

August 30, 1991

Mr. Bill Marsh
Drilling Superintendent
Chevron Canada Resources
500 - 5th Avenue S.W.
Calgary, Alberta
T2P 0L7

Dear Mr. Marsh:

RE: Daly Unit No. 3
Leak-off Test

The Petroleum Branch has reviewed the results of the leak-off test conducted on the 14B-12-10-28 (WPM) well after drilling out the surface casing. The Branch is concerned that the high fracture gradient of 41.7 kPa/m is not representative. The leak-off test in Virden Roselea Unit No. 1 at 10B-30-10-25 (WPM) indicated a fracture gradient of 23.4 kPa/m. For this reason the Branch requests Chevron conduct a leak-off test below the surface casing on the next infill well drilled in Daly Unit No. 3 to assist in confirming the fracture gradient in the Daly Field.

If you have any questions or concerns, please contact the undersigned at (204) 945-6574.

Yours truly,

ORIGINAL SIGNED BY
JOHN N. FOX

John N. Fox, P. Eng.
Chief Petroleum Engineer

cc: Virden Office



Energy and Mines

Petroleum

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

(204) 945-6577
FAX: (204) 945-0586

January 22, 1991

~~RECEIVED~~ MARCH 31/91

Mr. Dan Boyko
Omega Hydrocarbons Ltd.
1300, 112 - 4th Avenue S.W.
Calgary, Alberta
T2P 0H3

Dear Sir:

Re: Waskada Lower Amaranth A Pool
Expansion of Pressure Maintenance Operations

Drilling in the Waskada Field over the past 2-3 years has resulted in a significant expansion of the Waskada Lower Amaranth A Pool to the north and east. A total of 41 producing wells operated by Omega and Enron now surround Waskada Unit No. 16. Cumulative oil production from these wells had reached a total of $80.7 \times 10^3 \text{ m}^3$ by October 31, 1990, approximately 5% of the total production from the pool.

The Petroleum Branch requests that Omega review, either separately or jointly with Enron, the feasibility of expanding pressure maintenance operations in Sections 3,9,10,11,14,15 & 16 in Township 2-25 (WPM). We request that Omega report on the results of this feasibility study prior to March 31, 1991.

If you have any questions please contact the undersigned at (204) 945-6573 or John N. Fox, Chief Petroleum Engineer at (204) 945-6574.

Yours truly,

L.R. Dubreuil
Director

LRD:cvs

cc: Mr. H. Dale Logie
Enron Oil Canada Ltd.

CHEVRON DALY UNIT #3 14B-12-10-28 WPM

CASING: 244.5mm, 48.1 kg/m, H-40, ST3C, 8RB 1750 ERW

LANDED AT 150.3m

FLUID IN THE HOLE: WATER @ 1000 kg/m³

LEAK OFF = APPLIED PRESSURE + HYDROSTATIC PRESSURE = 4800 kPa + 1470 kPa = 6270 kPa

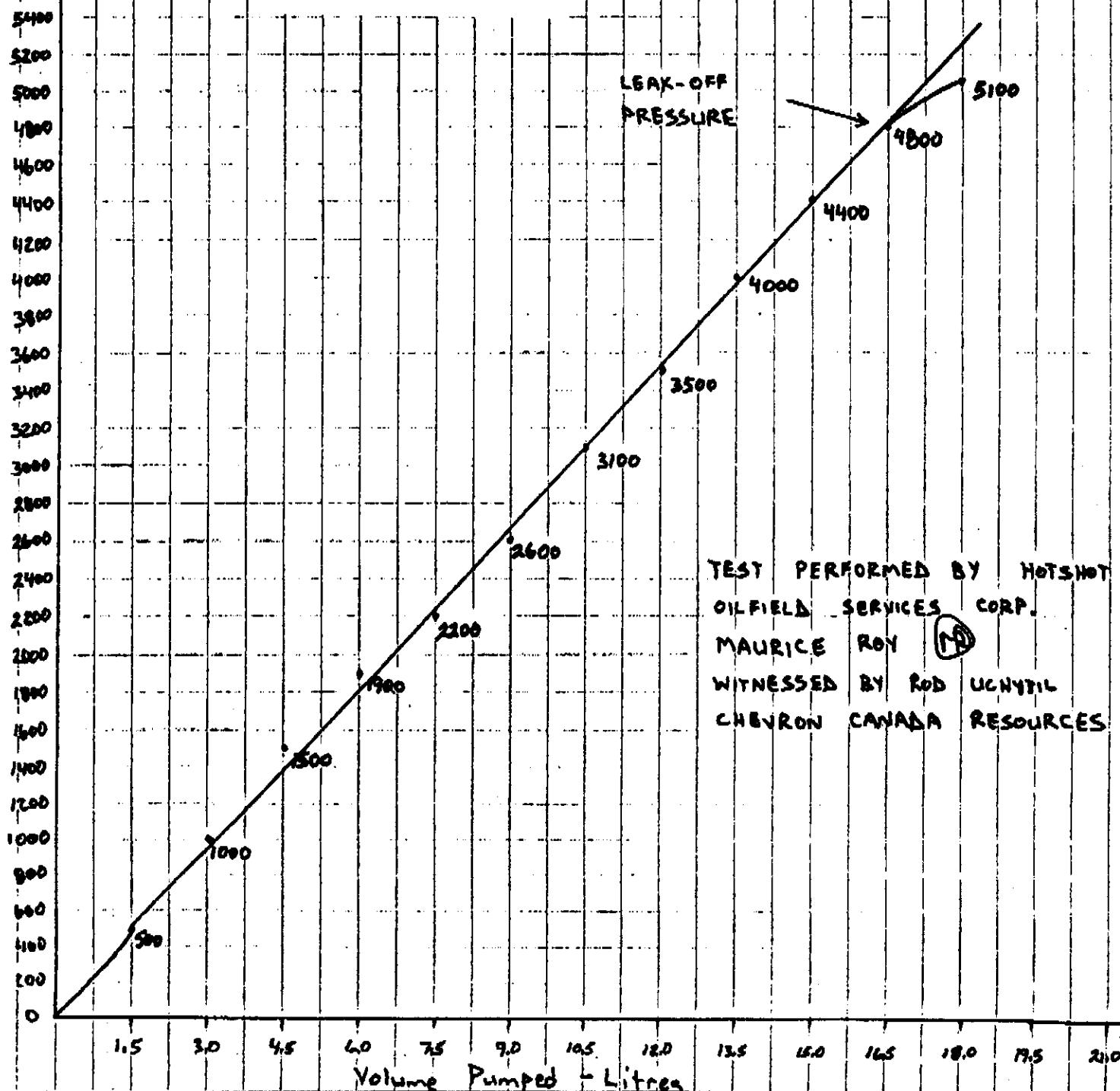
FRACTURE GRADIENT = 6270 kPa / 150.3m = 41.7 kPa/m

EQUIVALENT MUD WEIGHT = 4250 kg/m³

#1000 +
for leak-off
test.

J

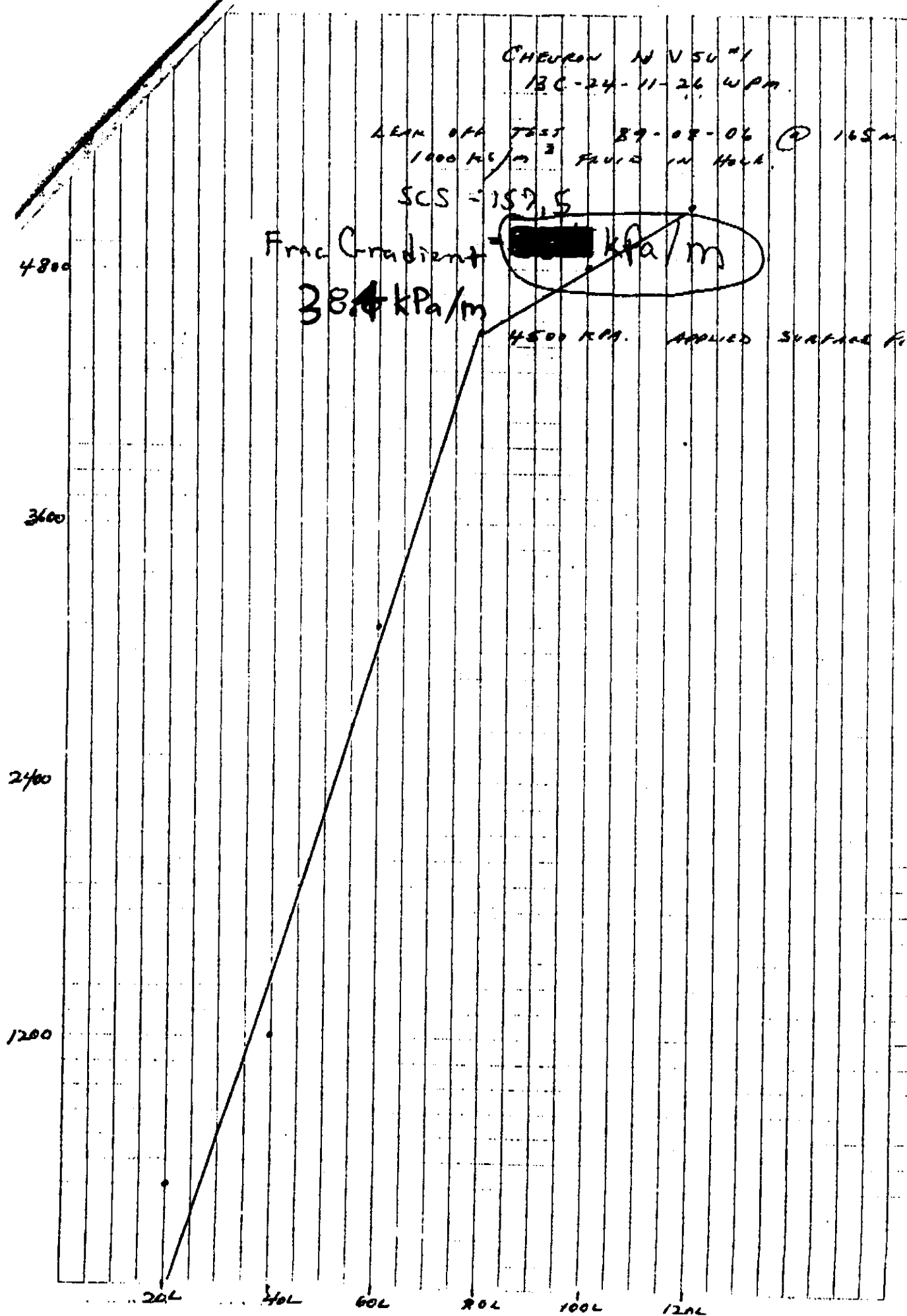
Applied Surface Pressure (kPa)



TEST PERFORMED BY HOTSHOT
OILFIELD SERVICES CORP.
MAURICE ROY (M)
WITNESSED BY ROD UCHYTIL
CHEVRON CANADA RESOURCES

RL

July 1st 1991 Chevron VRU#1 10B-30-10-
SCS - 147.5 m
Surface Press - 2000 KPa
Fluid Weight - 1000 Kg/m³
Frac Gradient - 23.4 KPa/m



Manitoba

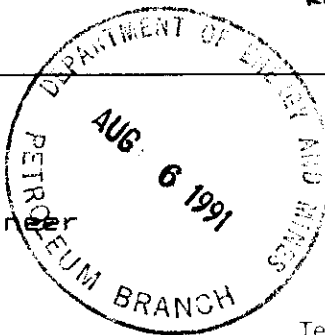
File: Daly Unit No. 3

Reduced Spacing Correspondence



Date July 31, 1991

To John Fox
Chief Petroleum Engineer
Petroleum



From Bruce Dunning
Senior Petroleum
Inspector

Memorandum

Telephone

Subject

CHEVRON DALY UNIT #3 INFILL PRE-SPUD MEETING - JULY 26

Attached is a summary of the July 26, 1991 Chevron Daly Unit #3 infill pre-spud meeting held in Estevan.

The items are listed in order of discussion.

Bruce Dunning

BD/cg
Attachment

First Fold

DALY UNIT #3 INFILL DRILLING PROGRAM

CHEVRON PRE-SPUD MEETING SUMMARY

July 26/91, 11:00am
Derrick Hotel, Estevan

Chairman: Bill Marsh

In attendance were all contractors that would be involved in the drilling of Daly Unit #3 infill.

Chevron's main priority is worker safety. Secondary is the environment, then the well itself.

- Surface to $\pm 150\text{m}$.
- Leakoff test to be done.
- High pressure zone may be encountered at 675m - 700m.
- Pressures can be too high for hard shutin - will have flowing facilities.
- Will run 177.8mm intermediate to $\pm 680\text{m}$ (3m into Amaranth).
- Will change over to heavy mud prior to drilling out intermediate shoe.
- Will run slick core barrel (ie. no stabalizers) so that it can be stripped in hole.
- Intermediate will be set 3m into Amaranth in order to protect cretaceous sands from formation fluids.
- Last blowout encountered high pressure in the Red Beds.
- The surrounding injection wells were shut in May 13 and have BHP's ranging from 11,000 - 14,400 kPa.
- Maximum mud weight that can be achieved using Barite is 2250 kg/m³.
- Existing BHP would require 2200 kg mud. This doesn't allow for trip margin, therefore it is very important that hole is kept full at all times.

- Enough hematite will be on site for killing one well.
- Worst case scenario is a flow rate of 6,000 bbls/day. This can be handled at the 15-1-10-28 injection plant.
- Morris Debaar's pumper will be at 12-12-10-28 injection well to reverse the flow of blowout fluids to 15-1. A second pumper will be available if needed at the flowing well.
- Pressure rating of the fibreglass pipe to be used from the flowing well to 12-12 is 250 psi.
- Will have a pressure manifold in place for cementing under pressure.
- Setting casing slips under pressure is creating most concern. They must ensure enough height between rotating head rubbers and annular for slip insertion.
- Haliburton will cement using drillers method (ie. constant back pressure while circulating) if pressure encountered.
- Gas detection device will be supplied by Virden Chevron office.
- Personal safety was emphasized again.

BD/cg