



Chevron Canada Resources

P.O. Box 100, Virden, Manitoba R0M 2C0
Phone (204) 748-1334 Fax (204) 748-6762

NOV 6 1991

File

NVSU No 1

Pressure
Survey

1991-10-31

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

ATTENTION: Mr John Fox

RE: North Virden Scallion Unit 1 Infill Area Pressure Survey

Dear Sir:

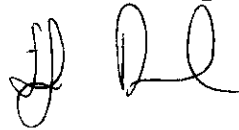
Chevron Canada Resources, as operator of the subject unit, requests exemption from the requirement of conducting annual reservoir pressure surveys in this area. We request that these surveys be conducted once every three years in conjunction with the Scallion Unit 1 pressure survey.

Comprehensive annual pressure surveys have been conducted in this area every year since 1989 and were required because of the infill project. We request the reduction in frequency for the following reasons:

1. We anticipate the suspension/abandonment of several wells in this area due to low oil production.
2. Over voidage in NVSU #1 has created a pressure bank that is gradually increasing the average reservoir pressure. This is indicated in the attached pressure surveys. Chevron intends to keep a net voidage ratio of 1.2 to maintain reservoir pressures well above the saturation pressure.
3. Increases in average reservoir pressures can be adequately monitored by triennial pressure surveys. Reservoir pressures between surveys can be predicted by historical increases and current production and injection rates.
4. Pressure survey results are of no value to waterflood management. The waterflood is presently monitored by production and injection rates.
5. Annual pressure surveys cost both Chevron and the Crown reductions in revenue with no long term benefits.

Attached are results of the last three year's surveys. If any additional information is required please contact Kevin Anderson or myself at the letterhead address.

Yours Truly,

A handwritten signature in black ink, appearing to be 'TJ Ruml', written in a cursive style.

TJ (Tom) Ruml
Production Technologist
Virden MB

NVSU #1 1991 Infill Pressure Survey

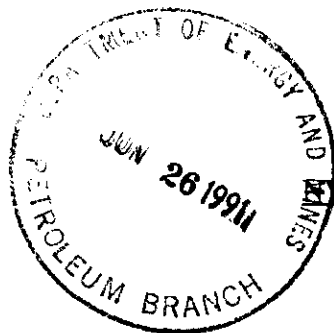
<u>Well</u>	<u>Type of Survey</u>	<u>Datum Depth Pressure (kPa)</u>		
		<u>1989</u>	<u>1990</u>	<u>1991</u>
11D-23-11-26	Sonolog	-	8 540	8 770
15D-23-11-26	Sonolog	-	10 290	10 960
12-24-11-26	Fall-off	-	9 155	9 775
1D-26-11-26	Sonolog	-	9 390	9 370
3-26-11-26	Sonolog	8 520	8 660	8 710
6-26-11-26	Fall-off	9 220	10 285	10 805



Chevron Canada Resources

P.O. Box 100, Virden, Manitoba R0M 2C0
Phone (204) 748-1334 Fax (204) 748-6762

June 19, 1991



SU #1 1991 Infill Pressure Survey

Department of Energy and Mines
Petroleum Branch
Attention: Mr. John Fox
555 - 330 Graham Avenue
WINNIPEG, Manitoba
R3C 4E3

Dear Sir

Enclosed are the results of the subject pressure survey. The results from 1989 and 1990 are also included for comparison purposes. Datum Depth pressures are indicating a slight increase in reservoir pressure in the infill area.

If you have any questions regarding the above, please contact Tom Ruml or Kevin Anderson at 748-1334 or at the letterhead address.

Yours truly,

for J.E. CAUSGROVE, P. Eng.
Area Superintendent
Virden

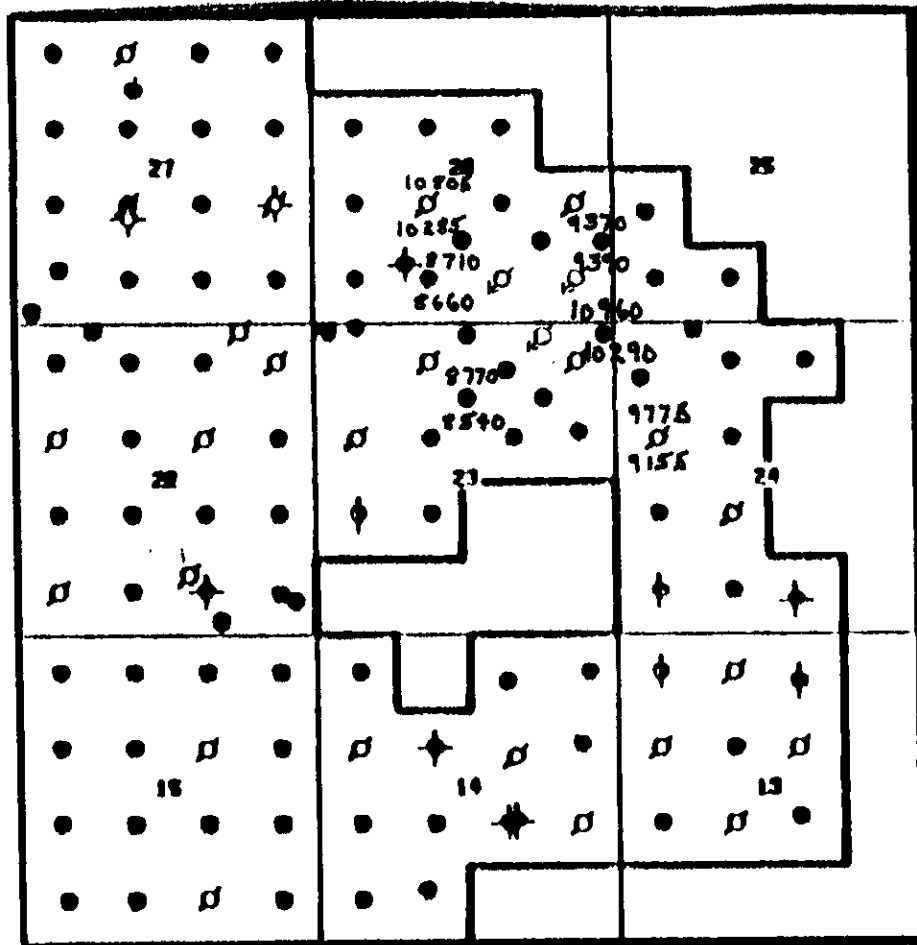
TJR/tjs
Enclosure

NVSU #1 1991 Infill Pressure Survey

<u>Well</u>	<u>Type of Survey</u>	Datum Depth Pressure (kPa)		
		<u>1989</u>	<u>1990</u>	<u>1991</u>
11D-23-11-26	Sonolog	-	8 540	8 770
15D-23-11-26	Sonolog	-	10 290	10 960
12-24-11-26	Fall-off	-	9 155	9 775
1D-26-11-26	Sonolog	-	9 390	9 370
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6-26-11-26	Fall-off	9 220	10 285	10 805

NORTH VIRDEN SCALLION UNIT #1

1991 INFILL PRESSURE SURVEY RESULTS



8770 - 1991 Results

8540 - 1990 Results

April 26, 1991

Mr. J.E. Causgrove, P. Eng.
Area Superintendent
Chevron Canada Resources
Box 100
Virden, Manitoba
ROM 2G0

Dear Sir:

RE: 1991 Pressure Surveys
North Virden Scallion Unit No. 1
Waskada Unit No. 6

Chevron's plans for the 1991 pressure surveys for the subject units as outlined in your letters dated April 18, 1991 are hereby approved.

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

Yours truly,



L.R. Dubreuil
Director



Chevron Canada Resources

P.O. Box 100, Virden, Manitoba R0M 2C0
Phone (204) 748-1334 Fax (204) 748-6762

April 18, 1991



North Virden Scallion Unit #1 Infill
1991 Pressure Survey

Department of Energy and Mines
Petroleum Branch
555 - 330 Graham Avenue
WINNIPEG, Manitoba
R3C 4E3

ATTENTION: Mr. John Fox

Dear Sir:

Chevron Canada Resources, as operator of North Virden Scallion Unit #1, submits the following information regarding the 1991 Infill project subsurface pressure survey:

1. List of wells to be surveyed
2. Measurement technique
3. Well status

The 1991 survey will be conducted on the same wells using the same methods as done in the 1990 survey. We hope to conduct the survey during May and June. If additional information is required, please contact Tom Ruml or Kevin Anderson at 748-1334 or at the letterhead address.

Yours truly,

For

J. E. CAUSGROVE, P. Eng.
Area Superintendent
Virden

TJR/tjs
Enclosure

North Virden Scallion Unit #1
Infill Project Pressure Survey for 1991

<u>WELLS</u>	<u>TYPE OF SURVEY</u>	<u>WELL STATUS</u>
11D-23-11-26	Sonolog	Producer
15D-23-11-26	Sonolog	Producer
12-24-11-26	Fall-off	Injector
1D-26-11-26	Sonolog	Producer
3-26-11-26	Sonolog	Producer
6-26-11-26	Fall-off	Injector



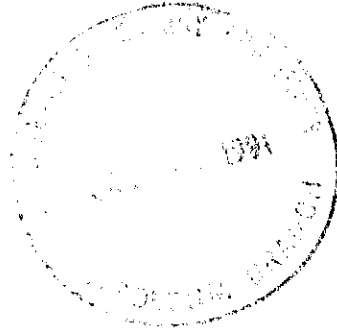
Chevron Canada Resources

P.O. Box 100, Virden, Manitoba R0M 2C0

Phone (204) 748-1334 Fax (204) 748-6762

File: NVSH #1

Pressure surveys



January 9, 1991

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

Attention Mr. John Fox

Dear Sir:

RE: North Virden Scallion Unit #1
Pressure Survey - 1990

Please find enclosed the results of the above survey. The results have been tabulated on the following page with results from the 1987 survey for comparison purposes. For your convenience the results are also shown along with 1987 results on the attached map. In the case of the infill area 1989 and 1990 results are shown.

If you have any questions regarding the above, please contact Steve Pierce or Kevin Anderson at 748-1334 or at the letterhead address.

Yours Truly

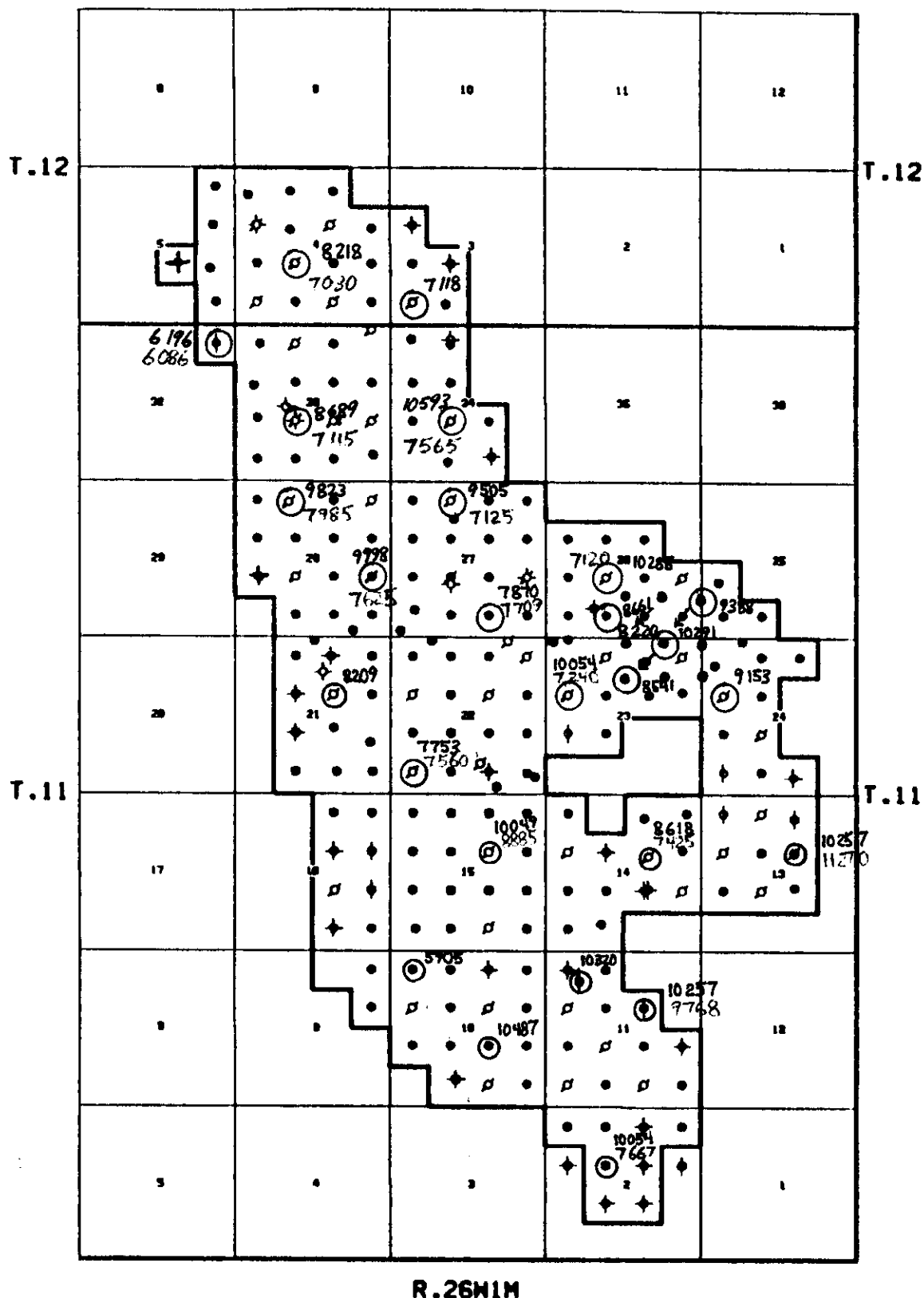
FOR L.A. Martinson
Area Superintendent
Virden

WELL	TYPE OF SURVEY	DATUM DEPTH PRESSURE (kPa)		
		1987	1989	1990
11-2-11-26	SONOLOG	7 667		10 054
6-10-11-26	SONOLOG	8 420		
7-10-11-26	SONOLOG			10 487
13-10-11-26	SONOLOG			5 905
10-11-11-26	PRESSURE BOMB	9 768		10 257
A13-11-11-26	PRESSURE BOMB			10 320
10-13-11-26	FALL OFF	11 270		10 257
10-14-11-26	FALL OFF	7 425		8 618
10-15-11-26	FALL OFF	8 885		10 049
8-16-11-26	SONOLOG	5 106		
10-21-11-26	FALL OFF			8 209
11-21-11-26	PRESSURE BOMB	7 149		
4-22-11-26	FALL OFF	7 560		7 753
12-22-11-26	FALL OFF	6 130		
15-22-11-26	SONOLOG	6 729		
16-22-11-26	SONOLOG	8 177		
11D-23-11-26	SONOLOG			8 541
12-23-11-26	FALL OFF	7 240		10 054
15-23-11-26	SONOLOG		8 854	
15D-23-11-26	SONOLOG			10 291
16-23-11-26	FALL OFF		9 045	
6-24-11-26	FALL OFF	8 265		
12-24-11-26	FALL OFF			9 153
13-24-11-26	SONOLOG		9 176	
1-26-11-26	SONOLOG		9 045	
1D-26-11-26	SONOLOG			9 388

WELL	TYPE OF SURVEY	DATUM DEPTH PRESSURE (kPa)		
		1987	1989	1990
3-26-11-26	SONOLOG	8 220	8 518	8 661
6-26-11-26	FALL OFF	7 120	9 216	10 285
1-27-11-26	SONOLOG	8 174		
2-27-11-26	SONOLOG	7 709		7 870
14-27-11-26	FALL OFF	7 125		9 505
8-28-11-26	FALL OFF	7 625		9 998
14-28-11-26	FALL OFF	7 985		9 823
16-32-11-26	SONOLOG	6 086		6 196
6-33-11-26	FALL OFF	7 115		8 689
6-34-11-26	FALL OFF	7 565		10 593
4-3-12-26	FALL OFF			7 118
6-3-12-26	SONOLOG	7 500		
6-4-12-26	FALL OFF	7 030		8 218
7-5-12-26	SONOLOG	6 020		

NORTH VIRDEN SCALLION UNIT NO.1 UNIT AREA MAP

R.26W11N



R.26W11N

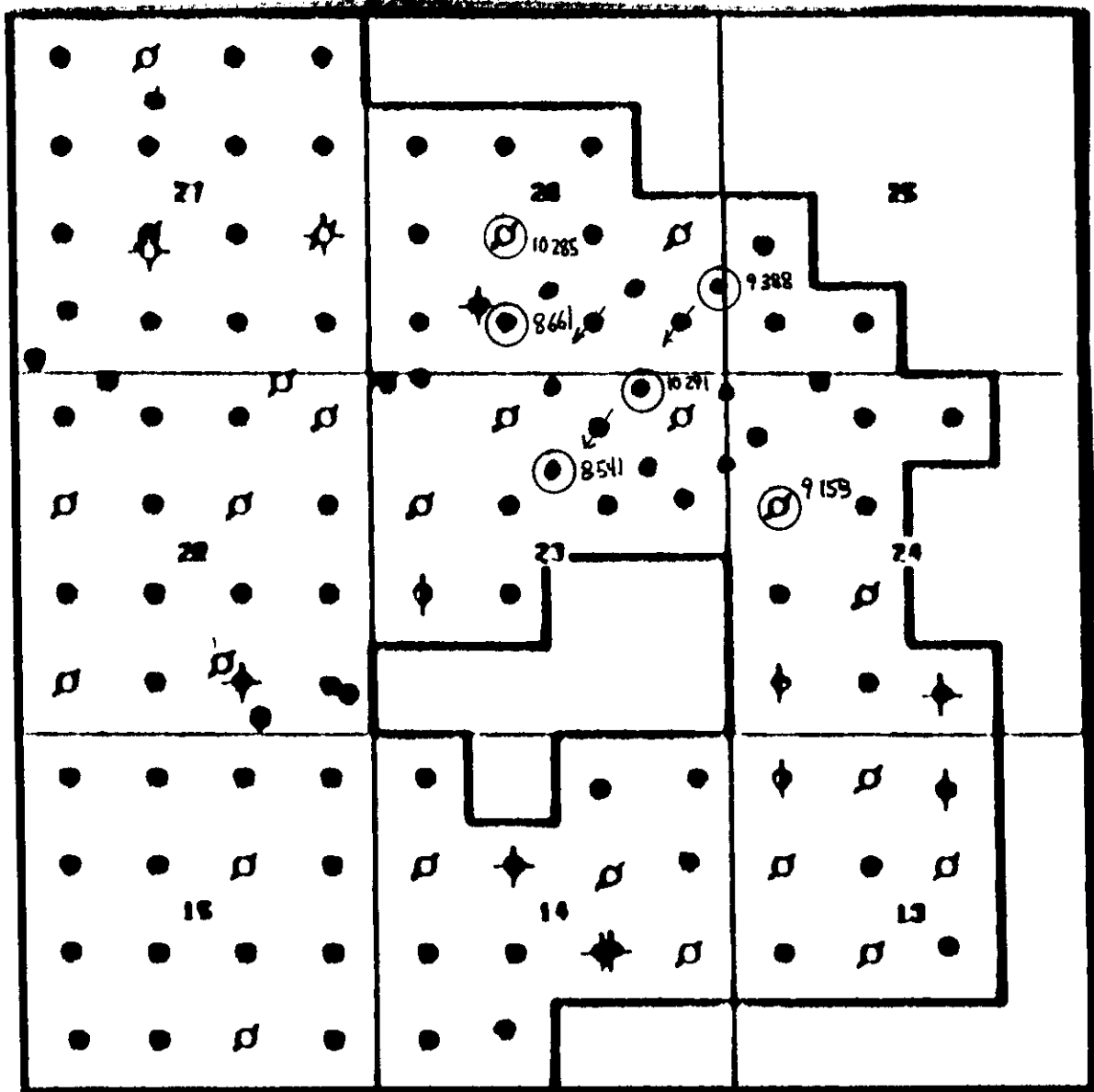
⊙ Wells in 1990 survey
 10054 1990 B.H. Pressure (KPa)
 7667 1987 B.H. Pressure (KPa)

● PRODUCING WELL
 ■ INJECTION WELL
 ⊕ ABANDONED WELL

—— UNIT OUTLINE

Datum Depth - 149.35m subsea

NVSU^{#1} BHP Survey - Infill



⊙ 8541 1990 B.H. Pressure (KPa)



Energy and Mines

Petroleum

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

(204) 945-6577

January 25, 1990

Chevron Canada Resources
Box 100
Virden, Manitoba
R0M 2C0

Attention: Mr. L. A. Martinson, P. Eng.
Area Superintendent, Virden

Dear Sir:

Re: North Virden Scallion Unit No. 1 - Pressure Survey

Your letter outlining Chevron's plans for the 1990 pressure survey in North Virden Scallion Unit No. 1 is hereby acknowledged.

Your plan to survey 26 wells using a combination of fall-off tests and fluid level measurements is hereby approved.

You are reminded that though the Unit pressure survey is only required once every three years, Board Order No. PM 61 requires pressure surveys to be conducted annually in the reduced spacing project area.

Yours sincerely,

[Handwritten signature]

L. R. Dubreuil
Director

JNF/sml

FILE: NVSU #1
Pressure
Survey
6559A



Energy and Mines

Petroleum

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

(204) 945-6577

January 25, 1990

*FILE
NVSU → 1
Pressure
surveys*

Chevron Canada Resources
Box 100
Virden, Manitoba
ROM 2C0

Attention: Mr. L. A. Martinson, P. Eng.
Area Superintendent, Virden

Dear Sir:

Re: North Virden Scallion Unit No. 1 - Pressure Survey

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Your plan to survey 26 wells using a combination of fall-off tests and fluid level measurements is hereby approved.

You are reminded that though the Unit pressure survey is only required once every three years, Board Order No. PM 61 requires pressure surveys to be conducted annually in the reduced spacing project area.

Yours sincerely,

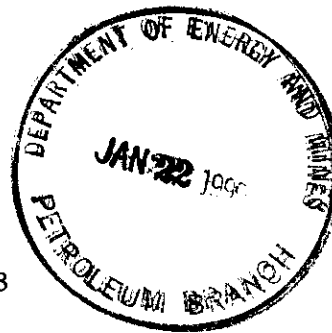
L. R. Dubreuil
Director

JNF/sml



Chevron Canada Resources

P.O. Box 100, Virden, Manitoba R0M 2C0
Phone (204) 748-1334 Fax (204) 748-6762



1990-01-18

Department of Energy and Mines
Petroleum Branch
555 - 330 Graham Avenue
WINNIPEG, Manitoba
R3C 4E3

ATTENTION: Mr. John Fox

Dear Sir:

RE: North Virden Scallion Unit #1
Pressure Survey - 1990

Please find enclosed a list of the wells that Chevron intends to include in the above reservoir pressure survey. The majority of the wells are the same as those used in the 1987 survey. Those that are not, are in close proximity to allow for close reservoir pressure comparisons. Wells in the pilot reduced spacing area have also been included in the survey. As done in 1987, injection wells will be surveyed by using surface fall-off tests and producers will be shut-in and sonologged until pressure buildup is less than 5% per week.

Should you have any concerns regarding the above, please contact Steve Pierce or John Cooke at 748-1334 or at the letterhead address.

Yours truly,

For

L. A. Martinson, P. Eng.
Area Superintendent
Virden

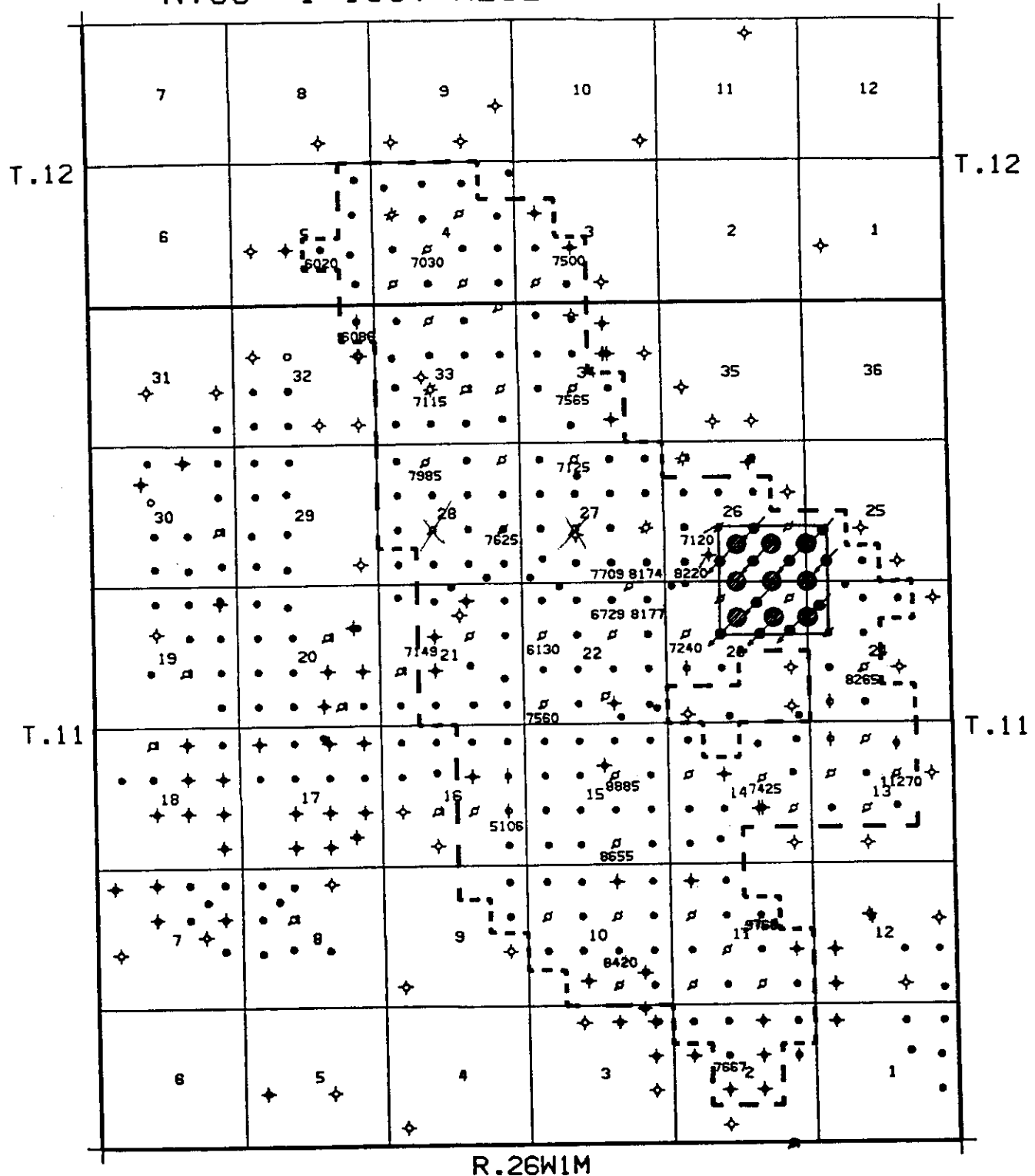
LAM/tjs
Enclosures

NORTH VIRDEN SCALLION UNIT #1
 TRIANNUAL RESERVOIR PRESSURE SURVEY 1990

PROPOSED WELLS:	STATUS	TYPE OF SURVEY	WELL USED IN 1987 SURVEY?
-----	-----	-----	-----
11-2-11-26	PRODUCER	SONOLOG	YES
7-10-11-26	PRODUCER	SONOLOG	NO
13-10-11-26	PRODUCER	SONOLOG	NO
10-11-11-26	SUSPENDED	PRESSURE BOMB	YES
8-13-11-11-26	SUSPENDED	PRESSURE BOMB	NO
10-13-11-26	WIW	FALL-OFF	YES
10-14-11-26	WIW	FALL-OFF	YES
10-15-11-26	WIW	FALL-OFF	YES
10-21-11-26	WIW	FALL-OFF	NO
4-22-11-26	WIW	FALL-OFF	YES
11D-23-11-26*	PRODUCER	SONOLOG	NO
12-23-11-26	WIW	FALL-OFF	YES
15D-23-11-26*	PRODUCER	SONOLOG	NO
12-24-11-26*	WIW	FALL-OFF	NO
1D-26-11-26*	PRODUCER	SONOLOG	NO
3-26-11-26*	PRODUCER	SONOLOG	YES
6-26-11-26*	WIW	FALL-OFF	YES
2-27-11-26	PRODUCER	SONOLOG	YES
14-27-11-26	WIW	FALL-OFF	YES
6-28-11-26	WIW	FALL-OFF	YES
14-28-11-26	WIW	FALL-OFF	YES
16-32-11-26	PRODUCER	SONOLOG	YES
6-33-11-26	WIW	FALL-OFF	YES
6-34-11-26	WIW	FALL-OFF	YES
4-3-12-26	WIW	FALL-OFF	NO
6-4-12-26	WIW	FALL-OFF	NO

* in-fill project

NVSU #1 1987 RESERVOIR PRESSURE

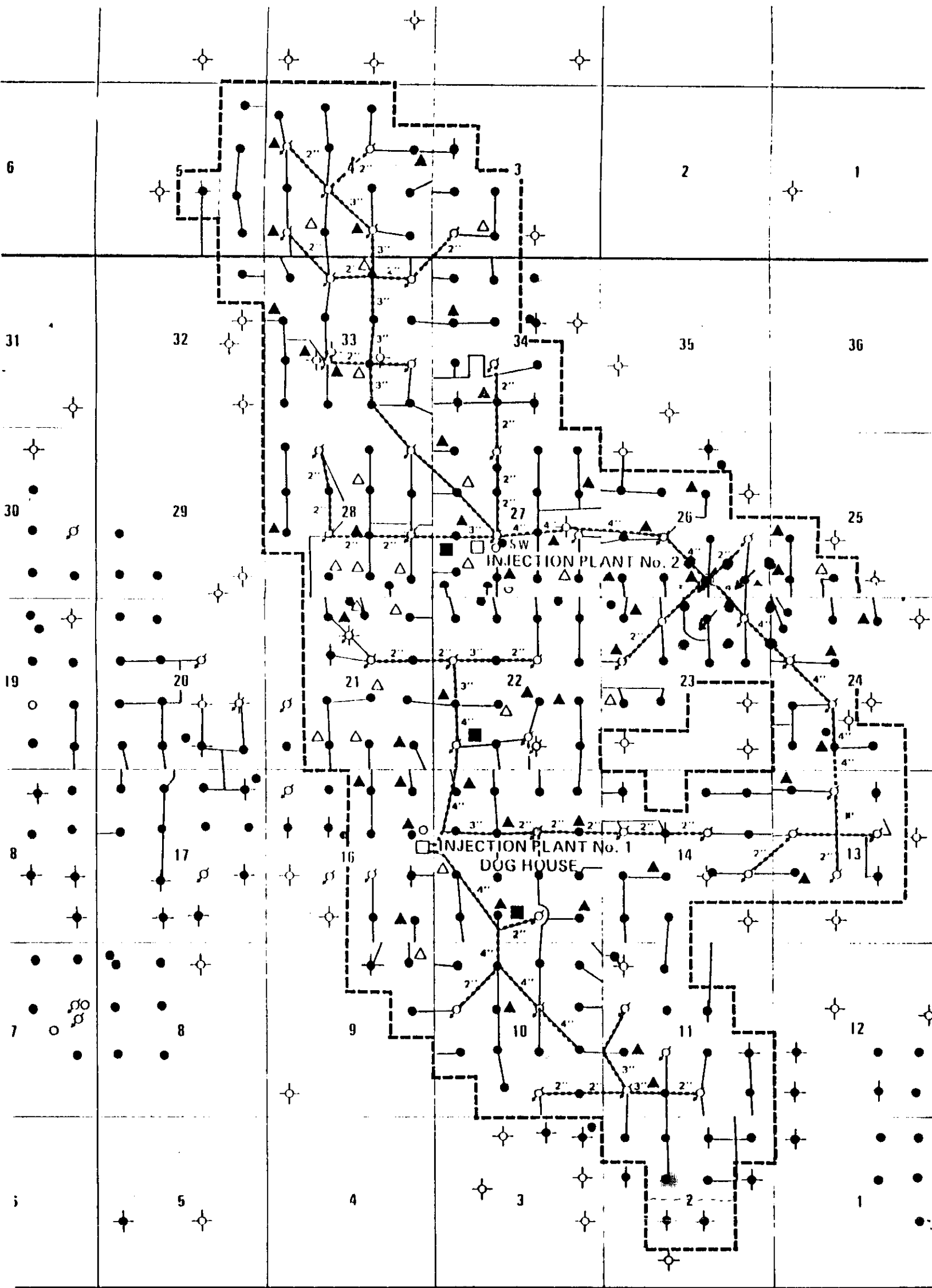


NORTH VIRDEN SCALLION UNIT NO. 1

AS OF 1989-01-25

SCALE 1" = 1 MILE

- PROJECT BOUNDARY
- PROPOSED INFILL SITES
- ◆ PROPOSED CONVERSIONS



RGE. 26 W. P.M.

NORTH VIRDEN SCALLION UNIT NO. 1

Proposed wells
For 1990 survey.

LEGEND

- | | | | |
|-------|----------------|---|--------------------------------|
| ----- | INJECTION LINE | ⊙ | ABANDONED WELL |
| ----- | UNIT BOUNDARY | ○ | DEVONIAN WATER SUPPLY WELL |
| ⌘ | INJECTION WELL | ▲ | RECTIFIER |
| ⌘ | SUSPENDED WELL | ■ | BATTERY |
| | | — | ROADS |
| | | △ | RECTIFIER AND DEEP GROUND BEDS |