

**Virden Roselea Unit #3**  
**2013 Annual EOR Report**

## **Executive Summary**

In 2013 oil production in the Virden Roselea Unit #3 (VRU #3) was 23 m<sup>3</sup>/d (145 bbl/d) totaling 8.5 e<sup>3</sup>m<sup>3</sup> (53.7 mmbbl). Annual production was down 13.1% from 2012 to 2013. By the end of 2013 cumulative oil production from the VRU #3 was 2 596 e<sup>3</sup>m<sup>3</sup> (16.3 mmbbl). The original forecasted recovery was 1 290 e<sup>3</sup>m<sup>3</sup> (8.1 mmbbl) on primary recovery and 2 837 e<sup>3</sup>m<sup>3</sup> (17.9 mmbbl) total primary plus secondary recovery.

In December 2013 there were 53 producing oil wells and 23 water injectors active in the unit. In 2013 a new horizontal well was drilled in the unit.

Corex Resources has operated VRU #3 since December 19, 2012.

## Discussion

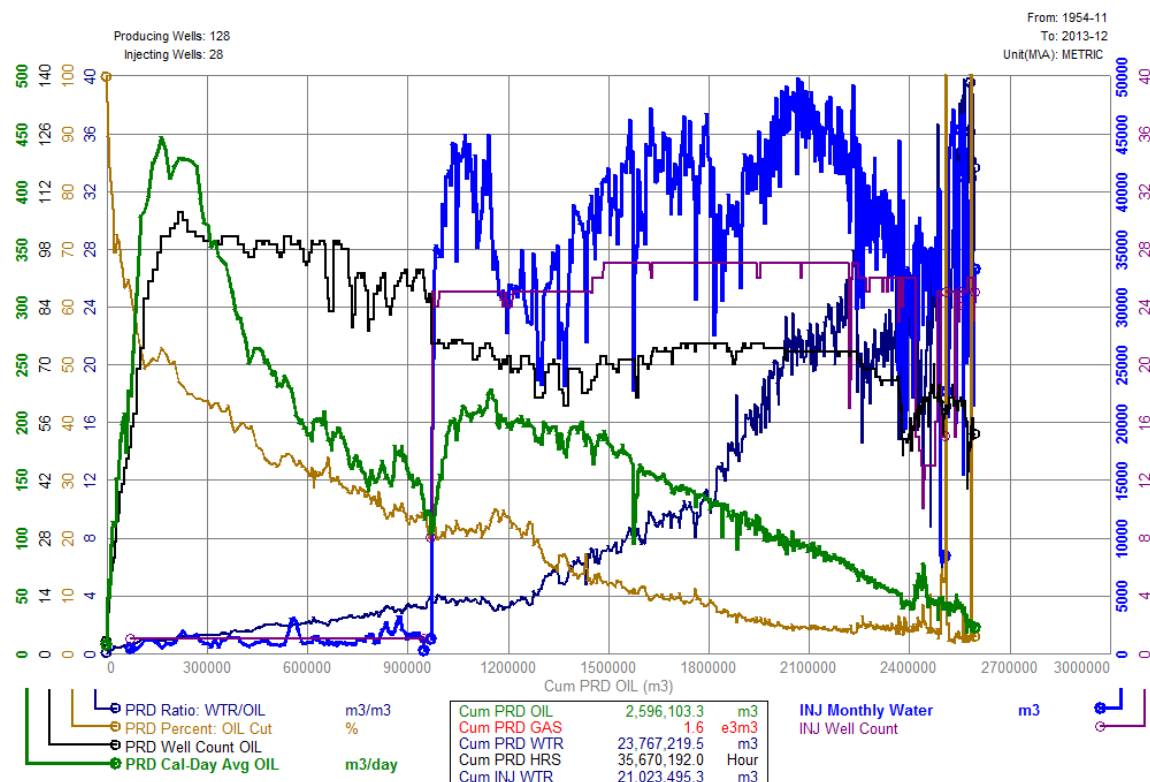
The VRU #3 has been under waterflood since 1967, 12 years after first production from the pool in 1954. Water injection increased the oil production rate from  $\sim 100 \text{ m}^3/\text{d}$  to  $\sim 225 \text{ m}^3/\text{d}$ , however lower than peak production from the field of  $450 \text{ m}^3/\text{d}$ . Expected ultimate oil recovery was doubled by the waterflood.

Prior to this year, 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. This year, the horizontal well that was drilled produced 100% oil in December 2013, a total of  $60.4 \text{ m}^3$  (380 bbl) for the month.

There have been no new wells converted to injection since 1974. The water injection rate was  $1\,014 \text{ m}^3/\text{d}$  in 2013 and the producing WOR was  $30 \text{ m}^3/\text{m}^3$ . The injected water at VRU #3 is not filtered or treated in any way.

In the composite rate – cumulative oil plot below, waterflood response is clearly demonstrated at a cumulative oil production of  $1000 \text{ e}^3\text{m}^3$  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.



## 2013 Reservoir Pressure Surveys

Unit	UWID	Licence	Test Date	Test Type	Shut-in Time (days)	Datum Pressure (kPaa)
VRU #3	100/14-11-010-26W1/00	1202	7/1/2014	BH BU of Injector	60.9	6815.187

One pressure survey was conducted in the VRU #3 during 2013, resulting in a pressure of 6 815 kPaa, a pressure within the range of the historical pressures. 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, slightly over pressured and also likely above the original pool pressure.

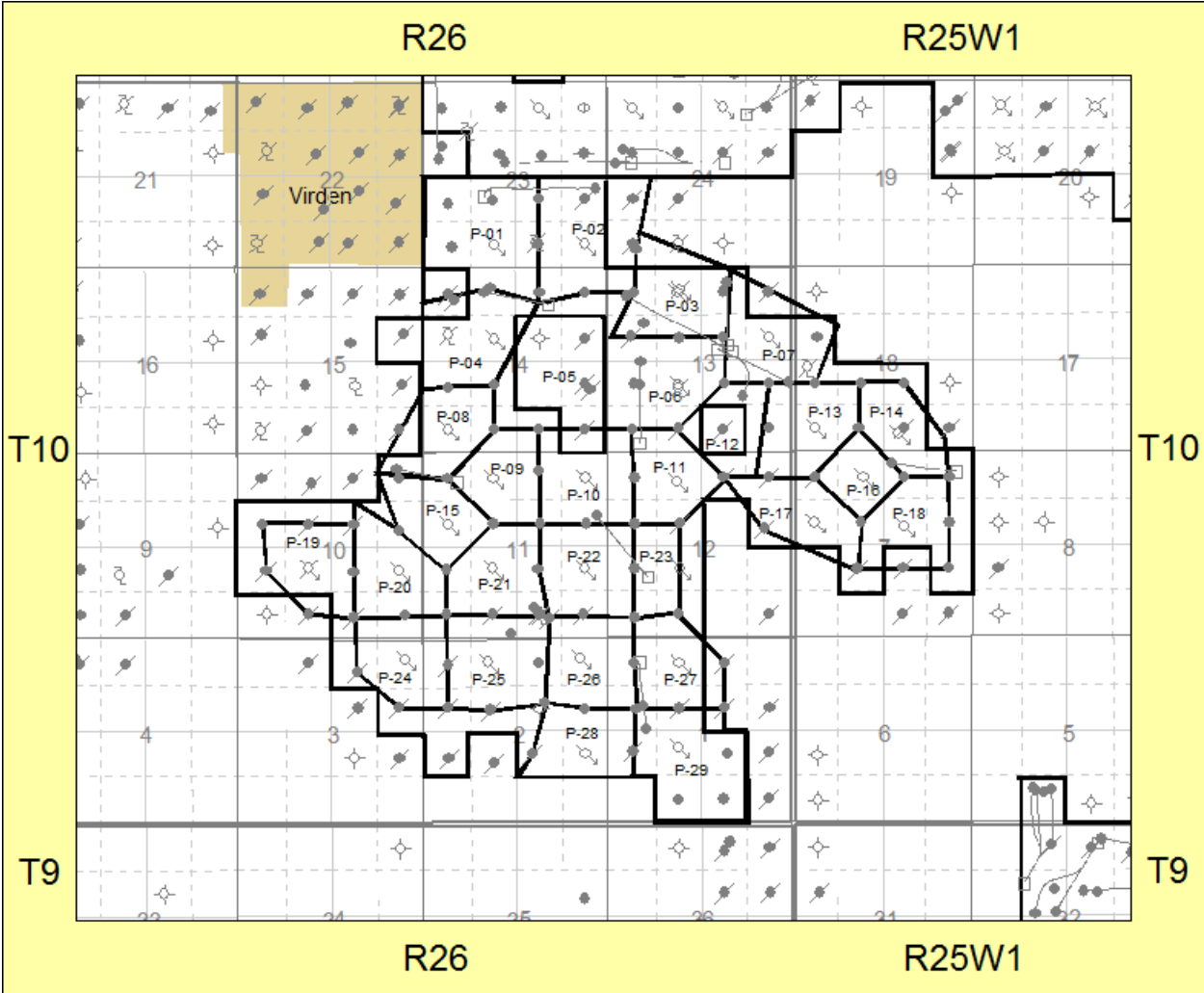
The voidage replacement ratio (VRR) in 2013 was increased to a maximum of 1.39, where in 2012 it was maintained at 0.79. The cumulative VRR at year end was 0.8. The high reservoir pressure is inconsistent with the cumulative VRR less than 1.0.

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  $1.06 \text{ m}^3/\text{sm}^3$  and a water formation volume factor of  $1.04 \text{ m}^3/\text{sm}^3$  were used in the VRR calculations.

## 2013 Well Servicing

UWID	Licence	Operation	Date	Objective
102/08-13-010-26W1/00	005110	Pump Repair	30-JAN-13	Repair failed artificial lift
100/15-14-010-26W1/00	000982	Scale Removal	26-MAR-13	Corrosion Inhibitor Squeeze
102/16-10-010-26W1/00	004987	Pump Repair	27-MAR-13	RIH with new pump. Stroke test pump to 7mpa.
100/16-02-010-26W1/00	001111	Equipment Pressure Integrity Test	17-APR-13	Annual annulus pressure test
100/06-01-010-26W1/00	001371	Equipment Pressure Integrity Test	17-APR-13	Annual annulus pressure test
100/08-02-010-26W1/00	001348	Equipment Pressure Integrity Test	17-APR-13	Annual annulus pressure test
102/08-23-010-26W1/00	006837	Pump Repair	29-APR-13	Repair failed pump
100/03-18-010-25W1/00	001092	Pump Repair	08-JUL-13	Repair failed pump
100/10-11-010-26W1/00	001230	Pump Repair	10-JUL-13	Repair failed pump
100/05-11-010-26W1/00	001253	Tubing Repair	12-JUL-13	Repair tubing
102/12-01-010-26W1/00	004973	Pump Repair	21-OCT-13	Repair failed pump
100/14-11-010-26W1/00	001202	Pressure Build-up/Survey	06-NOV-13	Peform pressure build up
100/13-13-010-26W1/00	000748	Pump Repair	15-DEC-13	Repair failed pump

# Waterflood Pattern Map



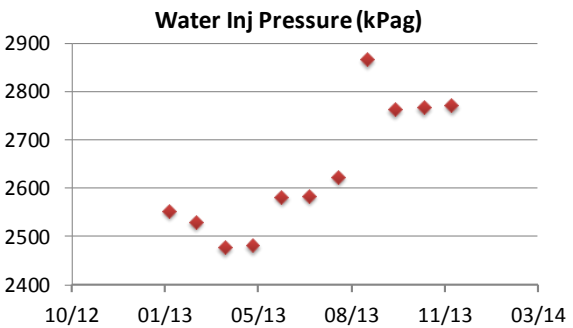
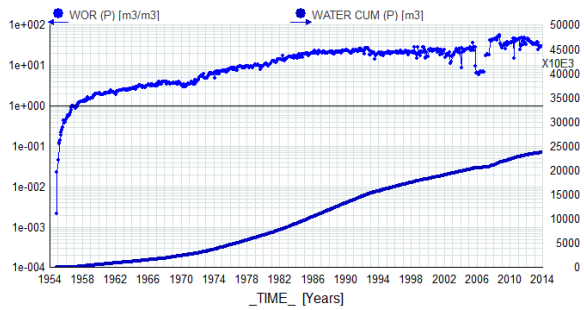
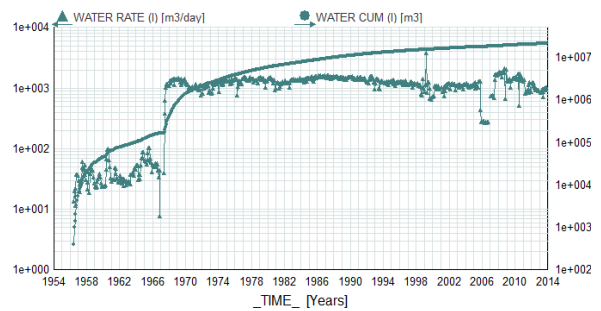
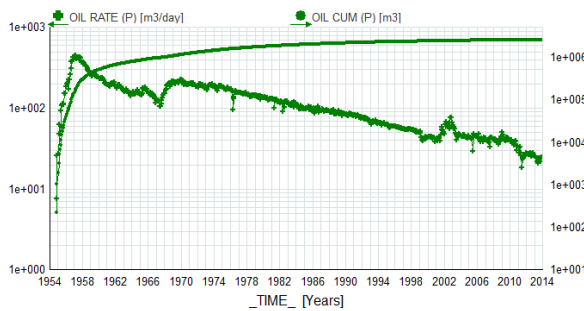
## Waterflood Pattern Table

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	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPa	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	789.6	25.47	27040.0	872.26	34.25	27040.0	872.26	2552	0.97	0.79
2/28/2013	703.7	25.13	23321.0	832.89	33.14	23321.0	832.89	2528.8	0.97	0.79
3/31/2013	749.3	24.17	24293.4	783.66	32.42	26306.0	848.58	2476.9	1.05	0.79
4/30/2013	657.2	21.91	25391.2	846.37	38.64	28896.0	963.20	2480.4	1.11	0.79
5/31/2013	651.6	21.02	23582.5	760.73	36.19	26908.0	868.00	2580.8	1.11	0.79
6/30/2013	664.5	22.15	16625.7	554.19	25.02	21454.0	715.13	2581.9	1.24	0.79
7/31/2013	748.2	24.14	22232.7	717.18	29.71	30496.3	983.75	2623.5	1.33	0.79
8/31/2013	751.3	24.24	20970.6	676.47	27.91	29924.0	965.29	2865.8	1.38	0.79
9/30/2013	660.0	22.00	20243.7	674.79	30.67	27978.0	932.60	2761.7	1.34	0.79
10/31/2013	747.1	24.10	21801.7	703.28	29.18	31451.0	1014.55	2765.4	1.39	0.79
11/30/2013	735.0	24.50	22025.6	734.19	29.97	30405.0	1013.50	2770.2	1.33	0.79
12/31/2013	687.9	22.19	23092.1	744.91	33.57	33191.0	1070.68	2912.3	1.39	0.80

Cumulative Oil Produced (E3m3)	2596.10
Cumulative Water Produced (E3m3)	23767.22
Cumulative Water Injected (E3m3)	21023.50
Cumulative Voidage Replacement Ratio	0.80



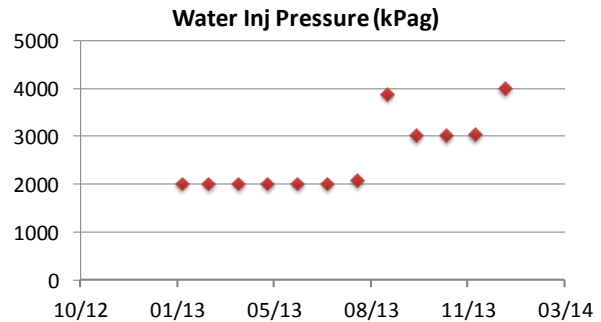
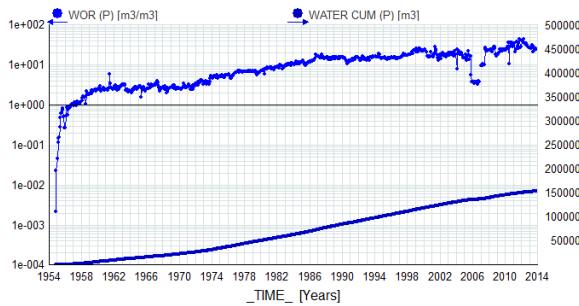
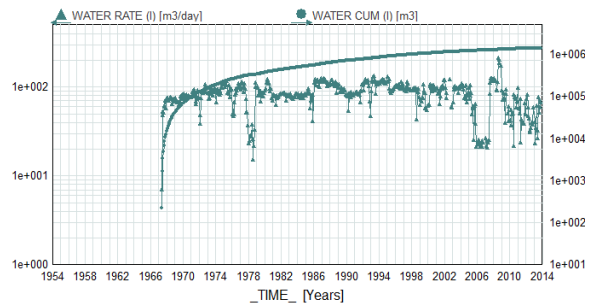
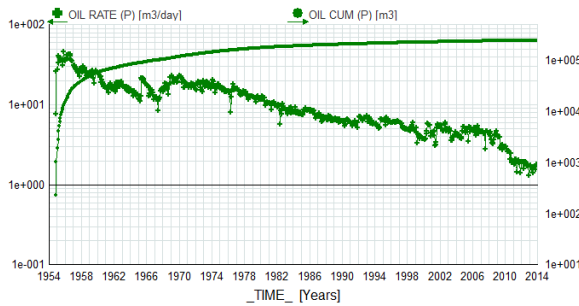


# VRU #3

## Pattern P-01 – 00/03-23-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	54.8	1.77	1462.4	47.17	26.69	1247.0	40.23	2000	0.82	0.78
2/28/2013	47.7	1.71	1250.7	44.67	26.19	652.0	23.29	2000	0.50	0.78
3/31/2013	51.4	1.66	1330.3	42.91	25.91	1069.0	34.48	2000	0.77	0.78
4/30/2013	46.7	1.56	1454.2	48.47	31.11	1866.0	62.20	2000	1.24	0.78
5/31/2013	43.8	1.41	1328.4	42.85	30.33	1013.0	32.68	2000	0.74	0.78
6/30/2013	46.4	1.55	993.1	33.10	21.38	801.0	26.70	2000	0.77	0.78
7/31/2013	52.1	1.68	1321.9	42.64	25.37	2400.0	77.42	2061	1.75	0.79
8/31/2013	51.6	1.67	1234.2	39.81	23.89	1623.3	52.36	3871	1.26	0.79
9/30/2013	46.1	1.54	1177.9	39.26	25.52	1823.2	60.77	3000	1.49	0.79
10/31/2013	52.6	1.70	1282.2	41.36	24.40	2170.7	70.02	3000	1.62	0.79
11/30/2013	53.9	1.80	1331.8	44.39	24.73	2018.1	67.27	3033	1.46	0.79
12/31/2013	50.8	1.64	1400.1	45.16	27.59	1231.0	39.71	4000	0.85	0.79

Cumulative Oil Produced (E3m3)	247.31
Cumulative Water Produced (E3m3)	1539.37
Cumulative Water Injected (E3m3)	1411.05
Cumulative Voidage Replacement Ratio	0.79

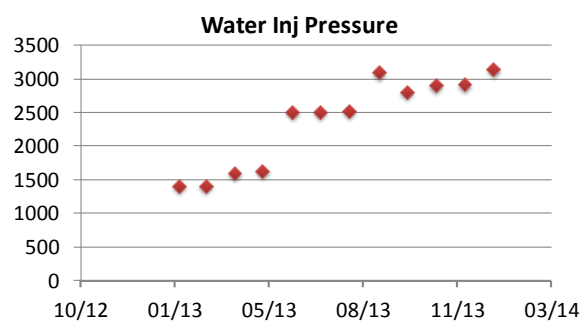
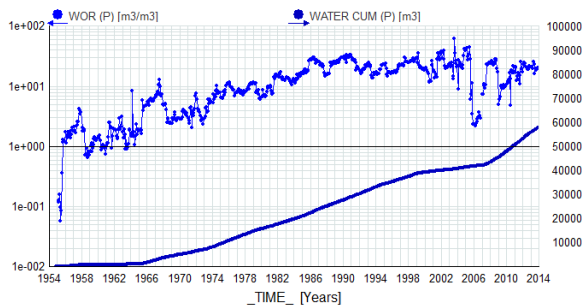
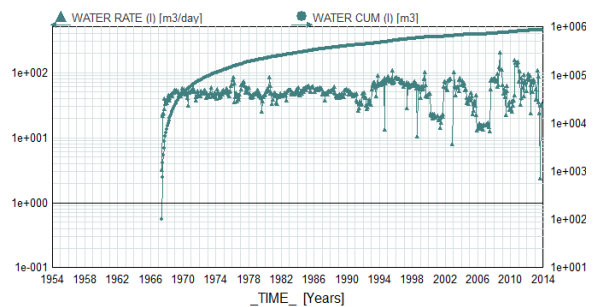
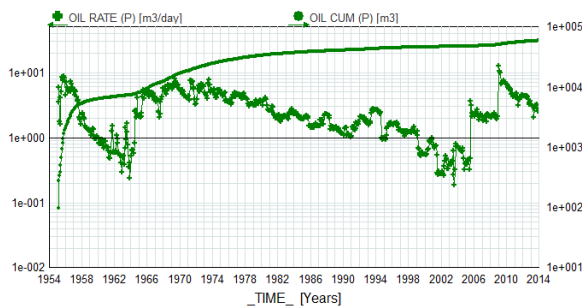


# VRU #3

## Pattern P-02 – 00/01-23-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	97.8	3.15	2033.7	65.60	20.80	1719.0	55.45	1400	0.81	1.40
2/28/2013	86.2	3.08	1767.5	63.12	20.50	1091.0	38.96	1407	0.59	1.40
3/31/2013	95.1	3.07	1884.1	60.78	19.81	1199.0	38.68	1600	0.61	1.40
4/30/2013	60.8	2.03	1544.8	51.49	25.41	3199.0	106.63	1630	1.99	1.40
5/31/2013	84.9	2.74	1996.8	64.41	23.53	2692.0	86.84	2500	1.29	1.40
6/30/2013	87.2	2.91	1425.6	47.52	16.34	1054.0	35.13	2500	0.70	1.40
7/31/2013	97.1	3.13	1884.9	60.80	19.42	732.0	23.61	2519	0.37	1.39
8/31/2013	97.4	3.14	1771.7	57.15	18.19	73.5	2.37	3090	0.04	1.39
9/30/2013	86.5	2.88	1727.1	57.57	19.97	968.5	32.28	2803	0.53	1.39
10/31/2013	98.5	3.18	1884.9	60.80	19.14	975.3	31.46	2900	0.49	1.38
11/30/2013	75.2	2.51	1551.9	51.73	20.63	991.4	33.05	2907	0.61	1.38
12/31/2013	88.6	2.86	1927.2	62.17	21.74	1374.0	44.32	3139	0.68	1.38

Cumulative Oil Produced (E3m3)	59.33
Cumulative Water Produced (E3m3)	578.70
Cumulative Water Injected (E3m3)	882.99
Cumulative Voidage Replacement Ratio	1.38



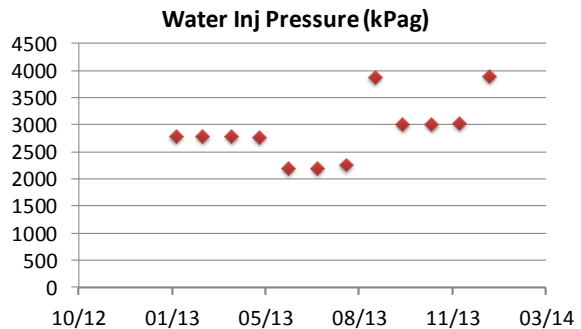
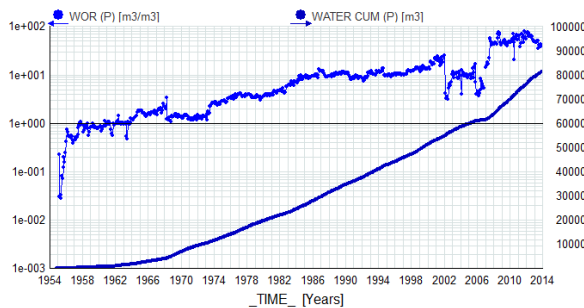
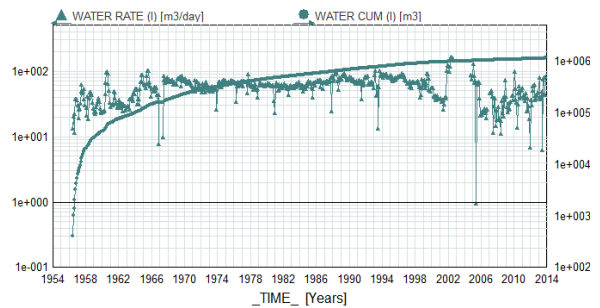
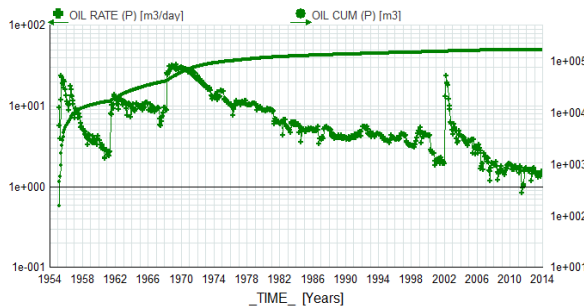
# VRU #3

## Pattern P-03 – 00/14-13-010-26W1/0

## P-03 – 02/14-13-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	47.7	1.54	2342.6	75.57	49.13	2474.0	79.81	2800	1.03	1.19
2/28/2013	41.4	1.48	1943.3	69.40	46.92	1101.0	39.32	2800	0.55	1.18
3/31/2013	45.8	1.48	2137.4	68.95	46.65	1156.0	37.29	2800	0.53	1.18
4/30/2013	41.0	1.37	2085.6	69.52	50.88	1244.0	41.47	2780	0.58	1.18
5/31/2013	40.9	1.32	2040.9	65.84	49.95	1518.0	48.97	2200	0.73	1.18
6/30/2013	40.9	1.36	1430.5	47.68	34.96	190.0	6.33	2200	0.13	1.18
7/31/2013	46.0	1.48	1904.1	61.42	41.44	2361.0	76.16	2255	1.21	1.18
8/31/2013	45.6	1.47	1777.8	57.35	39.00	2513.0	81.06	3871	1.38	1.18
9/30/2013	40.5	1.35	1736.7	57.89	42.89	1331.1	44.37	3000	0.75	1.18
10/31/2013	43.6	1.40	1655.1	53.39	38.00	1340.5	43.24	3000	0.79	1.18
11/30/2013	46.0	1.53	1863.1	62.10	40.49	2441.1	81.37	3030	1.28	1.18
12/31/2013	38.2	1.23	1934.2	62.39	50.60	1641.0	52.94	3890	0.83	1.18

Cumulative Oil Produced (E3m3)	168.28
Cumulative Water Produced (E3m3)	814.00
Cumulative Water Injected (E3m3)	1161.74
Cumulative Voidage Replacement Ratio	1.18

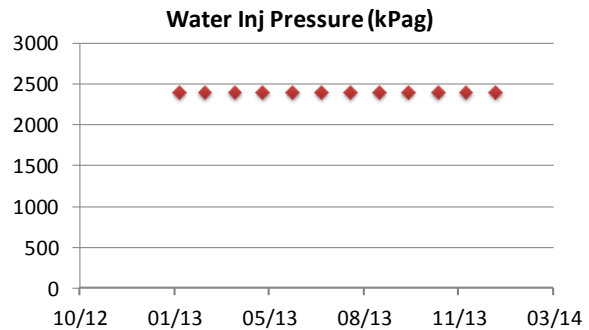
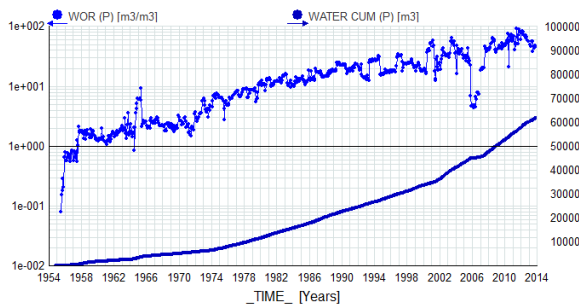
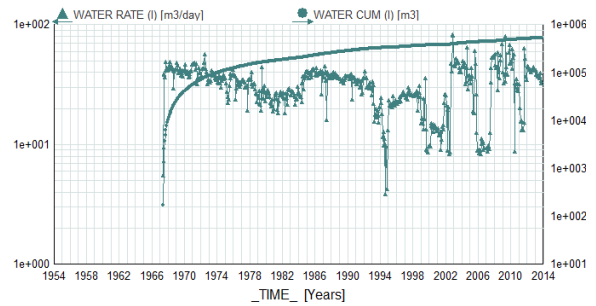
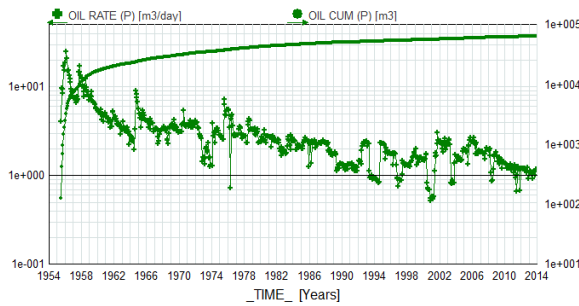


# VRU #3

## Pattern P-04 – 00/11-14-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	35.1	1.13	1746.3	56.33	49.75	1189.0	38.35	2400	0.67	0.79
2/28/2013	31.3	1.12	1545.6	55.20	49.46	1171.0	41.82	2400	0.74	0.79
3/31/2013	34.2	1.10	1592.1	51.36	46.62	1204.0	38.84	2400	0.74	0.79
4/30/2013	31.1	1.04	1740.4	58.01	56.05	1107.0	36.90	2400	0.62	0.79
5/31/2013	28.7	0.93	1603.7	51.73	55.88	1152.0	37.16	2400	0.71	0.79
6/30/2013	30.8	1.03	1188.4	39.61	38.52	1124.0	37.47	2400	0.92	0.79
7/31/2013	34.5	1.11	1582.1	51.03	45.86	1116.0	36.00	2400	0.69	0.79
8/31/2013	34.3	1.10	1477.0	47.64	43.12	1236.7	39.89	2400	0.82	0.79
9/30/2013	30.5	1.02	1440.2	48.01	47.30	1017.2	33.91	2400	0.69	0.79
10/31/2013	34.7	1.12	1571.5	50.69	45.22	1004.9	32.42	2400	0.63	0.79
11/30/2013	35.6	1.19	1632.2	54.41	45.78	0.0	0.00	2400	0.00	0.79
12/31/2013	33.5	1.08	1716.0	55.35	51.30	701.0	22.61	2400	0.40	0.79

Cumulative Oil Produced (E3m3)	64.09
Cumulative Water Produced (E3m3)	619.12
Cumulative Water Injected (E3m3)	537.83
Cumulative Voidage Replacement Ratio	0.79

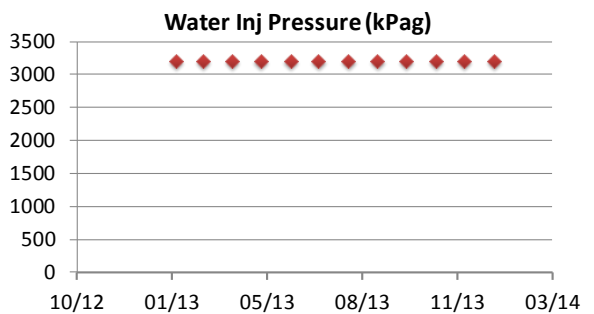
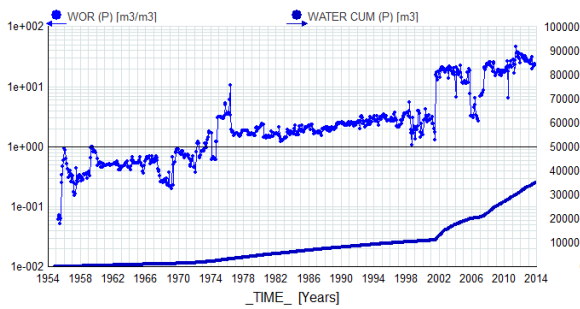
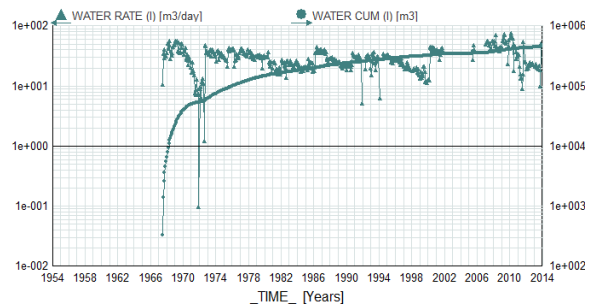
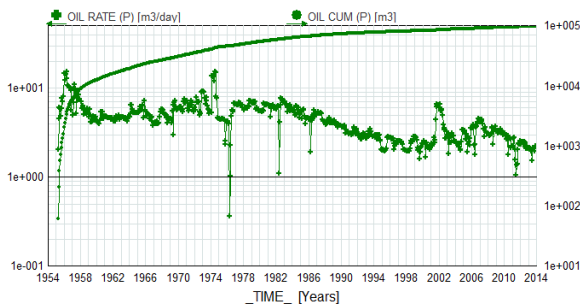


# VRU #3

## Pattern P-06 – 00/06-13-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPag	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	65.7	2.12	1687.1	54.42	25.70	661.0	21.32	3200	0.38	1.02
2/28/2013	58.6	2.09	1443.6	51.56	24.65	607.0	21.68	3200	0.40	1.01
3/31/2013	65.0	2.10	1537.5	49.60	23.66	714.0	23.03	3200	0.45	1.01
4/30/2013	58.5	1.95	1671.1	55.70	28.57	619.0	20.63	3200	0.36	1.01
5/31/2013	47.8	1.54	1516.3	48.91	31.73	614.0	19.81	3200	0.39	1.01
6/30/2013	58.6	1.95	1147.7	38.26	19.58	591.0	19.70	3200	0.49	1.01
7/31/2013	65.7	2.12	1527.8	49.28	23.26	590.0	19.03	3200	0.37	1.00
8/31/2013	65.4	2.11	1426.4	46.01	21.82	682.8	22.03	3200	0.46	1.00
9/30/2013	58.1	1.94	1391.6	46.39	23.94	561.8	18.73	3200	0.39	1.00
10/31/2013	66.2	2.14	1517.5	48.95	22.93	306.0	9.87	3200	0.19	1.00
11/30/2013	67.6	2.25	1576.2	52.54	23.31	1556.7	51.89	3200	0.95	1.00
12/31/2013	63.8	2.06	1657.0	53.45	25.98	1750.0	56.45	3200	1.02	1.00

Cumulative Oil Produced (E3m3)	98.46
Cumulative Water Produced (E3m3)	351.50
Cumulative Water Injected (E3m3)	450.61
Cumulative Voidage Replacement Ratio	1.00

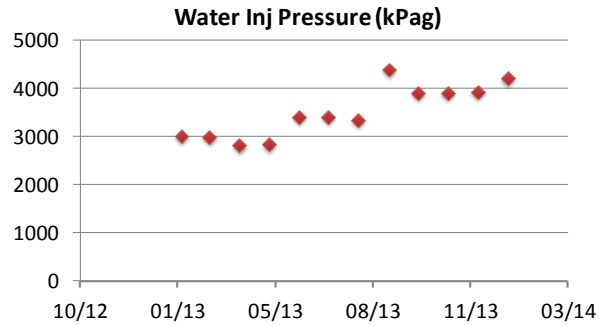
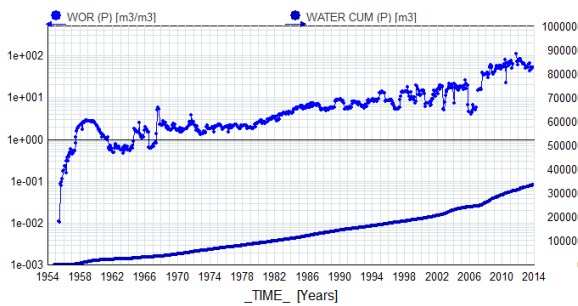
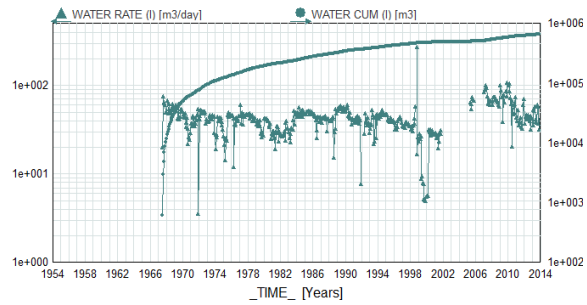
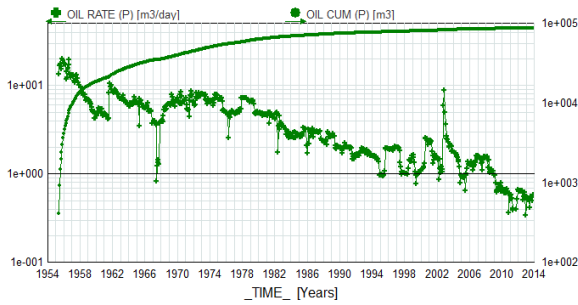


# VRU #3

## Pattern P-07 – 00/09-13-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPag	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	16.7	0.54	891.5	28.76	53.54	1105.0	35.65	3000	1.22	1.56
2/28/2013	14.3	0.51	736.5	26.31	51.51	1485.0	53.04	2993	1.98	1.55
3/31/2013	16.6	0.54	860.9	27.77	51.86	1596.0	51.48	2800	1.82	1.55
4/30/2013	15.2	0.51	940.4	31.35	61.87	1724.0	57.47	2820	1.80	1.55
5/31/2013	13.1	0.42	868.3	28.01	66.54	1218.0	39.29	3400	1.38	1.55
6/30/2013	15.2	0.51	657.1	21.90	43.23	1254.0	41.80	3397	1.86	1.55
7/31/2013	17.1	0.55	874.6	28.21	51.15	1178.0	38.00	3335	1.32	1.55
8/31/2013	17.0	0.55	816.6	26.34	48.17	1883.3	60.75	4384	2.26	1.55
9/30/2013	15.1	0.50	797.0	26.57	52.96	1125.5	37.52	3900	1.39	1.55
10/31/2013	17.2	0.55	868.7	28.02	50.65	1784.3	57.56	3900	2.01	1.54
11/30/2013	17.6	0.59	902.3	30.08	51.42	959.1	31.97	3910	1.04	1.55
12/31/2013	16.6	0.53	948.7	30.60	57.32	1737.0	56.03	4200	1.80	1.55

Cumulative Oil Produced (E3m3)	87.05
Cumulative Water Produced (E3m3)	326.88
Cumulative Water Injected (E3m3)	644.32
Cumulative Voidage Replacement Ratio	1.55

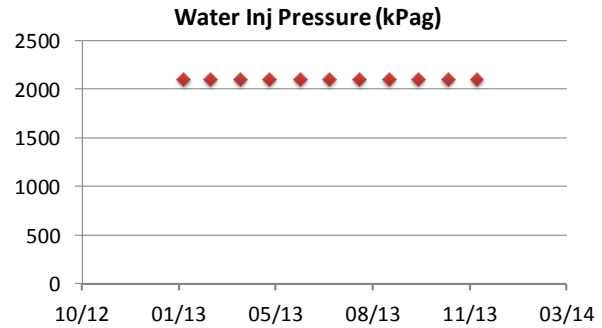
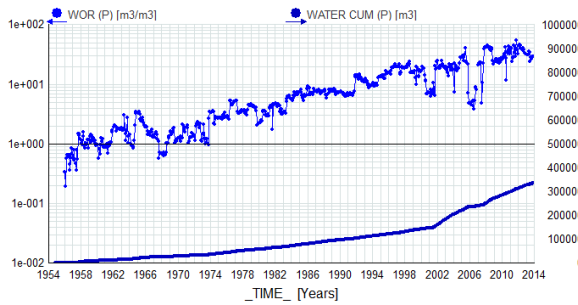
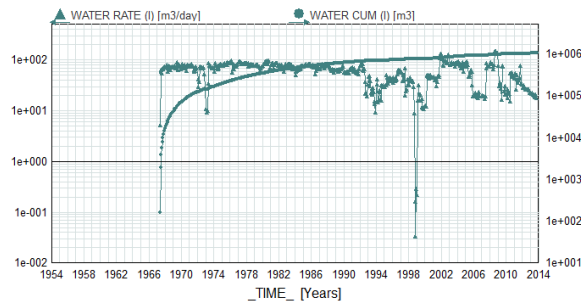
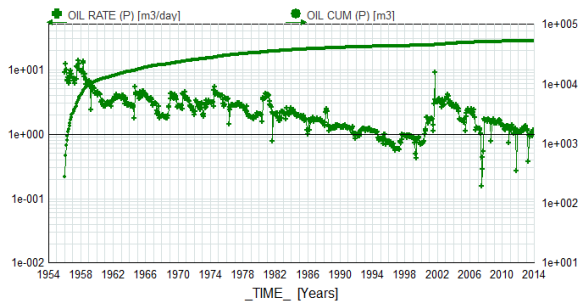


# VRU #3

## Pattern P-08 – 00/04-14-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPag	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	37.0	1.19	1170.6	37.76	31.68	1170.6	37.76	2100	0.97	2.68
2/28/2013	31.2	1.11	958.2	34.22	30.76	958.2	34.22	2100	0.97	2.67
3/31/2013	11.5	0.37	359.0	11.58	31.36	359.0	11.58	2100	0.97	2.67
4/30/2013	29.1	0.97	1020.8	34.03	35.08	1020.8	34.03	2100	0.97	2.67
5/31/2013	28.2	0.91	964.7	31.12	34.21	964.7	31.12	2100	0.97	2.66
6/30/2013	27.9	0.93	667.8	22.26	23.94	667.8	22.26	2100	0.96	2.66
7/31/2013	31.2	1.01	889.0	28.68	28.49	889.0	28.68	2100	0.97	2.65
8/31/2013	31.0	1.00	830.0	26.77	26.77	830.0	26.77	2100	0.96	2.65
9/30/2013	27.7	0.92	813.3	27.11	29.36	813.3	27.11	2100	0.97	2.64
10/31/2013	31.4	1.01	883.0	28.48	28.12	883.0	28.48	2100	0.96	2.64
11/30/2013	34.7	1.16	1009.0	33.63	29.08	1009.0	33.63	2100	0.97	2.63
12/31/2013	4.9	0.16	155.5	5.02	31.73	155.5	5.02	2100	0.97	2.63

Cumulative Oil Produced (E3m3)	53.49
Cumulative Water Produced (E3m3)	336.00
Cumulative Water Injected (E3m3)	1028.56
Cumulative Voidage Replacement Ratio	2.63

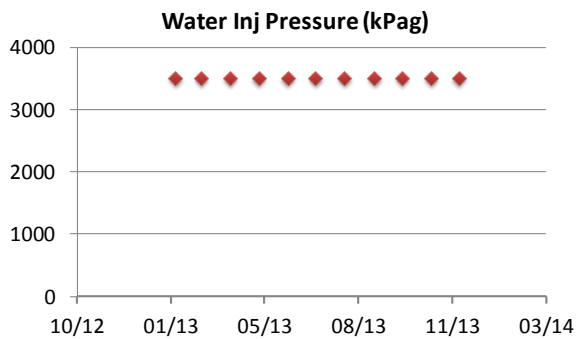
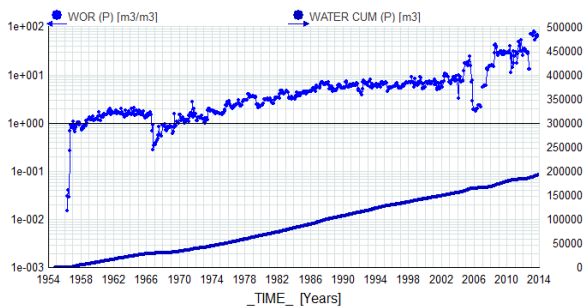
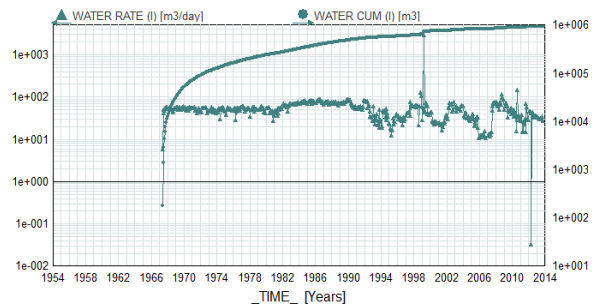
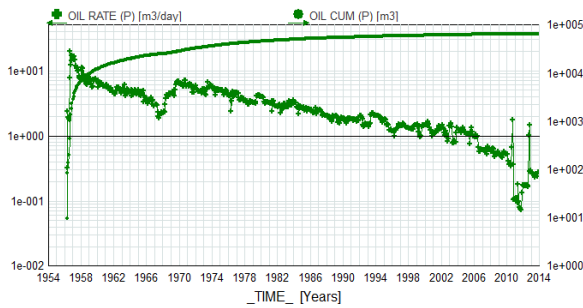


# VRU #3

## Pattern P-09 – 00/14-11-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	8.2	0.27	579.2	18.68	70.37	1069.0	34.48	3500	1.82	3.69
2/28/2013	7.2	0.26	493.6	17.63	68.74	989.0	35.32	3500	1.97	3.69
3/31/2013	8.0	0.26	525.7	16.96	65.88	971.0	31.32	3500	1.82	3.68
4/30/2013	7.3	0.24	574.6	19.15	79.10	916.0	30.53	3500	1.57	3.68
5/31/2013	7.2	0.23	552.4	17.82	76.22	971.0	31.32	3500	1.73	3.67
6/30/2013	7.3	0.24	392.4	13.08	54.02	926.0	30.87	3500	2.32	3.67
7/31/2013	8.1	0.26	522.3	16.85	64.11	914.0	29.48	3500	1.72	3.67
8/31/2013	8.0	0.26	487.7	15.73	60.86	1049.1	33.84	3500	2.12	3.66
9/30/2013	7.1	0.24	477.7	15.92	66.99	832.7	27.76	3500	1.72	3.66
10/31/2013	8.1	0.26	518.8	16.74	63.68	845.0	27.26	3500	1.60	3.66
11/30/2013	8.3	0.28	537.8	17.93	64.82	0.0	0.00	3500	0.00	3.65
12/31/2013	7.8	0.25	566.5	18.28	72.20	0.0	0.00	3500	0.00	3.64

Cumulative Oil Produced (E3m3)	65.16
Cumulative Water Produced (E3m3)	193.09
Cumulative Water Injected (E3m3)	946.07
Cumulative Voidage Replacement Ratio	3.64



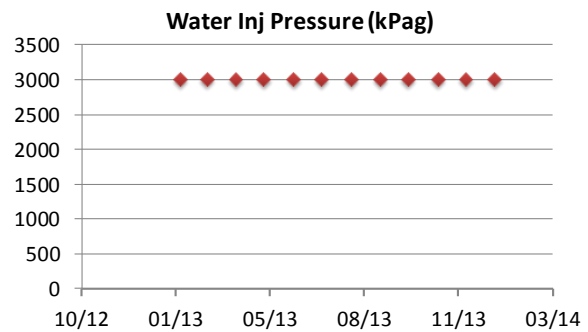
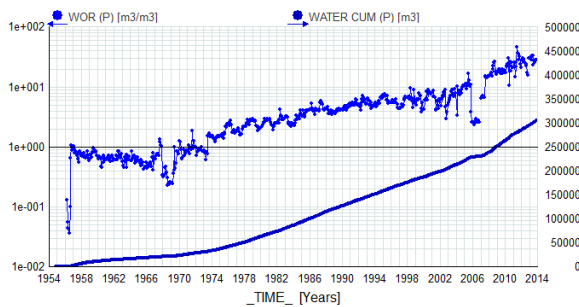
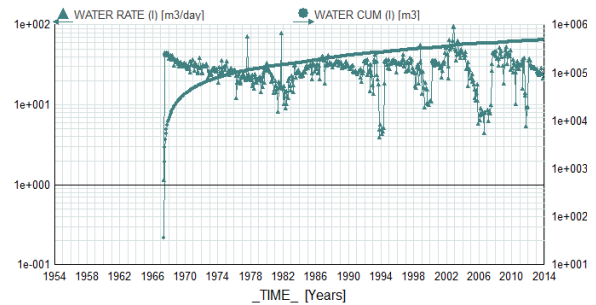
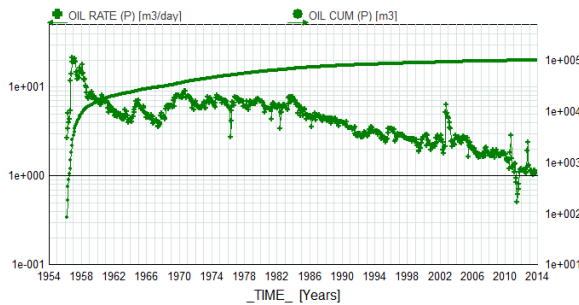


# VRU #3

## Pattern P-10 – 00/16-11-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	35.2	1.13	1098.2	35.43	31.22	803.0	25.90	3000	0.71	1.19
2/28/2013	32.1	1.15	941.6	33.63	29.35	789.0	28.18	3000	0.81	1.19
3/31/2013	35.6	1.15	1002.9	32.35	28.20	771.0	24.87	3000	0.74	1.19
4/30/2013	32.4	1.08	1096.2	36.54	33.79	719.0	23.97	3000	0.64	1.19
5/31/2013	32.2	1.04	1058.5	34.14	32.88	773.0	24.94	3000	0.71	1.19
6/30/2013	32.2	1.07	748.6	24.95	23.21	777.0	25.90	3000	0.99	1.19
7/31/2013	36.1	1.16	996.5	32.14	27.63	763.0	24.61	3000	0.74	1.19
8/31/2013	35.8	1.16	930.4	30.01	25.98	895.4	28.88	3000	0.93	1.19
9/30/2013	31.8	1.06	910.0	30.33	28.59	739.9	24.66	3000	0.78	1.19
10/31/2013	33.4	1.08	929.3	29.98	27.81	757.9	24.45	3000	0.79	1.19
11/30/2013	33.2	1.11	943.4	31.45	28.44	644.7	21.49	3000	0.66	1.18
12/31/2013	34.6	1.12	1072.2	34.59	31.02	627.0	20.23	3000	0.57	1.18

Cumulative Oil Produced (E3m3)	100.91
Cumulative Water Produced (E3m3)	306.22
Cumulative Water Injected (E3m3)	484.31
Cumulative Voidage Replacement Ratio	1.18

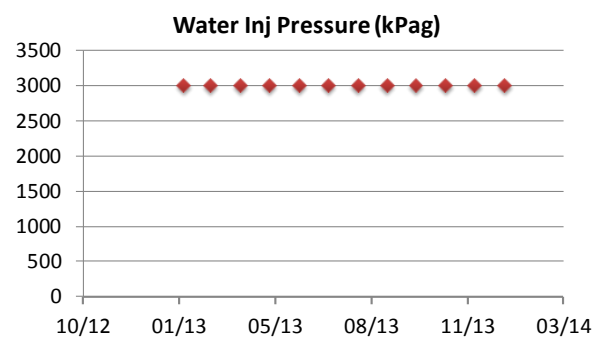
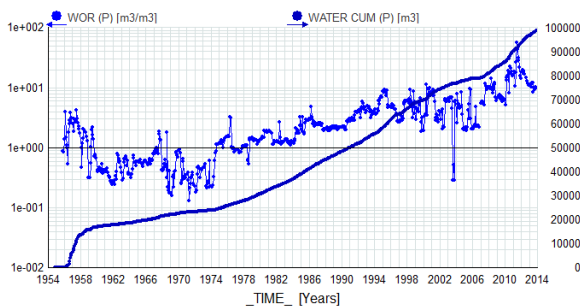
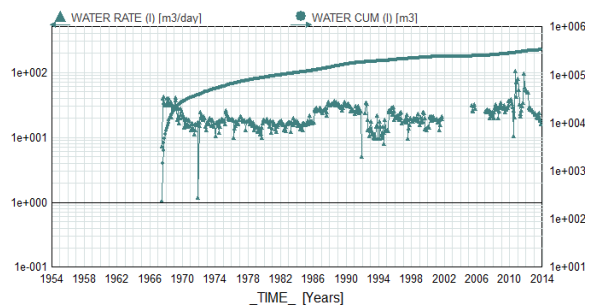
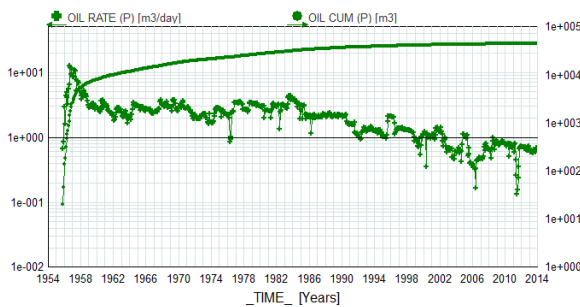


# VRU #3

## Pattern P-11 – 00/14-12-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	18.5	0.60	212.1	6.84	11.44	691.0	22.29	3000	2.99	2.28
2/28/2013	17.6	0.63	186.4	6.66	10.60	671.0	23.96	3000	3.28	2.28
3/31/2013	19.5	0.63	198.5	6.40	10.18	702.0	22.65	3000	3.21	2.28
4/30/2013	17.8	0.59	216.9	7.23	12.19	616.0	20.53	3000	2.62	2.28
5/31/2013	17.8	0.57	214.0	6.90	12.03	616.0	19.87	3000	2.65	2.28
6/30/2013	17.6	0.59	148.2	4.94	8.40	676.0	22.53	3000	4.07	2.29
7/31/2013	19.8	0.64	197.2	6.36	9.98	662.0	21.35	3000	3.04	2.29
8/31/2013	19.7	0.63	184.1	5.94	9.37	732.5	23.63	3000	3.59	2.29
9/30/2013	17.5	0.58	180.4	6.01	10.33	581.1	19.37	3000	2.93	2.29
10/31/2013	19.9	0.64	195.9	6.32	9.85	565.8	18.25	3000	2.62	2.29
11/30/2013	20.3	0.68	203.4	6.78	10.01	486.6	16.22	3000	2.17	2.29
12/31/2013	19.2	0.62	213.9	6.90	11.16	2177.0	70.23	3000	9.32	2.30

Cumulative Oil Produced (E3m3)	45.65
Cumulative Water Produced (E3m3)	98.93
Cumulative Water Injected (E3m3)	335.23
Cumulative Voidage Replacement Ratio	2.30

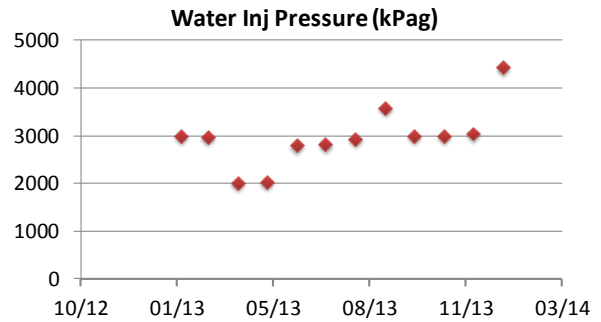
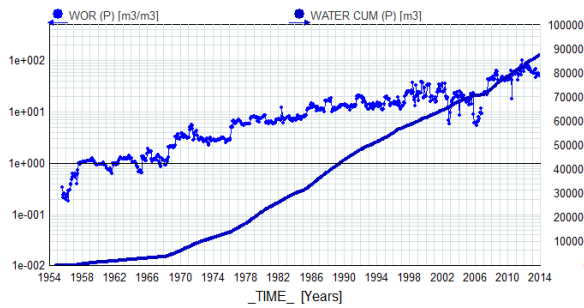
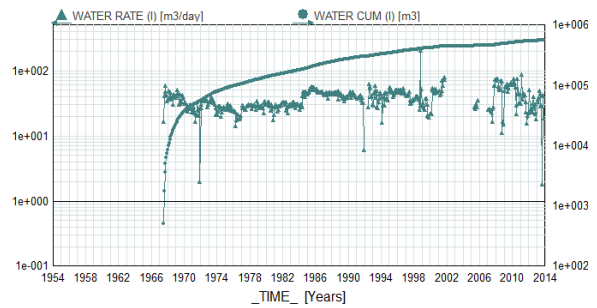
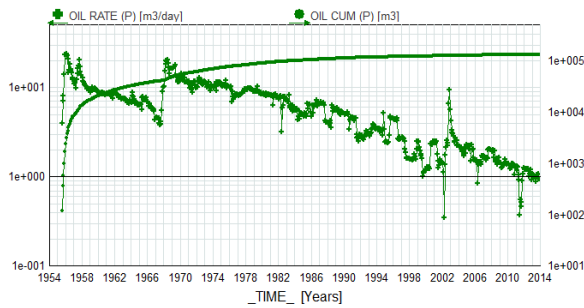


# VRU #3

## Pattern P-13 – 00/04-18-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	33.0	1.06	1950.4	62.92	59.11	1019.0	32.87	3000	0.51	0.56
2/28/2013	28.5	1.02	1639.0	58.54	57.41	1004.0	35.86	2964	0.60	0.56
3/31/2013	31.9	1.03	1815.5	58.57	56.95	1215.0	39.19	2000	0.66	0.56
4/30/2013	29.5	0.98	1988.4	66.28	67.33	1466.0	48.87	2027	0.73	0.56
5/31/2013	27.4	0.88	1902.1	61.36	69.46	1361.0	43.90	2800	0.71	0.56
6/30/2013	29.5	0.98	1372.8	45.76	46.49	867.0	28.90	2803	0.62	0.56
7/31/2013	32.7	1.06	1815.7	58.57	55.47	917.0	29.58	2923	0.50	0.56
8/31/2013	32.8	1.06	1705.9	55.03	52.06	56.5	1.82	3581	0.03	0.56
9/30/2013	29.2	0.97	1668.7	55.62	57.15	1255.9	41.86	3000	0.74	0.56
10/31/2013	33.1	1.07	1815.0	58.55	54.75	1264.7	40.80	3000	0.68	0.56
11/30/2013	28.1	0.94	1417.2	47.24	50.47	564.5	18.82	3047	0.39	0.56
12/31/2013	31.9	1.03	1981.9	63.93	62.07	178.0	5.74	4432	0.09	0.56

Cumulative Oil Produced (E3m3)	133.34
Cumulative Water Produced (E3m3)	874.63
Cumulative Water Injected (E3m3)	563.83
Cumulative Voidage Replacement Ratio	0.56

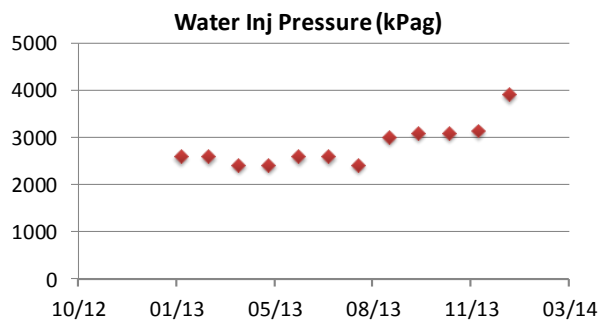
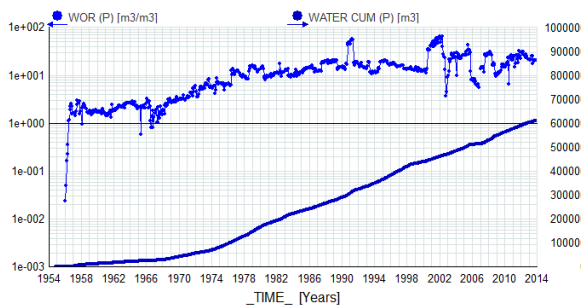
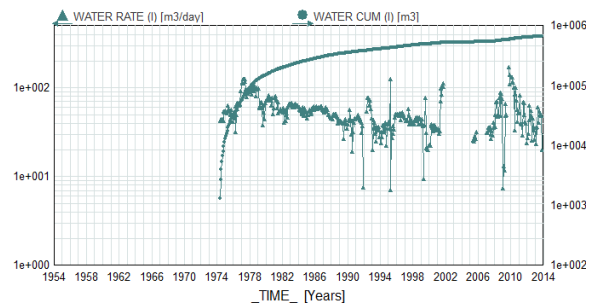
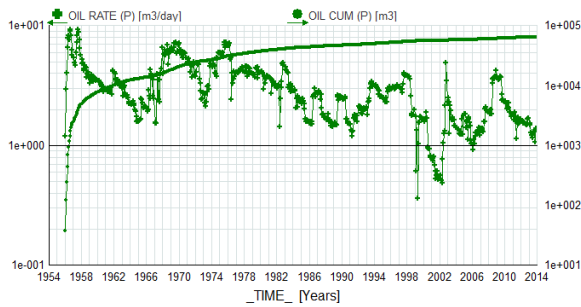


# VRU #3

## Pattern P-14 – 02/02-18-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPag	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	47.3	1.53	999.1	32.23	21.11	1095.0	35.32	2600	1.05	0.98
2/28/2013	41.3	1.48	850.6	30.38	20.59	660.0	23.57	2593	0.74	0.98
3/31/2013	39.8	1.28	844.5	27.24	21.23	1125.0	36.29	2400	1.27	0.98
4/30/2013	36.6	1.22	927.7	30.92	25.34	1825.0	60.83	2407	1.89	0.98
5/31/2013	36.2	1.17	901.7	29.09	24.90	1267.0	40.87	2600	1.35	0.98
6/30/2013	36.4	1.21	633.5	21.12	17.42	0.0	0.00	2593	0.00	0.98
7/31/2013	40.3	1.30	831.6	26.83	20.65	1662.0	53.61	2419	1.90	0.98
8/31/2013	40.4	1.30	787.3	25.40	19.48	1574.7	50.80	3003	1.90	0.99
9/30/2013	31.8	1.06	661.2	22.04	20.79	1490.0	49.67	3100	2.15	0.99
10/31/2013	40.9	1.32	837.6	27.02	20.48	1501.4	48.43	3100	1.71	0.99
11/30/2013	41.9	1.40	870.0	29.00	20.77	598.3	19.94	3127	0.66	0.99
12/31/2013	39.4	1.27	914.6	29.50	23.21	1074.0	34.65	3900	1.12	0.99

Cumulative Oil Produced (E3m3)	64.55
Cumulative Water Produced (E3m3)	611.84
Cumulative Water Injected (E3m3)	669.72
Cumulative Voidage Replacement Ratio	0.99

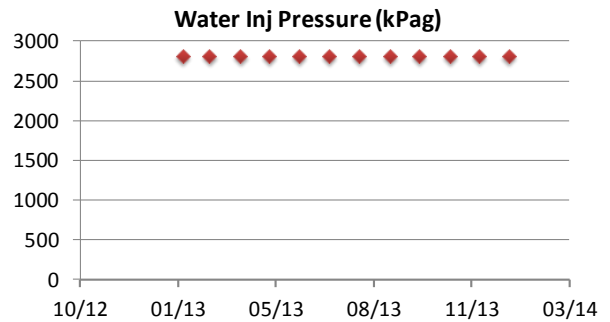
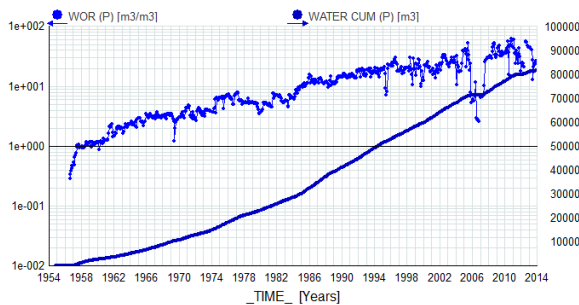
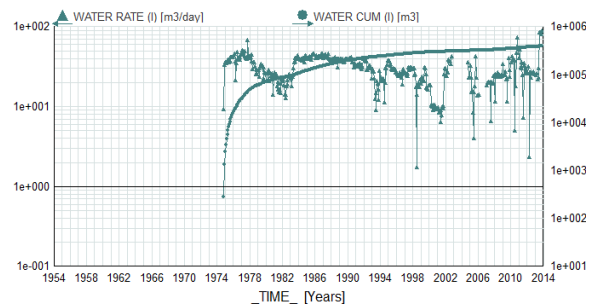
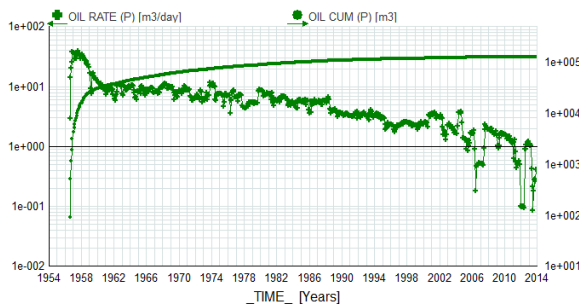


# VRU #3

## Pattern P-15 – 00/12-11-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	34.2	1.10	1536.5	49.57	44.95	771.0	24.87	2800	0.49	0.41
2/28/2013	28.6	1.02	1270.0	45.36	44.36	703.0	25.11	2800	0.54	0.41
3/31/2013	32.3	1.04	1374.9	44.35	42.59	802.0	25.87	2800	0.57	0.41
4/30/2013	12.9	0.43	532.2	17.74	41.21	669.0	22.30	2800	1.23	0.41
5/31/2013	6.5	0.21	180.7	5.83	27.60	712.0	22.97	2800	3.80	0.41
6/30/2013	2.6	0.09	32.8	1.09	12.81	907.0	30.23	2800	25.58	0.41
7/31/2013	5.5	0.18	118.4	3.82	21.35	2628.0	84.77	2800	21.17	0.41
8/31/2013	8.7	0.28	195.3	6.30	22.42	2636.2	85.04	2800	12.91	0.42
9/30/2013	7.7	0.26	191.2	6.37	24.73	2537.4	84.58	2800	12.74	0.42
10/31/2013	8.8	0.28	207.8	6.70	23.62	2535.9	81.80	2800	11.70	0.42
11/30/2013	12.2	0.41	329.5	10.98	26.90	2683.3	89.44	2800	7.85	0.42
12/31/2013	8.5	0.27	226.9	7.32	26.71	4377.0	141.19	2800	18.57	0.43

Cumulative Oil Produced (E3m3)	128.44
Cumulative Water Produced (E3m3)	815.45
Cumulative Water Injected (E3m3)	405.82
Cumulative Voidage Replacement Ratio	0.43

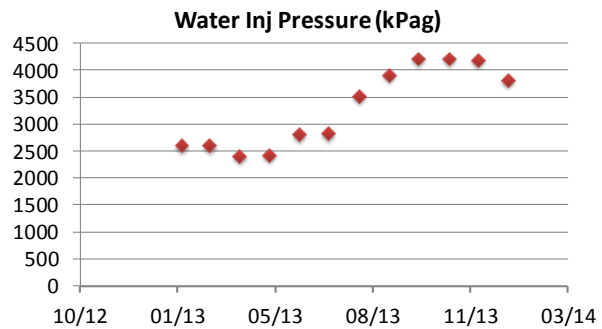
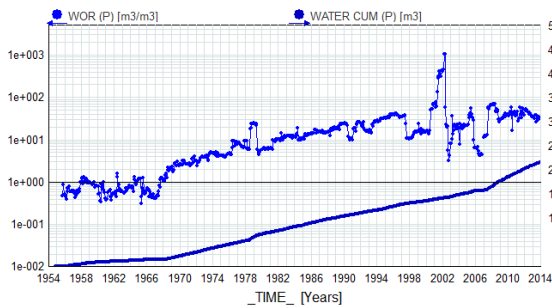
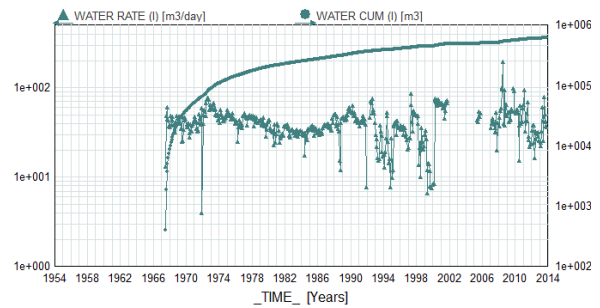
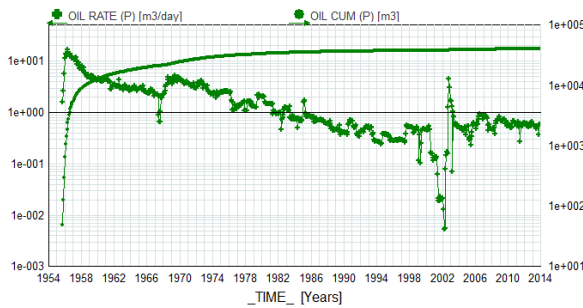


# VRU #3

## Pattern P-16 – 00/14-07-010-25W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	18.0	0.58	628.5	20.27	34.95	754.0	24.32	2600	1.17	2.41
2/28/2013	15.9	0.57	534.8	19.10	33.61	624.0	22.29	2593	1.13	2.41
3/31/2013	17.0	0.55	539.1	17.39	31.75	1016.0	32.77	2400	1.83	2.41
4/30/2013	15.5	0.52	586.6	19.55	37.93	1814.0	60.47	2413	3.01	2.41
5/31/2013	15.0	0.48	565.3	18.24	37.65	1320.0	42.58	2800	2.27	2.41
6/30/2013	15.3	0.51	400.6	13.35	26.16	770.0	25.67	2823	1.85	2.41
7/31/2013	16.7	0.54	521.6	16.83	31.18	2424.3	78.20	3513	4.50	2.41
8/31/2013	17.0	0.55	497.9	16.06	29.26	1578.1	50.91	3910	3.06	2.41
9/30/2013	10.9	0.36	377.5	12.58	34.48	1120.9	37.36	4200	2.88	2.41
10/31/2013	17.2	0.56	529.7	17.09	30.71	1278.6	41.25	4200	2.34	2.41
11/30/2013	17.6	0.59	550.1	18.34	31.20	1087.3	36.24	4187	1.91	2.41
12/31/2013	16.6	0.54	578.4	18.66	34.85	871.0	28.10	3803	1.46	2.41

Cumulative Oil Produced (E3m3)	41.14
Cumulative Water Produced (E3m3)	216.26
Cumulative Water Injected (E3m3)	622.54
Cumulative Voidage Replacement Ratio	2.41

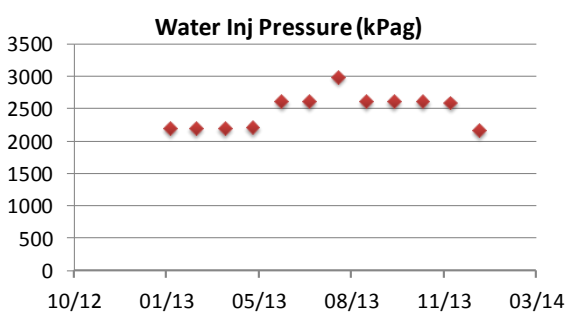
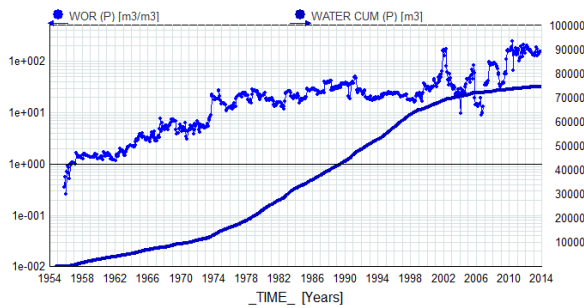
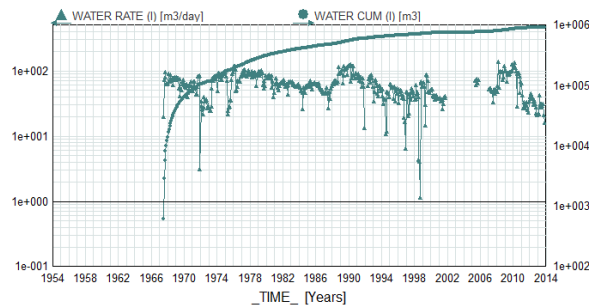
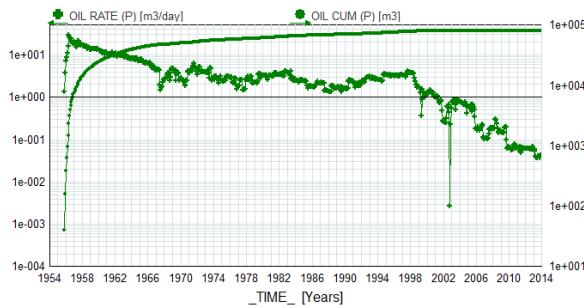


# VRU #3

## Pattern P-18 – 00/10-07-010-25W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPa	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	1.8	0.06	241.4	7.79	131.77	669.0	21.58	2200	2.75	1.11
2/28/2013	1.5	0.05	196.2	7.01	129.48	624.0	22.29	2200	3.16	1.11
3/31/2013	1.2	0.04	184.8	5.96	147.95	1328.0	42.84	2200	7.14	1.11
4/30/2013	1.1	0.04	202.1	6.74	186.62	836.0	27.87	2213	4.11	1.11
5/31/2013	1.1	0.04	199.3	6.43	175.96	978.0	31.55	2600	4.88	1.12
6/30/2013	1.1	0.04	138.0	4.60	127.44	856.0	28.53	2613	6.15	1.12
7/31/2013	1.2	0.04	183.6	5.92	147.00	913.0	29.45	2987	4.94	1.12
8/31/2013	1.2	0.04	171.5	5.53	137.27	964.3	31.11	2600	5.58	1.12
9/30/2013	1.1	0.04	168.0	5.60	152.85	626.1	20.87	2600	3.70	1.12
10/31/2013	1.2	0.04	182.4	5.88	146.03	659.2	21.26	2600	3.59	1.12
11/30/2013	1.2	0.04	189.5	6.32	151.68	486.6	16.22	2583	2.55	1.12
12/31/2013	0.0	0.04	199.2	6.43	163.81	1012.0	32.65	2155	5.05	1.12

Cumulative Oil Produced (E3m3)	82.04
Cumulative Water Produced (E3m3)	746.95
Cumulative Water Injected (E3m3)	931.02
Cumulative Voidage Replacement Ratio	1.12

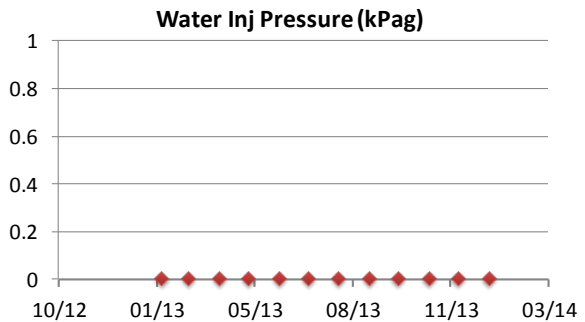
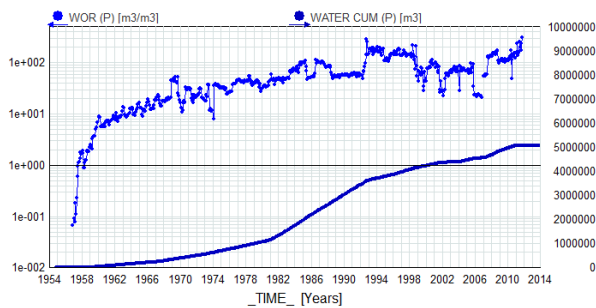
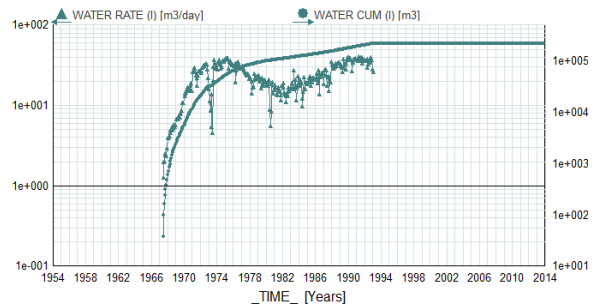
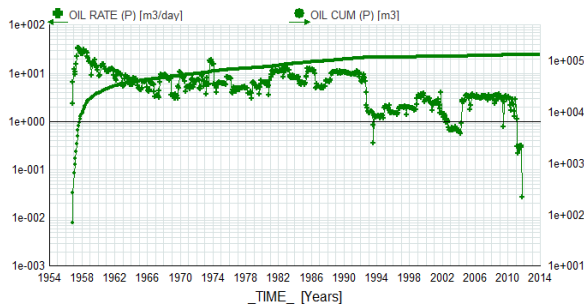


# VRU #3

## Pattern P-19 – 00/06-10-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
2/28/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
3/31/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
4/30/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
5/31/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
6/30/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
7/31/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
8/31/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
9/30/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
10/31/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
11/30/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04
12/31/2013	0.0	0.00	0.0	0.00		0.0	0.00	--	#DIV/0!	0.04

Cumulative Oil Produced (E3m <sup>3</sup> )	131.58
Cumulative Water Produced (E3m <sup>3</sup> )	5084.99
Cumulative Water Injected (E3m <sup>3</sup> )	217.73
Cumulative Voidage Replacement Ratio	0.04



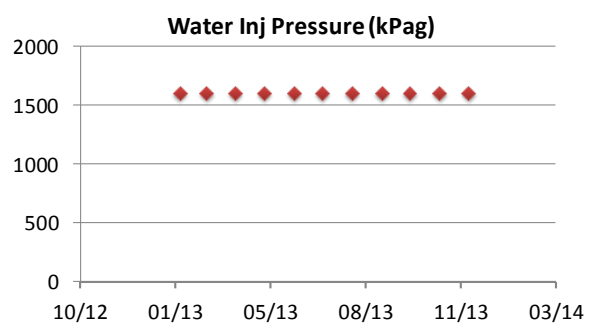
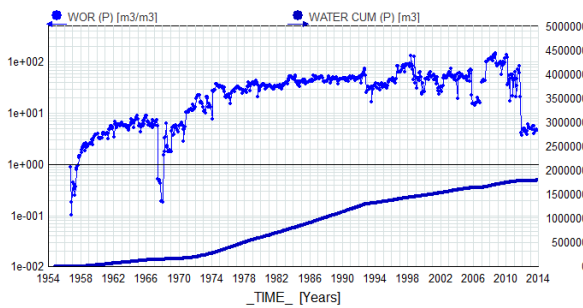
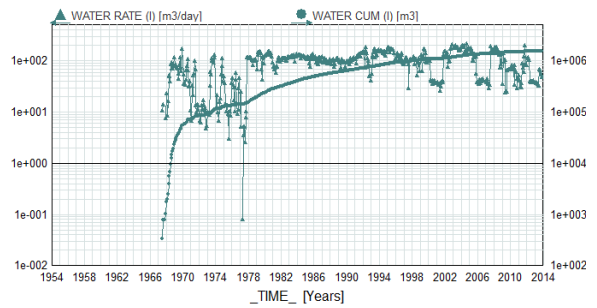
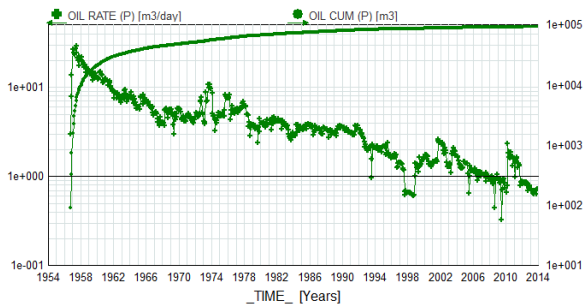


# VRU #3

## Pattern P-20 – 00/08-10-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPa	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	22.3	0.72	113.4	3.66	5.08	1131.0	36.48	1600	8.30	0.82
2/28/2013	19.4	0.69	96.6	3.45	4.99	1091.0	38.96	1600	9.37	0.82
3/31/2013	21.6	0.70	102.9	3.32	4.77	1139.0	36.74	1600	9.12	0.82
4/30/2013	19.6	0.65	112.4	3.75	5.73	1081.0	36.03	1600	8.16	0.82
5/31/2013	19.6	0.63	110.9	3.58	5.66	1021.0	32.94	1600	7.79	0.82
6/30/2013	19.4	0.65	76.8	2.56	3.96	1023.0	34.10	1600	10.58	0.82
7/31/2013	21.7	0.70	102.2	3.30	4.71	2109.0	68.03	1600	16.95	0.82
8/31/2013	21.7	0.70	95.4	3.08	4.41	2050.6	66.15	1600	17.44	0.82
9/30/2013	19.2	0.64	93.0	3.10	4.86	1671.7	55.72	1600	14.84	0.82
10/31/2013	21.9	0.71	101.5	3.27	4.63	1677.0	54.10	1600	13.53	0.82
11/30/2013	21.8	0.73	102.8	3.43	4.72	1437.9	47.93	1600	11.49	0.82
12/31/2013	21.1	0.68	110.9	3.58	5.25	449.0	14.48	1600	3.39	0.82

Cumulative Oil Produced (E3m3)	94.17
Cumulative Water Produced (E3m3)	1797.40
Cumulative Water Injected (E3m3)	1560.36
Cumulative Voidage Replacement Ratio	0.82

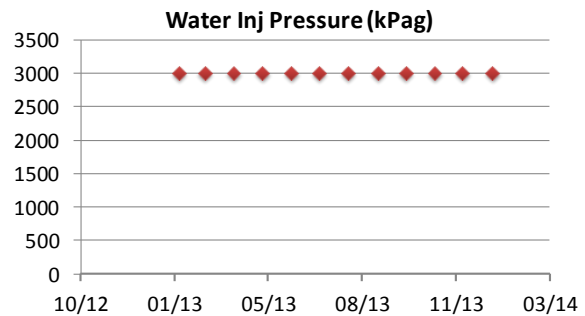
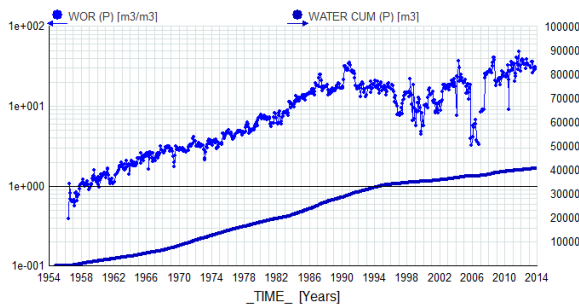
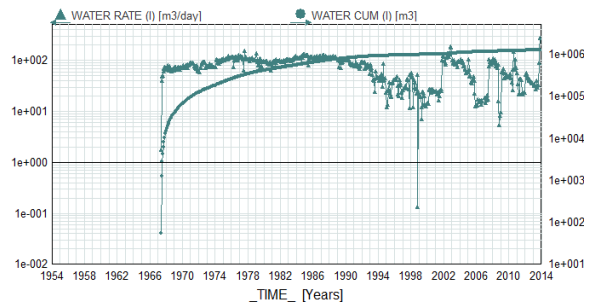
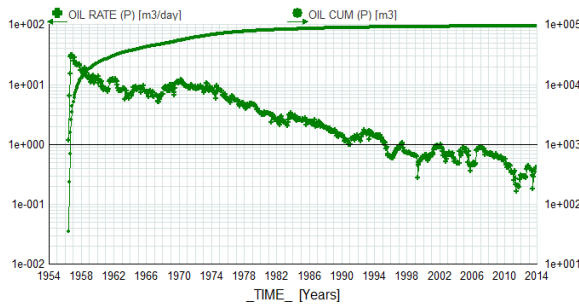


# VRU #3

## Pattern P-21 – 00/06-11-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	12.3	0.40	395.6	12.76	32.22	997.0	32.16	3000	2.44	2.48
2/28/2013	10.7	0.38	337.1	12.04	31.57	971.0	34.68	3000	2.79	2.48
3/31/2013	11.8	0.38	359.1	11.59	30.36	1031.0	33.26	3000	2.78	2.48
4/30/2013	10.8	0.36	392.6	13.09	36.47	818.0	27.27	3000	2.03	2.48
5/31/2013	9.4	0.30	340.9	11.00	36.09	971.0	31.32	3000	2.77	2.48
6/30/2013	5.5	0.18	143.7	4.79	26.31	1202.0	40.07	3000	8.05	2.48
7/31/2013	8.8	0.28	266.0	8.58	30.24	921.0	29.71	3000	3.35	2.48
8/31/2013	11.9	0.38	333.1	10.75	27.96	1025.3	33.07	3000	2.97	2.48
9/30/2013	10.6	0.35	325.5	10.85	30.76	2722.9	90.76	3000	8.10	2.48
10/31/2013	12.0	0.39	354.4	11.43	29.42	5165.1	166.62	3000	14.08	2.49
11/30/2013	12.3	0.41	367.1	12.24	29.85	8264.4	275.48	3000	21.77	2.51
12/31/2013	11.6	0.38	387.0	12.49	33.23	4623.0	149.13	3000	11.59	2.51

Cumulative Oil Produced (E3m <sup>3</sup> )	95.78
Cumulative Water Produced (E3m <sup>3</sup> )	408.48
Cumulative Water Injected (E3m <sup>3</sup> )	1273.69
Cumulative Voidage Replacement Ratio	2.51

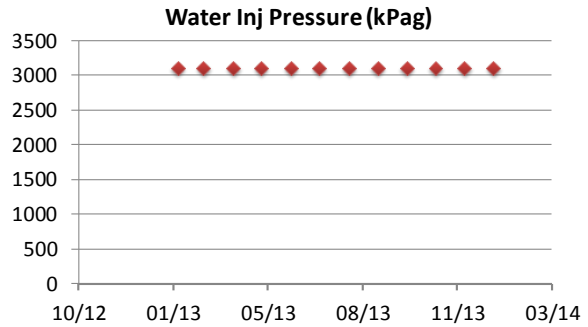
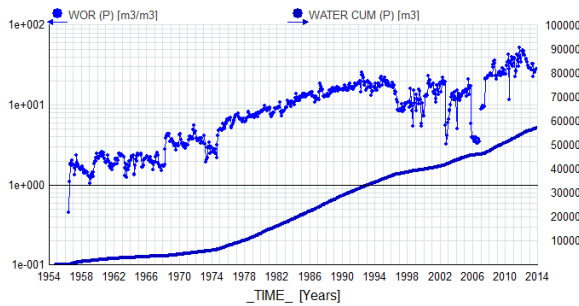
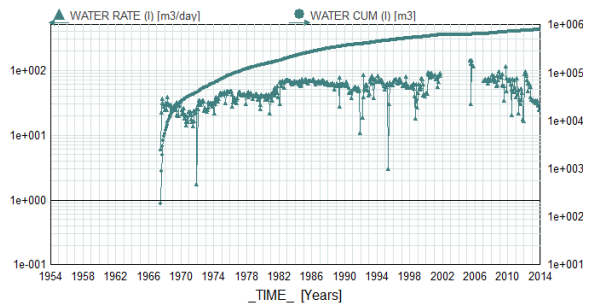
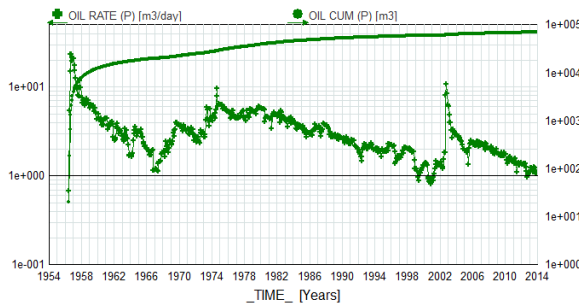


# VRU #3

## Pattern P-22 – 00/08-11-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	34.4	1.11	999.7	32.25	29.08	1067.0	34.42	3100	1.03	1.24
2/28/2013	34.4	1.23	980.1	35.00	28.52	1001.0	35.75	3100	0.99	1.24
3/31/2013	38.2	1.23	1048.0	33.81	27.45	1029.0	33.19	3100	0.95	1.24
4/30/2013	34.8	1.16	1145.5	38.18	32.96	1001.0	33.37	3100	0.85	1.23
5/31/2013	34.4	1.11	1113.2	35.91	32.37	981.0	31.65	3100	0.85	1.23
6/30/2013	34.5	1.15	782.3	26.08	22.66	1018.0	33.93	3100	1.24	1.23
7/31/2013	38.6	1.25	1041.4	33.59	26.97	980.0	31.61	3100	0.91	1.23
8/31/2013	38.4	1.24	972.2	31.36	25.31	1073.9	34.64	3100	1.06	1.23
9/30/2013	34.2	1.14	949.3	31.64	27.75	898.8	29.96	3100	0.91	1.23
10/31/2013	33.2	1.07	913.4	29.46	27.51	892.1	28.78	3100	0.94	1.23
11/30/2013	31.9	1.06	905.0	30.17	28.36	735.9	24.53	3100	0.78	1.23
12/31/2013	36.7	1.18	1112.2	35.88	30.28	718.0	23.16	3100	0.62	1.23

Cumulative Oil Produced (E3m3)	70.02
Cumulative Water Produced (E3m3)	570.70
Cumulative Water Injected (E3m3)	790.48
Cumulative Voidage Replacement Ratio	1.23

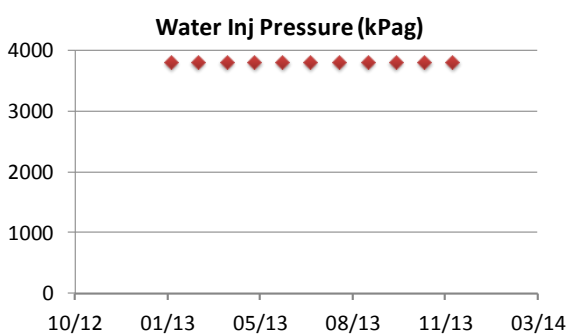
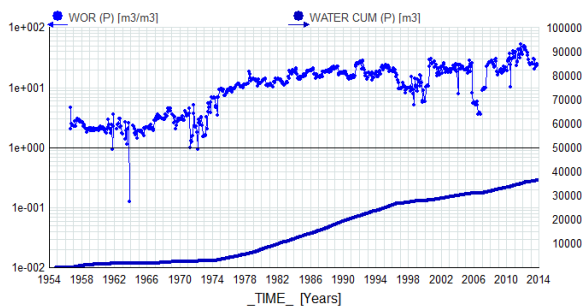
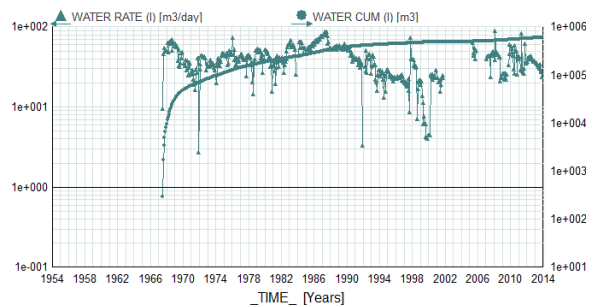
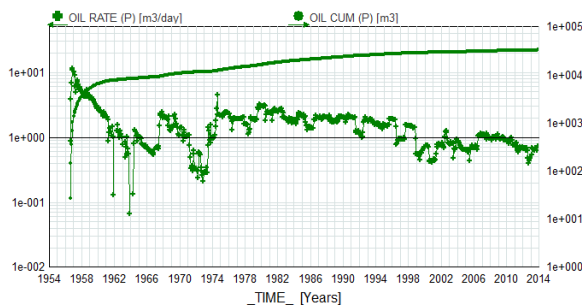


# VRU #3

## Pattern P-23 – 00/06-12-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	16.6	0.54	421.3	13.59	25.35	1089.0	35.13	3800	2.48	1.50
2/28/2013	19.0	0.68	487.1	17.40	25.68	1003.0	35.82	3800	1.98	1.50
3/31/2013	20.8	0.67	515.1	16.62	24.80	1101.0	35.52	3800	2.05	1.50
4/30/2013	19.2	0.64	571.6	19.05	29.76	1011.0	33.70	3800	1.71	1.50
5/31/2013	19.2	0.62	563.8	18.19	29.30	1001.0	32.29	3800	1.72	1.50
6/30/2013	19.0	0.63	390.4	13.01	20.53	954.0	31.80	3800	2.33	1.50
7/31/2013	21.4	0.69	519.7	16.76	24.32	950.0	30.65	3800	1.75	1.51
8/31/2013	21.2	0.68	485.1	15.65	22.87	1073.9	34.64	3800	2.12	1.51
9/30/2013	19.0	0.63	475.4	15.85	25.07	859.3	28.64	3800	1.74	1.51
10/31/2013	21.5	0.69	516.1	16.65	24.00	845.0	27.26	3800	1.57	1.51
11/30/2013	22.0	0.73	536.1	17.87	24.41	718.6	23.95	3800	1.29	1.51
12/31/2013	20.7	0.67	563.6	18.18	27.18	712.0	22.97	3800	1.22	1.51

Cumulative Oil Produced (E3m3)	33.12
Cumulative Water Produced (E3m3)	365.30
Cumulative Water Injected (E3m3)	601.08
Cumulative Voidage Replacement Ratio	1.51

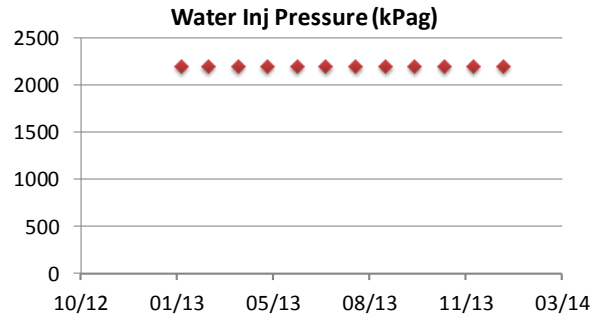
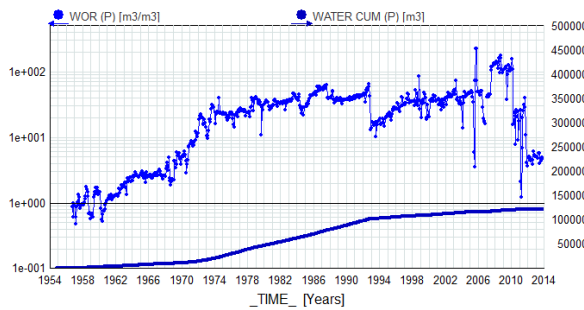
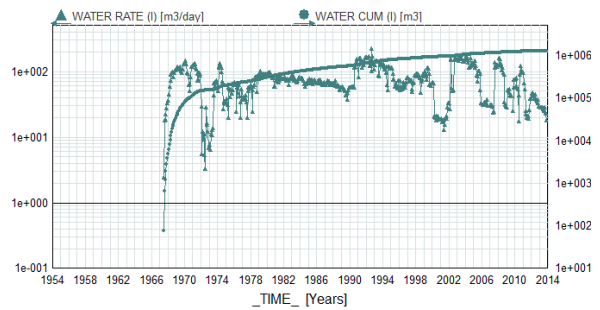
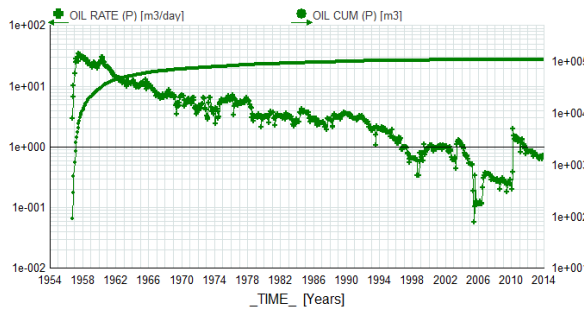


# VRU #3

## Pattern P-24 – 00/16-03-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	22.3	0.72	113.4	3.66	5.08	887.0	28.61	2200	6.51	0.95
2/28/2013	19.4	0.69	96.6	3.45	4.99	804.0	28.71	2200	6.91	0.95
3/31/2013	21.6	0.70	102.9	3.32	4.77	892.0	28.77	2200	7.14	0.95
4/30/2013	19.6	0.65	112.4	3.75	5.73	851.0	28.37	2200	6.42	0.95
5/31/2013	19.6	0.63	110.9	3.58	5.66	821.0	26.48	2200	6.27	0.95
6/30/2013	19.4	0.65	76.8	2.56	3.96	820.0	27.33	2200	8.48	0.95
7/31/2013	21.7	0.70	102.2	3.30	4.71	785.0	25.32	2200	6.31	0.95
8/31/2013	21.7	0.70	95.4	3.08	4.41	878.4	28.34	2200	7.47	0.95
9/30/2013	19.2	0.64	93.0	3.10	4.86	706.9	23.56	2200	6.28	0.95
10/31/2013	21.9	0.71	101.5	3.27	4.63	718.3	23.17	2200	5.80	0.95
11/30/2013	21.8	0.73	102.8	3.43	4.72	537.8	17.93	2200	4.30	0.95
12/31/2013	21.1	0.68	110.9	3.58	5.25	539.0	17.39	2200	4.07	0.95

Cumulative Oil Produced (E3m3)	110.68
Cumulative Water Produced (E3m3)	1222.06
Cumulative Water Injected (E3m3)	1273.14
Cumulative Voidage Replacement Ratio	0.95

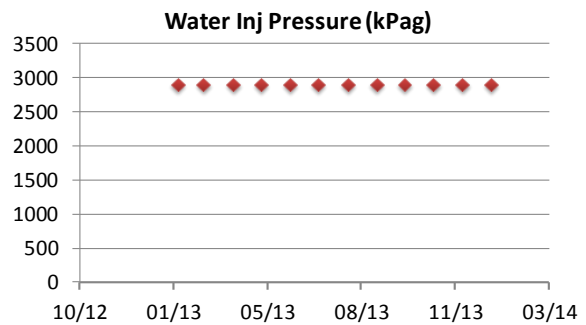
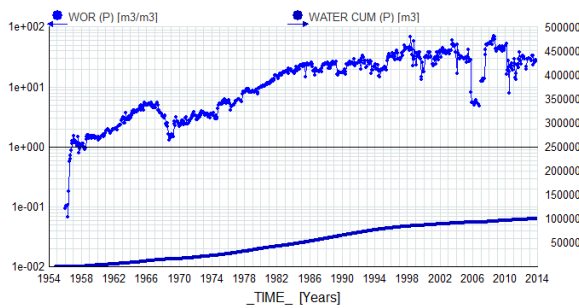
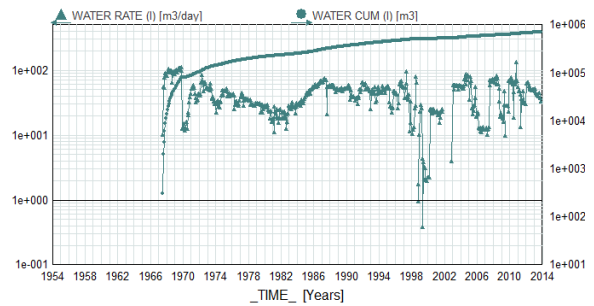
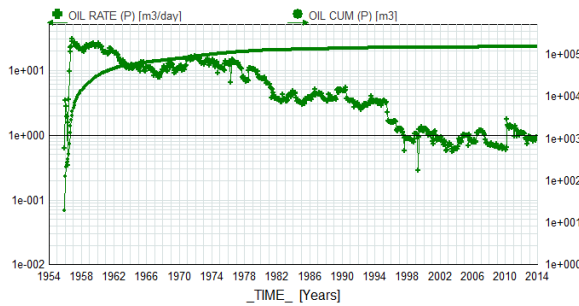


# VRU #3

## Pattern P-25 – 00/14-02-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	28.6	0.92	839.3	27.07	29.40	1491.0	48.10	2900	1.72	0.60
2/28/2013	24.7	0.88	715.2	25.54	28.91	1480.0	52.86	2900	2.00	0.60
3/31/2013	27.5	0.89	761.8	24.57	27.75	1389.0	44.81	2900	1.76	0.60
4/30/2013	25.1	0.84	832.7	27.76	33.17	1281.0	42.70	2900	1.49	0.60
5/31/2013	25.0	0.81	821.5	26.50	32.86	1317.0	42.48	2900	1.55	0.60
6/30/2013	24.8	0.83	568.7	18.96	22.96	1238.0	41.27	2900	2.08	0.61
7/31/2013	27.8	0.90	757.0	24.42	27.23	1217.0	39.26	2900	1.55	0.61
8/31/2013	27.6	0.89	706.7	22.80	25.63	1399.5	45.15	2900	1.90	0.61
9/30/2013	24.5	0.82	689.9	23.00	28.15	1149.4	38.31	2900	1.61	0.61
10/31/2013	27.9	0.90	751.9	24.25	26.92	1164.9	37.58	2900	1.49	0.61
11/30/2013	28.2	0.94	779.2	25.97	27.61	984.3	32.81	2900	1.22	0.61
12/31/2013	26.9	0.87	821.0	26.48	30.52	954.0	30.77	2900	1.12	0.61

Cumulative Oil Produced (E3m <sup>3</sup> )	150.96
Cumulative Water Produced (E3m <sup>3</sup> )	1006.49
Cumulative Water Injected (E3m <sup>3</sup> )	707.01
Cumulative Voidage Replacement Ratio	0.61

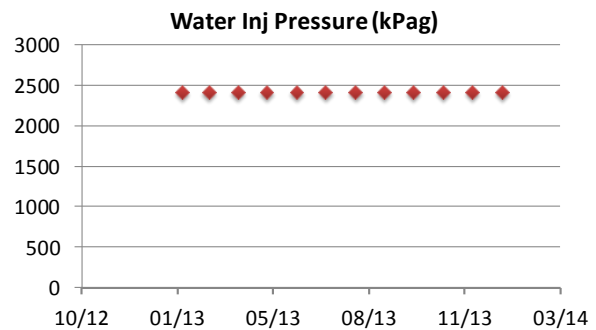
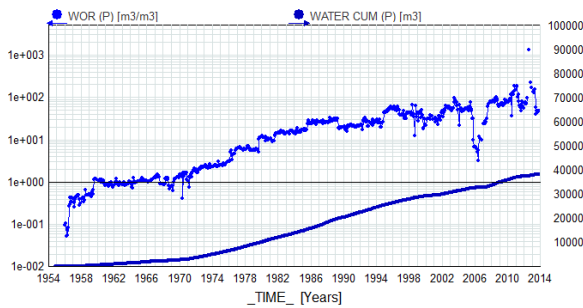
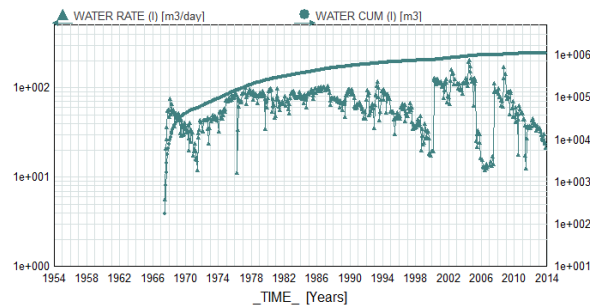
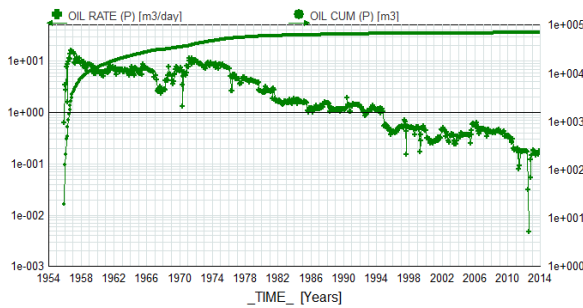


# VRU #3

## Pattern P-26 – 00/16-02-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	5.8	0.19	774.4	24.98	134.69	1071.0	34.55	2400	1.37	2.46
2/28/2013	5.0	0.18	660.0	23.57	131.99	989.0	35.32	2400	1.49	2.46
3/31/2013	5.6	0.18	703.0	22.68	126.66	1011.0	32.61	2400	1.43	2.45
4/30/2013	5.0	0.17	768.4	25.61	152.15	899.0	29.97	2400	1.16	2.45
5/31/2013	4.6	0.15	259.7	8.38	57.07	871.0	28.10	2400	3.30	2.45
6/30/2013	4.6	0.15	179.7	5.99	39.49	792.0	26.40	2400	4.30	2.45
7/31/2013	5.1	0.16	239.3	7.72	46.91	806.0	26.00	2400	3.30	2.45
8/31/2013	5.1	0.16	223.4	7.20	44.23	943.9	30.45	2400	4.13	2.45
9/30/2013	4.5	0.15	218.9	7.30	48.63	752.8	25.09	2400	3.37	2.45
10/31/2013	5.1	0.16	237.7	7.67	46.60	745.1	24.04	2400	3.07	2.45
11/30/2013	5.3	0.18	246.8	8.23	47.01	644.7	21.49	2400	2.56	2.45
12/31/2013	4.9	0.16	259.5	8.37	52.95	645.0	20.81	2400	2.44	2.45

Cumulative Oil Produced (E3m3)	69.67
Cumulative Water Produced (E3m3)	383.00
Cumulative Water Injected (E3m3)	1115.40
Cumulative Voidage Replacement Ratio	2.45

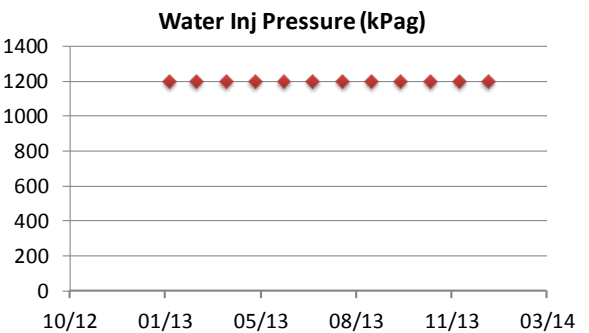
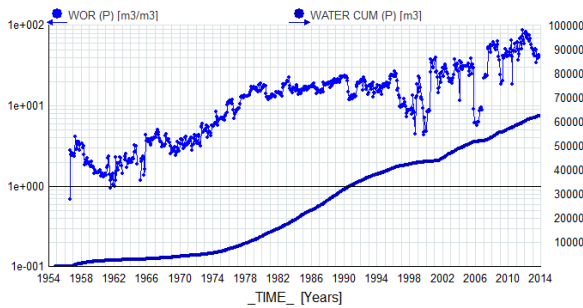
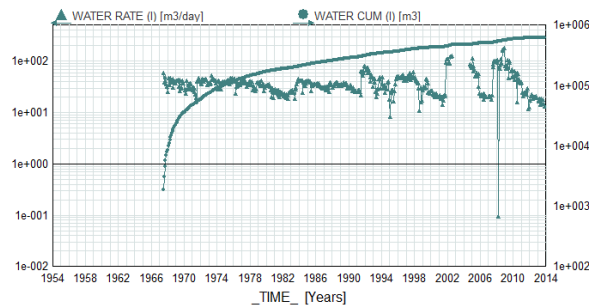
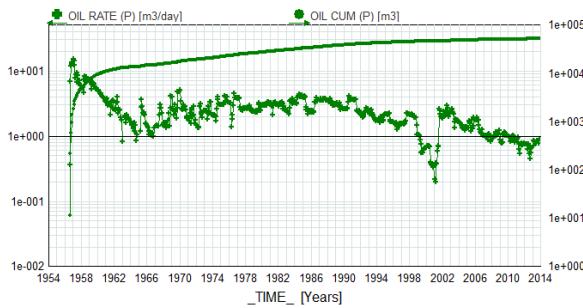


# VRU #3

## Pattern P-27 – 00/14-01-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	21.7	0.70	1046.2	33.75	48.23	513.0	16.55	1200	0.48	0.93
2/28/2013	23.4	0.84	1019.7	36.42	43.57	491.0	17.54	1200	0.47	0.93
3/31/2013	25.8	0.83	1082.3	34.91	42.00	571.0	18.42	1200	0.51	0.93
4/30/2013	23.7	0.79	1191.7	39.72	50.27	418.0	13.93	1200	0.34	0.93
5/31/2013	23.8	0.77	1175.5	37.92	49.35	513.0	16.55	1200	0.43	0.93
6/30/2013	23.5	0.78	813.9	27.13	34.57	561.0	18.70	1200	0.67	0.93
7/31/2013	26.4	0.85	1083.3	34.94	41.00	468.0	15.10	1200	0.42	0.93
8/31/2013	26.2	0.85	1011.3	32.62	38.59	552.8	17.83	1200	0.53	0.93
9/30/2013	23.3	0.78	987.5	32.92	42.34	442.5	14.75	1200	0.44	0.93
10/31/2013	26.6	0.86	1075.9	34.71	40.49	452.1	14.58	1200	0.41	0.93
11/30/2013	27.2	0.91	1117.6	37.25	41.11	396.2	13.21	1200	0.35	0.93
12/31/2013	25.6	0.83	1175.0	37.90	45.83	404.0	13.03	1200	0.34	0.92

Cumulative Oil Produced (E3m3)	52.38
Cumulative Water Produced (E3m3)	627.45
Cumulative Water Injected (E3m3)	629.90
Cumulative Voidage Replacement Ratio	0.92



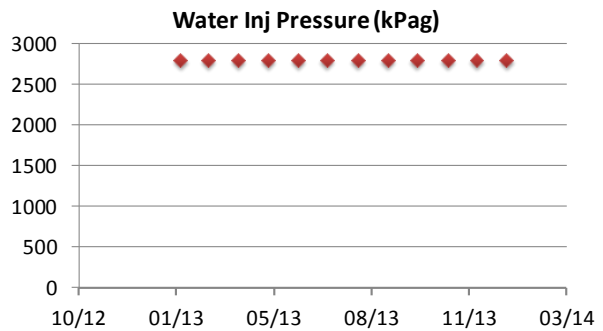
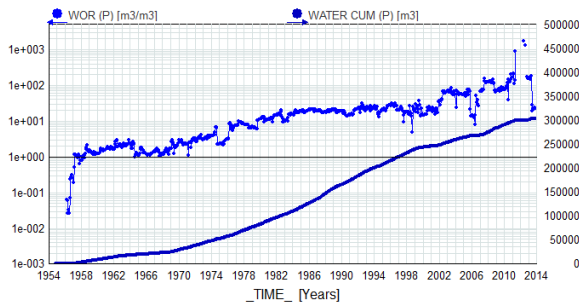
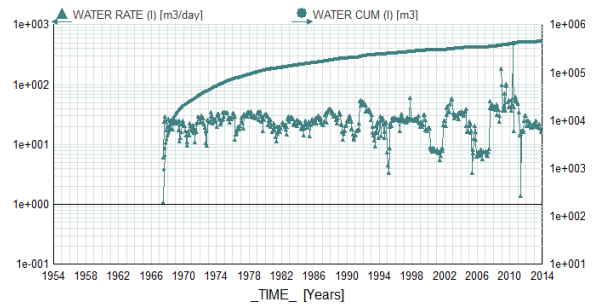
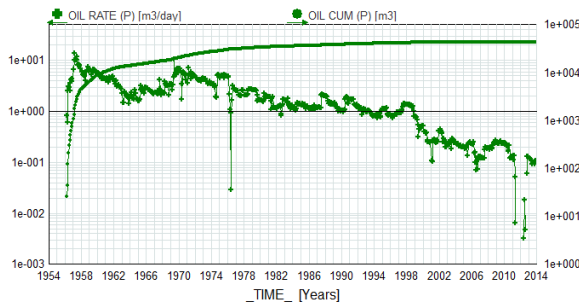


# VRU #3

## Pattern P-28 – 00/08-02-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	3.7	0.12	588.9	19.00	159.30	627.0	20.23	2800	1.06	1.27
2/28/2013	3.2	0.11	501.8	17.92	156.15	611.0	21.82	2800	1.21	1.27
3/31/2013	3.6	0.12	534.5	17.24	146.56	771.0	24.87	2800	1.43	1.27
4/30/2013	3.2	0.11	584.2	19.47	179.92	589.0	19.63	2800	1.00	1.27
5/31/2013	2.8	0.09	78.0	2.51	27.54	631.0	20.35	2800	7.80	1.27
6/30/2013	2.8	0.09	53.9	1.80	19.29	616.0	20.53	2800	10.84	1.27
7/31/2013	3.1	0.10	71.8	2.32	22.95	590.0	19.03	2800	7.86	1.27
8/31/2013	3.1	0.10	67.1	2.16	21.66	691.8	22.32	2800	9.85	1.27
9/30/2013	2.8	0.09	65.7	2.19	23.78	568.3	18.94	2800	8.29	1.27
10/31/2013	3.2	0.10	71.4	2.30	22.56	572.3	18.46	2800	7.67	1.28
11/30/2013	3.2	0.11	74.1	2.47	22.95	486.6	16.22	2800	6.28	1.28
12/31/2013	3.0	0.10	78.0	2.51	25.73	387.0	12.48	2800	4.77	1.28

Cumulative Oil Produced (E3m3)	43.67
Cumulative Water Produced (E3m3)	303.33
Cumulative Water Injected (E3m3)	444.95
Cumulative Voidage Replacement Ratio	1.28



# VRU #3

## Pattern P-29 – 00/06-01-010-26W1/0

Date	Monthly Oil Prod sm <sup>3</sup>	Oil Rate (CD) sm <sup>3</sup> /d	Monthly Water Prod sm <sup>3</sup>	Water Rate (CD) sm <sup>3</sup> /d	Water Oil Ratio m <sup>3</sup> /m <sup>3</sup>	Monthly Water Inj sm <sup>3</sup>	Water Inj Rate (CD) sm <sup>3</sup> /d	Water Inj Pressure kPg	Voidage Replacement Ratio	Cum Voidage Replacement Ratio
1/31/2013	53.1	1.71	2421.1	78.10	45.55	531.0	17.13	1200	0.21	0.44
2/28/2013	45.5	1.63	2031.9	72.57	44.64	527.0	18.82	1200	0.25	0.44
3/31/2013	51.8	1.67	2219.1	71.59	42.84	571.0	18.42	1200	0.25	0.44
4/30/2013	46.0	1.53	2366.5	78.88	51.45	511.0	17.03	1200	0.21	0.44
5/31/2013	47.4	1.53	2392.9	77.19	50.50	554.0	17.87	1200	0.23	0.44
6/30/2013	46.9	1.56	1656.6	55.22	35.29	522.0	17.40	1200	0.31	0.44
7/31/2013	52.7	1.70	2205.1	71.13	41.86	532.0	17.16	1200	0.24	0.44
8/31/2013	52.1	1.68	2058.7	66.41	39.48	610.4	19.69	1200	0.29	0.44
9/30/2013	46.4	1.55	2013.7	67.12	43.39	475.5	15.85	1200	0.23	0.44
10/31/2013	52.9	1.71	2190.2	70.65	41.43	478.9	15.45	1200	0.21	0.44
11/30/2013	54.2	1.81	2274.9	75.83	41.99	962.3	32.08	1200	0.41	0.44
12/31/2013	51.0	1.64	2391.7	77.15	46.91	942.0	30.39	1200	0.39	0.44

Cumulative Oil Produced (E3m3)	127.35
Cumulative Water Produced (E3m3)	1530.39
Cumulative Water Injected (E3m3)	731.40
Cumulative Voidage Replacement Ratio	0.44

