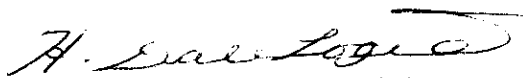


ENRON Oil Canada Ltd.

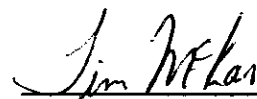
WASKADA LOWER AMARANTH
WATERFLOOD STUDY
UNIT NO. 16 EXPANSION

May 1988

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INTRODUCTION

The Waskada Lower Amaranth "A" pool is located in southwestern Manitoba. Enron Oil Canada Ltd. presently operates the Waskada Unit No. 16 pressure maintenance project shown in Figure 1. Water injection was started in June 1987. Additional wells have been drilled to the north and east of this waterflood project leading to the potential for expansion of the existing waterflood project or creation of a new adjacent waterflood project. This study was undertaken to evaluate the performance of the existing waterflood as well as evaluate the potential of waterflooding offset primary oil producing lands operated by Enron. The Waskada Lower Amaranth study area is illustrated in Figure 2.

The Lower Amaranth oil is undersaturated with a bubble point pressure of 4 220 kPa at the reservoir temperature of 43°C. The initial formation pressure is estimated to be 8 670 kPa. No gas/oil or water/oil contacts are evident within the study area. Primary depletion is by solution gas drive.

CONCLUSIONS

1. The oil-in-place in the Waskada Lower Amaranth zone within the study area is estimated to be $3\,165\,10^3\text{m}^3$ (19.92 MMBbls). Of this total, $1\,328\,10^3\text{m}^3$ (8.36 MMBbls) is contained within the boundaries of Waskada Unit No. 16.
2. The pressure history match indicates pressure maintenance around well 13-4 caused by communication between the Lower Amaranth and Mississippian formations. In the computer simulation model, Mississippian water was injected into the Lower Amaranth zone around well 13-4 to match recorded formation pressures. Additional communication with the Mississippian formation is evident around wells 4-9, 5-9, 14-10 and 5-15.
3. Solution gas drive depletion combined with the minor Mississippian communication (Case 1) would result in a primary recovery of only 7.3 percent of the original oil-in-place after ten years (9.3 percent recovery after twenty years). This amounts to an average production of $6\,570\,\text{m}^3$ (41,330 Bbls) per well after ten years or $8\,420\,\text{m}^3$ (52,970 Bbls) per well after twenty years.
4. If waterflood operations continue in Waskada Unit No. 16 ($\text{VRR} = 1.0$) and the non-Unit area continues under a primary depletion mechanism (Case 2), a recovery factor of approximately 8.9 percent would be possible after an additional ten years of production (12.3 percent recovery after twenty years). Non-Unit wells will marginally benefit from Unit waterflood operations.
5. If a seven-spot waterflood operation is instituted in the study area as shown in Figure 9 (Case 3), a total recovery of 12.4 percent of the original oil-in-place would be possible after ten years of continued production (19.8 percent recovery after twenty years and 29.1 percent recovery after 40 years). This seven-spot pattern would require the conversion of wells 1-9, 6-9, 10-9, 16-9, 5-10 and 4-15 from oil production to water injection.

If the seven-spot pattern is modified by converting wells 15-9 and 14-10 instead of 16-9 and 4-15 (Case 5), no significant changes in total recovery are evident. This allows some flexibility in the choice of water injectors in the north end of the project area where the potential for continued development exists. Well 4-9 would probably not be converted to pattern water injection due to its highly damaged condition and associated Mississippian communication problem. This is not considered detrimental due to the Lower Amaranth pressure being recharged by Mississippian communication around wells 13-4 and 5-9.

5. A five-spot waterflood pattern could be implemented in the non-Unit study area by converting wells 5-9, 7-9, 15-9, 5-10 and 13-10 from oil production to water injection (Case 4). This would result in a total recovery of 11.8 percent of the original oil-in-place after ten years (19.5 percent recovery after twenty years).
6. The seven-spot pattern decreases the producer to injector ratio which should result in increased sweep efficiency. The seven-spot pattern in this specific study area also reduces the number of good oil producers which would have to be taken out of service for conversion to water injectors. Injection into the less productive wells should result in a better distribution of water injection between layers and reduce the potential of water channelling between wells through layer two. The seven-spot pattern also appears to conform with the way the reservoir was geologically laid down in the subject area (confirmed by well productivity).

RECOMMENDATIONS

1. The existing Waskada Unit No. 16 waterflood should be expanded to create a seven-spot waterflood pattern as shown in Figure 9. Wells 1-9, 6-9, 10-9 and 5-10 should be converted to water injectors. Dependent on the additional drilling this summer (ie. wells 11-10 and 3-15) and any offset pattern compromise, one or two additional wells in the northern area will be required for water injection (wells 15-9, 16-9, 14-10 or 4-15).
2. Unitization procedures should be initiated immediately.

DISCUSSION

Input Data

1. Grid System:

A 24 x 30 x 3 Cartesian coordinate grid system was chosen to model the production performance of the Waskada Lower Amaranth formation (Figure 3). This allows the wells to be placed in the middle of each 1.8 hectare areal grid block with a minimum of two grid blocks between wells. Only three layers could be used due to model grid block limitations. It was therefore necessary to combine core analysis layer 1 with 2 and layer 4 with 5 to make a 3 layer model. There is no vertical communication between layers. Only 1,101 of the total 2,160 grid blocks are active.

2. Reservoir Rock Properties:

Evaluation of the routine core analysis conducted on twenty-two wells resulted in the breakdown of the Lower Amaranth (Spearfish) formation into five layers. This five layer designation is illustrated on the type log of Figure 4. Layer 1 is a bioturbated sand/shale lense sequence which is considered not to be continuous between wells. Layers 2 to 4 are more continuous between wells with layer 3 being the most discernible having consistently higher porosity and permeability. Layer 5 varies in thickness dependent upon the underlying Mississippian structure. Core analysis results are contained in Table 1. Due to computer model grid block limitations, a three layer model was created by combining layer 1 with 2 and layer 4 with 5. Reservoir properties over missing core intervals were determined by a log to core comparison. Grid block values of net pay, porosity and permeability for each of the three layers were obtained by interpolation of individual well core analysis using a pre-processor (values contained in Appendix 1).

A rock compressibility of $6.7 \times 10^{-7} \text{ kPa}^{-1}$ was used in this model study.

3. Fluid Properties:

Fluid properties are based upon the PVT study contained in previous applications. These oil and solution gas properties are shown in Table 2. The oil is undersaturated with a bubble point pressure of 4 220 kPa at the reservoir temperature of 43°C. Initial reservoir pressure is estimated to be 8 670 kPa.

Water compressibility is estimated from correlations to be $4.4 \times 10^{-7} \text{ kPa}^{-1}$.

4. Relative Permeability:

Based upon the previous three layer groupings, core analysis indicates variations in porosity and permeability between layers. Special core analysis on small plug core samples resulted in variations of water/oil relative permeability curves as a function of absolute air permeability. The water/oil and gas/oil relative permeability curves used in this simulation study for each of the three layer groupings are illustrated in Figures 5 and 6.

It is hypostulated that the recorded water production from the Lower Amaranth zone is associated with high pressure drawdowns pulling water from the less permeable shaly sand intervals. An oil/water capillary pressure curve was added to the least permeable layer to provide for initial mobile water. The resulting initial water saturations are as follows:

Layer 1: $S_w = 56\%$ least porous and permeable layer
Layer 2: $S_w = 37\%$ most porous and permeable layer
Layer 3: $S_w = 45\%$

5. Original In-Place Fluids:

Initialization of the simulation model resulted in the following distribution of fluids at initial conditions for the total study area and for Waskada Unit No. 16 separately:

	<u>Waskada Unit No. 16</u>	<u>Total Study Area</u>
Reservoir Pore Volume, (10^3m^3)	2 859.0	6 847.0
Original Oil-In-Place, (10^3m^3)	1 328.0	3 165.0
Original Solution Gas, (10^6m^3)	67.0	159.7
Original Water-In-Place, (10^3m^3)	1 319.0	3 176.0

History Match

1. Input Data Modifications:

In order to properly match pressure history, it was necessary to increase the net pay in the more permeable layer 2 in the northeast quarter of Section 5 and southwest quarter of Section 4.

Core derived permeabilities to air were universally reduced by 75% in all grid blocks to more accurately describe liquid permeabilities at overburden pressure.

Permeabilities around wells 11-4, 10-5, 4-9, 5-9 and 14-10 were decreased to account for remedial cement squeezes required to shut off Mississippian water communication. Additional minor permeability adjustments were required to match well productivity.

A permeability channel was created between wells 15-4 and 1-9 to account for the anomolous pressure, production and injection behaviour.

Water cuts at wells 13-4, 4-9, 5-9, 14-10 and 5-15 indicate communication between the oil bearing Lower Amaranth zone and the underlying Mississippian aquifer. A small volume of water injection was added around wells 13-10, 5-9 and 5-15 to account for some pressure recharging of the Amaranth zone by dump waterflooding (injection time interval only from date of first production until initiation of the waterflood project).

2. Pressure Match:

Pressure surveys were conducted on approximately May 30, 1986; July 31, 1986; June 1, 1987; September 8, 1987 and January 1, 1988. Average producing water cuts were used to estimate the liquid gradients for sonic pressure tests. All pressures were modified to a pool datum depth of -411 mSS for comparison with computer simulation results.

The final pressure history match comparison is given in Table 3.

3. Production Match:

Oil production and water injection were input for each well on an average daily basis to obtain a pressure history match. The water production from wells with Mississippian communication (13-4, 4-9, 5-9, 14-10 and 5-15) was reduced to match simulation values. Comparison of produced and injected fluid volumes up to the end of February 1988 is given as follows:

	Produced Oil (m ³)	Injected Water (m ³)	Produced Water (10 ³ m ³)	
			Lower Amaranth	Total
Actual	52 013	22 720	4 097	18 494
Simulator	51 960	22 620	2 680	2 680

A further breakdown of produced fluid volumes by well is given in Table 4. The major additional discrepancy in produced water volumes not attributed to Mississippian communication occurs around well 1-9. The water production problem at this well is due to channelling from injection well 15-4.

4. Oil Productivity and Water Injectivity:

In preparation for running production forecasts, production in March 1988 was used to set individual well oil productivity indices. The well productivity indices were altered to obtain a low bottomhole pressure to simulate the near pumped off condition of all producing wells. The pressure fall-off test results of December 1987 were used to set individual well water injectivity indices.

Production Forecasts

1. Case 1 - Primary Recovery

This is the base case run for comparison purposes. This case assumes no conversion of producers to injectors and all wells continue to produce under solution gas drive. The small amount of Mississippian water recharging introduced during the

history match phase was allowed to continue. Forecast average oil production rates and cumulative oil production within the study area are illustrated in Figures 7 and 8. Starting April 1, 1988, ten and twenty year production forecasts result is the following:

	Ten Year Forecast	Twenty Year Forecast
Daily Oil Production, m ³ (Bbls)	25.2(159)	12.4(78)
Cumulative Oil Production, 10 ³ m ³ (MBbls)	229.9(1,446)	294.6(1,854)
Primary Recovery, %	7.26	9.30

2. Case 2 - Secondary Recovery in Waskada Unit No. 16:

This case assumes continued waterflood operation within the existing Waskada Unit No. 16 with offset non-Unit study area wells allowed to produced under primary solution gas drive. A reservoir fluid voidage replacement ratio of 1.0 is maintained within the waterflood Unit boundaries. The small amount of Mississippian water recharging introduced during the history match phase was allowed to continue in only the primary production area. Forecast average oil production rates and cumulative oil production for the study area are again illustrated in Figures 7 and 8. Starting April 1, 1988, ten and twenty year production forecasts result in the following:

	Ten Year Forecast	Twenty Year Forecast
Daily Oil Production, m ³ (Bbls)	39.1(246)	22.5(142)
Cumulative Oil Production, 10 ³ m ³ (MBbls)	281.8(1,773)	389.9(2,454)
Total Recovery, %	8.91	12.33

3. Case 3 - Seven-Spot Waterflood:

A seven-spot (modified line drive) pattern is illustrated in Figure 9. This supplements the existing waterflood pattern in Unit No. 16. Conversion of wells 1-9, 4-9, 6-9, 10-9, 15-9, 5-10 and 4-15 from production to injection would be required. Well 4-9 would probably not be converted to injection due to its highly

damaged condition and associated Mississippian communication problem. Waterflood operations in the non-Unit study area were scheduled in the simulation model to commence in June 1988. A reservoir fluid voidage replacement ratio of 1.0 was maintained within Unit and non-Unit study area boundaries. Forecast average oil production rates and cumulative oil production for the study area are illustrated in Figures 10 and 11. Starting April 1, 1988, ten and twenty year production forecasts result in the following:

	<u>Ten Year Forecast</u>	<u>Twenty Year Forecast</u>	<u>Forty Year Forecast</u>
Daily Oil Production, m ³ (Bbls)	78.5(494)	53.0(334)	31.6(199)
Cumulative Oil Production 10 ³ m ³ (MBbls)	392.6(2,471)	626.6(3,943)	921.1(5,796)
Total Recovery, %	12.41	19.80	29.11
WOR, m ³ /m ³	0.441	1.247	3.307

4. Case 4 - Five-Spot Waterflood:

This case creates a five-spot waterflood pattern in the non-Unit study area by converting wells 5-9, 7-9, 15-9, 5-10 and 13-10 from production to injection. A reservoir fluid voidage replacement ratio of 1.0 was maintained within Unit and non-Unit study area boundaries. The resulting production forecast (Figures 10 and 11) is considered optimistic due to the loss of injection water into the Mississippian formation around well 5-9. Starting April 1, 1988, ten and twenty year production forecasts result in the following:

	<u>Ten Year Forecast</u>	<u>Twenty Year Forecast</u>
Daily Oil Production, m ³ (Bbls)	77.0(485)	46.2(354)
Cumulative Oil Production 10 ³ m ³ (MBbls)	374.6(2,357)	618.3(3,891)
Total Recovery, %	11.84	19.54
WOR, m ³ /m ³	0.439	1.237

5. Case 5 - Seven-Spot Modified Waterflood:

In order to supply periferal injection and compromise with offset five-spot injection patterns, Case 3 was modified by converting wells 15-9 and 14-10 to injection instead of wells 16-9 and 4-15. Forecast average oil production rates and cumulative production for the study area are illustrated in Figures 10 and 11. Starting April 1, 1988, ten and twenty year production forecasts result in the following:

	<u>Ten Year Forecast</u>	<u>Twenty Year Forecast</u>
Daily Oil Production, m ³ (Bbls)	80.3(505)	55.3(348)
Cumulative Oil Production, 10 ³ m ³ (MBbls)	398.7(2,509)	641.0(4,034)
Total Recovery, %	12.60	20.25
WOR, m ³ /m ³	0.519	1.435

The twenty year daily oil production and cumulative oil production forecasts for all five cases are tabulated in Tables 5 and 6 respectively.

TABLES

TABLE 1

WASKADA LOWER AMARANTH CORE ANALYSES

WID	LAYER 1			LAYER 2			LAYER 3			LAYER 4			LAYER 5		
	h	Ø	k	h	Ø	k	h	Ø	k	h	Ø	k	h	Ø	k
3-4	1.00	13.11	1.48	1.99	16.75	1.28	1.94	19.36	3.59	1.85	18.03	2.05	0.47	14.40	1.99
5-4	1.40	14.10	1.14	1.40	12.25	2.16	2.05	19.31	40.41	1.30	13.29	2.98	2.40	17.76	2.77
9-4	0.24	9.30	1.03	0.58	13.58	1.32	0.82	14.80	5.61	2.72	14.32	4.67	1.38	13.90	2.46
11-4	4.65	14.95	2.48	1.70	15.24	5.96	2.64	17.10	21.98	1.60	14.88	8.61	-	-	-
13-4	-	-	-	0.75	16.47	2.17	2.95	17.25	10.60	1.15	19.01	10.81	1.95	12.14	1.45
15-4	3.05	15.51	2.39	2.48	18.10	1.89	4.05	16.43	3.10	1.23	14.16	13.56	0.35	17.80	1.42
16-4	-	-	-	-	-	-	1.96	13.97	2.04	2.48	17.10	2.27	0.57	10.00	1.15
10-5	-	-	-	-	-	-	0.63	12.60	2.69	-	-	-	-	-	-
15-5	-	-	-	1.47	13.67	12.95	0.92	15.52	1.87	0.50	17.80	3.18	-	-	-
16-5	0.86	16.08	1.43	-	-	-	0.67	13.72	1.28	2.68	17.01	1.86	1.96	13.18	1.62
1-9	1.10	14.49	1.34	2.25	16.71	8.00	3.56	15.26	6.44	3.15	15.43	7.65	2.62	14.57	7.02
2-9	1.65	14.85	1.78	3.05	13.57	2.18	1.74	16.07	6.08	0.90	16.31	2.11	-	-	-
3-9	4.07	14.50	1.63	2.48	16.47	3.52	1.20	18.18	14.49	1.93	19.14	19.06	1.11	16.21	3.97
5-9	1.78	15.45	2.62	2.83	16.00	3.50	1.64	17.85	10.54	2.68	17.00	2.82	2.32	14.00	3.37
6-9	0.84	16.71	3.85	1.37	12.67	5.87	3.04	17.83	7.66	-	-	-	-	-	-
7-9	-	-	-	0.84	17.03	2.23	2.36	15.62	6.53	1.35	17.69	11.03	1.67	15.37	2.76
8-9	-	-	-	1.49	17.67	11.50	2.70	16.56	6.15	1.04	14.19	2.18	0.80	14.94	2.32
9-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-9	0.25	18.70	3.95	1.00	14.85	3.47	1.80	15.80	3.46	0.30	21.10	9.61	-	-	-
16-9	-	-	-	1.19	17.90	14.96	1.95	17.49	31.13	1.03	16.62	6.07	0.70	14.30	1.54
4-10	-	-	-	-	-	-	3.22	16.02	2.40	0.81	18.76	6.71	1.33	15.33	9.94
13-10	0.46	16.50	10.17	3.22	16.78	6.07	2.05	19.12	55.94	1.98	18.44	6.87	0.54	16.50	3.48
14-10	1.09	15.83	5.16	1.28	15.69	10.01	0.73	14.47	4.23	1.01	16.36	6.21	-	-	-

TABLE 2

WASKADA LOWER AMARANTH

FLUID PROPERTY DATA IN BLACK OIL FORMAT

SURFACE GAS SPECIFIC GRAVITY = 0.99500

DENSITY OF OIL AT STOCK TANK = 830.00 KG/M³

BUBBLE POINT PRESSURE = 4220.0 KPA

PRESSURE KPA	OIL FORMATION	SOLUTION	GAS FORMATION	OIL	GAS
	FACTOR	GAS RATIO	FACTOR	VISCOSITY	VISCOSITY
	RM ³ /SCM ³	M ³ /M ³	RM ³ /SCM ³	CP	CP
101.00	1.0250	0.	1.00000	2.90400	0.01020
958.00	1.1190	29.35	0.10363	2.00000	0.01060
1413.00	1.1350	34.86	0.07179	1.54800	0.01080
2082.00	1.1470	39.84	0.04929	1.43200	0.01100
2813.00	1.1560	44.29	0.03658	1.36700	0.01130
3482.00	1.1630	47.49	0.02963	1.31900	0.01150
4220.00	1.1700	51.04	0.02488	1.28500	0.01180
6895.00	1.1660	60.28	0.01543	1.35000	0.01280
10343.00	1.1620	71.98	0.01046	1.45000	0.01400
13790.00	1.1580	84.04	0.00800	1.58000	0.01520

ROCK COMPRESSIBILITY V/V/KPA = 0.6700E-06

TABLE 3

WASKADA LOWER AMARANTH
PRESSURE HISTORY MATCH COMPARISON

Well	Date (D/M/Y)	Survey Type	Reservoir Pressure @ -411 m SS (kPa)		
			Measured	Simulated	ΔP
4-4	04/06/86	Sonic	6 975	6 739	- 236
5-4	04/06/86	Sonic	6 503	6 393	- 110
	31/07/86	Sonic	6 351	6 363	+ 12
	01/06/87	S.G.	3 453	3 675	+ 222
	01/01/88	S.G.	8 900	8 500	- 400
6-4	29/05/86	S.G.	6 800	6 855	+ 55
	04/06/86	Sonic	6 832	6 855	+ 23
11-4	04/06/86	Sonic	7 481	7 047	- 434
	01/06/87	S.G.	5 191	5 091	- 100
	01/01/88	S.G.	11 197	10 283	- 914
13-4	29/05/86	S.G.	7 870	7 811	- 59
14-4	04/06/86	Sonic	7 831	7 861	+ 30
15-4	01/06/87	S.G.	7 463	6 996	- 467
	01/01/88	S.G.	13 503	13 810	+ 307
16-4	08/09/87	S.G.	8 112	7 635	- 477
9-5	30/05/86	S.G.	6 206	6 258	+ 52
	04/06/86	Sonic	6 256	6 258	+ 2
	31/07/86	Sonic	6 555	6 482	- 73
	01/09/87	Sonic	4 261	4 047	- 214
15-5	04/06/86	Sonic	5 486	6 617	+1 131
	31/07/86	Sonic	7 121	6 614	- 507
16-5	04/06/86	Sonic	6 623	6 701	+ 78
	01/06/87	S.G.	4 682	5 139	+ 457
	01/01/88	S.G.	10 056	10 236	+ 180
4-9	17/06/86	Sonic	6 241	6 154	- 87
	31/07/86	Sonic	6 673	6 866	+ 193
5-9	17/06/86	Sonic	7 958	7 542	- 416
15-9	17/06/86	Sonic	7 736	7 496	- 240
16-9	30/05/86	S.G.	7 267	7 736	+ 469
14/10	18/06/86	Sonic	8 749	8 255	- 494

TABLE 4

WASKADA LOWER AMARANTH CUMULATIVE PRODUCTION
TO MARCH 1, 1988

Well	OIL (m ³)		WATER (m ³)	
	Actual	Simulator	Actual	Simulator
3-4	644.8	640	70.3	90
4-4	3 340.7	3 340	97.6	90
5-4	3 887.5	3 880	303.9	160
6-4	4 502.7	4 510	97.5	90
9-4	423.4	420	36.9	20
10-4	780.4	780	33.8	20
11-4	755.1	750	34.0	50
12-4	2 366.4	2 360	139.2	110
13-4	2 705.1	2 710	2 794.7	160
14-4	1 748.9	1 740	74.4	60
15-4	391.5	380	48.7	20
16-4	731.9	730	51.2	50
9-5	6 101.8	6 100	228.2	230
10-5	588.4	590	128.3	80
15-5	862.1	860	158.8	180
16-5	1 181.1	1 180	425.4	100
1-9	271.2	270	467.1	40
2-9	2 562.7	2 560	214.2	130
3-9	1 562.9	1 560	37.0	70
4-9	3 129.7	3 120	5 900.2	140
5-9	571.6	570	2 503.6	70
6-9	426.6	430	48.3	40
7-9	952.8	950	46.7	60
8-9	135.1	140	12.8	10
9-9	237.6	240	6.1	10
10-9	979.5	980	71.0	110
15-9	1 021.3	1 020	132.5	80
16-9	3 023.1	3 020	195.3	160
4-10	191.2	190	17.7	20
5-10	-	-	-	-
12-10	-	-	-	-
13-10	236.4	240	10.3	20
14-10	875.2	870	386.8	140
4-15	277.1	280	29.9	30
5-15	4 547.5	4 550	3 692.0	370
Total	52 013.3	51 960	18 494.4	2 680

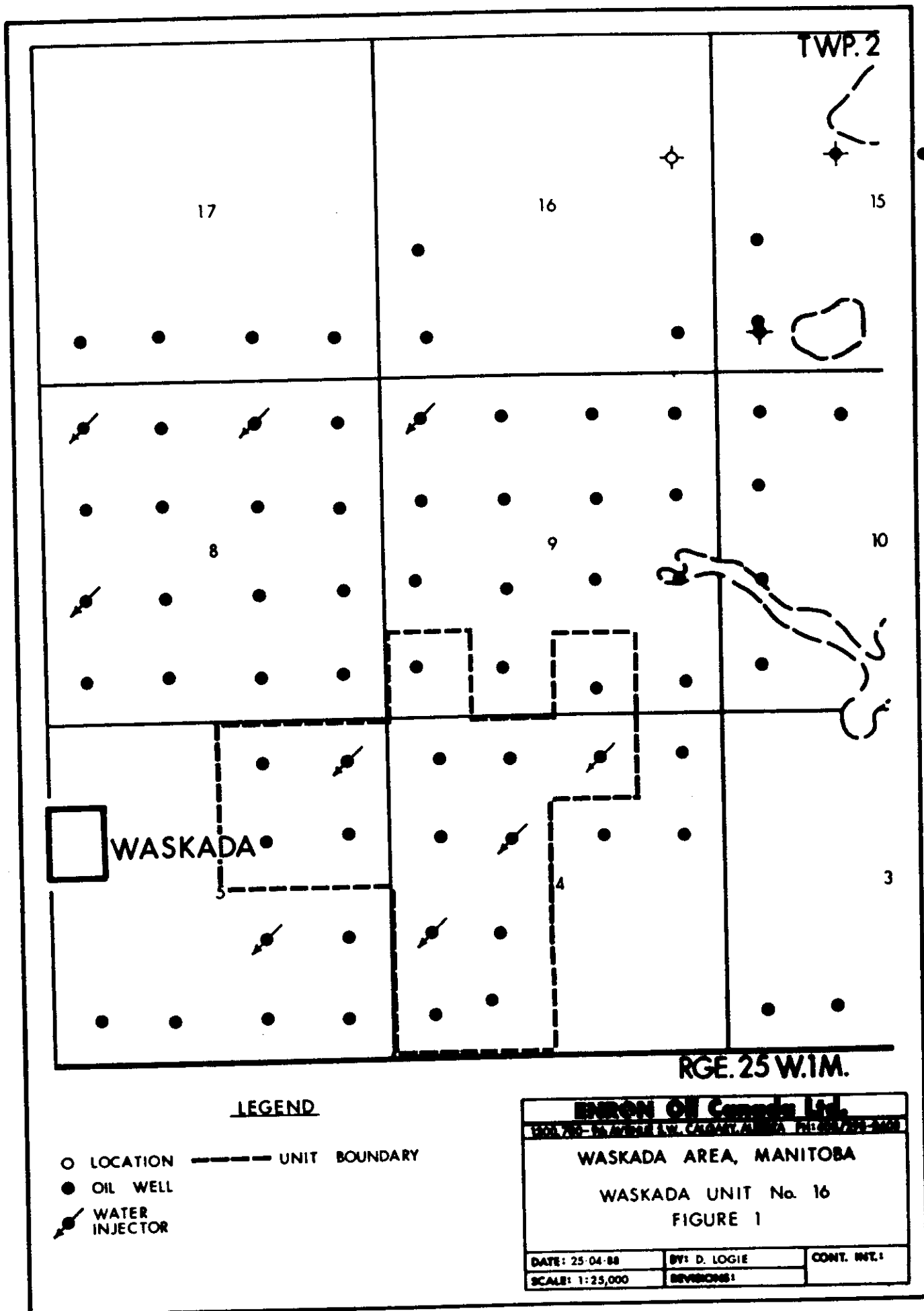
TABLE 5
WASKADA LOWER AMARANTH
ENRON STUDY AREA
DAILY OIL PRODUCTION FORECASTS

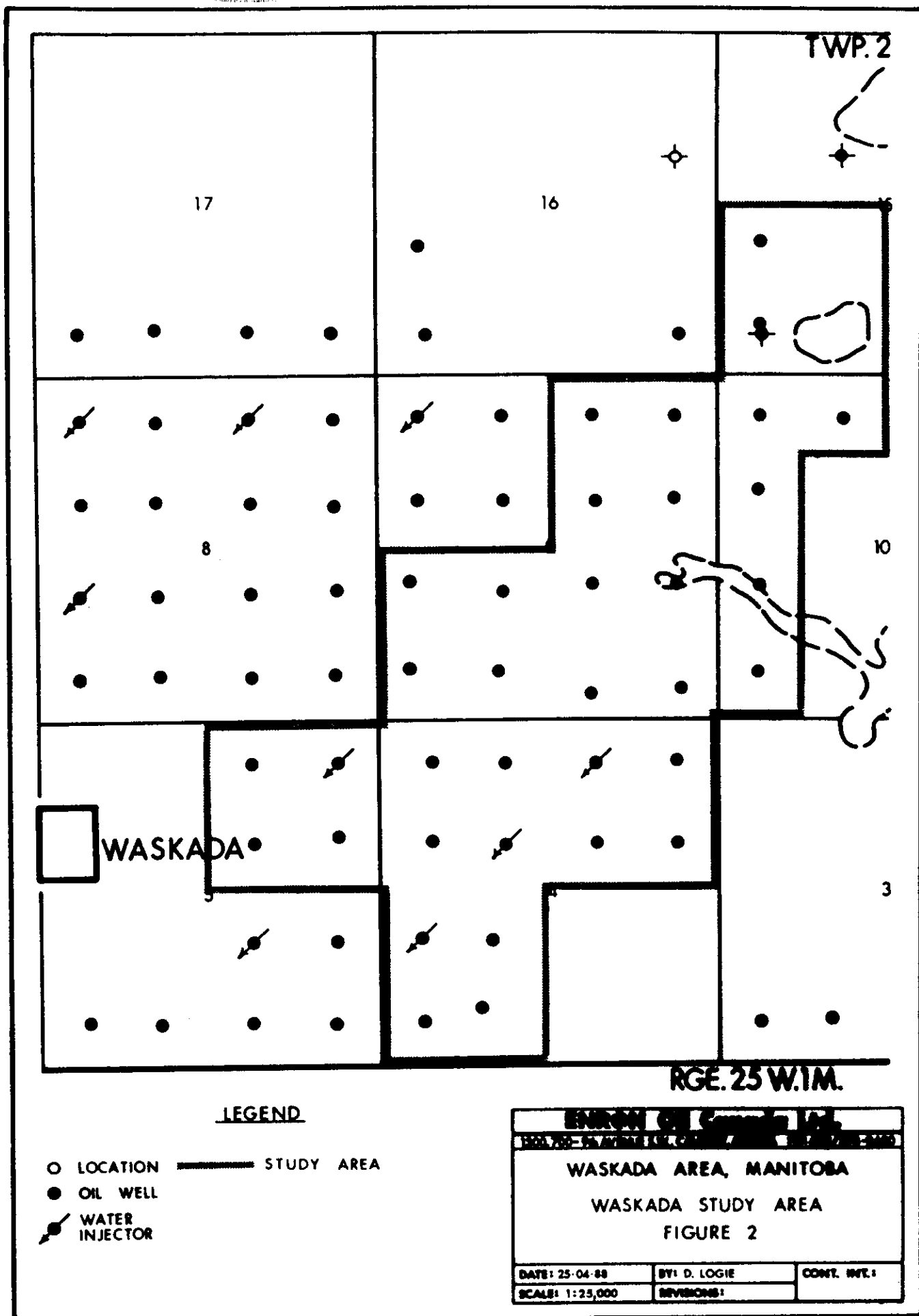
Date	CASE				
	1	2	3	4	5
April 1988	105.6	121.5	121.5	121.5	121.5
April 1990	64.9	80.7	101.7	93.2	103.3
April 1992	48.0	63.1	95.9	89.5	96.9
April 1994	37.7	52.2	89.6	85.4	91.7
April 1996	30.4	44.8	84.2	81.2	86.4
April 1998	25.2	39.1	78.5	77.0	80.3
April 2000	21.5	34.5	71.9	73.2	74.6
April 2002	18.5	30.7	66.2	69.5	68.5
April 2004	16.1	27.5	61.3	64.5	63.6
April 2006	14.1	24.8	56.9	60.3	59.1
April 2008	12.4	22.5	53.0	56.2	55.3

TABLE 6
WASKADA LOWER AMARANTH
ENRON STUDY AREA
CUMULATIVE OIL PRODUCTION FORECASTS

Date	CASE				
	1	2	3	4	5
April 1988	58.0	55.4	55.4	55.4	55.4
April 1990	115.1	124.3	130.9	125.8	131.7
April 1992	155.0	175.4	202.9	192.3	204.7
April 1994	185.6	216.6	270.3	256.2	273.3
April 1996	209.9	251.6	333.5	316.9	338.1
April 1998	229.9	281.8	392.6	374.6	398.7
April 2000	246.8	308.5	447.3	429.4	455.0
April 2002	261.3	332.3	497.4	481.4	506.9
April 2004	273.9	353.5	543.7	530.3	554.9
April 2006	284.9	372.6	586.6	575.8	599.4
April 1008	294.6	389.9	626.6	618.3	641.0

FIGURES





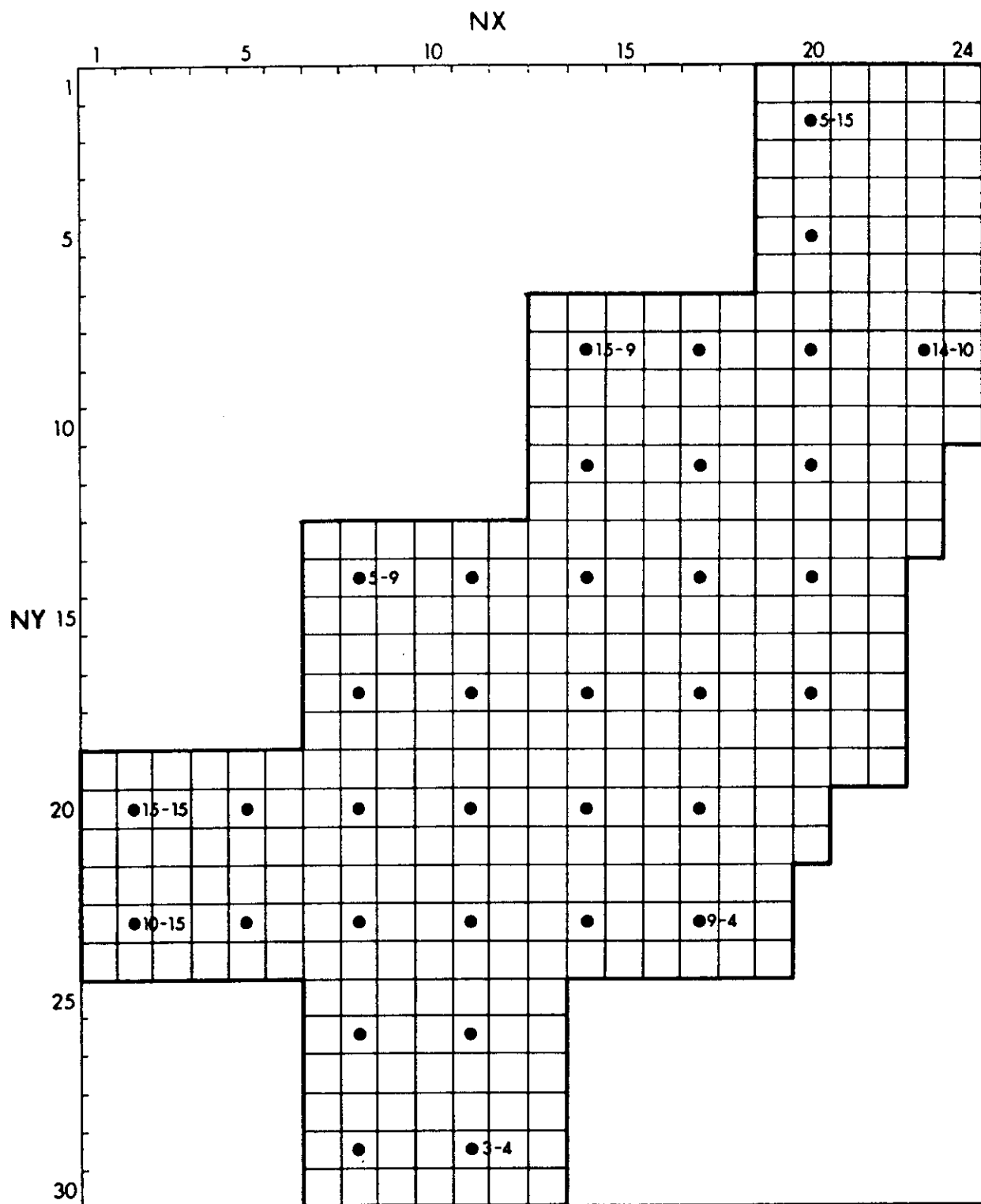


FIGURE 3
WASKADA LOWER AMARANTH
COMPUTER MODEL GRID SYSTEM

FIGURE 4

WASKADA SPEARFISH (LOWER AMARANTH)

TYPE LOG (5-4-2-25 W1M)

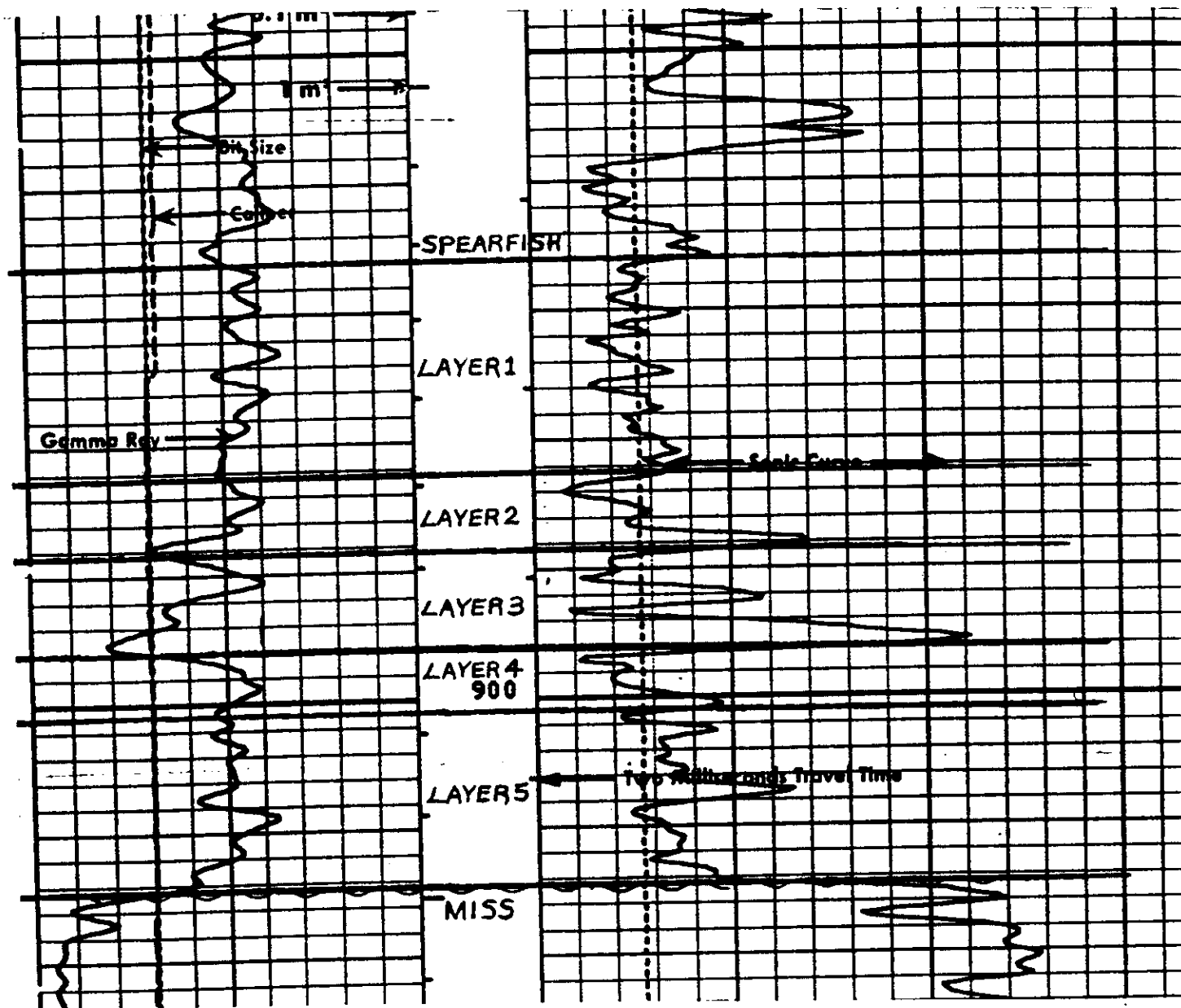
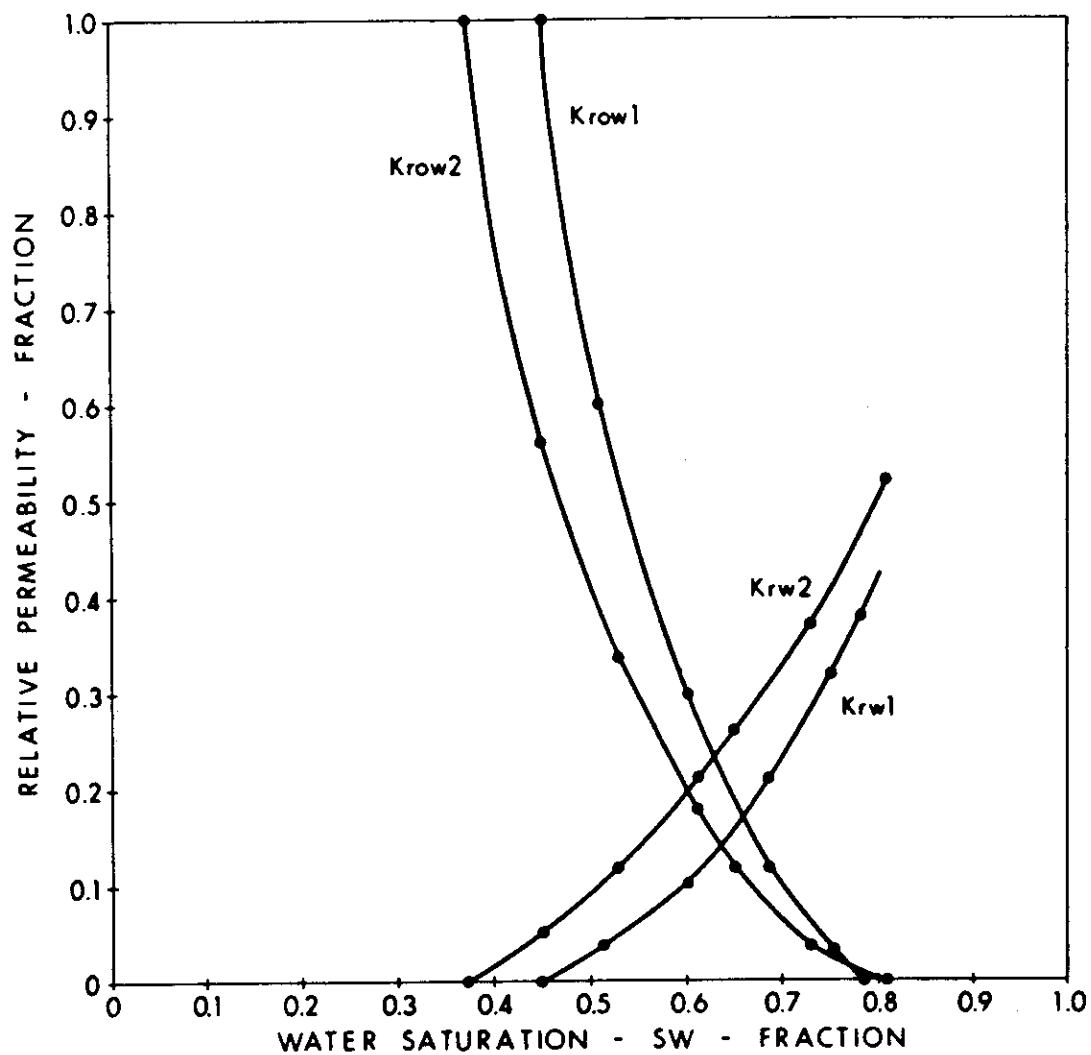
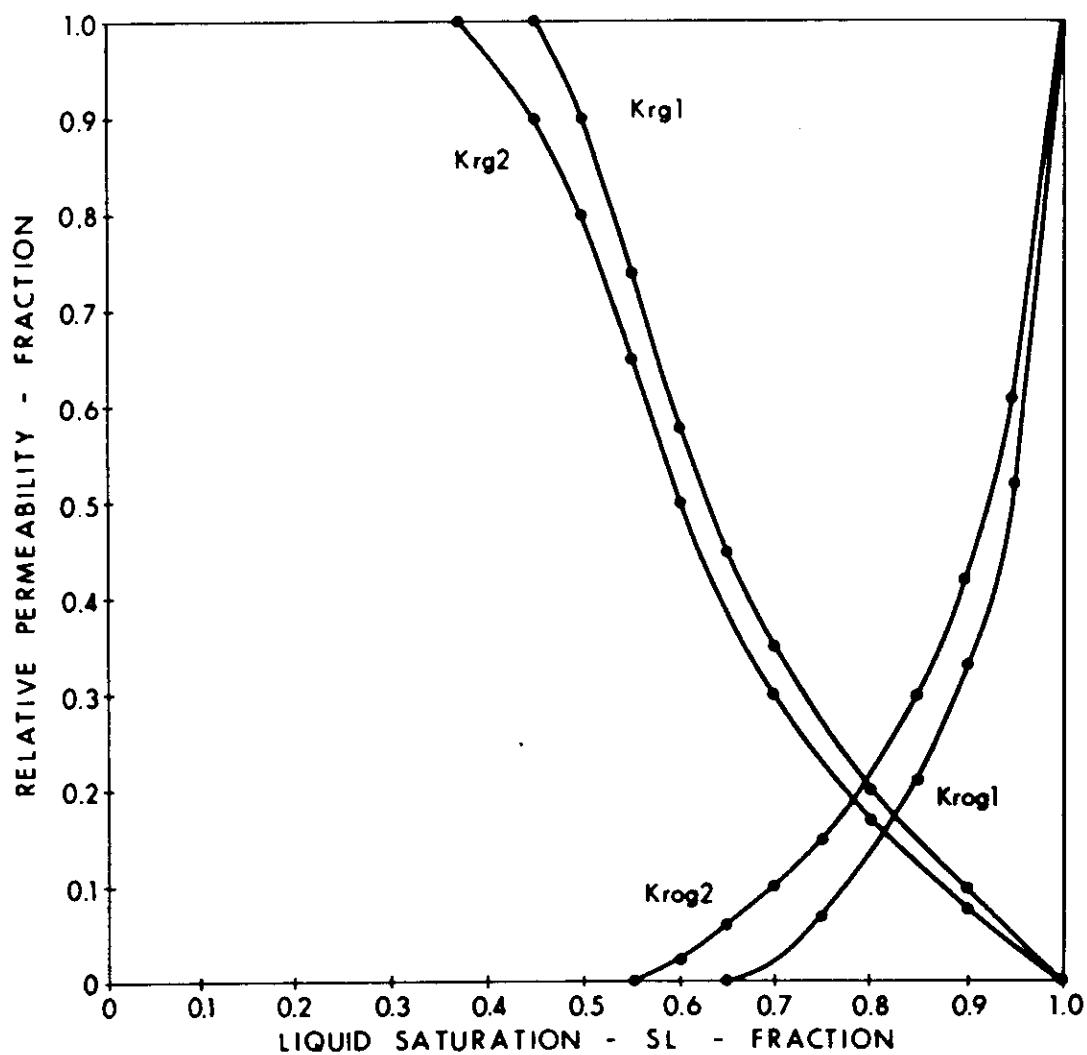


FIGURE 5
WASKADA LOWER AMARANTH
OIL-WATER RELATIVE PERMEABILITY CURVES



Krow1 & Krw1 - Layers 1 & 3
Krow2 & Krw2 - Layer 2 (more porous & permeable)

FIGURE 6
WASKADA LOWER AMARANTH
GAS-OIL RELATIVE PERMEABILITY CURVES

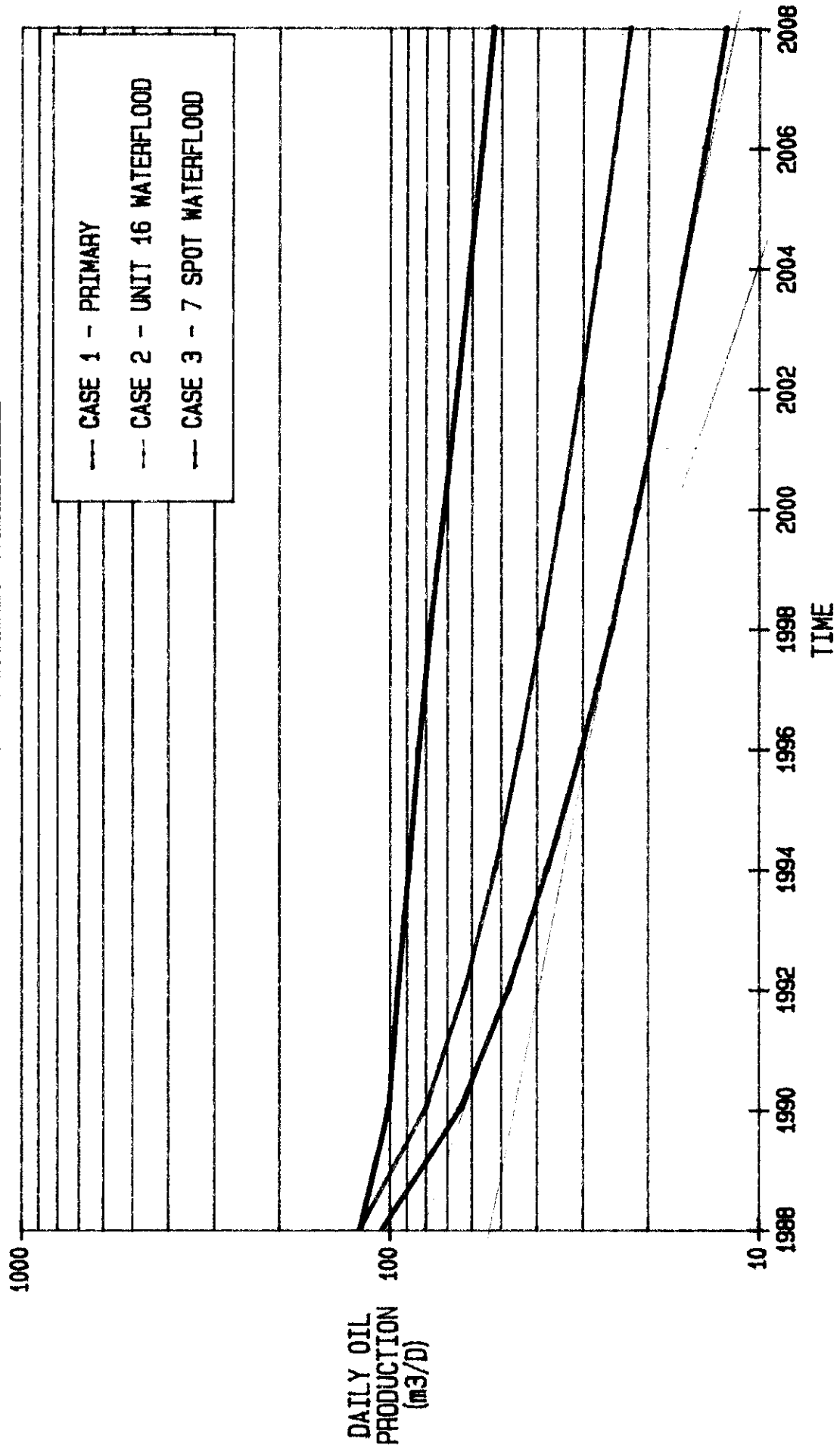


Krog1 & Krg1 - Layers 1 & 3

Krog2 & Krg2 - Layer 2 (more porous & permeable)

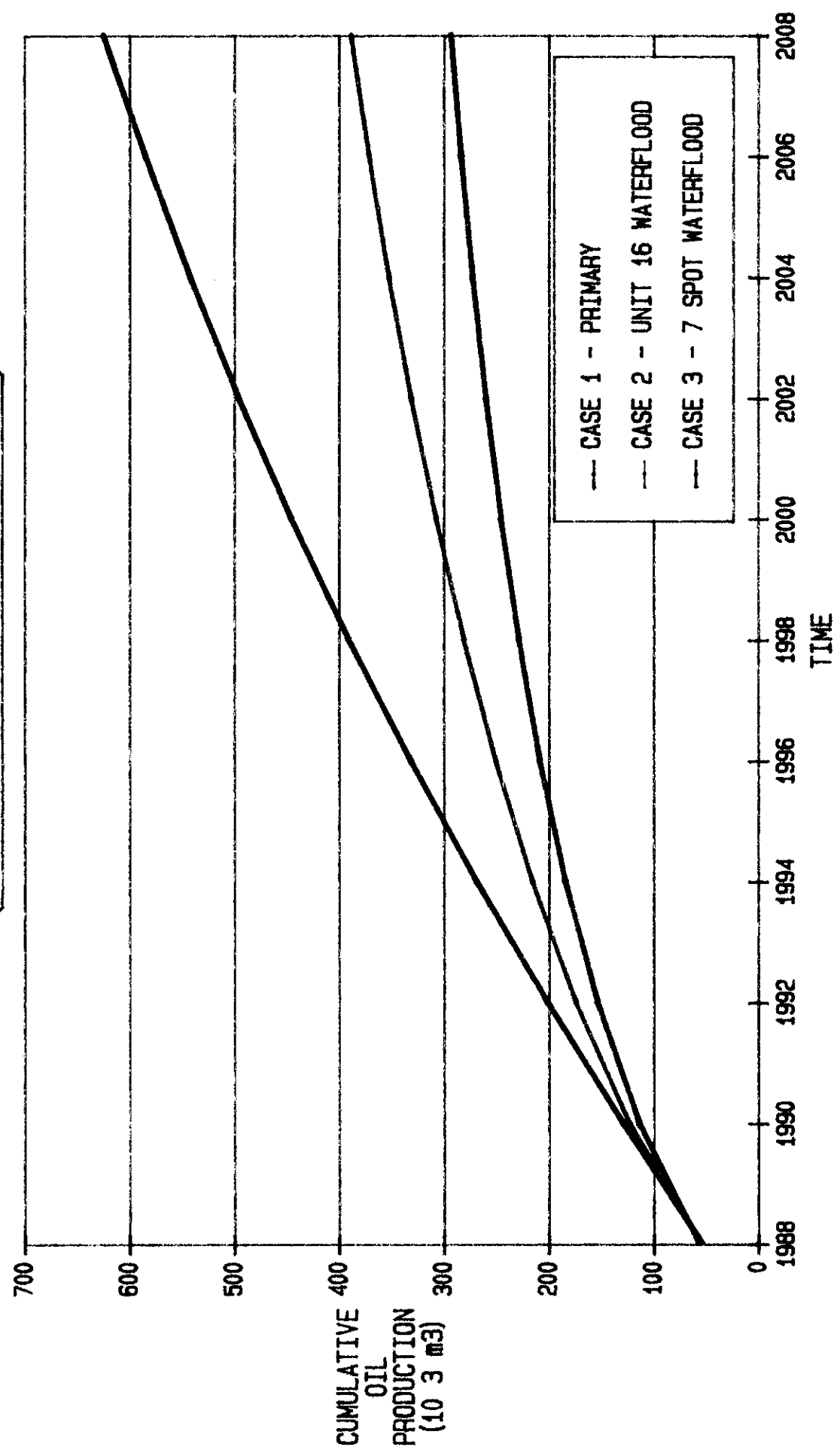
WASKADA LOWER AMARANTH
ENRON STUDY AREA
DAILY OIL PRODUCTION FORECASTS

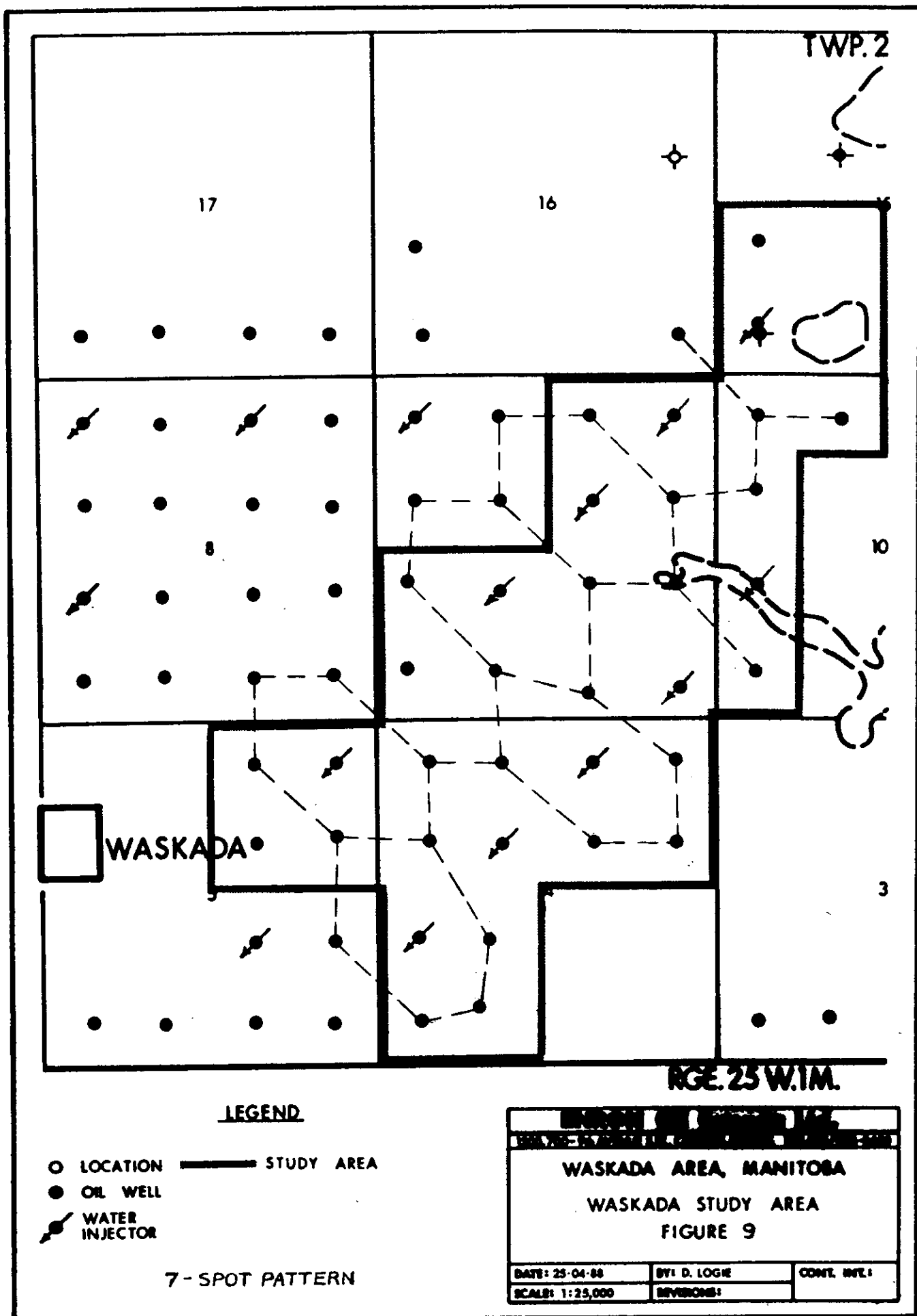
FIGURE 7



WASKADA LOWER AMARANTH
ENRON STUDY AREA
CUMULATIVE OIL PRODUCTION FORECASTS

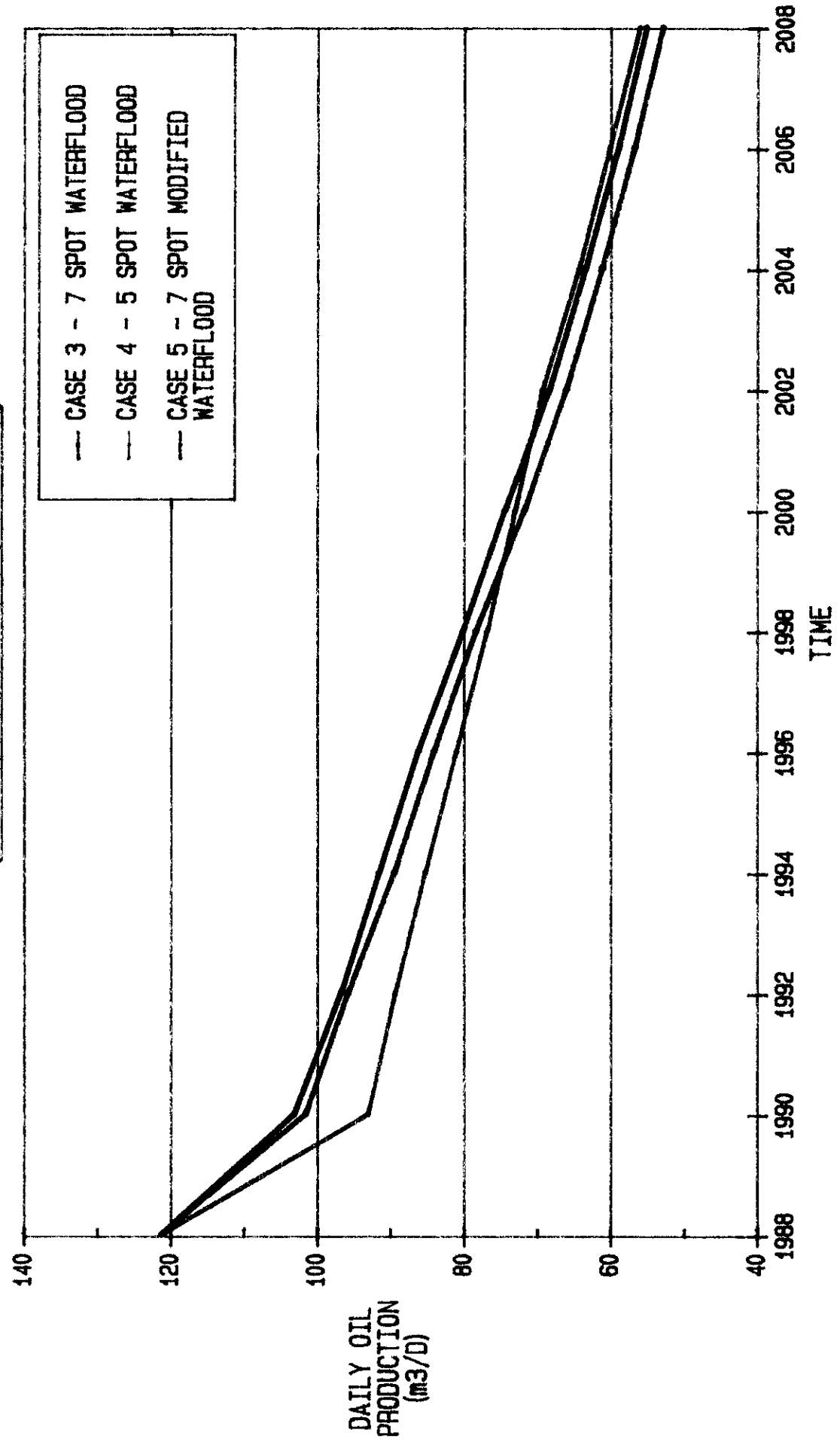
FIGURE 8





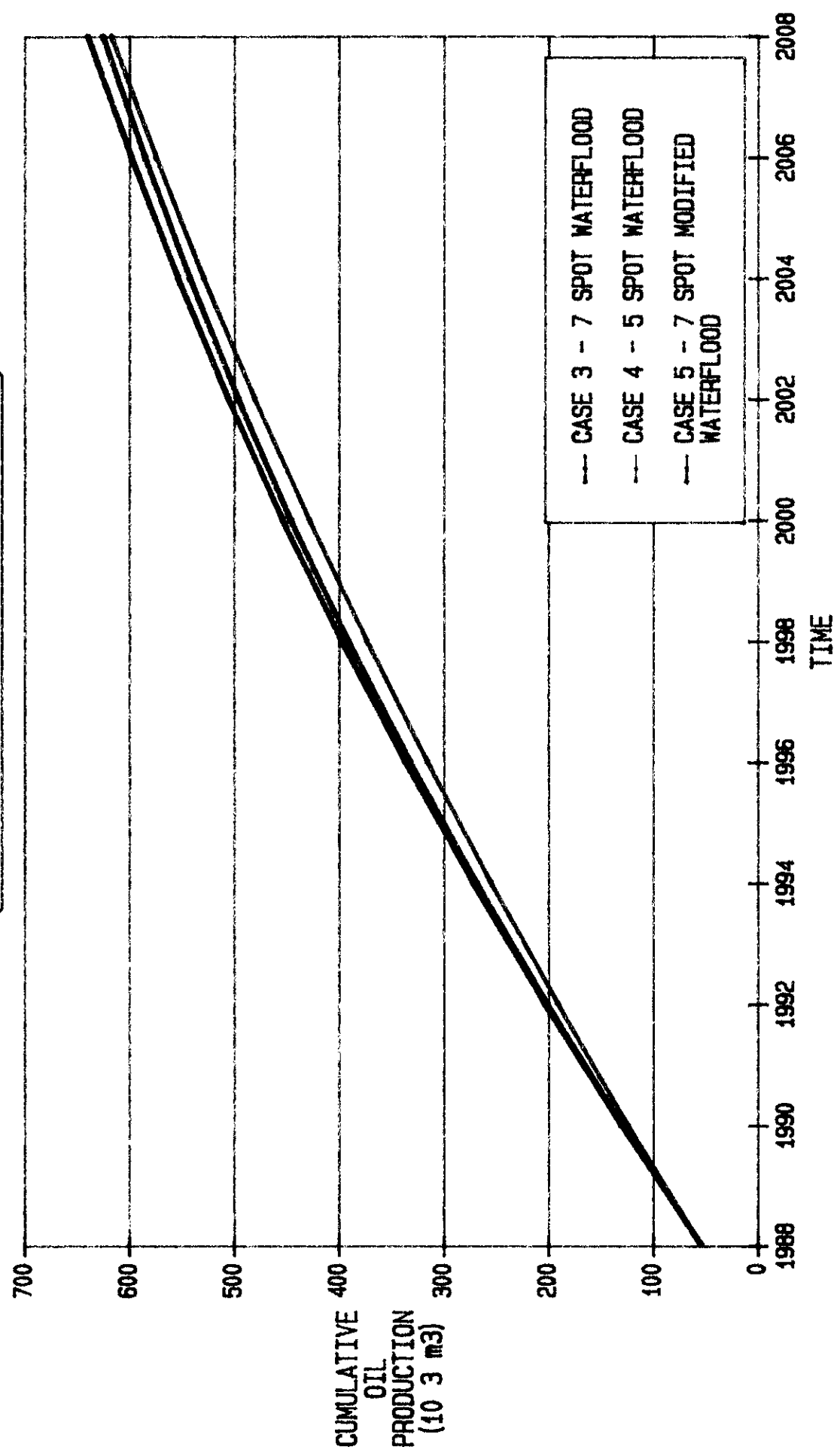
WASKADA LOWER AMARANTH
ENRON STUDY AREA
DAILY OIL PRODUCTION FORECASTS

FIGURE 10



WASKADA LOWER AMARANTH
ENRON STUDY AREA
CUMULATIVE OIL PRODUCTION FORECASTS

FIGURE 11



APPENDICES

WELL NUMBER I J K CURRENT TRANSMISSIBILITY
(M3-CP/D/KPA)

1	11	29	1	13.75
1	11	29	2	11.16
1	11	29	3	20.03
2	8	29	1	12.97
2	8	29	2	159.6
2	8	29	3	23.41
3	8	26	1	31.66
3	8	26	2	168.0
3	8	26	3	35.58
4	11	26	1	17.83
4	11	26	2	345.3
4	11	26	3	48.21
5	17	23	1	8.557
5	17	23	2	19.41
5	17	23	3	56.24
6	14	23	1	7.518
6	14	23	2	47.38
6	14	23	3	38.94
7	11	23	1	6.999
7	11	23	2	31.79
7	11	23	3	11.54
8	8	23	1	19.52
8	8	23	2	107.5
8	8	23	3	19.63
9	8	20	1	23.60
9	8	20	2	176.4
9	8	20	3	55.45
10	11	20	1	20.43
10	11	20	2	169.2
10	11	20	3	92.12
11	14	20	1	11.75
11	14	20	2	32.60
11	14	20	3	23.39
12	17	20	1	19.05
12	17	20	2	22.45
12	17	20	3	38.28
13	5	23	1	47.66
13	5	23	2	295.7
13	5	23	3	27.72
14	2	23	1	9.922
14	2	23	2	9.521
14	2	23	3	6.910
15	2	20	1	76.00
15	2	20	2	12.33
15	2	20	3	17.75
16	5	20	1	45.29
16	5	20	2	61.40
16	5	20	3	54.53
17	17	17	1	44.13
17	17	17	2	66.71
17	17	17	3	111.9
18	14	17	1	29.71
18	14	17	2	47.01
18	14	17	3	118.7
19	11	17	1	36.70
19	11	17	2	71.50
19	11	17	3	146.8
20	8	17	1	5.513
20	8	17	2	16.28
20	8	17	3	13.55
21	8	14	1	20.94
21	8	14	2	32.69
21	8	14	3	25.29

22	11	14	1	39.60
22	11	14	2	57.79
22	11	14	3	84.45
23	14	14	1	55.88
23	14	14	2	110.9
23	14	14	3	109.9
24	17	14	1	47.37
24	17	14	2	73.06
24	17	14	3	29.01
25	17	11	1	39.75
25	17	11	2	202.5
25	17	11	3	16.01
26	14	11	1	29.66
26	14	11	2	30.87
26	14	11	3	27.67
27	14	8	1	17.31
27	14	8	2	42.56
27	14	8	3	17.61
28	17	8	1	22.11
28	17	8	2	69.43
28	17	8	3	22.01
29	20	17	1	20.27
29	20	17	2	34.65
29	20	17	3	65.46
30	20	14	1	29.07
30	20	14	2	134.8
30	20	14	3	30.33
31	20	11	1	46.84
31	20	11	2	135.8
31	20	11	3	17.58
32	20	8	1	59.86
32	20	8	2	185.0
32	20	8	3	30.28
33	23	8	1	24.91
33	23	8	2	11.65
33	23	8	3	11.16
34	23	5	1	46.79
34	23	5	2	35.25
34	23	5	3	40.73
35	20	5	1	43.93
35	20	5	2	77.26
35	20	5	3	44.84
36	20	2	1	23.70
36	20	2	2	69.07
36	20	2	3	38.70
37	9	20	1	25.77
37	9	20	2	203.2
37	9	20	3	73.56
38	7	20	1	30.03
38	7	20	2	136.3
38	7	20	3	41.20
39	9	14	1	23.57
39	9	14	2	35.76
39	9	14	3	37.92
40	20	3	1	25.60
40	20	3	2	66.42
40	20	3	3	41.39
41	22	8	1	31.11
41	22	8	2	51.92
41	22	8	3	13.81

Waskada Unit 16 History Match	0.			DAYS FORMATION THICKNESS METERS			LYR 1 RUNTIME			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)										
(2)										
(3)										
(4)										
(5)										
(6)										
(7)										
(8)										
(9)										
(10)										
(11)										
(12)										
(13)							3.575	3.445	3.152	2.782
(14)							3.608	3.575	3.322	2.970
(15)							3.497	3.549	3.484	3.373
(16)							3.270	3.399	3.549	3.731
(17)							2.918	3.068	3.347	3.776
(18)							2.451	2.509	2.788	3.211
(19)	3.000	3.150	3.280	3.350	3.340	3.180	3.000	2.840	3.230	2.470
(20)	2.890	3.000	3.050	3.070	3.000	2.690	2.310	2.000	2.570	2.034
(21)	2.750	2.790	2.810	2.780	2.680	2.460	2.270	2.340	2.960	2.405
(22)	2.610	2.620	2.610	2.590	2.520	2.460	1.657	1.930	2.476	2.179
(23)	2.520	2.500	2.500	2.500	2.500	2.560	1.839	2.275	2.912	2.548
(24)	2.500	2.480	2.480	2.510	2.570	2.700	1.950	2.431	2.951	2.393
(25)							2.171	2.535	2.782	2.873
(26)							2.314	2.600	2.587	2.372
(27)							2.288	2.451	2.451	2.255
(28)							2.217	2.333	2.438	2.405
(29)							2.190	2.275	2.548	2.717
(30)							2.275	2.418	2.730	3.055

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								1.790	2.500	2.880
(2)								1.600	2.000	2.500
(3)								1.600	2.000	2.200
(4)									2.200	2.370
(5)									2.420	2.820
(6)									2.990	3.410
(7)			1.950	1.826	1.657	1.227	1.258	1.498	2.275	2.619
(8)			2.041	1.950	1.755	1.295	1.300	1.607	2.502	2.925
(9)			2.067	1.956	1.807	1.373	1.420	1.654	2.444	2.711
(10)			2.060	1.943	1.833	1.781	1.833	2.021	2.249	2.372
(11)			2.073	1.950	1.852	1.807	1.826	1.918	2.008	2.021
(12)			2.138	1.995	1.891	1.826	1.807	1.813	1.800	1.716
(13)	2.457	2.346	2.275	2.099	1.989	1.905	1.826	1.768	1.670	1.495
(14)	2.600	2.561	2.476	2.275	2.190	2.086	1.950	1.826	1.644	1.398
(15)	3.224	3.113	2.944	2.737	2.587	2.438	2.262	2.034	1.748	1.411
(16)	3.867	3.711	3.471	3.224	3.029	2.840	2.626	2.307	1.911	1.508
(17)	4.225	4.043	3.809	3.575	3.360	3.152	2.925	2.541	2.080	1.625
(18)	3.621	3.776	3.809	3.718	3.497	3.217	2.925	2.600	2.204	1.872
(19)	2.827	3.283	2.886	2.959	2.751	3.055	2.665	2.359	2.002	1.586
(20)	2.275	2.931	2.714	2.860	2.569	2.737	2.275	2.021	1.696	1.241
(21)	2.775	3.087	2.543	2.454	2.200	2.379	2.047	1.807	1.469	1.007
(22)	2.502	2.411	3.010	2.515	2.223	2.002	1.826	1.683	1.313	
(23)	2.957	2.557	2.782	1.950	1.735	1.664	1.625	1.644	1.163	
(24)	2.557	2.275	2.457	1.748	1.469	1.430	1.521	1.625	0.8320	
(25)	2.749	2.451								
(26)	1.950	1.742								
(27)	1.891	1.495								
(28)	2.138	1.579								
(29)	2.600	1.956								
(30)	3.159	2.600								

	(21)	(22)	(23)	(24)
(1)	2.530	2.580	1.650	0.7500
(2)	2.440	2.775	1.680	0.8700
(3)	2.370	3.105	2.415	1.905
(4)	2.560	2.430	2.150	1.940
(5)	2.980	2.900	2.690	2.540
(6)	3.520	3.380	3.160	3.010
(7)	2.613	2.444	2.243	2.132
(8)	2.795	2.529	2.275	2.158
(9)	2.632	2.398	2.164	2.034
(10)	2.294	2.093	1.878	1.748
(11)	1.905	1.696	1.475	
(12)	1.534	1.280	1.027	
(13)	1.241	0.9230	0.6045	
(14)	1.079	0.6955		
(15)	1.059	0.6240		
(16)	1.163	0.6630		
(17)	1.371	0.7150		
(18)	1.625	0.6045		
(19)	1.007	0.6500E-02		
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
(26)				
(27)				
(28)				
(29)				
(30)				

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)										
(2)										
(3)										
(4)										
(5)										
(6)										
(7)										
(8)										
(9)										
(10)										
(11)										
(12)										
(13)							1.650	1.690	1.780	1.890
(14)							1.630	1.650	1.740	1.850
(15)							1.660	1.680	1.670	1.650
(16)							1.770	1.780	1.670	1.470
(17)							1.970	2.030	1.850	1.520
(18)							2.250	2.430	2.290	2.010
(19)	1.800	1.800	1.620	1.560	1.980	3.400	2.500	2.830	2.750	2.570
(20)	1.760	1.800	1.460	1.180	1.300	2.940	2.350	2.950	2.940	2.910
(21)	1.540	1.540	1.440	1.420	1.740	2.800	1.980	2.410	2.650	2.860
(22)	1.300	1.360	1.560	1.880	2.360	2.840	1.610	1.760	2.150	1.799
(23)	1.180	1.300	1.760	2.380	3.000	3.100	1.460	1.250	1.730	1.575
(24)	1.300	1.500	2.000	2.620	3.200	3.460	1.750	1.570	1.740	1.407
(25)							1.910	1.870	1.840	3.660
(26)							1.970	2.050	1.900	3.440
(27)							1.830	1.890	1.840	3.440
(28)							4.075	4.200	4.425	1.800
(29)							3.700	3.750	4.400	1.980
(30)							3.750	3.950	4.675	2.190

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								1.400	1.250	1.130
(2)								1.480	1.370	1.250
(3)								1.570	1.470	1.330
(4)									1.580	1.430
(5)									1.700	1.560
(6)									1.850	1.710
(7)			1.500	1.520	1.620	1.408	1.512	1.584	2.000	1.890
(8)			1.490	1.500	1.630	1.432	1.560	1.656	2.120	2.050
(9)			1.540	1.570	1.700	1.488	1.600	1.688	2.120	1.970
(10)			1.630	1.670	1.800	1.940	2.070	2.130	2.080	1.880
(11)			1.750	1.800	1.930	2.070	2.160	2.180	2.090	1.850
(12)			1.890	2.000	2.130	2.230	2.300	2.300	2.180	1.900
(13)	1.980	1.970	2.000	2.200	2.330	2.420	2.480	2.490	2.370	2.070
(14)	2.000	1.970	2.070	2.350	2.480	2.610	2.700	2.770	2.660	2.340
(15)	1.660	1.690	1.830	2.120	2.450	2.790	3.040	3.130	3.030	2.700
(16)	1.310	1.380	1.550	1.830	2.380	2.940	3.350	3.460	3.350	3.040
(17)	1.200	1.370	1.570	1.750	2.430	3.060	3.550	3.580	3.470	3.200
(18)	1.820	1.970	2.240	2.490	2.810	3.070	3.240	3.250	3.150	2.950
(19)	2.530	2.760	2.488	2.704	2.592	2.950	2.680	2.570	2.410	2.050
(20)	3.000	3.310	2.992	3.240	2.744	2.670	2.000	1.810	1.610	1.210
(21)	3.110	3.400	2.904	2.904	2.432	2.270	1.600	1.290	1.020	0.6300
(22)	2.058	2.198	3.170	2.950	2.420	1.760	1.180	0.9300	0.6600	
(23)	1.855	1.918	2.590	2.250	1.810	1.280	0.8000	0.7500	0.4700	
(24)	1.554	1.575	2.050	1.730	1.370	1.020	0.7900	0.8000	0.3500	
(25)	3.620	3.480								
(26)	3.000	2.720								
(27)	3.000	2.440								
(28)	1.660	1.260								
(29)	1.960	1.500								
(30)	2.340	1.950								

	(21)	(22)	(23)	(24)
(1)	1.000	1.200	0.9000	0.7500
(2)	1.100	1.350	1.050	0.9000
(3)	1.200	1.500	1.200	1.050
(4)	1.300	1.650	1.350	1.200
(5)	1.400	1.800	1.500	1.350
(6)	1.440	1.650	1.350	1.200
(7)	1.560	1.150	0.8000	0.6300
(8)	1.640	1.160	0.7500	0.5700
(9)	1.600	1.140	0.7400	0.5400
(10)	1.520	1.080	0.7000	0.4800
(11)	1.470	1.020	0.6200	
(12)	1.480	0.9800	0.5300	
(13)	1.590	1.020	0.4600	
(14)	1.820	1.150		
(15)	2.130	1.380		
(16)	2.450	1.580		
(17)	2.640	1.560		
(18)	2.500	1.100		
(19)	1.310	0.1000E-01		
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
(26)				
(27)				
(28)				
(29)				
(30)				

Waskade Unit 16 History Match	0.	DAYS FORMATION THICKNESS METERS					LYR 3 RUNTIME		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)									
(2)									
(3)									
(4)									
(5)									
(6)									
(7)									
(8)									
(9)									
(10)									
(11)									
(12)									
(13)						4.000	3.890	3.610	3.280
(14)						4.060	4.000	3.680	3.310
(15)						3.960	3.880	3.640	3.330
(16)						3.780	3.700	3.520	3.290
(17)						3.550	3.490	3.360	3.180
(18)						3.280	3.270	3.160	2.980
(19)	2.000	2.250	2.720	3.220	3.510	3.320	3.090	2.960	2.740
(20)	1.810	2.000	2.510	3.080	3.500	3.210	3.000	2.710	2.440
(21)	1.820	1.970	2.280	2.610	2.780	2.600	2.270	2.120	2.000
(22)	1.900	1.970	2.050	2.090	2.020	1.860	1.470	1.520	1.590
(23)	1.980	2.000	1.900	1.740	1.500	1.390	1.000	1.250	1.440
(24)	2.000	1.970	1.870	1.730	1.590	1.540	1.570	1.700	1.760
(25)						2.320	2.580	2.510	2.340
(26)						3.030	3.500	3.190	2.820
(27)						3.090	3.360	3.220	2.910
(28)						2.830	2.920	2.940	2.800
(29)						2.550	2.500	2.690	2.740
(30)						2.500	2.490	2.700	2.910

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								2.180	2.000	1.830
(2)								2.270	2.160	2.000
(3)								2.370	2.280	2.090
(4)									2.380	2.200
(5)									2.470	2.290
(6)									2.530	2.340
(7)			2.000	2.030	2.070	1.704	1.792	1.920	2.500	2.270
(8)			2.020	2.000	1.960	1.568	1.600	1.704	2.170	2.000
(9)			2.040	1.930	1.860	1.464	1.464	1.504	1.860	1.740
(10)			2.110	1.910	1.820	1.760	1.730	1.700	1.630	1.500
(11)			2.280	2.000	1.890	1.800	1.710	1.620	1.500	1.340
(12)			2.630	2.370	2.170	2.000	1.830	1.670	1.490	1.260
(13)	3.030	2.980	3.000	2.760	2.540	2.320	2.070	1.880	1.620	1.300
(14)	3.000	3.000	3.060	3.000	2.920	2.770	2.500	2.280	1.910	1.470
(15)	3.080	3.020	3.070	3.160	3.330	3.450	3.360	2.980	2.360	1.710
(16)	3.090	2.970	2.990	3.190	3.640	4.120	4.300	3.720	2.800	1.920
(17)	3.000	2.820	2.780	3.000	3.680	4.470	5.000	4.210	3.070	2.000
(18)	2.770	2.570	2.510	2.730	3.370	4.080	4.460	4.000	3.110	2.350
(19)	2.510	2.280	2.170	2.320	2.890	3.450	3.640	3.310	2.600	1.850
(20)	2.250	2.070	1.960	2.000	2.600	3.020	3.000	2.630	1.890	1.130
(21)	1.960	2.000	2.160	2.450	2.900	3.160	2.990	2.340	1.310	0.5100
(22)	1.720	2.010	2.500	3.050	3.450	3.640	3.410	2.510	1.000	
(23)	1.600	2.020	2.720	3.500	3.840	4.050	4.000	3.190	1.430	
(24)	1.800	2.000	2.580	3.180	3.550	3.800	3.900	3.500	1.340	
(25)	2.190	2.140								
(26)	2.500	2.160								
(27)	2.510	2.000								
(28)	2.440	1.850								
(29)	2.500	1.950								
(30)	2.950	2.500								

	(21)	(22)	(23)	(24)
(1)	1.440	1.500	1.200	1.050
(2)	1.580	1.650	1.350	1.200
(3)	1.730	1.965	1.380	1.230
(4)	1.890	2.295	1.830	1.545
(5)	2.010	2.565	2.175	1.950
(6)	2.070	2.700	2.370	2.190
(7)	2.010	1.780	1.600	1.500
(8)	1.820	1.640	1.500	1.410
(9)	1.580	1.420	1.300	1.220
(10)	1.340	1.180	1.040	0.9600
(11)	1.140	0.9400	0.7800	
(12)	1.010	0.7500	0.5300	
(13)	0.9700	0.6400	0.3500	
(14)	1.030	0.6200		
(15)	1.190	0.7100		
(16)	1.400	0.8400		
(17)	1.660	0.9300		
(18)	2.000	0.8200		
(19)	1.130	0.1000E-01		
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
(26)				
(27)				
(28)				
(29)				
(30)				

Waskada Unit 16 History Match	0.	DAYS BLOCK POROSITIES(FRACTION)	LYR 1 RUNTIME						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)									
(2)									
(3)									
(4)									
(5)									
(6)									
(7)									
(8)									
(9)									
(10)									
(11)									
(12)									
(13)						0.1570	0.1562	0.1539	0.1511
(14)						0.1575	0.1570	0.1545	0.1512
(15)						0.1569	0.1565	0.1547	0.1520
(16)						0.1557	0.1557	0.1549	0.1534
(17)						0.1542	0.1547	0.1550	0.1550
(18)						0.1522	0.1533	0.1545	0.1555
(19)	0.1410	0.1426	0.1445	0.1464	0.1480	0.1491	0.1516	0.1537	0.1557
(20)	0.1396	0.1410	0.1426	0.1444	0.1460	0.1472	0.1500	0.1526	0.1553
(21)	0.1382	0.1392	0.1409	0.1427	0.1442	0.1453	0.1489	0.1513	0.1539
(22)	0.1370	0.1378	0.1395	0.1412	0.1425	0.1432	0.1474	0.1494	0.1514
(23)	0.1364	0.1370	0.1387	0.1402	0.1410	0.1406	0.1450	0.1466	0.1482
(24)	0.1370	0.1377	0.1390	0.1397	0.1392	0.1374	0.1394	0.1424	0.1452
(25)							0.1349	0.1363	0.1395
(26)							0.1350	0.1383	0.1424
(27)							0.1360	0.1391	0.1430
(28)							0.1366	0.1403	0.1443
(29)							0.1361	0.1409	0.1452
(30)							0.1350	0.1409	0.1451

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								0.1616	0.1630	0.1609
(2)								0.1604	0.1611	0.1596
(3)								0.1591	0.1596	0.1583
(4)									0.1591	0.1581
(5)									0.1598	0.1591
(6)									0.1614	0.1608
(7)			0.1500	0.1513	0.1531	0.1554	0.1581	0.1609	0.1630	0.1625
(8)			0.1501	0.1514	0.1532	0.1555	0.1581	0.1607	0.1627	0.1630
(9)			0.1502	0.1515	0.1534	0.1555	0.1577	0.1597	0.1609	0.1607
(10)			0.1502	0.1516	0.1535	0.1556	0.1575	0.1587	0.1591	0.1584
(11)			0.1499	0.1515	0.1537	0.1560	0.1578	0.1585	0.1581	0.1569
(12)			0.1492	0.1510	0.1538	0.1568	0.1588	0.1590	0.1579	0.1561
(13)	0.1486	0.1476	0.1480	0.1500	0.1534	0.1574	0.1602	0.1599	0.1580	0.1555
(14)	0.1480	0.1465	0.1463	0.1481	0.1520	0.1570	0.1610	0.1602	0.1575	0.1544
(15)	0.1490	0.1463	0.1446	0.1452	0.1493	0.1547	0.1586	0.1585	0.1559	0.1525
(16)	0.1511	0.1472	0.1435	0.1422	0.1466	0.1525	0.1565	0.1567	0.1538	0.1498
(17)	0.1540	0.1497	0.1447	0.1410	0.1463	0.1522	0.1560	0.1557	0.1519	0.1469
(18)	0.1556	0.1538	0.1513	0.1499	0.1518	0.1544	0.1559	0.1550	0.1503	0.1447
(19)	0.1573	0.1583	0.1592	0.1598	0.1585	0.1568	0.1551	0.1526	0.1486	0.1444
(20)	0.1580	0.1610	0.1643	0.1670	0.1622	0.1570	0.1527	0.1495	0.1466	0.1444
(21)	0.1567	0.1600	0.1628	0.1636	0.1591	0.1531	0.1480	0.1451	0.1439	0.1438
(22)	0.1537	0.1566	0.1584	0.1577	0.1533	0.1471	0.1417	0.1401	0.1408	
(23)	0.1500	0.1526	0.1537	0.1523	0.1480	0.1418	0.1360	0.1362	0.1386	
(24)	0.1477	0.1500	0.1505	0.1490	0.1453	0.1404	0.1363	0.1360	0.1385	
(25)	0.1462	0.1484								
(26)	0.1458	0.1480								
(27)	0.1465	0.1484								
(28)	0.1477	0.1492								
(29)	0.1490	0.1497								
(30)	0.1483	0.1490								

	(21)	(22)	(23)	(24)
(1)	0.1575	0.1544	0.1520	0.1508
(2)	0.1567	0.1539	0.1517	0.1505
(3)	0.1560	0.1534	0.1513	0.1502
(4)	0.1560	0.1535	0.1514	0.1502
(5)	0.1570	0.1543	0.1519	0.1506
(6)	0.1584	0.1554	0.1527	0.1512
(7)	0.1597	0.1561	0.1531	0.1516
(8)	0.1599	0.1562	0.1530	0.1517
(9)	0.1585	0.1555	0.1531	0.1519
(10)	0.1567	0.1545	0.1528	0.1519
(11)	0.1552	0.1536	0.1524	
(12)	0.1542	0.1528	0.1520	
(13)	0.1533	0.1519	0.1513	
(14)	0.1519	0.1505		
(15)	0.1497	0.1483		
(16)	0.1466	0.1454		
(17)	0.1430	0.1424		
(18)	0.1400	0.1405		
(19)	0.1415	0.1417		
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
(26)				
(27)				
(28)				
(29)				
(30)				

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								0.1784	0.1800	0.1777
(2)								0.1767	0.1776	0.1758
(3)								0.1748	0.1752	0.1737
(4)									0.1740	0.1726
(5)									0.1743	0.1733
(6)									0.1763	0.1764
(7)			0.1580	0.1605	0.1643	0.1688	0.1733	0.1773	0.1800	0.1825
(8)			0.1577	0.1601	0.1642	0.1693	0.1750	0.1811	0.1869	0.1910
(9)			0.1578	0.1598	0.1639	0.1692	0.1753	0.1813	0.1860	0.1865
(10)			0.1578	0.1591	0.1629	0.1681	0.1739	0.1790	0.1819	0.1807
(11)			0.1577	0.1580	0.1613	0.1664	0.1716	0.1757	0.1775	0.1760
(12)			0.1577	0.1569	0.1597	0.1645	0.1694	0.1727	0.1738	0.1725
(13)	0.1725	0.1653	0.1580	0.1558	0.1582	0.1629	0.1676	0.1702	0.1709	0.1699
(14)	0.1780	0.1696	0.1609	0.1560	0.1573	0.1613	0.1660	0.1677	0.1681	0.1675
(15)	0.1797	0.1725	0.1643	0.1585	0.1573	0.1589	0.1618	0.1638	0.1648	0.1650
(16)	0.1810	0.1746	0.1668	0.1602	0.1568	0.1561	0.1572	0.1599	0.1616	0.1624
(17)	0.1820	0.1758	0.1682	0.1610	0.1561	0.1533	0.1530	0.1568	0.1589	0.1600
(18)	0.1805	0.1755	0.1690	0.1621	0.1557	0.1513	0.1507	0.1550	0.1565	0.1582
(19)	0.1783	0.1745	0.1694	0.1631	0.1552	0.1484	0.1454	0.1487	0.1524	0.1561
(20)	0.1757	0.1730	0.1692	0.1640	0.1548	0.1460	0.1400	0.1436	0.1489	0.1543
(21)	0.1732	0.1709	0.1675	0.1623	0.1545	0.1469	0.1421	0.1434	0.1479	0.1535
(22)	0.1714	0.1693	0.1660	0.1612	0.1549	0.1489	0.1452	0.1452	0.1485	
(23)	0.1710	0.1690	0.1656	0.1608	0.1555	0.1508	0.1480	0.1469	0.1496	
(24)	0.1740	0.1710	0.1664	0.1612	0.1562	0.1520	0.1492	0.1480	0.1509	
(25)	0.1775	0.1730								
(26)	0.1814	0.1761								
(27)	0.1855	0.1803								
(28)	0.1899	0.1853								
(29)	0.1940	0.1902								
(30)	0.1971	0.1940								

	(21)	(22)	(23)	(24)
(1)	0.1741	0.1707	0.1682	0.1669
(2)	0.1726	0.1693	0.1668	0.1655
(3)	0.1707	0.1672	0.1643	0.1628
(4)	0.1693	0.1649	0.1611	0.1590
(5)	0.1691	0.1630	0.1573	0.1542
(6)	0.1707	0.1616	0.1531	0.1486
(7)	0.1741	0.1607	0.1485	0.1431
(8)	0.1778	0.1605	0.1450	0.1400
(9)	0.1761	0.1615	0.1487	0.1430
(10)	0.1732	0.1626	0.1532	0.1483
(11)	0.1707	0.1636	0.1571	
(12)	0.1690	0.1644	0.1602	
(13)	0.1676	0.1648	0.1623	
(14)	0.1663	0.1647		
(15)	0.1646	0.1641		
(16)	0.1629	0.1633		
(17)	0.1612	0.1625		
(18)	0.1600	0.1621		
(19)	0.1594	0.1623		
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
(26)				
(27)				
(28)				
(29)				
(30)				

Waskada Unit 16 History Match	0.	DAYS BLOCK	POROSITIES(FRACTION)	LYR	3 RUNTIME				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)									
(2)									
(3)									
(4)									
(5)									
(6)									
(7)									
(8)									
(9)									
(10)									
(11)									
(12)									
(13)									
(14)									
(15)									
(16)									
(17)									
(18)									
(19)	0.1530	0.1537	0.1543	0.1545	0.1537	0.1516	0.1559	0.1581	0.1605
(20)	0.1523	0.1530	0.1538	0.1544	0.1540	0.1514	0.1560	0.1600	0.1641
(21)	0.1520	0.1526	0.1537	0.1544	0.1542	0.1525	0.1591	0.1639	0.1691
(22)	0.1519	0.1526	0.1540	0.1552	0.1556	0.1549	0.1612	0.1670	0.1736
(23)	0.1522	0.1530	0.1548	0.1565	0.1577	0.1580	0.1672	0.1750	0.1836
(24)	0.1530	0.1541	0.1561	0.1581	0.1598	0.1608	0.1631	0.1699	0.1785
(25)							0.1570	0.1631	0.1699
(26)							0.1519	0.1570	0.1624
(27)							0.1480	0.1518	0.1558
(28)							0.1490	0.1503	0.1519
(29)							0.1518	0.1510	0.1505
(30)							0.1552	0.1530	0.1510
							0.1584	0.1557	0.1532
							0.1600	0.1580	0.1560
							0.1610	0.1603	0.1594
							0.1625	0.1629	0.1631
							0.1637	0.1652	0.1667
							0.1641	0.1669	0.1695
							0.1641	0.1676	0.1706

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								0.1742	0.1750	0.1729
(2)								0.1736	0.1741	0.1721
(3)								0.1733	0.1736	0.1717
(4)									0.1740	0.1718
(5)									0.1751	0.1721
(6)									0.1761	0.1713
(7)			0.1550	0.1552	0.1563	0.1585	0.1627	0.1697	0.1750	0.1665
(8)			0.1543	0.1536	0.1534	0.1537	0.1550	0.1602	0.1619	0.1550
(9)			0.1542	0.1531	0.1521	0.1516	0.1522	0.1546	0.1551	0.1525
(10)			0.1548	0.1536	0.1523	0.1514	0.1514	0.1524	0.1529	0.1526
(11)			0.1559	0.1550	0.1534	0.1521	0.1517	0.1521	0.1529	0.1536
(12)			0.1574	0.1567	0.1550	0.1531	0.1521	0.1524	0.1536	0.1550
(13)	0.1618	0.1615	0.1600	0.1596	0.1571	0.1541	0.1523	0.1527	0.1545	0.1566
(14)	0.1666	0.1667	0.1654	0.1640	0.1592	0.1546	0.1520	0.1530	0.1556	0.1583
(15)	0.1724	0.1721	0.1693	0.1652	0.1595	0.1544	0.1520	0.1536	0.1571	0.1606
(16)	0.1780	0.1762	0.1713	0.1652	0.1587	0.1534	0.1511	0.1540	0.1590	0.1634
(17)	0.1810	0.1772	0.1708	0.1638	0.1574	0.1524	0.1500	0.1547	0.1607	0.1660
(18)	0.1741	0.1719	0.1665	0.1605	0.1560	0.1534	0.1533	0.1570	0.1615	0.1651
(19)	0.1654	0.1641	0.1600	0.1556	0.1537	0.1540	0.1561	0.1586	0.1614	0.1640
(20)	0.1577	0.1566	0.1534	0.1500	0.1506	0.1532	0.1570	0.1582	0.1600	0.1622
(21)	0.1524	0.1513	0.1491	0.1472	0.1477	0.1497	0.1524	0.1542	0.1565	0.1593
(22)	0.1496	0.1483	0.1467	0.1453	0.1451	0.1456	0.1467	0.1488	0.1520	
(23)	0.1490	0.1475	0.1460	0.1446	0.1435	0.1425	0.1420	0.1440	0.1482	
(24)	0.1509	0.1490	0.1473	0.1455	0.1439	0.1423	0.1412	0.1420	0.1465	
(25)	0.1541	0.1521								
(26)	0.1581	0.1563								
(27)	0.1626	0.1611								
(28)	0.1672	0.1657								
(29)	0.1710	0.1694								
(30)	0.1721	0.1710								

	(21)	(22)	(23)	(24)
(1)	0.1694	0.1661	0.1636	0.1623
(2)	0.1689	0.1657	0.1633	0.1621
(3)	0.1685	0.1652	0.1628	0.1616
(4)	0.1682	0.1648	0.1622	0.1610
(5)	0.1677	0.1639	0.1614	0.1601
(6)	0.1659	0.1621	0.1599	0.1589
(7)	0.1614	0.1590	0.1579	0.1574
(8)	0.1548	0.1554	0.1560	0.1561
(9)	0.1528	0.1541	0.1551	0.1556
(10)	0.1533	0.1545	0.1556	0.1561
(11)	0.1547	0.1559	0.1567	
(12)	0.1564	0.1576	0.1582	
(13)	0.1582	0.1593	0.1598	
(14)	0.1602	0.1611		
(15)	0.1625	0.1631		
(16)	0.1649	0.1650		
(17)	0.1666	0.1663		
(18)	0.1660	0.1664		
(19)	0.1653	0.1661		
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
(26)				
(27)				
(28)				
(29)				
(30)				

Waskada Unit 16 History Match	0.	DAYS KX - PERMEABILITY(MD)	LYR 1 RUNTIME						
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)									
(2)									
(3)									
(4)									
(5)									
(6)									
(7)									
(8)									
(9)									
(10)									
(11)									
(12)									
(13)						1.162	1.178	1.260	2.745
(14)						1.178	1.162	1.249	2.760
(15)						1.189	1.140	1.178	2.512
(16)						0.4212	0.3888	0.3821	2.168
(17)						0.4037	0.3537	0.3335	1.838
(18)						0.3740	0.3105	0.2862	1.575
(19)	5.250	5.227	4.717	3.990	3.210	2.813	2.205	2.092	1.455
(20)	5.220	5.250	4.575	3.788	3.015	2.543	1.913	2.003	1.507
(21)	4.372	4.253	3.818	3.255	2.678	2.520	2.160	2.295	1.755
(22)	1.594	1.493	1.406	5.145	4.530	1.688	1.620	1.777	0.8250
(23)	1.102	0.4688	0.9675	3.900	3.750	1.635	1.688	1.920	0.9030
(24)	0.9375	0.7950	0.7687	3.090	3.075	1.500	1.605	1.838	0.8550
(25)					3.000	2.640	2.820	3.255	1.868
(26)						2.325	2.400	2.760	1.575
(27)						2.190	2.235	2.445	1.335
(28)						1.095	1.095	1.118	1.162
(29)						1.140	1.102	1.065	1.043
(30)						1.200	1.125	1.050	0.9975

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								1.493	1.500	1.695
(2)								1.658	1.725	1.905
(3)								1.912	2.055	2.235
(4)									2.445	2.640
(5)									2.872	3.090
(6)									3.315	3.540
(7)			1.125	1.433	1.890	2.392	2.895	3.360	3.750	3.960
(8)			1.455	1.747	2.205	2.730	3.240	3.705	4.065	4.275
(9)			1.890	2.183	2.618	3.120	3.600	4.012	4.305	4.462
(10)			2.317	2.618	3.045	3.525	3.967	4.305	4.508	4.582
(11)			2.685	3.000	3.435	3.908	4.313	4.568	4.665	4.628
(12)			2.925	3.247	3.712	4.215	4.605	4.778	4.747	4.590
(13)	2.925	2.940	3.000	3.330	3.832	4.395	4.822	4.890	4.717	4.425
(14)	3.000	2.918	2.918	3.195	3.727	4.365	4.875	4.830	4.530	4.110
(15)	2.625	2.565	2.543	2.775	3.322	3.990	4.470	4.470	4.133	3.630
(16)	2.175	2.070	1.988	2.137	2.745	3.473	3.983	3.997	3.608	3.030
(17)	1.800	1.658	1.493	1.500	2.190	0.2963E-01	3.525	3.517	3.053	2.385
(18)	1.553	1.470	1.380	1.463	0.1935E-01	2.520	2.955	3.000	2.490	1.793
(19)	1.500	1.493	1.463	0.1545E-01	1.800	2.137	2.370	2.332	1.950	1.418
(20)	1.635	1.665	0.1643E-01	1.650	1.710	0.1808E-01	1.860	1.777	1.523	1.178
(21)	1.920	1.928	1.838	0.1718E-01	0.1620E-01	1.537	1.463	1.365	1.215	1.050
(22)	0.9120	0.8850	0.8040	0.7080	0.6150	1.327	1.162	1.080	1.035	
(23)	0.8160E-01	0.9510	0.8370	0.7170	0.5940	1.207	0.9750	0.9300	0.9900	
(24)	0.9360	0.9000	0.8100	0.7020	0.5880	1.215	1.028	0.9750	1.095	
(25)	2.025	2.010								
(26)	1.702	1.740								
(27)	1.433	1.493								
(28)	1.215	1.283								
(29)	1.050	1.132								
(30)	0.9825	1.050								

	(21)	(22)	(23)	(24)
(1)	1.935	2.145	2.303	2.378
(2)	2.115	2.303	2.445	2.520
(3)	2.423	2.588	2.707	2.775
(4)	2.820	2.955	3.053	3.105
(5)	3.247	3.367	3.443	3.473
(6)	3.682	3.765	3.810	3.832
(7)	4.065	2.055	2.063	2.066
(8)	4.342	2.179	2.175	2.168
(9)	4.500	2.243	2.224	2.209
(10)	4.560	2.246	2.209	2.186
(11)	4.515	2.190	2.134	
(12)	4.372	2.077	1.995	
(13)	4.095	3.810	3.600	
(14)	3.682	3.330		
(15)	3.135	2.745		
(16)	2.475	2.092		
(17)	1.762	1.440		
(18)	1.125	0.9225		
(19)	0.9300	0.7275		
(20)				
(21)				
(22)				
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(28)				
(29)				
(30)				

Waskada Unit 16 History Match	0.	DAYS KX - PERMEABILITY(MD)					LYR 2 RUNTIME			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)										
(2)										
(3)										
(4)										
(5)										
(6)										
(7)										
(8)										
(9)										
(10)										
(11)										
(12)										
(13)							3.750	3.521	3.146	5.392
(14)							3.919	3.938	3.660	6.563
(15)							3.983	4.181	4.193	8.100
(16)							1.415	1.574	1.682	9.622
(17)							1.370	1.608	1.794	10.73
(18)							1.337	1.594	1.801	10.83
(19)	1.425	1.493	1.140	1.749	2.755	9.240	11.25	12.81	14.61	10.69
(20)	1.350	1.425	1.485	2.888	6.930	9.488	10.37	11.93	14.50	10.93
(21)	1.200	1.320	3.413	12.29	15.64	18.38	13.51	14.47	16.46	12.12
(22)	0.7125	0.7837	3.113	11.49	15.09	14.03	12.19	12.13	13.16	5.649
(23)	0.9000	0.5063	4.425	16.58	22.50	18.58	14.39	14.58	15.83	6.636
(24)	1.013	2.396	5.415	17.51	21.61	19.17	15.00	17.63	19.16	7.650
(25)							13.13	14.58	14.12	27.55
(26)							16.09	18.00	15.65	27.61
(27)							15.41	15.99	13.79	23.09
(28)							10.89	10.59	8.737	3.686
(29)							8.839	8.104	6.195	2.162
(30)							7.500	6.668	4.856	1.559

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								11.97	11.85	11.89
(2)								11.12	10.99	11.08
(3)								9.712	9.615	9.847
(4)									8.273	8.948
(5)									7.725	9.578
(6)									8.872	13.58
(7)			2.250	4.980	8.970	5.193	6.186	5.802	6.750	11.89
(8)			2.183	5.288	10.52	6.771	9.300	10.36	15.63	21.00
(9)			2.122	5.108	10.64	7.077	9.957	12.20	18.24	20.59
(10)			1.740	4.005	9.195	15.91	22.90	29.03	17.04	18.03
(11)			1.643	2.625	7.110	12.79	18.74	24.22	14.18	14.85
(12)			3.015	3.488	5.903	9.510	13.76	18.18	10.83	11.55
(13)	4.658	4.553	9.675	9.015	10.03	6.465	8.760	12.21	15.25	16.89
(14)	5.775	5.610	10.88	9.750	8.520	4.155	4.650	7.440	9.953	11.54
(15)	7.530	6.788	11.65	9.510	7.890	3.622	3.870	5.085	6.337	7.335
(16)	9.337	8.003	6.255	4.658	3.983	3.945	4.215	4.117	3.997	4.117
(17)	10.88	9.030	6.690	4.575	4.102	0.4327E-01	4.800	3.622	2.467	1.800
(18)	10.87	9.435	7.335	5.347	0.4320E-01	3.885	3.577	2.625	1.613	1.178
(19)	10.82	9.802	4.173	0.3163E-01	2.344	3.277	3.431	2.351	1.088	1.110
(20)	11.27	10.51	0.4629E-01	3.588	2.547	0.3053E-01	2.250	1.553	1.020	1.485
(21)	12.47	11.74	5.261	0.4166E-01	0.2980E-01	3.660	3.116	2.137	1.560	2.325
(22)	5.733	5.376	4.635	3.693	2.730	4.688	3.090	2.280	2.527	
(23)	0.5280	6.102	5.196	4.158	3.156	5.753	4.200	3.233	3.735	
(24)	7.257	6.600	5.514	4.428	3.456	6.630	5.100	4.200	5.258	
(25)	24.07	20.73								
(26)	22.15	18.14								
(27)	17.18	13.72								
(28)	2.354	1.935								
(29)	0.8100	0.9473								
(30)	0.6075	0.8100								

	(21)	(22)	(23)	(24)
(1)	11.93	11.89	11.76	11.65
(2)	11.11	10.94	10.65	10.43
(3)	9.870	9.413	8.715	8.227
(4)	9.000	7.957	6.457	5.445
(5)	9.682	7.440	4.432	2.550
(6)	13.41	8.722	3.098	3.098
(7)	10.69	6.094	1.298	1.298
(8)	15.90	8.460	1.575	1.575
(9)	16.76	10.39	4.534	1.901
(10)	15.53	11.07	6.825	4.560
(11)	13.42	10.65	7.886	
(12)	10.96	9.461	7.856	
(13)	16.88	15.64	14.09	
(14)	12.17	12.05		
(15)	8.122	8.625		
(16)	4.890	5.745		
(17)	2.648	3.727		
(18)	1.800	2.813		
(19)	1.800	2.827		
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
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(27)				
(28)				
(29)				
(30)				

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)										
(2)										
(3)										
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(5)										
(6)										
(7)										
(8)										
(9)										
(10)										
(11)										
(12)										
(13)							1.162	1.185	1.485	3.712
(14)							1.050	1.162	1.740	4.680
(15)							1.170	1.553	2.269	6.068
(16)							0.4766	0.6980	1.015	7.515
(17)							0.4955	0.7709	1.138	8.497
(18)							0.4604	0.7587	1.135	8.378
(19)	1.725	1.635	1.440	2.706	2.541	3.250	2.250	3.908	5.903	7.763
(20)	1.725	1.725	1.598	3.184	2.970	3.762	2.430	3.750	5.467	7.080
(21)	1.665	1.747	1.882	4.472	4.719	5.098	2.767	3.742	5.115	6.495
(22)	0.7912	0.8775	1.099	2.707	3.060	2.918	2.963	3.622	4.740	2.388
(23)	0.7763	0.4312	1.196	3.165	3.750	3.142	2.753	3.240	4.260	2.175
(24)	0.8625	0.9600	1.215	2.970	3.188	2.648	2.100	2.670	3.668	1.917
(25)							2.003	2.348	3.113	4.043
(26)							1.935	2.100	2.610	3.270
(27)							1.905	1.942	2.183	2.550
(28)							1.912	1.830	1.830	1.935
(29)							1.988	1.785	1.590	1.477
(30)							2.100	1.808	1.493	1.275

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								3.780	3.750	3.863
(2)								3.818	3.832	3.908
(3)								3.832	3.900	3.960
(4)									3.938	3.967
(5)									3.938	3.923
(6)									3.900	3.788
(7)			1.500	1.717	2.115	2.572	3.045	3.465	3.750	3.495
(8)			1.582	1.702	1.980	2.332	2.700	2.993	3.120	2.925
(9)			1.882	1.905	1.995	2.137	2.332	2.520	2.640	2.655
(10)			2.303	2.250	2.115	2.017	2.025	2.160	2.348	2.535
(11)			2.798	2.700	2.310	1.942	1.793	1.920	2.220	2.572
(12)			3.330	3.068	2.512	1.928	1.620	1.815	2.295	2.805
(13)	4.238	4.372	4.125	3.735	2.955	2.092	1.582	1.950	2.640	3.293
(14)	5.505	5.738	5.460	4.875	3.803	2.662	1.875	2.527	3.398	4.072
(15)	7.133	7.350	6.900	6.060	4.943	3.930	3.428	3.878	4.605	5.108
(16)	8.858	8.910	8.212	7.148	6.015	5.153	4.867	5.212	5.783	6.097
(17)	10.20	9.967	9.030	7.807	6.592	0.5745E-01	5.550	5.850	6.263	6.525
(18)	9.818	9.870	9.068	7.815	0.6450E-01	5.370	4.950	5.250	5.250	4.920
(19)	9.007	9.240	4.477	0.3834E-01	2.999	4.245	4.939	5.164	3.600	3.443
(20)	8.190	8.490	0.4153E-01	3.549	2.621	0.3128E-01	2.362	2.756	2.227	2.392
(21)	7.492	7.815	3.842	0.3276E-01	0.2445E-01	2.993	2.554	2.239	1.680	1.912
(22)	2.775	2.922	2.781	2.400	1.872	3.330	2.287	1.793	1.740	
(23)	0.2064	2.766	2.646	2.325	1.905	3.727	2.925	2.273	2.092	
(24)	2.328	2.580	2.475	2.217	1.893	3.915	3.210	2.625	2.527	
(25)	4.898	5.445								
(26)	3.908	4.380								
(27)	2.977	3.383								
(28)	2.145	2.512								
(29)	1.500	1.845								
(30)	1.237	1.500								

	(21)	(22)	(23)	(24)
(1)	3.997	4.125	4.222	4.275
(2)	4.012	4.110	4.178	4.222
(3)	4.012	4.050	4.087	4.102
(4)	3.960	3.938	3.930	3.923
(5)	3.840	3.765	3.705	3.682
(6)	3.637	3.510	3.435	3.405
(7)	3.315	1.605	1.575	1.567
(8)	2.925	1.466	1.463	1.474
(9)	2.745	1.418	1.451	1.474
(10)	2.738	1.455	1.519	1.553
(11)	2.895	1.571	1.650	
(12)	3.217	1.751	1.834	
(13)	3.727	3.967	4.080	
(14)	4.387	4.462		
(15)	5.085	4.867		
(16)	5.528	4.950		
(17)	5.250	4.485		
(18)	3.750	3.480		
(19)	2.933	2.820		
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
(26)				
(27)				
(28)				
(29)				
(30)				

Waskada Unit 16 History Match 607.0000 DAYS PRESSURES (KPA) Lyr 1 RUNTIME

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)										
(2)										
(3)										
(4)										
(5)										
(6)										
(7)										
(8)										
(9)										
(10)										
(11)										
(12)										
(13)							7568.	7658.	7913.	8083.
(14)							7481.	7578.	7928.	8083.
(15)							7358.	7436.	7842.	8073.
(16)							7013.	6819.	7775.	8070.
(17)							6188.	4773.	7395.	8038.
(18)							7161.	7032.	7924.	8132.
(19)	6839.	6840.	6850.	6882.	6962.	7138.	7392.	7600.	8071.	8173.
(20)	6847.	6839.	6839.	6857.	6928.	7146.	7736.	7827.	8648.	8297.
(21)	6870.	6839.	6818.	6805.	6838.	6986.	7319.	7606.	8008.	8121.
(22)	6940.	6824.	6776.	6747.	6752.	6816.	7008.	7313.	7652.	7908.
(23)	7117.	6711.	6726.	6700.	6680.	6706.	6797.	7036.	7348.	7552.
(24)	7469.	7192.	6881.	6705.	6649.	6662.	6764.	6975.	7251.	7544.
(25)							6839.	6987.	7219.	7498.
(26)							6886.	7007.	7226.	7492.
(27)							7041.	7135.	7354.	7651.
(28)							7318.	7366.	7630.	7970.
(29)							7671.	7666.	7942.	8227.
(30)							7949.	7962.	8171.	8378.

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								8136.	7981.	7776.
(2)								8131.	7882.	6786.
(3)								8239.	8255.	8302.
(4)									8350.	8388.
(5)									8352.	8378.
(6)									8312.	8348.
(7)			7783.	7657.	7638.	7689.	7827.	8032.	8218.	8301.
(8)			7793.	7709.	7717.	7777.	7899.	8063.	8201.	8287.
(9)			7950.	7900.	7901.	7947.	8029.	8135.	8227.	8290.
(10)			8112.	8086.	8086.	8115.	8161.	8221.	8277.	8321.
(11)			8237.	8228.	8232.	8247.	8272.	8305.	8340.	8368.
(12)			8328.	8337.	8347.	8351.	8364.	8382.	8402.	8420.
(13)	8203.	8299.	8358.	8390.	8410.	8422.	8433.	8445.	8457.	8468.
(14)	8206.	8307.	8377.	8420.	8448.	8469.	8482.	8492.	8500.	8508.
(15)	8212.	8319.	8394.	8443.	8475.	8501.	8516.	8525.	8533.	8540.
(16)	8222.	8333.	8410.	8462.	8496.	8521.	8537.	8548.	8556.	8563.
(17)	8230.	8344.	8420.	8468.	8503.	8534.	8549.	8560.	8570.	8578.
(18)	8256.	8347.	8406.	8437.	8488.	8512.	8541.	8562.	8577.	8588.
(19)	8249.	8310.	8331.	8287.	8343.	8458.	8523.	8539.	8579.	8592.
(20)	8233.	8254.	8111.	7950.	8096.	8386.	8519.	8560.	8583.	8594.
(21)	8195.	8274.	8296.	8206.	8374.	8490.	8539.	8572.	8590.	8598.
(22)	8052.	8274.	8421.	8479.	8531.	8546.	8569.	8589.	8599.	
(23)	7345.	8147.	8427.	8527.	8572.	8581.	8593.	8603.	8606.	
(24)	7797.	8143.	8446.	8551.	8590.	8597.	8604.	8610.	8609.	
(25)	7790.	7999.								
(26)	7788.	7984.								
(27)	7939.	8105.								
(28)	8194.	8307.								
(29)	8393.	8463.								
(30)	8493.	8536.								

(21) (22) (23) (24)

(1)	8056.	8264.	8375.	8432.
(2)	7990.	8286.	8391.	8444.
(3)	8316.	8379.	8430.	8460.
(4)	8390.	8409.	8431.	8445.
(5)	8393.	8404.	8406.	8407.
(6)	8373.	8382.	8361.	8351.
(7)	8348.	8373.	8279.	8243.
(8)	8359.	8549.	8219.	8124.
(9)	8329.	8335.	8202.	8138.
(10)	8344.	8338.	8274.	8207.
(11)	8386.	8394.	8378.	
(12)	8435.	8451.	8452.	
(13)	8478.	8488.	8484.	
(14)	8515.	8519.		
(15)	8546.	8548.		
(16)	8569.	8571.		
(17)	8586.	8587.		
(18)	8596.	8596.		
(19)	8598.	8594.		

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Waskada Unit 16 History Match 607.0000 DAYS PRESSURES (KPA) LVR 2 RUNTIME

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)										
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(12)										
(13)							7362.	7491.	7698.	7698.
(14)							7302.	7476.	7976.	7708.
(15)							7152.	7307.	7552.	7598.
(16)							6879.	7083.	7419.	7527.
(17)							6735.	7001.	7396.	7513.
(18)							7150.	7410.	7648.	7577.
(19)	6525.	6340.	6123.	6147.	6530.	6843.	7286.	7572.	7839.	7658.
(20)	6391.	6141.	5872.	5933.	6281.	6653.	7795.	7689.	8698.	7694.
(21)	6197.	5836.	5673.	5769.	5996.	6281.	6706.	7107.	7375.	7337.
(22)	5981.	5489.	5445.	5568.	5719.	5924.	6209.	6573.	6769.	6895.
(23)	5590.	5150.	5301.	5434.	5542.	5654.	5809.	6055.	6201.	6241.
(24)	5257.	5093.	5235.	5369.	5460.	5536.	5601.	5726.	5810.	5732.
(25)							5493.	5548.	5603.	5602.
(26)							5413.	5446.	5498.	5537.
(27)							5349.	5376.	5427.	5489.
(28)							5318.	5338.	5373.	5434.
(29)							5300.	5321.	5361.	5446.
(30)							5297.	5323.	5379.	5550.

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								7465.	7299.	7011.
(2)								7507.	7256.	6269.
(3)								7685.	7774.	8350.
(4)									7915.	8014.
(5)									7914.	7940.
(6)									7883.	7912.
(7)			7131.	7250.	7342.	7432.	7570.	7702.	7829.	7900.
(8)			7193.	7305.	7393.	7487.	7612.	7725.	7819.	7896.
(9)			7292.	7387.	7469.	7565.	7661.	7738.	7806.	7869.
(10)			7415.	7484.	7559.	7635.	7694.	7742.	7789.	7844.
(11)			7563.	7588.	7631.	7676.	7719.	7755.	7792.	7835.
(12)			7672.	7680.	7694.	7718.	7750.	7781.	7815.	7849.
(13)	7692.	7698.	7703.	7717.	7734.	7756.	7788.	7820.	7851.	7876.
(14)	7677.	7688.	7707.	7732.	7760.	7796.	7838.	7868.	7892.	7910.
(15)	7621.	7656.	7695.	7736.	7783.	7843.	7899.	7927.	7944.	7958.
(16)	7566.	7605.	7660.	7726.	7805.	7889.	7953.	7985.	8005.	8018.
(17)	7532.	7554.	7603.	7686.	7796.	7927.	7995.	8033.	8067.	8093.
(18)	7526.	7509.	7551.	7632.	7783.	7932.	8003.	8064.	8125.	8174.
(19)	7510.	7449.	7473.	7565.	7756.	7902.	7991.	8072.	8160.	8224.
(20)	7440.	7352.	7338.	7469.	7635.	7822.	7956.	8055.	8164.	8228.
(21)	7264.	7214.	7174.	7248.	7628.	7731.	7850.	7977.	8096.	8194.
(22)	6999.	6984.	7009.	7132.	7384.	7590.	7736.	7883.	7977.	
(23)	6329.	6528.	6757.	6989.	7275.	7493.	7647.	7799.	7883.	
(24)	5741.	5941.	6506.	6859.	7202.	7444.	7609.	7755.	7826.	
(25)	5623.	5665.								
(26)	5560.	5585.								
(27)	5518.	5542.								
(28)	5511.	5573.								
(29)	5817.	6167.								
(30)	6327.	6797.								

	(21)	(22)	(23)	(24)
(1)	7317.	7548.	7652.	7697.
(2)	7264.	7589.	7688.	7723.
(3)	7803.	7766.	7768.	7769.
(4)	7910.	7860.	7830.	7811.
(5)	7925.	7908.	7876.	7847.
(6)	7939.	7957.	7923.	7884.
(7)	7976.	8098.	8035.	7927.
(8)	8024.	8599.	8279.	8024.
(9)	7951.	8081.	8056.	7987.
(10)	7896.	7949.	7957.	7950.
(11)	7872.	7901.	7912.	
(12)	7875.	7892.	7898.	
(13)	7893.	7904.	7900.	
(14)	7924.	7932.		
(15)	7970.	7976.		
(16)	8029.	8031.		
(17)	8102.	8096.		
(18)	8177.	8156.		
(19)	8217.	8182.		

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Maskada Unit 16 History Match

607.0000 DAYS PRESSURES (KPA)

LYR 3 RUNTIME

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1)									
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(12)									
(13)						7452.	7611.	7859.	7903.
(14)						7360.	7573.	8038.	7906.
(15)						7162.	7379.	7729.	7827.
(16)						6718.	7007.	7632.	7786.
(17)						6267.	6689.	7578.	7778.
(18)						6956.	7310.	7775.	7834.
(19)	6946.	6892.	6833.	6831.	6911.	7092.	7689.	7975.	7922.
(20)	6940.	6871.	6803.	6805.	6895.	7121.	7917.	8754.	8039.
(21)	6950.	6848.	6757.	6755.	6828.	6994.	7630.	7905.	7875.
(22)	6995.	6796.	6663.	6650.	6700.	6828.	7321.	7524.	7634.
(23)	7005.	6639.	6537.	6528.	6552.	6624.	7002.	7178.	7279.
(24)	7077.	6778.	6544.	6472.	6462.	6495.	6772.	6948.	7086.
(25)							6699.	6883.	7054.
(26)							6727.	6903.	7079.
(27)							6853.	7015.	7186.
(28)							7041.	7200.	7378.
(29)							7231.	7408.	7617.
(30)							7365.	7560.	7798.

(21) (22) (23) (24)

(1) 7759. 7989. 8094. 8142.
(2) 7667. 8024. 8131. 8172.
(3) 8170. 8183. 8204. 8220.
(4) 8257. 8250. 8253. 8257.
(5) 8255. 8268. 8271. 8272.
(6) 8239. 8274. 8271. 8266.
(7) 8233. 8313. 8257. 8224.
(8) 8278. 8652. 8267. 8155.
(9) 8238. 8319. 8207. 8141.
(10) 8246. 8277. 8237. 8178.
(11) 8291. 8318. 8317.
(12) 8341. 8367. 8374.
(13) 8376. 8391. 8394.
(14) 8393. 8402.
(15) 8399. 8408.
(16) 8402. 8411.
(17) 8405. 8413.
(18) 8410. 8415.
(19) 8409. 8408.

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Waskada Unit 16 History Match			974.0000 DAYS PRESSURES (KPA)				LYR 1 RUNTIME			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
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(11)										
(12)										
(13)						7566.	7586.	7703.	7729.	
(14)						7487.	7281.	7659.	7724.	
(15)						7433.	7474.	7669.	7724.	
(16)						7215.	7203.	7650.	7711.	
(17)						6701.	5380.	7435.	7658.	
(18)						6621.	6805.	7454.	7587.	
(19)	4581.	4557.	4769.	5009.	5306.	5804.	6405.	6772.	7306.	
(20)	4507.	4227.	4667.	4922.	5173.	5673.	6479.	6433.	7589.	
(21)	4635.	4562.	4715.	4823.	4955.	5333.	5903.	6242.	6747.	
(22)	4788.	4646.	4716.	4651.	4587.	4875.	5275.	5568.	6095.	
(23)	4916.	4090.	4586.	4413.	3805.	4483.	4681.	4299.	5373.	
(24)	5250.	4988.	4785.	4517.	4316.	4528.	4689.	4772.	5207.	
(25)							4632.	4621.	4997.	
(26)							4452.	3926.	4763.	
(27)							4731.	4632.	4980.	
(28)							4983.	4832.	5215.	
(29)							5000.	4168.	5228.	
(30)							5388.	5239.	5628.	

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								6399.	6063.	5639.
(2)								6371.	5797.	4141.
(3)								6607.	6533.	6262.
(4)									7082.	7068.
(5)									7356.	7380.
(6)									7423.	7469.
(7)			6102.	5896.	6099.	6174.	6218.	6876.	7309.	7453.
(8)			5966.	5298.	6019.	6069.	5432.	6789.	7286.	7454.
(9)			6246.	6119.	6376.	6550.	6637.	7102.	7386.	7511.
(10)			6393.	6276.	6615.	6897.	7105.	7343.	7511.	7604.
(11)			6472.	5843.	6735.	7123.	7349.	7520.	7640.	7712.
(12)			7028.	6927.	7179.	7379.	7545.	7672.	7764.	7823.
(13)	7695.	7588.	7366.	7300.	7419.	7567.	7698.	7801.	7878.	7930.
(14)	7704.	7624.	7486.	7434.	7532.	7686.	7812.	7908.	7979.	8030.
(15)	7710.	7640.	7517.	7448.	7572.	7757.	7898.	7997.	8069.	8120.
(16)	7701.	7622.	7460.	7275.	7524.	7794.	7973.	8077.	8148.	8202.
(17)	7665.	7568.	7249.	6327.	7284.	7863.	8072.	8157.	8223.	8276.
(18)	7590.	7566.	7430.	7193.	7675.	8041.	8154.	8231.	8291.	8341.
(19)	7346.	7504.	7609.	7748.	8037.	8148.	8238.	8301.	8351.	8392.
(20)	6638.	7308.	7733.	8009.	8137.	8268.	8332.	8372.	8409.	8435.
(21)	6963.	7325.	7631.	7931.	8334.	8384.	8405.	8434.	8459.	8469.
(22)	6682.	7211.	7682.	8037.	8311.	8407.	8449.	8480.	8498.	
(23)	5176.	6786.	7523.	7978.	8301.	8423.	8478.	8511.	8524.	
(24)	5741.	6455.	7411.	7936.	8293.	8432.	8492.	8525.	8534.	
(25)	5434.	5833.								
(26)	4485.	5429.								
(27)	5210.	5535.								
(28)	5220.	5537.								
(29)	4293.	5364.								
(30)	5522.	5812.								

	(21)	(22)	(23)	(24)
(1)	6346.	6897.	7187.	7337.
(2)	6172.	6939.	7247.	7401.
(3)	6808.	7181.	7380.	7483.
(4)	7228.	7370.	7469.	7522.
(5)	7433.	7474.	7493.	7510.
(6)	7494.	7483.	7434.	7438.
(7)	7482.	7413.	7145.	7230.
(8)	7473.	7309.	6210.	6865.
(9)	7530.	7416.	7054.	7094.
(10)	7628.	7581.	7418.	7296.
(11)	7742.	7742.	7688.	
(12)	7856.	7883.	7867.	
(13)	7962.	7981.	7954.	
(14)	8062.	8077.		
(15)	8156.	8174.		
(16)	8243.	8263.		
(17)	8319.	8338.		
(18)	8380.	8393.		
(19)	8414.	8403.		

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(11)										
(12)										
(13)							7232.	7227.	7229.	7032.
(14)							7153.	7133.	7484.	6997.
(15)							7006.	6963.	6980.	6840.
(16)							6727.	6517.	6704.	6661.
(17)							6111.	5097.	6358.	6501.
(18)							6177.	6245.	6576.	6472.
(19)	4700.	4614.	4729.	4946.	5338.	5651.	6137.	6366.	6762.	6481.
(20)	4566.	4240.	4461.	4576.	4897.	5336.	6536.	6288.	7629.	6471.
(21)	4545.	4364.	4306.	4290.	4429.	4747.	5253.	5611.	6115.	5984.
(22)	4477.	4263.	4162.	3977.	3890.	4219.	4541.	4884.	5180.	5424.
(23)	4314.	3975.	3946.	3676.	3229.	3786.	4008.	3912.	4453.	4616.
(24)	4262.	4184.	3989.	3771.	3636.	3814.	3905.	3933.	4109.	4064.
(25)							3779.	3723.	3876.	3872.
(26)							3624.	3469.	3711.	3736.
(27)							3775.	3696.	3843.	3851.
(28)							3894.	3785.	3966.	4001.
(29)							3835.	3322.	3924.	4134.
(30)							4023.	3894.	4109.	4209.

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								4751.	4609.	4380.
(2)								4849.	4639.	3698.
(3)								5122.	5390.	6306.
(4)									5866.	6073.
(5)									6118.	6186.
(6)									6238.	6292.
(7)			5386.	5350.	5459.	5495.	5506.	5938.	6245.	6369.
(8)			5358.	5132.	5489.	5493.	5150.	5952.	6276.	6421.
(9)			5627.	5605.	5743.	5877.	5941.	6194.	6345.	6453.
(10)			5853.	5814.	5974.	6113.	6205.	6308.	6397.	6491.
(11)			6042.	5674.	6117.	6249.	6327.	6397.	6471.	6550.
(12)			6412.	6319.	6355.	6392.	6444.	6499.	6570.	6635.
(13)	6868.	6691.	6556.	6500.	6492.	6511.	6555.	6608.	6668.	6714.
(14)	6829.	6678.	6581.	6546.	6554.	6601.	6663.	6712.	6754.	6789.
(15)	6731.	6619.	6547.	6522.	6567.	6661.	6758.	6810.	6845.	6873.
(16)	6596.	6509.	6431.	6354.	6511.	6694.	6820.	6887.	6932.	6965.
(17)	6449.	6360.	6215.	5768.	6327.	6705.	6866.	6943.	7013.	7069.
(18)	6345.	6264.	6217.	6163.	6448.	6753.	6876.	6979.	7085.	7177.
(19)	6213.	6151.	6183.	6277.	6563.	6748.	6869.	6985.	7121.	7231.
(20)	5912.	5976.	6039.	6255.	6458.	6668.	6824.	6951.	7102.	7204.
(21)	5855.	5845.	5850.	5992.	6426.	6532.	6673.	6826.	6980.	7134.
(22)	5572.	5597.	5665.	5824.	6110.	6345.	6510.	6678.	6789.	
(23)	4745.	5051.	5358.	5640.	5966.	6212.	6382.	6549.	6646.	
(24)	4030.	4317.	5050.	5477.	5870.	6143.	6325.	6484.	6565.	
(25)	3813.	3948.								
(26)	3362.	3765.								
(27)	3772.	3893.								
(28)	4011.	4107.								
(29)	4131.	4260.								
(30)	4316.	4448.								

	(21)	(22)	(23)	(24)
(1)	4826.	5199.	5408.	5521.
(2)	4860.	5321.	5514.	5609.
(3)	5651.	5665.	5723.	5765.
(4)	5977.	5949.	5945.	5950.
(5)	6185.	6173.	6151.	6151.
(6)	6327.	6342.	6317.	6310.
(7)	6459.	6573.	6442.	6407.
(8)	6579.	7351.	6153.	6418.
(9)	6564.	6715.	6612.	6610.
(10)	6573.	6648.	6659.	6662.
(11)	6613.	6664.	6688.	
(12)	6683.	6717.	6730.	
(13)	6748.	6769.	6761.	
(14)	6816.	6832.		
(15)	6896.	6909.		
(16)	6988.	6997.		
(17)	7094.	7092.		
(18)	7196.	7175.		
(19)	7247.	7207.		
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(13)							7455.	7400.	7331.	7104.
(14)							7386.	7241.	7543.	7063.
(15)							7273.	7157.	7087.	6914.
(16)							7057.	6761.	6836.	6765.
(17)							6481.	5200.	6535.	6639.
(18)							6472.	6378.	6644.	6596.
(19)	4956.	4893.	5116.	5263.	5459.	5779.	6292.	6488.	6750.	6571.
(20)	4824.	4415.	4979.	5169.	5348.	5674.	6590.	6345.	7689.	6524.
(21)	4936.	4825.	4972.	5052.	5169.	5416.	5759.	6022.	6339.	6278.
(22)	4991.	4810.	4832.	4796.	4758.	5047.	5271.	5428.	5709.	5901.
(23)	4869.	4131.	4525.	4379.	3784.	4460.	4628.	4215.	4970.	5178.
(24)	4957.	4683.	4564.	4390.	4193.	4373.	4412.	4362.	4578.	4665.
(25)							4262.	4199.	4340.	4375.
(26)							4177.	3631.	4192.	4212.
(27)							4229.	4183.	4236.	4252.
(28)							4225.	4207.	4264.	4309.
(29)							4203.	3644.	4189.	4330.
(30)							4239.	4213.	4353.	4480.

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								5381.	5164.	4823.
(2)								5471.	5157.	3920.
(3)								5748.	5910.	6366.
(4)									6396.	6528.
(5)									6645.	6705.
(6)									6742.	6812.
(7)			5704.	5611.	5746.	5810.	5872.	6336.	6688.	6856.
(8)			5657.	5243.	5694.	5715.	5279.	6256.	6698.	6922.
(9)			5881.	5791.	5944.	6044.	6092.	6512.	6824.	7020.
(10)			6036.	5949.	6147.	6343.	6520.	6774.	6987.	7144.
(11)			6145.	5745.	6260.	6546.	6771.	6982.	7151.	7269.
(12)			6477.	6413.	6559.	6740.	6948.	7140.	7276.	7365.
(13)	6938.	6789.	6629.	6584.	6671.	6838.	7045.	7226.	7341.	7414.
(14)	6890.	6757.	6640.	6605.	6691.	6863.	7073.	7246.	7353.	7424.
(15)	6796.	6688.	6593.	6552.	6666.	6865.	7074.	7234.	7341.	7415.
(16)	6688.	6593.	6484.	6380.	6582.	6853.	7086.	7234.	7336.	7410.
(17)	6591.	6492.	6299.	5826.	6392.	6855.	7138.	7256.	7346.	7416.
(18)	6521.	6449.	6352.	6245.	6586.	7005.	7173.	7286.	7369.	7437.
(19)	6410.	6396.	6404.	6494.	6904.	7092.	7234.	7327.	7401.	7461.
(20)	6096.	6287.	6430.	6723.	6970.	7208.	7334.	7400.	7458.	7496.
(21)	6183.	6276.	6427.	6680.	7225.	7353.	7422.	7479.	7523.	7536.
(22)	6028.	6200.	6475.	6819.	7176.	7361.	7459.	7532.	7571.	
(23)	5351.	5897.	6382.	6808.	7176.	7370.	7476.	7553.	7592.	
(24)	4786.	5311.	6215.	6766.	7173.	7373.	7482.	7560.	7592.	
(25)	4363.	4592.								
(26)	3784.	4241.								
(27)	4211.	4275.								
(28)	4277.	4341.								
(29)	4166.	4400.								
(30)	4488.	4566.								

	(21)	(22)	(23)	(24)
(1)	5377.	5898.	6212.	6375.
(2)	5367.	6018.	6316.	6460.
(3)	6190.	6372.	6520.	6609.
(4)	6555.	6639.	6712.	6759.
(5)	6756.	6807.	6836.	6858.
(6)	6875.	6905.	6890.	6900.
(7)	6964.	7003.	6814.	6864.
(8)	7087.	7407.	6232.	6704.
(9)	7147.	7200.	6890.	6915.
(10)	7239.	7275.	7174.	7086.
(11)	7341.	7387.	7374.	
(12)	7422.	7471.	7485.	
(13)	7464.	7499.	7515.	
(14)	7472.	7502.		
(15)	7468.	7499.		
(16)	7466.	7498.		
(17)	7473.	7503.		
(18)	7488.	7510.		
(19)	7497.	7500.		
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(19)	6938.	7289.	8314.	9847.	0.1167E+05	0.1042E+05	6606.	6578.	6216.
(20)	6687.	6746.	8098.	0.1024E+05	0.1567E+05	0.1105E+05	5856.	6385.	6000.
(21)	6468.	6728.	7572.	8560.	9938.	8929.	6542.	6576.	6249.
(22)	5919.	6092.	6911.	7285.	7484.	7480.	6405.	6619.	6256.
(23)	4881.	3711.	5836.	6279.	5860.	6576.	4210.	6230.	6000.
(24)	4674.	4590.	5451.	5920.	6009.	6467.	6987.	6850.	6481.
(25)							7639.	7159.	6886.
(26)							7039.	7069.	6968.
(27)							7297.	7139.	7253.
(28)							6905.	7088.	7476.
(29)							6110.	7110.	7833.
(30)							7519.	7595.	7587.
							8728.	8064.	7446.
							0.1106E+05	8457.	7206.
							8593.	7725.	6758.
							6820.	6544.	5835.
							4148.	5098.	4942.
							4617.	4862.	4835.

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								5055.	4717.	4311.
(2)								5031.	4436.	2754.
(3)								5276.	5167.	4977.
(4)									5549.	5432.
(5)									5642.	5009.
(6)									6010.	5921.
(7)			5177.	4995.	5219.	5292.	5289.	5851.	6045.	5923.
(8)			5044.	4380.	5129.	5166.	4443.	5746.	5912.	5000.
(9)			5299.	5180.	5455.	5610.	5639.	6134.	6332.	6241.
(10)			5358.	5226.	5593.	5801.	5798.	6316.	6593.	6689.
(11)			5252.	4503.	5520.	5700.	4833.	6254.	6724.	6894.
(12)			5556.	5363.	5809.	6060.	6055.	6560.	6872.	7034.
(13)	5747.	5812.	5627.	5241.	5841.	6126.	6094.	6615.	6944.	7122.
(14)	4845.	5654.	5591.	4490.	5804.	5971.	4985.	6433.	6941.	7155.
(15)	5849.	5990.	5881.	5516.	6090.	6371.	6319.	6740.	6999.	7132.
(16)	5889.	6143.	6152.	5957.	6355.	6603.	6606.	6843.	6961.	6919.
(17)	4841.	6091.	6327.	5553.	6495.	6796.	6306.	6803.	6847.	6124.
(18)	6230.	6752.	7047.	7067.	7386.	7357.	6925.	7019.	7113.	7068.
(19)	6835.	7426.	8049.	9229.	9092.	7879.	6837.	7026.	7289.	7465.
(20)	6649.	7934.	0.1063E+05	0.1338E+05	0.1178E+05	8347.	4845.	6638.	7331.	7644.
(21)	7570.	8119.	8853.	0.1034E+05	9422.	7917.	6762.	7143.	7569.	7810.
(22)	8232.	8176.	8032.	7719.	7857.	7563.	6971.	7350.	7685.	
(23)	0.1068E+05	8312.	7416.	5509.	7039.	6989.	5492.	7123.	7660.	
(24)	7687.	7341.	7221.	6779.	7232.	7193.	6901.	7428.	7722.	
(25)	6801.	6599.								
(26)	5600.	5909.								
(27)	5728.	5531.								
(28)	5131.	5058.								
(29)	3992.	4591.								
(30)	4588.	4702.								

	(21)	(22)	(23)	(24)
(1)	5120.	5771.	6122.	6307.
(2)	4939.	5823.	6198.	6395.
(3)	5583.	6076.	6355.	6506.
(4)	5885.	6239.	6461.	6572.
(5)	5951.	6332.	6507.	6590.
(6)	6215.	6407.	6484.	6550.
(7)	6243.	6374.	6232.	6393.
(8)	6103.	6205.	5235.	6066.
(9)	6497.	6540.	6270.	6373.
(10)	6786.	6819.	6712.	6618.
(11)	6978.	7029.	7010.	
(12)	7121.	7193.	7206.	
(13)	7223.	7287.	7291.	
(14)	7278.	7348.		
(15)	7280.	7384.		
(16)	7189.	7382.		
(17)	7023.	7387.		
(18)	7397.	7593.		
(19)	7645.	7628.		
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(13)							5564.	5434.	5158.	4819.
(14)							5521.	5382.	5124.	4713.
(15)							5460.	5286.	5058.	4796.
(16)							5422.	5031.	4986.	4821.
(17)							5418.	3996.	4969.	4895.
(18)							6728.	6084.	5774.	5444.
(19)	6091.	6475.	7388.	8912.	0.1025E+05	8255.	7199.	6426.	6108.	5804.
(20)	5957.	6341.	7210.	9817.	0.1558E+05	8949.	7271.	6300.	6145.	5953.
(21)	5671.	6080.	6696.	7291.	8447.	7340.	6823.	6308.	6174.	6090.
(22)	5052.	5365.	5826.	6032.	6127.	6309.	6246.	6086.	6098.	6197.
(23)	4221.	3657.	5166.	5360.	5173.	5691.	5886.	5664.	5996.	6346.
(24)	4199.	4091.	5024.	5270.	5357.	5658.	6143.	6273.	5999.	5628.
(25)							7248.	7880.	6062.	5366.
(26)							8408.	0.1099E+05	6845.	5220.
(27)							6376.	7040.	5507.	5048.
(28)							5122.	4957.	4768.	4805.
(29)							4263.	3702.	3912.	4010.
(30)							3837.	3735.	3895.	4098.

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								4160.	3950.	3589.
(2)								4167.	3815.	2618.
(3)								4262.	4356.	5024.
(4)									4523.	4612.
(5)									4536.	4378.
(6)									4586.	4557.
(7)			4458.	4386.	4425.	4419.	4361.	4497.	4512.	4435.
(8)			4413.	4205.	4396.	4357.	4112.	4420.	4399.	4058.
(9)			4571.	4465.	4473.	4443.	4388.	4532.	4586.	4587.
(10)			4650.	4507.	4485.	4414.	4348.	4543.	4709.	4852.
(11)			4569.	4219.	4448.	4330.	3950.	4535.	4827.	5050.
(12)			4535.	4475.	4558.	4539.	4501.	4773.	5050.	5268.
(13)	4541.	4503.	4440.	4362.	4550.	4667.	4700.	5009.	5268.	5439.
(14)	4208.	4427.	4349.	3945.	4506.	4699.	4335.	5159.	5445.	5589.
(15)	4567.	4594.	4560.	4518.	4799.	5091.	5240.	5512.	5663.	5747.
(16)	4586.	4743.	4807.	4829.	5146.	5445.	5619.	5769.	5842.	5852.
(17)	4164.	4910.	5114.	4868.	5430.	5807.	5743.	5916.	5957.	5714.
(18)	5261.	5449.	5602.	5738.	6104.	6201.	6015.	6074.	6157.	6162.
(19)	5667.	5789.	5964.	6624.	6892.	6410.	5884.	6029.	6237.	6343.
(20)	5695.	5965.	6341.	7804.	7396.	6429.	4452.	5632.	6143.	6342.
(21)	6069.	6126.	6260.	6738.	6768.	6163.	5604.	5789.	6065.	6281.
(22)	6483.	6209.	6050.	5859.	5964.	5878.	5618.	5723.	5866.	
(23)	0.1070E+05	6218.	5677.	4838.	5450.	5508.	4932.	5455.	5661.	
(24)	5518.	5295.	5435.	5247.	5422.	5462.	5346.	5491.	5592.	
(25)	5036.	4957.								
(26)	4529.	4691.								
(27)	4706.	4579.								
(28)	4541.	4019.								
(29)	3858.	4176.								
(30)	4206.	4219.								

	(21)	(22)	(23)	(24)
(1)	4025.	4232.	4368.	4446.
(2)	3901.	4279.	4431.	4505.
(3)	4488.	4512.	4574.	4618.
(4)	4626.	4680.	4726.	4759.
(5)	4653.	4796.	4870.	4930.
(6)	4720.	4895.	5002.	5088.
(7)	4717.	5086.	5160.	5250.
(8)	4691.	5980.	5096.	5383.
(9)	4864.	5258.	5363.	5516.
(10)	5045.	5268.	5423.	5538.
(11)	5223.	5378.	5485.	
(12)	5414.	5521.	5581.	
(13)	5552.	5623.	5635.	
(14)	5680.	5733.		
(15)	5817.	5857.		
(16)	5935.	5977.		
(17)	6025.	6089.		
(18)	6225.	6216.		
(19)	6339.	6274.		
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(13)							6110.	5811.	5336.	4892.
(14)							5994.	5568.	5211.	4735.
(15)							5886.	5512.	5085.	4747.
(16)							5810.	5230.	4907.	4668.
(17)							5620.	4035.	4763.	4610.
(18)							7092.	6065.	5466.	5065.
(19)	7254.	7795.	9228.	0.1038E+05	0.1119E+05	9766.	7997.	6604.	5974.	5530.
(20)	6914.	7019.	8994.	0.1062E+05	0.1580E+05	0.1015E+05	8342.	6579.	6320.	5858.
(21)	6686.	7200.	8514.	9408.	0.1010E+05	9198.	8119.	6973.	6536.	6210.
(22)	5961.	6370.	7553.	8194.	8304.	8236.	7619.	6877.	6666.	6553.
(23)	4848.	3802.	6297.	6853.	6345.	7150.	7071.	6104.	6675.	6968.
(24)	4801.	4942.	5988.	6493.	6563.	6968.	7285.	7088.	6859.	6599.
(25)							7915.	7940.	6990.	6292.
(26)							8328.	0.1110E+05	7085.	5981.
(27)							7083.	7098.	6333.	5671.
(28)							5823.	5625.	5461.	5145.
(29)							4710.	4000.	4562.	4502.
(30)							4359.	4095.	4297.	4320.

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1)								4262.	4198.	3881.
(2)								4297.	4100.	2599.
(3)								4481.	4607.	5082.
(4)									4880.	4941.
(5)									4972.	4661.
(6)									5205.	5173.
(7)			4795.	4700.	4821.	4846.	4828.	5148.	5271.	5224.
(8)			4713.	4307.	4750.	4741.	4233.	5077.	5217.	4531.
(9)			4843.	4770.	4938.	5025.	5022.	5406.	5598.	5587.
(10)			4824.	4770.	5009.	5190.	5236.	5661.	5918.	6055.
(11)			4665.	4316.	4901.	5121.	4515.	5711.	6115.	6284.
(12)			4640.	4587.	4942.	5310.	5517.	5998.	6257.	6387.
(13)	4586.	4585.	4557.	4412.	4867.	5278.	5526.	6017.	6259.	6379.
(14)	4214.	4490.	4492.	4026.	4816.	5144.	4682.	5824.	6156.	6288.
(15)	4519.	4570.	4589.	4538.	4967.	5342.	5558.	5895.	6075.	6167.
(16)	4451.	4588.	4685.	4754.	5102.	5457.	5698.	5892.	5989.	6007.
(17)	4006.	4581.	4765.	4679.	5155.	5580.	5702.	5866.	5906.	5710.
(18)	4824.	4954.	5056.	5146.	5508.	5771.	5768.	5867.	5943.	5959.
(19)	5319.	5350.	5408.	5803.	6128.	5861.	5576.	5761.	5933.	6041.
(20)	5585.	5735.	6100.	7840.	6717.	5880.	4379.	5485.	5872.	6051.
(21)	6068.	6085.	6278.	6833.	6386.	5824.	5394.	5617.	5863.	6048.
(22)	6577.	6299.	6123.	5842.	5837.	5670.	5441.	5594.	5744.	
(23)	0.1076E+05	6441.	5826.	4901.	5476.	5433.	4944.	5414.	5613.	
(24)	6388.	6031.	5812.	5462.	5540.	5482.	5361.	5507.	5608.	
(25)	5789.	5682.								
(26)	5004.	5279.								
(27)	5142.	5088.								
(28)	4784.	4762.								
(29)	3890.	4311.								
(30)	4204.	4249.								

	(21)	(22)	(23)	(24)
(1)	4249.	4666.	4940.	5090.
(2)	4194.	4759.	5035.	5175.
(3)	4871.	5062.	5227.	5329.
(4)	5100.	5286.	5418.	5496.
(5)	5184.	5441.	5564.	5630.
(6)	5410.	5587.	5664.	5721.
(7)	5521.	5721.	5670.	5774.
(8)	5533.	6052.	5210.	5750.
(9)	5923.	6158.	5982.	6053.
(10)	6215.	6344.	6315.	6262.
(11)	6390.	6486.	6512.	
(12)	6468.	6546.	6594.	
(13)	6455.	6517.	6583.	
(14)	6370.	6424.		
(15)	6256.	6318.		
(16)	6130.	6218.		
(17)	6015.	6147.		
(18)	6086.	6160.		
(19)	6130.	6141.		
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