

Virden Roselea Unit #3
2015 Annual EOR Report

Executive Summary

In 2015 oil production in the Virden Roselea Unit #3 (VRU #3) was 41.7 m³/d (262 bbl/d) totaling 15.2 e³m³ (95.8 mbbbl). Annual production was up 38% from 2014 to 2015. By the end of 2015 cumulative oil production from the VRU #3 was 2 625 e³m³ (16.5 mmbbl). The original forecasted recovery was 1 290 e³m³ (8.1 mmbbl) on primary recovery and 2 837 e³m³ (17.9 mmbbl) total primary plus secondary recovery.

In December 2015 there were 50 producing oil wells and 20 water injectors active in the unit. In 2015, one well in the Scallion formation was drilled in the unit as well as some recompletions in the Virden formation.

Discussion

The VRU #3 has been under waterflood since 1967, 12 years after first production from the pool in 1954. Water injection increased the oil production rate from $\sim 100 \text{ m}^3/\text{d}$ ($\sim 629 \text{ bbl/d}$) to $\sim 225 \text{ m}^3/\text{d}$ ($1,415 \text{ bbl/d}$); however, lower than peak production from the field of $450 \text{ m}^3/\text{d}$ ($2,830 \text{ bbl/d}$). Expected ultimate oil recovery was doubled by the waterflood. As of yet, the waterflood forecast has not been exceeded as in other units.

Prior to 2013, there had been only one development well drilled in VRU #3 in the last nine years, a horizontal well drilled in 2008. In 2002 and 2003, nine horizontal wells were drilled in the unit with mixed results. In 2014, two Scallion and three Virden horizontal wells were drilled in the unit. In 2015, an additional Scallion well was drilled.

There have been no new wells converted to injection since 1974. Currently, potential conversions are under technical review to improve the sweep efficiency in the unit. In the Northeast segment of the unit different tracers were placed into the injectors and the produced water was monitored from the producing wells. The results showed that the reservoir is very complex with notable fracturing. A clear fracture trend can be seen in the NW-SE orientation, with water from distant injectors traveling to some wells and completely bypassing others. Therefore, there is an undisputable high permeability channel that is preferential to flow in some areas of the unit. This gives us the understanding that the waterflood is more complex than envisioned and the patterns that have been drawn in all of the units will rarely be correct. The intricacy of the reservoir and ultimately the waterflood behavior cannot be fully understood. With natural fractures the low recovery of the unit and poor sweep efficiency is understandable. An increase in the injector to producer ratio will likely be effective and change the well-established streamlines. This unit also has the lowest cum VRR of any of the units at 0.80, and increasing the amount of injection as well as balancing the flood would be beneficial. The water injection rate was $926 \text{ m}^3/\text{d}$ ($5,827 \text{ bbl/d}$) in 2015 (Note: An error in geoScout production data for the month of May shows no injection in any of the wells for the entirety of the month, as such, the injection volume for the year was divided by 11 months), down significantly from last year and the producing WOR was $22 \text{ m}^3/\text{m}^3$. The injected water at VRU #3 is not filtered or treated in any way.

Significant events in 2015 are as follows:

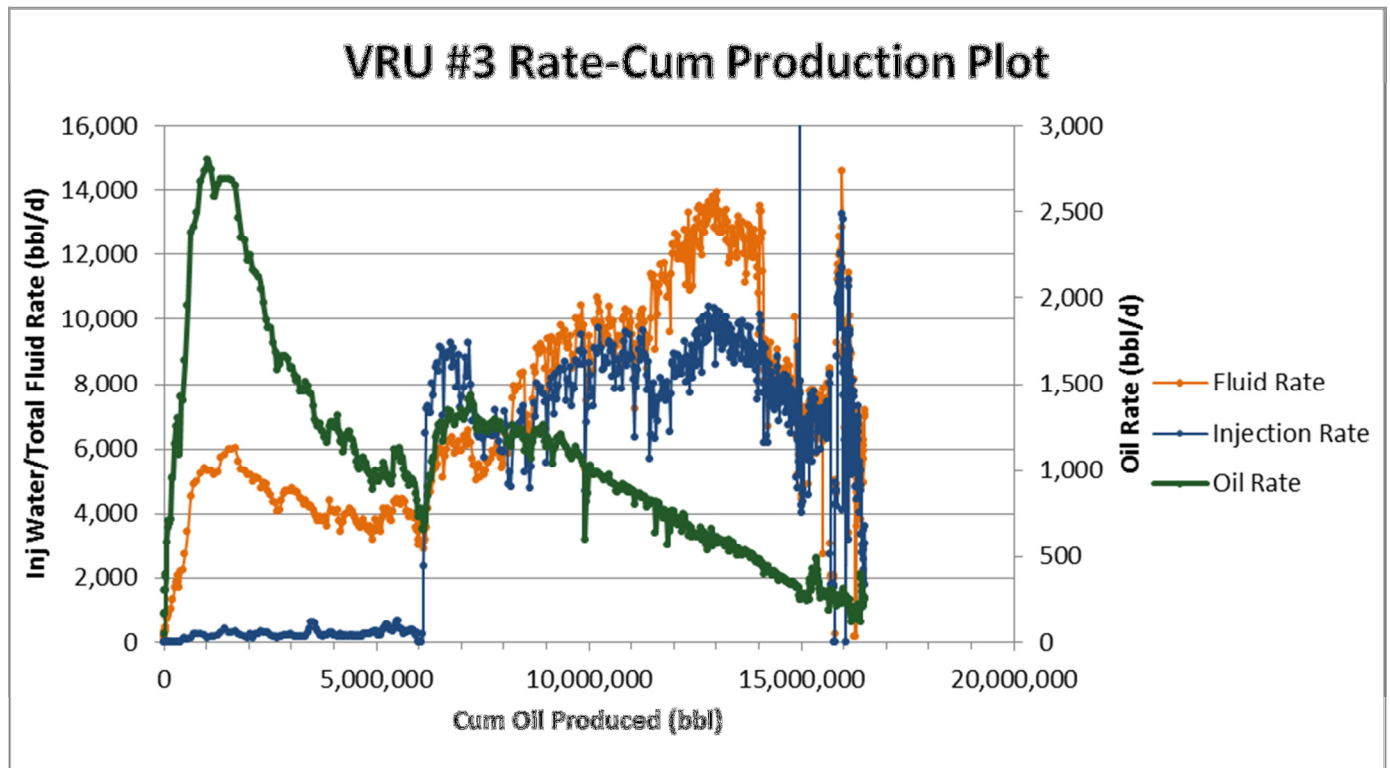
- February 2015, drill 102/05-12-010-26W1/00 horizontal in the Scallion formation.
- August 2015, recomplete 100/06-18-010-25W1/00 in the Virden formation.
- August 2015, recomplete 100/10-11-010-26W1/00 in the Virden formation.
- December 2015, recomplete 100/04-11-010-26W1/00 in the Virden formation.

- December 2015, recomplete 100/13-12-010-26W1/00 in the Virden formation.

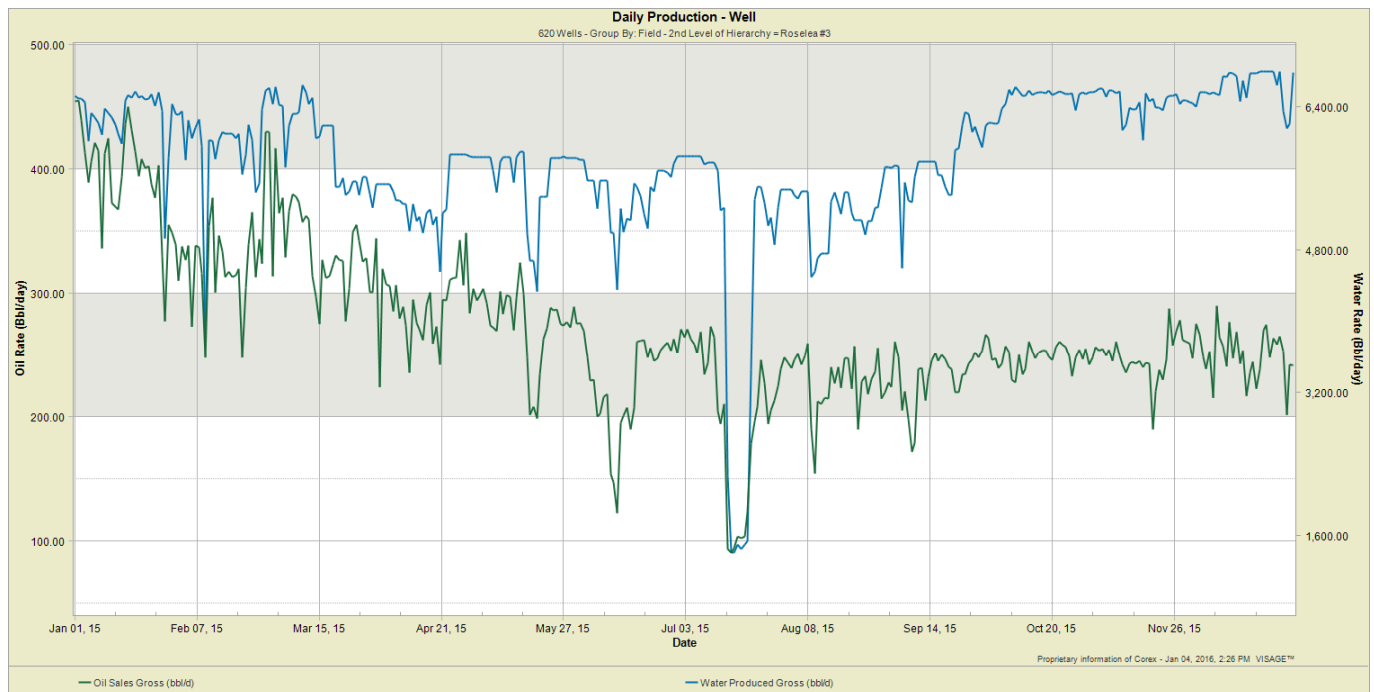
In the composite rate – cumulative oil plot below, waterflood response is clearly demonstrated at a cumulative oil production of $1000 \text{ e}^3\text{m}^3$ (6.3 MMbbl) after a pattern waterflood was initiated.

Detailed production, injection, voidage tables and plots for the total unit and each injection pattern are at the end of this report.

VRU #3 – Rate vs Cum Oil Production



VRU #3 – Rate vs Time



2015 Reservoir Pressure Surveys

Unit	UWI	License	Test Type	Date of Pressure	Duration of SI (days)	Datum BHP (kPaa)
VRU #3	100/10-11-010-26W1/00	1230	AWS BU	9/11/2015	11	6,450
VRU #3	102/05-12-010-26W1/00	10238	BH BU	2/20/2015	8	6,193

In 2015, two pressure surveys were conducted within the unit, pressures close to normally pressured. In 2014, six pressure surveys were conducted giving an average pool pressure of 7 200 kPaa. Prior pressure surveys have shown that wide variations in pressure exist across the pool. Average pressure is estimated to be between 6 500 – 8 500 kPaa based on pressures taken in 2011 and 2012, indicating that the reservoir is over pressured, based on the current survey (few data points) the reservoir appears more normally pressured.

It is important to note that the pressure reported for 102/05-12-010-26W1/00 is from a newly drilled Scallion horizontal prior to production.

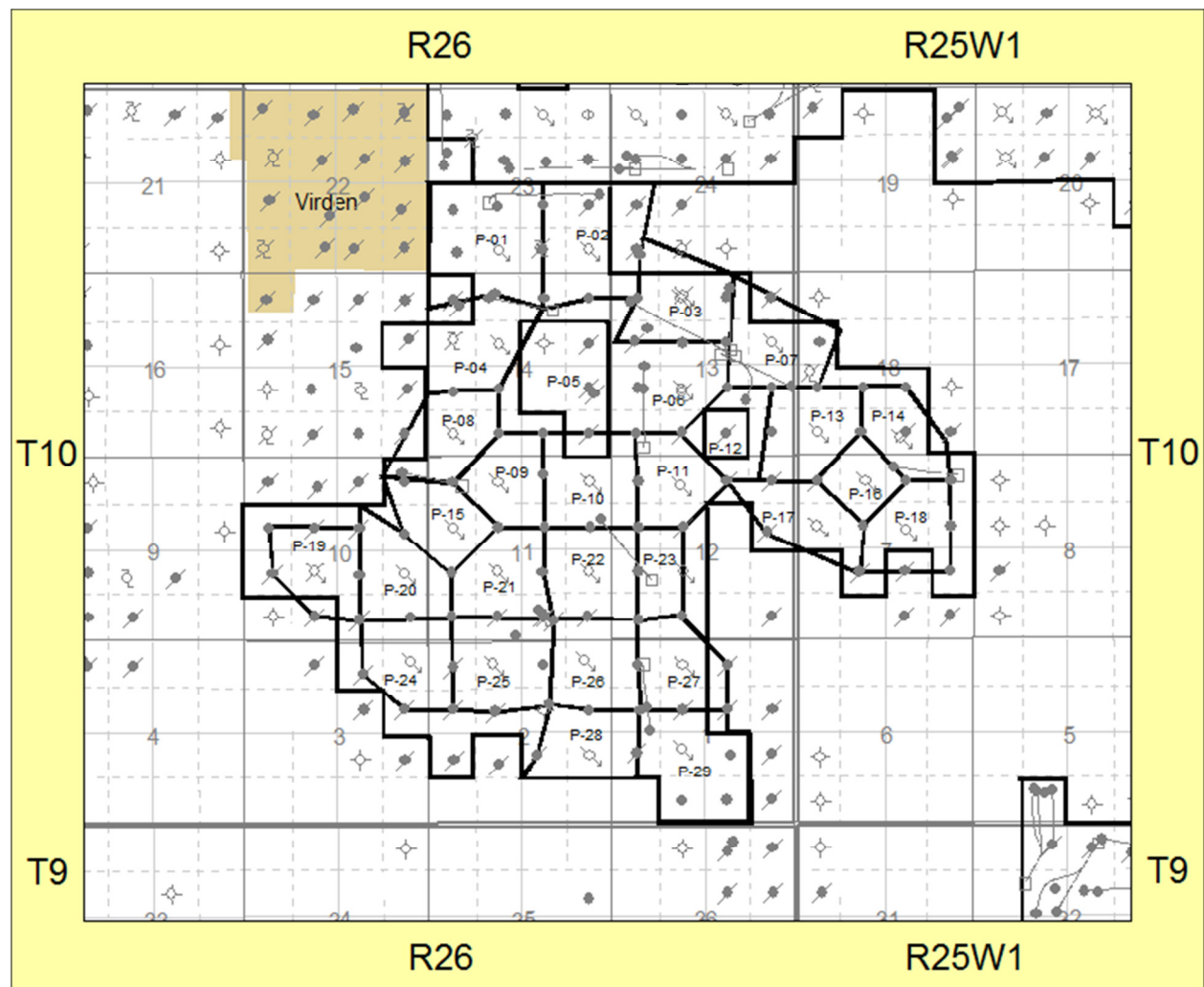
The voidage replacement ratio (VRR) in 2015 hovered around 1.00. At the end of the year the VRR was 1.13. The cumulative VRR at year end was 0.8 (Note: Due to the error in geoScout data for the month of May the actual Cum VRR may differ slightly). The high reservoir pressure is inconsistent with the cumulative VRR less than 1.0.

There is partial pressure support for the field from an aquifer on the west side of the unit and the water influx from the aquifer is not accounted for in the VRR calculation. An oil formation volume factor of $1.06 \text{ rm}^3/\text{sm}^3$ and a water formation volume factor of $1.04 \text{ rm}^3/\text{sm}^3$ were used in the VRR calculations.

2015 Well Servicing

UWI	Licence	Unit	Operation	Date	Objective
100/02-23-010-26W1/00	000739	VRU#3	In Line Inspection	22-JUL-15	
100/04-11-010-26W1/00	001275	VRU#3	Workover	03-DEC-15	
100/04-14-010-26W1/00	001039	VRU#3	Equipment Pressure Integrity Test	01-MAY-15	
100/06-11-010-26W1/00	001198	VRU#3	Equipment Pressure Integrity Test	01-MAY-15	
100/06-12-010-26W1/00	001292	VRU#3	Equipment Pressure Integrity Test	01-MAY-15	
100/06-18-010-25W1/00	001172	VRU#3	Recompletion	24-AUG-15	
100/08-11-010-26W1/00	001204	VRU#3	Equipment Pressure Integrity Test	01-MAY-15	
100/10-11-010-26W1/00	001230	VRU#3	Recompletion	30-AUG-15	
100/11-14-010-26W1/00	000892	VRU#3	Equipment Pressure Integrity Test	10-JUN-15	
100/12-11-010-26W1/00	001237	VRU#3	Equipment Pressure Integrity Test	20-MAY-15	
100/12-11-010-26W1/00	001237	VRU#3	Pressure Build-up/Survey	04-DEC-15	
100/13-12-010-26W1/00	001197	VRU#3	Workover	08-DEC-15	
100/13-13-010-26W1/00	000748	VRU#3	Rod Repair	05-FEB-15	
100/14-01-010-26W1/00	001224	VRU#3	Equipment Pressure Integrity Test	01-MAY-15	
100/14-02-010-26W1/00	001188	VRU#3	Equipment Pressure Integrity Test	01-MAY-15	
100/14-07-010-25W1/00	001037	VRU#3	Pressure Build-up/Survey	04-DEC-15	
100/14-11-010-26W1/00	001202	VRU#3	Equipment Pressure Integrity Test	01-MAY-15	
100/14-13-010-26W1/00	000669	VRU#3	Equipment Pressure Integrity Test	10-JUN-15	
100/14-14-010-26W1/00	000944	VRU#3	In Line Inspection	22-JUL-15	
100/16-02-010-26W1/00	001111	VRU#3	Equipment Pressure Integrity Test	20-MAY-15	
100/16-03-010-26W1/00	001370	VRU#3	Equipment Pressure Integrity Test	20-MAY-15	
100/16-11-010-26W1/00	001211	VRU#3	Equipment Pressure Integrity Test	20-MAY-15	
102/04-12-010-26W1/00	10204	VRU#3	Rod Repair	24-FEB-15	
102/05-12-010-26W1/00	10238	VRU#3	Equip & Tie-In	25-FEB-15	
102/05-12-010-26W1/00	10238	VRU#3	Initial Completion	20-FEB-15	SCALLION COMPLETION
102/05-12-010-26W1/00	10238	VRU#3	Drilling - original	07-FEB-15	
102/05-12-010-26W1/00	10238	VRU#3	Construction	30-JAN-15	
102/07-11-010-26W1/00	9931	VRU#3	Equip & Tie-In	13-JAN-15	
102/11-02-010-26W1/00	10052	VRU#3	Workover	02-DEC-15	
103/05-18-010-25W1/00	10124	VRU#3	Pump Repair	16-JUN-15	
HEADER INSTALL	P15-VIR-02	VRU#3	Satellite	29-OCT-15	

Waterflood Pattern Map

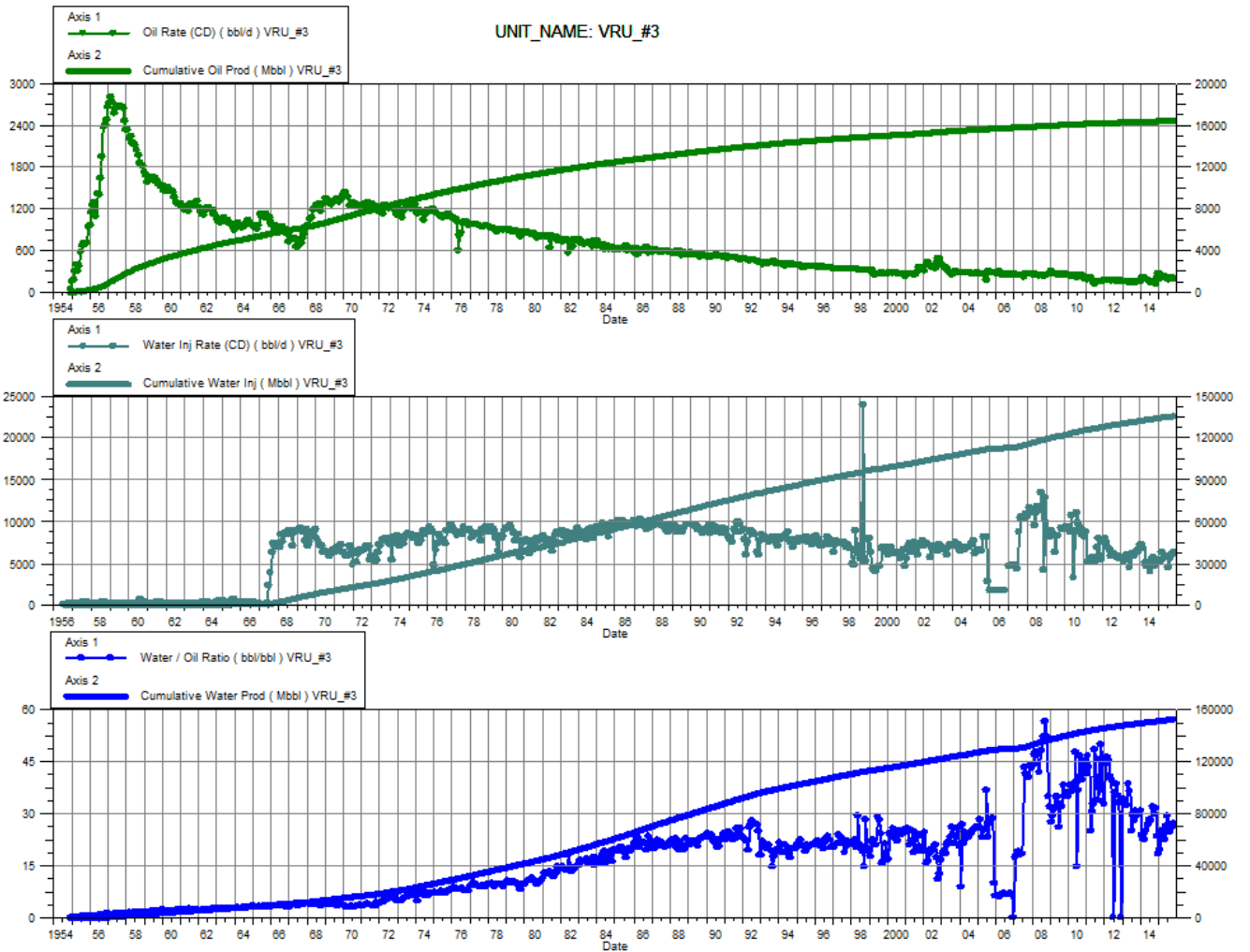


Waterflood Pattern Table

Pattern	Well
P-01	100/03-23-010-26W1/00
P-02	100/01-23-010-26W1/00
P-03	100/14-13-010-26W1/00
P-03	102/14-13-010-26W1/00
P-04	100/11-14-010-26W1/00
P-06	100/06-13-010-26W1/00
P-07	100/09-13-010-26W1/00
P-08	100/04-14-010-26W1/00
P-09	100/14-11-010-26W1/00
P-10	100/16-11-010-26W1/00
P-11	100/14-12-010-26W1/00
P-13	100/04-18-010-25W1/00
P-14	102/02-18-010-25W1/00
P-15	100/12-11-010-26W1/00
P-16	100/14-07-010-25W1/00
P-17	100/12-07-010-25W1/00
P-18	100/10-07-010-25W1/00
P-19	100/06-10-010-26W1/00
P-20	100/08-10-010-26W1/00
P-21	100/06-11-010-26W1/00
P-22	100/08-11-010-26W1/00
P-23	100/06-12-010-26W1/00
P-24	100/16-03-010-26W1/00
P-25	100/14-02-010-26W1/00
P-26	100/16-02-010-26W1/00
P-27	100/14-01-010-26W1/00
P-28	100/08-02-010-26W1/00
P-29	100/06-01-010-26W1/00

Total for VRU #3

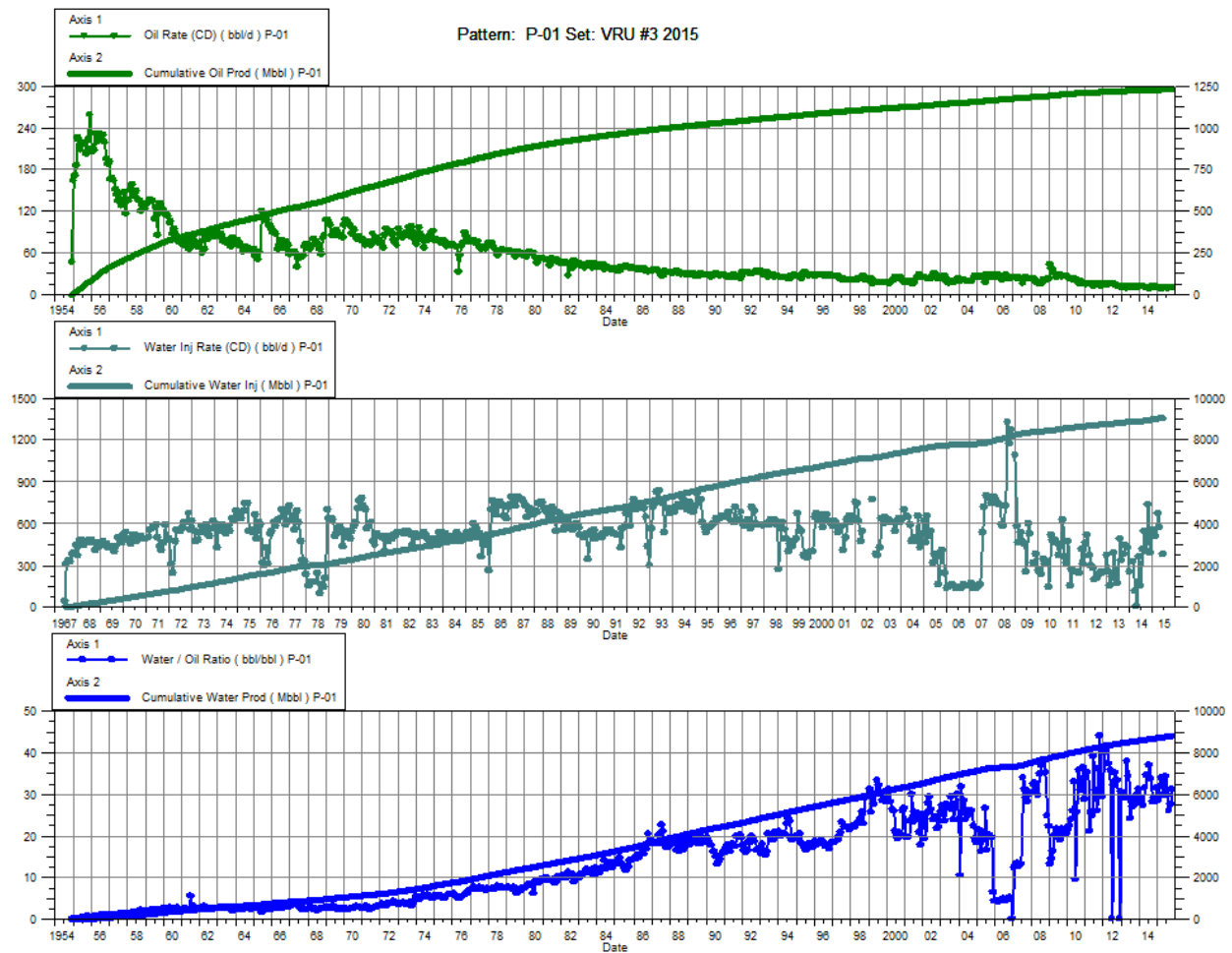
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	42.3	2608.07	818.3	24059.66	858.03	21366.8	19.34	1.00	0.80	3,555
2/28/2015	31.0	2608.94	767.4	24081.15	824.79	21389.9	24.79	1.03	0.80	3,224
3/31/2015	36.9	2610.09	876.9	24108.33	994.09	21420.7	23.75	1.09	0.80	2,868
4/30/2015	37.0	2611.20	832.2	24133.30	886.57	21447.3	22.47	1.02	0.80	2,924
5/31/2015	35.3	2612.29	933.4	24162.24		21447.3	26.43		0.80	3,085
6/30/2015	30.8	2613.22	903.1	24189.33	943.63	21475.6	29.36	1.01	0.80	3,135
7/31/2015	29.2	2614.12	739.6	24212.26	724.16	21498.1	25.34	0.94	0.80	3,580
8/31/2015	34.3	2615.18	847.3	24238.52	890.61	21525.7	24.73	1.01	0.80	3,556
9/30/2015	32.9	2616.17	857.6	24264.25	954.93	21554.3	26.08	1.07	0.80	3,530
10/31/2015	32.6	2617.18	883.4	24291.64	1015.61	21585.8	27.11	1.11	0.80	3,528
11/30/2015	30.8	2618.10	865.2	24317.60	1001.87	21615.9	28.13	1.12	0.80	3,652
12/31/2015	30.5	2619.05	943.9	24346.86	1104.61	21650.1	30.98	1.13	0.80	3,862



VRU #3

Pattern P-01 – 00/03-23-010-26W1/0

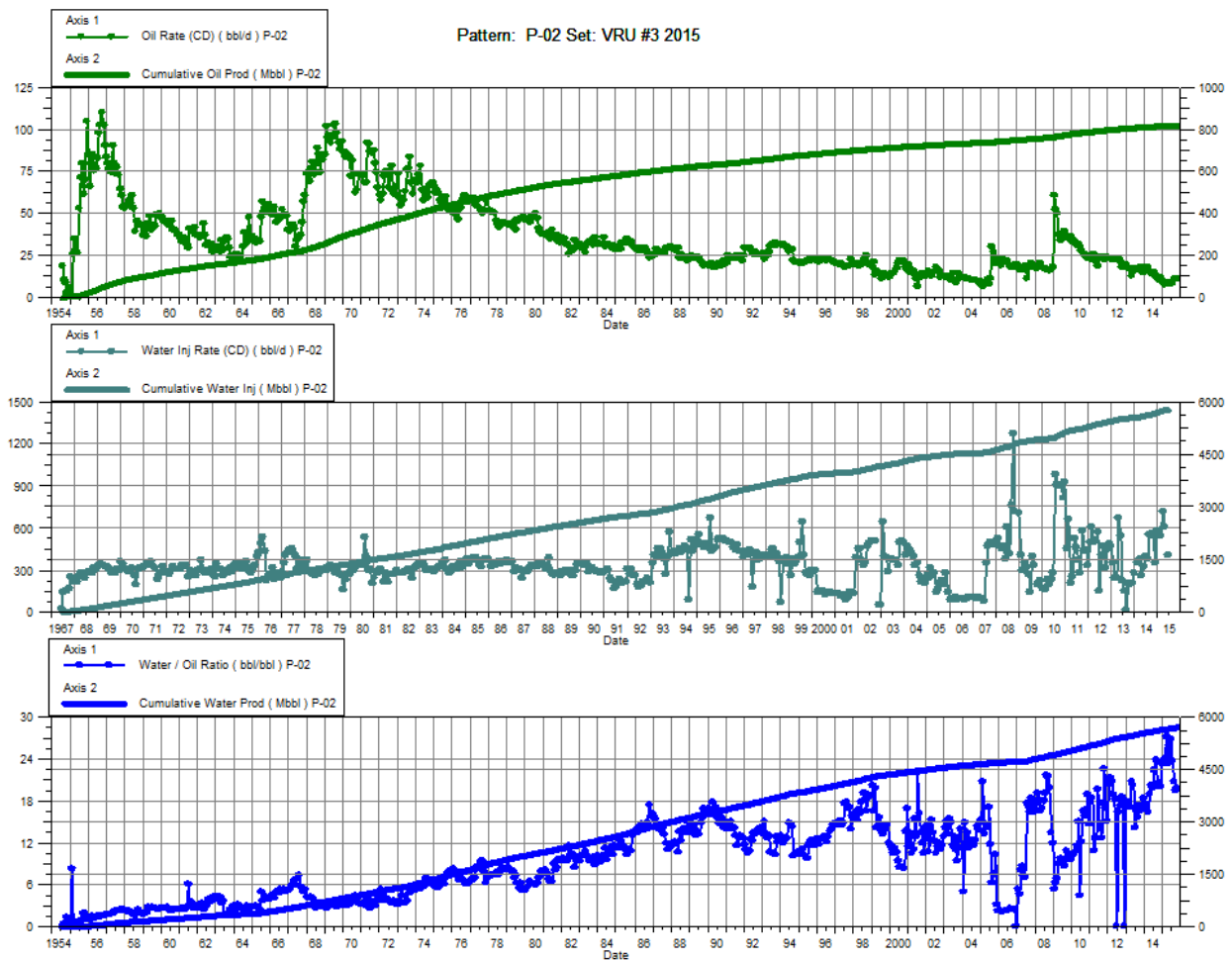
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	1.7	195.49	47.7	1386.42	84.32	1433.0	28.48	1.71	0.90	2,981
2/28/2015	1.5	195.53	47.7	1387.76	80.83	1435.3	31.64	1.64	0.90	2,414
3/31/2015	1.5	195.58	51.1	1389.34	107.01	1438.6	33.91	2.03	0.91	2,771
4/30/2015	1.8	195.63	52.3	1390.91	90.32	1441.3	29.74	1.67	0.91	1,913
5/31/2015	1.7	195.69	56.0	1392.65		1441.3	32.91		0.91	2,121
6/30/2015	1.6	195.73	55.1	1394.30	59.83	1443.1	34.13	1.05	0.91	2,678
7/31/2015	1.4	195.78	42.7	1395.62		1443.1	29.54		0.91	600
8/31/2015	1.5	195.83	38.8	1396.83		1443.1	25.90		0.90	600
9/30/2015	1.6	195.88	45.0	1398.18		1443.1	27.46		0.90	600
10/31/2015	1.6	195.92	48.3	1399.67		1443.1	31.13		0.90	600
11/30/2015	1.5	195.97	47.8	1401.11		1443.1	31.71		0.90	600
12/31/2015	1.5	196.01	50.7	1402.68		1443.1	34.83		0.90	600



VRU #3

Pattern P-02 – 00/01-23-010-26W1/0

Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	1.5	129.61	34.1	897.39	91.63	908.5	23.27	2.57	0.88	2,890
2/28/2015	1.2	129.64	29.6	898.22	86.18	910.9	23.98	2.80	0.88	2,607
3/31/2015	1.3	129.68	34.6	899.29	114.79	914.5	27.10	3.20	0.89	2,768
4/30/2015	1.5	129.73	34.0	900.31	96.01	917.4	23.27	2.70	0.89	1,887
5/31/2015	1.4	129.77	35.7	901.42		917.4	25.93		0.89	3,100
6/30/2015	1.3	129.81	35.5	902.48	64.80	919.3	26.73	1.76	0.89	2,997
7/31/2015	1.3	129.85	29.7	903.40		919.3	23.72		0.89	-
8/31/2015	1.6	129.90	33.9	904.45		919.3	20.76		0.89	-
9/30/2015	1.8	129.95	34.4	905.48		919.3	19.50		0.89	-
10/31/2015	1.7	130.01	34.3	906.55		919.3	19.81		0.89	-
11/30/2015	2.2	130.07	34.8	907.59		919.3	15.56		0.88	-
12/31/2015	2.2	130.14	36.8	908.73	195.76	925.4	17.08	5.02	0.89	3,345

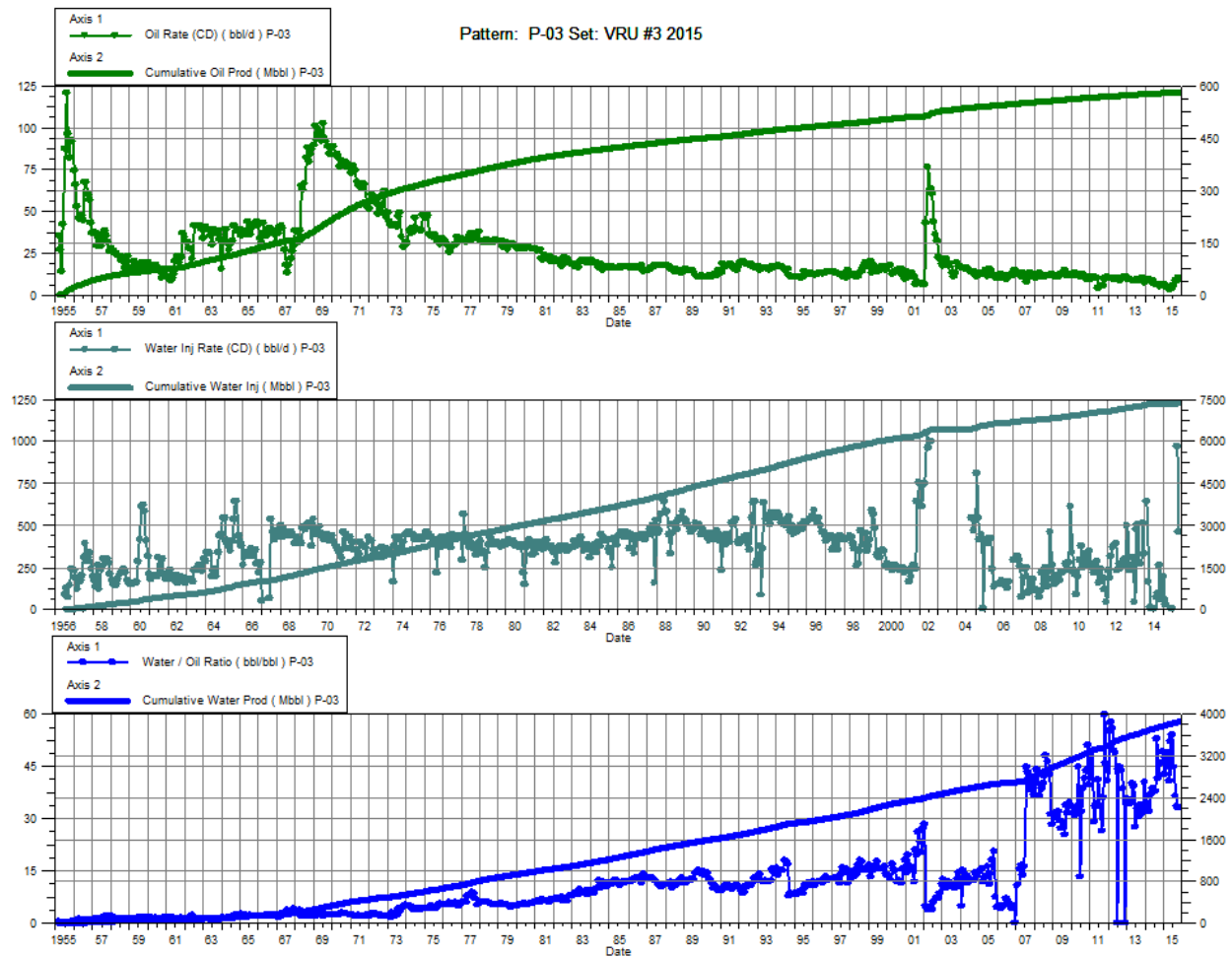


VRU #3

Pattern P-03 – 00/14-13-010-26W1/0

P-03 – 02/14-13-010-26W1/0

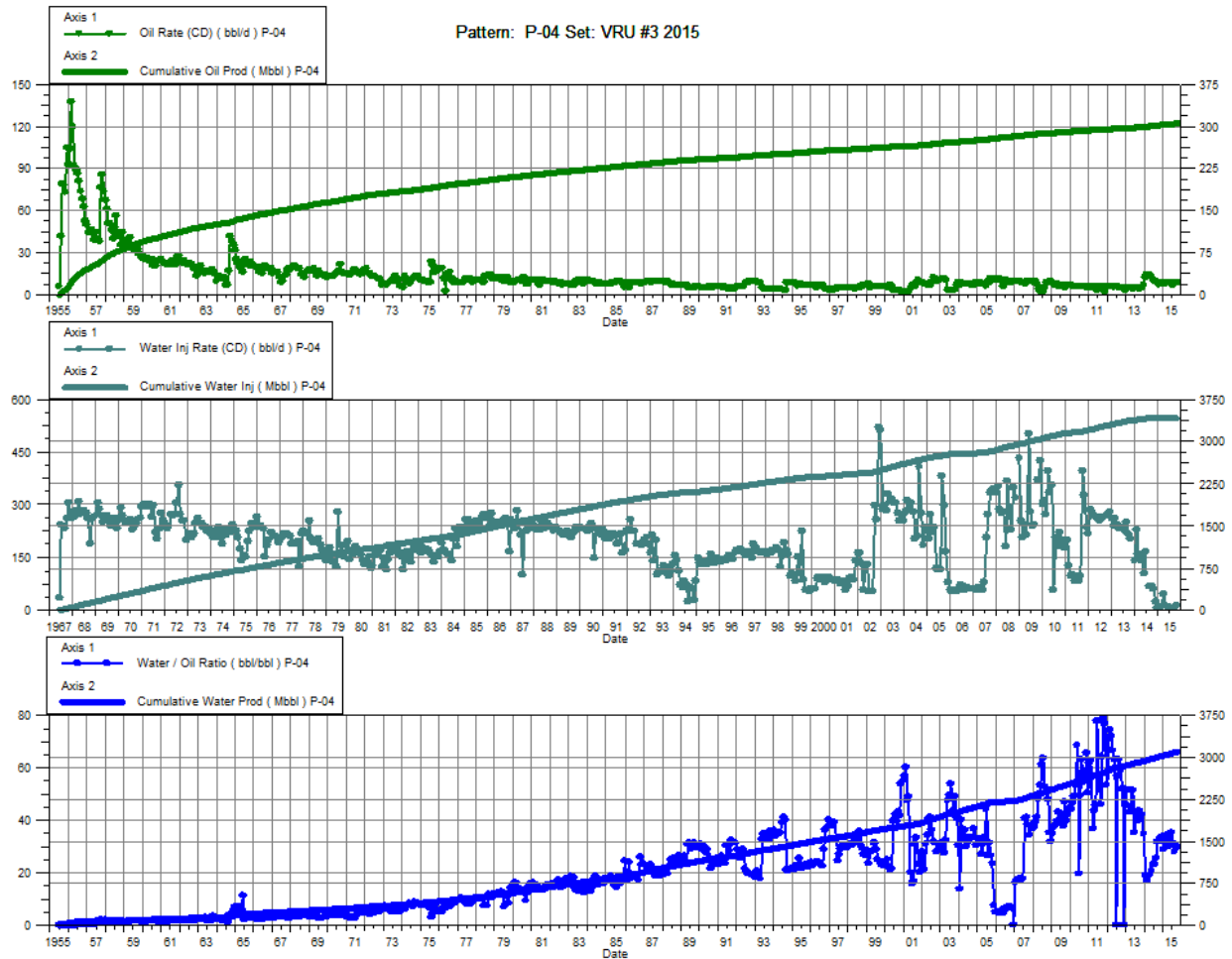
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	1.1	92.21	46.5	601.60	8.84	1169.1	42.50	0.19	1.68	2,974
2/28/2015	0.9	92.24	40.8	602.74	3.56	1169.2	47.14	0.09	1.68	2,207
3/31/2015	0.8	92.26	39.1	603.95		1169.2	48.61		1.68	2,384
4/30/2015	0.6	92.28	23.9	604.67		1169.2	40.65		1.67	1,933
5/31/2015	0.7	92.30	33.7	605.71		1169.2	52.17		1.67	2,400
6/30/2015	0.6	92.32	34.6	606.75	0.08	1169.2	54.02	0.00	1.67	2,320
7/31/2015	1.0	92.35	43.1	608.08		1169.2	44.87		1.67	-
8/31/2015	1.4	92.39	50.7	609.66		1169.2	36.43		1.66	-
9/30/2015	1.4	92.43	47.9	611.09	154.82	1173.9	33.36	3.13	1.66	100
10/31/2015	1.7	92.49	55.6	612.82	72.94	1176.1	33.14	1.27	1.66	3,010
11/30/2015	1.6	92.54	55.3	614.48	25.78	1176.9	33.84	0.45	1.66	3,313
12/31/2015	1.6	92.58	58.6	616.29	16.06	1177.4	37.20	0.27	1.66	3,690



VRU #3

Pattern P-04 – 00/11-14-010-26W1/0

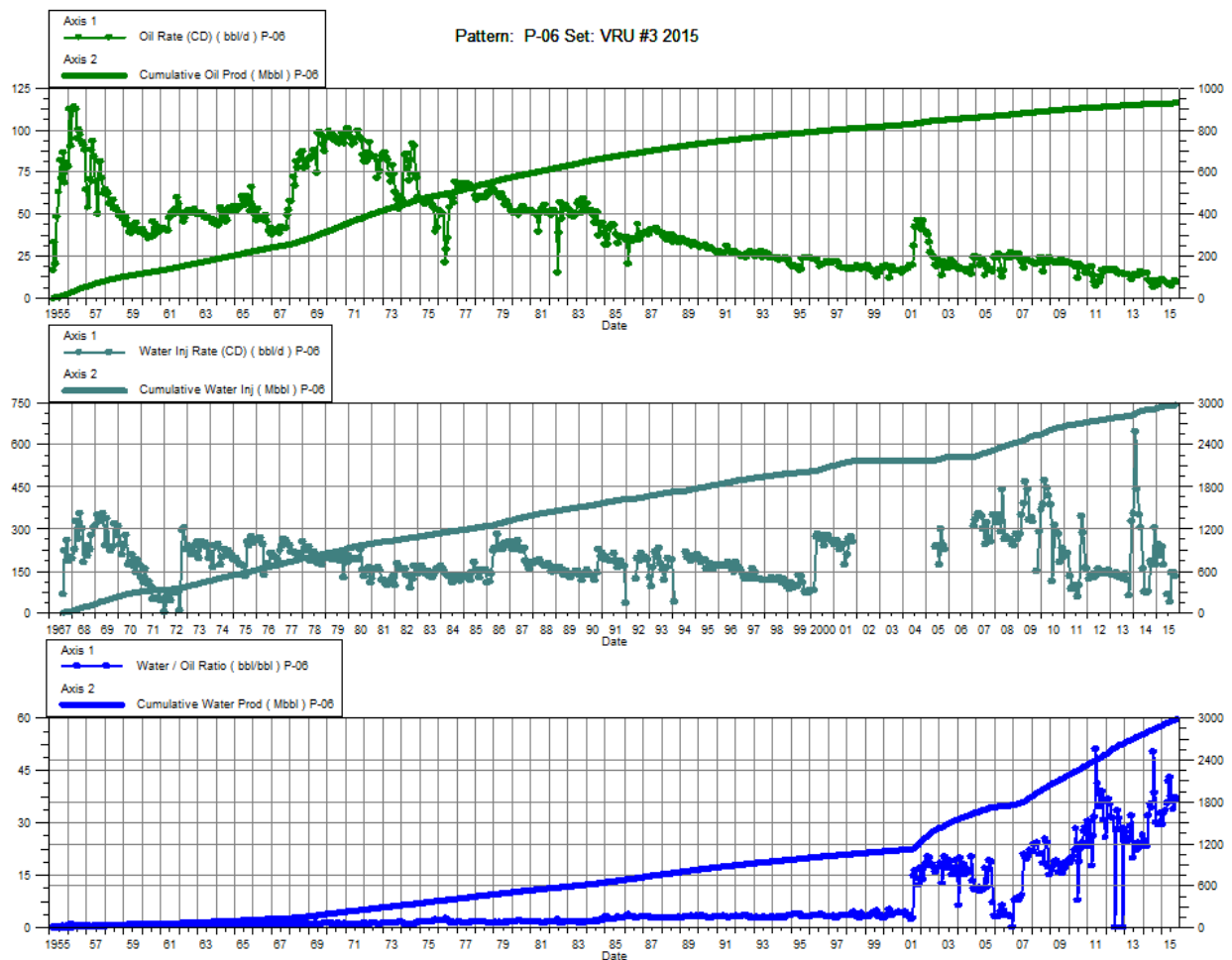
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	1.4	48.21	39.4	482.21	1.43	543.5	28.72	0.04	1.02	3,400
2/28/2015	1.3	48.25	39.7	483.32	1.66	543.6	31.58	0.04	1.02	3,400
3/31/2015	1.3	48.29	42.6	484.64	7.37	543.8	34.12	0.17	1.02	3,400
4/30/2015	1.4	48.33	42.9	485.92	2.12	543.9	29.98	0.05	1.02	3,387
5/31/2015	1.4	48.38	47.7	487.40		543.9	33.10		1.01	2,990
6/30/2015	1.3	48.41	44.2	488.73	1.38	543.9	35.25	0.03	1.01	2,719
7/31/2015	1.1	48.45	35.3	489.82		543.9	31.11		1.01	4,000
8/31/2015	1.3	48.49	37.5	490.99		543.9	27.97		1.01	4,000
9/30/2015	1.4	48.53	41.0	492.22	1.25	544.0	29.34	0.03	1.00	4,000
10/31/2015	1.4	48.57	40.0	493.46	1.71	544.0	29.76	0.04	1.00	4,000
11/30/2015	1.3	48.61	39.3	494.63	8.76	544.3	30.40	0.22	1.00	4,000
12/31/2015	1.3	48.65	42.0	495.94	0.36	544.3	33.24	0.01	1.00	4,000



VRU #3

Pattern P-06 – 00/06-13-010-26W1/0

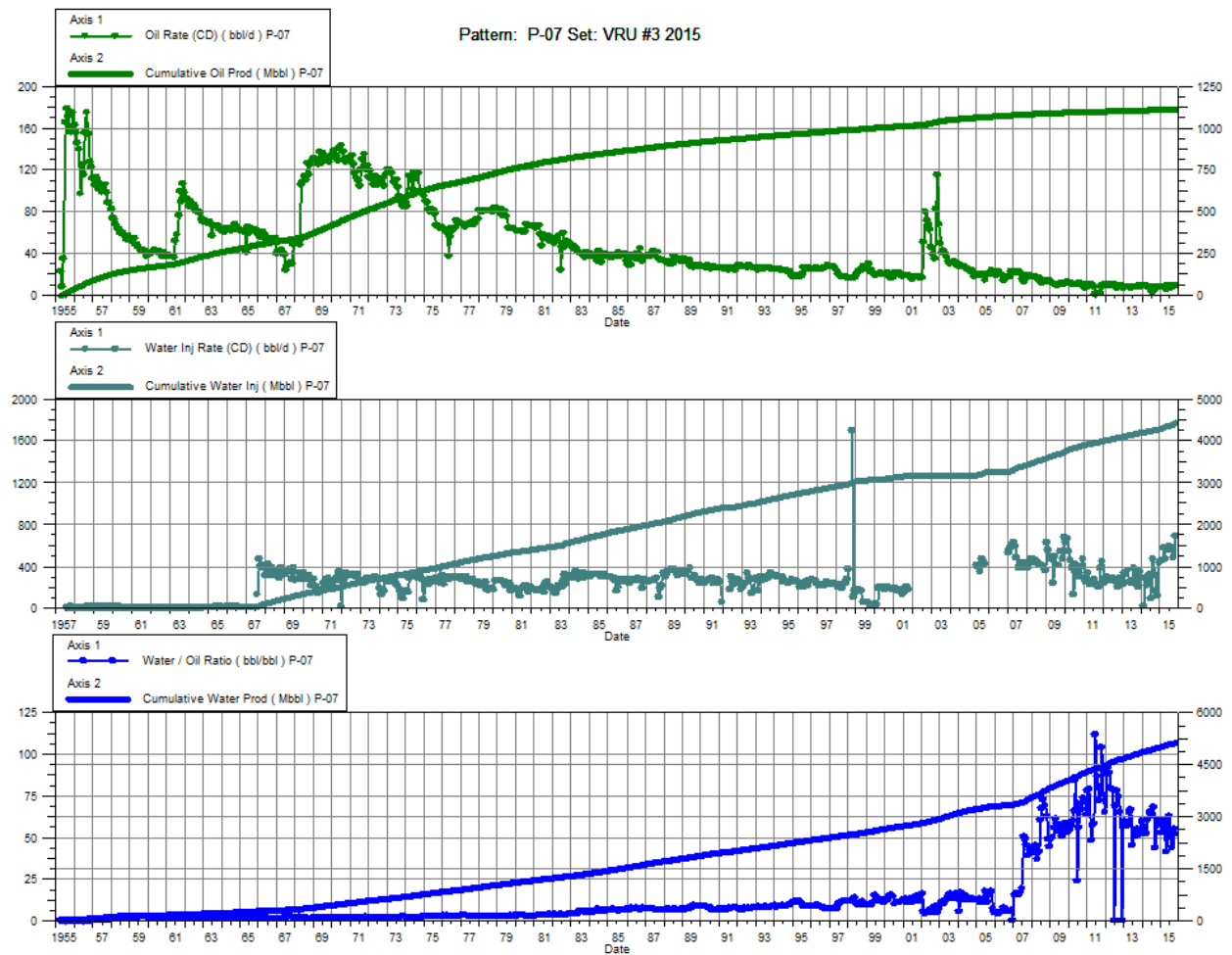
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	1.8	147.47	53.6	460.38	38.85	466.1	29.44	0.70	0.76	3,400
2/28/2015	1.6	147.52	53.8	461.89	31.96	466.9	32.81	0.58	0.76	3,400
3/31/2015	1.5	147.56	50.8	463.46	37.60	468.1	33.44	0.72	0.76	3,400
4/30/2015	1.5	147.61	52.1	465.02	27.26	468.9	35.64	0.51	0.76	3,403
5/31/2015	1.4	147.65	56.4	466.77		468.9	41.66		0.76	3,503
6/30/2015	1.3	147.69	54.4	468.40	10.71	469.3	43.04	0.19	0.76	3,603
7/31/2015	1.1	147.72	42.7	469.73	6.32	469.4	37.46	0.14	0.76	3,692
8/31/2015	1.4	147.77	48.5	471.23	22.55	470.1	33.82	0.45	0.76	3,861
9/30/2015	1.6	147.82	58.2	472.98	23.13	470.8	36.24	0.39	0.76	4,177
10/31/2015	1.6	147.87	58.8	474.80	20.43	471.5	37.15	0.34	0.75	3,848
11/30/2015	1.5	147.91	58.2	476.54	48.57	472.9	37.74	0.81	0.75	3,858
12/31/2015	1.9	147.97	62.8	478.49	50.18	474.5	33.97	0.78	0.75	4,810



VRU #3

Pattern P-07 – 00/09-13-010-26W1/0

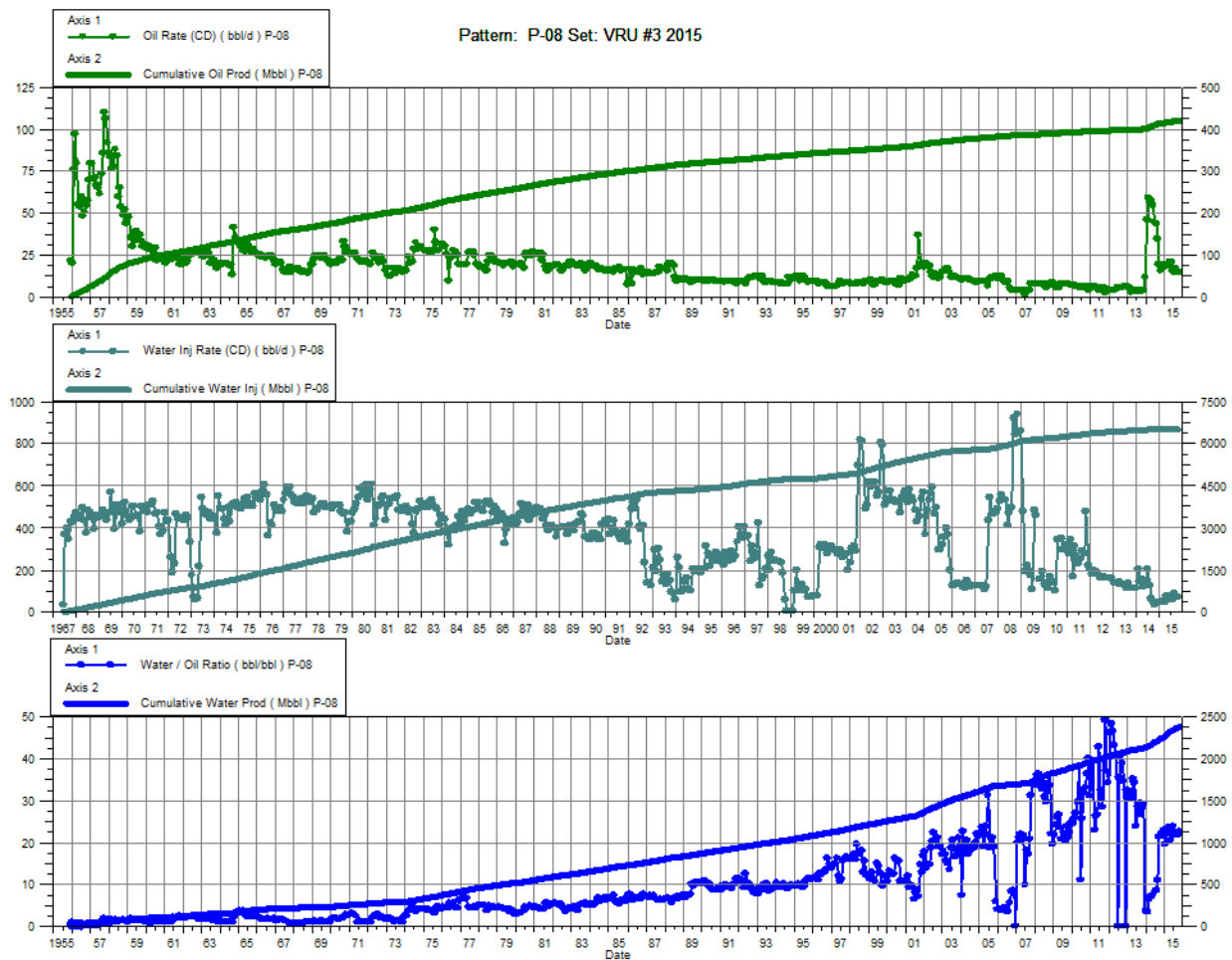
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	1.4	176.44	72.8	797.10	71.72	682.3	52.35	0.97	0.70	3,981
2/28/2015	1.2	176.48	71.4	799.10	73.39	684.3	58.46	1.01	0.70	3,379
3/31/2015	1.0	176.51	58.6	800.91	92.88	687.2	56.26	1.56	0.70	2,813
4/30/2015	0.9	176.54	38.7	802.08	75.37	689.5	41.07	1.90	0.70	3,240
5/31/2015	1.4	176.58	84.7	804.70		689.5	60.26		0.70	3,797
6/30/2015	1.4	176.62	85.4	807.26	93.57	692.3	62.53	1.08	0.70	3,713
7/31/2015	1.0	176.66	51.5	808.86	88.09	695.0	49.78	1.68	0.70	4,106
8/31/2015	1.1	176.69	49.1	810.38	92.01	697.9	43.52	1.83	0.71	4,303
9/30/2015	1.4	176.73	77.6	812.71	76.92	700.2	54.87	0.97	0.71	4,390
10/31/2015	1.6	176.78	81.6	815.24	110.29	703.6	51.77	1.33	0.71	4,094
11/30/2015	1.5	176.83	80.8	817.66	78.19	705.9	52.80	0.95	0.71	3,930
12/31/2015	1.5	176.87	85.6	820.32	92.54	708.8	57.90	1.06	0.71	4,794



VRU #3

Pattern P-08 – 00/04-14-010-26W1/0

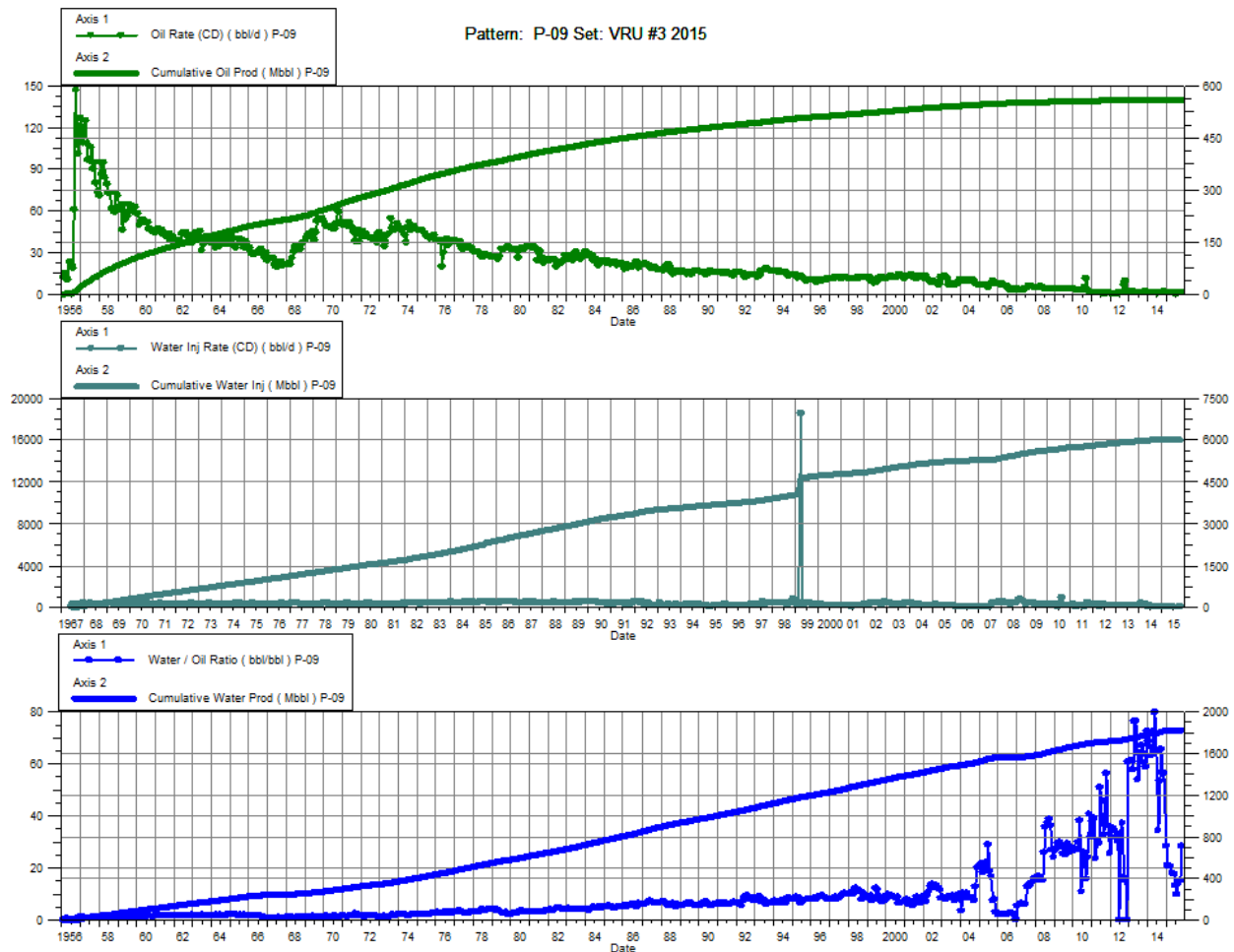
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	3.1	66.13	61.0	362.08	7.41	1035.1	19.52	0.12	2.41	3,700
2/28/2015	3.0	66.21	66.5	363.94	8.61	1035.3	21.87	0.12	2.40	3,614
3/31/2015	2.9	66.30	69.4	366.09	6.83	1035.5	23.60	0.09	2.39	1,355
4/30/2015	3.3	66.40	68.0	368.14	11.91	1035.9	20.53	0.17	2.38	3,007
5/31/2015	3.4	66.51	78.0	370.55		1035.9	22.83		2.36	3,197
6/30/2015	2.6	66.59	61.2	372.39	12.09	1036.2	23.83	0.19	2.35	3,127
7/31/2015	2.4	66.66	54.7	374.09	8.85	1036.5	22.66	0.16	2.35	3,905
8/31/2015	2.7	66.74	59.0	375.91	13.56	1036.9	21.76	0.22	2.34	3,903
9/30/2015	2.4	66.82	52.8	377.50	11.08	1037.3	21.62	0.20	2.33	2,580
10/31/2015	2.4	66.89	54.7	379.19	11.17	1037.6	22.65	0.20	2.32	3,709
11/30/2015	2.2	66.96	52.0	380.75	20.10	1038.2	23.22	0.37	2.31	3,802
12/31/2015	2.3	67.03	57.4	382.53	13.98	1038.7	25.33	0.23	2.30	4,150



VRU #3

Pattern P-09 – 00/14-11-010-26W1/0

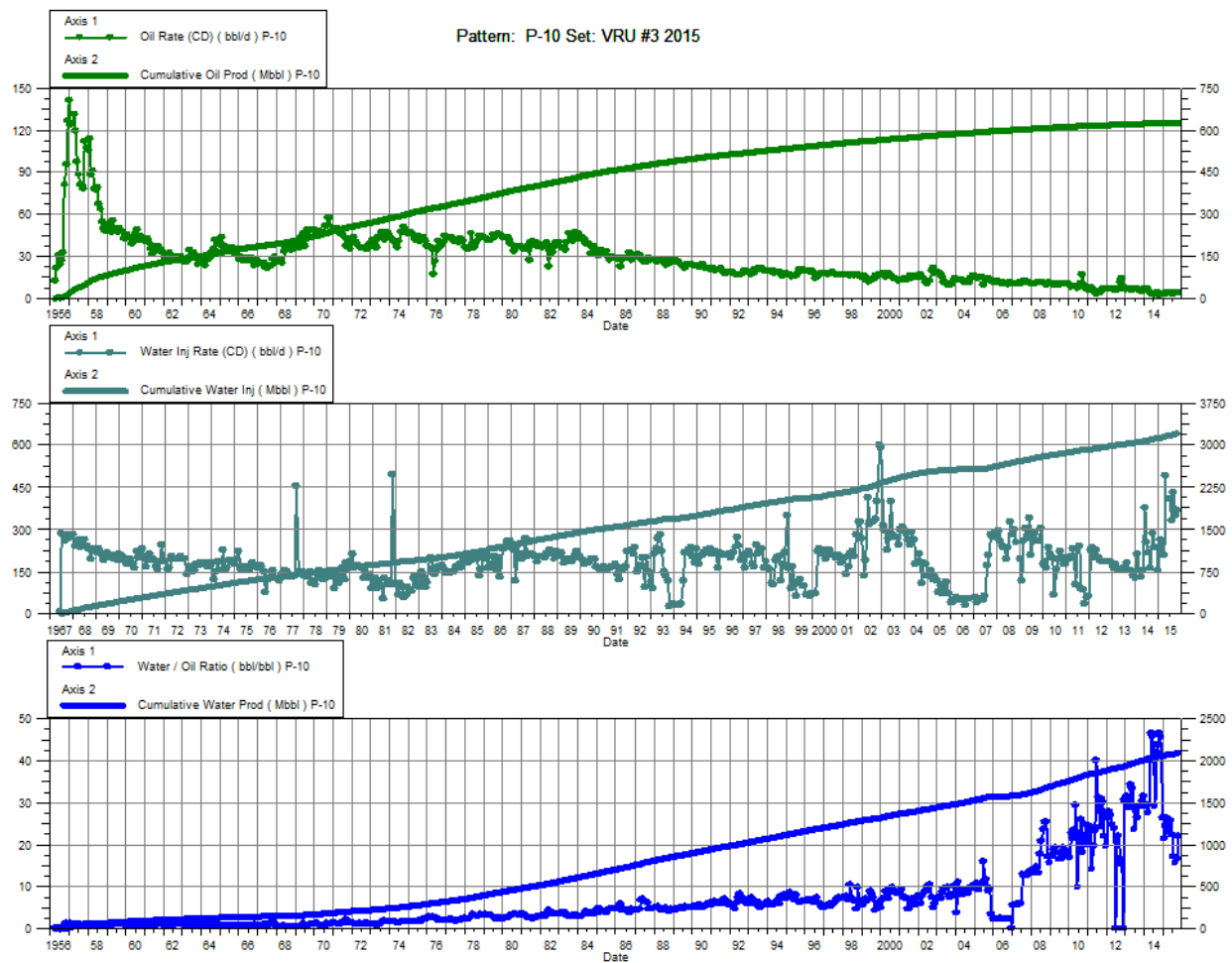
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.2	89.03	4.9	288.86	4.61	955.2	21.28	0.90	2.52	3,800
2/28/2015	0.2	89.04	5.0	289.00	3.32	955.3	20.66	0.63	2.52	3,779
3/31/2015	0.3	89.05	5.7	289.18	5.53	955.5	20.75	0.92	2.52	3,206
4/30/2015	0.3	89.06	5.7	289.35	4.43	955.6	17.99	0.74	2.51	3,393
5/31/2015	0.2	89.06	3.6	289.46		955.6	17.84		2.51	3,202
6/30/2015	0.2	89.07	2.1	289.52	6.35	955.8	13.19	2.75	2.51	3,277
7/31/2015	0.1	89.07	1.3	289.57		955.8	9.69		2.51	4,050
8/31/2015	0.3	89.08	3.6	289.68		955.8	13.63		2.51	4,050
9/30/2015	0.2	89.09	3.0	289.77	7.48	956.0	15.33	2.36	2.51	4,095
10/31/2015	0.3	89.10	8.0	290.01	6.65	956.3	28.48	0.81	2.51	4,737
11/30/2015	0.2	89.10	6.1	290.20	11.57	956.6	27.52	1.82	2.51	4,857
12/31/2015	0.5	89.12	7.4	290.43	7.17	956.8	16.44	0.92	2.51	5,050



VRU #3

Pattern P-10 – 00/16-11-010-26W1/0

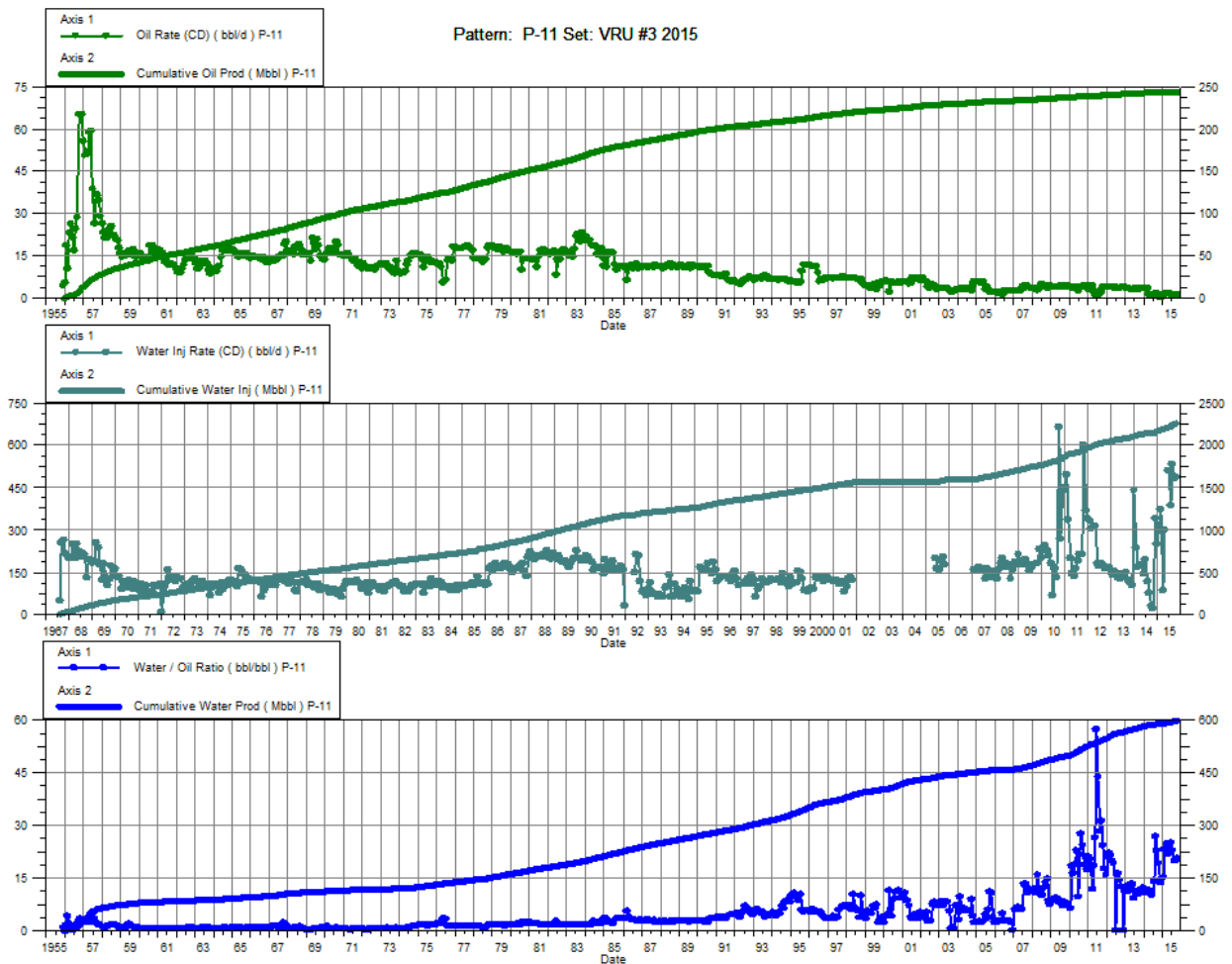
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.6	99.43	12.1	328.29	41.61	498.0	21.34	3.29	1.16	3,800
2/28/2015	0.6	99.44	14.0	328.68	38.54	499.1	24.32	2.65	1.16	3,782
3/31/2015	0.7	99.46	17.2	329.21	32.75	500.1	26.28	1.83	1.16	3,294
4/30/2015	0.8	99.49	17.3	329.73	78.15	502.5	23.02	4.32	1.17	3,110
5/31/2015	0.6	99.51	16.2	330.23		502.5	25.82		1.16	3,387
6/30/2015	0.5	99.52	12.1	330.59	64.96	504.4	22.41	5.16	1.17	3,037
7/31/2015	0.5	99.54	8.0	330.84	52.37	506.1	17.04	6.15	1.17	4,090
8/31/2015	0.8	99.56	11.8	331.21	68.89	508.2	15.75	5.51	1.18	4,000
9/30/2015	0.6	99.58	10.5	331.52	55.38	509.9	16.61	4.97	1.18	3,983
10/31/2015	0.7	99.60	15.5	332.00	58.20	511.7	21.89	3.60	1.18	3,793
11/30/2015	0.6	99.62	13.5	332.41	106.65	514.9	21.27	7.52	1.19	4,187
12/31/2015	1.0	99.65	15.4	332.89	77.70	517.3	15.51	4.73	1.19	4,100



VRU #3

Pattern P-11 – 00/14-12-010-26W1/0

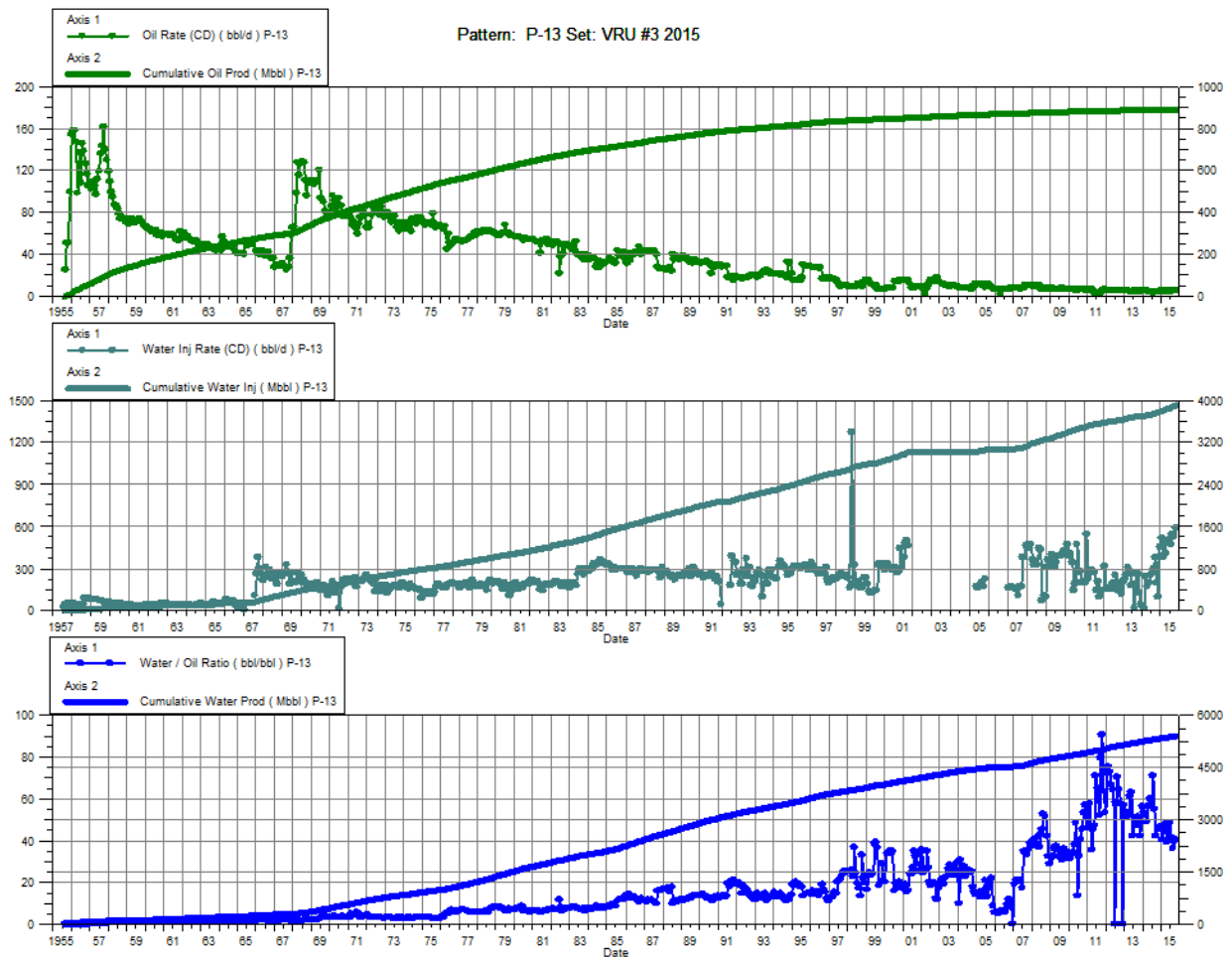
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.1	38.72	1.6	93.69	50.87	346.1	15.09	29.44	2.60	3,500
2/28/2015	0.2	38.72	5.3	93.84	59.07	347.7	22.96	10.61	2.61	3,493
3/31/2015	0.2	38.73	5.8	94.02	13.65	348.1	24.67	2.28	2.61	3,297
4/30/2015	0.3	38.74	5.9	94.20	47.64	349.6	21.80	7.78	2.62	3,200
5/31/2015	0.3	38.75	6.3	94.39		349.6	24.18		2.61	3,206
6/30/2015	0.2	38.75	4.8	94.54	80.87	352.0	24.78	16.28	2.63	3,400
7/31/2015	0.1	38.76	3.2	94.63	61.48	353.9	22.73	18.45	2.64	3,419
8/31/2015	0.2	38.76	3.6	94.75	84.74	356.5	19.68	22.27	2.66	3,613
9/30/2015	0.2	38.77	3.2	94.84	76.79	358.8	19.73	22.65	2.67	3,977
10/31/2015	0.2	38.77	3.3	94.95	77.66	361.2	20.38	22.28	2.69	3,625
11/30/2015	0.2	38.78	3.3	95.04	61.86	363.1	20.62	17.96	2.70	3,417
12/31/2015	0.3	38.79	3.7	95.16	78.71	365.5	12.32	19.73	2.71	4,200



VRU #3

Pattern P-13 – 00/04-18-010-26W1/0

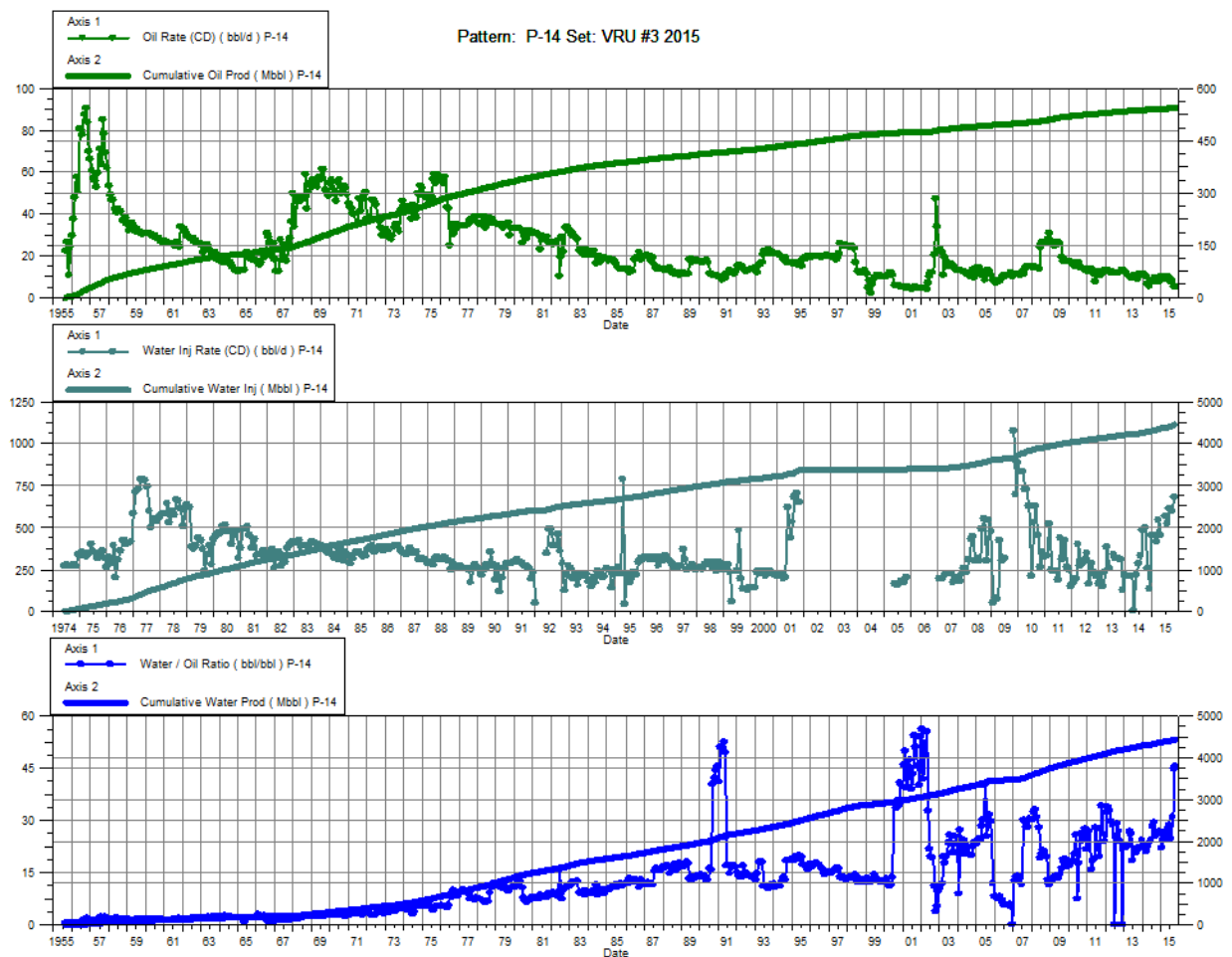
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.9	141.60	35.2	849.34	82.79	604.2	40.24	2.30	0.61	3,384
2/28/2015	0.8	141.62	34.7	850.31	60.67	605.9	45.32	1.71	0.61	2,911
3/31/2015	0.7	141.65	35.2	851.40	78.14	608.3	47.48	2.17	0.61	3,200
4/30/2015	0.8	141.67	31.1	852.33	65.31	610.3	39.07	2.05	0.61	3,207
5/31/2015	0.9	141.70	39.6	853.56		610.3	45.82		0.61	3,303
6/30/2015	0.9	141.72	40.8	854.79	81.33	612.7	48.13	1.95	0.61	3,410
7/31/2015	0.7	141.75	30.3	855.73	74.98	615.0	41.56	2.41	0.62	3,706
8/31/2015	0.9	141.77	33.4	856.76	87.14	617.7	35.79	2.54	0.62	3,903
9/30/2015	0.9	141.80	34.0	857.78	84.26	620.3	39.53	2.42	0.62	3,977
10/31/2015	0.8	141.83	33.1	858.80	93.91	623.2	40.15	2.77	0.62	3,303
11/30/2015	0.8	141.85	32.7	859.78	65.76	625.2	40.79	1.96	0.62	3,430
12/31/2015	0.8	141.87	34.6	860.86	100.64	628.3	44.82	2.84	0.63	4,290



VRU #3

Pattern P-14 – 02/02-18-010-26W1/0

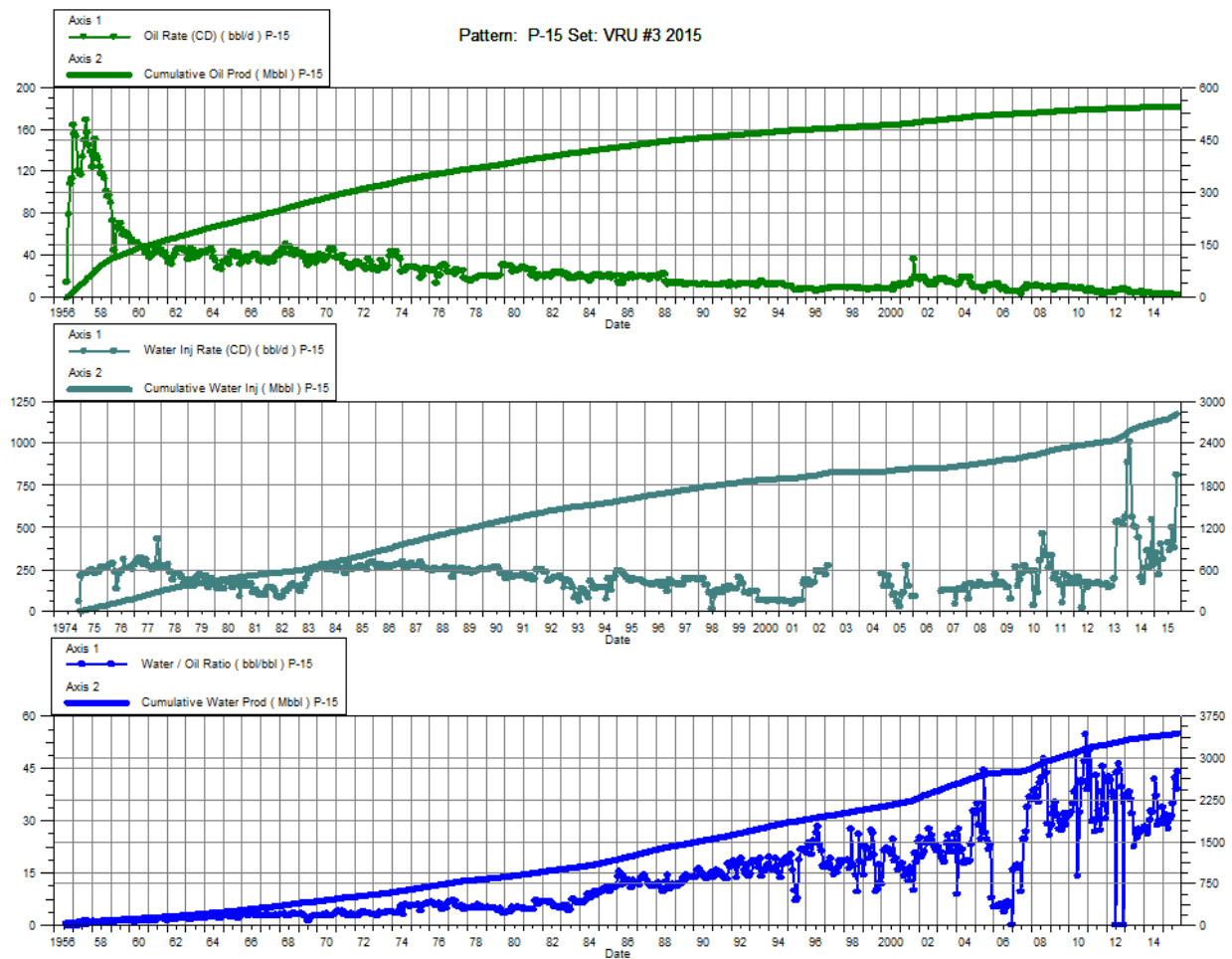
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	1.6	86.16	36.3	694.77	71.88	686.8	22.20	1.89	0.88	3,481
2/28/2015	1.4	86.20	34.3	695.72	66.02	688.7	24.09	1.85	0.88	2,896
3/31/2015	1.5	86.25	38.6	696.92	86.88	691.4	26.52	2.17	0.88	2,800
4/30/2015	1.6	86.29	40.1	698.13	72.13	693.6	24.94	1.73	0.88	2,800
5/31/2015	1.6	86.34	43.6	699.48		693.6	27.67		0.88	2,803
6/30/2015	1.5	86.39	42.5	700.75	90.81	696.3	28.67	2.06	0.88	2,910
7/31/2015	1.2	86.43	30.3	701.69	83.57	698.9	24.44	2.64	0.89	3,206
8/31/2015	1.3	86.47	40.8	702.96	97.68	701.9	30.74	2.32	0.89	3,403
9/30/2015	0.9	86.49	38.3	704.11	95.27	704.8	44.62	2.43	0.89	3,483
10/31/2015	0.8	86.52	37.2	705.26	108.03	708.1	45.38	2.84	0.89	3,019
11/30/2015	0.8	86.54	35.7	706.33	74.58	710.3	45.52	2.04	0.89	3,607
12/31/2015	0.8	86.57	39.0	707.54	16.34	710.8	50.82	0.41	0.89	3,797



VRU #3

Pattern P-15 – 00/12-11-010-26W1/0

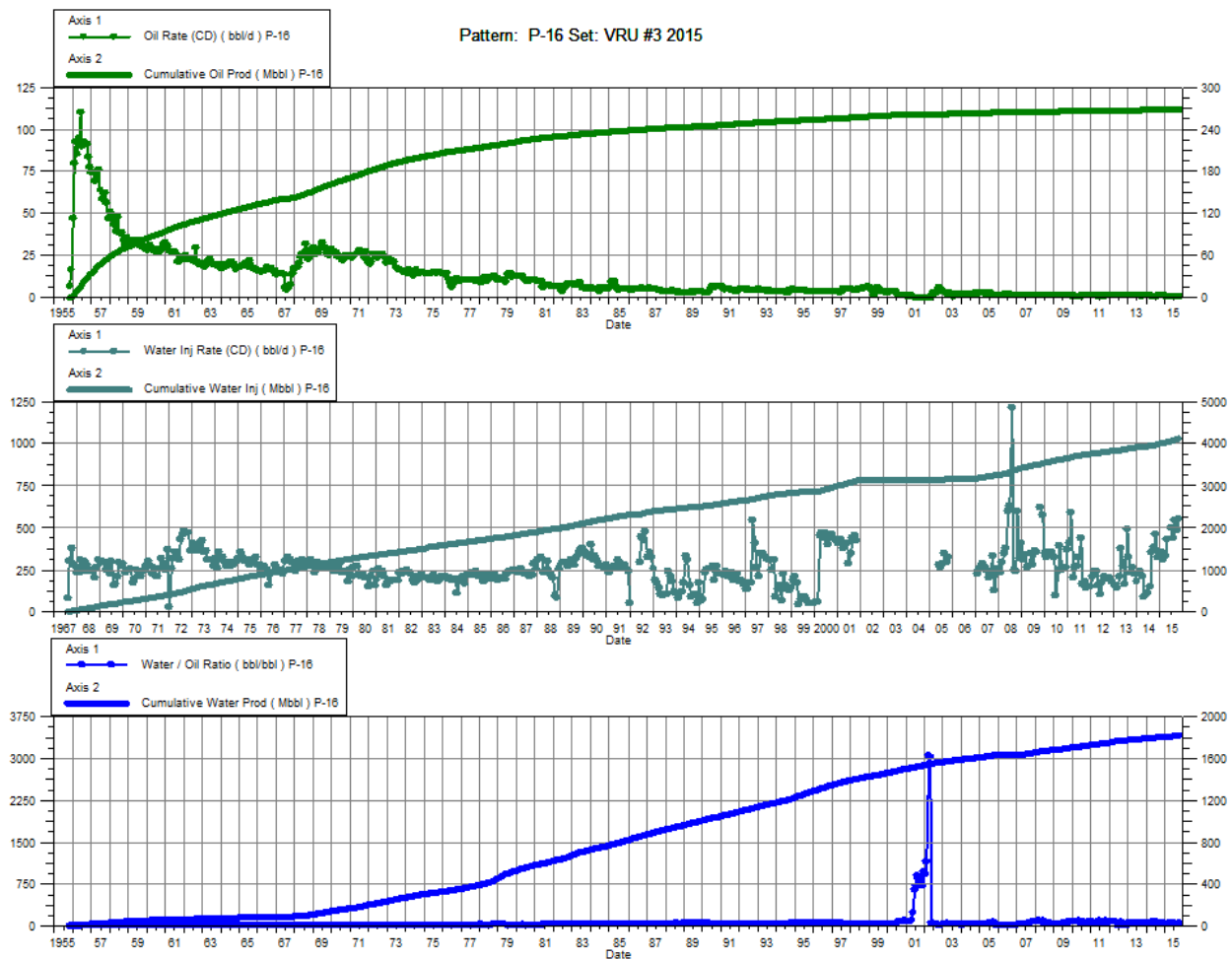
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.5	86.57	14.4	541.74	55.05	432.1	29.15	3.70	0.69	3,400
2/28/2015	0.6	86.59	17.9	542.24	34.05	433.0	30.60	1.84	0.69	3,421
3/31/2015	0.6	86.61	19.2	542.84	63.26	435.0	31.62	3.19	0.69	3,974
4/30/2015	0.5	86.62	14.6	543.28	48.50	436.4	27.39	3.21	0.69	3,207
5/31/2015	0.5	86.64	16.6	543.79		436.4	30.60		0.69	3,403
6/30/2015	0.5	86.65	15.5	544.25	64.42	438.4	31.22	4.02	0.69	3,530
7/31/2015	0.4	86.67	13.5	544.67	57.88	440.2	35.02	4.16	0.70	4,361
8/31/2015	0.4	86.68	15.3	545.15	79.93	442.7	42.34	5.10	0.70	4,016
9/30/2015	0.3	86.69	12.1	545.51	60.10	444.5	39.04	4.86	0.70	4,453
10/31/2015	0.3	86.70	14.0	545.95	129.56	448.5	43.86	9.02	0.71	3,819
11/30/2015	0.3	86.71	13.7	546.36	111.01	451.8	44.24	7.90	0.71	4,000
12/31/2015	0.3	86.72	14.7	546.81	86.88	454.5	49.04	5.79	0.72	4,000



VRU #3

Pattern P-16 – 00/14-07-010-25W1/0

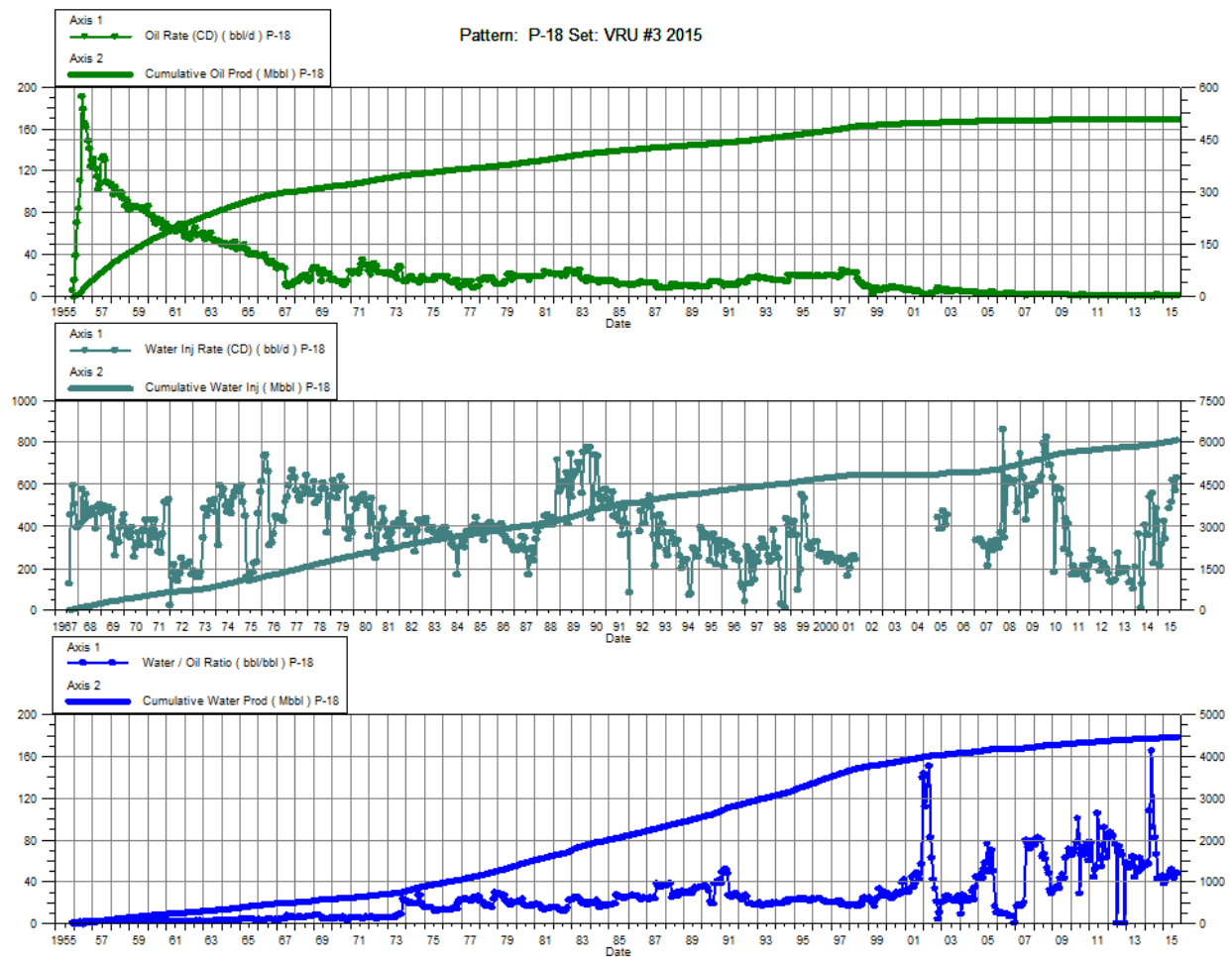
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.1	42.64	4.7	287.84	56.53	637.7	32.36	11.69	1.93	3,394
2/28/2015	0.1	42.65	4.3	287.96	49.60	639.1	35.72	11.24	1.93	3,186
3/31/2015	0.1	42.65	5.0	288.12	53.23	640.7	38.60	10.39	1.93	2,800
4/30/2015	0.1	42.65	5.1	288.27	67.83	642.8	37.43	12.96	1.94	2,787
5/31/2015	0.1	42.66	5.5	288.44		642.8	41.87		1.94	2,610
6/30/2015	0.1	42.66	5.4	288.60	79.72	645.2	43.32	14.42	1.94	2,900
7/31/2015	0.1	42.67	3.7	288.72	70.06	647.3	38.08	18.46	1.95	2,897
8/31/2015	0.2	42.67	5.2	288.88	87.14	650.0	35.75	16.29	1.96	2,816
9/30/2015	0.1	42.67	4.9	289.03	77.13	652.4	37.46	15.37	1.96	3,297
10/31/2015	0.1	42.68	4.8	289.17	87.40	655.1	38.07	17.91	1.97	3,206
11/30/2015	0.1	42.68	4.6	289.31	66.56	657.1	38.00	14.16	1.97	3,400
12/31/2015	0.1	42.68	5.0	289.47	86.59	659.7	42.70	16.96	1.98	3,397



VRU #3

Pattern P-18 – 00/10-07-010-25W1/0

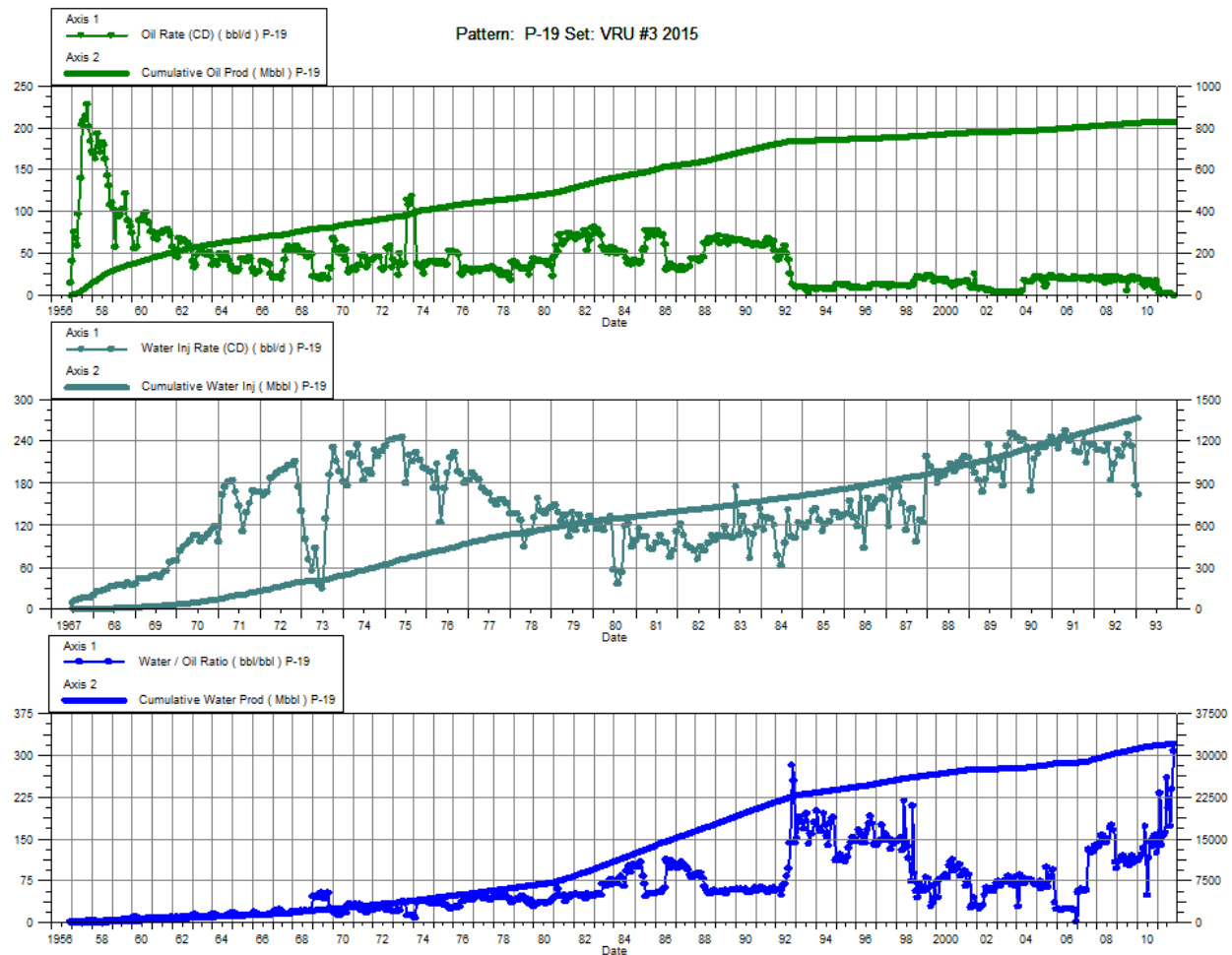
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.2	80.98	7.2	707.24	33.35	950.5	37.51	4.50	1.20	3,581
2/28/2015	0.2	80.98	6.6	707.42	50.22	951.9	40.90	7.38	1.21	3,000
3/31/2015	0.2	80.99	7.7	707.66	67.15	954.0	44.65	8.50	1.21	2,997
4/30/2015	0.2	80.99	7.9	707.90	54.13	955.6	44.41	6.71	1.21	2,920
5/31/2015	0.2	81.00	8.6	708.16		955.6	49.19		1.21	3,197
6/30/2015	0.2	81.00	8.4	708.42	76.58	957.9	51.05	8.99	1.21	3,110
7/31/2015	0.1	81.01	5.7	708.59	81.50	960.5	44.80	13.91	1.21	3,406
8/31/2015	0.2	81.01	7.8	708.84	98.29	963.5	42.90	12.25	1.22	3,603
9/30/2015	0.2	81.02	7.3	709.05	90.70	966.2	47.30	12.19	1.22	3,697
10/31/2015	0.2	81.02	7.1	709.27	100.63	969.3	48.20	13.91	1.22	3,610
11/30/2015	0.1	81.02	6.7	709.47	70.74	971.5	49.07	10.41	1.23	3,907
12/31/2015	0.1	81.03	7.4	709.70	113.55	975.0	53.69	15.03	1.23	4,090



VRU #3

Pattern P-19 – 00/06-10-010-26W1/0

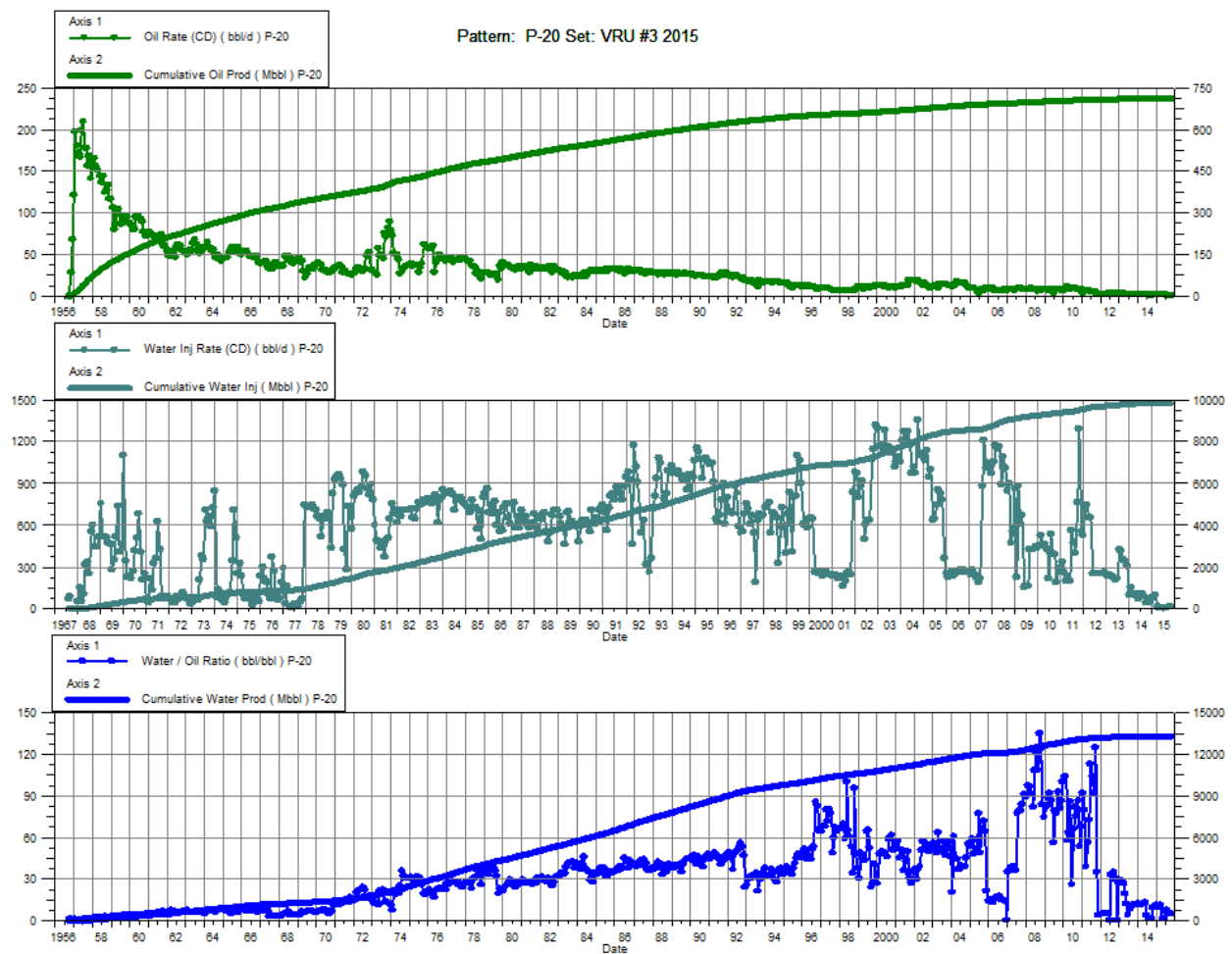
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
2/28/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
3/31/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
4/30/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
5/31/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
6/30/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
7/31/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
8/31/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
9/30/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
10/31/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
11/30/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--
12/31/2015	0.0	0.00	0.0	0.00		0.0	0.00	--	0.04	--



VRU #3

Pattern P-20 – 00/08-10-010-26W1/0

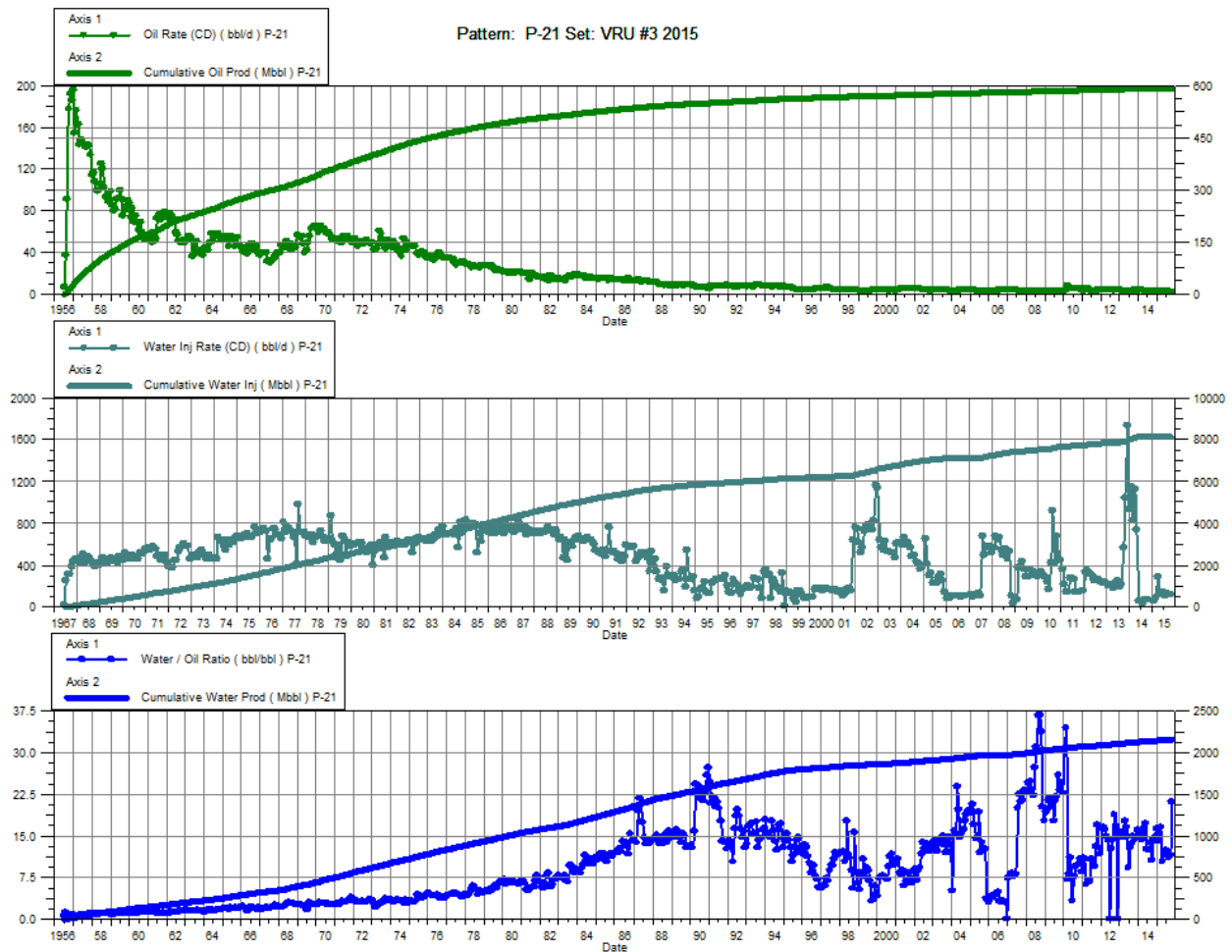
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.4	113.32	4.1	2111.80	12.70	1565.8	9.59	2.82	0.70	3,600
2/28/2015	0.4	113.33	4.2	2111.92	14.75	1566.3	10.35	3.22	0.70	3,514
3/31/2015	0.4	113.34	4.3	2112.05	1.50	1566.3	11.38	0.32	0.70	1,237
4/30/2015	0.3	113.35	0.3	2112.06	0.60	1566.3	0.85	1.01	0.70	2,332
5/31/2015	0.3	113.36	0.3	2112.07		1566.3	0.95		0.70	1,819
6/30/2015	0.4	113.37	2.4	2112.14	0.77	1566.3	6.77	0.28	0.70	2,417
7/31/2015	0.3	113.38	1.9	2112.20	0.66	1566.4	7.32	0.30	0.70	2,919
8/31/2015	0.3	113.39	1.1	2112.23	0.62	1566.4	4.23	0.44	0.70	3,079
9/30/2015	0.3	113.39	1.1	2112.27	1.66	1566.4	4.32	1.26	0.70	2,499
10/31/2015	0.2	113.40	1.0	2112.30	1.71	1566.5	4.40	1.33	0.70	3,258
11/30/2015	0.2	113.41	1.0	2112.33	1.43	1566.5	4.45	1.13	0.70	3,874
12/31/2015	0.2	113.41	0.9	2112.36	1.79	1566.6	5.31	1.61	0.70	3,400



VRU #3

Pattern P-21 – 00/06-11-010-26W1/0

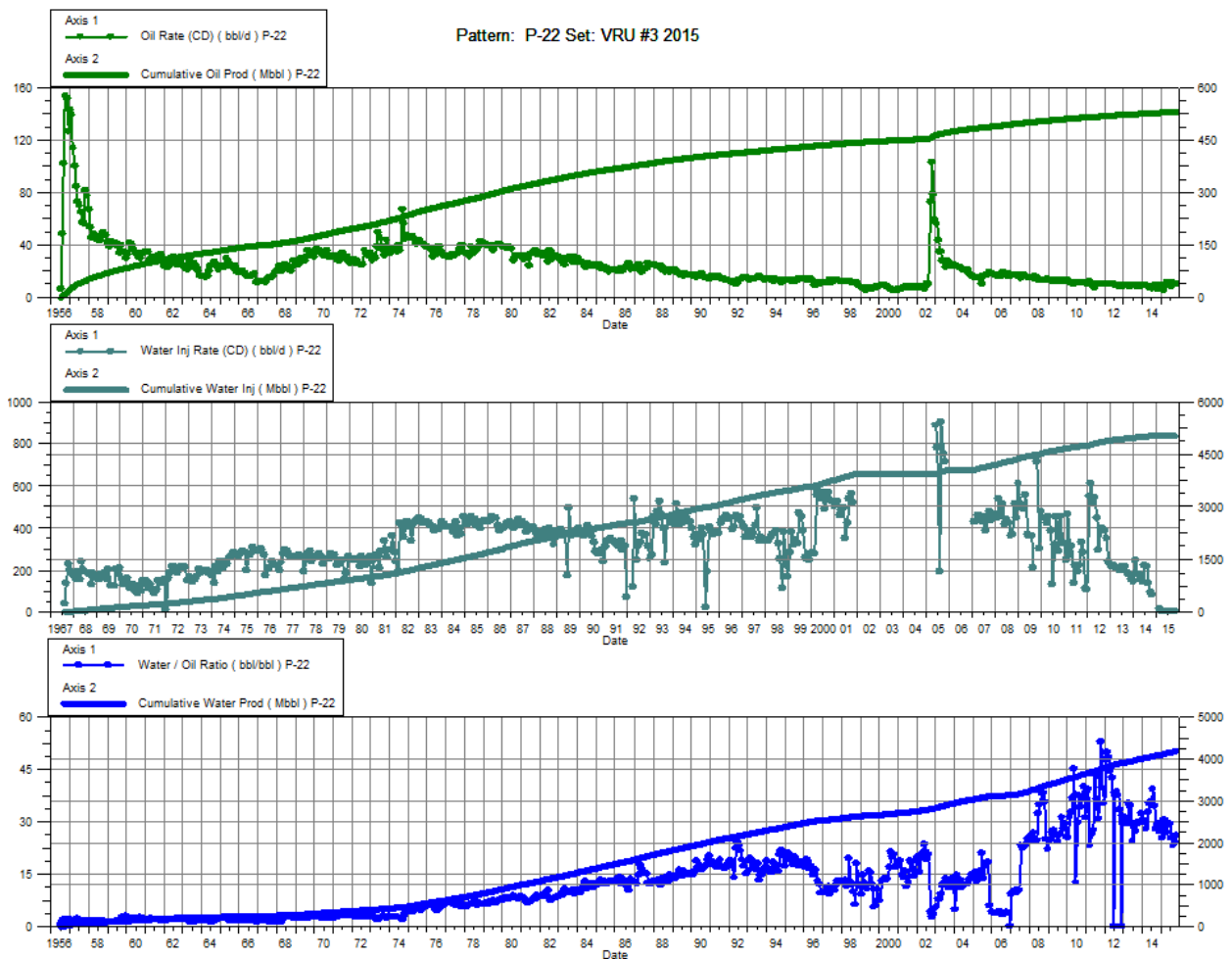
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.6	94.25	8.2	341.34	8.73	1294.0	14.10	1.00	2.96	3,400
2/28/2015	0.6	94.27	9.0	341.59	12.17	1294.3	15.37	1.26	2.96	3,361
3/31/2015	0.6	94.29	9.9	341.90	45.45	1295.7	16.50	4.33	2.96	2,310
4/30/2015	0.6	94.31	5.9	342.07	17.40	1296.2	10.42	2.67	2.96	2,603
5/31/2015	0.6	94.32	6.5	342.27		1296.2	11.53		2.96	2,710
6/30/2015	0.6	94.34	7.0	342.49	21.42	1296.9	12.49	2.82	2.96	3,020
7/31/2015	0.4	94.35	4.8	342.63	16.44	1297.4	11.79	3.13	2.96	3,600
8/31/2015	0.4	94.37	4.7	342.78	19.29	1298.0	10.91	3.72	2.96	3,606
9/30/2015	0.4	94.38	4.0	342.90	18.49	1298.6	11.53	4.23	2.96	3,793
10/31/2015	0.4	94.39	9.0	343.18	17.62	1299.1	21.00	1.87	2.96	3,690
11/30/2015	0.4	94.40	7.1	343.39	31.73	1300.1	19.43	4.24	2.96	3,612
12/31/2015	0.5	94.42	8.3	343.65	20.65	1300.7	15.30	2.34	2.96	3,950



VRU #3

Pattern P-22 – 00/08-11-010-26W1/0

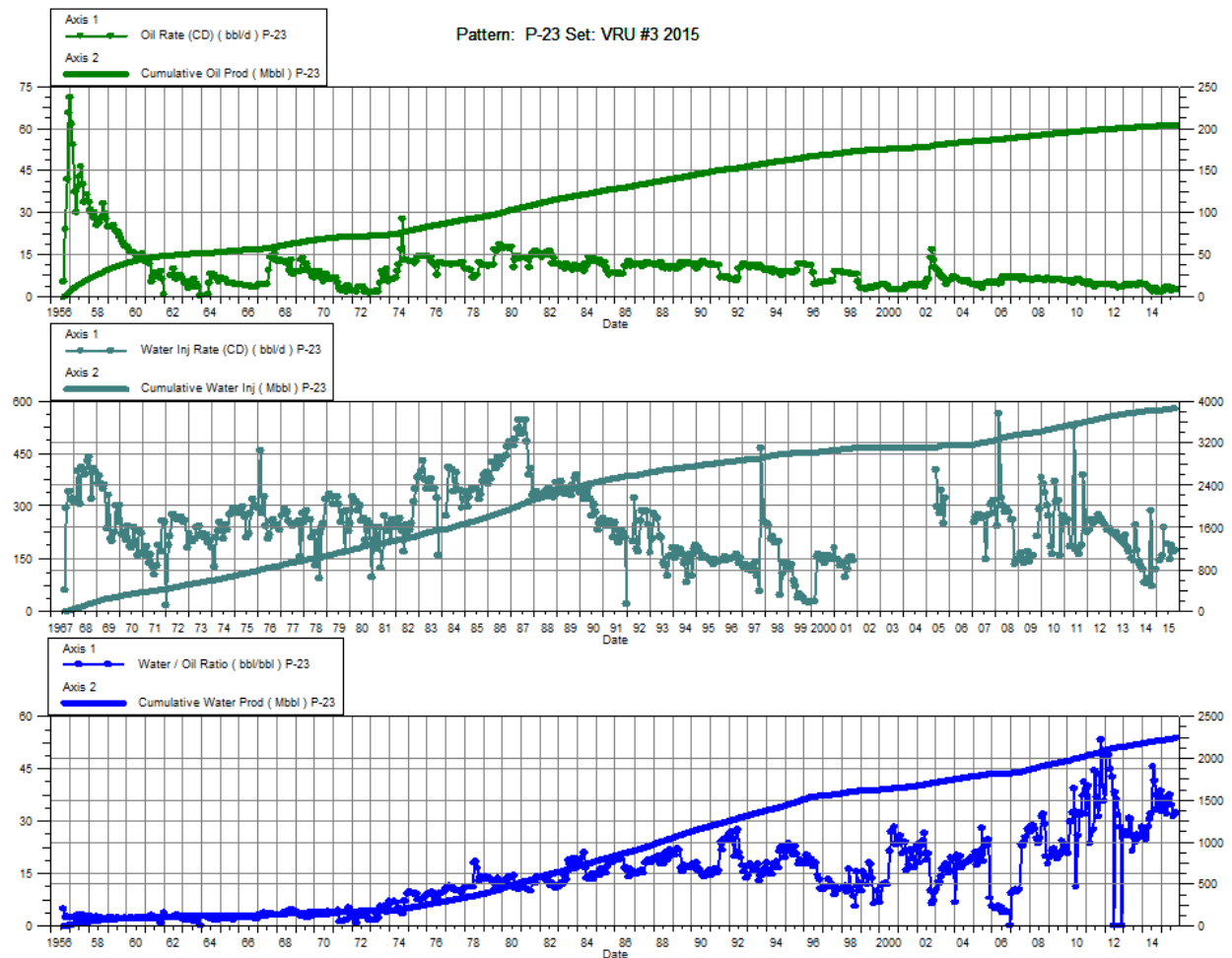
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	1.5	84.04	39.2	652.93		798.5	25.47		1.08	3,400
2/28/2015	1.0	84.07	28.9	653.74	2.46	798.6	30.42	0.08	1.08	3,350
3/31/2015	1.6	84.11	47.6	655.22	0.72	798.6	30.46	0.02	1.08	2,045
4/30/2015	1.8	84.17	48.0	656.66	0.53	798.6	26.66	0.01	1.08	3,400
5/31/2015	1.8	84.22	52.2	658.27		798.6	29.52		1.07	3,410
6/30/2015	1.5	84.27	45.1	659.63	0.69	798.6	29.29	0.02	1.07	3,723
7/31/2015	1.3	84.31	33.2	660.65	0.53	798.6	25.48	0.02	1.07	4,352
8/31/2015	1.8	84.37	41.1	661.93	0.68	798.7	23.07	0.02	1.07	3,918
9/30/2015	1.6	84.41	38.8	663.09	0.55	798.7	24.03	0.01	1.07	4,417
10/31/2015	1.6	84.46	43.0	664.42	0.62	798.7	26.12	0.01	1.06	3,973
11/30/2015	1.6	84.51	40.8	665.65	1.15	798.7	26.33	0.03	1.06	4,197
12/31/2015	1.7	84.56	43.7	667.00	0.79	798.7	25.48	0.02	1.06	4,400



VRU #3

Pattern P-23 – 00/06-12-010-26W1/0

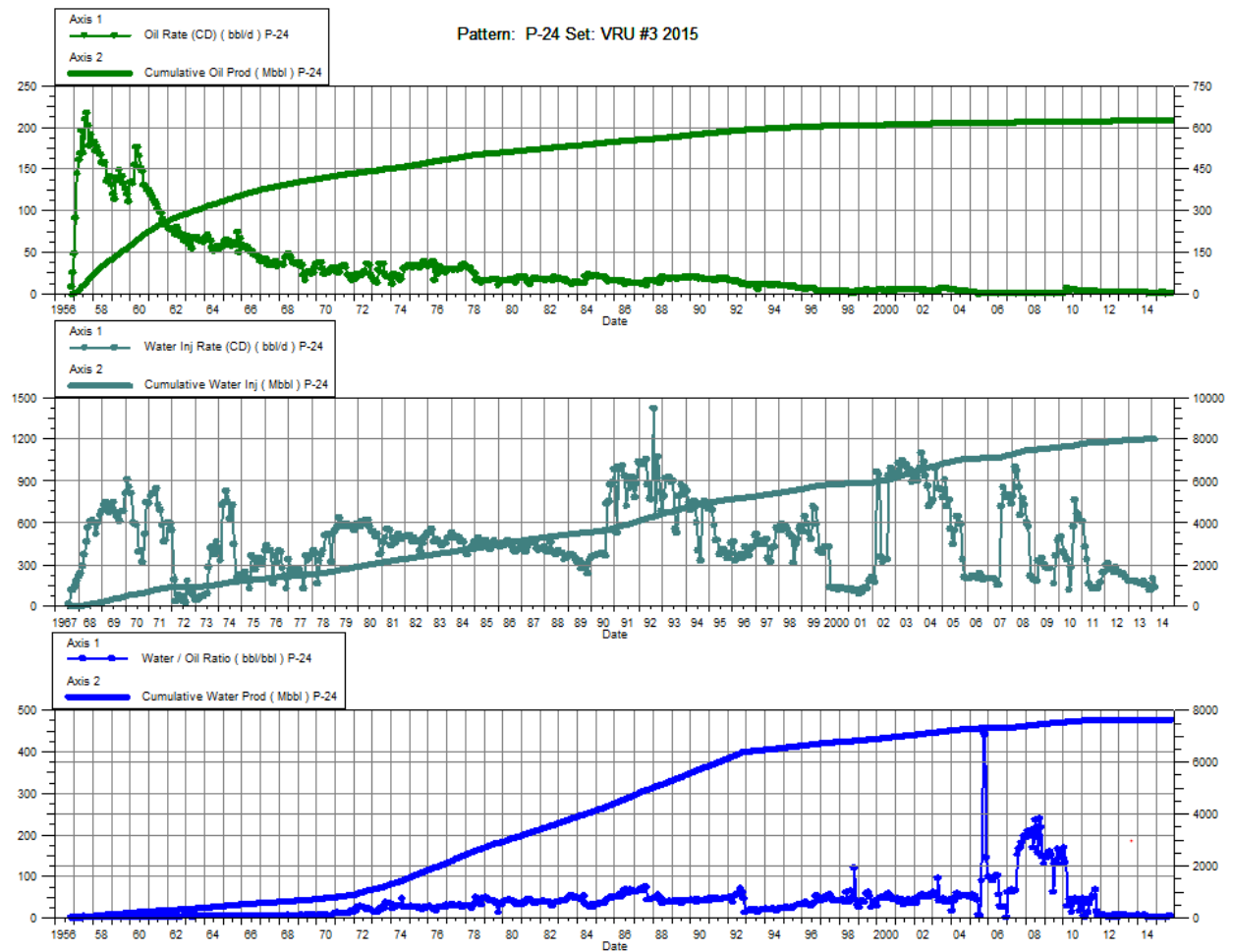
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.4	32.35	11.9	352.20		608.5	32.79		1.58	3,800
2/28/2015	0.4	32.36	13.1	352.57	22.87	609.2	35.46	1.69	1.58	3,779
3/31/2015	0.5	32.38	16.8	353.09	25.25	609.9	36.24	1.46	1.58	3,190
4/30/2015	0.5	32.39	17.2	353.60	38.11	611.1	31.81	2.15	1.58	2,912
5/31/2015	0.5	32.41	18.5	354.18		611.1	35.14		1.58	3,203
6/30/2015	0.4	32.42	16.0	354.66	30.37	612.0	37.50	1.85	1.58	1,887
7/31/2015	0.3	32.43	11.8	355.02	23.49	612.7	34.47	1.93	1.58	4,313
8/31/2015	0.5	32.45	14.4	355.47	29.70	613.6	31.26	2.00	1.58	3,522
9/30/2015	0.4	32.46	13.5	355.87	26.80	614.4	31.98	1.93	1.58	4,139
10/31/2015	0.4	32.47	13.4	356.29	27.76	615.3	32.32	2.01	1.58	3,460
11/30/2015	0.4	32.48	13.3	356.69	50.63	616.8	32.98	3.71	1.58	3,794
12/31/2015	0.4	32.50	14.0	357.12	36.27	617.9	36.21	2.52	1.58	3,920



VRU #3

Pattern P-24 – 00/16-03-010-26W1/0

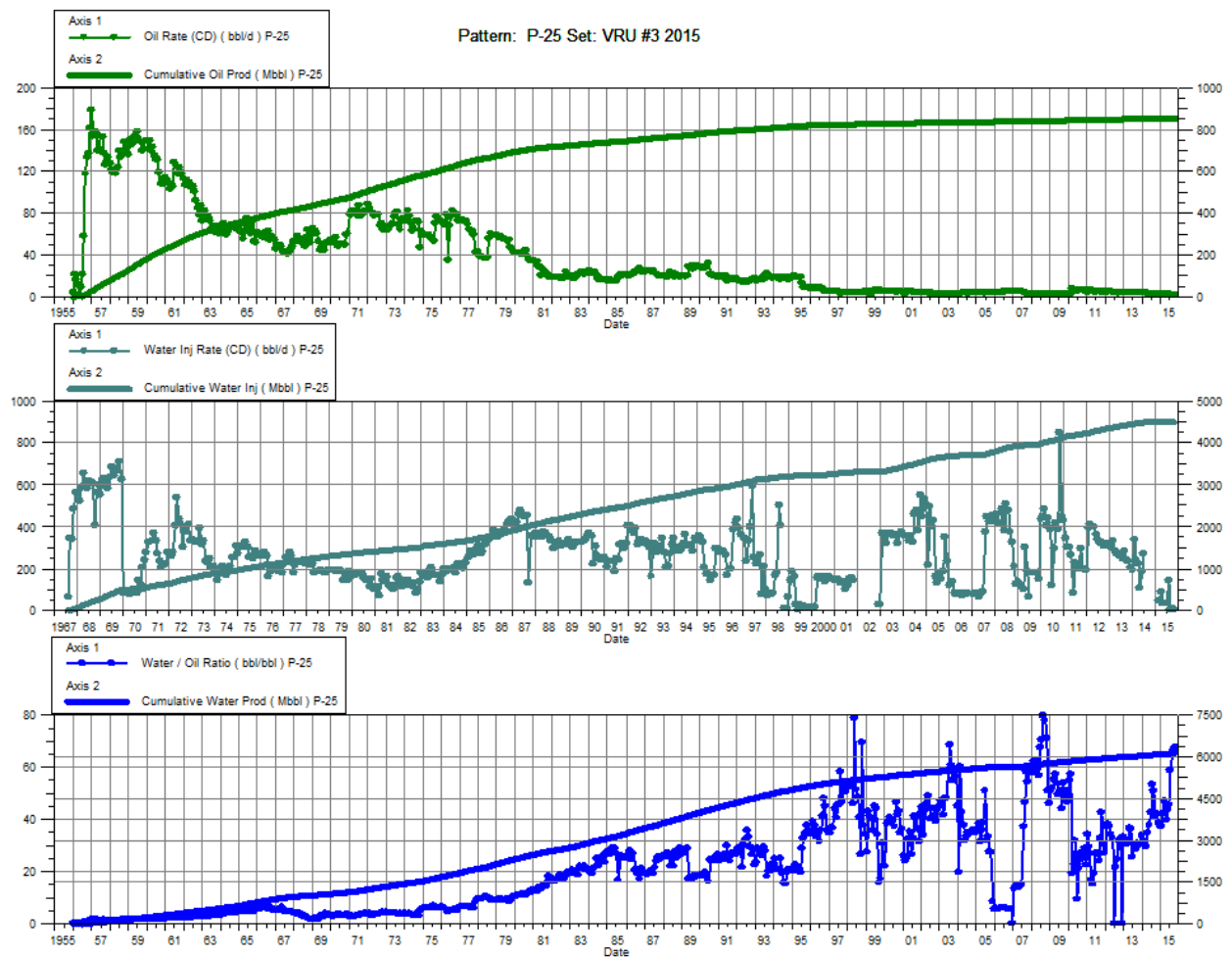
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.3	99.44	0.2	1215.47		1274.7	0.82		0.97	--
2/28/2015	0.3	99.45	0.3	1215.47		1274.7	0.91		0.97	--
3/31/2015	0.3	99.45	0.3	1215.48		1274.7	0.97		0.97	--
4/30/2015	0.3	99.46	0.3	1215.49		1274.7	0.85		0.97	--
5/31/2015	0.3	99.47	0.3	1215.50		1274.7	0.95		0.97	--
6/30/2015	0.3	99.48	0.3	1215.51		1274.7	0.98		0.97	--
7/31/2015	0.1	99.48	0.2	1215.51		1274.7	1.76		0.97	--
8/31/2015	0.1	99.49	0.3	1215.52		1274.7	2.97		0.97	--
9/30/2015	0.1	99.49	0.3	1215.53		1274.7	3.05		0.97	--
10/31/2015	0.1	99.49	0.3	1215.54		1274.7	3.09		0.97	--
11/30/2015	0.1	99.50	0.3	1215.55		1274.7	3.14		0.97	--
12/31/2015	0.1	99.50	0.2	1215.56		1274.7	3.50		0.97	--



VRU #3

Pattern P-25 – 00/14-02-010-26W1/0

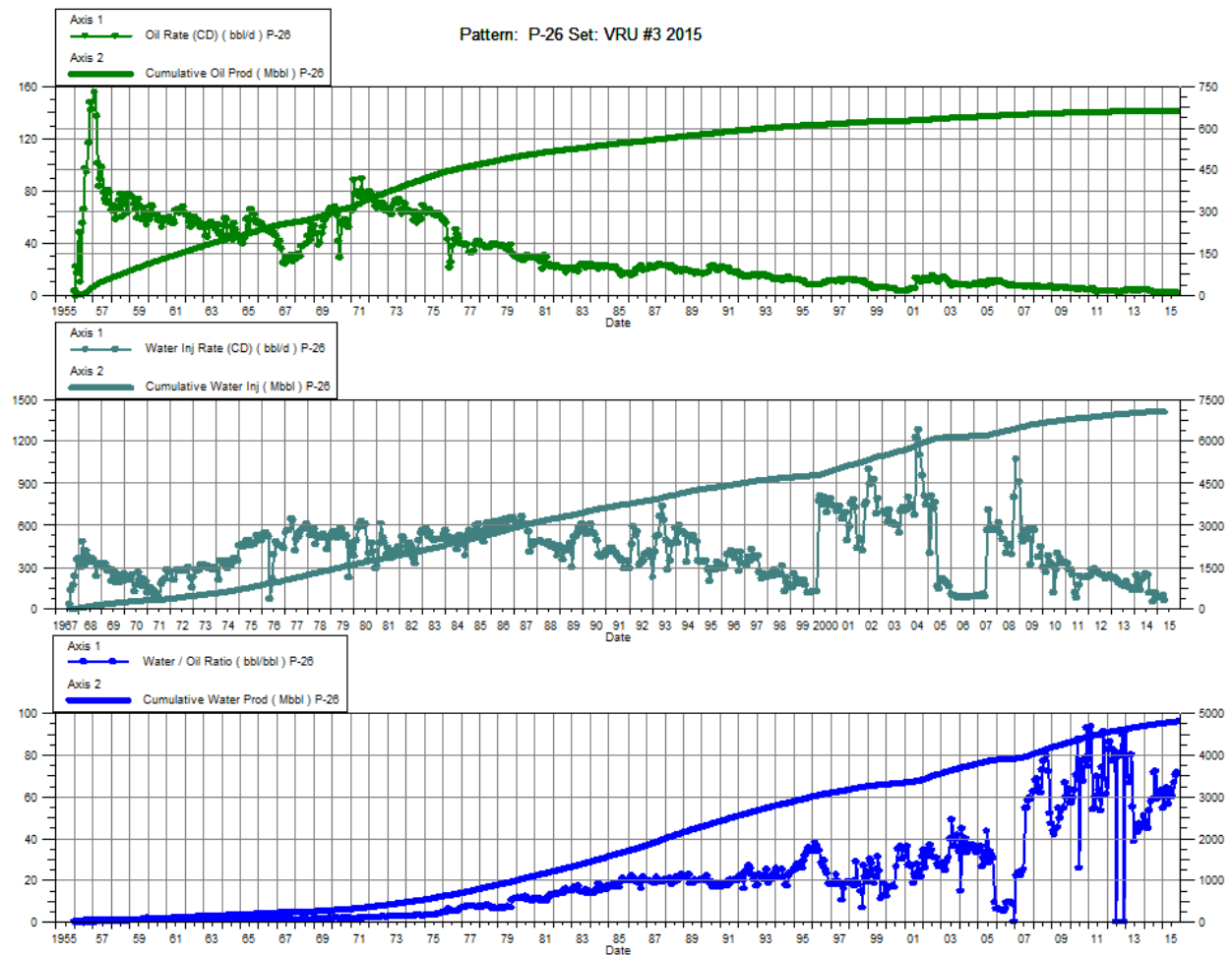
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.5	135.58	18.5	968.19		713.6	37.10		0.65	-
2/28/2015	0.5	135.60	20.8	968.78	7.38	713.8	41.89	0.35	0.65	71
3/31/2015	0.5	135.61	22.3	969.47	13.65	714.2	46.75	0.60	0.65	2,032
4/30/2015	0.6	135.63	22.7	970.15	5.69	714.4	39.54	0.24	0.65	3,000
5/31/2015	0.6	135.65	24.6	970.91		714.4	43.55		0.64	3,013
6/30/2015	0.5	135.66	24.1	971.63	4.97	714.5	45.41	0.20	0.64	3,413
7/31/2015	0.3	135.67	19.8	972.25	22.69	715.2	58.59	1.13	0.64	3,800
8/31/2015	0.4	135.69	25.9	973.05	0.49	715.2	65.35	0.02	0.64	3,813
9/30/2015	0.4	135.70	24.5	973.78	1.80	715.3	66.55	0.07	0.64	4,173
10/31/2015	0.4	135.71	23.8	974.52	0.62	715.3	67.64	0.03	0.64	3,800
11/30/2015	0.3	135.72	23.5	975.23	0.52	715.3	68.72	0.02	0.64	3,807
12/31/2015	0.3	135.73	23.9	975.97	0.86	715.3	85.87	0.04	0.64	4,000



VRU #3

Pattern P-26 – 00/16-02-010-26W1/0

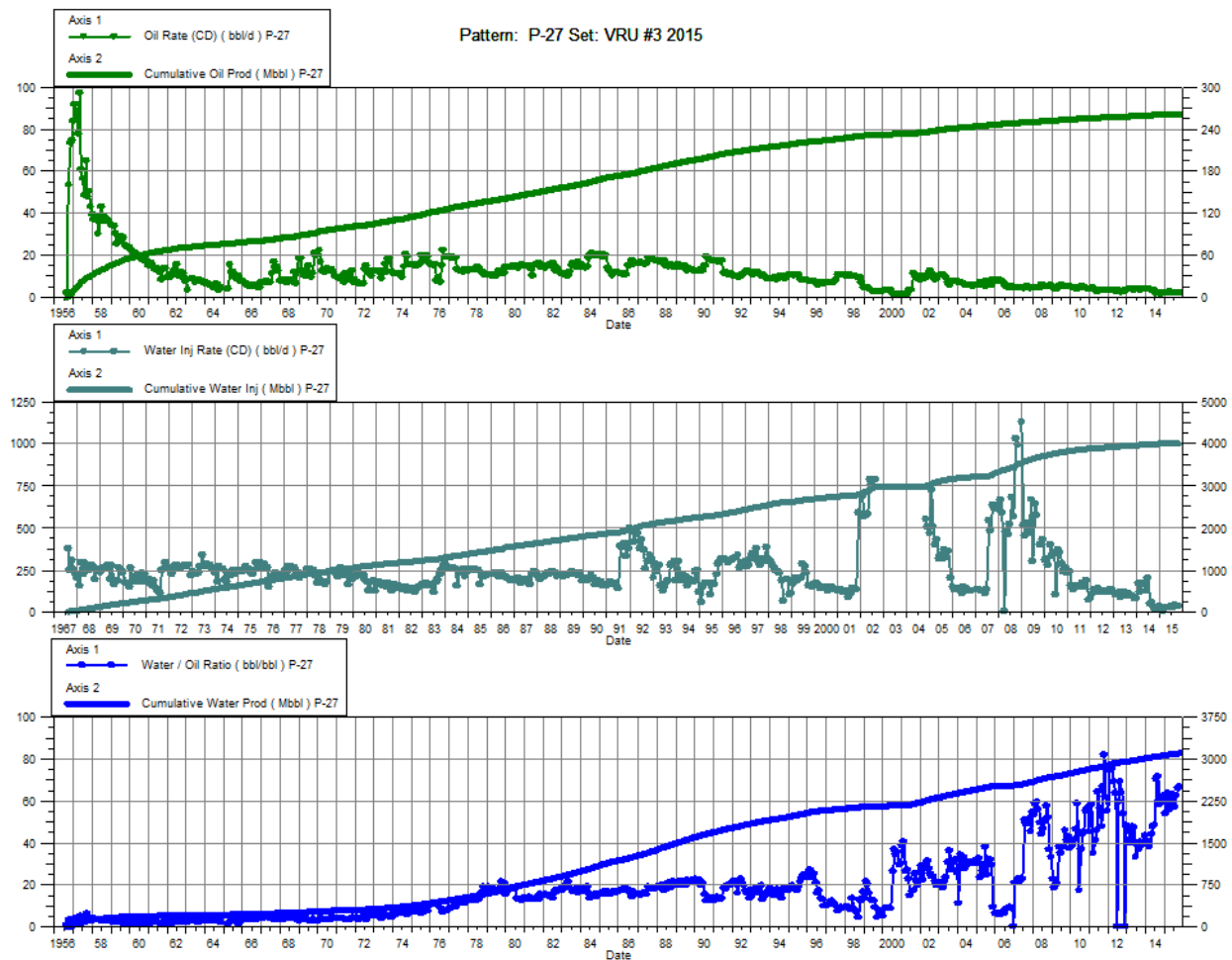
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.4	105.53	22.1	758.37	11.75	1124.7	54.45	0.52	1.30	4,800
2/28/2015	0.4	105.55	23.1	759.02	13.65	1125.1	59.69	0.58	1.30	4,750
3/31/2015	0.4	105.56	24.4	759.77	15.15	1125.6	63.96	0.61	1.30	3,387
4/30/2015	0.5	105.57	25.1	760.53	9.53	1125.9	56.23	0.37	1.30	3,023
5/31/2015	0.4	105.58	25.1	761.31		1125.9	61.58		1.30	3,700
6/30/2015	0.4	105.59	23.9	762.02		1125.9	63.64		1.30	3,700
7/31/2015	0.3	105.60	20.0	762.64		1125.9	60.09		1.29	3,700
8/31/2015	0.4	105.62	26.0	763.45		1125.9	66.73		1.29	3,700
9/30/2015	0.4	105.63	24.8	764.19		1125.9	70.32		1.29	3,700
10/31/2015	0.3	105.64	24.1	764.94		1125.9	71.46		1.29	3,700
11/30/2015	0.3	105.65	23.9	765.66		1125.9	72.77		1.29	3,700
12/31/2015	0.3	105.66	24.9	766.43		1125.9	79.66		1.29	3,700



VRU #3

Pattern P-27 – 00/14-01-010-26W1/0

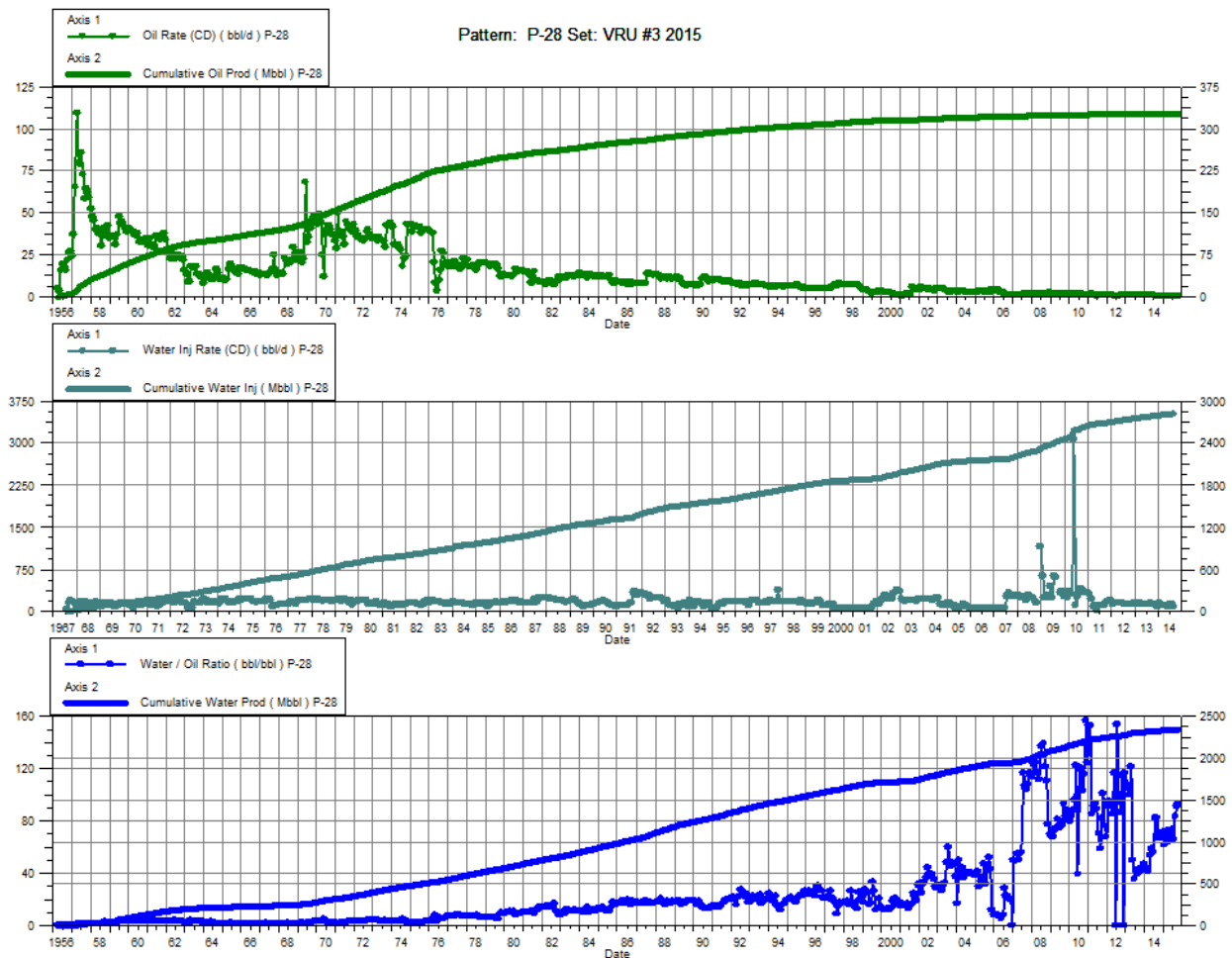
Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.4	41.50	21.2	488.06	3.49	635.6	53.89	0.16	1.20	4,000
2/28/2015	0.4	41.51	21.4	488.66	0.92	635.7	59.26	0.04	1.20	3,971
3/31/2015	0.4	41.52	22.5	489.36	3.96	635.8	63.74	0.17	1.20	3,194
4/30/2015	0.4	41.54	23.3	490.05	4.37	635.9	55.83	0.18	1.19	3,017
5/31/2015	0.4	41.55	23.1	490.77		635.9	61.09		1.19	3,503
6/30/2015	0.4	41.56	22.0	491.43	5.81	636.1	63.16	0.26	1.19	3,607
7/31/2015	0.3	41.57	18.4	492.00	4.59	636.2	57.13	0.25	1.19	3,771
8/31/2015	0.4	41.58	23.9	492.74	6.29	636.4	62.33	0.26	1.19	3,526
9/30/2015	0.3	41.59	22.8	493.42	5.54	636.6	66.29	0.24	1.19	4,267
10/31/2015	0.3	41.60	22.3	494.11	5.69	636.8	66.70	0.25	1.19	3,810
11/30/2015	0.3	41.61	22.0	494.78	10.20	637.1	67.98	0.46	1.19	3,910
12/31/2015	0.3	41.62	22.9	495.49	4.01	637.2	74.36	0.17	1.19	4,200



VRU #3

Pattern P-28 – 00/08-02-010-26W1/0

Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacemt Ratio	Water Inj Pressure kPa
1/31/2015	0.1	52.02	7.1	370.63		449.0	61.24		1.06	3,400
2/28/2015	0.1	52.02	7.2	370.83		449.0	67.58		1.06	3,400
3/31/2015	0.1	52.02	7.5	371.07		449.0	72.60		1.06	3,400
4/30/2015	0.1	52.03	7.7	371.30		449.0	63.65		1.06	3,400
5/31/2015	0.1	52.03	7.4	371.53		449.0	70.29		1.06	3,400
6/30/2015	0.1	52.03	6.9	371.73		449.0	73.11		1.06	3,400
7/31/2015	0.1	52.04	6.0	371.92		449.0	65.35		1.06	3,400
8/31/2015	0.1	52.04	8.0	372.17		449.0	83.18		1.06	3,400
9/30/2015	0.1	52.04	7.6	372.40		449.0	90.76		1.06	3,400
10/31/2015	0.1	52.04	7.4	372.62		449.0	92.45		1.06	3,400
11/30/2015	0.1	52.05	7.3	372.84		449.0	94.21		1.05	3,400
12/31/2015	0.1	52.05	7.6	373.08		449.0	103.41		1.05	3,400



VRU #3

Pattern P-29 – 00/06-01-010-26W1/0

Date	Oil Rate (CD) m3/d	Cum Oil Prod Mm3	Water Rate (CD) m3/d	Cum Water Prod Mm3	Water Inj Rate (CD) m3/d	Cum Water Inj Mm3	Water Oil Ratio m3/m3	Voidage Replacement Ratio	Cum Voidage Replacment Ratio	Water Inj Pressure kPa
1/31/2015	2.3	123.24	67.2	1456.04	44.94	747.4	29.80	0.65	0.47	4,200
2/28/2015	2.1	123.29	67.4	1457.92	36.39	748.4	32.86	0.52	0.47	4,171
3/31/2015	2.0	123.35	70.6	1460.11	43.81	749.8	35.35	0.60	0.47	3,358
4/30/2015	2.1	123.42	65.3	1462.07		749.8	30.97		0.47	2,100
5/31/2015	2.1	123.48	71.1	1464.27		749.8	34.07		0.47	2,100
6/30/2015	1.8	123.54	62.9	1466.16		749.8	35.14		0.47	2,100
7/31/2015	1.5	123.58	49.7	1467.70		749.8	32.18		0.47	2,100
8/31/2015	1.9	123.64	61.0	1469.59		749.8	31.76		0.47	2,100
9/30/2015	1.8	123.70	58.5	1471.35		749.8	32.54		0.47	2,100
10/31/2015	1.7	123.75	56.9	1473.11		749.8	33.10		0.47	2,100
11/30/2015	1.7	123.80	56.3	1474.80		749.8	33.62		0.47	2,100
12/31/2015	1.6	123.85	59.2	1476.64		749.8	36.89		0.47	2,100

