you of the requirements of Board Order No. PM 59 - Clause 8(c) that the unit operator and Ranchmen's Resources Ltd. submit a detailed joint report on the feasibility and desirability of expanding the unit to include Lsd's 11 and 14 of Section 30-11-26 (WPM).

This report was due August 1, 1990. You are requested to submit the report to the Board before September 22, 1990. A copy of Board Order No. PM 59 is included for your reference.

Yours respectfully,

ORIGINAL SIGNED BY
H. CLARE MOSTER

H. Clare Moster
Deputy Chairman

Encl.

cc: Saskatchewan Oil and Gas Corporation

September 27, 1990

Mr. G.A. Yeryk
Manager, Resource Recovery
Saskoil
Saskoil Tower
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan
S4P 3G4

Dear Mr. Yeryk:

RE: North Virden Scallion Unit No. 2
Board Order No. PM 59

Your letter dated September 20, 1990 requesting a six (6) month extension of the submission of the detailed joint report described in Clause 8(c) of Board Order No. PM 59 is hereby acknowledged.

The Board is prepared to grant this request upon receipt in writing of a similar request by Ranchmen's Resources Ltd., which you have indicated is forthcoming.

If you have any questions in respect of the content of the joint report, please contact John N. Fox, Chief Petroleum Engineer, at (204) 945-6574.

Yours respectfully,

ORIGINAL SIGNED BY
H. CLARE MOSTER

H. Clare Moster
Deputy Chairman

cc: Ranchmen's Resources Ltd.
Attention: Mr. G. John Shand



Date: September 25, 1990

To: L.R. DUBREUIL

Action / Route Slip

From: H. CLARE MOSTER

Telephone:

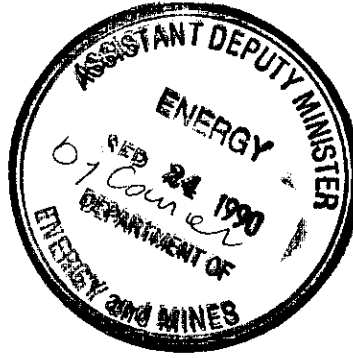
- | | | | | |
|---|---|--|---|--|
| <input checked="" type="checkbox"/> Take Action | <input type="checkbox"/> Per Your Request | <input type="checkbox"/> Circulate, Initial and Return | <input type="checkbox"/> For Approval and Signature | <input type="checkbox"/> Make _____ Copies |
| <input type="checkbox"/> May We Discuss | <input type="checkbox"/> For Your Information | <input type="checkbox"/> Return With Comments or Revisions | <input checked="" type="checkbox"/> Draft Reply for Signature | <input type="checkbox"/> Please File |

Comments: Review request and draft Board reply for my signature.

Attachment

saskoïl

September 20, 1990



Mr. Clare Moster
Deputy Chairman
The Oil and Natural Gas Conservation Board
Room 309, Legislative Building
Winnipeg, Manitoba
R3C 0V8

Dear Mr. Moster:

**RE: NORTH VIRDEN SCALLION UNIT NO. 2
BOARD ORDER NO. PM 59**

Saskatchewan Oil and Gas Corporation, as operator of the North Virden Scallion Unit No. 2, hereby requests a six-month extension on the submission of the detailed joint report described in Clause 8(c) of Board Order No. PM 59.

It is Saskoil's opinion that additional injection and production data is required before making any recommendation on the feasibility of expanding the Unit are to include the wells operated by Ranchmen's Resources Ltd. in Lsd.'s 11 and 14 of Section 30, Township 11, Range 26, WPM.

The production and injection histories of Unit wells, as well as those of Ranchmen's, are attached. The cumulative amount of water injected into the A10-30 well to date is less than one third of the total water injected (32.5%). Also, the ratio of cumulative water injection to cumulative reservoir withdrawals in the nine-spot injection pattern surrounding the A10-30 well is below 1.15. However, we regret that during some individual months, the volumes of water injected into the A10-30 well have exceed the limits prescribed in Board Order PM 59. Saskoil has taken steps to ensure that this situation does not recur. The production histories of two Ranchmen's wells show no effect of water injection to date.

Ranchmen's Resources Ltd. have also agreed to extend the period for the detailed joint report for six (6) months, and we understand they will be sending a letter in this regard.

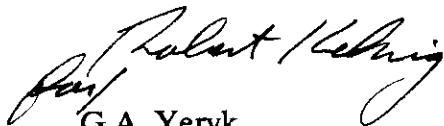
Saskoil Tower
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan

S4P 3C4 (306) 781-8200

Mr. C. Moster
09/20/90
Page 2

We hope that the additional time and production data will assist us to determine the effect of injection on the non-unit wells, and therefore ask that authorization for the six-month extension be granted. Please contact Mr. Kadri Kaleli of our Regina office at (306) 781-8367 if you have any questions or concerns.

Yours truly,

A handwritten signature in cursive script, appearing to read "G.A. Yeryk".

G.A. Yeryk
Manager, Resource Recovery

GY/KK/ljg
xc: R. Gladysz
D. Gallant
R. Kehrig/J. Chodzicki/Unit File
Working Interest Owners

WORKING INTEREST OWNERS
NORTH VIRDEN SCALLION UNIT #2

SASKATCHEWAN OIL AND GAS CORPORATION
Saskoil Tower
1945 Hamilton Street
Regina, Saskatchewan
S4P 3C4
Attention: Mr. R.R. Gladysz

DOME PETROLEUM LIMITED
Canpar Holdings Ltd.

c/o AMOCO CANADA PETROLEUM
COMPANY LTD.
240 - 4th Avenue S.W.
Calgary, Alberta
T2P 4H4
Attention: Mr. D. Foster

TUNDRA OIL AND GAS
1313 - One Lombard Place
Winnipeg, Manitoba
R3B 0X3
Attention: Mr. Bob Puchniak

MOUNTCLIFF RESOURCES LIMITED
4856 North Haven Drive N.W.
Calgary, Alberta
T2K 2J7
Attention: Mr. Cliff Berg

BRANDON PROFESSIONAL INVESTMENTS LTD.
160 - 14th Street
Box 1270
Brandon, Manitoba
R7A 6A4
Attention: Mr. D.H. Penny

90-08-28 (REVISED)

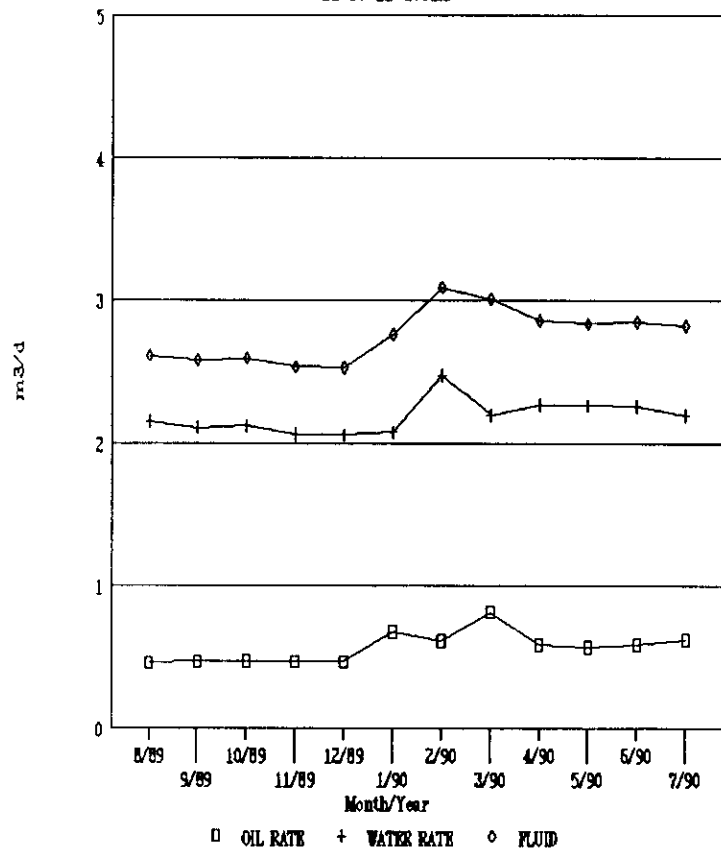
NC TH VIRDEN AREA - RANCHMEN'S RESOURCES NON-UNIT WELLS

PRODUCTION HISTORY - Aug'89 to July'90

		8/89	9/89	10/89	11/89	12/89	1/90	2/90	3/90	4/90	5/90	6/90	7/90
11-30-11-26w1m	Oil m3/d	0.5	0.5	0.5	0.5	0.5	0.7	0.6	0.8	0.6	0.6	0.6	0.6
	Water m3/d	2.1	2.1	2.1	2.1	2.1	2.1	2.5	2.2	2.3	2.3	2.3	2.2
	Fluid m3/d	2.6	2.6	2.6	2.5	2.5	2.8	3.1	3.0	2.9	2.8	2.8	2.8
14-30-11-26w1m	Oil m3/d	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.5	0.5	0.5	0.5	0.5
	Water m3/d	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Fluid m3/d	1.0	1.0	1.2	1.0	1.0	1.1	1.1	1.1	1.0	1.1	1.0	1.1
TOTALS	Oil m3/d	0.9	0.9	0.9	0.9	0.9	1.2	1.2	1.3	1.1	1.1	1.1	1.1
	Water m3/d	2.7	2.7	2.8	2.6	2.6	2.7	3.1	2.8	2.8	2.8	2.8	2.8
	Fluid m3/d	3.6	3.6	3.8	3.6	3.6	3.8	4.2	4.1	3.9	3.9	3.9	3.9

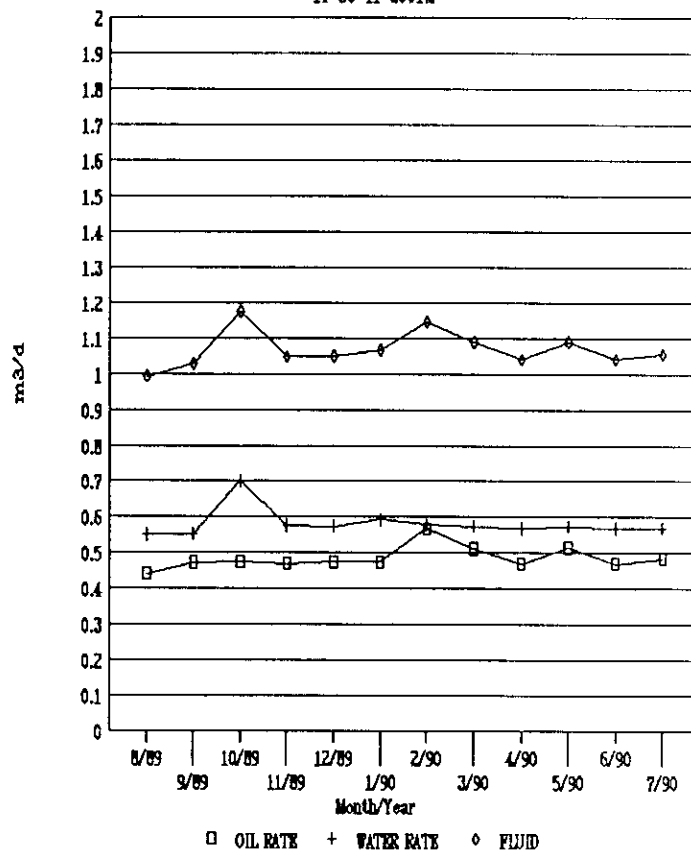
NORTH VIRDEN RANCHMEN'S NON-UNIT

11-30-11-26w1m



NORTH VIRDEN RANCHMEN'S NON-UNIT

14-30-11-26w1m



D.GALLANT
90/09/11
VIRRANCH

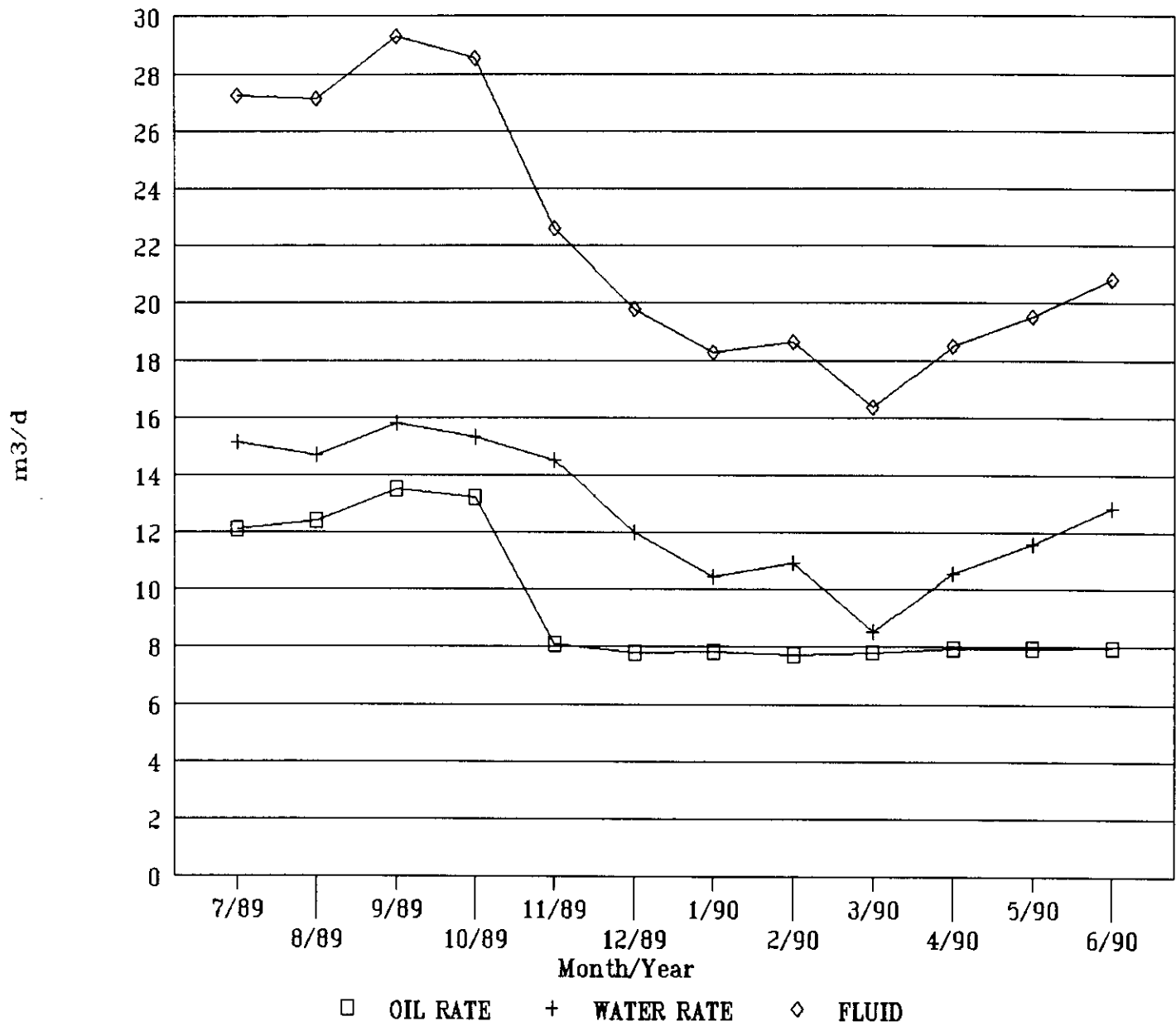
NORTH VIRDEN SCALLION UNIT No.2
- Waterflood Injection History -

INJECTOR	TARGETS	12/89	1/90	2/90	3/90	4/90	5/90	6/90	7/90	CUM. TO DATE	% of CUM. INJ.
12-29 -11-26W1M	m3/mth m3/d kPa	14 - 17		503.5 18.0 5998	550.1 17.7 5998	528.2 17.6 5998	500.1 16.1 5998	508.8 17.0 5998	508.1 17.1 5998	3098.8	51.4%
10-30 -11-26W1M	m3/mth m3/d kPa	5 - 7	275.3 8.9 5516	284.0 10.1 5929	211.0 6.8 3447	204.9 6.8 3861	219.3 7.1 3447	200.1 6.7 3241	220.1 7.4 3964	1956.2	32.5%
04-32 -11-26W1M	m3/mth m3/d kPa	18 - 24		132.6 4.7 5998	136.1 4.4 5998	160.4 5.3 5998	165.9 5.4 5998	166.6 5.6 5998	208.3 7.0 5998	969.9	16.1%
TOTAL	m3/mth m3/d	37 - 48	275.3 8.9	920.1 32.9	897.2 28.9	893.5 29.8	885.3 28.6	875.5 29.2	936.5 31.5	6024.9	

NOTE : Max. injection pressure limited to 6000 kPa as per MEM.
10-30 injection rate is limited to 33% of total volume due to offsetting Ranchmen wells.

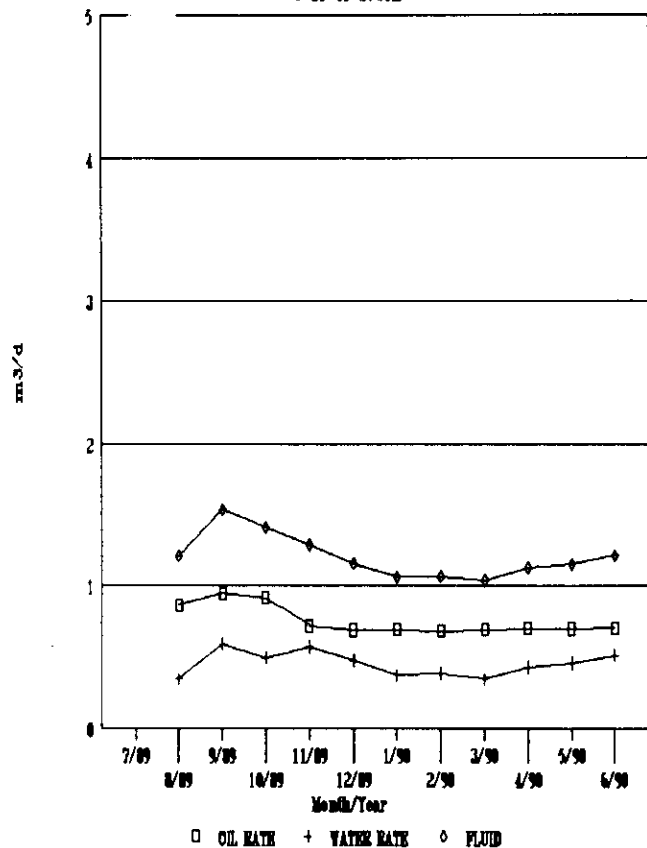
NORTH VIRDEN SCALLION UNIT NO. 2

Total Unit Production



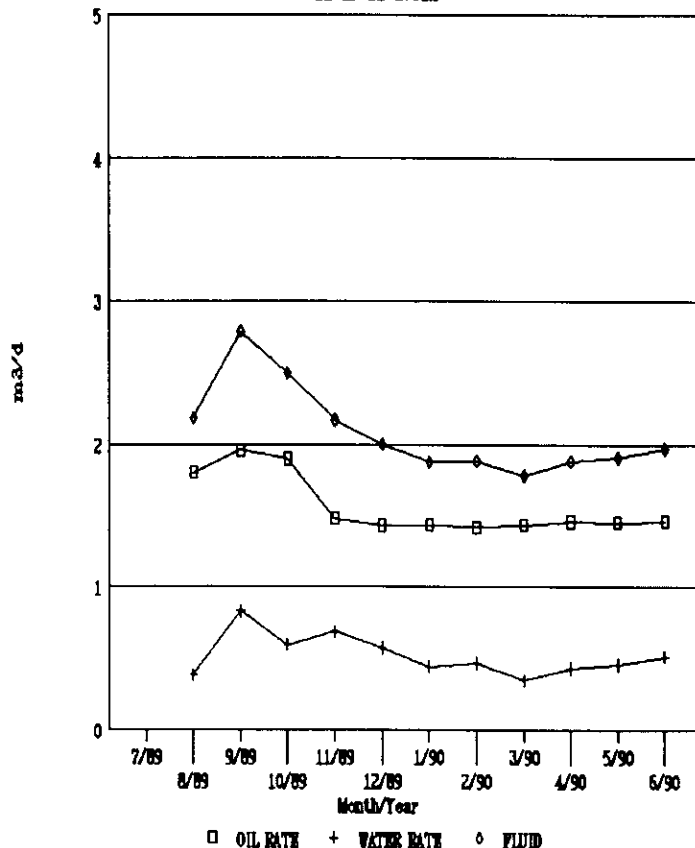
NORTH VIRDEN SCALLION UNIT NO. 2

6-29-11-26W1M



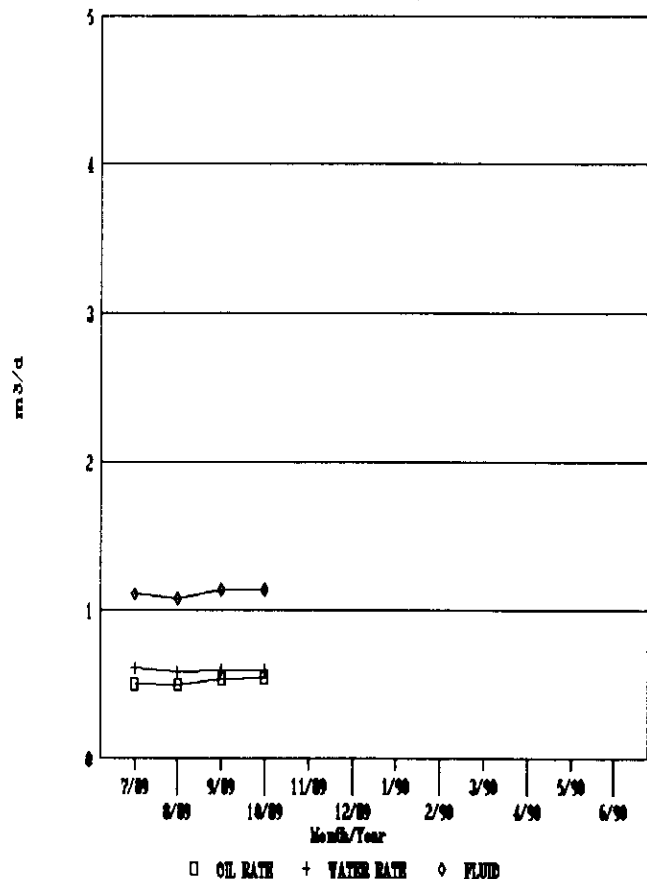
NORTH VIRDEN SCALLION UNIT NO. 2

11-29-11-26W1M



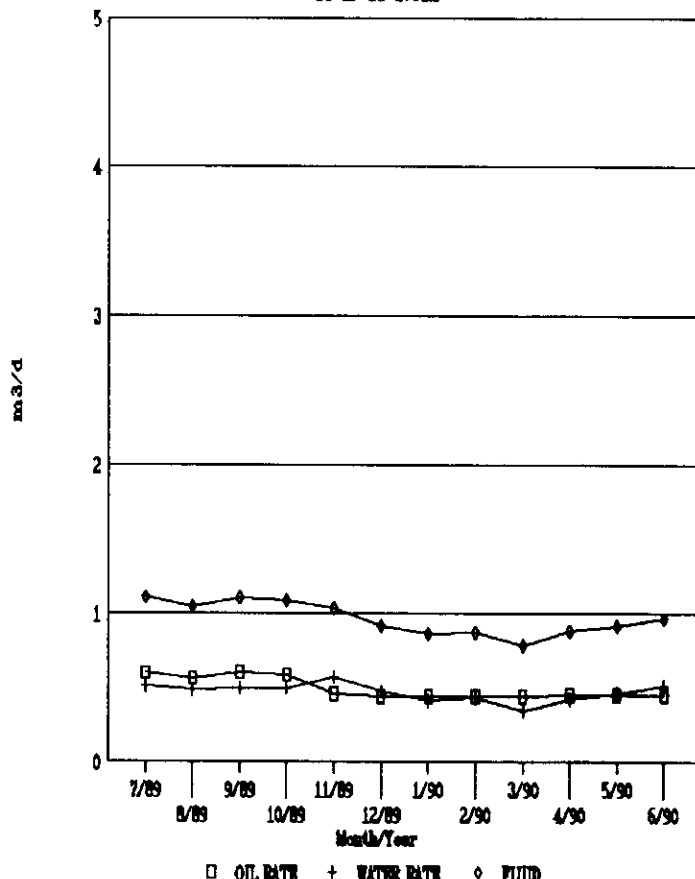
NORTH VIRDEN SCALLION UNIT NO. 2

12-29-11-26W1M INJECTOR



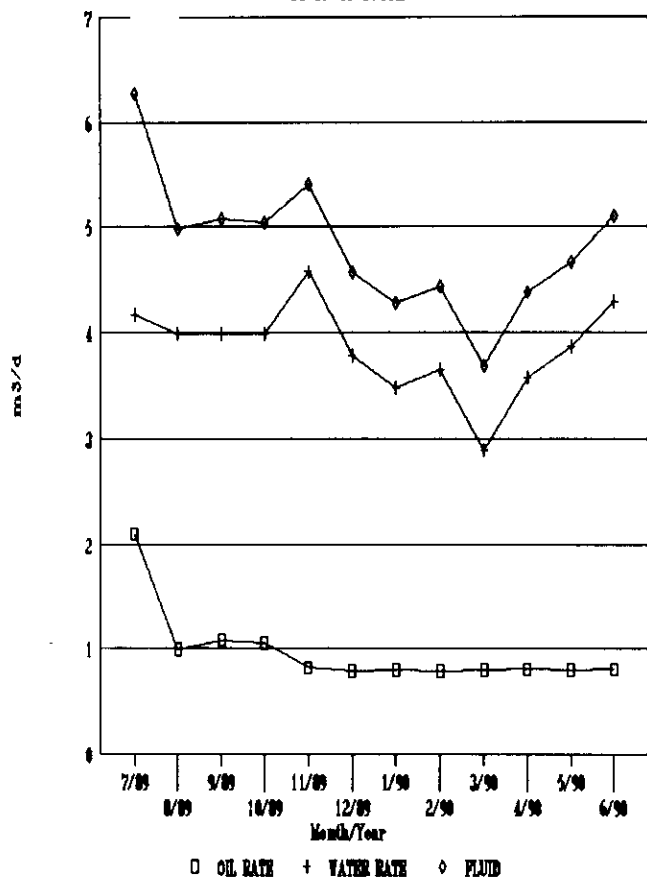
NORTH VIRDEN SCALLION UNIT NO. 2

13-29-11-26W1M



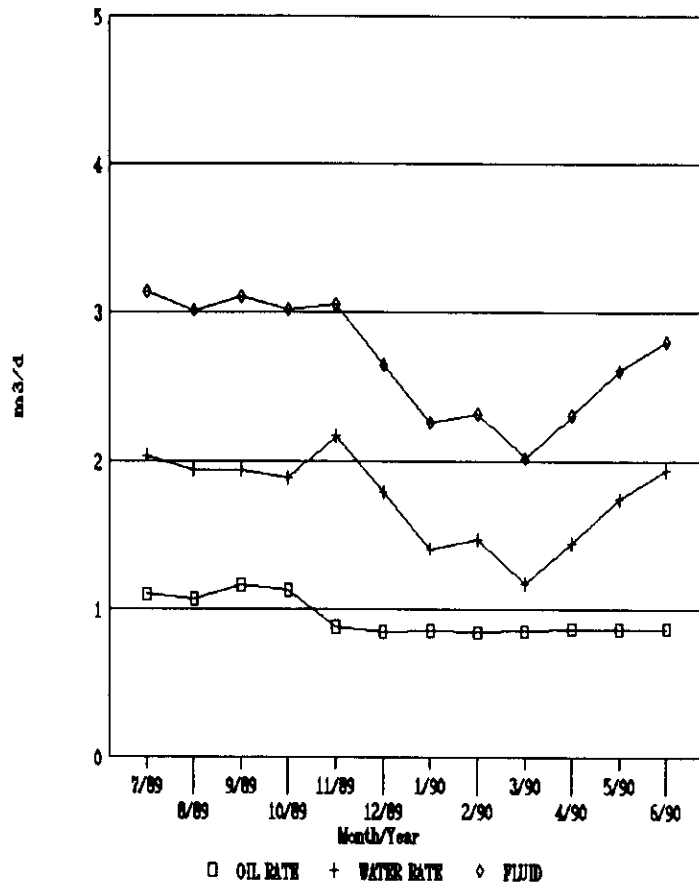
NORTH VIRDEN SCALLION UNIT NO. 2

14-29-11-2671M



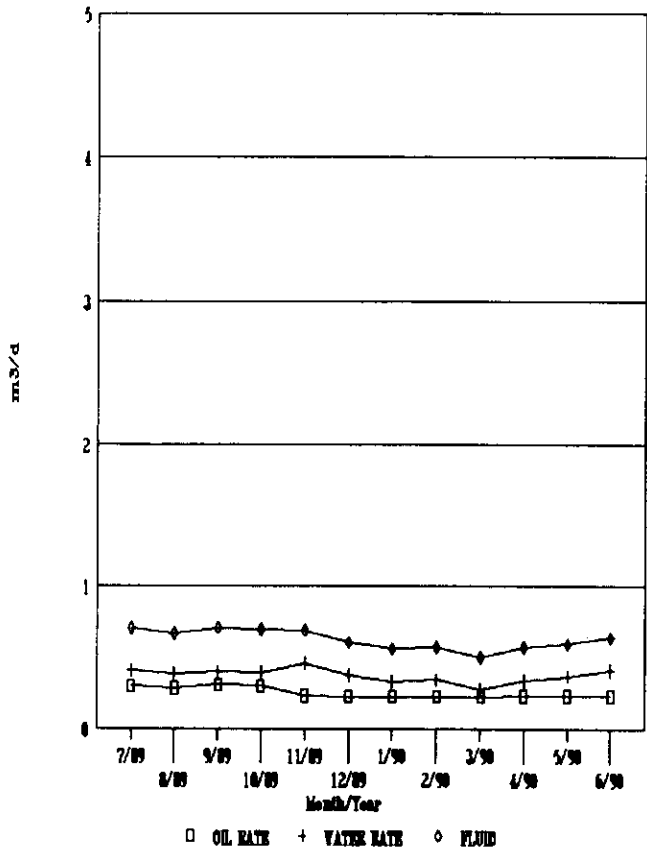
NORTH VIRDEN SCALLION UNIT NO. 2

9-30-11-2671M



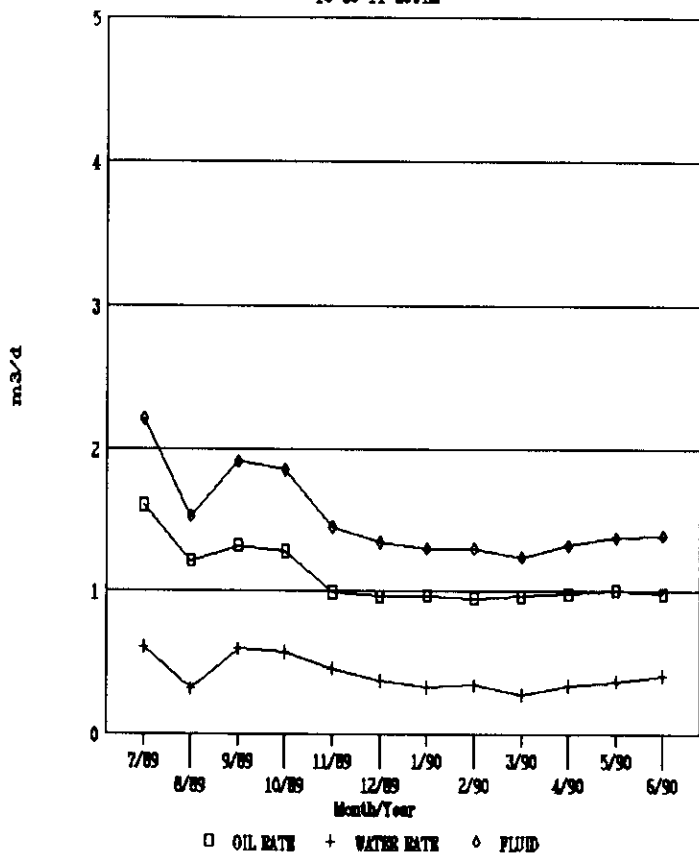
NORTH VIRDEN SCALLION UNIT NO. 2

15-30-11-2671M



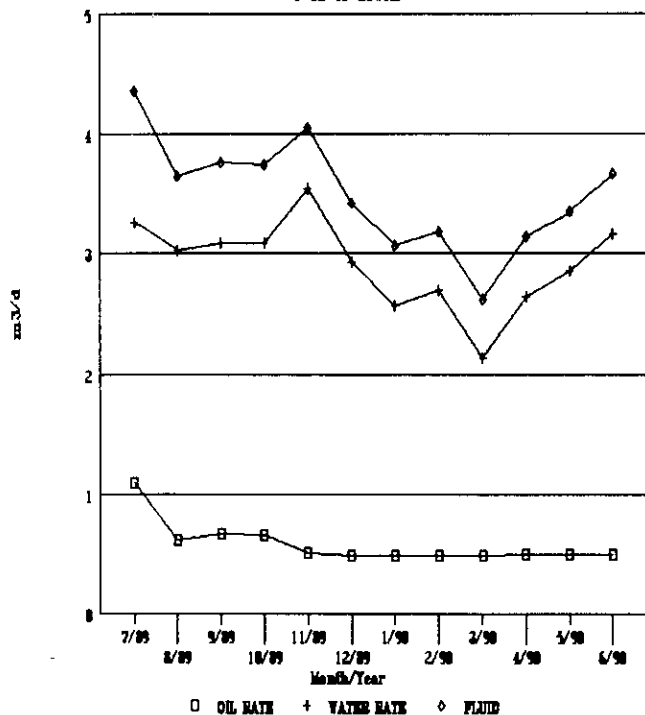
NORTH VIRDEN SCALLION UNIT NO. 2

16-30-11-2671M



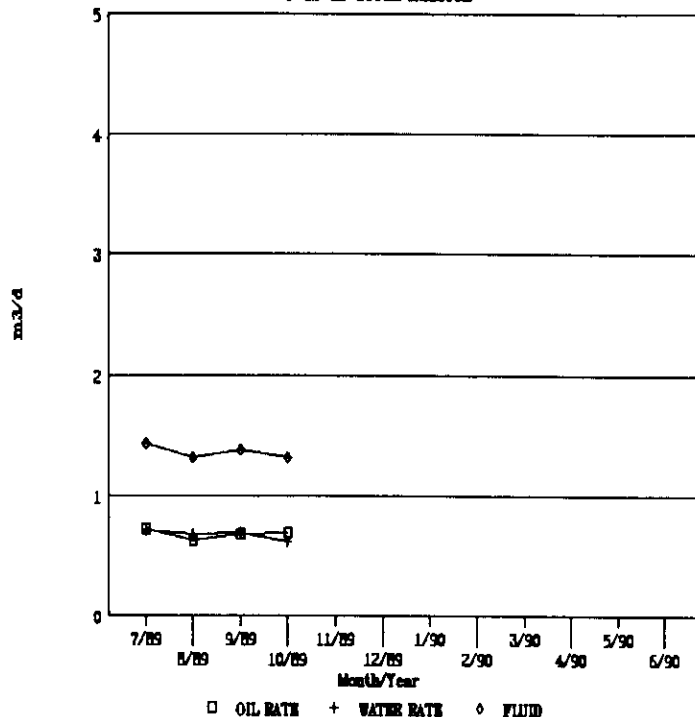
NORTH VIRDEN SCALLION UNIT NO. 2

3-32-11-26W1M



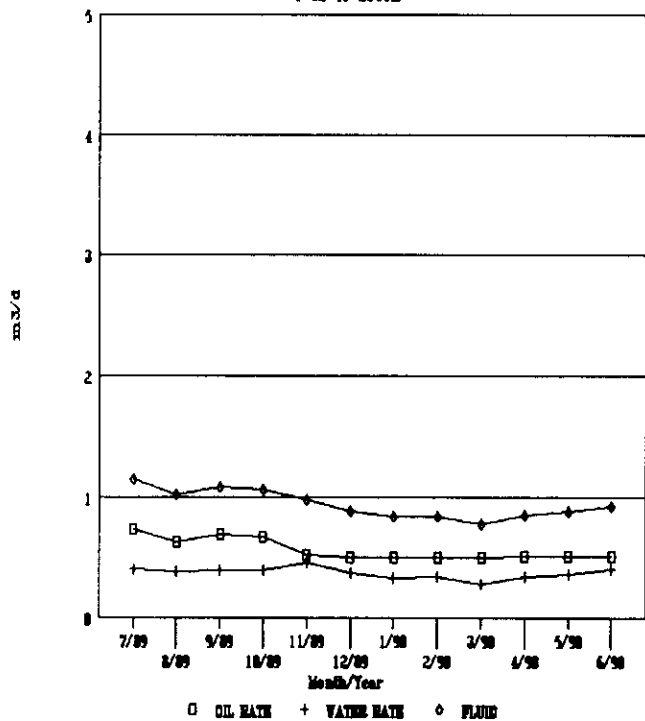
NORTH VIRDEN SCALLION UNIT NO. 2

4-32-11-26W1M DIRECTOR



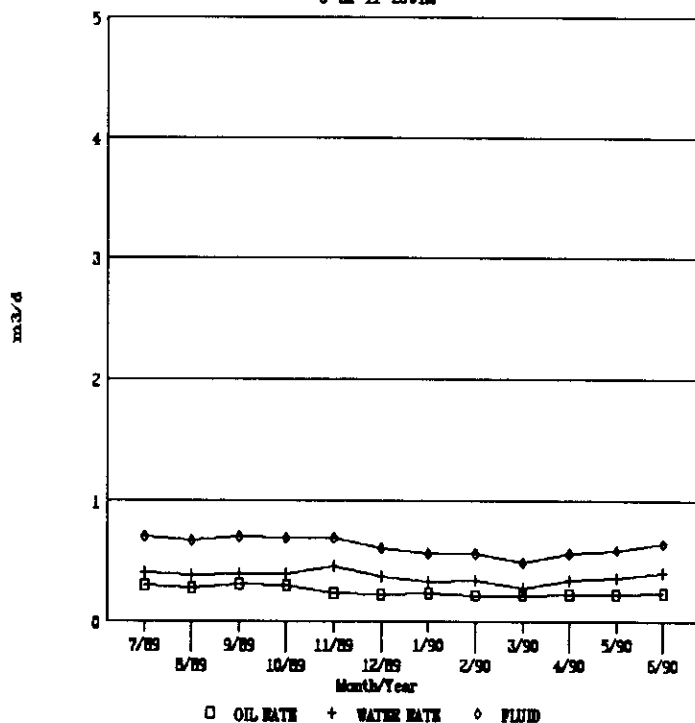
NORTH VIRDEN SCALLION UNIT NO. 2

5-32-11-26W1M



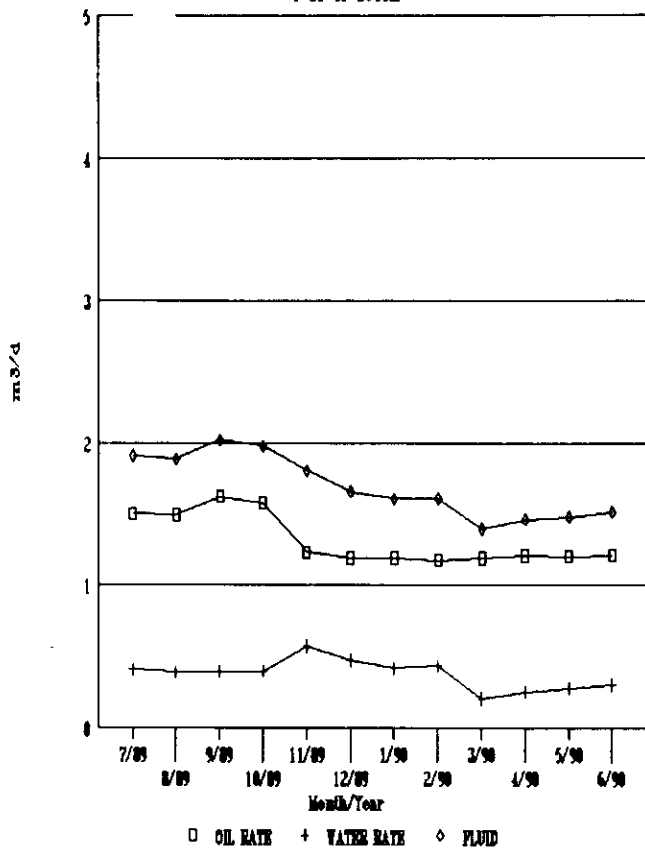
NORTH VIRDEN SCALLION UNIT NO. 2

6-32-11-26W1M



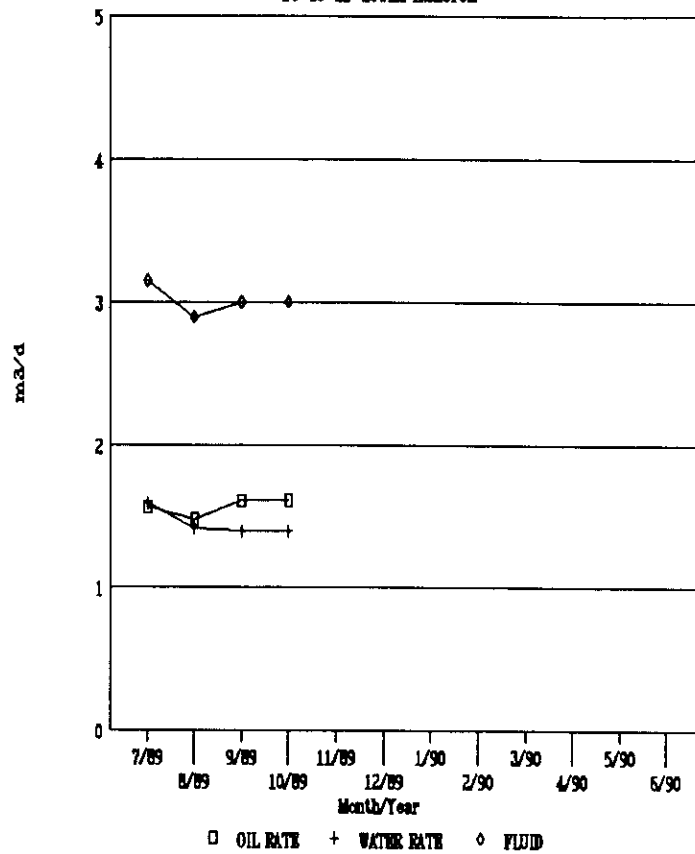
NORTH VIRDEN SCALLION UNIT NO. 2

1-31-11-25W1M



NORTH VIRDEN SCALLION UNIT NO. 2

10-30-11-25W1M DIRECTOR



NORTH VIRDEN SCALLION UNIT NO.2
PRODUCTION HISTORY – July'89 to June'90

		7/89	8/89	9/89	10/89	11/89	12/89	1/90	2/90	3/90	4/90	5/90	6/90
06-29-11-26w1m	Oil m3/d		0.9	0.9	0.9	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	Water m3/d		0.3	0.6	0.5	0.6	0.5	0.4	0.4	0.3	0.4	0.5	0.5
	Fluid m3/d		1.2	1.5	1.4	1.3	1.2	1.1	1.1	1.0	1.1	1.2	1.2
11-29	Oil m3/d		1.8	2.0	1.9	1.5	1.4	1.4	1.4	1.4	1.5	1.5	1.5
	Water m3/d		0.4	0.8	0.6	0.7	0.6	0.4	0.5	0.3	0.4	0.5	0.5
	Fluid m3/d		2.2	2.8	2.5	2.2	2.0	1.9	1.9	1.8	1.9	1.9	2.0
12-29	Oil m3/d	0.5	0.5	0.5	0.5								
	Water m3/d	0.6	0.6	0.6	0.6								
	Fluid m3/d	1.1	1.1	1.1	1.1								
13-29	Oil m3/d	0.6	0.6	0.6	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5
	Water m3/d	0.5	0.5	0.5	0.5	0.6	0.5	0.4	0.4	0.3	0.4	0.5	0.5
	Fluid m3/d	1.1	1.0	1.1	1.1	1.0	0.9	0.9	0.9	0.8	0.9	0.9	1.0
14-29	Oil m3/d	2.1	1.0	1.1	1.1	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	Water m3/d	4.2	4.0	4.0	4.0	4.6	3.8	3.5	3.7	2.9	3.6	3.9	4.3
	Fluid m3/d	6.3	5.0	5.1	5.0	5.4	4.6	4.3	4.4	3.7	4.4	4.7	5.1
09-30	Oil m3/d	1.1	1.1	1.2	1.1	0.9	0.8	0.9	0.8	0.9	0.9	0.9	0.9
	Water m3/d	2.0	1.9	1.9	1.9	2.2	1.8	1.4	1.5	1.2	1.4	1.7	1.9
	Fluid m3/d	3.1	3.0	3.1	3.0	3.1	2.6	2.3	2.3	2.0	2.3	2.6	2.8
15-30	Oil m3/d	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Water m3/d	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4
	Fluid m3/d	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.6
16-30	Oil m3/d	1.6	1.2	1.3	1.3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	Water m3/d	0.6	0.3	0.6	0.6	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4
	Fluid m3/d	2.2	1.5	1.9	1.9	1.5	1.3	1.3	1.3	1.2	1.3	1.4	1.4
03-32	Oil m3/d	1.1	0.6	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Water m3/d	3.3	3.0	3.1	3.1	3.5	2.9	2.6	2.7	2.1	2.6	2.9	3.2
	Fluid m3/d	4.4	3.6	3.8	3.7	4.1	3.4	3.1	3.2	2.6	3.1	3.4	3.7
04-32	Oil m3/d	0.7	0.6	0.7	0.7								
	Water m3/d	0.7	0.7	0.7	0.6								
	Fluid m3/d	1.4	1.3	1.4	1.3								
05-32	Oil m3/d	0.7	0.6	0.7	0.7	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	Water m3/d	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4
	Fluid m3/d	1.1	1.0	1.1	1.1	1.0	0.9	0.8	0.8	0.8	0.9	0.9	0.9
06-32	Oil m3/d	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	Water m3/d	0.4	0.4	0.4	0.4	0.5	0.4	0.3	0.3	0.3	0.3	0.4	0.4
	Fluid m3/d	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.6
01-31	Oil m3/d	1.5	1.5	1.6	1.6	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	Water m3/d	0.4	0.4	0.4	0.4	0.6	0.5	0.4	0.4	0.2	0.3	0.3	0.3
	Fluid m3/d	1.9	1.9	2.0	2.0	1.8	1.7	1.6	1.6	1.4	1.5	1.5	1.5
10-30	Oil m3/d	1.6	1.5	1.6	1.6								
	Water m3/d	1.6	1.4	1.4	1.4								
	Fluid m3/d	3.2	2.9	3.0	3.0								
TOTALS	Oil m3/d	12.1	12.4	13.5	13.2	8.1	7.8	7.8	7.7	7.8	7.9	7.9	8.0
	Water m3/d	15.1	14.7	15.8	15.3	14.5	12.0	10.4	10.9	8.5	10.6	11.6	12.9
	Fluid m3/d	27.3	27.1	29.3	28.5	22.6	19.8	18.3	18.7	16.4	18.5	19.5	20.8

August 17, 1990

Mr. D.F. Gallant
Senior Production Engineer
Saskatchewan Oil and Gas Corporation
Saskoil Tower
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan
S4P 3G4

Dear Mr. Gallant:

RE: North Virden Scallion Unit No. 2
Board Order No. PM 59

This letter is to remind you of the requirements of Board Order No. PM 59 - Clause 8(c) that the unit operator and Ranchmen's Resources Ltd. submit a detailed joint report on the feasibility and desirability of expanding the unit to include Lsd's 11 and 14 of Section 30-11-26 (WPM).

This report was due August 1, 1990. You are requested to submit the report to the Board before September 22, 1990. A copy of Board Order No. PM 59 is included for your reference.

You are also reminded of Clauses 8(a) and (b) prescribing limits on the volume injected into the A10-30-11-26 well. The Board has noted that the injection volumes have exceeded the prescribed limits. Saskoil is requested to correct this matter immediately.

Yours respectfully,

ORIGINAL SIGNED BY
H. CLARE MOSTER

H. Clare Moster
Deputy Chairman

Encl.

cc: Ranchmen's Resources Ltd.

NVSU #2 - COMPLIANCE CLAUSE 8
BO. # P759

90/08/14

12-29-11-26 on injection FEB/90
A10-30-11-26 on injection DEC/89
4-32-11-26 on injection FEB/90

total injection 1st qu. /90 - 2138.8 m³

total injection A10-30-11-26 - 836.5 m³ 39% of total

SINCE INJ. commenced
to May 31/90

cumul. inj = 4212.9 m³

A10-30 1536 m³ 36% of total

< 33.3 %

A10-30 Pattern Withdrawals

WELL	TRACT FACTOR	1990 VOIDAGE to May 31/90
6-30	1/4	260.4
7-30	1/2	86.2
9-30	1/2	178.1
11-30	1/2	221.5
14-30	1/4	41.8
15-30	1/2	46.9
16-30	1/4	61.2
		<hr/> 896.1 m ³

$$VRR = \frac{1260.7}{896.1} = 1.41$$

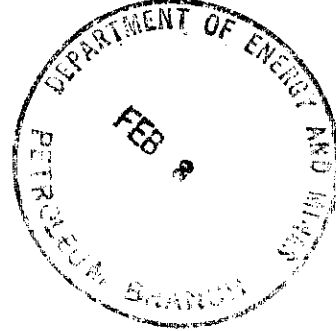
< 1.15

saskoïl

February 1, 1990

Manitoba Energy and Mines
555 - 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E3

Attention: Mr. John N. Fox
Chief Petroleum Engineer



Dear Mr. Fox:

RE: North Virden Scallion Unit No. 2
Waterflood Commencement

Saskatchewan Oil and Gas Corporation (Saskoïl) would like to notify Manitoba Energy and Mines of the commencement of a waterflood in the North Virden Scallion Unit No. 2. The injectors and start dates are as follows:

10-30-11-26 W1M - December 17, 1989
04-32-11-26 W1M - January 29, 1990
12-29-11-26 W1M - January 29, 1990

If you have any questions or concerns, please contact Mr. Kadri Kaleli of our Regina office at (306) 781-8367.

Yours truly,

SASKATCHEWAN OIL AND GAS CORPORATION

A handwritten signature in dark ink, appearing to read "G. Yeryk".

Glen A. Yeryk
Manager, Resource Recovery

KK/ljg
xc: R. Gladysz
R. Kehrig/Unit File

Saskoïl Tower
1945 Hamilton Street
P.O. Box 1550
Regina, Saskatchewan

S4P 3C4 (306) 781-8200

December 28, 1989

Saskatchewan Oil and Gas Corporation
Saskoil Tower
1945 Hamilton Street
P. O. Box 1550
Regina, Saskatchewan
S4P 3C4

Attention: Mr. Carl Swatschine C.E.T
Sr. Production Technologist

Re: North Virden Scallion Unit No. 2

As per our discussion attached is a copy of the Petroleum Drilling and Production Regulation and an invoice for the same.

I have calculated the EOR incentive period for the Unit to be 49 months. During the incentive period which starts the first day of the month in which the waterflood is fully implemented, production from the Unit is classified as incentive oil and Crown royalties and freehold production taxes are reduced as shown in Attachment 1. You will be officially notified of the EOR incentive period by our Administration Section when the waterflood is fully implemented.

According to Article VII of the North Virden Scallion Unit No. 2 Unit Operating Agreement, ICG Resources is the Unit Operator. The Branch will need formal notification of the change in Unit Operator.

In accordance with the Regulation you are also required to transfer the well licences held by ICG Resources to Saskoil. The Administration Section will be formally notifying you of these requirements in the near future. Attached is a list of well licences held by ICG Resources.

You are also requested to submit the results of the pressure surveys conducted earlier this year on the wells, 11-29-11-26 (WPM) and 16-30-11-26 (WPM).

If you have any further questions in respect of this matter please contact the undersigned at (204) 945-6574.

Yours sincerely,

ORIGINAL SIGNED BY
JOHN N. FOX

John N. Fox
Chief Petroleum Engineer

JNF/jb

ATTACHMENT 1

INCENTIVE OIL

CROWN ROYALTIES

<u>New Oil</u>	<u>Royalty Volume (m³)</u>
P 50 m ³ /mon	0.55 (P ² /265)
P 50 m ³ /mon	0.55 [9.43 + 0.45 (P-50)]

<u>Incentive Oil</u>	<u>Royalty Volume</u>
P 50 m ³ /mon	0.35 (P ² /265)
P 50 m ³ /mon	0.35 [9.43 + 0.45 (P-50)]

FREEHOLD OIL & GAS PRODUCTION TAX

<u>New Oil</u>	<u>Tax Rate (%)</u>
P 36 m ³ /mon	0
36 m ³ /mon P 65 m ³ /mon	0.23P - 8.11
P 65 m ³ /mon	19.59 - 820/P

<u>Incentive Oil</u>	<u>Tax Rate (%)</u>
P 56 m ³ /mon	0
P 56 m ³ /mon	9.27 - 510/P

Where P = monthly oil production in cubic metres

WELLS REQUIRING PERFORMANCE DEPOSITS (GEOGRAPHIC ORDER)

COMPANY: ICG RESOURCES LTD.

LOCATION	STATUS	LICENCE NO
13-21-11-26	COOP	2996
04-28-11-26	COOP	3097
12-29-11-26	COOP	2932
13-29-11-26	COOP	2889
14-29-11-26	COOP	2963
09-30-11-26	COOP	3107
A10-30-11-26	WIW	3815
A15-30-11-26	COOP	3160
16-30-11-26	COOP	2981
01-31-11-26	COOP	3144
08-31-11-26	ABD D	2957
02-32-11-26	ABD D	2992
03-32-11-26	COOP	2952
04-32-11-26	COOP	2928
05-32-11-26	COOP	3066
06-32-11-26	COOP	3098
11-32-11-26	ST	2937
12-32-11-26	ABD D	3148
05-05-12-26	ABD D	3394



ICG RESOURCES LTD.

SUBSIDIARY OF INTER-CITY GAS CORPORATION

2700 - 140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1989-09-13

All Working Interest Owners and
All Royalty Interest Owners
North Virden Scallion Unit No. 2
(Addressee lists attached)

Gentlemen:

Re: North Virden Scallion Unit No. 2
Unit Agreement Revisions

Attached are two revised copies of Page 27 and Exhibit "A" of the Unit Agreement for the North Virden Scallion Unit No. 2. Clause 1403 on Page 27 of the Unit Agreement has been changed to have a release of parties tied to a November 1, 1989 date and Exhibit "A" has been changed to show J. D. Nichol and K. L. Younge as the Royalty Owners of Tracts 6 and 9. Please insert these pages into your Unit Agreements. A letter agreement is attached regarding the changing of Clause 1403. Could all Working Interest Owners, who have not already executed this letter agreement and all Royalty owners execute this letter agreement and return it to ICG for its records.

Attached you will also find copies of the counterpart execution pages of the Unit agreement and, where appropriate, the Unit Operating Agreement. Copies of some further documentation regarding the title work conducted by MacLeod Dixon are attached for the Working Interest Owners.

Yours truly,

ICG RESOURCES LTD.

D. R. Bates, P. Eng.
Chairman, Operating Committee

DRB/ma

Enc.

cc: Manitoba Oil and Natural Gas Conservation Board

THE OIL AND NATURAL GAS
CONSERVATION BOARD
WINNIPEG, MANITOBA

SEP 20 1989

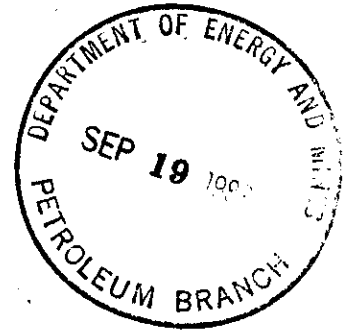
RECEIVED



ICG RESOURCES LTD.

SUBSIDIARY OF INTER-CITY GAS CORPORATION

2700 - 140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000



1989-09-13

All Working Interest Owners and
All Royalty Interest Owners
North Virden Scallion Unit No. 2
(Addressee lists attached)

Gentlemen:

Re: North Virden Scallion Unit No. 2
Effective Date

Pursuant to Clause 1402 of the North Virden Scallion Unit No. 2 Unit Agreement, ICG Resources Ltd., as operator, hereby notifies the Working Interest Owners that the unit has been formed and has an effective date of August 1, 1989. A copy of the notice from the Manitoba Oil and Natural Gas Conservation Board is attached.

Yours truly,

ICG RESOURCES LTD.

D. R. Bates, P. Eng.
Chairman, Operating Committee

DRB/ma

Enc.

cc: L. R. Dubreuil, Chief Petroleum Engineer
Manitoba Department of Energy and Mines, Petroleum Division



The Oil and Natural Gas
Conservation Board

Room 309
Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

(204) 945-3130

July 31, 1989

ICG Resources Ltd.
2700, 140 - 4th Avenue S.W.
Calgary, Alberta
T2P 3S3

Attention: Mr. D. R. Bates
Engineering Manager

Dear Sir:

Re: North Virden Scallion Unit No. 2

The Oil and Natural Gas Conservation Board is in receipt of your letter dated July 27, 1989 requesting approval of the North Virden Scallion Unit No. 2 Unit Agreement and the attached copies of the working interest and royalty owner consents.

The North Virden Scallion Unit No. 2 Unit Agreement is hereby approved with an effective date (pursuant to Article 1401 of the Unit Agreement) of August 1, 1989.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Ian Haugh', written over a horizontal line.

Ian Haugh
Chairman



Memorandum

Date *Sept. 8/89* August 30, 1989

To Ian Haugh
Deputy Minister
Energy and Mines

From H. Clare Moster
Assistant Deputy Minister
Energy Division
Energy and Mines

Subject NORTH VIRDEN SCALLION UNIT NO. 2
AMENDMENT TO THE UNIT AGREEMENT

Telephone

The subject Unit Agreement, to which the Crown in a royalty interest party, contains Clause 1403, for Release of Parties if the Unit is not effective prior to June 1, 1989.

As the Unit Agreement was not approved by The Oil and Natural Gas Conservation Board until July 31, 1989, the Unit did not become effective until August 1, 1989.

Therefore, ICG Resources Inc. as Unit Operator, is requesting the approval of all Parties to the Agreement to amend Clause 1403 to a November 1, 1989 date.

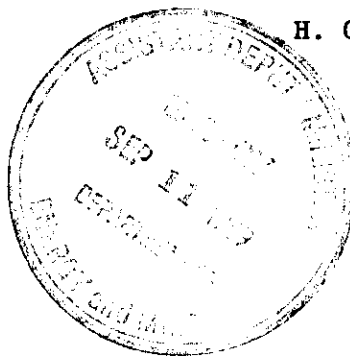
As this is simply an administrative housekeeping amendment, the approval of the Minister is recommended.

Please return signed copies to this office for disposition.

H. Clare Moster

HCM/ms

cc: L.R. Dubreuil

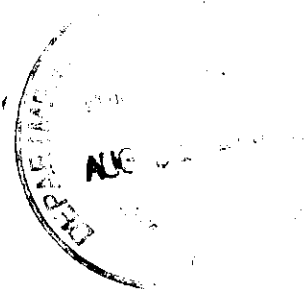


→ PETROLOGUM

Type in "Minister of Energy and Mines"
"Sept. 8, 1989"
on attached forms before
distributing.

0919T

HCM
Sept. 11/89





ICG RESOURCES LTD.

SUBSIDIARY OF INTER-CITY GAS CORPORATION

2700 - 140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1989-07-28

The Parties
North Virden Scallion Unit No. 2
(Address list attached)

Gentlemen:

Re: Unit Agreement
Clause 1403

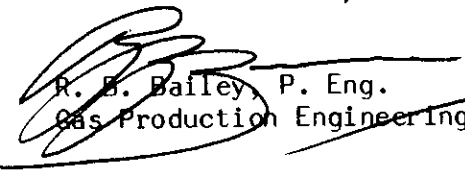
Please be advised that the executed Unit Agreement inadvertently included a date of June 01, 1989 in the captioned Release of Parties Clause.

ICG Resources Ltd. hereby requests your approval to change the date of release to November 1, 1989. If you are in agreement with this amendment, please so indicate by signing and returning one copy of this letter for our files.


The required amendment is not expected to delay regulatory approval and is brought forward at this time for administrative purposes.

Yours truly,

ICG RESOURCES LTD.


R. B. Bailey, P. Eng.
Gas Production Engineering Co-ordinator

RBB/ma
Enc.

Approval 
Party Harold Neufeld, Minister of Energy and Mines

Date _____

Sept. 8/89

1402. Notice of Effective Date

As soon as possible after the Effective Date Unit Operator shall notify all Working Interest Owners, the Conservation Board and the Department of Energy and Mines of Manitoba of the Effective Date and each of the Tracts qualified as of the Effective Date, and each Working Interest Owner shall advise each of its Royalty Owners of the Effective Date.

1403. Release of Parties

This agreement shall cease to bind the Parties if the unitization provided for herein has not become effective on or before the first day of November 1989.

ARTICLE XV

TERM

1501. Effect of Execution and Delivery

Subject to clause 1403 this agreement is binding upon a person who executes and delivers a counterpart thereof to Unit Operator, and that person is bound by this agreement as of the time of such delivery. This agreement inures to the benefit of and is binding upon the heirs, executors, administrators, successors and assigns of the Parties.



Memorandum

Date **August 28, 1989**
To **H. Clare Moster**
Assistant Deputy Minister
Energy Division

From **John N. Fox**
Chief Petroleum Engineer
Petroleum Branch

Subject _____ Telephone _____

RE: North Virden Scallion Unit No. 2
Amendment to the Unit Agreement

The North Virden Scallion Unit No. 2 Unit Agreement executed by the Minister contained a clause releasing the parties from the agreement if the unit did not become effective on or before June 1, 1989 (see Clause 1403 attached).

All working interest and royalty owners have signed the Unit Agreement and The Oil and Natural Gas Conservation Board approved the Unit Agreement effective August 1, 1989. ICG Resources, the unit operator, has requested that all parties to the Unit Agreement sign an amendment changing the release date in Clause 1403 from June 1, 1989 to November 1, 1989.

Recommendation:

It is recommended that the Minister sign the attached forms approving the amendment to the Unit Agreement.

ORIGINAL SIGNED BY
JOHN N. FOX

John N. Fox

JNF:dah

attach

100-1-1001

1402. Notice of Effective Date

As soon as possible after the Effective Date Unit Operator shall notify all Working Interest Owners, the Conservation Board and the Department of Energy and Mines of Manitoba of the Effective Date and each of the Tracts qualified as of the Effective Date, and each Working Interest Owner shall advise each of its Royalty Owners of the Effective Date.

1403. Release of Parties

This agreement shall cease to bind the Parties if the unitization provided for herein has not become effective on or before the first day of June 1989.

ARTICLE XV

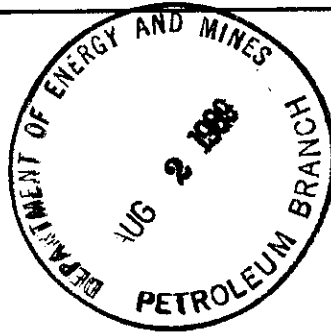
TERM

1501. Effect of Execution and Delivery

Subject to clause 1403 this agreement is binding upon a person who executes and delivers a counterpart thereof to Unit Operator, and that person is bound by this agreement as of the time of such delivery. This agreement inures to the benefit of and is binding upon the heirs, executors, administrators, successors and assigns of the Parties.



The Oil and Natural Gas
Conservation Board



Room 309
Legislative Building
Winnipeg, Manitoba, CANADA
R3C 0V8

(204) 945-3130

JUL 31 1989

ICG Resources Ltd.
2700, 140 - 4th Avenue S.W.
Calgary, Alberta
T2P 3S3

Attention: Mr. D. R. Bates
Engineering Manager

Dear Sir:

Re: North Virden Scallion Unit No. 2

The Oil and Natural Gas Conservation Board is in receipt of your letter dated July 27, 1989 requesting approval of the North Virden Scallion Unit No. 2 Unit Agreement and the attached copies of the working interest and royalty owner consents.

The North Virden Scallion Unit No. 2 Unit Agreement is hereby approved with an effective date (pursuant to Article 1401 of the Unit Agreement) of August 1, 1989.

Yours sincerely,

ORIGINAL SIGNED BY
IAN HAUGH

Ian Haugh
Chairman

LRD/jtb

bc: Wm. McDonald
H. Clare Moster
Petroleum Branch



ICG RESOURCES LTD.

SUBSIDIARY OF INTER-CITY GAS CORPORATION

2700 - 140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1989-06-28

The Oil and Natural Gas Conservation Board
Room 309, Legislature Building
Winnipeg, Manitoba
R3C 0V8

Dear Sirs:

Re: Approval of the Unit Agreement
North Virden Scallion Unit No. 2

ICG Resources Ltd. as operator of the proposed North Virden Scallion Unit No. 2 hereby requests approval of the unit agreement by The Oil and Natural Gas Conservation Board such that the unit can become effective. ICG requests early approval such that this unit can become effective July 1, 1989 to allow waterflood secondary recovery operations to commence.

Attached are copies of the signature pages of the unit agreement approved by 100 percent of the working interest owners and by the Minister of Energy and Mines on behalf of the Crown as a royalty owner.

Yours very truly,

ICG RESOURCES LTD.

D. R. Bates, P. Eng.
Engineering Manager

DRB/ma

Enc.

cc: L. R. Dubreuil, Director
Petroleum Division
Manitoba Energy and Mines





ICG RESOURCES LTD.

SUBSIDIARY OF INTER-CITY GAS CORPORATION

2700 - 140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1989-07-28

The Parties
North Virden Scallion Unit No. 2
(Address list attached)

Gentlemen:

Re: Unit Agreement
Clause 1403

Please be advised that the executed Unit Agreement inadvertently included a date of June 01, 1989 in the captioned Release of Parties Clause.

ICG Resources Ltd. hereby requests your approval to change the date of release to November -1, 1989. If you are in agreement with this amendment, please so indicate by signing and returning one copy of this letter for our files.

The required amendment is not expected to delay regulatory approval and is brought forward at this time for administrative purposes.

Yours truly,

ICG RESOURCES LTD.

M. Karamanlis

per R. B. Bailey, P. Eng.
Gas Production Engineering Co-ordinator

RBB/ma
Enc.

Approval _____

Party _____

Date _____

1402. Notice of Effective Date

As soon as possible after the Effective Date Unit Operator shall notify all Working Interest Owners, the Conservation Board and the Department of Energy and Mines of Manitoba of the Effective Date and each of the Tracts qualified as of the Effective Date, and each Working Interest Owner shall advise each of its Royalty Owners of the Effective Date.

1403. Release of Parties

This agreement shall cease to bind the Parties if the unitization provided for herein has not become effective on or before the first day of November 1989.

ARTICLE XV

TERM

1501. Effect of Execution and Delivery

Subject to clause 1403 this agreement is binding upon a person who executes and delivers a counterpart thereof to Unit Operator, and that person is bound by this agreement as of the time of such delivery. This agreement inures to the benefit of and is binding upon the heirs, executors, administrators, successors and assigns of the Parties.

ALL WORKING INTEREST OWNERS
North Virden Scallion Unit #2

ICG Resources Ltd.
2700, 140 - 4 Avenue S.W.
Calgary, Alberta
T2P 3S3

Attention: Mr. Doug Bates

Canpar Holdings Ltd.
Dome Petroleum Limited

c/o Amoco Canada Petroleum
Company Ltd.
240 - 4 Avenue S.W.
Floor A15
Calgary, Alberta
T2P 4H4

Attention: Mr. Colin McFee

Brosco Fund Limited
Pioneer Energy Resources Limited
Manitoba Oil and Gas Corporation

c/o Tundra Oil and Gas
1313 - One Lombard Place
Winnipeg, Manitoba
R3B 0X3

Attention: Mr. Bob Puchniak

Mountcliff Resources Ltd.
4856 North Haven Drive N.W.
Calgary, Alberta
T2K 2J7

Attention: Mr. Cliff Berg

60494 Manitoba Ltd.
Box 999
Virden, Manitoba
R0M 2C0

89-04-17



pc: Bob Dubreuil

C. Halwachs, Jun 28/89

ON MATTERS OF STATE

Order in Council

No. 730

To The Honourable the Lieutenant Governor in Council
Energy and Mines

The undersigned, the Minister of
submits for approval of Council a report setting forth that:

WHEREAS Section 75 of "The Mines Act", being Chapter M160 of the Revised Statutes of Manitoba, 1987, provides as follows:

"75(1) Where the Crown is a working interest owner or royalty owner of a tract of land, the Lieutenant Governor in Council may authorize the minister, on behalf of the Crown, to enter into a unitization agreement for the unit operation of the pool or field, or part thereof, within which the tract is situated.

75(2) Notwithstanding any other provision of this Act or of an agreement or other disposition made under this Act, the Lieutenant Governor in Council may authorize the minister, on behalf of the Crown, to enter into an agreement for the calculation of the royalty payable to the Crown on the oil and gas produced from a unit area that includes a tract that is subject to the payment of a royalty to the Crown."

AND WHEREAS Dome Petroleum Limited and Canpar Holdings Ltd. are the holders of Crown Oil and Natural Gas Lease No. L264 covering Legal Subdivisions 12, 13 and 14 of Section 29, Township 11, Range 26, WPM;

AND WHEREAS ICG Resources Ltd. by virtue of an operating agreement has acquired an interest in the said Crown Oil and Natural Gas Lease.

AND WHEREAS Tundra Oil and Gas Ltd. and 60494 Manitoba Ltd. are the holders of Crown Oil and Gas Lease No. L842-500 covering Legal Subdivisions 6 and 11 of Section 29, Township 11, Range 26, WPM;

AND WHEREAS ICG Resources Ltd. and others are proposing to unitize operations in part of the Virden Lodgepole A Pool to be known as North Virden Scallion Unit No. 2, which includes the tracts described as Legal Subdivisions 6, 11, 12, 13 and 14 of Section 29, in Township 11, Range 26, WPM;

AND WHEREAS ICG Resources Ltd. has requested agreement for the proposed unitization from the Crown as the royalty owner of the subject tracts;

AND WHEREAS in order to accomplish the more efficient and economical development and production of the oil and gas resources of the Virden Lodgepole A Pool, it is deemed advisable for the Crown to enter into the said unitization agreement;

THEREFORE, he, the Minister, recommends:

THAT the Minister of Energy and Mines be authorized to enter into the Unit Agreement for North Virden Scallion Unit No. 2 in the form hereto annexed and marked as Schedule "A", or any form to the like effect.

Initiating Department/Agency	
Department/Agency	Authorized Officer
ENERGY & MINES	<i>[Signature]</i>
Approved By	
C.S.C.	Finance
Approved as to form by:	
Name	<i>G.R. CARNEGIE</i>
Civil Litigation Branch:	Initials
or Legislative Counsel:	<i>[Initials]</i>

Signature *[Signature]*

IN THE EXECUTIVE COUNCIL CHAMBER, WINNIPEG

Upon consideration of the foregoing report and recommendation Council advises that it be done as recommended.

21 June 1989
Date

[Signature]
President or Presiding Member

AT GOVERNMENT HOUSE IN THE CITY OF WINNIPEG

Approved and Ordered this 21st day of June A.D. 1989

[Signature]
Lieutenant Governor

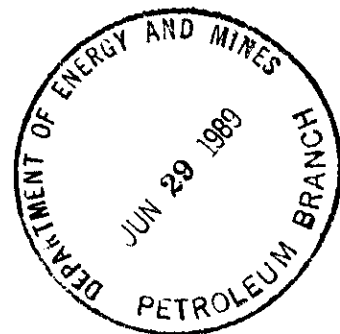
This is the Schedule " 11 " referred to in
Order in Council No. 730/89

Donald Litch
Clerk of the Executive Council

SCHEDULE A

NORTH VIRDEN SCALLION UNIT NO. 2

UNIT AGREEMENT



Manitoba



Energy and Mines

Petroleum

555 — 330 Graham Avenue
Winnipeg, Manitoba, CANADA
R3C 4E3

(204) 945-6577

June 27, 1989

ICG Resources Ltd.
2700 - 140 - Fourth Ave S.W.
Calgary, Alberta
T2P 3S3

Attention: Mr. D. R. Bates, P. Eng.
Engineering Manager

Dear Doug:

Re: North Virden Scallion Unit No. 2

Enclosed for your records is a copy of the execution page of the "Unit Agreement - North Virden Scallion Unit No. 2" signed by the Minister of Energy and Mines on behalf of the Crown as a royalty owner.

Please note that execution of a unit agreement by the Minister does not constitute approval of that unit agreement. Such approval may only be done by The Oil and Natural Gas Conservation Board.

An application for approval by the Board of a unit agreement should be made to:

The Oil and Natural Gas Conservation Board
Room 309, Legislative Building
Winnipeg, Manitoba
R3C 0V8

and should include photocopies of execution pages representing one hundred percent of the working interests and royalty interests. Note that under Article 1401 of the Unit Agreement, the effective date of the agreement is the first day of the month following Board approval. If you are trying for July 1, 1989 effective date, I suggest you phone fax all of the required execution pages together with a brief cover letter requesting Board approval to me. Upon receipt of this, I will attempt to obtain Board approval. Our phone fax number is (204) - 945-0586. Please note that our office is closed June 30, 1989 for Canada Day.

Yours sincerely,

L. R. Dubreuil
Director

LRD:jtb

1504. Notice to Royalty Owners

The Working Interest Owners shall give notice in accordance with their Leases to their respective Royalty Owners of the termination of this agreement within thirty (30) calendar days thereafter.

IN WITNESS WHEREOF the Parties have executed this agreement each on the date shown below.

~~XXXXXXXXXXXXXXXXXXXX~~

Minister of Energy & Mines

DATE:

June 26/89

[Signature]

[Signature]

WITNESS

Execution Page forming part of the Unit Agreement - North Virden
Scallion Unit No. 2.



Memorandum

Date June 9, 1989

To Dr. Ian Haugh
Deputy Minister
Energy & Mines

From L. R. Dubreuil
Director of Petroleum
Energy & Mines

Subject North Virden Scallion Unit No. 2

Telephone

ICG Resources Ltd., is proposing to unitize an area consisting of 14 tracts in the Virden Field. The proposed North Virden Scallion Unit No. 2 includes five tracts (Lsd's) for which the Crown is the royalty interest owner (i.e.: mineral rights owner). Section 74 of The Mines Act states that before a Unitization Agreement can be put into effect, it must be approved by The Oil and Natural Gas Conservation Board. It further states that the Board shall not approve an agreement unless the royalty owners have agreed to the Unit operation. Therefore, ICG has submitted copies of the proposed Unit Agreement for the North Virden Scallion Unit No. 2 for execution by the Minister on behalf of the Crown as a royalty owner.

Section 75 of The Mines Act states that the Minister, with authorization of the Lieutenant Governor in Council, may enter such agreements on behalf of the Crown as a royalty owner.

Recommendation:

It is recommended that the Minister:

1. Request authorization from Cabinet to permit him to enter into the proposed North Virden Scallion Unit No. 2 Unit Agreement on behalf of the Crown with respect to Lsd's 6, 11, 12, 13 and 14 of Section 29, Township 11, Range 26, West of the Principal Meridian. The attached draft Order-in-Council has only minor revisions involving changes in Crown lessees from the previously approved OIC on this matter.
2. Execute the attached Unit Agreement for the North Virden Scallion Unit No. 2 as a royalty owner. Note: one full copy and a duplicate signature page (to be returned to ICG) are attached.

Discussion:

The five tracts in the proposed North Virden Scallion Unit No. 2 which contain Crown owned mineral rights are:

Lsd's 12, 13, 14 of Section 29-11-26 (WPM) held under Crown Oil and Natural Gas Lease No. L264 covering rights to the base of the Lodgepole Formation.

Lsd's 6 and 11 of Section 29-11-26 held under Crown Oil and Natural Gas Lease L842-500.

Currently all five wells on the tracts produce from the Virden Lodgepole A Pool at a combined rate of approximately 210 m³/month and a water oil ratio of about 0.70 m³/m³.

Under continued primary production it is anticipated that some or all of the wells would soon become uneconomic. With proposed pressure maintenance operations in the Unit area, it is likely that the productivity of the wells will be enhanced or at least maintained in the future. On this basis, inclusion of these tracts in the Unit is recommended.

By inclusion of these tracts in the Unit, the Crown will receive royalties based on allocated Unit production. Petroleum Branch staff have reviewed all the Tract Participation Factors proposed for tracts in the Unit and recommend their acceptance.

Clause 1301 of the proposed Unit Agreement specifically states that the execution of the agreement by the Minister is strictly as a royalty interest owner. Therefore, by such execution, the Minister is not approving the Unit Agreement. Such approval may only be done by the Board under Section 74 of The Mines Act.



L. R. Dubreuil
Director

LRD/jtb

Attachment

cc: H. Clare Moster

RECOMMENDED FOR APPROVAL:



H. CLARE MOSTER
ASSISTANT DEPUTY MINISTER



Memorandum

Date June 8, 1989

To H. Clare Moster
Assistant Deputy Minister
Energy

From L. R. Dubreuil
Director of Petroleum
Energy & Mines

Subject North Virden Scallion Unit No. 2

Telephone

ICG Resources Ltd., is proposing to unitize an area consisting of 14 tracts in the Virden Field. The proposed North Virden Scallion Unit No. 2 includes five tracts (Lsd's) for which the Crown is the royalty interest owner (i.e.: mineral rights owner). Section 74 of The Mines Act states that before a Unitization Agreement can be put into effect, it must be approved by The Oil and Natural Gas Conservation Board. It further states that the Board shall not approve an agreement unless the royalty owners have agreed to the Unit operation. Therefore, ICG has submitted copies of the proposed Unit Agreement for the North Virden Scallion Unit No. 2 for execution by the Minister on behalf of the Crown as a royalty owner.

Section 75 of The Mines Act states that the Minister, with authorization of the Lieutenant Governor in Council, may enter such agreements on behalf of the Crown as a royalty owner.

Recommendation:

It is recommended that the Minister:

1. Request authorization from Cabinet to permit him to enter into the proposed North Virden Scallion Unit No. 2 Unit Agreement on behalf of the Crown with respect to Lsd's 6, 11, 12, 13 and 14 of Section 29, Township 11, Range 26, West of the Principal Meridian. The attached draft Order-in-Council has only minor revisions involving changes in Crown lessees from the previously approved OIC on this matter.
2. Execute the attached Unit Agreement for the North Virden Scallion Unit No. 2 as a royalty owner. Note: one full copy and a duplicate signature page (to be returned to ICG) are attached.

Discussion:

The five tracts in the proposed North Virden Scallion Unit No. 2 which contain Crown owned mineral rights are:

Lsd's 12, 13, 14 of Section 29-11-26 (WPM) held under Crown Oil and Natural Gas Lease No. L264 covering rights to the base of the Lodgepole Formation.

Lsd's 6 and 11 of Section 29-11-26 held under Crown Oil and Natural Gas Lease L842-500.

First { Fold

Currently all five wells on the tracts produce from the Virden Lodgepole A Pool at a combined rate of approximately 210 m³/month and a water oil ratio of about 0.70 m³/m³.

Under continued primary production it is anticipated that some or all of the wells would soon become uneconomic. With proposed pressure maintenance operations in the Unit area, it is likely that the productivity of the wells will be enhanced or at least maintained in the future. On this basis, inclusion of these tracts in the Unit is recommended.

By inclusion of these tracts in the Unit, the Crown will receive royalties based on allocated Unit production. Petroleum Branch staff have reviewed all the Tract Participation Factors proposed for tracts in the Unit and recommend their acceptance.

Clause 1301 of the proposed Unit Agreement specifically states that the execution of the agreement by the Minister is strictly as a royalty interest owner. Therefore, by such execution, the Minister is not approving the Unit Agreement. Such approval may only be done by the Board under Section 74 of The Mines Act.



L. R. Dubreuil
Director

LRD/jtb

Attachment

TRANSMITTAL SLIP
AUTHORITY SEEKING
DOCUMENTS

Manitoba
Energy and Mines



- | | |
|--|--|
| <input type="checkbox"/> Treasury Board Submission | <input type="checkbox"/> Planning & Priorities Committee of Cabinet Submission |
| <input checked="" type="checkbox"/> Cabinet Submission | <input type="checkbox"/> Pre-Clearance |
| <input checked="" type="checkbox"/> Order-in-Council | <input type="checkbox"/> Out-of-Province Travel Request |
| <input type="checkbox"/> Staffing Request | <input type="checkbox"/> Other _____ |

SUBJECT: North Virden Scallion Unit No. 2 Crown consent to Unit Agreement.

CONTACT: Bob Dubreuil

DIVISION: Energy (Petroleum)

TELEPHONE NO: 945-6573

DATE PREPARED: June 9, 1989

PROCESSING PRIORITY: Normal ____ Urgent X DATE APPROVAL REQUIRED BY: June 23, 1989

IF URGENT, EXPLAIN: It is important that approval of The Unit and the implementation of enhanced oil recovery operations in the pool occur as soon as possible. Crown consent to the Unit Agreement is the first step in the approval process.

APPROVALS:	SIGNATURE	DATE
Senior Branch/Section Manager	<u><i>Bob Dubreuil</i></u>	<u>June 9/89</u>
Senior Division Manager	_____	_____
Executive Director, Communications & Community Relations	_____	_____
Manager, Financial Services	_____	_____
Director, Personnel & Operations	_____	_____
Executive Director, Administrative Services	_____	_____

DEPARTMENT OF ENERGY AND MINES

CABINET SUBMISSION

SUBJECT:

An agreement to unitize oil development operations in the Virden oil field.

BACKGROUND:

The Province of Manitoba is the owner of the mines and minerals in Legal Subdivisions 6, 11, 12, 13, and 14 of Township 11, Range 26, WPM located in the Virden oil field. Dome Petroleum Limited and Canpar Holdings Ltd. are the holders of the Crown oil and natural gas lease to Legal Subdivisions 12, 13 and 14 of Section 29, Township 11, Range 26, WPM and Tundra Oil and Gas Ltd. and 60494 Manitoba Ltd. are the holders of the Crown oil and natural gas lease to Legal Subdivisions 6 and 11 of Section 29, Township 11, Range 26, WPM. Five wells have been completed in the Virden Lodgepole A Pool on these lands, three by ICG Resources Ltd. and two by Tundra Oil and Gas Ltd. ICG Resources Ltd. and others, are planning to initiate waterflood operations in that area of the Pool, but before proceeding, they must obtain the agreement of the mineral rights owners affected. As ICG Resources Ltd. and others, wish to include the Crown wells in the proposed North Virden Scallion Unit No. 2, they have requested the consent of the Minister of Energy and Mines on behalf of the Crown as mineral rights owner.

DISCUSSION:

Inclusion of the Crown wells in the proposed Unit will result in a portion of the total crude oil and natural gas produced from all wells in the Unit being allocated to the Crown wells, and the Crown will receive royalties on the allocated production.

The Mines Act specifically provides for the Minister to enter into unitization agreements on behalf of the Crown with the approval of the Lieutenant Governor in Council.

FINANCIAL IMPLICATIONS:

The proposed unitization will not affect operating expenditures and may result in additional future oil royalty revenue to the Crown depending on the success of the waterflood project.

COMMUNICATION:

Because of the routine nature of the procedure for Crown consent as a mineral owner to unitization, no communication is required.

RECOMMENDATION:

It is recommended that the Minister of Energy and Mines be authorized to enter into the Unit Agreement for North Virden Scallion Unit No. 2 on behalf of the Crown.

Date Typed: June 8, 1989

Harold Neufeld
Minister of Energy and Mines



MANITOBA

ON MATTERS OF STATE

No.

To The Honourable the Lieutenant Governor in Council

The undersigned, the Minister of Energy and Mines
submits for approval of Council a report setting forth that:

WHEREAS Section 75 of "The Mines Act", being Chapter M160 of the Revised Statutes of Manitoba, 1987, provides as follows:

"75(1) Where the Crown is a working interest owner or royalty owner of a tract of land, the Lieutenant Governor in Council may authorize the minister, on behalf of the Crown, to enter into a unitization agreement for the unit operation of the pool or field, or part thereof, within which the tract is situated.

75(2) Notwithstanding any other provision of this Act or of an agreement or other disposition made under this Act, the Lieutenant Governor in Council may authorize the minister, on behalf of the Crown, to enter into an agreement for the calculation of the royalty payable to the Crown on the oil and gas produced from a unit area that includes a tract that is subject to the payment of a royalty to the Crown."

AND WHEREAS Dome Petroleum Limited and Canpar Holdings Ltd. are the holders of Crown Oil and Natural Gas Lease No. L264 covering Legal Subdivisions 12, 13 and 14 of Section 29, Township 11, Range 26, WPM;

AND WHEREAS Tundra Oil and Gas Ltd. and 60494 Manitoba Ltd. are the holders of Crown Oil and Gas Lease No. L842-500 covering Legal Subdivisions 6 and 11 of Section 29, Township 11, Range 26, WPM;

AND WHEREAS ICG Resources Ltd. by virtue of an operating agreement has acquired an interest in the said Crown Oil and Natural Gas Lease.

AND WHEREAS ICG Resources Ltd. and others are proposing to unitize operations in part of the Virden Lodgepole A Pool to be known as North Virden Scallion Unit No. 2, which includes the tracts described as Legal Subdivisions 6, 11, 12, 13 and 14 of Section 29, in Township 11, Range 26, WPM;

AND WHEREAS ICG Resources Ltd. has requested agreement for the proposed unitization from the Crown as the royalty owner of the subject tracts;

AND WHEREAS in order to accomplish the more efficient and economical development and production of the oil and gas resources of the Virden Lodgepole A Pool, it is deemed advisable for the Crown to enter into the said unitization agreement;

THEREFORE, he, the Minister, recommends:

THAT the Minister of Energy and Mines be authorized to enter into the Unit Agreement for North Virden Scallion Unit No. 2 in the form hereto annexed and marked as Schedule "A", or any form to the like effect.

Initiating Department/Agency	
Department/Agency	Authorized Officer
Approved By C.S.C. Finance	
Approved as to form by:	
Name	<i>G. R. CARNEGIE</i>
Civil Litigation Branch: or Legislative Counsel:	Initials <i>GR</i>

Signature

IN THE EXECUTIVE COUNCIL CHAMBER, WINNIPEG

Upon consideration of the foregoing report and recommendation Council advises that it be done as recommended.

.....
Date

.....
President or Presiding Member

AT GOVERNMENT HOUSE IN THE CITY OF WINNIPEG

Approved and Ordered this day of..... A.D.

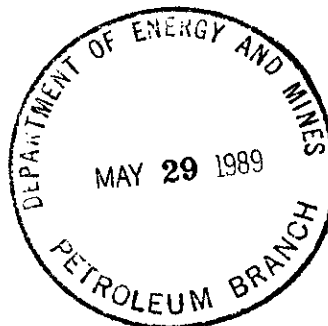
.....
Lieutenant Governor



ICG RESOURCES LTD.

SUBSIDIARY OF INTER-CITY GAS CORPORATION

2700 - 140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000



1989 05 24

Manitoba Department of Energy and Mines
Petroleum Section
555, 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E2

Attention: Mr. R.L. Dubreuil
Director of Petroleum

Gentlemen:

Re: Unit and Unit Operating Agreements
N. Virden Scallion Unit #2

Attached for your information and approval are copies of the Unit Agreement and Unit Operating Agreement for the N.Virden Scallion Unit #2 as approved under Board Order No. PM59. The agreements as presented have been verbally approved by all Unit Owners and we are presently awaiting execution pages. Once received from all parties we will forward copies to your office. ICG would request that you proceed and expedite if possible, your internal approval process. ICG would hope to commence construction and flooding operations between July 15 to August 01, 1989.

If you have any concerns, please contact the undersigned at (403) 231-9057.

Yours truly,

ICG RESOURCES LTD.

D.R. Bates
Engineering Manager

BH/hjm
Encls.



Energy and Mines

Petroleum

555 — 330 Graham Avenue
Winnipeg, Manitoba, CANADA
R3C 4E3

(204) 945-6577

February 20, 1989

ICG Resources Ltd
2700 - 140 - 4th Ave S.W
Calgary, Alberta
T2P 3S3

Attention: Mr. D. R. Bates
Engineering Manager

RE: Draft Unitization and Unit
Operating Agreement
North Virden Scallion Unit No. 2

Your letter of February 9, 1989 and attached drafts of the subject agreements are acknowledged.

Upon review of the draft documents, we have the following suggestions and comments:

Unit Agreement

1. Clause 205 - Change "two copies each" to "one copy each" in the fourth line.

2. Clause 502b - Qualification of tracts where not all Royalty Interest Owners have become parties to the agreement. This provision appears to be in conflict with The Mines Act. Under section 74 of the Mines Act, the Board cannot approve a unitization agreement unless all royalty owners involved have become parties to the agreement. Without Board approval, the unit cannot become effective (clause 1401b). In this situation, the Board can make a Unitization Order under Sections 76 and 77 of The Mines Act.

As clause 1311 subjugates the agreement to The Mines Act, the wording of clause 502b may not cause a problem, however it is a little confusing.

3. Exhibit A - The exhibit should be modified to reflect current ownership changes (MOGC, Brosco, Pioneer etc). I understand Bob Puchniak of Tundra Oil and Gas Ltd has already contacted you in this regard.

Unit Operating Agreement

We have no comments with regard to the Unit Operating Agreement.

Further to clause 1403 of the Unit Agreement, we note that the time schedule for a May 1/89 effective date is fairly tight. Execution by the Crown as a Royalty Owner requires approval of the Lieutenant Governor in Council. This process normally takes 2-3 weeks from receipt of a final signature copy of the agreement. We will, however, do everything possible to expedite this process.

Yours sincerely,

A handwritten signature in cursive script, appearing to read "L. R. Dubreuil".

L. R. Dubreuil
Director of Petroleum

LRD:jtb



ICG RESOURCES LTD.

SUBSIDIARY OF INTER-CITY GAS CORPORATION

2700 - 140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1989 02 09

ALL WORKING INTEREST OWNERS
PROPOSED NORTH VIRDEN SCALLION UNIT NO. 2
(see attached list)

Gentlemen:

Re: Draft Unitization Agreement

Attached please find an update draft revision of both the Unit Agreement and Unit Operating Agreement for the proposed North Virden Scallion Unit No. 2. We feel at this time that all past concerns and/or comments have been addressed and that these drafts will be in final execution form. We would ask that you provide us with your approval or any other concerns and/or comments. Please pass these to either Brian Hayward (403) 231-9058 or the undersigned at (403) 231-9057.

As a further update, the objection to our waterflood by Ranchmen's Resources Ltd., has been resolved and the Manitoba Oil and Natural Gas Conservation Board has approved the application.

It is also anticipated that our Titles Opinion will be finalized within three weeks. Current outstanding items are the discharge of certain caveats.

.../2



ALL WORKING INTEREST OWNERS
PROPOSED NORTH VIRDEN SCALLION UNIT NO. 2
Page 2
1989 02 09

We again would stress full co-operation in a very expeditious manner so that this Unit can be made operational as soon as possible.

Yours truly,

ICG RESOURCES LTD.



D.R. Bates
Engineering Manager

/hjm

Encls

cc: Manitoba Energy and Mines
Attention: C. Moster
MacLeod Dixon
Attention: Kieran Mulroy

ALL WORKING INTEREST OWNERS

Proposed North Virden Scallion Unit #2

ICG Resources Ltd.
2700, 140 - 4 Avenue S.W.
Calgary, Alberta
T2P 3S3

Attention: Mr. Doug Bates

Canpar Holdings Ltd.
Dome Petroleum Limited

c/o Amoco Canada Petroleum
Company Ltd.
240 - 4 Avenue S.W.
Floor A15
Calgary, Alberta
T2P 4H4

Attention: Mr. Glen Kinney

Brosco Fund Limited
Pioneer Energy Resources Limited
Manitoba Oil and Gas Corporation

c/o Tundra Oil and Gas
1313 - One Lombard Place
Winnipeg, Manitoba
R3B 0X3

Attention: Mr. Bob Puchniak

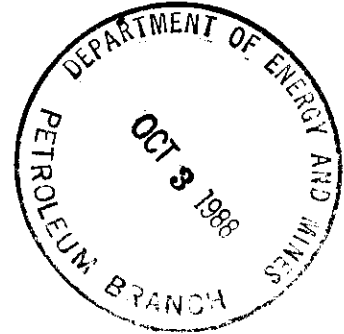
Mountcliff Resources Ltd.
4856 North Haven Drive N.W.
Calgary, Alberta
T2K 2J7

Attention: Mr. Cliff Berg



ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P3S3
(403) 231-9000



1988-09-29

Manitoba Energy and Mines
Petroleum Branch
555 - 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E3

Attention: Mr. C. Moster
Director, Petroleum

Dear Sir:

Re: The Proposed North Virden Scallion Unit No. 2
Unit Agreement and Unit Operating Agreement

Attached for your review and comments are copies of drafts of the Unit Agreement and Unit Operating Agreements for the proposed North Virden Scallion Unit No. 2.

It is our understanding that these documents should be forwarded to the Petroleum Branch; if this is incorrect, could you please forward to the proper group.

Any comments can be directed to Mr. R. P. Masniuk at (403) 231-9012 or the undersigned at (403) 231-9057.

Yours very truly,

ICG RESOURCES LTD.

Douglas R. Bates, P. Eng.
Engineering Manager

DRB/ma
Enc.

Manitoba



Action / Route Slip

Date:

Oct 2/88

To:

Marc

From:

Bot

Telephone:

☒ Take Action

☐ Per Your Request

☐ Circulate, Initial
and Return

☐ For Approval and
Signature

☐ Make _____ Copies

☐ May We Discuss

☐ For Your Information

☐ Return With Comments
or Revisions

☐ Draft Reply for
Signature

☐ Please File

Comments:

Please review these tract factors

- to ensure calculations are properly done

- to ensure reserve numbers are reasonable

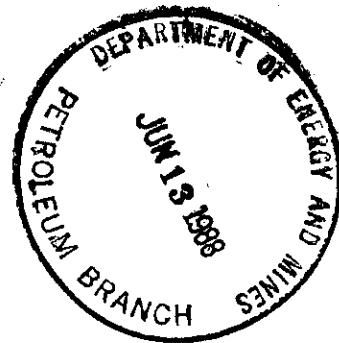
see EOR incentive binder.



ICG RESOURCES LTD

DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000



1988 06 09

Manitoba Energy and Mines
555 - 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E3

Attention: Mr. L.R. Dubreuil
Chief Petroleum Engineer

Gentlemen:

Re: Proposed North Virden Scallion Unit No. 2

This letter is in reply to your letter dated April 15, 1988 and our telephone conversation of May 24, 1988 regarding the status of the above proposed Unit.

An Operating Committee Meeting was held on May 25, 1988. One of the purposes of this meeting was to determine the level of support for this proposed Unit. At the meeting all parties present confirmed that they were very aware of the benefits of a pressure maintenance scheme in this area. In fact, all parties reviewed and agreed to attempt to comply with a Unitization/Implementation Schedule which is attached. The proposed schedule will see commencement of water injection by mid-October.

ICG Resources Ltd. as major Operator in this Area, will do everything possible to maintain the schedule. Our next meeting has been set for June 16, 1988 and I will keep you posted on any new developments.

Yours truly,

ICG RESOURCES LTD.

P. Krenkel,
Vice-President, Operations

PK/hjm
Encl.

Re: Proposed North Virden Scallion Unit No. 2

Unitization/Implementation Schedule

DATE

- | | |
|---------------|--|
| May 25 | - Operating Committee Meeting |
| Mid June | - follow-up Operating Committee Meeting to attempt unitization
- agree on waterflood scheme |
| End July | - have agreement from Owners for unitization formula
- apply for waterflood project
- identify long delivery equipment |
| End August | - receive waterflood project approval
- issue project AFE |
| Mid September | - start construction
- obtain Royalty Owners and Government Approval |
| Oct 1, 1988 | - Unit effective date |
| Mid October | - start water injection |



Energy and Mines

Petroleum

555 — 330 Graham Avenue
Winnipeg, Manitoba, CANADA
R3C 4E3

(204) 945-6577

April 15, 1988

ICG Resources Limited
2700, 140 — 4th Avenue S.W.
CALGARY, Alberta T2P 3S3

Attention: Mr. P. Krenkel
Vice-President, Operating

Re: North Virden Scallion Unit No. 2

Dear Peter:

We are concerned that continued delays in formation of the subject Unit may jeopardize all or a portion of the anticipated incremental reserves which would be attributable to pressure maintenance operations. Review of current production indicates a number of wells may be approaching their economic limit under primary production. Further delays will result in continued pressure depletion and could result in some wells becoming both economically and technically unsuitable for inclusion in the project.

You are therefore requested to submit, prior to May 23, 1988, a summary of the current status of unit negotiations and planned activities to result in a Unit being formed not later than January 1, 1989.

You are also requested to submit the following:

1. monthly reports of progress towards formation of a Unit
2. the results of a reservoir pressure survey (including build-up pressures on a minimum of four wells in the area) prior to September 1, 1988

If it becomes apparent that voluntary unitization cannot be achieved, we suggest that you request, at the earliest possible date, The Oil and Natural Gas Conservation Board consider ordering unitization.

Yours sincerely,

L.R. Dubreuil
Chief Petroleum Engineer
Petroleum Division

LRD:dah

cc: Tundra Oil and Gas

Cherty Zone
 $\frac{75}{100} \times \frac{100}{100} + \frac{25}{100} \times \frac{100}{100} = 1.2$
 h - metrics

NORTH VIRIDEN SCALLION UNIT NO. 2 TRACT FACTORS

Table 2

Tract	Reserve Factor	Production Factor	UNIT TRACT FACTOR	
			Interim	Final
✓ 06-29-11-26	.63 0.048137 ^{.067}	0.069690	0.069690	0.057836
✓ 11-29-11-26	.80 0.102725 ^{.085}	0.144874	0.144874	0.121692
✓ 12-29-11-26	.57 0.069029 ^{.061}	0.039987	0.039987	0.055960
✓ 13-29-11-26	.61 0.051795 ^{.067}	0.044970	0.044970	0.048724
✓ 14-29-11-26	.61 0.076827 ^{.065}	0.080102	0.080102	0.078301
09-30-11-26	.71 0.089439 ^{.061}	0.086107	0.086107	0.087939
10A-30-11-26	.63 0.075671 ^{.061}	0.118812	0.118812	0.095084
A15-30-11-26	.62 0.018099 ^{.024}	0.022868	0.022868	0.020245
16-30-11-26	.61 0.096756 ^{.065}	0.097413	0.097413	0.097052
01-31-11-26	.67 0.074516 ^{.072}	0.120154	0.120154	0.095053
03-32-11-26	.60 0.078656 ^{.064}	0.050016	0.050016	0.065768
04-32-11-26	.60 0.073361 ^{.071}	0.051038	0.051038	0.063316
05-32-11-26	.77 0.069221 ^{.066}	0.051101	0.051101	0.061067
06-32-11-26	.78 0.075768 ^{.068}	0.022868	0.022868	0.051963
	Row: 0.349 2.363	Row: .380 .361		

Note: Reserve Factor - X-plot Top Zone
 Productivity - Production from 91 actual producing days prior to July 1, 1988
 Interim Unit - Production Factor
 Final Unit - 55% Reserve Factor/45% Production Factor

PROPOSED NORTH VIRDEN SCALLION UNIT No. 2

- 1- Development in late 1982 early 1983
 - good initial rates
 - rapid decline with little evidence of active water drive
 - Current rate about $19 \text{ m}^3/\text{d}$ from 13 wells
 - many wells near economic limit
 - current cum P = $36,929.5 \text{ m}^3$ or 4.5% OOIP
- 2- A 1983 study by ICG concluded that water-flooding could result in an incremental 17.6% recovery of OOIP or $146,000 \text{ m}^3$ (7% pim 24.6% WF)
- 3- Unit negotiations were initiated but bogged down when agreement could not be obtained on the tract factors
- 4- Our last correspondence from ICG (July 1987) indicates Dome & Canpar were holding it up. I informed ICG of the possibility asking the Board to order unitization as they appeared to have 75% of the WIO signed up. No response has been received
- 5- ~~Options~~
 - a) ~~To write ICG, with copies to other WIO that Board is considering a show cause hearing as to why area shouldn't be water-flooded.~~
 - b) ~~To write ICG & WIO's & R100 that the Board is considering Ordering unitization~~

5. Options - To write 106 with cc's to other WIO's (RIO's?) that Board is considering a show cause hearing and that it may order unitization and waterflooding.

Working Interest Owners

Canpar

Dome

ICG

MOGC

Mountcliff

Tundra

Royalty Interest Owners (?)

CROWN 5x40 = 200 acres

CAN PERM

J D Nichol

Chappell

N. Heaman

C M Forester

SE NO. 1

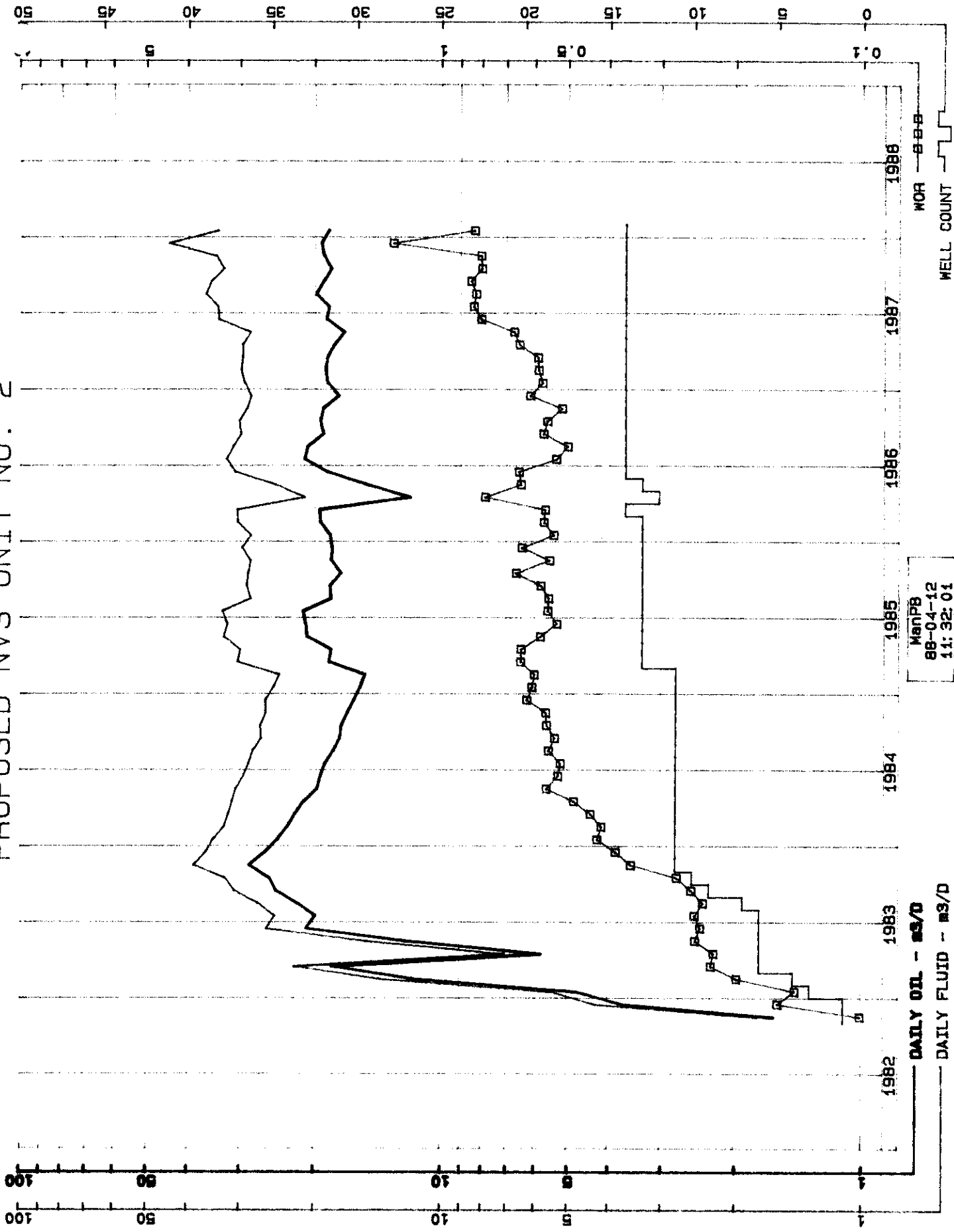
*** S T O R E ***
 VIDEONT
 WELL LIST

NAME
 88-04-12
 11:52:10

WELL NAME	FLD#	POOL	BLOCK	ACCT	LD#1	LD#2	LD#3	ON PRODCN	ON INJECTN	FIRST	LAST	CUM.OIL	CUM.WAT
	CODE	CODE	CODE	CODE	CODE	CODE	CODE	DATE	DATE	MONTH	MONTH	m3	m3
(0)13-21-011-26 WIN(0)	5	59	1	0	95	0	2994	1983-07-27	NOT ON YET	1983-07	1988-01	2306.6	1064.7
(2)15-26-011-26 WIN(0)	5	59	1	0	8	0	2460	1970-12-31	NOT ON YET	1979-01	1988-01	9167.6	16839.5
(2)04-28-011-26 WIN(0)	5	59	1	0	95	0	3097	1983-08-28	NOT ON YET	1983-08	1988-01	2183.6	1867.6
(0)06-29-011-26 WIN(0)	5	59	1	0	8	0	3508	1984-03-15	NOT ON YET	1985-03	1988-01	1565.6	291.0
(0)11-29-011-26 WIN(0)	5	59	1	0	8	0	3515	1985-03-13	NOT ON YET	1985-03	1988-01	2917.5	789.2
(0)12-29-011-26 WIN(0)	5	59	1	0	95	0	2932	1983-01-03	NOT ON YET	1983-01	1988-01	1712.8	921.4
(0)13-29-011-26 WIN(0)	5	59	1	0	95	0	2889	1982-11-15	NOT ON YET	1982-11	1988-01	2806.6	743.9
(0)14-29-011-26 WIN(0)	1	59	1	0	95	0	2583	1983-02-18	NOT ON YET	1983-03	1988-01	4254.7	3303.7
(0)09-30-011-26 WIN(0)	5	59	1	0	95	0	3107	1983-09-11	NOT ON YET	1983-09	1988-01	3384.6	7605.7
(2)10-30-011-26 WIN(0)	5	59	1	0	95	0	3015	1986-02-17	NOT ON YET	1986-02	1988-01	1747.2	659.9
(2)15-30-011-26 WIN(0)	5	59	1	0	95	0	3160	1987-10-23	NOT ON YET	1987-11	1988-01	886.1	704.0
(0)10-30-011-26 WIN(0)	5	59	1	0	95	0	2951	1983-03-13	NOT ON YET	1983-03	1988-01	3650.6	1418.3
(0)01-31-011-26 WIN(0)	5	59	1	0	95	0	3144	1983-10-13	NOT ON YET	1983-10	1988-01	3839.3	650.6
(0)07-32-011-26 WIN(0)	5	59	1	0	95	0	2952	1983-02-07	NOT ON YET	1983-02	1988-01	1777.9	3624.4
(0)04-32-011-26 WIN(0)	5	59	1	0	95	0	2920	1982-12-22	NOT ON YET	1983-01	1988-01	3197.2	953.5
(0)05-32-011-26 WIN(0)	5	59	1	0	95	0	3063	1983-08-27	NOT ON YET	1983-08	1988-01	2206.7	635.7
(0)01-32-011-26 WIN(0)	5	59	1	0	95	0	3095	1983-09-02	NOT ON YET	1983-09	1988-01	799.1	947.9

36929

PROPOSED NVS UNIT NO. 2



WELL NO. 1 * * * S T C O E * * * MAR 78
 WIRELINE 28-04-78
 MONTH REPORT: 1988-01 09:14:57

WELL NAME	WOLDF	OIL	WATER	OIL	WOP
		m3/M	m3/M	m3/d	
00167-21-011-26 WIM(O)	6001	25.61	28.51	1.01	1.12
00167-21-011-26 WIM(O)	7441	33.81	34.71	1.11	0.90
00164-28-011-26 WIM(O)	7441	25.01	43.71	→ 0.61	0.72
00166-28-011-26 WIM(O)	7441	40.21	11.21	1.31	0.08
00161-29-011-26 WIM(O)	7441	80.11	19.51	0.61	0.01
00167-29-011-26 WIM(O)	7441	24.81	18.01	→ 0.51	0.77
00167-29-011-26 WIM(O)	7441	27.31	20.81	→ 0.61	0.75
00163-29-011-26 WIM(O)	7441	46.61	12.81	1.51	1.75
00169-30-011-26 WIM(O)	7441	52.71	37.31	1.71	0.46
00167-30-011-26 WIM(O)	7441	31.71	75.51	1.31	0.84
00165-30-011-26 WIM(O)	7441	10.51	17.21	→ 0.41	1.17
00162-30-011-26 WIM(O)	7441	52.71	31.01	1.71	0.46
00161-31-011-26 WIM(O)	7441	60.31	17.91	2.01	0.29
00167-32-011-26 WIM(O)	7441	28.01	55.71	→ 0.91	0.42
00166-32-011-26 WIM(O)	7441	31.01	21.01	1.01	0.46
00165-32-011-26 WIM(O)	7441	31.21	14.91	1.01	0.45
00163-32-011-26 WIM(O)	7441	12.41	16.01	→ 1.41	1.45

TOTALS FOR THE MONTH:

1988	447.6	0.98
=====	=====	=====

 457.6
 =====

	<u>DST</u>	<u>Pressures</u>
6-29	1985 03	5450
12-29	1983 01	6039
13-29	1982 11	6039
14-29	1983 02	6412
9-30	1983 09	5909
16-30	1983 03	5995
	1983 03	5958
1-31	1983 10	5438
3-32	1983 01	6292
5-32	1983 07	5515
6-32	1983 08	5974

Well Work during 1987 / 1986

11-29	Dec 86	versene
14-29	Mar 85	nitrified acid
A15-30	Jul 86	acid job
16-30	Mar 85	Toluene squeeze
4-32	Mar 85	Toluene squeeze

DST Pressures
vs Time
FSIP

N.V.S. Unit No. 2

7000

6500

6000

5500

5000

DIETZGEN CORPORATION
MADE IN U.S.A.

NO. 341-TSC DIETZGEN GRAPH PAPER
3 YEARS BY MONTHS





Energy and Mines

Petroleum

555 — 330 Graham Avenue
Winnipeg, Manitoba, CANADA
R3C 4E3

(204) 945-6577

August 6, 1987

ICG Resources Limited
2700, 140 — 4th Avenue S.W.
CALGARY, Alberta
T2P 3S3

Attention: Mr. P. Krenkel
Vice-President, Operations

Re: Proposed North Virden Scallion Unit No. 2

Dear Peter:

Thank you for your letter of July 22, 1987 regarding the subject proposed unit.

With respect to problems encountered in negotiating Unitization formulae, please note that there is a provision in The Mines Act where the Board can, after a public hearing, order Unitization. A limitation on this provision is that the owners of a minimum of 75% of working and royalty interests have consented to a Plan of Unitization. However, on an area basis, it would seem that the 75% minimum working interest ownership concurrence has been achieved.

Please refer to Sections 76 and 77 of The Mines Act. Should you wish to pursue this option or if you require more information, I would be happy to assist. You can contact me at (204) 945-6574.

Yours sincerely,

Original signed by
L. R. Dubreuil

L.R. Dubreuil
Chief Petroleum Engineer
Petroleum Division

LRD:dah



ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1987 07 22

Manitoba Energy and Mines
555 - 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E3

Attention: Mr. L.R. Dubreuil

Gentlemen:

Re: Proposed North Virden Scallion Unit No. 2

ICG Resources Ltd., as major operator in the above area, are internally committed to the implementation of a pressure maintenance scheme, which requires Unitization.

The Technical Committee for the above proposed Unit completed its work in November 1986 but have been unable to obtain agreement on the formula for Unitization from all the working interest owners. At the moment, we are at an impasse with two of the Owners, Dome and Canpar, and are attempting to negotiate a compromise. Our experience to date indicates that negotiating compromises with the existing group of Owners, is a slow process. Although ICG Resources Ltd. are anxious to see this project proceed, we have no method for acceleration of the Unitization process.

A copy of the Technical Committee's Report has been attached for your information. Please call me at (403) 231-9036 if you wish to discuss this matter further.

Yours truly,

ICG RESOURCES LTD.

P. Krenkel,
Vice-President, Operations

PK/hjm
Encl.





JUN 23 1987

June 19, 1987

ICG Resources Limited
2700, 140 - 4th Avenue S.W.
CALGARY, Alberta
T2P 3S3

Attention: Mr. D.R. Bates

Dear Doug:

Re: North Virden Scallion Unit No. 2
ICG Proposed Unitization Formula

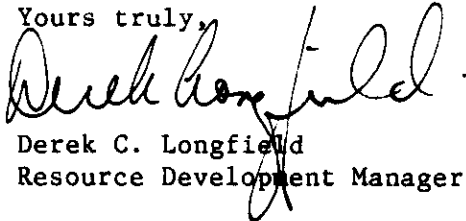
We are in receipt of your letter on the captioned subject of 1987-06-10, and appreciate your efforts to answer the concerns of all parties to the proposed Unit by devising a formula which incorporates both an interpreted reserve value as well as an actual production value. MOGC still believes that the pre-flood stabilized production rate is a critical factor in the value of a tract to the unit. Our concern with the proposed Unit participation, as detailed on your Table 1, is that the productivity utilized in the calculations is from production from July to December 1986, rather than actual current productivity.

As can be seen from the attached Table 1, utilizing the proposed formula and the most recent six month data available (Nov. 1986 to April 1987), the Tundra-MOGC share of the Unit would equate to 20.46%, rather than the 19.68% calculated with the 1986 production. This is clearly a result of the ICG wells continuing to exhibit an aggregate decline rate of over 15 percent per year, whereas the Tundra wells have stabilized at less than a 10 per cent per year decline (see attached Table 2).

In summary, while MOGC is willing to accept the formula which ICG has proposed, we believe the tract participations should be based on actual current productivity levels, that being the most recent six month production period, as opposed to the production from the second half of 1986.

We realize the urgency in arriving at a mutually acceptable formula and participations if we wish to have this Unit operating by fall. Please do not hesitate to call if you have any questions or concerns with this letter or the attached tables.

Yours truly,

A handwritten signature in black ink, appearing to read "Derek C. Longfield". The signature is fluid and cursive, with a large initial "D" and a long horizontal stroke extending to the right.

Derek C. Longfield
Resource Development Manager

DCL/emdh

Attachments:

cc. Tundra Oil & Gas - R.G. Puchniak

TABLE 1
PROPOSED NORTH VINDEN SCALLION UNIT NO. 2
EXCLUDING TCRI

WELL	Current Production November 1986 - April 1987 6 Month Prod'n Volume - m3	July - December 1986 6 Month Prod'n Volume - m3	Production Tract Factor Contribution Nov '86 - Apr '87	Reserve Tract Factor ^a Contribution	ICG Proposed Combined Tract Factor	Revised Combined Tract Factor
12-29-11-26	105.6	109.7	0.0317	0.0690	0.0509	0.0522
13-29-11-26	138.7	147.7	0.0416	0.0518	0.0408	0.0472
14-29-11-26	265.8	134.6	0.0797	0.0768	0.0808	0.0781
9-30-11-26	238.9	286.4	0.0718	0.0894	0.0838	0.0814
10A-30-11-26	450.2	568.0	0.1350	0.0757	0.1140	0.1024
A15-30-11-26	90.7	93.0	0.0272	0.0100	0.0209	0.0221
16-30-11-26	299.0	320.3	0.0896	0.0968	0.0925	0.0936
1-31-11-26	358.9	353.7	0.1076	0.0745	0.0837	0.0894
3-32-11-26	123.5	273.8	0.0370	0.0767	0.0562	0.0599
4-32-11-26	154.0	182.0	0.0462	0.0734	0.0629	0.0611
5-32-11-26	135.7	156.6	0.0407	0.0692	0.0591	0.0564
6-32-11-26	72.4	73.0	0.0217	0.0758	0.0504	0.0515
6-29-11-26	354.9	372.5	0.1064	0.0481	0.0723	0.0743
11-29-11-26	547.0	511.0	0.1640	0.1027	0.1245	0.1303
TOTAL (MOGC & TUNDRA)	901.9	883.5	0.2704	0.1508	0.1968	0.2046
UNIT TOTAL	3335.3	3584.2	1.0	1.0	1.0	1.0

^a From Table 3 Technical Committee Report Revised 87-03-04
Reserve X-Plot Top Zone

TABLE 2
PROPOSED NORTH VIRGEN SCALLION UNIT NO. 2
PRODUCTION COMPARISON *

<u>WELL</u>	<u>OCT-NOV/86</u> <u>PRODUCTION (m3)</u>	<u>MAR-APR/87</u> <u>PRODUCTION (m3)</u>
12-29	36.4	33.6
13-29	48.6	58.0
14-29	30.3	103.7
9-30	94.1	67.2
A10-30	188.6	131.2
15A-30	33.4	30.5
16-30	103.2	97.6
1-31	115.2	125.0
3-32	97.1	30.6
4-32	60.6	45.7
5-32	48.6	45.9
6-32	24.2	24.3
TOTAL	880.4	793.3
<u>TUNDRA WELLS</u>		
6-29	122.2	119.5
11-29 xx	171.1	203.2
TOTAL	293.3	322.7

* In both time periods, all wells produced for the available 61 days.

xx Versene job completed in December, 1986.

cc PK

1313 Richardson Building
One Lombard Place
Winnipeg, Manitoba R3B 0X3
Phone (204) 949-1195

June 29, 1987

IOG Resources Ltd.
2700, 140 - 4th Avenue S.W.
Calgary, Alberta
T2P 3S3

ATTN: D. R. Bates, P. Eng.

Dear Doug:

RE: LSDs 6 and 11, SECTION 29, TOWNSHIP 11, RANGE 26 WPM
(North Virden, Manitoba)

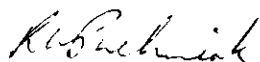
Every time you write, our share of the proposed Scallion Unit #2 gets smaller. Rather than put up with the aggravation, we herein offer to sell our 40% working interest (owned equally by Brosco Fund Limited and Pioneer Energy Resources Limited) in the two producing wells known as Tundra MOGC Virden Prov. 6-29-11-26 WPM and Tundra MOGC Virden Prov. 11-29-11-26 WPM. Our interests include leasehold interests (both mineral and surface), hydrocarbon reserves, wells, flowlines and other equipment (both downhole and surface).

The offering price is \$440,000.00, payable in cash upon closing. If consummated, the effective date of the sale would be August 1, 1987. This offer is open for acceptance on or before the close of business on July 17, 1987.

If this offer is acceptable to you, kindly so acknowledge by signing both copies of this letter in the space provided below and returning one copy to our offices. At that time, a mutually acceptable Petroleum, Natural Gas and General Rights Conveyance would be prepared with a view to closing on or about August 3, 1987.

Sincerely,

Tundra Oil and Gas



Robert G. Puchniak
President

RGP/st

ACCEPTED AND AGREED TO THIS

____ DAY OF _____, 1987.

JOINT VENTURERS:

BROSCO FUND LIMITED
PIONEER ENERGY RESOURCES LIMITED

IOG RESOURCES LTD.

PROPOSED
NORTH VIRDEN SCALLION UNIT NO. 2

T E C H N I C A L C O M M I T T E E R E P O R T

November 7, 1986

PROPOSED NORTH VIRDEN SCALLION UNIT NO. 2

Technical Committee Report

Conclusions

The Technical Committee has come up with potential unitization parameters for two cases; one which includes the Trans-Canada Resources Ltd. wells A11-30-11-26 WPM and 14-30-11-26 WPM and the other which excludes those wells.

The parameters, summarized on the attached Tables 1 & 2 and broken into individual company interests are:

- 1) crossplot ϕh - main zone only
- 2) crossplot ϕh - main zone plus lower zone
- 3) neutron ϕh - main zone only
- 4) neutron ϕh - main zone plus lower zone
- 5) acreage
- 6) initial productivity - 30 day
- 7) initial productivity - 90 day
- 8) initial productivity - 180 day
- 9) current productivity - July, August and September, 1986

Company interests on these parameters are shown after all individual well payouts and the Mountcliff/ICG project payout. Only well 13-29-11-26 WPM has as yet not paid out on an individual well basis.

The following tables summarize the tract factors for each of the parameters and other information such as production information and pay intervals:

Table 1	Potential Unitization Parameters Excluding TCRL Wells
Table 2	Potential Unitization Parameters Including TCRL Wells
Table 3	Tract Factors Excluding TCRL Wells
Table 4	Tract Factors Including TCRL Wells
Table 5	Tract Ownership
Table 6	Wellbore Parameters
Table 7	Logmate Analysis Wellbore Intervals
Table 8	Production Parameters
Table 9	Cumulative Production September 30, 1986

Also attached are production graphs of all the proposed unit wells including the TCRL wells.

Recommendations

The Technical Committee has the following recommendations:

- 1) Net pay or hydrocarbon pore volume maps should not be used for unitization purposes. A consensus of opinion is felt to be unachievable.
- 2) Water saturation calculations do not yield meaningful numbers and thus hydrocarbon pore volume should not be a unitization parameter.

- 3) Pore volume calculations are the best reserve tool to use for unitization but a consensus on use of neutron or crossplot numbers and the inclusion of the lower Cherty zone could not be reached.
- 4) The Trans-Canada Resources Ltd. wells have rapidly increasing water-oil ratios and their value to the unit at this time is questionable.
- 5) A partial inverted 9-spot waterflood pattern is the best waterflood configuration for the pool. A waterflood application will be sent to the Manitoba Department of Energy and Mines, Petroleum Branch, upon approval of the Operating Committee.
- 6) Source water can be obtained either from the TCRL wells, if they water out prior to injection startup or by drilling a water source well to the Devonian formation.

Discussion

The Technical Committee formed to evaluate the proposed waterflood scheme and come up with possible tract participation factors met formally three times; November 13, 1985, March 5, 1986 and October 2, 1986.

At the November 13, 1985 meeting, ICG reviewed the waterflood study it had prepared which will eventually be sent to the Manitoba Department of Energy and Mines, Petroleum Branch. There was general agreement on the proposed partial 9-spot waterflood injection pattern utilizing 13-29-11-26 WPM, 10A-30-11-26 WPM and 4-32-11-26 WPM as the water injectors. There was not an acceptable well at the 10-30 location and ICG/Mountcliff were to drill a new well at that location. The Technical Committee input into unitization proceedings were delayed at that point until after the drilling of the 10-30 location.

The March 5, 1986 meeting was held upon the drilling and completion of the 10A-30-11-26 WPM location. During the same time frame, Trans-Canada Resources Ltd. had drilled two new wells adjacent to the proposed unit boundaries at A11-30-11-26 WPM and 14-30-11-26 WPM. There was concern as to the proximity of the downdip aquifer. It was decided that an approach to TCRL would not be worthwhile until after significant production history. ICG had calculated wellbore hydrocarbon pore volume values based on a pay cutoff of 15% porosity and water saturation calculations based on a formation water resistivity of 0.02 ohms at reservoir temperature. Dome had done detailed logmate crossplot calculations with water saturation cutoffs that showed significant differences in the wellbore parameters. It was decided that ICG, Mountcliff and Dome get together and try to verify the differences. ICG presented some work on trying to find a relationship between initial productivity and wellbore reserves. No relationship appeared to exist.

Work was done in the interim by Dome, ICG and Mountcliff regarding the wellbore parameters. Water saturation calculations could not be performed that gave reasonable values. Actual formation water resistivity is 0.083 ohms at 25°C or about 0.078 ohms at reservoir temperature. A value of about 0.02 ohms at reservoir temperature is required to give reasonable water saturation values. The formation factor is felt to be the unknown parameter. Because of that, it was felt that water saturation should not be used as a unitization parameter. ICG had forwarded a letter on August 18, 1986 that outlined the logmate work that Dome had performed. ICG recommended that, to match pay calculation from the core analyses available, that a porosity cutoff of 13% be used to determine wellbore pay parameters and that water saturation be excluded. ICG had also requested comments from the other Technical Committee regarding these recommendations. Manitoba Oil and Gas and Tundra agreed with the proposal and indicated the desire to accelerate the unitization proceedings. Mountcliff responded with some detailed work that it had been done on core and log wellbore parameters that Mountcliff felt indicated that the neutron porosity log alone better represented the wellbore pay and porosity relationships. Mountcliff also presented work that showed the lower Cherty zone development in wells 12-29-11-26 WPM, 14-29-11-26 WPM and 3-32-11-26 WPM to be oil bearing, from DST's and core analyses, and thus should be included in the unitized zone.

The meeting of the Technical Committee on October 2, 1986 reviewed the responses to the August 18, 1986 ICG letter. A consensus of opinion on the inclusion of the lower Cherty development could not be obtained. Manitoba Oil and Gas and Tundra felt the lower zone could be water bearing because of the high water production of 14-29-11-26 WPM, the only well producing from both zones. They also stated that should the lower zone in 3-32-11-26 WPM be completed individually to prove or disprove reserve capability, they would want to see at least five months of production to ensure that it was not wet. Mountcliff and ICG argued the clean oil DST on 14-29-11-26 WPM and core oil staining on 3-32-11-26 WPM proved the hydrocarbon potential. A consensus could also not be reached on the use of the crossplot calculated wellbore parameters or the neutron log wellbore parameters. Consensus was reached on wellbore intervals to be used to calculate pay and porosity values for both the upper and lower Cherty zones and ICG had Dome rerun their logmate program to incorporate these intervals. Dome, because of 0.2 m digitizing intervals on wells 10A-30-11-26 WPM, A11-30-11-26 WPM and 14-30-11-26 WPM, could not use the exact interval as had been requested shown on Table 7. Intervals used for the logmate analyses on the wells were 651.40-655.60 m, 653.80-658.20 m and 653.40-655.80 m respectively.

The Technical Committee does not feel that the TCRL wells A11-30-11-26 WPM and 14-30-11-26 WM should be included in the unit at this time because of the rapidly increasing water-oil ratios in the two wells.

A water source has not been definitely located but the TCRL wells may be a possible source and if not, a well drilled into the Devonian structure would enable water production from either the lower Mississippian zone or from the Devonian zone.

Copies of the correspondence of the Technical Committee meetings have been included in this report.

Summary

The Technical Committee has completed the tasks assigned to it at this point, but can be reconvened at the request of the Operating Committee.

MEMBERS OF THE TECHNICAL COMMITTEE

<hr/> Dome Petroleum Limited	- Ron Britton
<hr/> ICG Resources Ltd.	- Douglas Bates
<hr/> Manitoba Oil and Gas Corporation	- Derek Longfield
<hr/> Mountcliff Resources Ltd.	- Cliff Berg
<hr/> Tundra Oil and Gas	- Dan Barchyn

TABLE 1

NORTH VIRDEN SCALLION UNIT NO. 2

EXCLUDING TCRL WELLS

POTENTIAL INITIALIZATION PARAMETERS

<u>Company</u>	<u>Top Zone - ϕh</u>		<u>Both Zones - ϕh</u>		<u>Acreage</u>	<u>Current Production</u>	<u>Initial Production</u>		
	<u>X-Plot</u>	<u>Neutron</u>	<u>X-Plot</u>	<u>Neutron</u>			<u>30 Day</u>	<u>90 Day</u>	<u>180 Day</u>
Canpar	0.0903	0.0979	0.0988	0.1072	0.0840	0.0757	0.0981	0.1013	0.1045
Dome	0.1016	0.1102	0.1111	0.1207	0.0945	0.0852	0.1105	0.1138	0.1177
ICG	0.32865	0.33295	0.3336	0.33565	0.3393	0.2931	0.33725	0.33025	0.3286
MOGC	0.0905	0.0756	0.0737	0.0605	0.0857	0.1518	0.0702	0.0747	0.0724
Mountcliff	0.32865	0.33295	0.3336	0.33565	0.3393	0.2931	0.33725	0.33025	0.3286
Tundra	0.0603	0.0504	0.0492	0.0403	0.0572	0.1011	0.0467	0.0497	0.0482

TABLE 2

NORTH VIRDEN SCALLION UNIT NO. 2

INCLUDING ICRL WELLS

POTENTIAL INITIALIZATION PARAMETERS

<u>Company</u>	<u>Top Zone - Øh</u>		<u>Both Zones - Øh</u>		<u>Acreage</u>	<u>Current Production</u>	<u>Initial Production</u>		
	<u>X-Plot</u>	<u>Neutron</u>	<u>X-Plot</u>	<u>Neutron</u>			<u>30 Day</u>	<u>90 Day</u>	<u>180 Day</u>
Canpar	0.0845	0.0915	0.0934	0.1015	0.0735	0.0626	0.0942	0.0923	0.0947
Dome	0.0952	0.1029	0.1052	0.1144	0.0830	0.0705	0.1059	0.1038	0.1067
ICG	0.30745	0.3112	0.31595	0.3178	0.29675	0.24235	0.3235	0.3013	0.2980
MOCC	0.0848	0.0706	0.0699	0.0572	0.0750	0.1254	0.0673	0.0680	0.0656
Mountcliff	0.30745	0.3112	0.31595	0.3178	0.29675	0.24235	0.3235	0.3013	0.2980
ICRL	0.0642	0.0655	0.0530	0.0531	0.1250	0.1732	0.0408	0.0879	0.0933
Tundra	0.0564	0.0471	0.0466	0.0382	0.0500	0.0836	0.0448	0.0454	0.0437

TABLE 3

NORTH VIRDEN SCALLION UNIT NO. 2

TRACT FACTORS

EXCLUDING TCRL WELLS

W e l l	Top Zone - ϕ h		Both Zones - ϕ h		Acreage	Current Production	Initial Production		
	X-Plot	Neutron	X-Plot	Neutron			30 Day	90 Day	180 Day
6-29-11-26 WPM	0.0481	0.0390	0.0392	0.0312	0.0714	0.1018	0.0431	0.0466	0.0433
11-29-11-26 WPM	0.1027	0.0870	0.0837	0.0696	0.0715	0.1511	0.0738	0.0778	0.0773
12-29-11-26 WPM	0.0690	0.0883	0.1063	0.1270	0.0715	0.0288	0.0412	0.0404	0.0428
13-29-11-26 WPM	0.0518	0.0561	0.0422	0.0449	0.0714	0.0434	0.0651	0.0711	0.0755
14-29-11-26 WPM	0.0768	0.0865	0.1194	0.1356	0.0714	0.0858	0.1171	0.1244	0.1314
9-30-11-26 WPM	0.0894	0.0846	0.0729	0.0677	0.0714	0.0770	0.1009	0.1104	0.1093
10A-30-11-26 WPM	0.0757	0.0713	0.0617	0.0570	0.0715	0.1608	0.0964	0.0889	0.0860
A15-30-11-26 WPM	0.0181	0.0212	0.0148	0.0170	0.0714	0.0243	0.0213	0.0236	0.0248
16-30-11-26 WPM	0.0968	0.1005	0.0789	0.0804	0.0714	0.0872	0.0841	0.0840	0.0854
1-31-11-26 WPM	0.0745	0.0728	0.0607	0.0583	0.0714	0.0950	0.0906	0.0870	0.0877
3-32-11-26 WPM	0.0787	0.0771	0.1422	0.1387	0.0714	0.0288	0.0672	0.0619	0.0561
4-32-11-26 WPM	0.0734	0.0725	0.0598	0.0580	0.0715	0.0502	0.0960	0.0949	0.0955
5-32-11-26 WPM	0.0692	0.0717	0.0564	0.0574	0.0714	0.0468	0.0631	0.0608	0.0582
6-32-11-25 WPM	0.0758	0.0714	0.0618	0.0572	0.0714	0.0195	0.0311	0.0282	0.0267

TABLE 4

NORTH VIRDEN SCALLION UNIT NO. 2

TRACT FACTORS

INCLUDING TCRL WELLS

W e l l	Top Zone - ϕ h		Both Zones - ϕ h		Current Production	Initial Production		
	X-Plot	Neutron	X-Plot	Neutron		30 Day	90 Day	180 Day
6-29-11-26 WPM	0.0451	0.0364	0.0372	0.0295	0.0841	0.0413	0.0425	0.0392
11-29-11-26 WPM	0.0961	0.0813	0.0793	0.0659	0.1249	0.0708	0.0709	0.0701
12-29-11-26 WPM	0.0646	0.0825	0.1007	0.1202	0.0238	0.0395	0.0368	0.0388
13-29-11-26 WPM	0.0485	0.0525	0.0400	0.0426	0.0359	0.0625	0.0648	0.0685
14-29-11-26 WPM	0.0719	0.0808	0.1131	0.1285	0.0705	0.1123	0.1135	0.1191
9-30-11-26 WPM	0.0837	0.0791	0.0690	0.0641	0.0637	0.1055	0.1007	0.0991
10A-30-11-26 WPM	0.0708	0.0666	0.0584	0.0540	0.1330	0.0924	0.0810	0.0780
A11-30-11-26 WPM	0.0515	0.0479	0.0425	0.0388	0.0959	0.0231	0.0528	0.0541
14-30-11-26 WPM	0.0127	0.0176	0.0105	0.0143	0.0773	0.0177	0.0351	0.0392
A15-30-11-26 WPM	0.0169	0.0198	0.0140	0.0161	0.0201	0.0204	0.0216	0.0226
16-30-11-26 WPM	0.0905	0.0939	0.0747	0.0761	0.0721	0.0807	0.0767	0.0774
1-31-11-26 WPM	0.0697	0.0681	0.0575	0.0552	0.0786	0.0869	0.0793	0.0795
3-32-11-26 WPM	0.0736	0.0720	0.1346	0.1314	0.0238	0.0645	0.0565	0.0509
4-32-11-26 WPM	0.0687	0.0677	0.0566	0.0549	0.0415	0.0921	0.0866	0.0865
5-32-11-26 WPM	0.0648	0.0670	0.0534	0.0543	0.0387	0.0605	0.0555	0.0528
6-32-11-25 WPM	0.0709	0.0668	0.0585	0.0541	0.0161	0.0298	0.0257	0.0242

TABLE 5

NORTH VIRDEN SCALLION UNIT NO. 2

TRACT OWNERSHIP

W e l l	C U R R E N T					A F T E R					P A Y O U T S			
	Canpar	Dome	ICG	MOGC	Mount.	Tundra	ICRL	Canpar	Dome	ICG	MOGC	Mount.	Tundra	ICRL
6-29-11-26 WPM				0.6000		0.4000					0.6000		0.4000	
11-29-11-26 WPM				0.6000		0.4000					0.6000		0.4000	
12-29-11-26 WPM	0.2352	0.2648	0.5000					0.2352	0.2648	0.2500		0.2500		
13-29-11-26 WPM	0.2352		0.7648					0.2352	0.2648	0.2500		0.2500		
14-29-11-26 WPM	0.2352	0.2648	0.5000					0.2352	0.2648	0.2500		0.2500		
9-30-11-26 WPM	0.2352	0.2648	0.5000					0.2352	0.2648	0.2500		0.2500		
10A-30-11-26 WPM			0.5000		0.5000					0.5000		0.5000		
A11-30-11-26 WPM							1.0000						1.0000	→
14-30-11-26 WPM							1.0000						1.0000	→
A15-30-11-26 WPM			1.0000							0.5000		0.5000		
16-30-11-26 WPM	0.2352	0.2648	0.5000					0.2352	0.2648	0.2500		0.2500		
1-31-11-26 WPM			1.0000							0.5000		0.5000		
3-32-11-26 WPM			1.0000							0.5000		0.5000		
4-32-11-26 WPM			1.0000							0.5000		0.5000		
5-32-11-26 WPM			1.0000							0.5000		0.5000		
6-32-11-25 WPM			1.0000							0.5000		0.5000		

TABLE 6

NORTH VIRDEN SCALLION UNIT NO. 2

WELLBORE PARAMETERS

Well		X-Plot Log Analysis $\frac{h}{\phi h}$	Neutron Log Analysis $\frac{h}{\phi h}$
6-29-11-26 WPM		3.38 0.500	3.13 0.477
11-29-11-26 WPM		6.00 1.067	6.00 1.064
12-29-11-26 WPM	Upper Lower	3.75 0.717 3.00 0.638	5.00 1.080 3.38 0.861
13-29-11-26 WPM		3.13 0.538	3.75 0.687
14-29-11-26 WPM	Upper Lower	4.63 0.798 4.13 0.724	5.13 1.058 4.63 1.016
9-30-11-26 WPM		4.63 0.929	4.63 1.035
* 10A-30-11-26 WPM		3.80 0.786	4.00 0.872
* A11-30-11-26 WPM		3.60 0.572	3.80 0.627
* 14-30-11-26 WPM		1.00 0.141	1.60 0.230
A15-30-11-26 WPM		1.25 0.188	1.50 0.260
16-30-11-26 WPM		5.25 1.005	5.50 1.229
1-31-11-26 WPM		4.13 0.774	4.50 0.891
3-32-11-26 WPM	Upper Lower	4.75 0.817 5.38 0.995	4.88 0.943 5.38 1.178
4-32-11-26 WPM		4.13 0.762	4.13 0.887
5-32-11-26 WPM		3.63 0.719	4.13 0.877
6-32-11-25 WPM		4.88 0.787	4.88 0.874

* Analyzed Intervals Slightly Different From Technical Committee Picks

TABLE 7

PROPOSED NORTH VIRDEN SCALLION UNIT #2

Final Logmate Analysis

Intervals Evaluated

Well	Interval - mKB
6-29-11-26 WPM	639.75 - 644.50
11-29-11-26 WPM	639.00 - 646.00
12-29-11-26 WPM	645.00 - 650.00
13-29-11-26 WPM	651.00 - 654.50
14-29-11-26 WPM	638.50 - 642.50
9-30-11-26 WPM	632.50 - 638.00
10A-30-11-26 WPM	638.25 - 642.75
A11-30-11-26 WPM	647.50 - 652.25
14-30-11-26 WPM	651.40 - 655.60
A15-30-11-26 WPM	653.80 - 658.20
16-30-11-26 WPM	653.40 - 655.80
1-31-11-26 WPM	647.25 - 649.00
3-32-11-26 WPM	643.75 - 649.50
4-32-11-26 WPM	642.25 - 646.75
5-32-11-26 WPM	631.75 - 636.75
6-32-11-26 WPM	636.75 - 642.00
	631.00 - 635.25
	630.50 - 634.50
	629.25 - 634.50

CASE 1 - X-plot h and ϕ_h with no water saturation or shale cutoffs
 - 13% porosity cutoff

CASE 2 - Neutron porosity h and ϕ_h with no water saturation or shale cutoffs
 - 13% porosity cutoff

TABLE 8

NORTH VIRDEN SCALLION UNIT NO. 2

PRODUCTION PARAMETERS

Well	Initial 30 Day		Initial 90 Day		Initial 180 Day		Current (July-Sept/86)	
	Oil m^3/d	Water Cut	Oil m^3/d	Water Cut	Oil m^3/d	Water Cut	Oil m^3/d	Water Cut
6-29-11-26 WPM	2.29	0.140	2.23	0.149	1.88	0.130	2.09	0.114
11-29-11-26 WPM	3.92	0.053	3.72	0.070	3.36	0.092	3.10	0.099
12-29-11-26 WPM	2.19	0.275	1.93	0.282	1.86	0.259	0.59	0.403
13-29-11-26 WPM	3.46	0.113	3.40	0.124	3.28	0.116	0.89	0.253
14-29-11-26 WPM	6.22	0.145	5.95	0.155	5.71	0.176	1.75	0.555
9-30-11-26 WPM	5.84	0.221	5.28	0.266	4.75	0.308	1.58	0.556
10A-30-11-26 WPM	5.12	0.105	4.25	0.170	3.74	0.173	3.30	0.176
A11-30-11-26 WPM	1.28	0.079	2.77	0.112	2.59	0.139	2.38	0.428
14-30-11-26 WPM	0.98	0.162	1.84	0.331	1.88	0.292	1.92	0.200
A15-30-11-26 WPM	1.13	0.221	1.13	0.237	1.08	0.212	0.50	0.519
16-30-11-26 WPM	4.47	0.187	4.02	0.165	3.71	0.157	1.79	0.302
1-31-11-26 WPM	4.81	0.080	4.16	0.102	3.81	0.106	1.95	0.171
3-32-11-26 WPM	3.57	0.346	2.96	0.391	2.44	0.452	0.59	0.731
4-32-11-26 WPM	5.10	0.052	4.54	0.052	4.15	0.050	1.03	0.264
5-32-11-26 WPM	3.35	0.029	2.91	0.043	2.53	0.090	0.96	0.278
6-32-11-25 WPM	1.65	0.207	1.35	0.254	1.16	0.306	0.40	0.600

Revised 1987-03-04

TABLE 9

NORTH VIRDEN SCALLION UNIT NO. 2

CUMULATIVE PRODUCTION
TO SEPTEMBER 30, 1986

Well	Cumulative Production - m ³	
	Oil	Water
6-29-11-26 WPM	727.6	133.5
11-29-11-26 WPM	1471.2	150.1
12-29-11-26 WPM	1403.3	650.8
13-29-11-26 WPM	2378.9	602.5
14-29-11-26 WPM	3439.3	2216.4
9-30-11-26 WPM	2690.7	2552.6
10A-30-11-26 WPM	623.2	129.5
A11-30-11-26 WPM	471.9	246.3
14-30-11-26 WPM	344.4	76.4
A15-30-11-26 WPM	667.4	411.1
16-30-11-26 WPM	2843.8	1024.0
1-31-11-26 WPM	2885.2	441.2
3-32-11-26 WPM	1424.8	2309.2
4-32-11-26 WPM	2726.4	648.1
5-32-11-26 WPM	1765.7	405.3
6-32-11-25 WPM	605.0	648.5



ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1986-10-06

**ALL WORKING INTEREST OWNERS
PROPOSED NORTH VIRDEN SCALLION UNIT NO. 2
(See Attached List)**

Gentlemen:

Re: Minutes of a Technical Committee Meeting
held October 2, 1986

A meeting of the Technical Committee of the proposed North Virden Scallion Unit No. 2 was held at 09:00 hours on October 2, 1986 at the offices of ICG Resources Ltd.

Those in attendance were:

<u>Company</u>	<u>Representative</u>
Dome Petroleum Limited	Ron Britton / Jim Jewitt
ICG Resources Ltd.	Douglas Bates
Manitoba Oil and Gas Corporation	Derek Longfield
Mountcliff Resources Ltd.	Cliff Berg
Tundra Oil and Gas	Dan Barchyn

At the last meeting held March 5, 1986, significant differences were found between work done by ICG and computer generated work done by Dome regarding pay and HCPV values from wellbore logs. Dome, ICG and Mountcliff had various discussions after that time to come up with a uniform method of computing wellbore parameters from logs. ICG forwarded a letter on August 18, 1986 that contained a logmate analyses summary of the proposed unit wells conducted by Dome and recommended that a 13% porosity cutoff, on a complex lithology (x-plot) porosity determination, with no water saturation cutoff be used for wellbore pay values. This cutoff seemed to match available core data values the best. ICG also requested comments from all Technical Committee representatives regarding this approach. Comments from all parties were received and Mountcliff recommended some changes to the wellbore parameter calculations such as using neutron porosity as the porosity tool and also that a lower zone in the Cherty member in wells 12-29, 14-29 and 3-32-11-26 WPM should be included in the pay determination.

Mountcliff, at the October 2, 1986 meeting, reviewed its memo and the reasons for the recommendations. Mountcliff feels the neutron tool more closely approaches the core values observed and showed core/neutron porosity crossplots to back this up. The curves show scatter and tend to have different curves for different wells which could be because of lithology.

Mountcliff reviewed the extent of the lower porosity zone and core and DST analyses in the zone that substantiated the hydrocarbon bearing capability of the interval. Tundra and MOGC felt that the lower zone might be water bearing. The 14-29 well is completed in both the upper and lower zone, the only lower zone completion in the area, and has the highest water oil ratio in the fields, anomalous to other wells completed only in the upper zone. Mountcliff pointed out that the DST in 14-29 in the lower section only was the best oil producing DST in the wells in the area. ICG stated that it was proposing to complete 3-32 in the lower zone and have it produce by itself from that zone to confirm oil productivity. Tundra and MOGC stated that they would only believe oil production capability after at least a 5 month production period. Technical Committee consensus on the inclusion of the zone could not be reached and will have to be handled by the Operating Committee.

Dome will conduct the final logmate analyses of the wells in the unit area and also the two Trans Canada Resources wells 11-30 and 14-20 adjoining the acreage. A consensus on a neutron porosity analysis as compared to a X-plot porosity analysis could not be reached. ICG is to ask Dome to do both at a 13% porosity cutoff with no other cutoffs applied. Dome is also to do individual analyses on the upper and lower zones in the three wells that have both. The committee agreed upon intervals to be analysed for each well and is attached. ICG has forwarded the information to Dome.

The Committee decided upon other parameters to be calculated to pass on to the Operating Committee for use as possible unitization parameters. They are as follows:

- 1) Initial oil productivity - 30 day, 60 day, 90 day, 180 day averages
- 2) Current productivity - last 90 day
- 3) Acreage

The committee did not feel that consensus would be obtainable on a pore volume map of the area and will pass that on to the Operating Committee.

Working Interest Owners
1986-10-06
Page 3

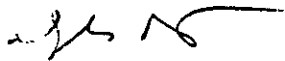
ICG reviewed the TCRL wells and handed out core analyses and recent production characteristics. The committee recommended that TCRL not be included in discussions at this time because of the rapidly increasing water cuts.

ICG reviewed the most recent estimates for capital expenditures required for the waterflood. At this time it appears that a water source well will be required for injection water, unless one of the recent TCPL wells waters out and becomes available. Cost estimates are 185 M\$ for a water well and 150 M\$ for injection facilities. MOGC and Tundra indicated that the cost of tying-in there to wells to the ICG 13-29 battery would be borne by them. The economics of the project are attractive, primary production shows a present worth at 20% before tax of 1.5 MMS compared to a waterflood case of 6 MMS.

The committee felt this was the last technical meeting required and that ICG would distribute the calculated parameter and logmate work as soon as available. A report will be forwarded to the Operating Committee to be signed by all Technical Committee representatives.

Yours very truly,

ICG RESOURCES LTD.



D.R. Bates
Chairman of the Technical
Committee

DRB/aw

PROPOSED NORTH VIRDEN SCALLION UNIT #2

Final Logmate Analysis

Intervals to be Evaluated

<u>W e l l</u>		<u>Interval - mKB</u>		
6-29-11-26 WPM		639.75	-	644.50
11-29-11-26 WPM		639.00	-	646.00
12-29-11-26 WPM	Top Section	645.00	-	650.00
	Bottom Section	651.00	-	654.50
13-29-11-26 WPM		638.50	-	642.50
14-29-11-26 WPM	Top Section	632.50	-	638.00
	Bottom Section	638.25	-	642.75
9-30-11-26 WPM		647.50	-	652.25
10A-30-11-26 WPM		651.50	-	655.50
11-30-11-26 WPM		653.75	-	658.25
14-30-11-26 WPM		653.50	-	655.75
A15-30-11-26 WPM		647.25	-	649.00
16-30-11-26 WPM		643.75	-	649.50
1-31-11-26 WPM		642.25	-	646.75
3-32-11-26 WPM	Top Section	631.75	-	636.75
	Bottom Section	636.75	-	642.00
4-32-11-26 WPM		631.00	-	635.25
5-32-11-26 WPM		630.50	-	634.50
6-32-11-26 WPM		629.25	-	634.50

CASE 1 - X-plot h and oh with no water saturation or shale cutoffs

- 13% porosity cutoff

CASE 2 - Neutron porosity h and oh with no water saturation or shale cutoffs

- 13% porosity cutoff

ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1986-09-24

ALL WORKING INTEREST OWNERS
PROPOSED NORTH VIRDEN SCALLION UNIT NO. 2
(See Attached List)

Re: Notice of a Technical Committee Meeting
October 2, 1986

A meeting of the Technical Committee of the proposed North Virden Scallion Unit No. 2 is called for 09:00 hours on Thursday, October 2, 1986 at the office of ICG Resources Ltd. on the 26th Floor Conference Room.

Items to be addressed during this meeting are as follows:

- 1) Results of work done by the Geological Subcommittee.
- 2) Comments on the logmate analysis performed by Dome Petroleum Ltd. and distributed to the working interest partners August 18, 1986 (copies attached).
- 3) Discussion on TransCanada Resources wells 11-30 and 14-30-11-26 WPM and inclusion into the Unit.
- 4) Updated waterflood cost estimate and injection water source.

If you have questions regarding this meeting, please contact the undersigned at 231-9057.

Yours truly,

ICG RESOURCES LTD.

D.R. Bates, P.Eng.
Engineering Manager

DRB/aw
Encls.

Mountcliff Resources Ltd.
4856 North Haven Drive
Calgary, Alberta T2K 2J7

SEP 12 1986

September 10, 1986

ICG Resources Ltd.
2700, 140 - Fourth Avenue S.W.
Calgary, Alberta T2P 3S3

Attention: Mr. D.R. Bates, P.Eng

Dear Mr. Bates:

Re: Proposed North Virden Scallion Unit #2

We have reviewed the recent work by Dome and also the previous work by ICG on the log cutoffs, core cutoffs, saturation calculations, net oil pay map and hydrocarbon pay volume map. In addition we have drawn additional maps and include these work copies for your consideration.

Following are our comments:

- 1) The three poorest wells to be included in the unit (as presently outlined) are 6-29, 15-30 and 6-32. The 6-29 well has been cored and analyzed and a core vs. log plot was made on the CNL-LDT. As shown (and from the basic core analysis) an additional .46 m of pay in the core would be added by reducing the core cutoff from 15% to 13% or 13.5%. Most of the pay in this well is in a higher porosity zone (1.12 metres thick) with higher (+ 10 md) permeabilities. The 13% - 13.5% cutoff fairly represents the log values of 14% X plot values used in the Dome sensitivity analysis and the log cutoff of 13.5% density could be validly used. The 13.5% cutoff would honor the core and the log on this particular well.

The use of a 13.5% density cutoff for log pay would then allow the 15-30 and 14-30 (Trans Canada) well logs to indicate pay in the producing zone where a 15% cutoff would indicate no pay.

The use of a 13.5% ϕ density cutoff or a 13.5% ϕ X plot cutoff is recommended for the log cutoffs. Consideration should be given to calculating the porosity footage values from the average of both the repeat and regular runs of the CNL/FDC logs since the FDC log does not repeat consistently.

The intervals selected for analysis using the 15% ρ density log cutoff should be reviewed when shifting to the 13.5% cutoff. Perhaps the 13.5% ρ cross plot should be used on the upper limit of pay where the break seems more consistent on both the neutron and density logs than the break shown by the lower limit.

- 2) Produced water analysis gives an R_w at BHT of .077 - .079 ohm/m which in turn gives larger S_w values than calculated previously by ICG using an R_w of .02. The F factor of the reservoir rock is the controlling factor in the RT values being read from some of the logs. This can be shown by overlaying the ρ and RT logs in the good producing wells, eg. 10A-30 (example included).

The hydrocarbon pore volume map, as is, should not be used because of the inability of the logs to read the variable lithologies and saturations due to the thin bedded nature of the rock types within the induction spacing. Further work is needed on this type of map.

- 3) Four wells, 6-29, 8-31, 3-32 and 11-32 have been cored and analyzed through the pay zone. Core/log plots on the CNL/FDC logs and a Core/Neutron porosity plot for the wells have been made.

The core/log plots show the relation to the log porosities and indicates a better relationship to the neutron log than to the density log. This is to be expected since the neutron log is a deeper reading instrument than the density log and is less affected by bore hole and mud cake than the density log. The neutron has a twelve inch moving average reading and therefore high porosity thinner zones are attenuated. The density log reads a ten inch moving average. The density log does not repeat consistently in the wells. This is probably due to hole changes and anisotropic rock character.

The core/neutron plots show a reasonable linear relationship in the individual well plots but not a consistent well to well relationship. The composite plot of all wells show a greater scatter but still have a linear relationship. Almost all core porosities above 12% have neutron porosities above 15%. Perhaps core/density plots could be checked if the technical committee so desires.

- 4) The lower porous development is present in a number of wells as shown on the map Lower Porous Development. The North Virden Field Section from 7-30-11-26 to 3-32-11-26 shows the development in the 12-29, 14-29 and 3-32 wells.

ICG Resources Ltd.
September 10, 1986
Page 3

The zone is tested (119 m oil S1P956/930) and perforated in 14-29. It is cored and stained in 3-32 and shows better porous development on the logs than the upper perforated zone. The 3-32 well was drilled and completed prior to the 14-29 well. The zone is present but not cored or perforated in the 12-29 well but the SW calculates the same as the upper perforated zone. The 10A-30 well produces oil from the upper zone at the same elevation as the lower zone in 12-29. The 11-29 well probably has about 14 porosity ft. in this lower zone that is included in its porosity foot value.

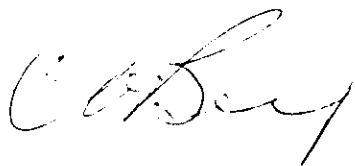
The zone should be opened to production in the 3-32 well and the 12-29 well and injection should be initiated into the zone when 12-29 is converted to an injector.

The zone should be included in the porosity footage figures for the 12-29, 14-29 and 3-32 wells. The core porosity footage and log porosity footage for the 3-32 well correlates very well over both zones.

We are prepared to discuss the work done at any time with any of the working interest owners.

Yours truly,

MOUNTCLIFF RESOURCES LTD.



C.A. Berg

CAB/aw

SEP - 4 1986

**Tundra
Oil and Gas**

1313 Richardson Building
One Lombard Place
Winnipeg, Manitoba R3B 0X3
Phone (204) 949-1195

August 28, 1986

ICG Resources Limited
2700, 140 - 4th Avenue S.W.
Calgary, Alberta
T2P 3S3

ATTN: D. R. BATES, P.ENG., Engineering Manager

Dear Doug:

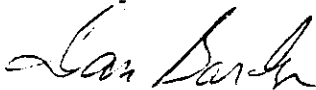
RE: PROPOSED NORTH VIRDEN SCALLION UNIT NO. 2

In response to your letter of August 18, 1986, Tundra Oil and Gas concurs with your recommendation of a 13% porosity cutoff with no water saturation cutoff to determine net pay for unitization purposes.

We are interested in seeing the project proceed and look forward to a technical meeting as soon as possible.

Sincerely,

Tundra Oil and Gas



Dan Barchyn, P.Eng.
Exploration Manager

DB/sc

AUG 29 1986



August 25, 1986

ICG Resources Limited
2700, 140-4th Avenue S.W.
Calgary, Alberta
T2P 3S3

Attention: Mr. D.R. Bates

Dear Doug:

Re: Proposed North Virden Scallion Unit No. 2
Net Pay Determination for Proposed Unit Wells

Further to your letter of August 18, 1986, I wish to reiterate Manitoba Oil and Gas Corporation's (MOGC's) contention that, as demonstrated by production from wells such as 6-29-11-26WPM, resistivity logs cannot be used to accurately or consistently estimate water saturation in the Scallion member in this area.

Therefore, as you have proposed, MOGC prefers the use of the porosity log, where confirmed by production, to define wellbore net pay values. A porosity cut off of 13% appears reasonable to estimate net pay in the wells, on a relative basis.

Although MOGC is convinced that a waterflood project is essential to increase the oil reserves of this area, we remain adamant that our inclusion in this proposed unit must not result in a tangible reduction of our current share of productivity in the area.

We look forward to a technical meeting at the earliest possible date to accelerate unitization proceedings.

Yours truly,

Derek Longfield, P. Eng.
Resource Development Manager

DL/ie

cc: Mr. R.G.Puchniak
Tundra Oil And Gas Ltd.

ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

August 18, 1986

ALL WORKING INTEREST OWNERS
Proposed North Virden Scallion Unit No. 2

Gentlemen:

Re: Proposed North Virden Scallion Unit No. 2
Logmate Analyses, Proposed Unit Wells

Enclosed is a table prepared by Dome Petroleum Ltd. summarizing detailed log analyses (logmate) conducted on the proposed unit wells for your perusal. Pay values using porosity cutoffs of 10%, 12% and 15% were generated. A water saturation cutoff of 70% was also used but only two wells were affected by this parameter as indicated on the table. A formation water resistivity of 0.04 ohm at reservoir temperature was used in the water saturation calculation. ICG's feeling is that an R_w of 0.02 ohm might be more appropriate but the HCPV values generated from the logmate study would be comparatively accurate.

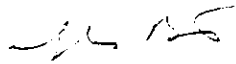
The well 6-29-11-26 WPM had a full core analysis which generated 2.38 m of net pay using cutoffs of 10% porosity and 0.1 md of permeability. By extrapolation the porosity cutoff from this study required to match the core analysis would be about 13%.

ICG recommends that a 13% porosity cutoff with no water saturation cutoff be used to determine net pay for unitization purposes. If all parties consent with this recommendation after reviewing the attached data, please indicate this to ICG and ICG will approach Dome to run this case on their logmate system.

ICG intends to have a unit technical meeting in early September, 1986 to continue unitization proceedings.

Yours very truly,

ICG RESOURCES LTD.


D.R. Bates, P.Eng.
Engineering Manager

DRB/aw

Summary of Log Calc Results (Dowal) Using various porosity and Sw cut = 55%

12

		100% permeability, 2.70% Sw		100% permeability, 2.70% Sw		100% permeability, 2.70% Sw		100% permeability, 2.70% Sw		100% permeability, 2.70% Sw			
		ft		m		ft		m		ft		m	
Interval analyzed		ft		m		ft		m		ft		m	
1	639.75 - 640.50	12.7	3.98	0.93	0.284	11.5	3.50	0.85	0.260	2.3	0.70	0.24	0.074
2	639.75 - 640.75	11.1	3.38	1.21	0.369	20.5	6.25	1.00	0.305	10.4	3.19	1.63	0.503
3	639.75 - 640.25	11.1	3.38	1.21	0.369	11.1	3.38	1.21	0.369	2.3	0.70	1.12	0.341
4	639.75 - 640.25	11.1	3.38	1.21	0.369	11.1	3.38	1.03	0.313	2.4	0.73	0.9	0.274
5	639.75 - 640.75	12.7	3.89	1.19	0.364	12.7	3.89	1.13	0.343	11.5	3.50	1.03	0.313
6	639.75 - 640.25	13.4	4.13	1.29	0.393	13.4	4.13	1.29	0.393	12.4	3.77	1.39	0.423
7	639.75 - 640.25	11.2	3.40	1.15	0.354	11.2	3.40	1.15	0.354	10.5	3.2	1.10	0.336
8	639.75 - 640.25	4.5	1.38	0.33	0.102	4.5	1.38	0.33	0.102	2.5	0.75	0.21	0.063
9	639.75 - 640.25	15.2	4.63	1.49	0.453	15.2	4.63	1.49	0.453	14.9	4.50	1.45	0.443
10	639.75 - 640.50	12.7	3.89	1.19	0.364	12.7	3.89	1.13	0.344	11.9	3.63	1.15	0.349
11	639.75 - 640.25	14.4	4.39	1.59	0.486	13.9	4.25	1.57	0.477	12.3	3.75	1.42	0.433
12	639.75 - 640.25	11.9	3.63	1.36	0.416	11.9	3.63	1.36	0.416	10.7	3.25	1.29	0.389
13	639.75 - 640.25	8.6	2.63	0.73	0.220	8.6	2.63	0.73	0.220	8.6	2.63	0.73	0.220
14	639.75 - 640.25	14.4	4.39	1.59	0.486	13.9	4.25	1.57	0.477	12.3	3.75	1.42	0.433
15													
16													
17													
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													



ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

March 13, 1986

ALL WORKING INTEREST OWNERS
Proposed North Virden Scallion Unit No. 2

Gentlemen:

Re: Minutes of a Technical Committee Meeting held March 5, 1986

A meeting of the Technical Committee of the proposed North Virden Scallion Unit No. 2 was held at 09:00 hours on March 5, 1986 at the offices of ICG Resources Ltd.

Those in attendance were:

<u>Company</u>	<u>Attendee</u>
Dome Petroleum Ltd.	Helen Harrison/Andrey Kunda
ICG Resources Ltd.	Douglas Bates/Moheb Gobrial
Manitoba Oil & Gas / Tundra	Derek Longfield
Mountcliff Resources Ltd.	Cliff Berg

ICG reviewed the recent area drilling. ICG has drilled and completed the 10-30-11-26 WPM which is to be converted to water injection at waterflood commencement. An extrapolation of the DST pressure indicates a reservoir pressure of 750 psia comparable to the original reservoir pressure of over 900 psia.

Trans-Canada Resources Ltd. has drilled two wells just outside the proposed unit boundary, 11-30 and 14-30-11-25 WPM. Both wells are cased but log analysis indicates limited pay in each of the wells. It was decided at the meeting not to approach TCRL at this time until production history either proved or disproved the wells.

Dome presented their initial interpretation of the geology of the Cherty zone. There was a substantial difference in some of the wellbore parameters as presented by ICG and Dome. Dome had used a logmate system with a complex lithology option to pick their parameters using a 15 percent porosity and a 50 percent water saturation cutoff. There were some inconsistencies noted where low

All Working Interest Owners
March 13, 1986
Page 2

wellbore HCPV wells were the better producers and where zones cutoff because of high calculated water saturation were producing relatively clean oil from the wet zone. Dome and ICG will review the data and come up wellbore HCPV parameters. ICG will keep the other working interest owners up to date on these proceedings.

ICG reviewed the work it had done on initial production characteristics of the proposed unit wells. ICG tried to see if there was a direct relationship between initial productivity and wellbore HCPV. Three cases of initial productivity were reviewed; the first 30 day, 90 day and 180 day average oil productivity. There appears to be a relationship between initial production and wellbore HCPV but there is significant scatter in the data. ICG feels that outside unit area well production and injection characteristics have effected the initial production rates and make this parameter a doubtful one in final unit participation.

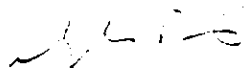
ICG proposed to forward the engineering study as is to the Manitoba Department of Energy and Mines, Petroleum Branch, to have the enhanced recovery scheme approved. Differences that may occur in the reservoir maps should not effect the study conclusions and recommendations.

Injection water has not been located at this point in time but the working interest owners are checking their potential supplies and ICG will check with Chevron and Beaverhead. The final alternative would be to drill a water source well.

Copies of logs on wells 10-30, 11-30 and 14-30-11-26 WPM and attached for your convenience.

Yours very truly,

ICG RESOURCES LTD.



D.R. Bates, P.Eng.
Senior Reservoir Engineer

DRB/at
Enclosures

ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION
2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

All Working Interest Owners
Proposed North Virden Scallion Unit #2

Dear Sirs:

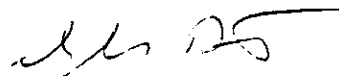
Enclosed for your review are minutes of an Operating Committee Meeting held November 13, 1985 at 9:30 A.M. and a Technical Committee Meeting held November 13, 1985 at 1:30 P.M., both in the offices of ICG Resources Ltd. At these meetings, working committees were established to aid in the formation of the North Virden Scallion Unit #2.

The unit will be formed to allow waterflooding of the Scallion member with a modified 9-spot water injection scheme. Three wells will be required for water injection; 12-29-11-26WPM, 10-30-11-26WPM and 4-32-11-26WPM. There is currently a suspended well at 10-30 which was artificially fractured when completed in late 1959. ICG is concerned that this well may not be suitable for water injection and intends to drill a replacement well for water injection purposes if required. Further unit proceedings will be delayed until a decision is made on the 10-30 well and it is redrilled if required.

The next technical meeting will not be held until January 1986. If you have any questions regarding this information, please contact the undersigned.

Yours very truly,

ICG RESOURCES LTD.



D.R. Bates, P. Eng
Senior Reservoir Engineer

DRB/tj
Encl.

PROPOSED NORTH VIRDEN SCALLION UNIT #2

Minutes of Technical Committee Meeting Held 1985-11-13

A meeting of the Technical Committee of the proposed North Virden Scallion Unit #2 was held at 1:30 P.M. 1985-11-13 on the 26th floor of ICG Resources Ltd.'s office at 140 4th Avenue S.W., Calgary.

Attending the meeting were:

Dome Petroleum Limited	Helen Harrison
ICG Resources Ltd.	Douglas Bates/Moheb Gobrial
Manitoba Oil & Gas Corp.	Derek Longfield
Mountcliff Resources Ltd.	Cliff Berg
Tundra Oil and Gas	Dan Barchyn

ICG reviewed the Proposed Waterflood Study it had prepared which identified the waterflood potential and is intended to be used as a basis for the waterflood application to be sent to the Manitoba Department of Energy and Mines, Petroleum Branch. ICG printed out two errors in the "Reservoir Characteristics" section of the report; a 15% porosity cut off was used not 10% and a formation water resistivity of 0.04 was used not 0.02.

There was general agreement in the waterflood scheme and proposed partial 9-spot injection pattern as proposed by ICG. Dome had some concern about the structure in the pool and possibly layering. The formation, however, will be perforated across the whole zone.

The zone to be unitized, as requested by the Operating Committee is the "Scallion Member of the Lodgepole Formation". ICG will prepare a type log to be reviewed at the next technical meeting.

The Technical Committee was also charged with preparing a hydrocarbon pore volume of the proposed unit area. Tundra and Manitoba Oil & Gas had reviewed the wellbore parameters ICG staff had used in their mapping and were in agreement with the parameters ICG had used except for the 10-30 tract. Tundra, however, had mapped the wellbore parameters differently. Dome had not finished their review of the reservoir parameters but will have a map prepared for the next meeting. Mountcliff was in agreement with the ICG map.

The 10-30 well was drilled in late 1959 and did not have a density porosity log for comparison to the rest of the wells. ICG expects to have to redrill 10-30 and abandon the existing well so would have a density log for the new location.

With new information of the 10-30 tract, a final map can be generated. Initial productivity numbers could be hard to establish in this pool. Wells on primary production tend to decline rapidly and eventually level off declining at a lower decline. The differences in the age of the wells (the new Tundra wells and

well 10-30), water disposal adjacent to the area, and completion techniques add to the complications in finding representative numbers.

ICG is to review individual production plots of the proposed unit wells and review wells outside the area. The well productivity may be proportional to wellbore hydrocarbon per volume. Manitoba Oil & Gas indicated they had production plots which could be utilized.

There will be no more Technical Committee meetings until well 10-30 is either reactivated or restored.

PROPOSED NORTH VIRDEN SCALLION UNIT #2

Minutes of Operating Committee Meeting Held 1985-11-13

A meeting of the Operating Committee of the proposed North Virden Scallion Unit #2 was held at 9:30 A.M. 1985-11-13 on the 26th floor of ICG Resources Ltd.'s office at 140 4th Avenue S.W., Calgary.

Attending the meeting were:

<u>COMPANY</u>	<u>REPRESENTATIVE(S)</u>
Dome Petroleum Limited/ Campar Holdings Ltd.	Claudia Kylo Helen Harrison
ICG Resources Ltd.	Douglas Bates
Manitoba Oil & Gas Corporation	Derek Longfield
Mountcliff Resources Ltd.	Cliff Berg
Tundra Oil and Gas	Bob Puchniak Dan Barchyn

Dome will be representing Canpar in all the unit proceedings.

The purpose of this Operating Committee Meeting was to set up working committees for the unit, agree on interim unit participation and voting procedures, and set up a mechanism for the Operator to recover pre-unit costs.

The following motions were approved:

Motion #1

"Unitization of the Lodgepole Scallion zone in the North Virden Area to be initiated with ICG Resources Ltd. acting as Interim Operator. The proposed name for the Unit is the "North Virden Scallion Unit #2". The area of interest is:

Lsd's 6, 11, 12, 13, 14	Section 29-11-16 WPM
Lsd's 9, 10, 15, 16	Section 30-11-26 WPM
Lsd 1	Section 31-11-26 WPM
Lsd's 3, 4, 5, 6	Section 32-11-26 WPM

The motion was moved by ICG, seconded by Tundra. The vote was unanimous.

Discussion of this motion was centered on tract 10-30-11-26 WPM. This tract is to have an injection well that may have to be redrilled if the proposed waterflood pattern is approved. Tundra felt that each tract should bring a well to the unit and as such it would be Mountcliff's and ICG's responsibility, prior to the unit

being formed, to either rework or redrill the well. All parties were in agreement to attempt to unitize.

Motion #2

"An Operating Committee be established with ICG Resources Ltd. as Chairman and an interim voting procedure based on surface acreage in the Area of Interest. An affirmative vote of two (2) or more partners having 75% be required to pass any motion excluding matters concerning Unit Participation factors where 100% is required. ICG Resources Ltd. will investigate the payout status on the Dome/Campar wells and adjust the interim voting interest to reflect such payout".

This motion was moved by ICG and seconded by Manitoba Oil & Gas. The vote was unanimous.

ICG has checked the payout status of the Dome/Campar wells and has found that they have as yet not paid out. Payout of the 12-29-11-26 WPM well is expected in December 1985 and payout of the 13-29-11-16WPM well is not expected until the spring of 1986. The interim voting interest will be adjusted as each well pays out. The current and after Dome/Canpar payout interim voting interests are as shown:

<u>COMPANY</u>	<u>CURRENT PERCENTAGE</u>	<u>AFTER DOME/CANPAR PAYOUT</u>
Canpar Holdings Ltd.	6.72	8.40
Dome Petroleum Limited	5.68	9.46
ICG Resources Ltd.	69.75	64.29
Manitoba Oil & Gas Corp.	8.57	8.57
Mountcliff Resources Ltd.	3.57	3.57
Tundra Oil and Gas	5.71	5.71

Motion #3

"A Technical Committee established with ICG Resources Ltd. as Chairman and that this Committee be charged with submitting to the Operating Committee a proposed waterflood pattern, a definition of the unitized zone and a type log of the zone, a hydrocarbon pore volume map and tract participation factors based upon original planimetered hydrocarbon pore volume, original hydrocarbon pore volume based on wellbore parameters, remaining reversible reserves and stabilized productivity".

The motion was moved by ICG and seconded by Dome. The vote was unanimous.

The discussion of this motion regarded the changes to the Technical Committee and the parameters to be investigated for unitization. All parties recognized the importance of reserves to the unit and there was some discussion about the applicability of and definition of productivity. Dome pointed out that the Chevron North Virden Scallion Unit #1 was based totally on productivity factors.

Motion #4

"A Titles Committee be established with ICG Resources Ltd. acting as Chairman and that this Committee be charged with submitting to the Operating Committee the working interest ownership and royalty interest ownership of the Lodgepool Scallion zone in the proposed Unit Area".

This motion was moved by ICG and seconded by Tundra.

ICG's representative, Doug Reynolds, will begin work on the unit land titles and will contact the other companies' representatives as required.

Motion #5

"Costs for work done in the Technical and Titles Committees, excluding actual meeting time, by ICG Personnel at the direction of the Operating Committee and excluding all costs incurred to date will be shared by the Working Interest Owners in proportion to each Owner's Interim Voting Interest which will be adjusted to the Unit Participation Interest if a unit is formed. The Interim Operator will determine these costs based on the following rates:

Engineers, Geologists, Land	\$300/day
Technicians, Draftsmen	\$220/day
Stenographers	\$ 18/hour
Reproduction	At cost
Outside Services	At cost

This motion was moved by ICG and seconded by Dome. The vote was unanimous.

ICG had intended to charge to the pre-unit account the costs associated with the technical work done on the original interflood study which would have been about \$2500. Tundra suggested that costs associated with travel for Tundra and Manitoba Oil & Gas to attend these unit meetings be also included and equalized with the other owners.

A compromise was agreed upon whereby ICG will charge only costs after the 1985-11-13 date and the travel time from Winnipeg will be absorbed by Tundra and Manitoba Oil & Gas.

Other Business

Discussions were initiated regarding equalization of costs when the unit was formed. Tundra and Manitoba Oil & Gas feel only pipelines, facilities and the salvageable, tangible well equipment be included in the equalization at a depreciated cost. They feel that each unit tract will have a wellbore and the intangible drilling and completion cost of the wells should remain the responsibility of the individual company.

Decisions on equalization will be made at a later Operating Committee Meeting.

Company representative lists to the various Committees are attached.

PROPOSED NORTH VIRDEN SCALLION UNIT #2

Operating Committee

Dome Petroleum Limited
ICG Resources Ltd.
Manitoba Oil & Gas Corporation
Mountcliff Resources Ltd.
Tundra Oil and Gas

Claudia Kyllö/Ib Møller
Peter Krenkel/Doug Bates
Derek Longfield/John Sadler
Cliff Berg
Bob Puchniak

Technical Committee

Dome Petroleum Limited
ICG Resources Ltd.
Manitoba Oil & Gas Corporation

Mountcliff Resources Ltd.
Tundra Oil and Gas

Helen Harrison/Claudia Kyllö
Doug Bates/Moheb Gobrial
Derek Longfield/Marc
Junghans
Cliff Berg
Dan Barchyn

Titles Committee

Dome Petroleum Limited
ICG Resources Ltd.
Manitoba Oil & Gas Corporation
Mountcliff Resources Ltd.
Tundra Oil and Gas

Joan Grschwendter
Doug Reynolds
Linda Vall
No Representative
No Representative

TUNDRA MOGC VILDEN PROV 6-29-11-26

K-E 5 YEARS BY MONTHS X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

Days on Production

Oil Rate - m³/d

Water Rate - m³/d



TUNDRA MDGC VIRGEN PROV 11-29-11-26

KE 5 YEARS BY MONTHS X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690

10 Days or Payson

10 Days or Payson

10 Days or Payson

Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. 19 85 19 86 19 19 19

Mountain

Cherry

Days or

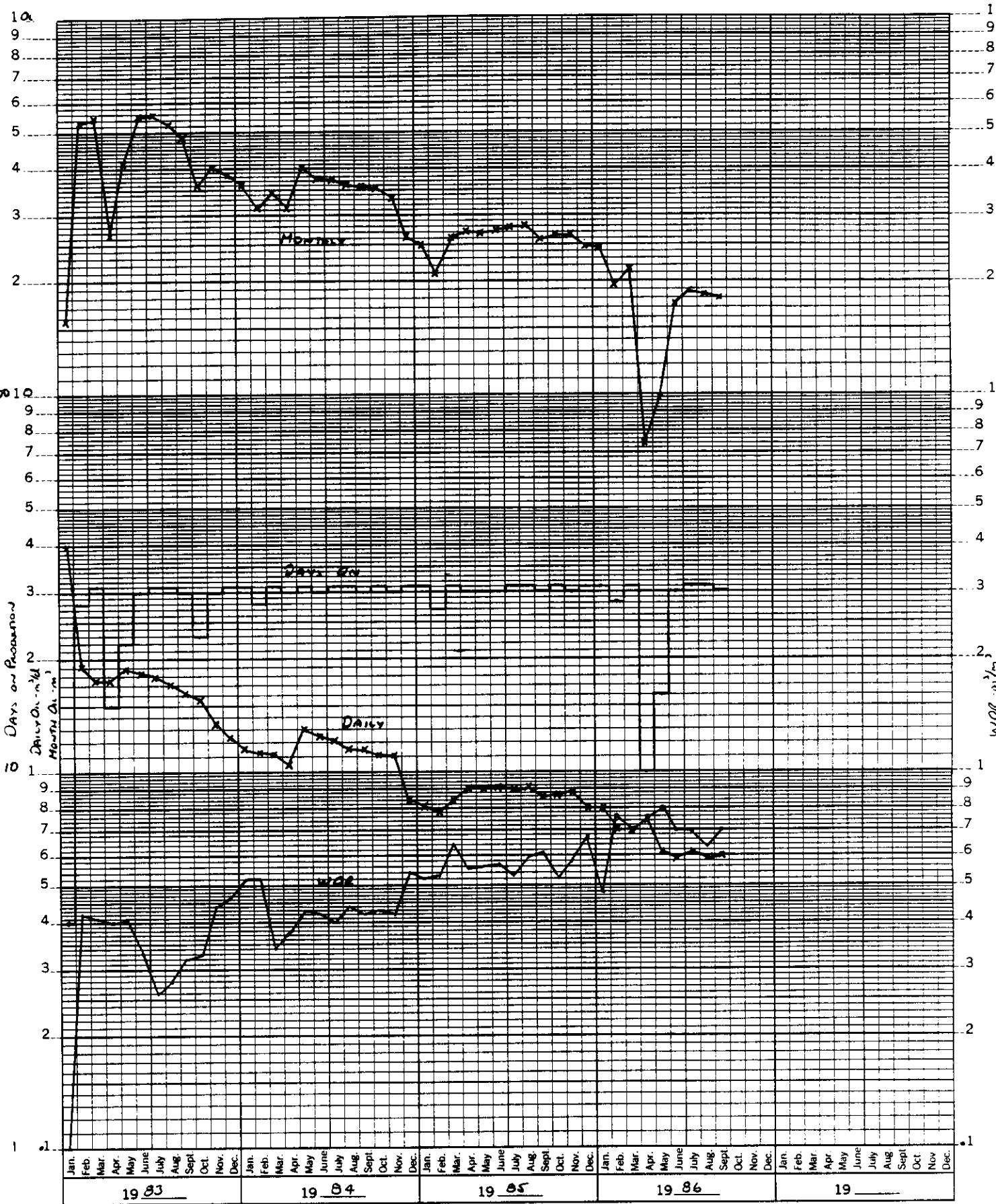
WOK

Water or Ratio m/m

ICGR at SCAW Nov 12-29-11-26

KE 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690

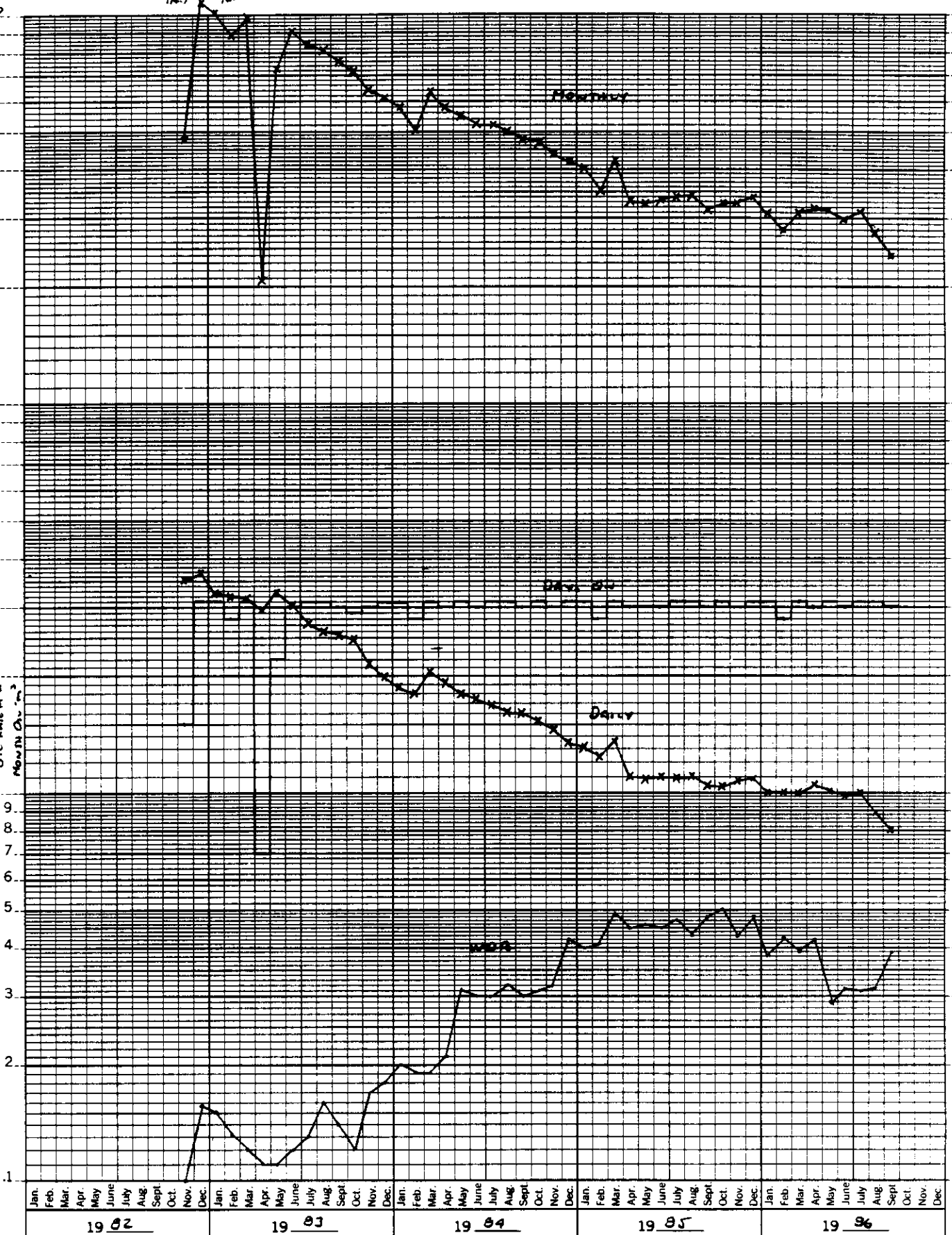


ICGR et al. Seawater Prod 13-29-11-26

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690

Days on Production

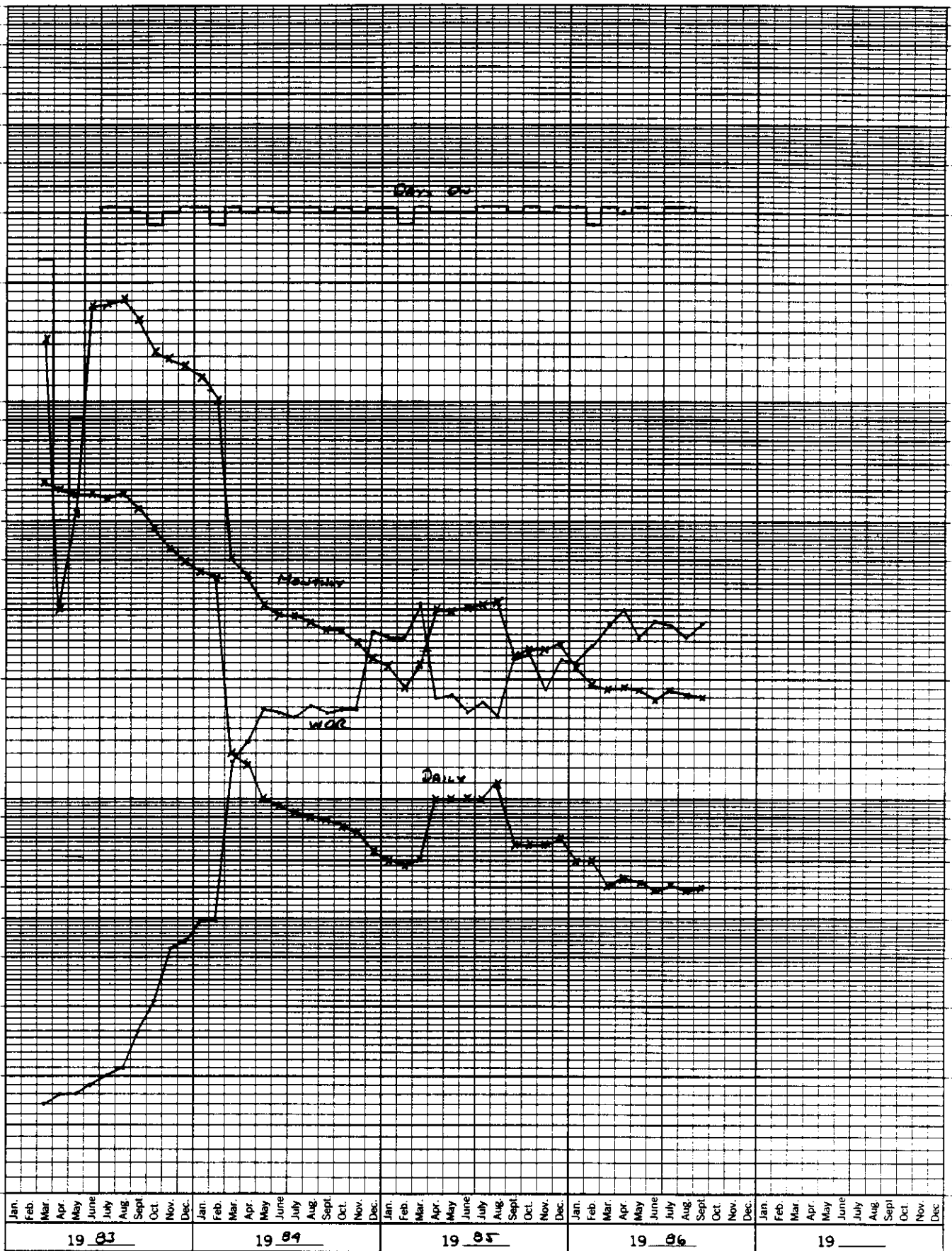


ICGR et al. SCALLION PROV 14-29-11-26

5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690

10 MONTHLY OIL - m³
5 DAILY OIL - m³
2 DAYS OF PRODUCTION



ICGR at m. Vinson 9-30-11-26

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690 100

Monthly Oil - m

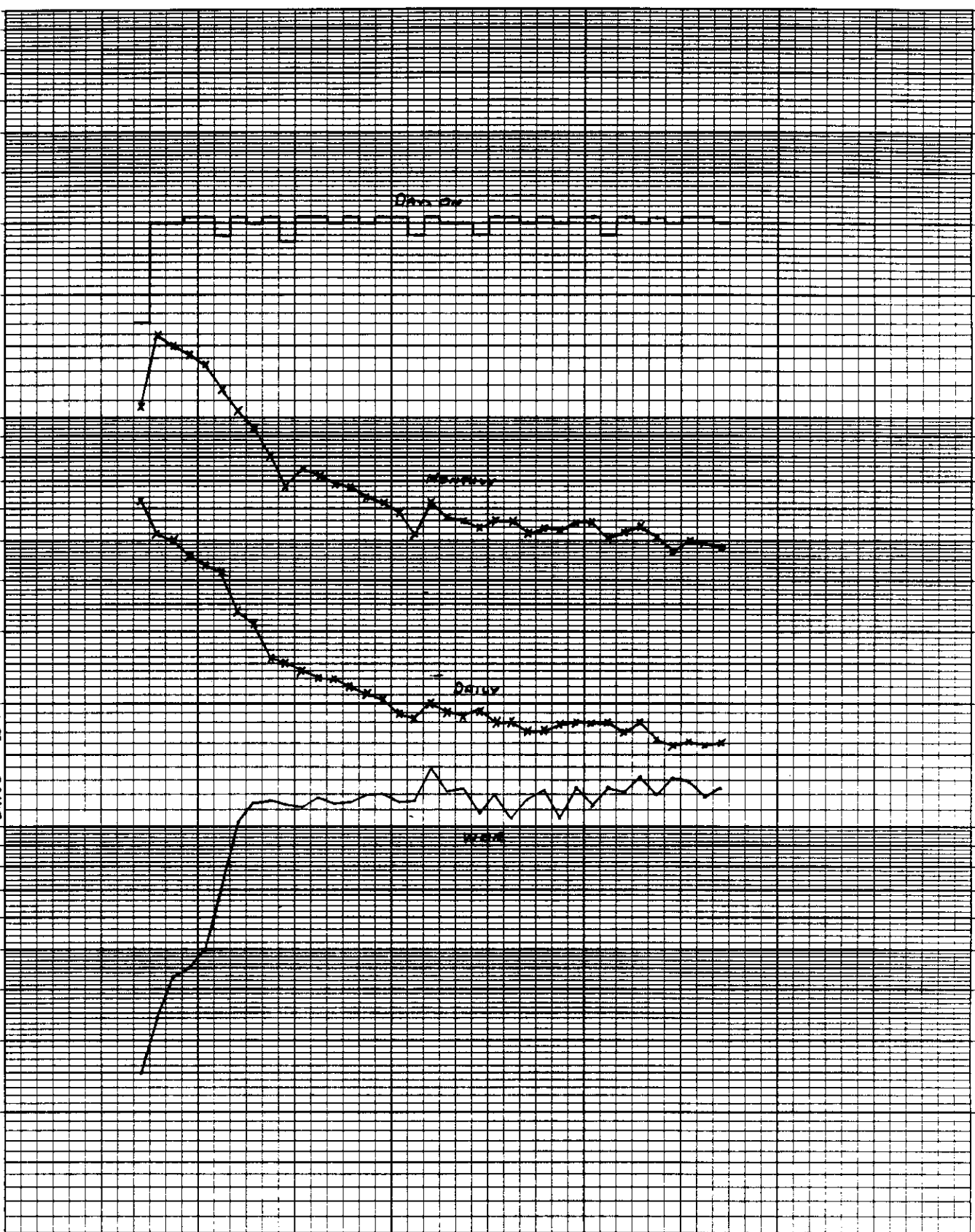
10

Daily Oil - m

10

10

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
19 33												19 34												19 35												19 36												19											



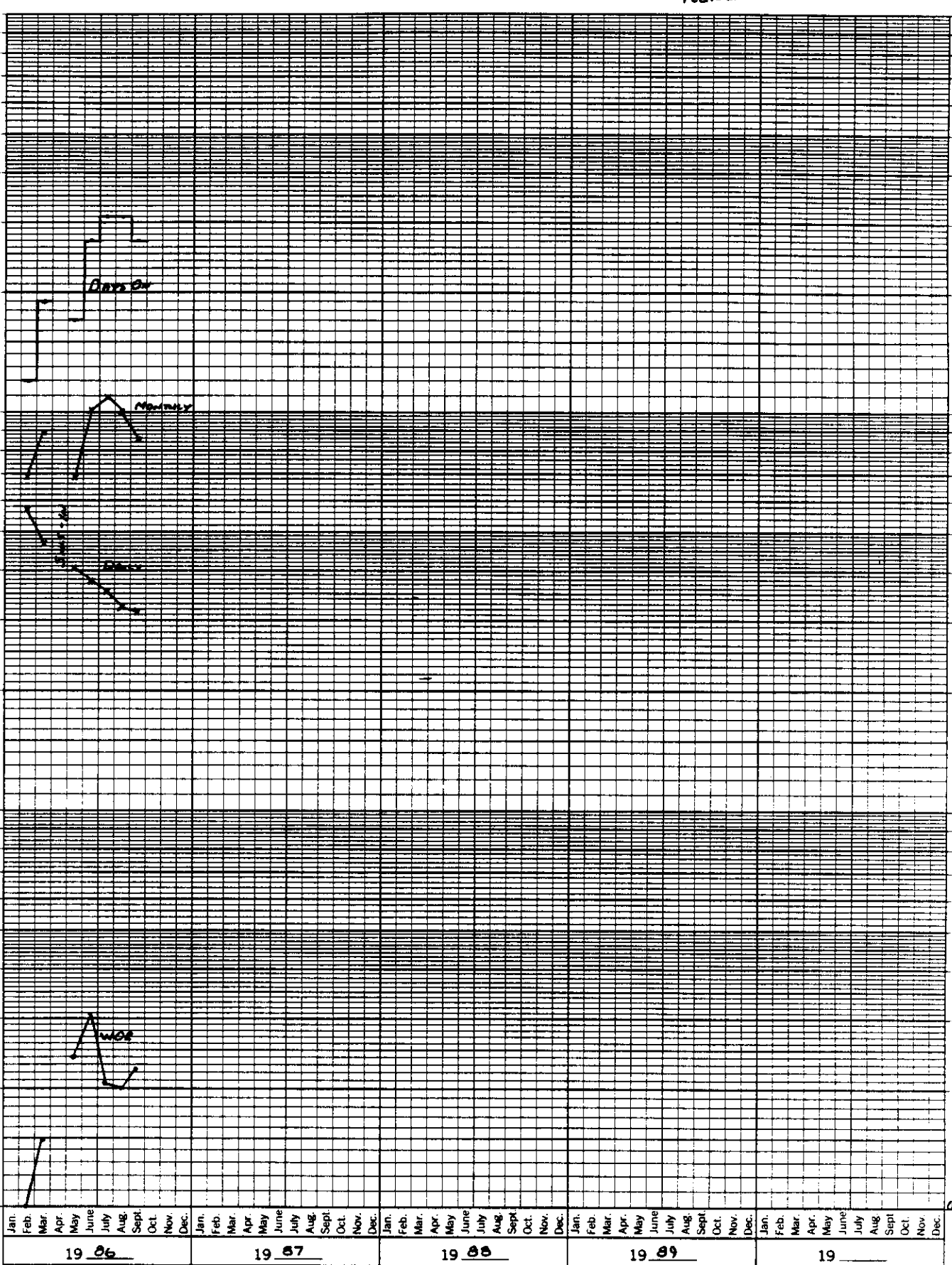
ICGR at m Scaution 10A-30-11-26

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 66908

Normally $Q_2 \cdot m^3$

10
DAN ON PENDING
Daily $Q_2 \cdot m^3$



19 86

19 87

19 88

19 89

19 90

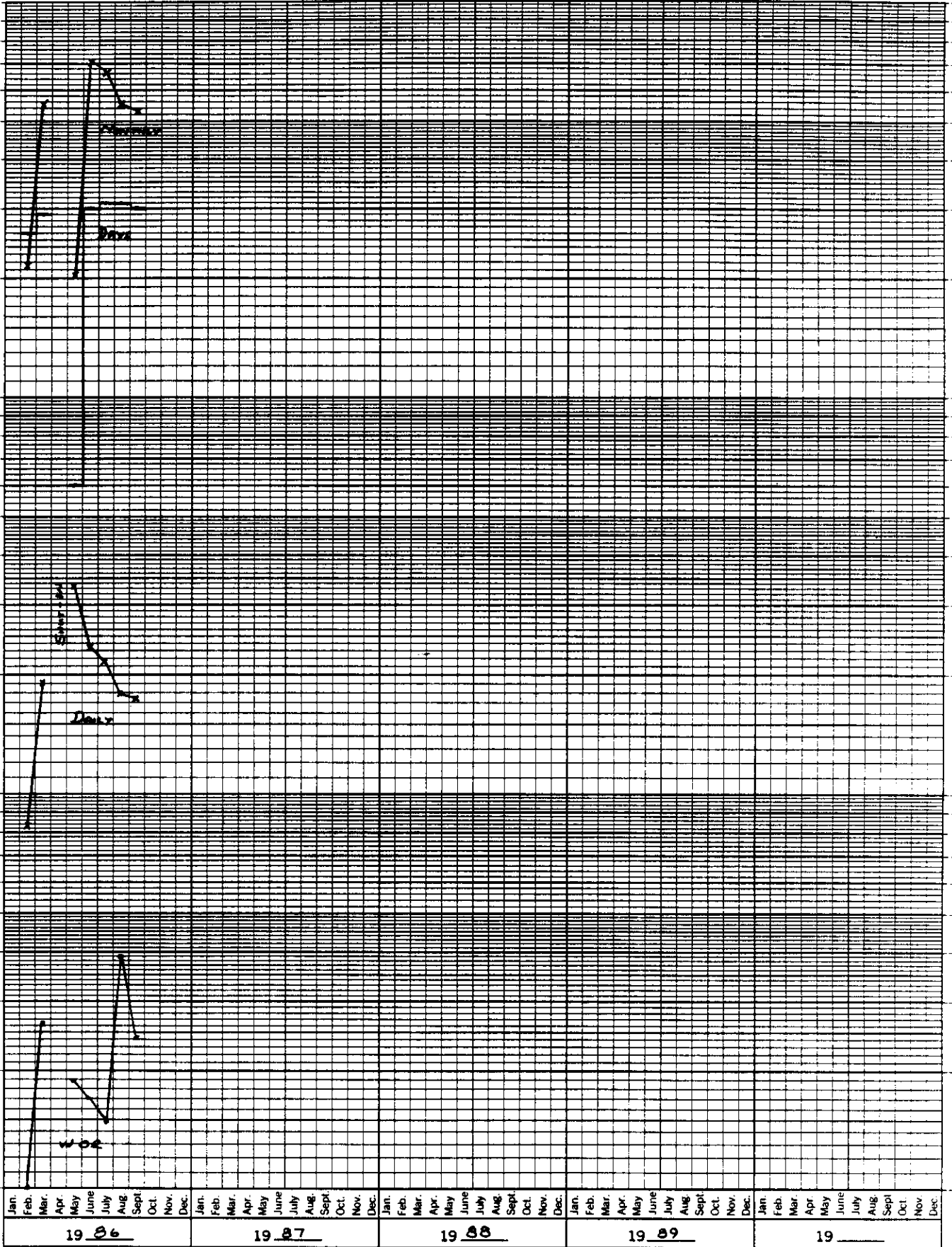
TCRL ST AL VIRDEN 14-30-11-26

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690

Days On Road
Miles On Road
Daily On Road

100
9
8
7
6
5
4
3
2
10
9
8
7
6
5
4
3
2
1
9
8
7
6
5
4
3
2
1
0.1



19 36

19 37

19 38

19 39

19 40

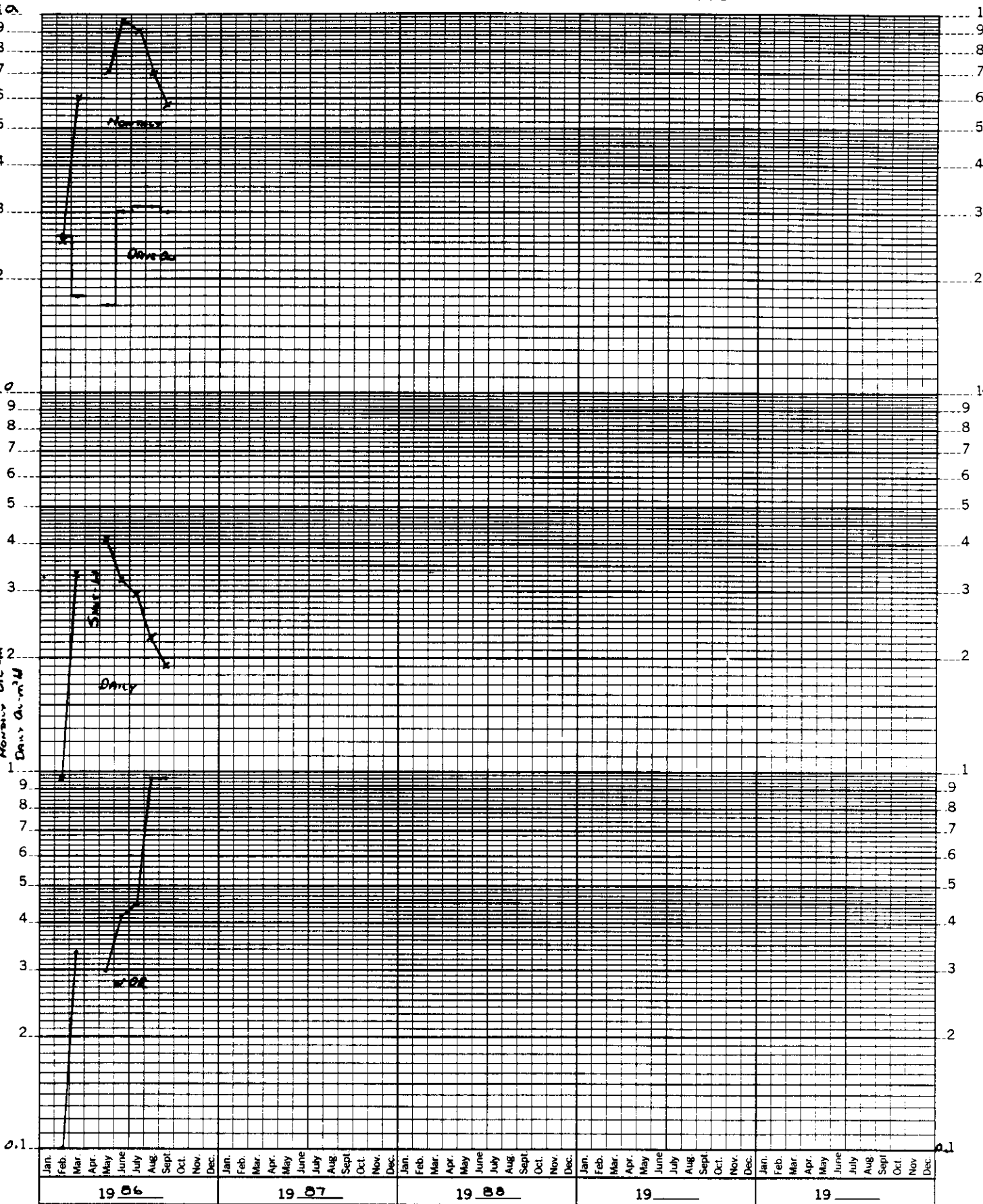
Wash On Road

TCRL of m. Viroon A11-30-11-26

46 6690

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

Days of Rainy
Month of Rainy

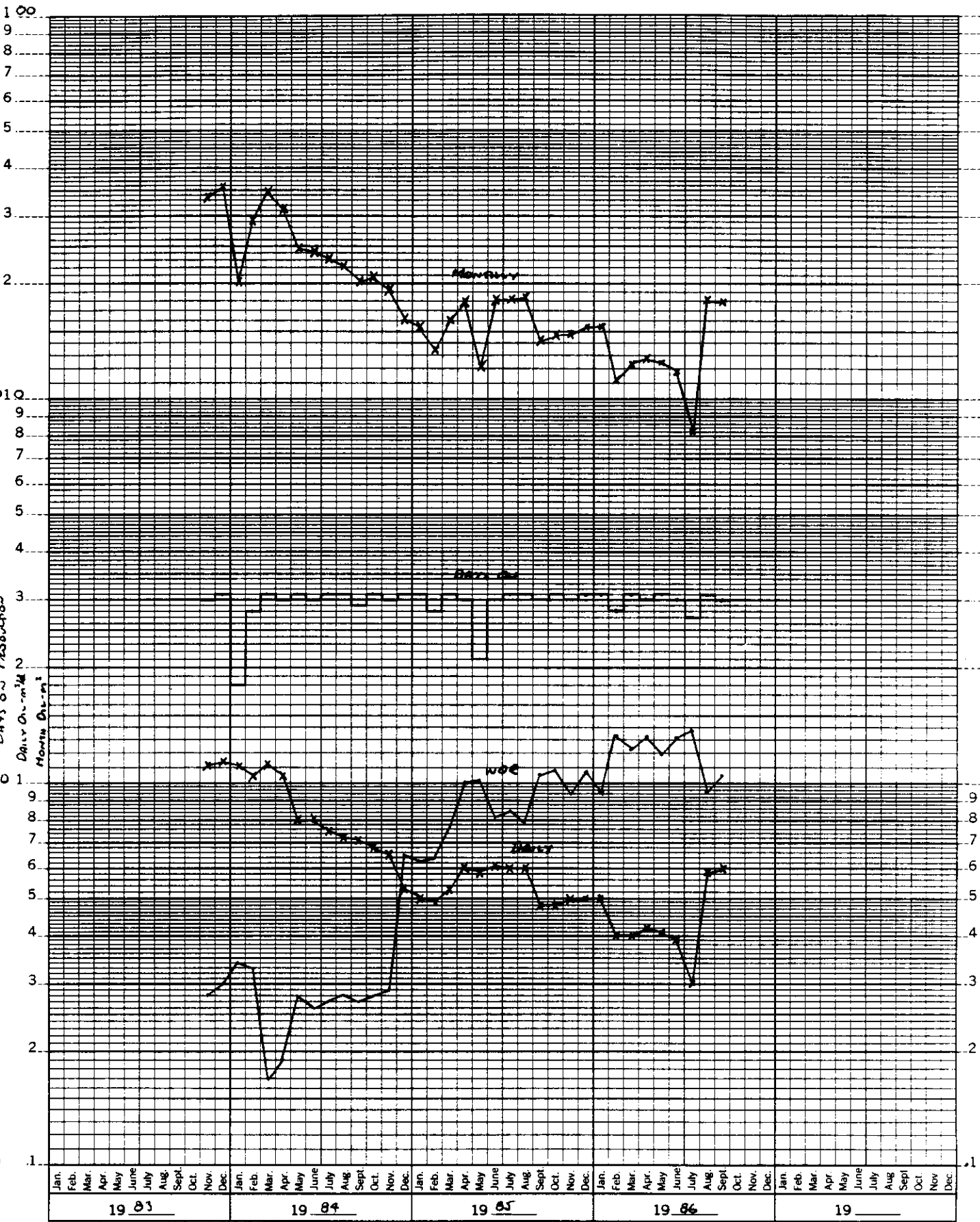


ICGR et al. VIKOS A 15-30-11-24

46 6690

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN USA

Days on Preserver



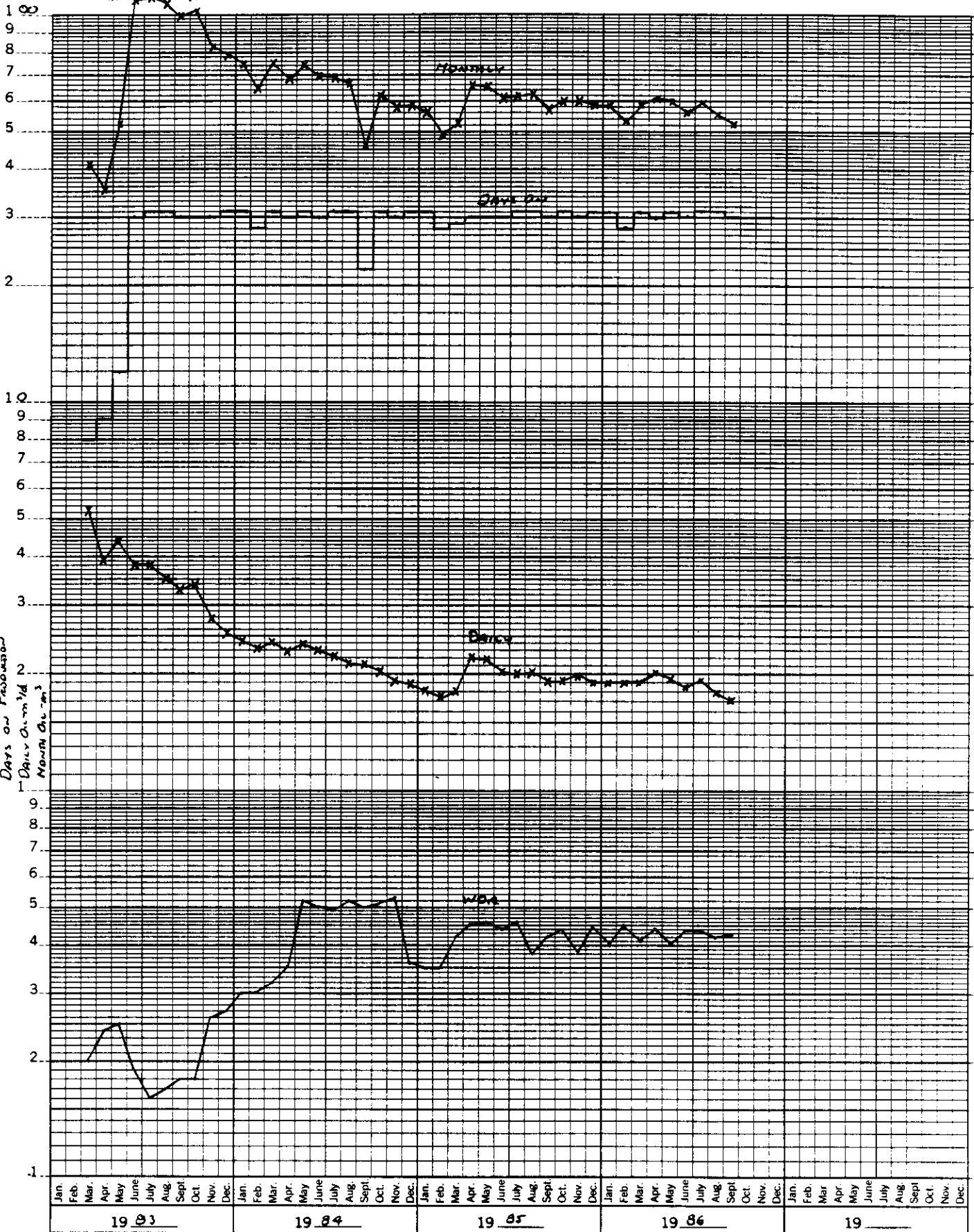
ICGR at m Seamon 16-3D-11-26

46 6690

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

Days on Passover

Days on Passover
Months on Passover

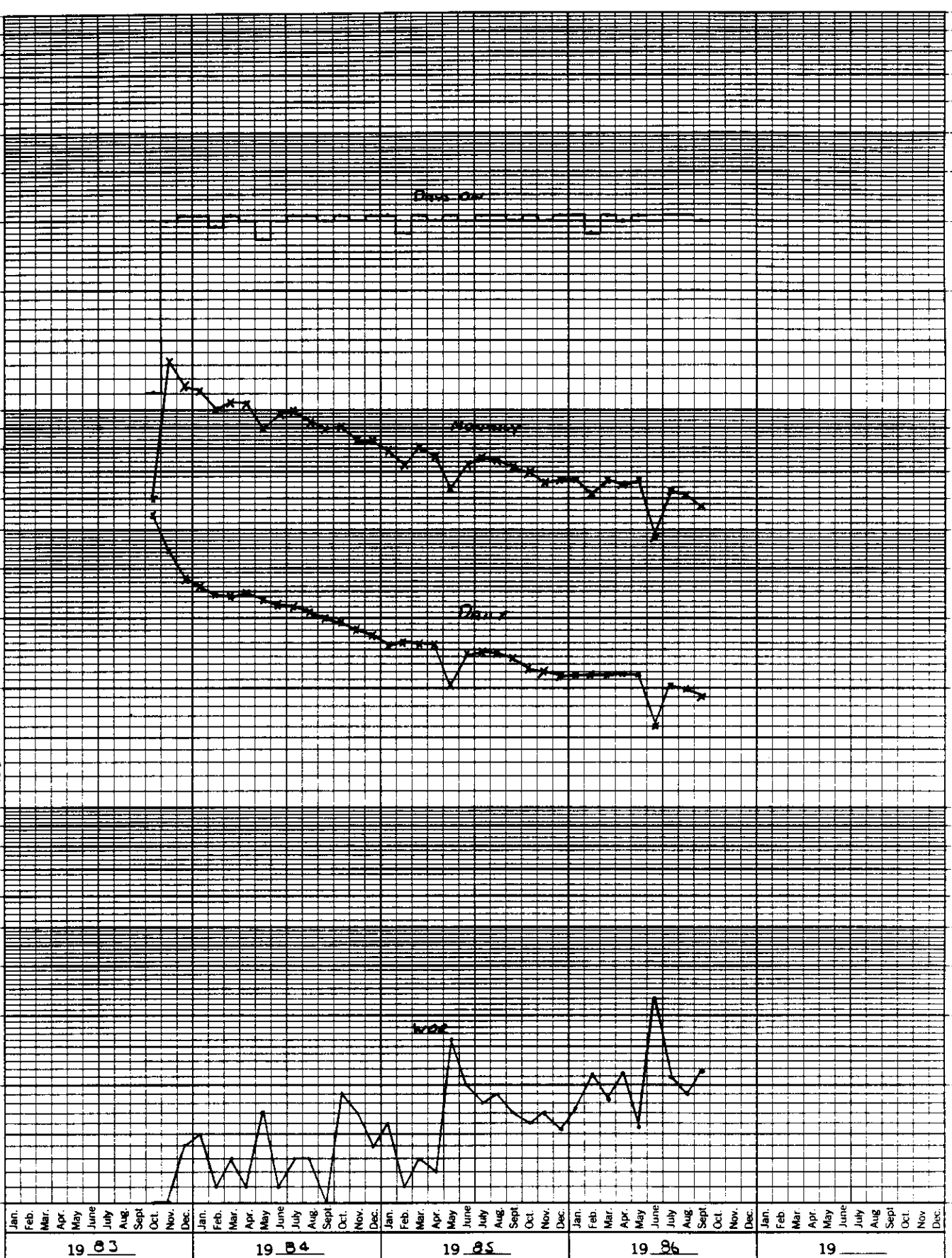


ICGR or a Sealion 1-31-11-26.

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690

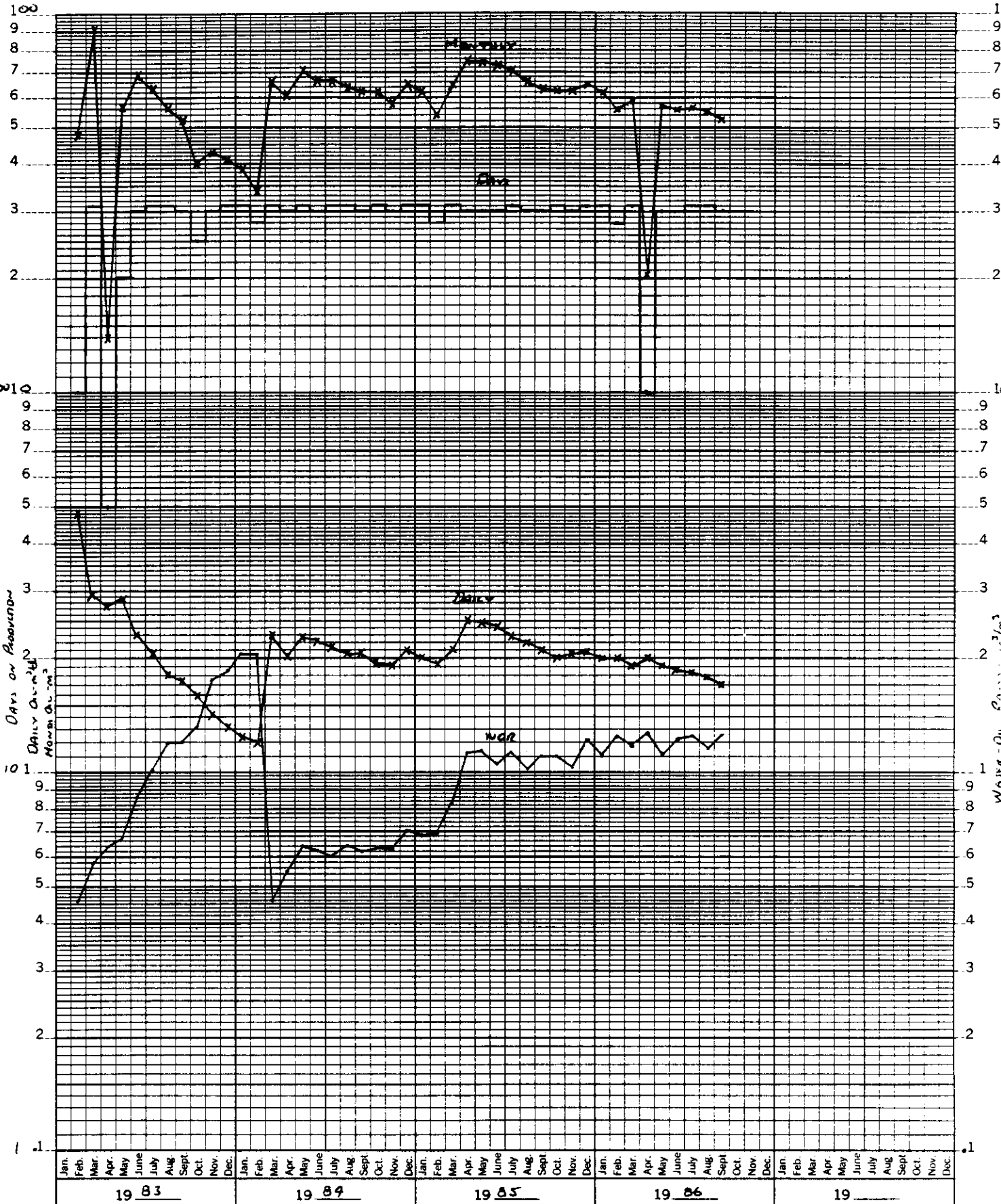
Monthly Oil - m³
Daily Oil - m³
Days on Pump



ICGR or a Station 3-32-11-26

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

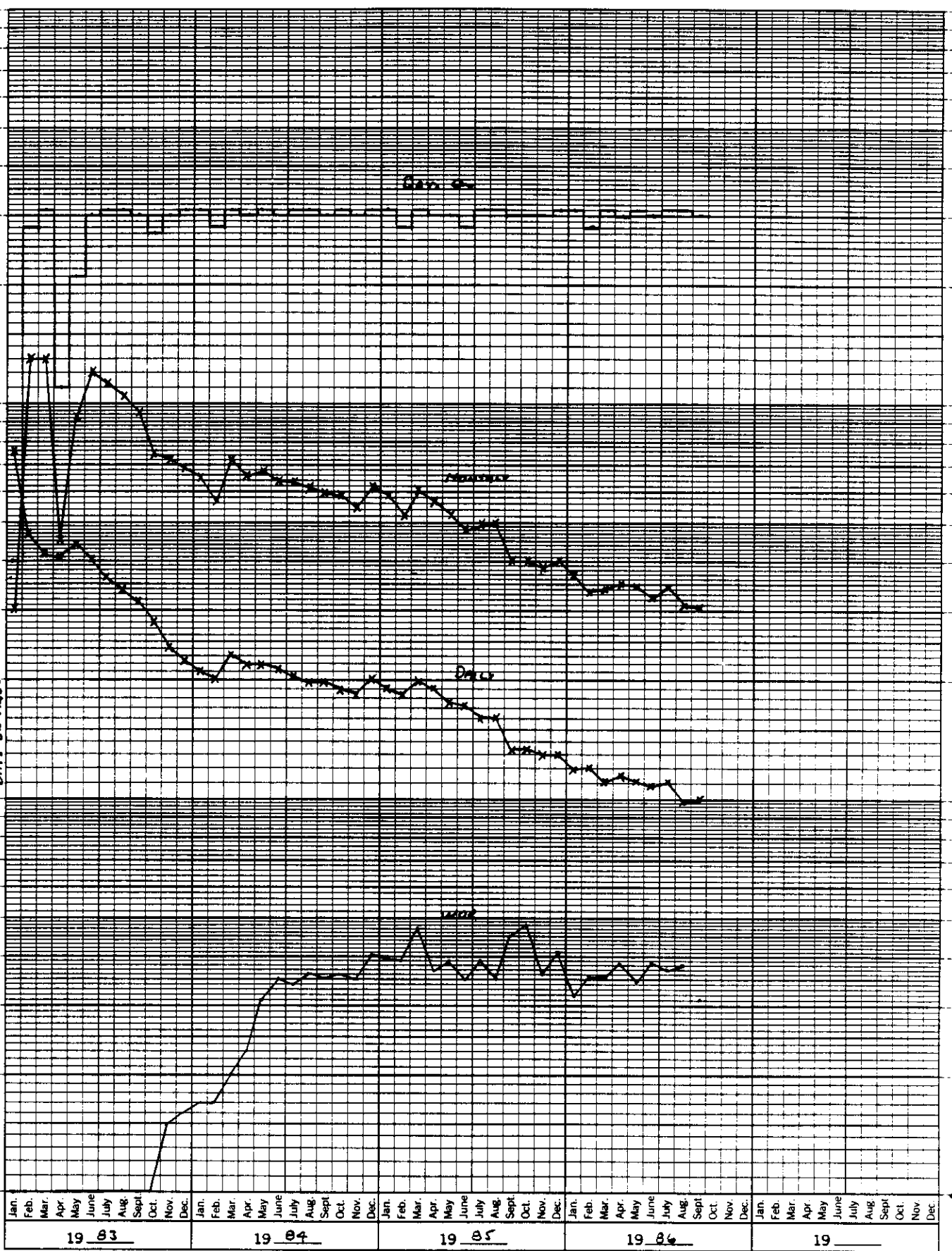
46 6690



ICGR or a Scallion 4-32-11-26

5 YEARS BY MONTHS X 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

46 6690 00



ICGL at M Viroon S-32-11-26

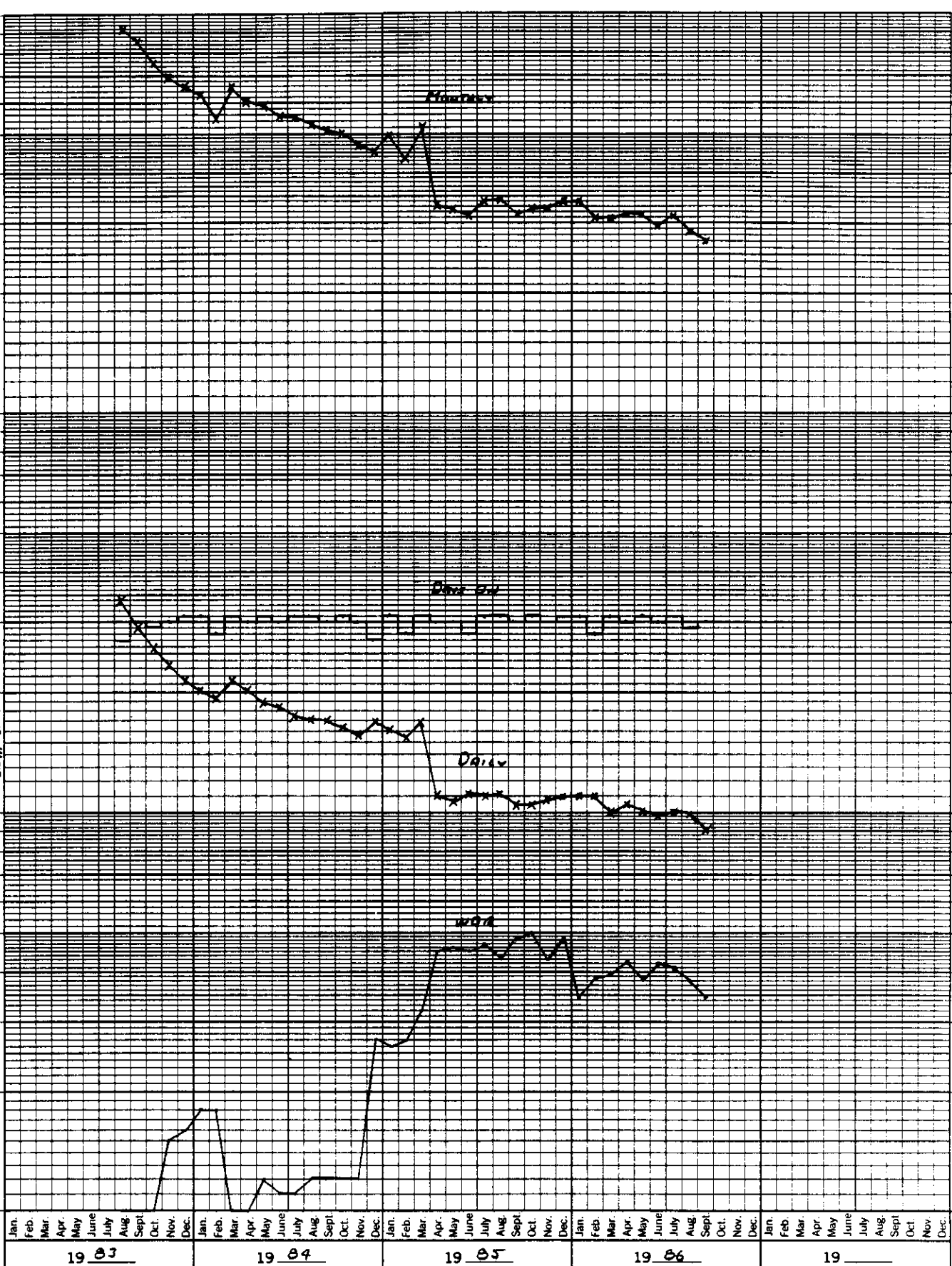
K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

Days on Prosean

100
90
80
70
60
50
40
30
20

10
9
8
7
6
5
4
3
2
1

10
9
8
7
6
5
4
3
2
1



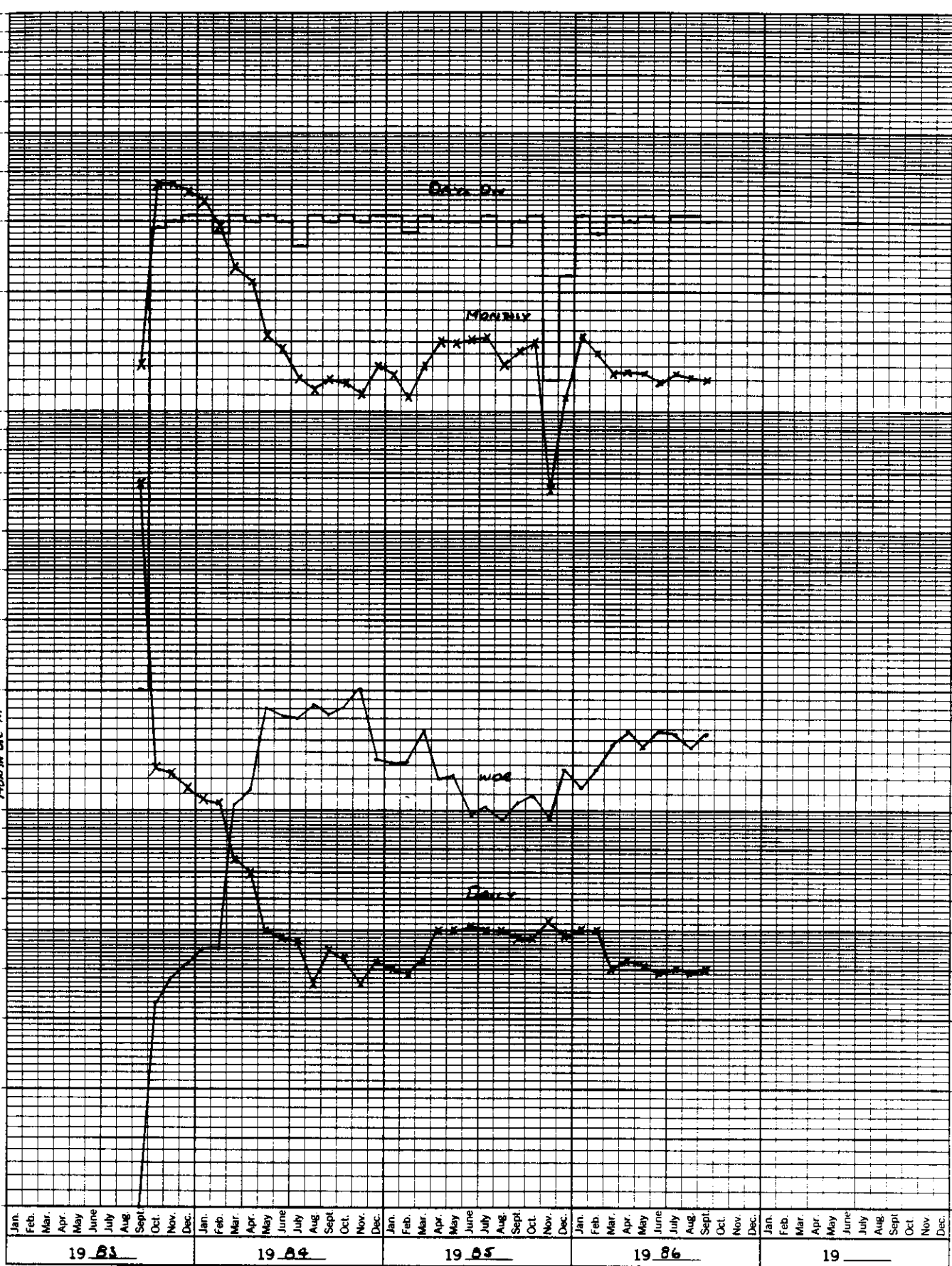
ICGR at An Vindon 6-32-11-26

46 6690

K-E 5 YEARS BY MONTHS x 3 LOG CYCLES
KEUFFEL & ESSER CO. MADE IN U.S.A.

Days on Reservoir

DAILY ON A 32N
MONTH ON A 1





Energy and Mines

Petroleum

555 — 330 Graham Avenue
Winnipeg, Manitoba, CANADA
R3C 4E3

(204) 945-6577

June 29, 1987

ICG Resources Ltd.
2700, 140 - Fourth Avenue S.W.
CALGARY, Alberta T2P 3S3

Attention: Mr. P. Krenkel
Vice-President, Operations

Re: Proposed North Virden Scallion Unit No. 2

Dear Peter:

Further to our correspondence and discussions during 1985, I request that you provide an update of the status of Unit negotiations and pressure maintenance plans for the subject proposed Unit. You are also requested to provide a proposed timetable to unitization.

You are requested to provide this information prior to July 15, 1987.

Yours sincerely,

L.R. Dubreuil
Chief Petroleum Engineer
Petroleum Division

LRD:dah



ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P3S3
(403) 231-9000
1985 10 30



ALL WORKING INTEREST OWNERS
North Virden Area

Gentlemen:

Re: Proposed North Virden Scallion Unit No. 2

Enclosed for your review are the Minutes of 1985-10-17 Meeting and a copy of ICG's report on Proposed Waterflood in the above Area. Note this report has been amended to include tract 10-30-11-26 WPM in the waterflood area.

A second meeting of the Working Interest Owners will be held on Wednesday, November 13, 1985 at 09:30 at 26th Floor, 140 - 4 Avenue S.W., Calgary.

The Agenda for this meeting is as follows:

1. Review, discuss and approve minutes of previous meeting.
2. Vote on motions 1 to 5 inclusive as per attached minutes. All parties should be prepared to designate their representative on the Operating, Technical and Titles Committee.
3. Other Business

Immediately following adjournment of the above meeting, the Technical Committee will meet to discuss the following:

1. Technical review of ICG's revised report on the Proposed Waterflood.
2. ICG are proposing to use a HCPV map as the basis for Unitization. All participants in this meeting should be prepared to review ICG's interpretation of the HCPV data.

.../2

ALL WORKING INTEREST OWNERS

North Virden Area

Page 2

1985 10 30

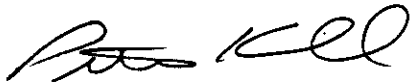
3. Discuss and plan proposal for a formal application to the Manitoba Department of Energy and Mines, Petroleum Branch.

4. Other business.

If the above date presents a problem, please contact the undersigned at 231-9036 or Doug Bates at 231-9057.

Yours truly,

ICG RESOURCES LTD.

A handwritten signature in black ink, appearing to read 'P. Krenkel', with a stylized flourish at the end.

P. Krenkel,
Vice-President, Operations

PK/hjm

ALL WORKING INTEREST OWNERS
North Virden Area

Dome Petroleum Limited
1400, 333 - 7 Avenue S.W.
Calgary, AB
T2P 2H8
Attention: Ms. Claudia Kylo

Canpar Holdings Ltd.
c/o Dome Petroleum Ltd.
1400, 333 - 7 Avenue S.W.
Calgary, AB
T2P 2H8
Attention: Ms. Claudia Kylo

Tundra Oil and Gas
300 Assiniboine Avenue
Winnipeg, Manitoba
R3C 0X6
Attention: Mr. Bob Puchniak

Manitoba Department of Energy and Mines
Eaton Place
555 - 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E3
Attention: Mr. H. Clare Moster

Manitoba Oil and Gas Corporation
870, 330 Graham Avenue
Winnipeg, Manitoba
R3C 4A5
Attention: Mr. Derek Longfield

Mountcliff Resources Ltd.
4856 North Haven Drive NW
Calgary, AB
T2K 2J7
Attention: Mr. Cliff Berg

PROPOSED NORTH VIRDEN SCALLION UNIT NO. 2

Minutes of Working Interest Owners'
Meeting Held 1985-10-17

A meeting of the Working Interest Owners of the North Virden Area was held at 9:30 a.m. 1985-10-17 on the 26th Floor of ICG Resources Ltd.'s office at 2600, 140 - 4 Avenue S.W., Calgary.

Attendance at the meeting was as follows:

<u>Company</u>	<u>Representative</u>
Mountcliff Resources Ltd.	Cliff Berg
Manitoba Oil & Gas Corporation	Derek Longfield
ICG Resources Ltd.	P. Krenkel
	D.R. Bates
	M.P. Gobrial
	D. Reynolds

Tundra Oil and Gas had advised us previously that they would not attend.

Canpar Holdings Ltd. had advised that they would be represented by Dome.

Dome did not attend. They were later contacted and advised that they had prior commitments.

Doug Bates presented his technical report on the Proposed Waterflood - Northwest Extension - Virden Lodgepole 'A' Pool. Some discussion followed. Manitoba Oil & Gas Corporation suggested that Lsd 10-30 be included in the unit as a water injector to add another partial 9-spot injection pattern and to increase the swept area. There was general agreement to this idea and ICG will add this tract to the proposed unit area and make the necessary changes to its waterflood evaluation study.

Since all parties were not present, it was decided not to formally vote on any motions.

ICG proposed the following motions for review and voting at the next meeting:

MOTION #1

"Unitization of the Lodgepole Pool in the North Virden Area be initiated with ICG Resources Ltd. acting as interim Operator. The proposed name for the Unit is "North Virden Scallion Unit #2". The area of interest is:

Lsds 6,11,12,13,14	sec 29-11-26 WPM
Lsds 9,10,15,16	sec 30-11-26 WPM
Lsd 1	sec 31-11-26 WPM
Lsds 3,4,5,6	sec 32-11-26 WPM"

MOTION #2

"An Operating Committee be established with ICG Resources Ltd. as Chairman and an interim voting procedure based on surface acreage in the Area of Interest. An affirmative vote of two (2) or more parties having 75% be required to pass any motion excluding matters concerning Unit participation factors."

The interim voting interest, based on a unit Area as per Motion #1 will be:

<u>Company</u>	<u>Percent</u>
Canpar Holdings Ltd.	6.72
Dome Petroleum Limited	5.68
ICG Resources Ltd.	69.75
Manitoba Oil and Gas Corporation	8.57
Mountcliff Resources Ltd.	3.57
Tundra Oil and Gas	5.71

ICG's representative on the Operating Committee is Peter Krenkel.

MOTION #3

"A Technical Committee established with ICG Resources Ltd. as Chairman and that this Committee be charged with submitting to the Operating Committee a hydrocarbon pore volume map, tract participation factors based upon original hydrocarbon pore volumes, and a proposed waterflood pattern."

ICG's representative is Doug Bates.

MOTION #4

"A Titles Committee be established with ICG Resources Ltd. acting as Chairman and that this Committee be charged with submitting to the Operating Committee the working interest ownership and royalty interest ownership of the Lodgepole zone in the proposed Unit Area."

ICG's representative is Doug Reynolds.

MOTION #5

"Costs for work done in the Technical and Titles Committee excluding actual meeting time by ICG Personnel at the direction of the Operating Committee will be shared by the Working Interest Owners in proportion to each Owner's Interim Voting Interest. The Interim Operator will determine these costs based on the following rates:

Engineers, Geologists, Land	\$300/day
Technicians, Draftsmen	\$220/day
Stenographers	\$18/hr
Reproduction	At Cost
Outside Services	At Cost

Other Business

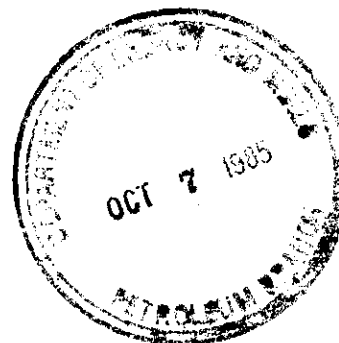
ICG mentioned that if Unitization was successful, the well, facility and pre-unit costs would be equalized and that the existing facilities currently owned 100% by ICG, would become "Unit Facilities".



ICG RESOURCES LTD
DIVISION OF INTER-CITY GAS CORPORATION

2700-140 FOURTH AVENUE S.W.
CALGARY ALBERTA CANADA
T2P 3S3
(403) 231-9000

1985 10 03



ALL WORKING INTEREST OWNERS
North Virden Area

Gentlemen:

Re: Proposed Unitization and Secondary
Recovery Scheme - North Virden Area
Twp 12 Rge 26 W1M

ICG Resources Ltd. are a major Owner and Operator of 11 wells in the Virden Northwest Extension of the Lodgepole 'A' Pool. We have identified an area of interest (attachment #1) covering 13 spacing units which we feel can be economically placed under secondary recovery.

ICG Resources Ltd., request your attendance at a meeting at 09:30 hours, October 17, 1985 on the 26th Floor, 140 - 4 Avenue S.W., Calgary. It is proposed that an area of interest be defined and that actions leading to unitization and evaluation of a secondary recovery project proceed.

The agenda for the meeting is as follows:

1. A review by ICG Resources Ltd. of its proposal to waterflood the area of interest.
2. Poll the Working Interest Owners to determine their interest in unitization and evaluation of a waterflood.
3. If it is decided that both should be undertaken, then;
 - a) establish an Operating Committee and elect a chairman;
 - b) establish an interim voting procedure;
 - c) nominate an interim Operator;

.../2

- d) establish a Technical Committee and provide it with terms of reference;
 - e) establish a Titles Committee and provide it with terms of reference;
 - f) establish an accounting procedure for handling pre-Unit expenses;
 - g) establish the rate of remuneration for Interim Operator's personnel working on this project at the direction of the Operating Committee;
4. If agreement is reached on the above, the Operating Committee will then set target dates for completion of this project.
5. Other business.

Since some representatives will be attending from out-of-town, we would propose that the first meeting of the Technical Committee be held immediately following conclusion of the above meeting.

If the proposed meeting date presents a problem, please contact the undersigned at 231-9036.

Yours truly,

ICG RESOURCES LTD.



P. Krenkel, P.Eng.
Engineering Manager

PK/hjm

ALL WORKING INTEREST OWNERS
North Virden Area

Dome Petroleum Limited
1400, 333 - 7 Avenue S.W.
Calgary, AB
T2P 2H8
Attention: Mr. Dave Peterson

Canpar Holdings Ltd.
1530, 140 - 4 Avenue S.W.
Calgary, AB
T2P 3N3

Tundra Oil and Gas
300 Assiniboine Avenue
Winnipeg, Manitoba
R3C 0X6
Attention: Mr. Bob Puchniak

Manitoba Department of Energy and Mines
Eaton Place
555 - 330 Graham Avenue
Winnipeg, Manitoba
R3C 4E3
Attention: Mr. H. Clare Moster

Manitoba Oil and Gas Corporation
870, 330 Graham Avenue
Winnipeg, Manitoba
R3C 4A5
Attention: Mr. Derrek Longfield

Mountcliff Resources Ltd.
4856 North Haven Drive NW
Calgary, AB
T2K 2J7
Attention: Mr. Cliff Berg

