

June 26, 1992

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4th Avenue S.W.  
CALGARY, Alberta  
T2P OH3

**ATTENTION: MR. RICHARD BREKKE**

Dear Sir:

RE: CONCURRENT PRODUCTION FROM THE WASKADA MC3a A POOL  
OMEGA WASKADA 8-23-1-26 (WPM) UWI: 100/08-23-001-26 W1/00  
OMEGA WASKADA 8A-23-1-26 (WPM) UWI: 1A0/08-23-001-26 W1/00

Your application for approval to produce the two subject wells concurrently from the Waskada MC3a A Pool is hereby approved. An approved copy of the application to recomplete the 8A-23 well is attached.

Board Order No. 78A sets conditions for the waiver of maximum permissible production rate (MPPR) restrictions for Waskada Unit No. 12. The conditions of approval require a voidage-replacement ratio of 1.0 be maintained and the reservoir pressure exceed 5200 kPa. As neither of these conditions is presently being met, production of oil from the Waskada MC3a A Pool in LSD 8 of Section 23-1-26 (WPM) shall not exceed the normal single well MPPR of 240 m<sup>3</sup>/month.

The Board has briefly reviewed the performance of the infill wells in Waskada Unit No. 4. Omega is requested to comment on the status of and future plans for the reduced spacing project and address the following matters:

(a) The location of the infill wells was chosen to recover oil trapped in unswept portions of the reservoir. Did the openhole logs and infill well production data provide any additional information on reservoir continuity and waterflood areal sweep efficiency?

(b) Infill well production declined significantly during the first year. Please comment on the reasons for the greater than anticipated decline in productivity.

(c) Provide a preliminary estimate of incremental recovery for the infill wells and comment on the original estimate of incremental recovery of 3.3% OOIP for the reduced spacing project. Has there been any interference between the infill and existing wells?

(d) What is Omega's continuing injection strategy for the reduced spacing project area?

After the 8A-23-1-26 (WPM) well has been recompleted, the Board requests that Omega conduct a pressure survey in the Lower Amaranth Formation in the well.

If you 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

June 26, 1992

The Oil and Natural Gas  
Conservation Board

- Ian Haugh, Chairman
- H. Clare Moster, Deputy Chairman
- Wm. McDonald, Member

John N. Fox  
Chief Petroleum Engineer  
Petroleum Branch

**CONCURRENT PRODUCTION - WASKADA MC3a A POOL**  
**OMEGA WASKADA 8-23-1-26 (WPM)**  
**OMEGA WASKADA 8A-23-1-26 (WPM)**

Omega Hydrocarbons Ltd. has made application under Subsection 51(8) of the Petroleum Drilling and Production Regulation for approval to produce the two subject wells concurrently from the Waskada MC3a A Pool in Waskada Unit No. 12

Recommendation:

It is recommended that the application be approved. A proposed letter of approval is attached.

Discussion:

Omega has applied to recomplate the infill well, Omega Waskada 8A-23-1-26 (WPM) in the MC3a A Pool (Figure 1). The 8A-23-1-26 (WPM) well is presently completed in the Lower Amaranth and is currently producing at a rate of 0.90 m<sup>3</sup> OPD at a WOR of 0.57 m<sup>3</sup>/m<sup>3</sup>.

The existing Mission Canyon producer in the same spacing unit, Omega Waskada 8-23-1-26 (WPM) produces from the MC3a A Pool at a rate of 0.5 m<sup>3</sup> OPD with a WOR of 10.25 m<sup>3</sup>/m<sup>3</sup> (April 1992). Cumulative MC3a production from the 8-23 well is 4 773 m<sup>3</sup> oil, 25 579 m<sup>3</sup> water. A third well in the spacing unit, 8-23LAM-1-26, produces from the Lower Amaranth.

The top of the MC3a porosity in 8A-23 is 1.6 m structurally higher than in 8-23. The proposed recompletion interval also has better porosity, 22-26% vs 10-13%. Omega is recompleting this well in the hopes that additional oil can be recovered from the spacing unit. Omega has indicated that this well may be a future commingling candidate, depending on the success of the recompletion.

Omega's 1991 Annual Progress Report indicates the reservoir pressure at the 9-23MC3a-1-26 (WPM) injection well to be 4133 kPa and at the 1-24-1-26 (WPM) injection well to be 4947 kPa

Omega is of the opinion that the reservoir pressure is being maintained by an associated aquifer, but these pressures do not substantiate this claim. These pressures are below the 5200 kPa required under Board Order No. 78A which exempts the unit wells from maximum permissible production rate (MPPR) restrictions. Of the four original water injection wells in Unit No. 12, two have been abandoned, one is suspended and only the 9-23MC3a well is active (Figure 1). In the first quarter of 1992, a total of 1682.9 m<sup>3</sup> fluid was produced from the unit while only 1276.6 m<sup>3</sup> or (75.9%) of the voidage was replaced. Therefore, if concurrent production is approved the production of oil from the MC3a A Pool in LSD 8 of Section 23-1-26 (WPM) shall not exceed the normal single well MPPR of 240 m<sup>3</sup>/month.

The 8A-23-1-26 (WPM) well was drilled in February 1991 as part of a four well reduced spacing pilot project in Waskada Unit No. 4 (Figure No. 2). In April 1992, the other three wells were producing as follows:

3C-24-1-26 (WPM)	0.2 m <sup>3</sup> OPD	WOR = 0.11 m <sup>3</sup> /m <sup>3</sup>
4C-24-1-26 (WPM)	1.2 m <sup>3</sup> OPD	WOR = 0.84 m <sup>3</sup> /m <sup>3</sup>
6A-24-1-26 (WPM)	0.3 m <sup>3</sup> OPD	WOR = 0.60 m <sup>3</sup> /m <sup>3</sup>

The overall performance of the reduced spacing project in Waskada Unit No. 4 is poorer than expected. As Omega is planning to recomplete one of the infill wells, the company should be requested to provide its comments on the success of the infill project.

In the first quarter of 1992, injected water in the 5-24-1-26 (WPM) pattern of Waskada Unit No. 4 (includes the reduced spacing project area) replaced 115% of voidage, but cumulative replacement for the pattern is only 48.9% of voidage. The last pressure survey in the infill area indicated the pressure was near the bubble point. It is recommended that when the 8A-23 is recompleted in the Mission Canyon, that a pressure survey be run in the Lower Amaranth.

Attached is a proposed letter approving the application for concurrent production and requesting Omega comment on the reduced spacing project.

John N. Fox

APPROVED BY:

L.R. Dubreuil, Director

FIGURE NO. 1

251

RIVER

Creek

MISSION CANYON 3a A  
POOL

SUBJECT WELL

Rge 26w1

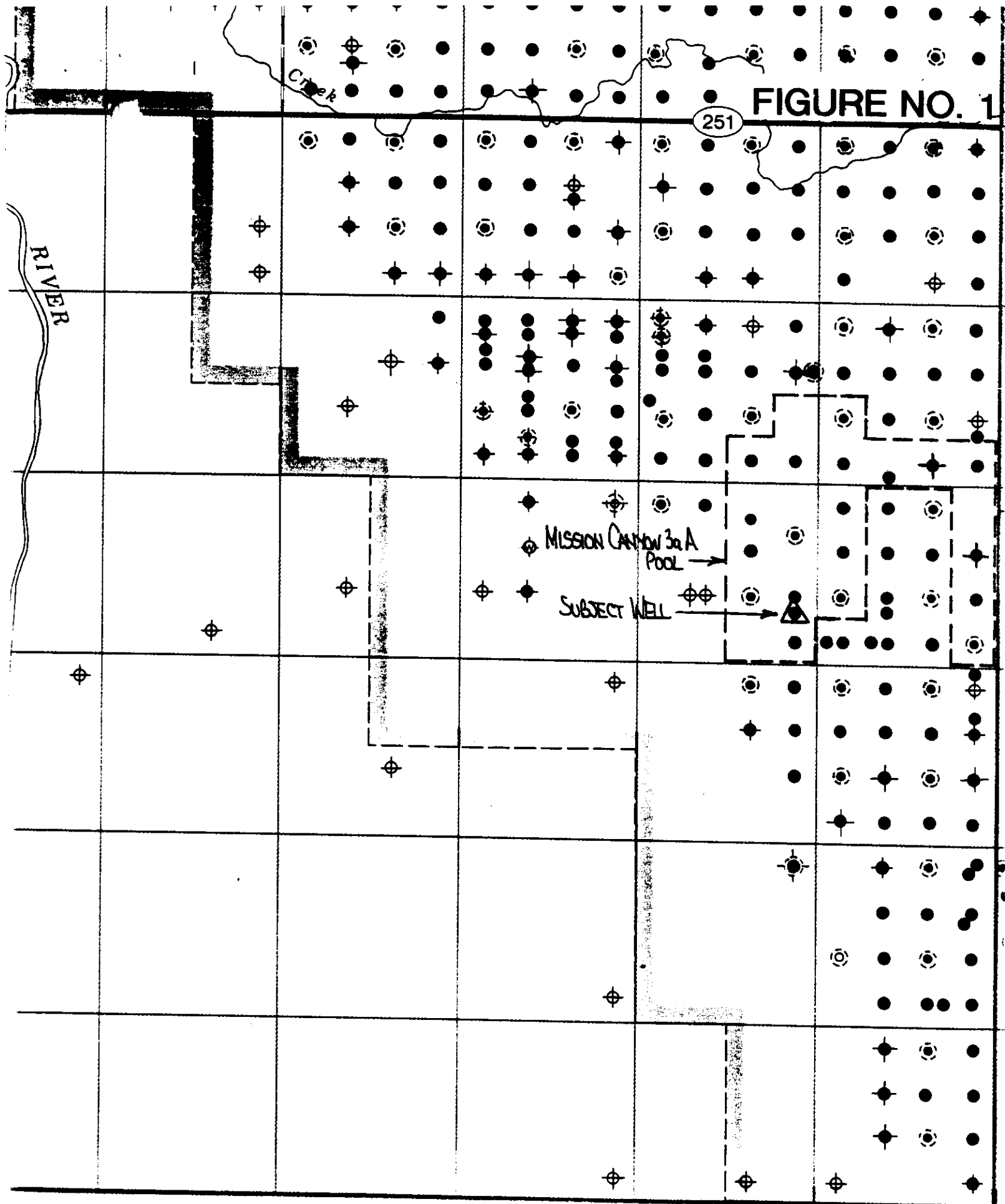
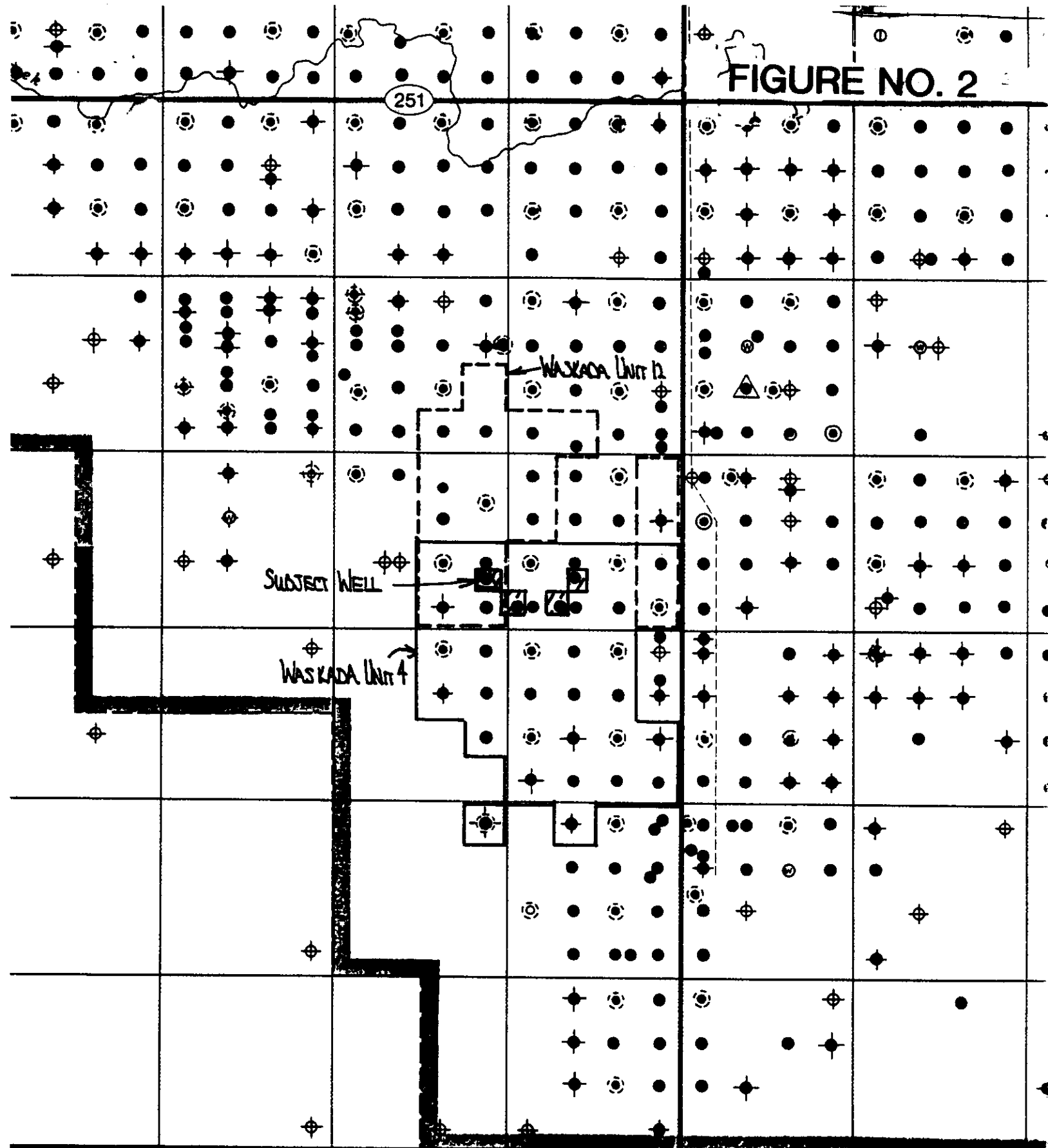



FIGURE NO. 2



Rge 26w1

- WASKADA UNIT No. 4 (LOWER AMARANTH 0329A) - ———
- WASKADA UNIT No. 12 (MISSION CANYON MC30A) - - - - -
- OMEGA INFILL PROJECT AREA - 

April 25, 1990

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4th Avenue S.W.  
Calgary, Alberta  
T2P 0H3

Attention: Mr. D.M. Boyko, P. Eng.  
Petroleum Engineer

Dear Sir:

RE: Omega Waskada 16-27-1-26 (WPM)  
Omega Waskada A16-27-1-26 (WPM)  
Concurrent Production from the Waskada MC3b B Pool

Your application for approval to produce the two subject wells concurrently from the Waskada MC3b B Pool is hereby approved. Please note the well name change from Omega Waskada 16-27LAM-1-26 (WPM) to Omega Waskada A16-27-1-26 (WPM).

Production of oil from the pool in Lsd 16 of Section 27-1-26 (WPM) shall not exceed the normal single well MPR (240 m<sup>3</sup> /month).

In view of the previous approvals of concurrent production in the Waskada MC3b B Pool, you are requested to summarize for the Board the success of this strategy to optimize resource recovery in the pool.

Yours respectfully,

ORIGINAL SIGNED BY  
**H. CLARE MOSTER**

H. Clare Moster  
Deputy Chairman

cc: Ian Haugh  
Chairman

b.cc: Wm. McDonald,  
Member

Petroleum Branch

April 25, 1990

The Oil and Natural Gas  
Conservation Board  
Ian Haugh, Chairman  
H. Clare Moster, Deputy Chairman  
Wm. McDonald, Member

John N. Fox  
Chief Petroleum Engineer  
Petroleum Branch

RE: Concurrent Production - Waskada MC3b B Pool  
Omega Waskada 16-27LAM-1-26 (WPM)  
Omega Waskada 16-27-1-26 (WPM)

Omega Hydrocarbons Ltd. has made application under subsection 51(8) of the Petroleum Drilling and Production Regulation ("the Regulation") for approval to produce the two subject wells concurrently from the Waskada MC3b B Pool.

Recommendation

It is recommended that the application be approved. A proposed letter of approval is attached.

Discussion

Omega has applied to recomplate the well, Omega Waskada 16-27LAM-1-26 (WPM) in the MC3b B Pool (Figure 1). The 16-27LAM-1-26 well is presently completed in the Lower Amaranth and during 1989 produced an average of 0.36 m<sup>3</sup> OPD at a WOR = 30.4 m<sup>3</sup>/m<sup>3</sup>. Based on the production history of 16-27LAM-1-26 and offsetting well performance, the Lower Amaranth is uneconomic to produce in this well.

The existing Mission Canyon producer in the same spacing unit, Omega Waskada 16-27-1-26 (WPM) produces from the Waskada MC3b B Pool at a rate of 0.6 m<sup>3</sup> OPD with a WOR = 17.9 m<sup>3</sup>/m<sup>3</sup> (December 1989).

The top of the MC3b is 1.7 m structurally higher in the 16-27LAM-1-26 well and Omega hopes that by recompleting the well in this formation additional oil can be recovered from the spacing unit.

The Board approved concurrent production from LSD's 13 and 15 of Section 27-1-26(WPM) (89-06-22 and 89-03-02, respectively) as part of a similar strategy. The initial results of Omega's strategy are not encouraging as none of the concurrently produced wells have shown an improvement in production to date. However, the Petroleum Branch believes that due to the close proximity of the oil/water contact, allowing Omega to produce both wells may result in some incremental recovery from the spacing unit.



A proposed letter of approval is attached. The letter includes a request for Omega to submit a summary of the results of their strategy of concurrently producing wells in the Waskada MC3b B Pool.

ORIGINAL SIGNED BY

**JOHN N. FOX**

John N. Fox

Att'd.

~~Original Signed By~~  
**L. R. DUBREUIL**

Approved by:

\_\_\_\_\_  
L.R Dubreuil, Director



Energy and Mines

Petroleum

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

April 25, 1990

(204) 945-6577

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4th Avenue S.W.  
Calgary, Alberta  
T2P 0H3

Attention: Mr. D.M. Boyko, P. Eng.  
Petroleum Engineer

Dear Sir:

RE: Omega Waskada 16-27-1-26 (WPM)  
Omega Waskada A16-27-1-26 (WPM)  
Concurrent Production from the Waskada MC3b B Pool

Your application for approval to produce the two subject wells concurrently from the Waskada MC3b B Pool is hereby approved. Please note the well name change from Omega Waskada 16-27LAM-1-26 (WPM) to Omega Waskada A16-27-1-26 (WPM).

Production of oil from the pool in Lsd 16 of Section 27-1-26 (WPM) shall not exceed the normal single well MPR (240 m<sup>3</sup> /month).

In view of the previous approvals of concurrent production in the Waskada MC3b B Pool, you are requested to summarize for the Board the success of this strategy to optimize resource recovery in the pool.

Yours respectfully,

H. Clare Moster  
Deputy Chairman

cc: Ian Haugh  
Chairman

MC 36  
B Pool

-28-

-27-

-26-

TWP 1

-22-

-23-

RGE  
26

WASKADA FIELD


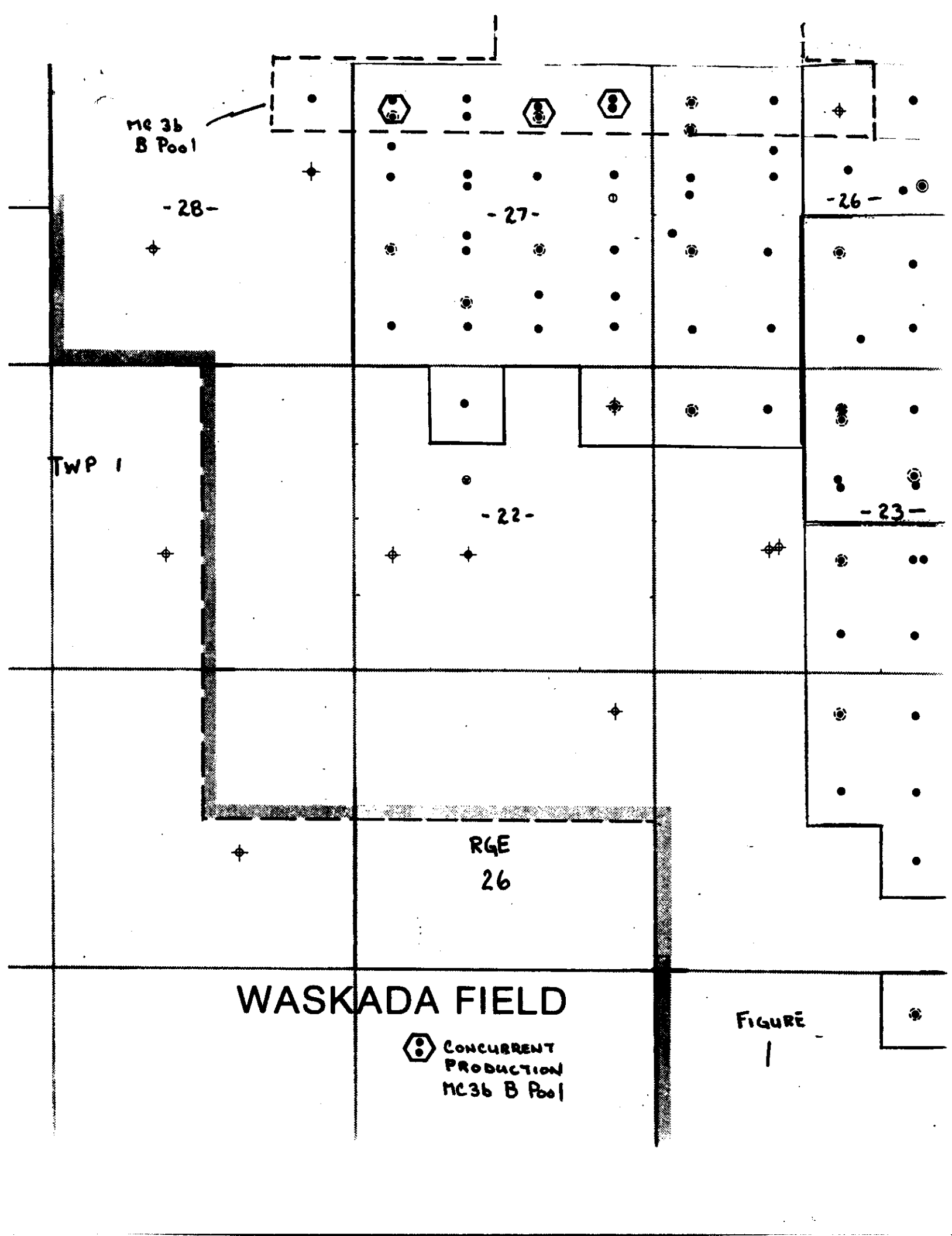
 CONCURRENT  
PRODUCTION  
MC36 B Pool

FIGURE  
1

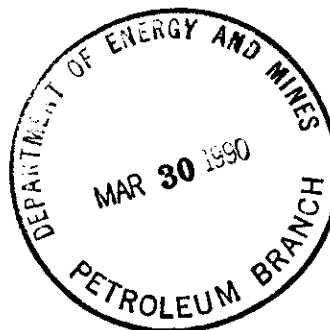




1300 SUN LIFE PLAZA III  
112 - 4th AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743  
FAX (403) 264-5691

March 28, 1990

**MANITOBA ENERGY AND MINES**  
**Petroleum Branch**  
555 - 330 Graham Avenue  
Winnipeg, Manitoba  
R3C 4E3



**Attention:** Mr. John Fox  
Chief Petroleum Engineer

Dear Sir:

**Re: Concurrent Completion At Two Wells**  
**In The Same Zone and DSU**  
**Omega Waskada 16-27-1-26 WPM**  
**Omega Waskada 16A-27-1-26 WPM**

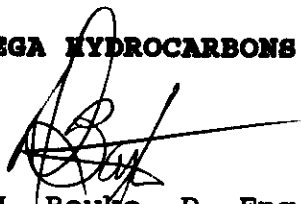
In response to your telephone inquiry of March 27, 1990 Omega Hydrocarbons Ltd. hereby requests permission to have two wells completed concurrently in the Lower Amaranth zone at the subject DSU pursuant to Section 51 Subsection 8 of the Petroleum Drilling and Production Regulations.

The proposed strategy involves recompleting the Lower Amaranth well, 16A-27-1-26 WPM, in the Upper Alida formation. Based on its present production this well is uneconomic in the Lower Amaranth zone. However, the Upper Alida is higher structurally at this location than at the twin well, 16-27-1-26 WPM. The 16-27-1-26 WPM well is presently producing at a 100% water cut which is suspected to be due to water encroachment. Recompleting the 16A-27-1-26 WPM well will thus allow for an increase in oil production and oil recovery in this Upper Alida pool. Following a successful completion of the Upper Alida at 16A-27-1-26 WPM, the twin well, 16-27-1-26 WPM, will likely be abandoned.

The production histories,  $\phi$ h and structure maps for these wells are attached. Should you require additional information please contact me at (403) 261-0743.

Yours truly,

**OMEGA HYDROCARBONS LTD.**

A handwritten signature in black ink, appearing to be 'D.M. Boyko', with a long horizontal stroke extending to the right.

D.M. Boyko, P. Eng.  
Petroleum Engineer

/jlb

c.c.: R. Brekke  
W. Sharp  
16-27 - Wellfile  
16A-27 - Wellfile

\*\*\* STORE \*\*\*  
 OMEGA PRODUCTION DATA BASE  
 WELL ID: (02)16-27-001-26NIN(0)

Omega  
 90-01-19  
 01:04:45

Field 1  
 Pool 1  
 Block 2  
 Acft 2

Area Man.  
 Working Interest 100.0000%  
 On Prdn 1983-06-29  
 On Injn Not on Yet

Misc01 0  
 Misc02 0  
 Misc03 0

Month	Hours	Oil	Water	Gas	Oil	Water	Fluid	Water	GOR	1. Water	1. Gas	Cum Oil	Cum Mtr	Cum Gas	Cum I. M	Cum I. G	Events	Perf LAM
		m3/d	m3/d	kg3/M	m3/d	m3/d	m3/d	m3/d	m3/d	m3/d	kg3/M	m3	m3	m3	m3	kg3		
1983-05	45	9.4	2.0	0.9	0.3	0.1	0.4	17.5	0.21	96	0.0	9.4	2.0	0.9	0.0	0.0		PVFract 27T
1983-06	45	129.0	436.1	11.2	4.2	14.1	18.2	77.2	3.38	87	0.0	0.0	138.4	438.1	12.1	0.0		
1983-07	683	186.7	233.3	2.8	6.0	7.5	13.5	55.5	1.25	15	0.0	0.0	325.1	671.4	14.9	0.0		
1983-08	720	194.4	150.9	15.1	6.5	5.0	11.5	43.7	0.78	78	0.0	0.0	519.5	822.3	30.0	0.0		
1983-09	708	157.1	501.5	7.7	5.1	16.2	21.2	76.1	3.19	49	0.0	0.0	676.6	1323.8	37.7	0.0		
1983-10	712	108.7	602.0	9.4	3.6	20.1	23.7	84.7	5.54	86	0.0	0.0	785.3	1925.8	47.1	0.0		
1983-11	744	99.6	620.5	10.0	3.2	20.0	23.2	86.2	6.23	100	0.0	0.0	884.9	2546.3	57.1	0.0		
1984-01	744	175.4	515.4	16.1	5.7	16.6	22.3	74.6	2.94	92	0.0	0.0	1060.3	3061.7	73.2	0.0		
1984-02	696	164.6	477.6	11.7	5.7	16.5	22.1	74.4	2.90	71	0.0	0.0	1224.9	3539.3	84.9	0.0		
1984-03	744	134.9	570.1	10.3	4.4	18.4	22.7	80.9	4.23	76	0.0	0.0	1359.8	4109.4	95.2	0.0		
1984-04	720	75.7	615.6	8.1	2.5	20.5	23.0	89.0	8.13	107	0.0	0.0	1435.5	4725.0	103.3	0.0		
1984-05	740	39.7	578.0	2.4	1.3	18.6	19.9	93.6	14.56	60	0.0	0.0	1475.2	5303.0	105.7	0.0		
1984-06	713	70.1	589.9	2.6	2.3	19.7	22.0	89.4	8.42	37	0.0	0.0	1545.3	5892.9	108.3	0.0		
1984-07	739	91.3	572.1	2.1	2.9	18.5	21.4	86.2	6.27	23	0.0	0.0	1636.6	6465.0	110.4	0.0		
1984-08	768	18.7	81.3	2.8	0.6	2.6	3.2	81.3	4.35	150	0.0	0.0	1653.3	6546.3	113.2	0.0		
1984-09	716	357.0	66.1	2.3	11.9	2.2	14.1	15.6	0.19	6	0.0	0.0	2012.3	6412.4	115.5	0.0		
1984-10	745	19.3	700.5	3.6	0.6	22.6	23.2	97.3	36.30	187	0.0	0.0	2031.6	7312.9	119.1	0.0		
1984-11	697	149.0	283.3	6.1	5.0	9.4	14.4	65.5	1.90	41	0.0	0.0	2180.6	7596.2	125.2	0.0		
1984-12	744	230.2	289.4	7.8	7.4	9.3	16.8	55.7	1.26	34	0.0	0.0	2410.8	7885.6	133.0	0.0		
1985-01	740	21.2	707.7	2.7	0.7	22.8	23.5	97.1	33.38	127	0.0	0.0	2432.0	8593.3	135.7	0.0		
1985-02	672	0.0	632.8	2.6	0.0	22.6	22.6	100.0	#####	#####	0.0	0.0	2432.0	9226.1	138.3	0.0		
1985-03	740	81.5	688.1	1.4	2.6	22.2	24.8	95.4	8.44	17	0.0	0.0	2513.5	9914.2	139.7	0.0		
1985-04	719	60.6	475.7	2.5	2.0	15.9	17.9	88.7	7.85	41	0.0	0.0	2574.1	10389.9	142.2	0.0		
1985-05	740	39.9	762.5	2.2	1.3	24.6	25.9	95.0	19.11	55	0.0	0.0	2614.0	11152.4	144.4	0.0		
1985-06	720	67.2	678.8	2.8	2.2	22.6	24.9	91.0	10.10	42	0.0	0.0	2681.2	11831.2	147.2	0.0		
1985-07	732	87.6	632.7	5.3	2.8	20.4	23.2	97.8	7.72	61	0.0	0.0	2768.8	12463.9	152.5	0.0		
1985-08	744	1.9	464.4	0.5	0.1	15.0	15.0	99.6	24.4	263	0.0	0.0	2770.7	12928.3	153.0	0.0		
1985-09	720	22.1	421.9	1.6	0.7	14.1	14.8	95.0	19.09	72	0.0	0.0	2792.8	13350.2	154.6	0.0		
1985-10	669	12.1	297.6	0.8	0.4	9.6	10.0	96.1	24.60	66	0.0	0.0	2804.9	13647.8	155.4	0.0		
1985-11	651	5.1	486.0	0.4	0.2	16.3	16.4	99.0	95.69	78	0.0	0.0	2810.0	14135.8	155.8	0.0		
1985-12	741	0.0	486.2	0.0	0.0	15.7	15.7	100.0	#####	0	0.0	0.0	2810.0	14622.0	155.8	0.0		
1986-01	552	2.7	430.3	0.3	0.1	13.9	14.0	99.4	159.4	111	0.0	0.0	2814.6	15222.9	156.1	0.0		
1986-02	306	1.9	170.6	0.3	0.1	6.1	6.2	98.9	85.79	158	0.0	0.0	2814.6	15222.9	156.4	0.0		
1986-03	372	32.8	216.0	2.0	1.1	7.0	8.0	86.8	6.59	61	0.0	0.0	2897.4	15438.9	158.4	0.0		
1986-04	460	44.0	210.0	2.5	1.5	7.0	8.5	82.7	4.77	57	0.0	0.0	2891.4	15648.9	160.9	0.0		
1986-05	357	55.7	114.0	3.1	1.8	3.7	5.5	67.2	2.05	56	0.0	0.0	2947.1	15762.9	164.0	0.0		
1986-06	357	82.7	42.1	5.4	2.8	1.4	4.2	33.7	0.51	65	0.0	0.0	3029.8	15805.0	169.4	0.0		
1986-07	365	62.9	124.2	5.3	2.0	4.0	6.0	66.4	1.97	84	0.0	0.0	3092.7	15929.2	174.7	0.0		
1986-08	289	7.9	194.0	1.3	0.3	6.3	6.5	96.1	24.56	165	0.0	0.0	3100.6	16123.2	176.0	0.0		Hot Oil
1986-09	360	4.1	185.6	4.7	0.1	6.2	6.3	97.8	45.27	1146	0.0	0.0	3104.7	16308.8	180.7	0.0		
1986-10	289	0.5	201.7	0.8	0.0	6.5	6.5	99.8	403.4	1600	0.0	0.0	3105.2	16510.5	181.5	0.0		
1986-11	360	0.0	204.1	0.0	0.0	6.8	6.8	100.0	#####	0	0.0	0.0	3105.2	16714.6	181.5	0.0		
1986-12	372	0.0	229.6	0.3	0.0	7.4	7.4	100.0	#####	#####	0.0	0.0	3105.2	16944.2	181.8	0.0		
1987-01	368	0.3	208.3	0.0	0.0	6.7	6.7	99.9	694.3	0	0.0	0.0	3105.5	17152.5	181.8	0.0		

(Lower Amaranth Production)

Field	1
Pool	1
Block	2
Acctg	2

Area Man.  
Working Interest 100.00000Z  
On Prdm 1983-06-29  
On Inin Not on Yet

**Area Man.**

[illegible]

## OMEGA PRODUCTION DATA BASE

## (Upper Alida Production)

90-01-19  
01:02:53Field 1  
Pool 2  
Block 9  
Acctg 9Area Man.  
Working Interest 100.00003  
On Prod 1982-12-17  
On Injn Not on YetMisc#1 0  
Misc#2 0  
Misc#3 0

Month	Hours	Oil	Water	Fluid	Water	GOR	I. Water	I. Gas	Cum Oil	Cum Wtr	Cum Gas	Cum I. W.	Cum I. G.	Events
		m3/D	m3/D	m3/D	m3/D	m3/m3	m3/m3	m3/m3	m3	m3	m3	m3	m3	
1982-10														
1982-11														
1982-12	314	27.7	117.3	4.7	80.9	4.23	72	0.0	27.7	117.3	2.0	0.0	0.0	
1983-01	744	173.7	115.3	3.7	39.9	0.66	76	0.0	0.0	232.6	15.2	0.0	0.0	
1983-02	672	239.5	136.1	4.9	13.4	36.3	60	0.0	0.0	439.9	368.7	29.4	0.0	
1983-03	744	301.0	95.6	4.9	12.8	24.1	62	0.0	0.0	740.9	464.3	71.7	0.0	
1983-04	588	212.8	78.5	2.5	9.7	26.9	37	0.0	0.0	953.7	542.8	81.6	0.0	
1983-05	744	229.6	166.8	5.4	12.8	42.1	55	0.0	0.0	1183.3	709.6	94.3	0.0	
1983-06	720	237.3	112.2	7.4	11.6	32.1	47	0.0	0.0	1420.6	821.8	97.0	0.0	
1983-07	714	212.7	140.0	4.5	11.4	39.7	59	0.0	0.0	1633.3	961.8	109.5	0.0	
1983-08	720	204.2	90.4	2.6	9.2	28.3	54	0.0	0.0	1837.5	1042.2	120.6	0.0	
1983-09	708	190.7	94.2	2.7	8.4	30.6	44	0.0	0.0	2028.2	1126.4	123.3	0.0	
1983-10	732	149.3	141.2	4.2	4.6	48.6	28	0.0	0.0	2177.5	1267.6	127.5	0.0	
1983-11	712	157.7	135.5	5.9	5.3	46.2	37	0.0	0.0	2335.2	1403.1	133.4	0.0	
1983-12	744	136.4	131.9	4.7	9.1	51.6	50	0.0	0.0	2471.0	1547.9	140.2	0.0	
1984-01	744	136.4	131.9	4.7	9.1	51.6	50	0.0	0.0	2607.4	1699.8	144.6	0.0	
1984-02	696	134.1	156.2	2.5	4.6	54	19	0.0	0.0	2741.5	1856.0	147.1	0.0	
1984-03	744	255.3	49.8	8.6	10.2	15.8	98	0.0	0.0	3006.8	1905.8	173.0	0.0	
1984-04	720	241.9	266.7	8.1	8.9	17.0	68	0.0	0.0	3248.7	2172.5	189.4	0.0	
1984-05	447	221.5	116.7	3.2	10.9	34.5	14	0.0	0.0	3470.2	2289.2	192.6	0.0	
1984-06	410	232.3	50.7	4.3	9.4	17.9	19	0.0	0.0	3702.5	2339.9	196.9	0.0	
1984-07	475	259.5	57.1	3.9	8.4	18.0	15	0.0	0.0	3962.0	2397.0	200.8	0.0	
1984-08	435	220.0	89.5	3.0	7.1	20.0	12	0.0	0.0	4182.0	2486.5	203.8	0.0	
1984-09	555	286.4	79.4	3.5	9.6	26.0	12	0.0	0.0	4470.4	2585.9	207.3	0.0	
1984-10	391	212.1	74.6	2.5	6.8	2.4	9.2	0.0	0.0	4682.5	2640.5	209.8	0.0	
1984-11	518	216.4	100.8	2.6	7.2	3.4	10.6	0.0	0.0	4898.9	2741.3	212.4	0.0	
1984-12	551	208.2	192.5	3.3	6.7	6.2	12.9	0.0	0.0	5107.1	2933.8	215.7	0.0	
1985-01	740	252.8	315.3	6.6	8.2	10.2	18.3	0.0	0.0	5359.9	3249.1	222.3	0.0	
1985-02	672	241.2	256.8	5.5	8.6	9.2	17.8	0.0	0.0	5601.1	3505.9	227.8	0.0	
1985-03	740	230.4	347.8	4.5	7.4	11.2	18.7	0.0	0.0	5831.5	3853.7	232.3	0.0	
1985-04	719	215.6	373.1	4.0	7.2	12.4	19.6	0.0	0.0	6047.1	4226.8	236.3	0.0	
1985-05	740	216.3	409.9	5.2	7.0	13.2	20.2	0.0	0.0	6263.4	4636.7	241.5	0.0	
1985-06	720	233.3	420.8	3.3	7.8	14.0	21.8	0.0	0.0	6496.7	5057.5	244.8	0.0	
1985-07	732	244.4	442.2	5.3	7.9	14.3	22.1	0.0	0.0	6741.1	5499.7	250.1	0.0	
1985-08	744	210.0	594.3	4.8	6.8	19.2	25.9	0.0	0.0	6951.1	6094.0	254.9	0.0	
1985-09	720	194.8	614.5	5.2	6.5	20.5	27.0	0.0	0.0	7145.9	6708.5	260.1	0.0	
1985-10	744	205.7	573.0	4.9	6.6	18.5	25.1	0.0	0.0	7351.6	7281.5	265.0	0.0	
1985-11	709	163.3	670.0	4.4	5.4	22.3	27.8	0.0	0.0	7514.9	7951.5	269.4	0.0	
1985-12	717	192.5	605.0	4.2	6.2	19.5	25.7	0.0	0.0	7707.4	8556.5	273.6	0.0	
1986-01	743	145.5	737.5	4.2	4.7	23.8	28.5	0.0	0.0	7852.9	9294.0	277.8	0.0	
1986-02	672	160.8	596.7	4.2	5.7	21.3	27.1	0.0	0.0	8013.7	9890.7	282.0	0.0	
1986-03	744	141.6	623.7	4.9	4.6	20.1	24.7	0.0	0.0	8153.3	10514.4	286.9	0.0	
1986-04	719	117.4	632.9	4.0	3.9	21.1	25.0	0.0	0.0	8272.7	11147.3	290.9	0.0	
1986-05	732	117.8	689.9	4.4	3.8	22.3	26.1	0.0	0.0	8396.5	11837.2	295.3	0.0	
1986-06	718	148.7	567.7	5.9	5.0	18.9	23.9	0.0	0.0	8539.2	12404.9	301.2	0.0	

Perf MC  
Acidize



\*\*\* STORE \*\*\*  
 OMEGA PRODUCTION DATA BASE  
 WELL ID: (00)16-27-001-26(MH0)

Area Man.

Working Interest 100.00002  
 On Prod 1982-12-17  
 On Injn Not on Yet

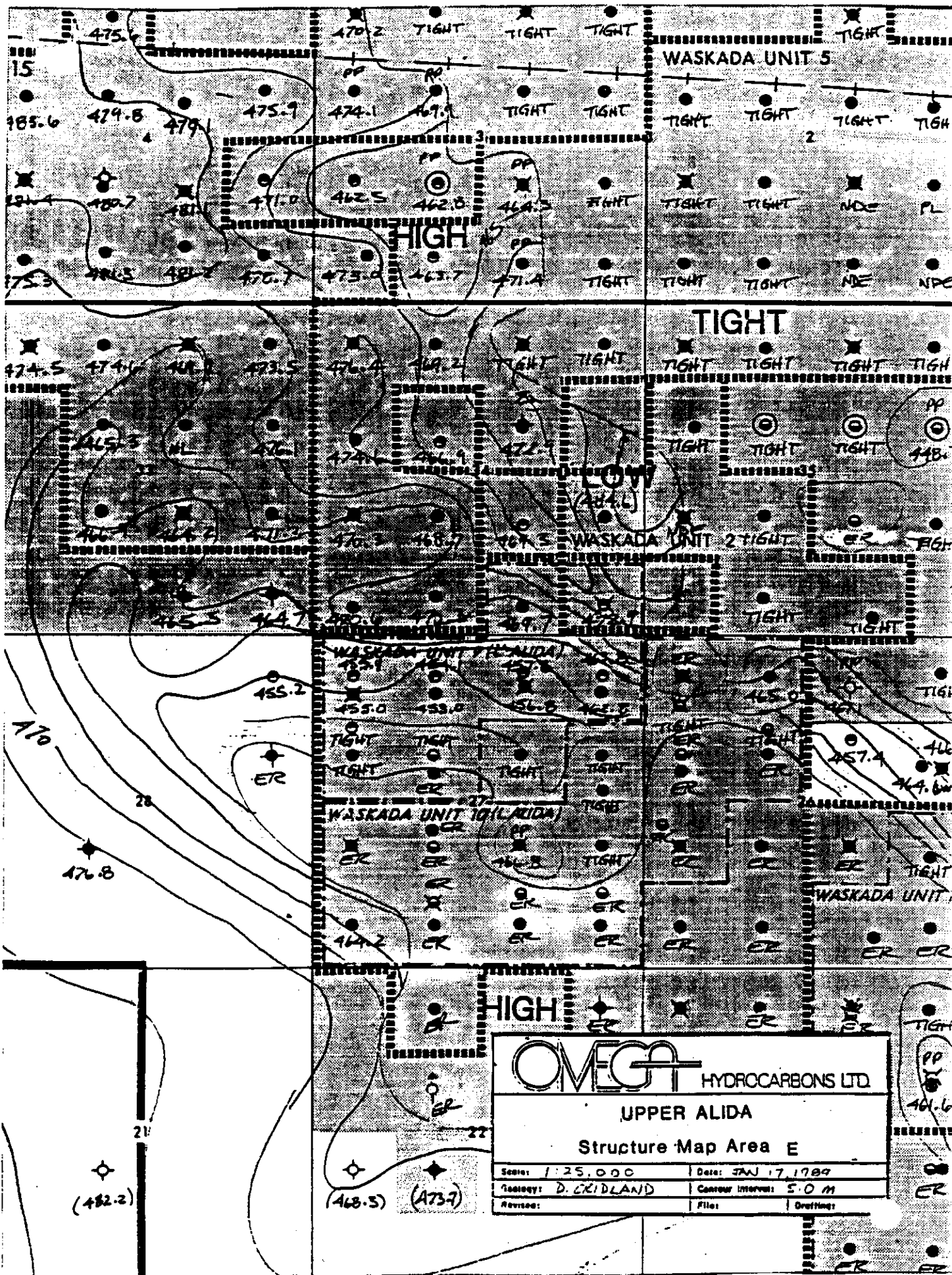
Omega  
 99-01-19  
 01:03:51

MiscB1 0  
 MiscB2 0  
 MiscB3 0

## (Upper Alida Production)

Month	Hours	Oil	Water	Gas	Oil	Water	Fluid	Water	GOR	1. Water	1. Gas	Cum Dil	Cum Mtr	Cum Bas	Cum 1.4	Cum 1.6	Events
		m3/M	m3/D	m3/M	m3/D	m3/D	m3/D	m3/D	m3/M	m3/M	m3/M	m3	m3	m3	m3	m3	
1986-07	736	162.8	704.3	5.5	5.3	22.7	28.0	81.2	4.33	34	0.0	0.0	8702.0	13109.2	306.7	0.0	0.0
1986-08	706	100.8	1044.7	5.9	3.3	34.3	37.6	91.4	10.56	59	0.0	0.0	8802.8	14173.9	312.6	0.0	0.0
1986-09	720	276.2	635.9	6.2	9.2	21.2	30.4	69.7	2.30	22	0.0	0.0	9079.0	14809.8	318.8	0.0	0.0
1986-10	743	141.1	918.2	8.2	4.6	29.6	34.2	86.7	6.51	58	0.0	0.0	9220.1	15728.0	327.0	0.0	0.0
1986-11	720	101.0	805.9	6.9	3.4	26.9	30.2	88.9	7.98	68	0.0	0.0	9321.1	16533.9	333.9	0.0	0.0
1986-12	728	70.9	1031.6	5.7	2.3	33.3	35.6	93.6	14.55	80	0.0	0.0	9392.0	17565.5	339.6	0.0	0.0
1987-01	744	69.2	1023.5	2.7	2.2	33.0	35.2	93.7	14.79	39	0.0	0.0	9461.2	18589.0	342.3	0.0	0.0
1987-02	667	35.3	993.4	3.3	1.3	35.5	36.7	96.6	28.14	93	0.0	0.0	9496.5	19582.4	345.6	0.0	0.0
1987-03	744	21.2	1117.2	4.0	0.7	36.0	36.7	98.1	52.70	189	0.0	0.0	9517.7	20699.6	349.6	0.0	0.0
1987-04	719	46.7	853.8	3.5	1.6	28.5	30.0	94.8	18.28	75	0.0	0.0	9544.4	21533.4	353.1	0.0	0.0
1987-05	744	106.1	1090.9	3.9	3.4	35.2	38.6	91.1	10.28	37	0.0	0.0	9670.5	22644.3	357.0	0.0	0.0
1987-06	679	71.6	1015.7	3.5	2.4	33.9	36.2	93.4	14.19	49	0.0	0.0	9742.1	23660.0	360.5	0.0	0.0
1987-07	744	63.1	1213.6	3.6	2.0	39.1	41.2	95.1	19.23	57	0.0	0.0	9805.2	24873.6	364.1	0.0	0.0
1987-08	680	113.1	944.4	2.6	3.8	31.5	35.2	89.3	8.35	23	0.0	0.0	9866.1	25979.9	368.5	0.0	0.0
1987-09	744	50.6	1212.2	3.1	1.6	39.1	40.7	96.0	23.96	61	0.0	0.0	9979.2	26924.3	371.1	0.0	0.0
1987-10	744	78.4	1215.4	3.9	2.6	40.5	43.1	93.9	15.50	50	0.0	0.0	10029.8	28136.5	374.2	0.0	0.0
1987-11	720	99.7	1168.3	2.9	3.2	37.7	40.9	92.1	11.72	29	0.0	0.0	10108.2	29351.9	378.1	0.0	0.0
1987-12	740	70.9	1096.8	2.9	2.3	35.4	37.7	93.9	15.47	41	0.0	0.0	10207.9	30520.2	381.0	0.0	0.0
1988-01	696	53.5	830.6	3.0	1.8	28.6	30.5	93.9	15.53	56	0.0	0.0	10278.8	31617.0	383.9	0.0	0.0
1988-02	744	67.8	629.1	2.3	2.2	20.3	22.5	90.3	9.28	34	0.0	0.0	10332.3	32447.6	386.9	0.0	0.0
1988-03	719	24.4	622.4	2.9	0.8	20.7	21.6	96.2	25.51	119	0.0	0.0	10400.1	33076.7	389.2	0.0	0.0
1988-04	744	20.7	729.6	3.9	0.7	23.5	24.2	97.2	35.23	188	0.0	0.0	10424.5	33699.1	392.1	0.0	0.0
1988-05	720	11.4	532.4	5.3	0.4	17.7	18.1	97.9	46.70	465	0.0	0.0	10445.2	34428.7	396.0	0.0	0.0
1988-06	744	13.2	512.7	3.8	0.4	16.5	17.0	97.5	38.84	288	0.0	0.0	10456.6	34961.1	401.3	0.0	0.0
1988-07	96	2.2	73.6	0.4	0.1	2.4	2.4	97.1	33.45	182	0.0	0.0	10469.8	35473.8	405.1	0.0	0.0
1988-08	411	13.1	403.8	1.4	0.4	13.0	13.4	96.9	30.82	107	0.0	0.0	10485.1	35951.2	406.9	0.0	0.0
1988-09	72	0.0	92.7	0.0	0.0	3.0	3.0	100.0	###	0	0.0	0.0	10495.1	36043.9	406.9	0.0	0.0
1988-10	528	27.7	480.7	1.7	0.9	15.5	16.4	94.6	17.35	61	0.0	0.0	10512.8	36524.6	408.6	0.0	0.0
1988-11	672	41.6	408.3	2.3	1.5	14.6	16.1	90.8	9.81	55	0.0	0.0	10554.4	36932.9	410.9	0.0	0.0
1988-12	744	19.9	382.8	2.2	0.6	12.3	13.0	95.1	19.24	111	0.0	0.0	10574.3	37315.7	413.1	0.0	0.0
1989-01	719	8.0	316.7	2.5	0.3	10.6	10.8	97.5	39.59	313	0.0	0.0	10582.3	37632.4	415.6	0.0	0.0
1989-02	744	6.5	358.3	1.1	0.2	11.6	11.8	98.2	55.12	169	0.0	0.0	10588.8	37990.7	416.7	0.0	0.0
1989-03	720	12.3	350.1	0.4	0.4	11.7	12.1	96.6	28.46	33	0.0	0.0	10615.4	38718.2	418.5	0.0	0.0
1989-04	744	8.7	377.4	1.4	0.5	12.2	12.6	96.3	26.39	98	0.0	0.0	10641.3	39302.2	420.7	0.0	0.0
1989-05	744	17.2	240.1	2.2	0.3	11.1	11.4	97.5	39.54	253	0.0	0.0	10641.3	39302.2	420.7	0.0	0.0
1989-06	720	24.9	254.8	1.6	0.6	8.0	8.6	93.3	13.96	70	0.0	0.0	10646.2	39557.1	423.5	0.0	0.0
1989-07	732	25.7	303.7	2.3	0.8	8.2	9.0	91.1	10.23	64	0.0	0.0	10691.9	39860.8	425.8	0.0	0.0
1989-08	744	17.1	306.8	2.2	0.6	9.9	10.4	94.7	17.94	129	0.0	0.0	10709.0	40167.6	428.0	0.0	0.0





April 25, 1990

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4th Avenue S.W.  
Calgary, Alberta  
T2P 0H3

Attention: Mr. D.M. Boyko, P. Eng.  
Petroleum Engineer

Dear Sir:

RE: Omega Waskada A1-25-1-26 (WPM)  
Omega Waskada 1-25LAM-1-26 (WPM)  
Concurrent Production from Waskada Lower Amaranth A Pool

Your application for approval to produce the two subject wells concurrently from the Waskada Lower Amaranth A Pool is hereby approved. Please note the well name change from Omega Waskada 1-25-1-26 (WPM) to Omega Waskada A1-25-1-26 (WPM).

Production of oil from the pool in Lsd 1 of Section 25-1-26 (WPM) shall not exceed the normal single well MPR (240 m<sup>3</sup> /month).

This approval is subject to the condition that before November 1, 1990 at least one of the wells in the spacing unit shall be abandoned or recompleted such that there remains only a single well in the spacing unit producing from the Waskada Lower Amaranth A Pool.

Yours respectfully,

**ORIGINAL SIGNED BY  
H. CLARE MOSTER**

H. Clare Moster  
Deputy Chairman

cc: Ian Haugh  
Chairman

bcc: Wm. McDonald  
Member

Petroleum Branch

April 25, 1990

The Oil and Natural Gas  
Conservation Board  
Ian Haugh, Chairman  
H. Clare Moster, Deputy Chairman  
Wm. McDonald, Member

John N. Fox  
Chief Petroleum Engineer  
Petroleum Branch

RE: Concurrent Production - Waskada Lower Amaranth A Pool  
Omega Waskada 1-25-1-26 (WPM)  
Omega Waskada 1-25LAM-1-26 (WPM)

Omega Hydrocarbons Ltd. has made application under subsection 51(8) of the Petroleum Drilling and Production Regulation ("the Regulation") for approval to produce the two subject wells concurrently from the Waskada Lower Amaranth A Pool.

#### Recommendations

It is recommended that the application be approved on the condition that before November 1, 1990 at least one of the wells in the spacing unit be abandoned or recompleted such that there remains only a single well in the spacing unit producing from the Waskada Lower Amaranth A Pool after that date. A proposed letter of approval is attached.

#### Discussion

Omega has applied to recomplete the well, Omega Waskada 1-25-1-26 (WPM) in the Lower Amaranth Formation. The 1-25-1-26 well is presently completed in the MC3a A Pool and during 1988 produced an average 0.15 m<sup>3</sup> OPD at a WOR = 14.9 m<sup>3</sup>/m<sup>3</sup>. Based on the production history of 1-25-1-26 (WPM) and offsetting well performance, the Mission Canyon is uneconomic to produce in this well.

The existing Lower Amaranth producer in the same spacing unit, Omega Waskada 1-25LAM-1-26 (WPM) is a poor producer. In 1989 the well average 0.1 m<sup>3</sup> OPD at a WOR = 61.1 m<sup>3</sup>/m<sup>3</sup>. Omega suspects that the Lower Amaranth and Mission Canyon are in communication in this well as a result of the 27 tonne frac job performed during the initial well completion. Offsetting Lower Amaranth production (Figure 1) supports this assumption.

If the Lower Amaranth recompletion at 1-25-1-26 is successful, Omega has indicated it plans to abandon the 1-25LAM-1-26 well. If the recompletion is unsuccessful, Omega has indicated it may try another cement squeeze on 1-25LAM-1-26 to try and isolate the Lower Amaranth and Mission Canyon Formations.

It is recommended that Omega be given the opportunity to evaluate the Lower Amaranth in 1-25-1-26 before requiring the company to abandon the existing Lower Amaranth producer 1-25LAM-1-26. To this end, it is recommended that Omega be given until November 1, 1990 to abandon or recomplate at least one of the wells in the spacing unit such that there remains only a single well producing from the Waskada Lower Amaranth A Pool after that date. A proposed letter of approval is attached.

ORIGINAL SIGNED BY  
**JOHN N. FOX**

John N. Fox

Att'd.

Original Signed By  
**L. R. DUBREUIL**

Approved: \_\_\_\_\_

L.R. Dubreuil, Director

# Manitoba



The Oil and Natural Gas  
Conservation Board

April 25, 1990

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

(204) 945-3130

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4th Avenue S.W.  
Calgary, Alberta  
T2P 0H3

Attention: Mr. D.M. Boyko, P. Eng.  
Petroleum Engineer

Dear Sir:

RE: Omega Waskada A1-25-1-26 (WPM)  
Omega Waskada 1-25LAM-1-26 (WPM)  
Concurrent Production from Waskada Lower Amaranth A Pool

Your application for approval to produce the two subject wells concurrently from the Waskada Lower Amaranth A Pool is hereby approved. Please note the well name change from Omega Waskada 1-25-1-26 (WPM) to Omega Waskada A1-25-1-26 (WPM).

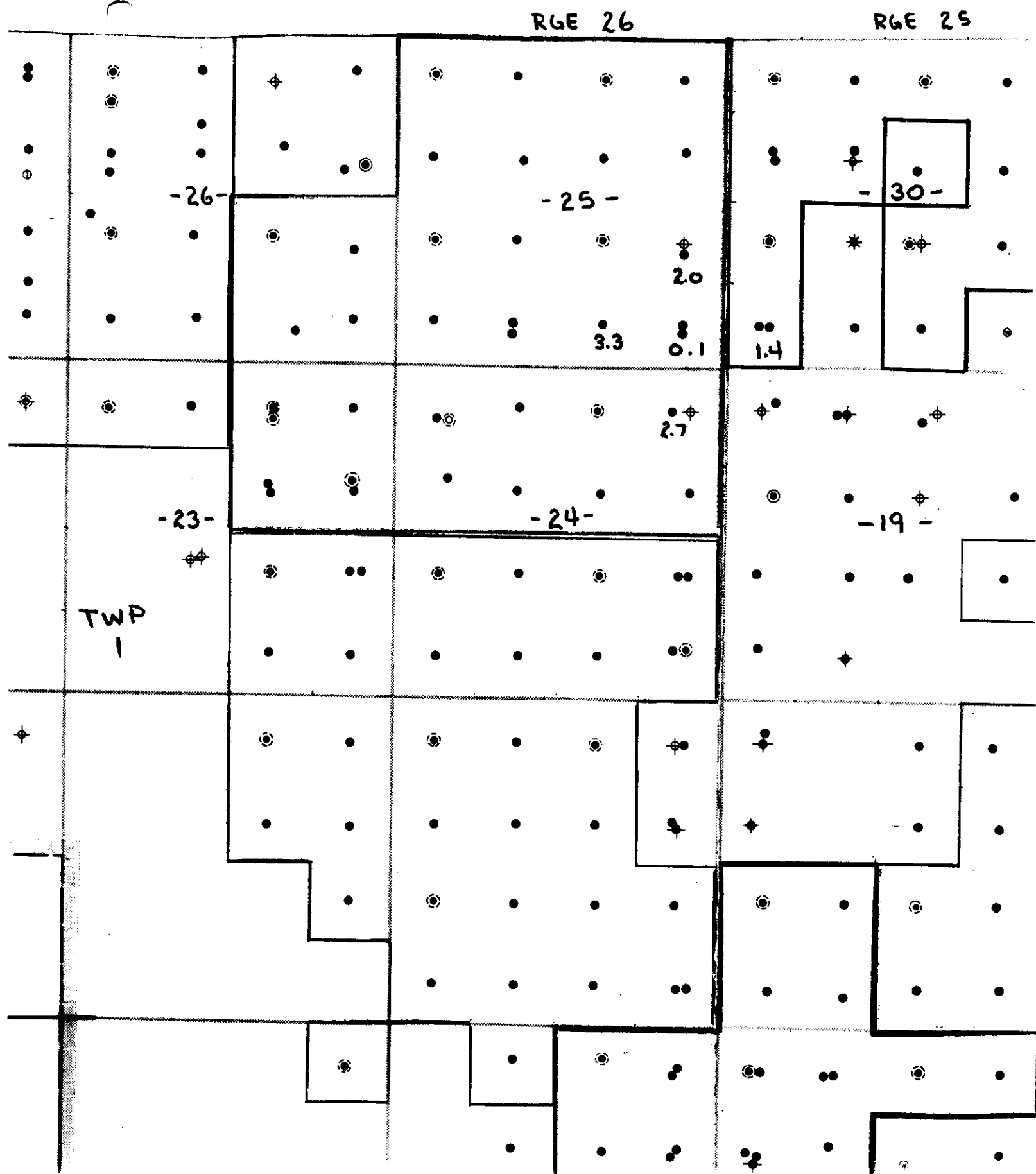
Production of oil from the pool in Lsd 1 of Section 25-1-26 (WPM) shall not exceed the normal single well MPR (240 m<sup>3</sup> /month).

This approval is subject to the condition that before November 1, 1990 at least one of the wells in the spacing unit shall be abandoned or recompleted such that there remains only a single well in the spacing unit producing from the Waskada Lower Amaranth A Pool.

Yours respectfully,

H. Clare Moster  
Deputy Chairman

cc: Ian Haugh  
Chairman



2.0 - 1989 AVERAGE  
PRODUCTION (M3OPD)

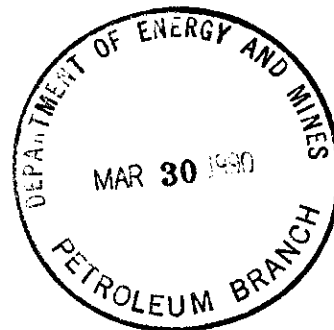
FIGURE 1





1300 SUN LIFE PLAZA III  
112 - 4th AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743  
FAX (403) 264-5691

March 28, 1990



**MANITOBA ENERGY AND MINES**  
**Petroleum Branch**  
555 - 330 Graham Avenue  
Winnipeg, Manitoba  
R3C 4E3

**Attention:** Mr. John Fox  
Chief Petroleum Engineer

Dear Sir:

**Re: Concurrent Completion At Two Wells  
In The Same Zone and DSU  
Omega Waskada 1-25-1-26 WPM  
Omega Waskada 1A-25-1-26 WPM**

In response to your telephone inquiry of March 27, 1990 Omega Hydrocarbons Ltd. hereby requests permission to have two wells completed concurrently in the Lower Amaranth zone at the subject DSU pursuant to Section 51 Subsection 8 of the Petroleum Drilling and Production Regulations.

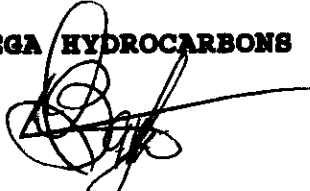
The proposed strategy involves recompleting the Lower Alida well, 1-25-1-26 WPM, in the Lower Amaranth formation. It is felt that this well has no more potential in the Lower Alida zone due to its water cut and rate. This is supported by the  $\phi$ h and structure mapping of this pool which is attached. The twin well 1A-25-1-26 WPM, is already completed in the Lower Amaranth zone. However, based on its production history and completion, it is suspected that this well is in communication with the Lower Alida zone. Recompleting 1-25-1-26 WPM will allow for an optimum LAM completion and it is expected to improve oil recovery at this location. Following a successful recompletion of the Lower Amaranth at 1-25-1-26 WPM, the twin well, 1A-25-1-26 WPM, will likely be abandoned.

In addition to the maps, the production histories for both wells are attached.

Should you require additional information regarding this application please contact the undersigned at (403) 261-0743.

Yours truly,

**OMEGA HYDROCARBONS LTD.**

A handwritten signature in black ink, appearing to be 'D.M. Boyko', written over the company name.

D.M. Boyko, P. Eng.  
Petroleum Engineer

/jb

c.c.: R. Brekke  
W. Sharp  
1-25 - Wellfile  
1A-25 - Wellfile

R.26

R.25 W.1.M.

26

25

30

23

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14

13

18

TP.  
1

- ⊙ Proposed Commingled Well
- SPEAR FISH OIL WELL
- UPPER ALIDA(MC3b) WELL
- LOWER ALIDA(MC3a) WELL
- TILSTON(MC1) WELL
- ⊗ WATER INJECTION WELL
- ⊕ WATER SOURCE WELL
- ⊗ SUSPENDED WELL
- ⊕ ABANDONED WELL

OMEGA

HYDROCARBONS LTD.

WASKADA, MN.

Structure-Top of MC3a Porosity

Scale: 1:25,000	Date: JUNE '89
Geology: DAC	Structure Interval: 5.0 m
Revised:	File: Shading: PAB

R.26

R.25 W.1.M.

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25

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TP.  
1

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- Proposed Commingled Well
- SPEAR FISH OIL WELL
- UPPER ALIDA(MC3b) WELL
- LOWER ALIDA(MC3a) WELL
- TILSTON(MC1) WELL
- ✕ WATER INJECTION WELL
- ⊕ WATER SOURCE WELL
- ⊙ SUSPENDED WELL
- ✧ ABANDONED WELL

<b>OMEGA</b> HYDROCARBONS LTD.	
<b>WASKADA, MN.</b>	
<b>Lower Alida(MC3a) pH Map</b>	
Scale: 1:25,000	Date: JUNE '99
Geology: DAC	Contour Interval: 0.2 pH
Revised:	File: Drafting: PAB

Misc#1	0
Misc#2	0
Misc#3	0

Area Man.

Working Interest 100.0000%

Field	Pool	Block	Acctg	Month	Hours	Area Man.										Working Interest 100.0000%	On Prdn 1983-01-17	On Injrn Not on Yet	Misc#1	Misc#2	Misc#3	0
						Oil	Water	Gas	Oil	Water	Gas	Oil	Water	Gas	Oil							
						m3/D	m3/D	Fluid	Water	GOR	I.Water	I.Gas	Cue Oil	Cue Wtri	Cue Gas	Cue I.W	Cue I.G	Events				
						m3/D	m3/D	m3/D	m3/D	m3/D	m3/D	m3/D	m3	m3	m3	m3	m3					
1986-07	744	106.9	280.6	6.7	3.4	9.1	12.5	72.4	2.62	63	0.0	0.0	2705.8	11796.1	317.7	0.0	0.0					
1986-08	744	99.3	55.2	4.8	3.2	1.8	5.0	33.7	0.56	48	0.0	0.0	2805.1	11851.3	322.5	0.0	0.0					
1986-09	720	76.9	82.4	4.0	2.6	2.7	5.3	51.7	1.07	52	0.0	0.0	2882.0	11933.7	326.5	0.0	0.0					
1986-10	741	78.3	179.9	5.5	2.5	5.8	8.3	69.7	2.30	70	0.0	0.0	2960.3	12113.6	332.0	0.0	0.0					
1986-11	720	62.4	152.6	4.3	2.1	5.1	7.2	71.0	2.45	69	0.0	0.0	3022.7	12266.2	336.3	0.0	0.0					
1986-12	696	49.6	96.6	3.0	1.6	3.1	4.7	55.0	1.94	60	0.0	0.0	3072.3	12362.4	339.3	0.0	0.0					
1987-01	658	53.2	79.6	2.7	1.7	2.6	4.3	59.9	1.50	51	0.0	0.0	3125.5	12442.0	342.0	0.0	0.0					
1987-02	622	38.2	127.9	2.4	1.4	4.6	5.9	77.0	3.35	63	0.0	0.0	3163.7	12569.9	344.4	0.0	0.0					
1987-03	624	34.8	81.5	1.9	1.1	2.6	3.8	70.1	2.34	55	0.0	0.0	3198.5	12651.4	346.3	0.0	0.0					
1987-04	527	44.3	45.8	2.4	1.5	1.5	3.0	50.8	1.03	54	0.0	0.0	3242.8	12697.2	348.7	0.0	0.0					
1987-05	159	5.2	215.9	0.5	0.2	7.0	7.1	97.5	41.52	96	0.0	0.0	3248.0	12913.1	349.2	0.0	0.0	TagSpr (c)				
1987-06	630	4.8	320.2	0.5	0.2	10.7	10.8	98.5	66.71	104	0.0	0.0	3252.8	13233.3	349.7	0.0	0.0	RedSpr (c)				
1987-07	608	1.1	121.5	0.0	0.0	3.9	4.0	99.1	110.5	0	0.0	0.0	3253.9	13354.8	349.7	0.0	0.0					
1987-08	663	0.5	54.7	0.0	0.0	1.8	1.8	99.1	109.4	0	0.0	0.0	3254.4	13409.5	349.7	0.0	0.0					
1987-09	432	0.0	6.2	0.0	0.0	0.2	0.2	98.2	55.00	0	0.0	0.0	3254.5	13421.2	349.7	0.0	0.0					
1987-10	63	0.1	5.5	0.0	0.0	0.2	0.2	96.8	29.92	55	0.0	0.0	3261.8	13639.6	350.1	0.0	0.0					
1987-11	680	7.3	218.4	0.4	0.2	7.3	7.5	96.8	29.92	55	0.0	0.0	3273.6	13895.5	350.6	0.0	0.0					
1987-12	744	11.8	249.9	0.5	0.4	8.1	8.4	95.5	21.18	42	0.0	0.0	3294.6	14114.5	351.6	0.0	0.0	TagSpr (r)				
1988-01	704	21.0	225.0	1.0	0.7	7.3	7.9	91.5	10.71	48	0.0	0.0	3294.6	14114.5	351.6	0.0	0.0	TagSpr (r)				
1988-02	576	19.6	156.2	1.4	0.7	5.4	6.1	88.9	7.97	71	0.0	0.0	3314.2	14270.7	353.0	0.0	0.0	TagSpr (r)				
1988-03																						
1988-04																		SUSPEND				
1988-06	536	0.0	43.8	0.5	0.0	1.5	1.5	100.0	1	1	0.0	0.0	3314.2	14314.5	353.5	0.0	0.0					
1988-07	744	0.0	35.1	0.0	0.0	1.1	1.1	100.0	1	1	0.0	0.0	3314.2	14349.6	353.5	0.0	0.0					
1988-09	718	0.0	25.1	2.1	0.0	0.8	0.8	100.0	1	1	0.0	0.0	3314.2	14374.7	355.6	0.0	0.0					
1989-05	116	4.8	11.2	0.2	0.2	0.4	0.5	70.0	2.33	42	0.0	0.0	3319.0	14395.9	355.8	0.0	0.0	ABANDON				
1989-06	720	0.0	124.9	0.7	0.0	4.2	4.2	100.0	1	1	0.0	0.0	3319.0	14510.8	356.5	0.0	0.0					
1989-07	744	5.5	138.8	0.9	0.2	4.5	4.7	96.2	25.24	164	0.0	0.0	3324.5	14649.6	357.4	0.0	0.0					
1989-08	696	4.6	241.2	0.5	0.1	7.8	7.9	98.1	52.43	109	0.0	0.0	3329.1	14890.8	357.9	0.0	0.0					
1989-09	652	2.9	290.5	0.0	0.1	9.7	9.8	99.0	109.2	0	0.0	0.0	3332.0	15181.3	357.9	0.0	0.0					
1989-10	538	1.7	263.4	0.4	0.1	6.5	6.6	99.2	119.6	235	0.0	0.0	3333.7	15384.7	358.3	0.0	0.0					
1989-11	656	0.0	100.7	0.5	0.0	3.4	3.4	100.0	1	1	0.0	0.0	3333.7	15405.4	358.8	0.0	0.0					
1989-12	738	0.0	80.1	0.0	0.0	2.6	2.6	100.0	1	1	0.0	0.0	3333.7	15565.5	358.8	0.0	0.0					

Omega  
90-01-18  
23:19:57

(Lower Amaranth Production)

Omega  
90-01-18  
23:19:57

Misc#1 0  
Misc#2 0  
Misc#3 0

Area Man.  
Working Interest 100.00002  
On Prdn 1983-01-17  
On Injn Not on Yet

Field 1  
Pool 1  
Block 1  
Acctg 1

Month	Hours	Oil	Water	Gas	Oil	Water	Fluid	Water	GOR	I. Water	I. Gas	Cum Oil	Cum Water	Cum Gas	Cum I.M.	Events
		m3/D	m3/D	m3/D	m3/D	m3/D	m3/D	m3/D	m3/D	m3/D	m3/D	m3	m3	m3	m3	
1982-10																
1982-11																
1983-01	343	354.8	33.2	47.7	11.4	1.1	12.5	8.6	0.09	134	0.0	354.8	33.2	47.7	0.0	0.0
1983-02	646	414.1	12.6	73.7	14.8	0.5	15.2	3.0	0.03	178	0.0	768.9	45.8	121.4	0.0	0.0
1983-03	594	270.0	0.5	37.8	8.7	0.0	8.7	0.2	0.00	149	0.0	1038.9	46.3	159.2	0.0	0.0
1983-04	682	174.6	182.9	35.6	5.8	5.1	11.9	51.2	1.05	204	0.0	1213.5	229.2	194.8	0.0	0.0
1983-05	720	43.0	552.5	3.5	1.4	17.8	19.2	92.8	12.85	81	0.0	1256.5	781.7	198.3	0.0	0.0
1983-06	720	108.4	287.2	3.4	3.6	9.6	13.2	72.6	2.65	31	0.0	1344.9	1068.9	201.7	0.0	0.0
1983-07	720	142.7	663.7	7.3	4.6	21.4	26.0	82.3	4.85	51	0.0	1507.6	1732.6	209.0	0.0	0.0
1983-08	744	42.4	913.9	3.6	1.4	29.5	30.8	95.6	21.55	85	0.0	1530.0	2646.5	212.6	0.0	0.0
1983-09	696	28.3	791.7	5.6	0.9	26.4	27.3	96.5	27.98	198	0.0	1578.3	3438.2	218.2	0.0	0.0
1983-10	44	1.8	48.6	0.5	0.1	1.6	1.6	96.4	27.00	278	0.0	1580.1	3486.8	218.7	0.0	0.0
1983-11	48	2.1	54.8	0.4	0.1	1.8	1.9	96.3	26.10	190	0.0	1582.2	3541.6	219.1	0.0	0.0
1983-12	744	32.5	853.0	6.4	1.0	27.5	28.6	96.3	26.25	197	0.0	1614.7	4394.6	225.5	0.0	0.0
1984-01	390	23.8	434.4	3.0	0.8	14.0	14.8	94.8	18.25	126	0.0	1638.5	4879.0	228.5	0.0	0.0
1984-02	538	22.4	210.6	3.4	0.8	7.3	8.0	90.4	9.40	152	0.0	1660.9	5039.6	231.9	0.0	0.0
1984-03	632	102.7	466.8	10.0	3.3	15.1	18.4	82.0	4.55	97	0.0	1743.6	5506.4	241.9	0.0	0.0
1984-04	648	18.2	182.8	3.6	0.6	6.1	6.7	90.9	10.04	198	0.0	1781.8	5689.2	245.5	0.0	0.0
1984-05	626	6.1	99.0	3.4	0.2	3.2	3.4	74.2	16.23	557	0.0	1787.9	5788.2	248.9	0.0	0.0
1984-06	574	33.8	248.8	6.9	1.1	8.3	9.4	88.0	7.36	204	0.0	1821.7	6037.0	255.8	0.0	0.0
1984-07	673	74.4	524.7	7.9	2.4	16.9	19.3	87.6	7.05	106	0.0	1896.1	6561.7	263.7	0.0	0.0
1984-08	666	8.0	416.7	1.1	0.3	13.4	13.3	98.3	57.60	176	0.0	1904.1	6978.4	264.8	0.0	0.0
1984-09	365	6.8	391.7	1.2	0.2	13.1	13.3	98.3	57.60	176	0.0	1910.9	7370.1	266.0	0.0	0.0
1984-10	702	0.0	999.7	2.2	0.0	29.3	29.3	100.0	11111	11111	0.0	1910.9	8279.8	269.2	0.0	0.0
1984-11	634	0.0	453.3	1.2	0.0	15.1	15.1	100.0	11111	11111	0.0	1910.9	8733.1	269.4	0.0	0.0
1984-12	600	0.0	122.6	3.2	0.0	4.0	4.0	100.0	11111	11111	0.0	1910.9	9013.3	274.2	0.0	0.0
1985-01	740	0.0	157.6	1.6	0.0	5.1	5.1	100.0	11111	11111	0.0	1910.9	9147.6	275.6	0.0	0.0
1985-02	672	0.0	134.3	1.4	0.0	4.8	4.8	100.0	11111	11111	0.0	1911.0	9383.3	277.0	0.0	0.0
1985-03	691	0.1	215.7	1.4	0.0	7.0	7.0	100.0	2157	14000	0.0	1911.0	9590.0	278.0	0.0	0.0
1985-04	651	0.0	226.7	1.0	0.0	7.6	7.6	100.0	11111	11111	0.0	2064.0	9763.0	286.8	0.0	0.0
1985-05	700	153.0	173.0	8.8	4.7	5.6	10.5	53.1	1.13	58	0.0	2094.3	9958.1	288.5	0.0	0.0
1985-06	310	30.3	195.1	1.7	1.0	6.5	7.5	86.6	6.44	56	0.0	2113.1	10148.0	289.6	0.0	0.0
1985-07	235	18.8	189.9	1.1	0.6	6.1	6.7	91.0	10.10	59	0.0	2136.2	10160.4	290.6	0.0	0.0
1985-08	278	23.1	12.4	1.0	0.7	0.4	1.1	34.9	0.54	43	0.0	2165.5	10259.1	292.3	0.0	0.0
1985-09	232	29.3	98.7	1.7	1.0	3.3	4.3	77.1	3.37	58	0.0	2186.5	10283.0	293.5	0.0	0.0
1985-10	231	21.0	33.5	1.2	0.7	0.6	1.4	53.2	1.14	57	0.0	2258.7	10316.5	298.3	0.0	0.0
1985-11	240	70.2	33.5	4.8	2.3	1.1	3.5	32.3	0.48	68	0.0	2271.0	10493.1	299.5	0.0	0.0
1985-12	333	14.3	176.6	1.2	0.5	5.7	6.2	92.5	12.35	84	0.0	2297.3	10585.0	300.7	0.0	0.0
1986-01	284	16.3	92.7	1.2	0.5	3.0	3.5	85.0	5.69	74	0.0	2337.5	10623.2	303.1	0.0	0.0
1986-02												2478.2	10722.1	305.3	0.0	0.0
1986-03	580	50.2	37.4	2.4	1.6	1.2	2.8	42.7	0.75	48	0.0	2548.6	11138.0	305.8	0.0	0.0
1986-04	719	140.7	98.9	2.2	4.7	3.3	8.0	41.3	0.70	16	0.0	2598.9	11515.5	311.0	0.0	0.0
1986-05	734	70.4	415.9	0.5	2.3	13.4	15.7	85.5	5.91	7	0.0					
1986-06	718	50.3	377.5	5.2	1.7	12.6	14.3	88.2	7.50	103	0.0					

Hot Oil

Hot Oil

TbgrRr

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Hot Oil

Omega  
90-01-18  
23:18:02

(Lower Alida Production)

STORRE  
OMEGA PRODUCTION DATA BASE  
WELL ID: (00)01-25-001-26(MINIO)

Misc1 0  
Misc2 0  
Misc3 0

Area Man.  
Working Interest 100.0000Z  
On Prdn 1981-07-17  
On Injrn Not on Yet

Page No. 1

Field 1  
Pool 3  
Block 99  
Acctg 4295

Month	Hours	Oil	Water	Gas	Oil	Water	Fluid	Water	WOR	SOR	I. Water	I. Gas	Cum Oil	Cum Water	Cum Gas	Cum I. W.	Cum I. G.	Events
		m3/D	m3/D	m3/M	m3/D	m3/D	m3/D	m3/D	%	m3	m3/M	m3/M	m3	m3	m3	m3	m3	
1981-06																		
1981-07	360	71.6	11.8	0.0	2.3	0.4	2.7	14.1	0.16	0	0.0	0.0	71.6	11.8	0.0	0.0	0.0	Perf MC
1981-08	696	52.2	29.0	0.0	1.7	0.9	2.6	35.7	0.56	0	0.0	0.0	123.8	40.8	0.0	0.0	0.0	Acidize
1981-09	720	210.0	101.0	0.0	7.0	3.4	10.4	32.5	0.48	0	0.0	0.0	333.8	141.8	0.0	0.0	0.0	Perf MC
1981-10	720	108.0	81.0	0.0	3.5	2.6	6.1	42.9	0.75	0	0.0	0.0	441.8	222.8	0.0	0.0	0.0	Acidize
1981-11	720	75.0	63.0	0.0	2.5	2.1	4.6	45.7	0.84	0	0.0	0.0	516.8	285.8	0.0	0.0	0.0	
1981-12	480	52.5	93.2	0.0	1.7	3.0	4.7	64.0	1.78	0	0.0	0.0	569.3	379.0	0.0	0.0	0.0	
1982-01	576	209.6	64.2	0.0	6.8	2.1	8.9	23.4	0.31	0	0.0	0.0	778.9	443.2	0.0	0.0	0.0	
1982-02	672	64.0	33.9	0.0	2.3	1.2	3.5	34.6	0.53	0	0.0	0.0	842.9	477.1	0.0	0.0	0.0	
1982-03	744	66.8	26.0	0.0	2.2	0.8	3.0	28.0	0.39	0	0.0	0.0	905.7	503.1	0.0	0.0	0.0	
1982-04	720	82.0	23.3	0.0	2.7	0.8	3.5	22.1	0.28	0	0.0	0.0	991.7	526.4	0.0	0.0	0.0	
1982-05	744	72.3	17.9	0.0	2.3	0.6	2.9	19.8	0.25	0	0.0	0.0	1064.0	544.3	0.0	0.0	0.0	
1982-06	720	238.0	30.5	0.0	7.9	1.0	9.0	11.4	0.13	0	0.0	0.0	1302.0	574.8	0.0	0.0	0.0	
1982-07	744	74.9	10.7	0.0	2.4	0.3	2.8	12.5	0.14	0	0.0	0.0	1376.9	585.5	0.0	0.0	0.0	
1982-08	744	293.2	15.5	0.0	9.5	0.5	10.0	5.0	0.05	0	0.0	0.0	1670.1	601.0	0.0	0.0	0.0	
1982-09	720	48.5	55.0	0.0	1.6	1.8	3.5	53.1	1.13	0	0.0	0.0	1718.6	656.0	0.0	0.0	0.0	
1982-10	744	55.8	64.8	0.0	1.8	2.1	3.9	53.7	1.16	0	0.0	0.0	1774.4	720.8	0.0	0.0	0.0	
1982-11	659	41.4	90.8	0.0	1.4	3.0	4.4	68.7	2.19	0	0.0	0.0	1815.8	811.6	0.0	0.0	0.0	
1982-12	742	54.1	25.7	0.0	1.4	0.8	2.6	32.2	0.48	37	0.0	0.0	1869.9	837.3	2.0	0.0	0.0	
1983-01	550	38.7	21.3	2.3	1.2	0.7	1.9	35.5	0.55	59	0.0	0.0	1908.6	858.6	4.3	0.0	0.0	
1983-02	618	28.7	1.0	2.1	1.0	0.0	1.1	3.4	0.03	73	0.0	0.0	1937.3	859.6	6.4	0.0	0.0	
1983-03	594	24.7	3.1	3.6	0.8	0.1	0.9	11.2	0.13	146	0.0	0.0	1982.0	862.7	10.0	0.0	0.0	
1983-04	610	25.2	5.2	5.5	0.8	0.2	1.0	17.1	0.21	218	0.0	0.0	1987.2	867.9	15.5	0.0	0.0	
1983-05	672	77.9	83.5	1.6	2.5	2.7	5.2	51.7	1.07	21	0.0	0.0	2065.1	951.4	17.1	0.0	0.0	
1983-06	720	79.3	82.6	2.0	2.6	2.8	5.4	51.0	1.04	25	0.0	0.0	2144.4	1034.0	19.1	0.0	0.0	
1983-07	728	47.0	206.5	2.5	1.5	6.7	8.2	81.5	4.39	53	0.0	0.0	2191.4	1240.5	21.6	0.0	0.0	
1983-08	736	47.2	190.1	1.7	1.5	6.1	7.7	80.1	4.03	36	0.0	0.0	2238.6	1430.6	23.3	0.0	0.0	
1983-09	693	37.0	229.5	1.5	1.2	7.7	8.9	86.1	6.20	41	0.0	0.0	2275.6	1660.1	24.8	0.0	0.0	
1983-10	732	57.1	225.2	2.6	1.8	7.3	9.1	79.8	3.94	46	0.0	0.0	2332.7	1885.3	27.4	0.0	0.0	
1983-11	720	48.2	302.8	2.6	1.6	10.1	11.7	86.3	6.28	54	0.0	0.0	2380.9	2188.1	30.0	0.0	0.0	
1983-12	744	109.6	205.6	3.0	3.5	6.6	10.2	65.2	1.88	27	0.0	0.0	2490.5	2393.7	33.0	0.0	0.0	
1984-01	720	60.2	227.0	6.0	1.9	7.3	9.3	79.0	3.77	100	0.0	0.0	2550.7	2620.7	39.0	0.0	0.0	
1984-02	616	76.1	156.9	3.8	2.6	5.4	8.0	67.3	2.06	50	0.0	0.0	2626.8	2777.6	42.8	0.0	0.0	
1984-03	632	53.1	196.1	5.8	1.7	6.3	8.0	78.7	3.69	109	0.0	0.0	2679.9	2973.7	48.6	0.0	0.0	
1984-04	607	39.3	208.7	6.3	1.3	7.0	8.3	84.2	5.31	160	0.0	0.0	2719.2	3182.4	54.9	0.0	0.0	
1984-05	312	18.0	112.9	2.7	0.6	3.6	4.2	86.2	6.27	150	0.0	0.0	2737.2	3295.3	57.6	0.0	0.0	TagRgr
1984-06	552	8.5	128.9	4.0	0.3	4.3	4.6	93.8	15.16	471	0.0	0.0	2745.7	3424.2	61.6	0.0	0.0	
1984-07	654	8.0	132.0	2.0	0.3	4.3	4.5	94.3	16.50	250	0.0	0.0	2753.7	3556.2	63.6	0.0	0.0	
1984-08	703	13.6	164.8	1.3	0.4	5.3	5.8	92.4	12.12	96	0.0	0.0	2767.3	3721.0	64.9	0.0	0.0	
1984-09	646	69.5	160.5	6.0	2.3	5.4	7.7	89.8	2.31	86	0.0	0.0	2836.8	3981.5	70.9	0.0	0.0	
1984-10	619	49.3	199.3	3.0	1.6	6.4	8.0	80.2	4.04	61	0.0	0.0	2886.1	4080.8	73.9	0.0	0.0	
1984-11	618	59.8	128.7	2.7	2.0	4.3	6.3	68.3	2.15	45	0.0	0.0	2945.9	4209.5	76.6	0.0	0.0	
1984-12	675	8.3	205.0	1.5	0.3	6.6	6.9	96.1	24.70	191	0.0	0.0	2954.2	4414.5	78.1	0.0	0.0	
1985-01	740	7.6	273.5	1.6	0.2	8.8	9.1	97.3	35.99	211	0.0	0.0	2961.8	4685.0	79.7	0.0	0.0	
1985-02	672	7.2	233.4	1.5	0.3	8.3	8.6	97.0	32.42	209	0.0	0.0	2968.0	4921.4	81.2	0.0	0.0	

## WELL ID: (00)01-25-001-25M(10) (Lower Alida Production)

Omega

90-01-18

23:18:59

Misc#1 0  
Misc#2 0  
Misc#3 0

Field 1  
Pool 3  
Block 99  
Acctg 4295

Area Man.  
Working Interest 100.0000%  
On Prod 1981-07-17  
On Injn Not on Yet

Month	Hours	Oil	Water	Gas	Oil	Water	Gas	Fluid	Water	WOR	GOR	1. Gas	Cum Oil	Cum Water	Cum Gas	Cum 1. M	Cum 1. G	Events
		m3/H	m3/D	m3/H	m3/D	m3/H	m3/D	m3/D	m3/D	m3/H	m3/D	m3/H	m3	m3	m3	m3	m3	
1985-03	698	1.9	142.7	1.2	0.1	4.6	4.7	98.7	75.11	632	0.0	0.0	2970.9	5064.1	82.4	0.0	0.0	
1985-04	526	0.0	79.4	0.9	0.0	2.6	2.6	100.0	100.0	1000	0.0	0.0	2970.9	5143.5	83.3	0.0	0.0	
1985-05	538	108.8	12.4	4.5	3.5	0.4	3.9	10.2	0.11	41	0.0	0.0	3079.7	5155.9	87.8	0.0	0.0	
1985-06	504	98.2	11.2	4.3	3.3	0.4	3.6	10.2	0.11	44	0.0	0.0	3177.9	5167.1	92.1	0.0	0.0	
1985-07	525	22.8	149.7	1.3	0.7	4.5	5.3	86.1	6.17	57	0.0	0.0	3200.7	5307.8	93.4	0.0	0.0	
1985-08	525	21.1	197.4	1.1	0.7	6.4	7.0	90.3	9.36	52	0.0	0.0	3221.8	5505.2	94.5	0.0	0.0	
1985-09	464	33.4	223.7	1.5	1.1	7.5	8.6	87.0	6.70	45	0.0	0.0	3255.2	5728.9	96.0	0.0	0.0	
1985-10	494	59.4	116.1	2.7	1.9	3.7	5.7	66.2	1.95	45	0.0	0.0	3314.6	5845.0	98.7	0.0	0.0	
1985-11	504	14.2	195.4	0.7	0.5	6.5	7.0	93.2	13.76	49	0.0	0.0	3328.8	6040.4	99.4	0.0	0.0	
1985-12	508	1.0	295.9	0.2	0.0	9.5	9.6	99.7	295.9	200	0.0	0.0	3329.8	6335.3	99.6	0.0	0.0	
1986-01	534	0.0	334.8	0.0	0.0	10.8	10.8	100.0	1000	0	0.0	0.0	3329.8	6671.1	99.6	0.0	0.0	Blpgr
1986-02	54	0.0	1.2	0.0	0.0	0.0	0.0	100.0	1000	0	0.0	0.0	3329.8	6671.1	99.6	0.0	0.0	
1986-03	520	0.8	113.0	0.2	0.0	3.6	3.7	99.3	141.3	250	0.0	0.0	3330.6	6785.3	99.8	0.0	0.0	
1986-04	189	1.5	45.9	0.5	0.1	1.5	1.6	96.8	30.60	333	0.0	0.0	3332.1	6831.2	100.3	0.0	0.0	
1986-12	368	1.9	242.7	0.0	0.1	7.8	7.9	99.2	127.7	0	0.0	0.0	3334.0	7073.9	100.3	0.0	0.0	
1987-01	354	21.7	202.1	1.2	0.7	6.5	7.2	90.3	9.31	55	0.0	0.0	3353.7	7276.0	101.5	0.0	0.0	
1987-02	476	59.7	242.3	3.5	2.1	8.7	10.8	80.2	4.06	59	0.0	0.0	3415.4	7518.3	105.0	0.0	0.0	
1987-03	516	18.2	128.6	0.7	0.6	4.1	4.7	87.6	7.07	38	0.0	0.0	3433.6	7646.9	105.7	0.0	0.0	
1987-04	413	4.1	43.0	0.2	0.1	1.4	1.6	91.3	10.49	49	0.0	0.0	3437.7	7689.9	105.9	0.0	0.0	
1987-05	152	18.7	176.8	0.5	0.6	5.7	6.3	90.4	9.45	27	0.0	0.0	3453.4	7866.7	106.4	0.0	0.0	Thpgr (c)
1987-06	508	84.6	363.0	1.6	2.8	12.1	14.9	81.1	4.29	19	0.0	0.0	3541.0	8229.7	108.0	0.0	0.0	
1987-07	474	53.2	319.1	1.3	1.7	10.3	12.0	85.7	6.00	24	0.0	0.0	3594.2	8548.8	109.3	0.0	0.0	
1987-08	477	35.9	243.0	2.9	1.2	7.8	9.0	87.1	6.77	81	0.0	0.0	3630.1	8791.8	112.2	0.0	0.0	
1987-09	540	27.0	193.4	2.5	0.9	6.4	7.3	87.7	7.16	93	0.0	0.0	3657.1	8985.2	114.7	0.0	0.0	
1987-10	582	6.7	277.3	1.0	0.2	8.9	9.2	97.6	41.39	149	0.0	0.0	3663.8	9262.5	115.7	0.0	0.0	Thpgr (r)
1987-11	680	2.7	118.6	0.5	0.1	4.0	4.0	97.8	43.93	185	0.0	0.0	3666.5	9381.1	116.2	0.0	0.0	
1987-12	216	0.4	48.7	0.1	0.0	1.5	1.6	99.2	121.8	250	0.0	0.0	3666.5	9429.8	116.3	0.0	0.0	
1988-01	101	0.2	20.5	0.3	0.0	0.7	0.7	99.0	102.5	1500	0.0	0.0	3667.1	9450.3	116.6	0.0	0.0	
1988-02	632	1.2	110.8	0.6	0.0	3.8	3.9	98.9	92.33	500	0.0	0.0	3668.3	9561.1	117.2	0.0	0.0	
1988-03	144	2.4	41.2	0.4	0.1	1.3	1.4	94.5	17.17	167	0.0	0.0	3670.7	9602.3	117.6	0.0	0.0	Thpgr (r)
1988-04	719	5.5	197.0	1.1	0.2	6.6	6.8	97.3	35.82	200	0.0	0.0	3676.2	9799.3	118.7	0.0	0.0	
1988-05	696	0.0	225.3	1.7	0.0	7.3	7.3	100.0	1000	1000	0.0	0.0	3676.2	10024.6	120.4	0.0	0.0	
1988-06	162	0.0	41.4	0.5	0.0	1.4	1.4	100.0	1000	1000	0.0	0.0	3676.2	10066.0	120.9	0.0	0.0	
1988-10	513	25.4	105.9	2.3	0.8	3.3	4.2	80.3	4.09	91	0.0	0.0	3701.6	10169.8	123.2	0.0	0.0	Ceent5qz
1988-11	720	14.5	130.5	2.6	0.5	4.4	4.8	99.0	9.00	179	0.0	0.0	3716.1	10300.3	125.8	0.0	0.0	
1988-12	744	3.6	82.4	0.7	0.1	2.7	2.8	95.8	22.89	194	0.0	0.0	3719.7	10392.7	126.5	0.0	0.0	
1989-01	744	13.4	39.1	0.6	0.4	1.3	1.7	74.5	2.92	45	0.0	0.0	3733.1	10421.8	127.1	0.0	0.0	
1989-02	672	4.3	58.8	0.2	0.2	2.1	2.3	93.2	13.67	47	0.0	0.0	3737.4	10480.6	127.3	0.0	0.0	
1989-04	623	4.0	37.6	1.2	0.1	1.3	1.4	90.4	9.40	300	0.0	0.0	3746.4	10597.7	128.8	0.0	0.0	
1989-08	384	0.4	20.1	1.3	0.0	0.6	0.7	92.0	50.25	3250	0.0	0.0	3746.8	10617.8	130.1	0.0	0.0	Thpgr (r)
1989-09	720	0.8	85.8	0.0	0.0	2.9	2.9	99.1	107.3	0	0.0	0.0	3747.6	10703.6	130.1	0.0	0.0	
1989-10	562	0.0	85.9	0.0	0.0	2.8	2.8	100.0	1000	0	0.0	0.0	3747.6	10799.5	130.1	0.0	0.0	
1989-11	72	0.0	9.1	0.0	0.0	0.3	0.3	100.0	1000	0	0.0	0.0	3747.6	10799.5	130.1	0.0	0.0	



# Manitoba



## Memorandum

Date June 22, 1989

To The Oil and Natural Gas  
Conservation Board

From John N. Fox  
Chief Petroleum Engineer  
Petroleum Branch

Ian Haugh - Chairman  
H. Clare Moster - Deputy Chairman  
Wm. McDonald - Member

Subject

Telephone

Re: Concurrent Production from Waskada MC3b B Pool  
Omega Waskada 13-27-1-26 (WPM)  
Omega Waskada A13-27-1-26 (WPM)

Omega Hydrocarbons Ltd. has made application under Subsection 51(8) of the Petroleum Drilling and Production Regulation for approval to produce the two subject wells concurrently from the Waskada MC3b B Pool.

### RECOMMENDATIONS

It is recommended that the application be approved. A proposed letter of approval is attached.

### DISCUSSION

Subsection 51(8) of the Petroleum Drilling and Production Regulation provides:

51(8) Notwithstanding anything in this section, a well drilled and completed in a drilling spacing unit in which there is already a well producing or capable of production from the same pool shall not be entitled to produce unless specifically authorized by the Board.

The 13-27-1-26 (WPM) well is in Waskada Unit No. 9 and produces from the MC3b B Pool at a rate of  $1.8\text{m}^3$  OPD with a WOR of  $11.9\text{m}^3/\text{m}^3$ . The A13-27-1-26 (WPM) well is an injection well in Waskada Unit No. 2 and has been suspended since January, 1987.

Water injection in Waskada Unit No. 9 and parts of Unit No. 2 has been suspended since 1987 as a result of over-injection and excessive water production (see Figure 1). Omega's strategy in the MC3b B Pool is to accelerate depletion of the "excess" water in the pool by producing both wells in Lsd. 13 of Section 27-1-26 (WPM). Omega hopes this will result in additional oil being recovered.

The Board approved (89-03-02) concurrent production from Lsd. 15 of Section 27-1-26(WPM) as part of this strategy. So far both wells in Lsd. 15 have produced 100% water.

First | Fold

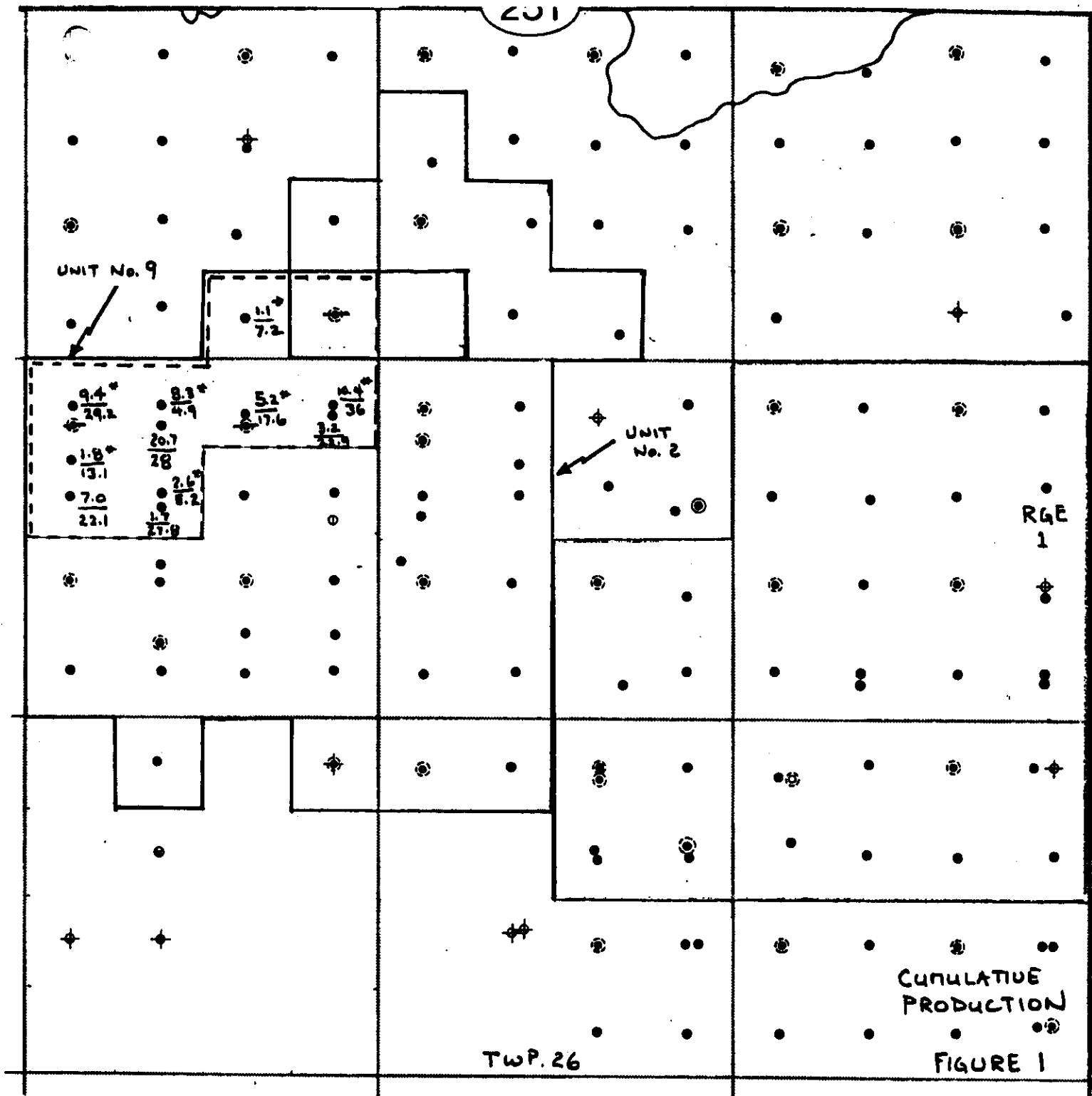
The MC3b B Pool in this area has proven significantly more productive than the Lower Amaranth A Pool (Figure 1) and Omega's strategy aimed at optimizing oil recovery from the MC3b B Pool appears to be justified.

A proposed letter of approval is attached. It is suggest that the letter include a request for Omega to outline its depletion strategy in the Lower Amaranth in this area.

 John W. Fox  
Chief Petroleum Engineer

JNF:jtb

Recommended by: \_\_\_\_\_  
L. R. Dubreuil, Director



$\frac{94}{29.2}$  Cumulative Production MC36 B Pool  $\frac{\text{oil } 10^3 \text{ m}^3}{\text{water } 10^3 \text{ m}^3}$

$\frac{3.2}{22.9}$  Cumulative Production LAm A Pool  $\frac{\text{oil } 10^3 \text{ m}^3}{\text{water } 10^3 \text{ m}^3}$



The Oil and Natural Gas  
Conservation Board

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

(204) 945-3130

June 22, 1989

Omega Hydrocarbons Ltd.  
1300 Sun Life Plaza III  
112 - 4th Avenue S.W.  
Calgary, Alberta  
T2P 0H3

Attention: D. M. Boyko, P. Eng.  
Petroleum Engineer

Dear Sir:

Re: Omega Waskada 13-27-1-26 (WPM)  
Omega Waskada A13-27-1-26 (WPM)  
Concurrent Production from Waskada MC3b B Pool

Your application for approval to produce the two subject wells concurrently from the Waskada MC3b B Pool is hereby approved. Please note the well name change from Omega Waskada WIW 13-27LAM-1-26 (WPM) to Omega Waskada A13-27-1-26 (WPM).

Production of oil from the pool in Lsd 13 of Section 27-1-26 (WPM) shall not exceed the normal single well MPR (240m<sup>3</sup>/month).

In view of the curtailment in injection in Waskada Unit No. 2, you are requested to summarize for the Board your proposed strategy to ensure optimum resource recovery in this area.

Yours respectfully,

H. Clare Moster  
Deputy Chairman

cc: Ian Haugh,  
Chairman

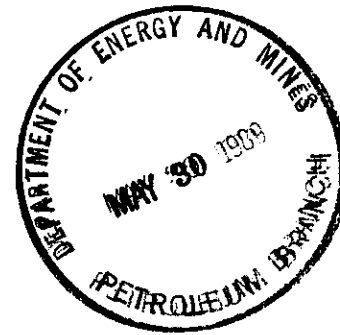
bc: Wm. McDonald,  
Member

Petroleum Branch



1300 SUN LIFE PLAZA III  
112 - 4th AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743

May 29, 1989



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

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

Dear Sir:

Re: Concurrent Production From Two Wells in the Same Zone and DSU  
Omega Waskada 13-27-1-26 WPM  
Omega Waskada 13-27LAm-1-26 WPM

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As a result of our telephone conversation of May 18, 1989 Omega Hydrocarbons Ltd. hereby requests permission to produce the subject wells simultaneously from the Upper Alida zone pursuant to Section 51 Subsection (8) of the Petroleum Drilling and Production Regulations.

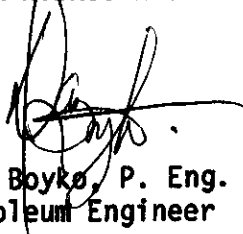
The following is put forward in support of this request. The attached structure mapping indicates that the Upper Alida zone is higher in wellbore 13-27LAm-1-26 WPM than in 13-27-1-26 WPM. However, present production from the Upper Alida zone in the 13-27LAm-1-26 WPM well is 100% water whereas production from the original Mississippian well 13-27-1-26 WPM was 2.0 m<sup>3</sup>/d of oil and over 20 m<sup>3</sup>/d of water before it was suspended. Two reasons are suggested for this occurrence. First, the excess water that was injected into this area at 1-34-1-26 WPM has caused the oil to be displaced. Second, the Lower Amaranth well was originally completed with a large hydraulic fracture before it was converted to an injection well. This may have caused communication between the Lower Amaranth and Upper Alida zones at this wellbore. As a result, a portion of injected water into the Lower Amaranth has been put into the Upper Alida zone and is now being produced back by the 13-27LAm-1-26 WPM well. In either case, it is believed that by producing both of these wells at the same time the drainage of the excess water will be hastened and will result in maximizing the oil recovery in Waskada Unit No. 9.

- 2 -

Additional information relating to this matter can be addressed to the undersigned at (403) 261-0743.

Yours truly,

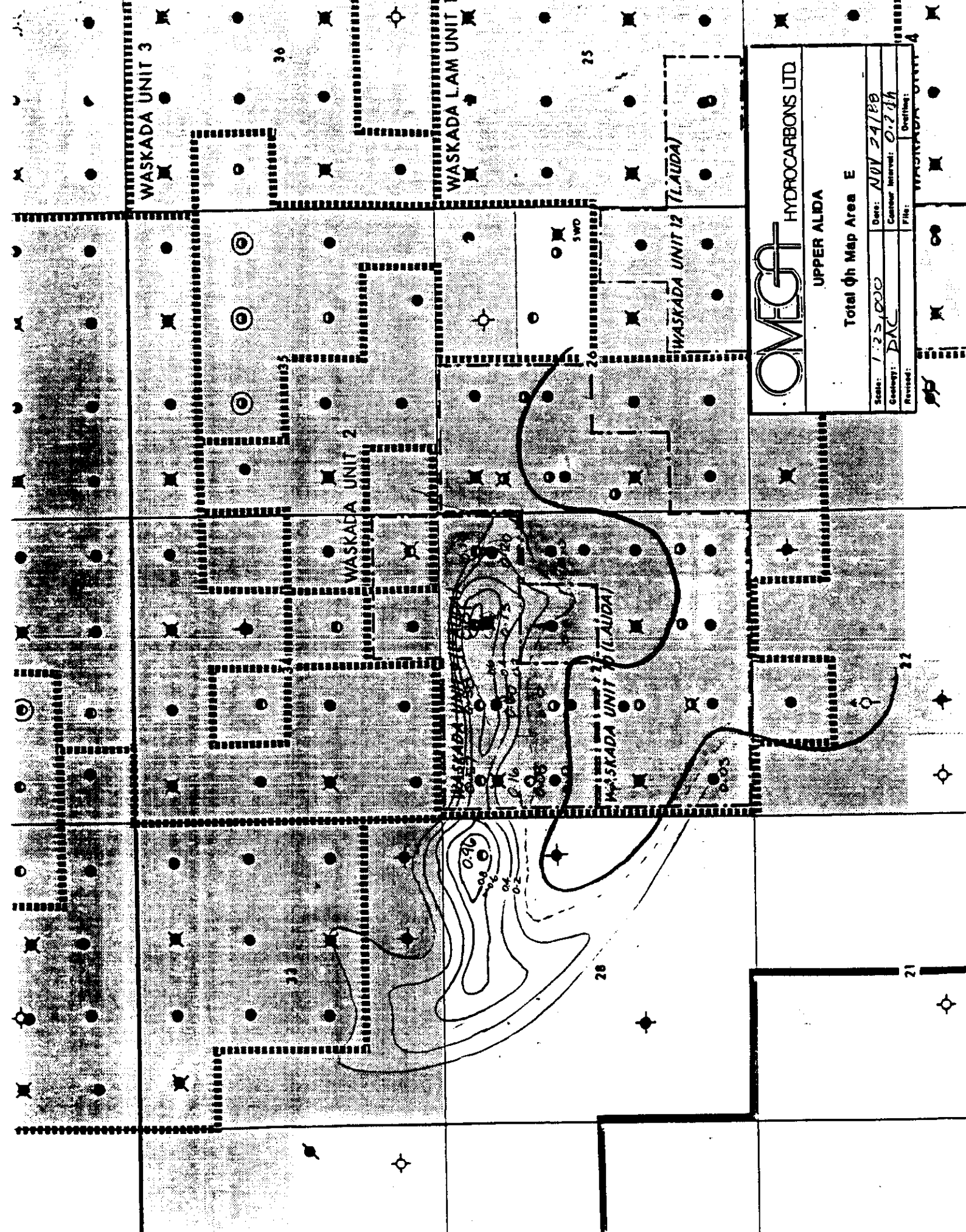
OMEGA HYDROCARBONS LTD.

A handwritten signature in black ink, appearing to read 'D.M. Boyko', is written over the printed name and title.

D.M. Boyko, P. Eng.  
Petroleum Engineer

DMB:jb

c.c.: R.A. Brekke  
W. Sharp  
13-27 Wellfile  
13-27LAm Wellfile

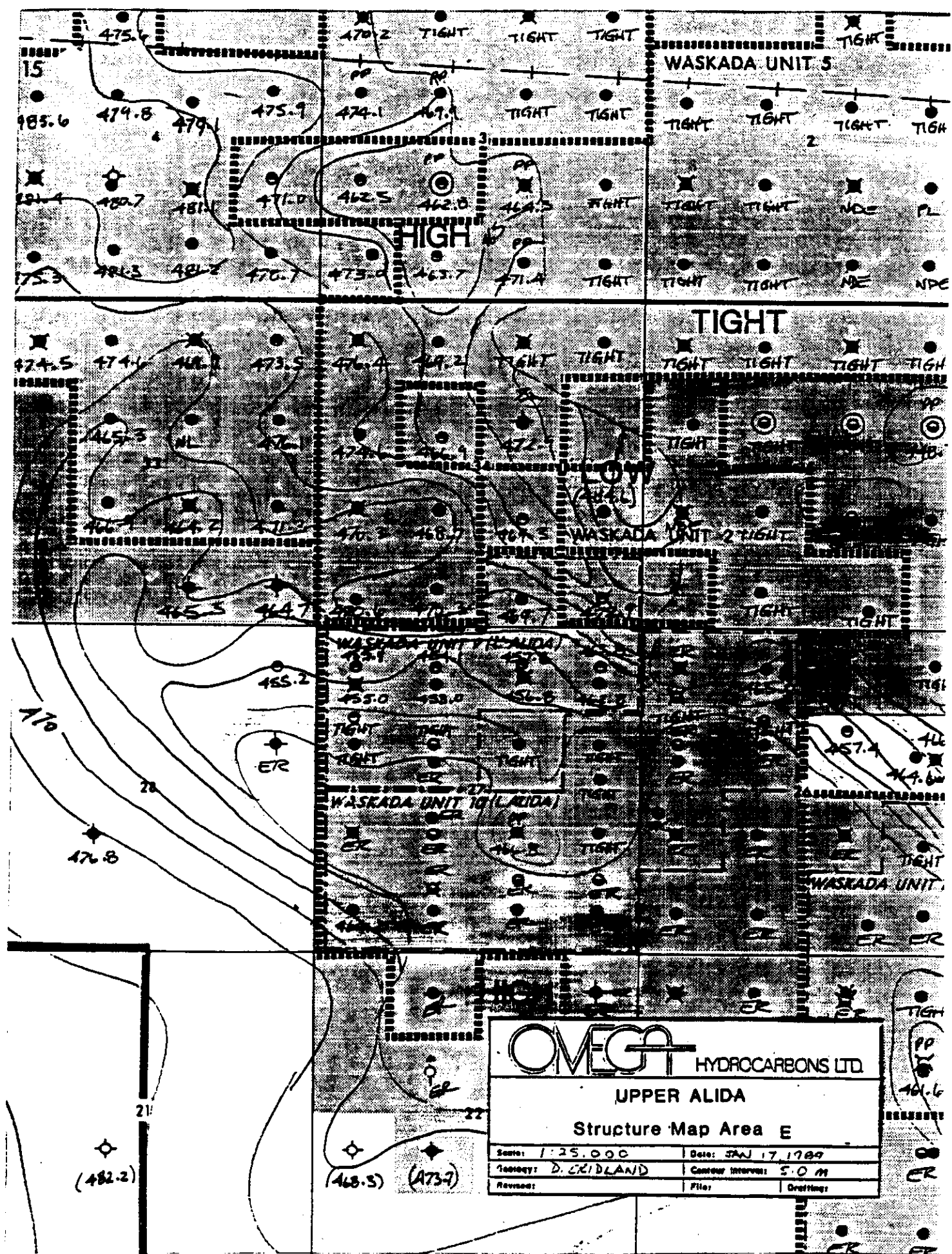


**OMEG** HYDROCARBONS LTD

UPPER ALIDA

Total  $\phi$ h Map Area E

Scale: 1:25,000	Date: NOV 24/88
Geology: DAC	Contour Interval: 0.2 ft
Revised:	File:





Page No. 2

Omega Production Data Base

Well ID: (00113-27-001-264110)

Upper Alida Production

Area Man.

89-05-02

07:37:55

Working Interest 100.0000%

On Prod 1982-12-28

On Inj Not on Yet

Field 1

Pool 2

Block 9

Acctg 9

13-27-1-26 WPM

Month	Hours	Oil	Water	Gas	Oil	Water	Fluid	GOR	I. Water	I. Gas	Cue Oil	Cue Water	Cue Gas	Cue I. W.	Cue I. G.	Misc#1	Misc#2	Misc#3
1986-09	720	80.1	555.3	2.9	2.7	18.5	21.2	6.93	36	0.0	0.0	6652.2	12910.0	235.7	0.0	0.0	0.0	0.0
1986-10	669	44.7	565.6	2.2	1.6	20.2	21.9	12.65	49	0.0	0.0	6696.9	13475.6	237.9	0.0	0.0	0.0	0.0
1986-11	720	38.8	543.7	1.3	1.2	18.1	19.4	14.01	34	0.0	0.0	6735.7	14019.3	239.2	0.0	0.0	0.0	0.0
1986-12	717	9.3	643.6	1.8	0.3	21.5	21.9	69.20	194	0.0	0.0	6745.0	14662.9	241.0	0.0	0.0	0.0	0.0
1987-01	720	25.5	576.0	2.0	0.9	19.2	20.0	22.59	78	0.0	0.0	6770.5	15238.9	243.0	0.0	0.0	0.0	0.0
1987-02	672	4.0	617.2	2.2	0.1	22.0	22.2	154.3	550	0.0	0.0	6774.5	15856.1	245.2	0.0	0.0	0.0	0.0
1987-03	744	17.1	678.5	2.1	0.6	21.9	22.4	39.68	123	0.0	0.0	6791.6	16534.6	247.3	0.0	0.0	0.0	0.0
1987-04	719	80.3	586.8	1.9	2.7	19.6	22.3	7.31	24	0.0	0.0	6871.9	17121.4	249.2	0.0	0.0	0.0	0.0
1987-05	744	150.8	557.1	2.5	4.9	18.0	22.8	3.69	17	0.0	0.0	7022.7	17678.5	251.7	0.0	0.0	0.0	0.0
1987-06	641	107.1	511.8	2.6	4.0	19.2	23.2	4.78	24	0.0	0.0	7129.8	18190.3	254.3	0.0	0.0	0.0	0.0
1987-07	744	175.0	493.4	2.9	5.6	15.9	21.6	2.82	17	0.0	0.0	7304.8	18683.7	257.2	0.0	0.0	0.0	0.0
1987-08	744	121.0	475.6	2.4	3.9	15.3	19.2	3.93	20	0.0	0.0	7425.8	19159.3	259.6	0.0	0.0	0.0	0.0
1987-09	720	156.4	461.4	3.5	5.2	15.4	20.6	2.95	22	0.0	0.0	7582.2	19620.7	263.1	0.0	0.0	0.0	0.0
1987-10	744	204.8	439.4	3.0	6.1	14.2	20.8	2.15	15	0.0	0.0	7791.1	20534.3	269.1	0.0	0.0	0.0	0.0
1987-11	720	184.1	474.2	3.0	8.0	10.1	18.1	1.25	13	0.0	0.0	8219.0	20844.5	272.2	0.0	0.0	0.0	0.0
1987-12	740	247.9	310.2	3.1	8.0	12.2	18.7	1.90	14	0.0	0.0	8418.3	21223.5	275.0	0.0	0.0	0.0	0.0
1988-01	744	199.3	379.0	2.8	6.4	12.2	15.3	1.75	11	0.0	0.0	8579.7	21506.0	276.8	0.0	0.0	0.0	0.0
1988-02	696	161.4	282.5	1.8	5.6	9.7	15.3	1.75	11	0.0	0.0	8745.8	21870.0	279.1	0.0	0.0	0.0	0.0
1988-03	744	166.1	364.0	2.3	5.4	11.7	17.1	2.19	14	0.0	0.0	8793.9	22496.9	282.0	0.0	0.0	0.0	0.0
1988-04	719	48.1	626.9	2.9	1.6	20.9	22.5	13.03	60	0.0	0.0	8824.9	23586.4	284.6	0.0	0.0	0.0	0.0
1988-05	744	31.0	1089.5	2.6	1.0	35.1	36.1	35.15	84	0.0	0.0	8838.5	24523.9	286.2	0.0	0.0	0.0	0.0
1988-06	720	13.6	937.5	1.6	0.5	31.2	31.7	68.93	118	0.0	0.0	9033.9	25240.7	287.5	0.0	0.0	0.0	0.0
1988-07	744	195.4	716.8	1.3	6.3	23.1	29.4	3.67	7	0.0	0.0	9196.8	26072.1	290.4	0.0	0.0	0.0	0.0
1988-08	744	162.9	831.4	2.9	5.3	26.6	32.1	5.10	18	0.0	0.0	9304.0	26819.9	292.7	0.0	0.0	0.0	0.0
1988-09	660	107.2	747.8	2.3	3.8	26.4	30.2	6.98	21	0.0	0.0	9331.7	27671.8	293.9	0.0	0.0	0.0	0.0
1988-10	744	27.7	851.9	1.2	0.9	27.5	28.4	30.75	43	0.0	0.0	9361.1	28412.9	295.1	0.0	0.0	0.0	0.0
1988-11	720	29.4	741.1	1.2	1.0	24.7	25.7	25.21	41	0.0	0.0	9413.3	29169.1	296.4	0.0	0.0	0.0	0.0
1988-12	744	52.2	776.2	1.3	1.7	25.0	26.7	14.87	25	0.0	0.0	9466.8	29927.1	298.1	0.0	0.0	0.0	0.0
1989-01	720	53.5	738.0	1.7	1.8	24.6	26.4	13.79	32	0.0	0.0	9518.8	30439.8	300.3	0.0	0.0	0.0	0.0
1989-02	576	52.0	512.7	2.2	2.2	21.6	23.8	9.86	42	0.0	0.0	9540.3	30694.6	301.3	0.0	0.0	0.0	0.0
1989-03	288	21.5	254.8	1.0	1.8	21.2	23.0	11.85	47	0.0	0.0							



The Oil and Natural Gas  
Conservation Board

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

(204) 945-3130

March 2, 1989

Omega Hydrocarbons Ltd  
1300 Sun Life Plaza III  
112 - 4th Avenue S.W.  
Calgary, Alberta  
T2P 0H3

Attention: R. A. Brekke, P. Eng.  
Manitoba District Engineer

Dear Sir:

Re: Omega Waskada 15-27-1-26 (WPM)  
Omega Waskada WIW 15-27LAM-1-26 (WPM)  
Concurrent Production from Waskada MC3b B Pool

Your application for approval to produce the two subject wells concurrently from the Waskada Mission Canyon 3b B Pool is hereby approved. A copy of your approved re-completion application is also enclosed.

Production of oil from subject pool on Lsd 15 of Section 27-1-26 shall not exceed the normal single well MPR (240m<sup>3</sup>/month).

In view of the curtailment in injection in the Waskada Unit No. 2, you are requested to summarize for the Board your proposed strategy to ensure optimum resource recovery in this area.

Yours respectfully,

*Original Signed by H. C. Moster*

  
Deputy Chairman

cc: Charles S. Kang,  
Chairman

bc: Wm. McDonald,  
Member

Petroleum Branch



Date March 2, 1989

## Memorandum

To The Oil and Natural Gas  
Conservation Board

From L. R. Dubreuil  
Director  
Petroleum Branch

Subject Charles S. Kang - Chairman  
H. Clare Mosier - Deputy Chairman  
Wm. McDonald - Member

Telephone

Omega Waskada 15-27-1-26 (WPM)  
Omega Waskada 15-27LAM-1-26 (WPM)  
Concurrent Production from Waskada MC3b B Pool

Omega Hydrocarbons Ltd has made application under subsection 51(8) of The Petroleum Drilling and Production Regulation for approval to produce the two subject wells concurrently from the Waskada MC3b B Pool.

### Recommendations:

It is recommended that the application be approved. A proposed letter of approval is attached.

### Discussion:

Subsection 51(8) of the Petroleum Drilling and Petroleum Regulation provides:

"51(8) Notwithstanding anything in this section, a well drilled and completed in a drilling spacing unit in which there is already a well producing or capable of production from the same pool shall not be entitled to produce unless specifically authorized by the Board."

Omega has developed the area around the subject wells and had initiated programs of pressure maintenance by water injection in both the Waskada Lower Anamath A Pool (Waskada Unit No. 2) and the Waskada MC3b B Pool (Waskada Unit No. 9).

Water injection was established in Waskada Unit No. 2 in an inverted nine spot injection pattern. In Waskada Unit No. 9, one well (1-34-1-26) was converted to injection (see Fig No. 1).

Water injection and communication with the Mission Canyon has resulted in excessive water production in parts of Unit No. 2. In addition, log re-evaluation has indicated a wet stringer in the northern part of Section 27-1-26 (WPM) in the Lower Anamath. For these reasons, Omega has curtailed injection in the area. The well Omega Waskada WIW 15-27LAM-1-26 (WPM) has been shut in since 1987.

Water injection in Waskada Unit No. 9 similarly resulted in a rapid and severe increase in water production in the Waskada MC3b B Pool. Specifically, the well Omega Waskada 15-27-1-26 has watered out.

Omega has proposed an operating strategy in the area which involves depletion of the water saturated zone in the Mission Canyon in the hope that additional oil recovery can be achieved. The strategy involves producing both wells in Lsd 15 of Section 27-1-26 (WPM) from the Waskada MC3b B Pool. Initially, it is expected that production will be 100% water. It is anticipated that water cuts may first drop at the 15-27LAM well which is structurally higher. At this time, the remaining well would probably be abandoned.

A proposed letter of approval to Omega is attached. It is suggested that the letter include a request for Omega to outline its depletion strategy in the Lower Amaranth in this area.

Original signed  
L. R. DUBREUIL

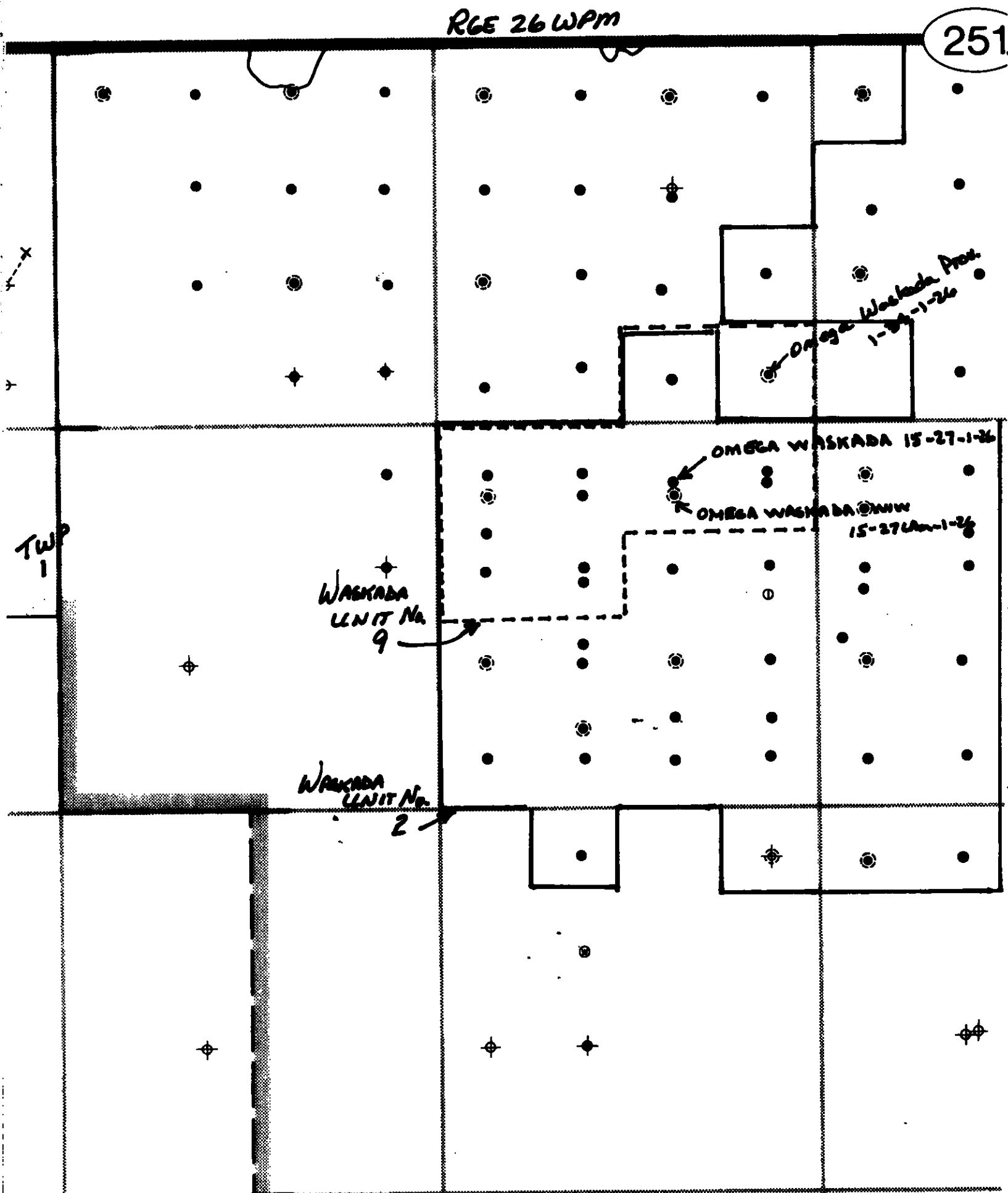
L. R. Dubreuil

LRD:jtb

FIG No.1

RGE 26 WPM

251





1300 SUN LIFE PLAZA III  
112 - 4th AVENUE S.W.  
CALGARY, ALBERTA, CANADA T2P 0H3  
TELEPHONE (403) 261-0743

February 21, 1989

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

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

Dear Bob:

Re: Concurrent Production From Two Wells In The Same Zone and DSU  
Omega Waskada 15-27-1-26 WPM  
Omega Waskada 15-27LAm-1-26 WPM

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Following up our telephone conversation on February 17, 1989 Omega Hydrocarbons Ltd. hereby requests permission pursuant to Section 51 Subsection (8) of the Petroleum Drilling and Production Regulations to produce concurrently from the Upper Alida zone in both of the subject wells.

At present one well is completed as a water injection in the lower Amaranth zone and the other well is completed as a producer in the Upper Alida formation. Due to structure in the Upper Alida formation and excess water injection into the overall area plans are to recomplete Omega Waskada 15-27LAm-1-26 WPM as an updip Upper Alida producer. In an attempt to quickly deplete the excess water injected into the Upper Alida formation through well 1-34-1-26 WPM Omega requires approval to simultaneously produce from the same zone in both wells in LSD 15-27-1-26 WPM. It is our opinion that this strategy will maximize oil recovery from Waskada Unit No. 9 by reducing the water/oil ratio at the updip well location.

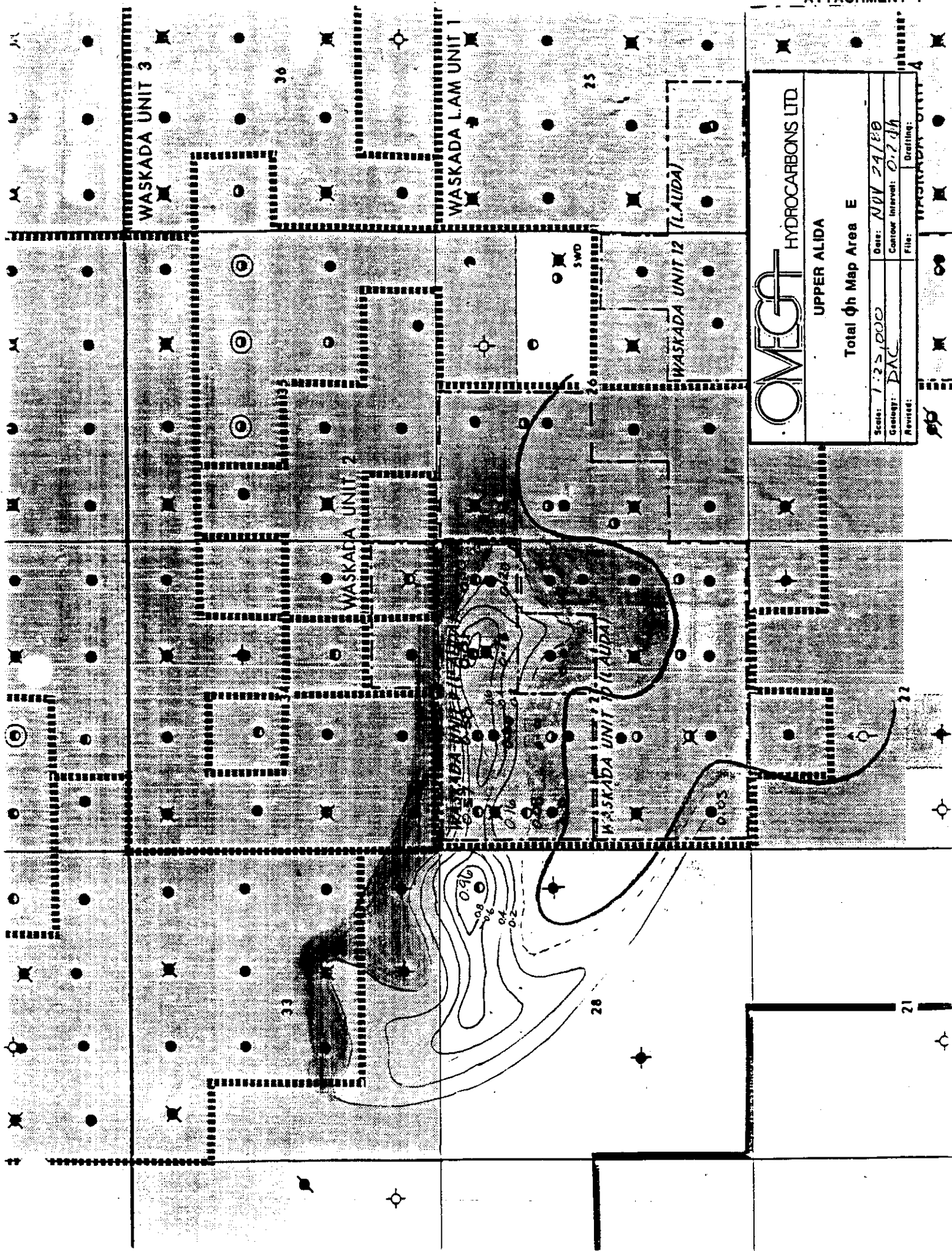
Any questions or comments relating to this application should be directed to the undersigned at (403) 261-0743.

Yours very truly,

OMEGA HYDROCARBONS LTD.

R.A. Brekke, P. Eng.  
Engineering Supervisor - Manitoba

c.c.: W. Sharp  
15-27 Wellfile  
15-27LAm Wellfile



**OMEGA** HYDROCARBONS LTD.

UPPER ALIDA

Total  $\phi$ h Map Area E

Scale: 1:25,000	Date: NOV 24/88
Geology: DAC	Contour Interval: 0.2 $\phi$ h
Revised:	File:
Drafting:	

