

PennWest

Waskada Unit No.2

Waterflood Progress Report

January 1st – December 31st, 2014

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INTRODUCTION

The Waskada Unit No.2 pressure maintenance project commenced water injection into the Lower Amaranth designed and in accordance with Manitoba Energy and Mines Approval No. PM 58.

Please refer to Attachment 1 – Area Map.

PRESSURE MAINTENANCE: Governed by Board Order No. PM 58

UNIT INFORMATION

UNITIZED ZONE: Lower Amaranth

Original Unit, January 1, 1984 Board Order – Voluntary

First Enlargement, September 1, 1985 Board Order - Voluntary

Second Enlargement, October 1, 1986 Board Order - Voluntary

POOL: Waskada Lower Amaranth A (03 29A)

This report documents the performance of the Waskada Unit No.2 pressure maintenance project for the period of January 1 to December 31, 2014. The Unit had 19 active producers and no active injectors at the end of 2014.

Unit No. 2 is part of the main Waskada field. The Waskada field is situated on the northeast rim of the Williston Basin in southern Manitoba. It comprises a large portion of Township 1 and 2, Ranges 25 and 26 W1.

GEOLOGY

The Waskada Fields produce light density crude (approximately 36° API), predominantly from the Lower Amaranth formation. This is an interlaminated, shallow marine to subtidal succession of sandstones, siltstones, and shale progressively onlaps the Mississippian unconformity surface from basin center, up dip to the north and eastern basin limits in Saskatchewan and Manitoba. The fine grained reservoir rock has a complex reservoir characterization with 13 to 16 % porosity and permeability on the order of 0.5 to 15 md. The Lower Amaranth, the oldest Mesozoic unit, is a clastic red bed sequence lying directly on the Paleozoic erosional surface. It consists of a series of dolomitic siltstones and sandstones interbedded with argillaceous siltstones and shales. The section is usually subdivided into a lower sandy unit and an overlying shale unit. The lower sequence is the oil production zone. The bulk of pay is found in the laminated sandstone/siltstone facies.

The Lower Amaranth has been classified into four general lithological types:

1. Interbedded shale/siltstone/sandstone by grain size, color and texture

2. Siltstone – This lithology occurs in distinct intervals up to two or three metres in thickness. It is generally light green in color and dolomitic.
3. Laminated sandstone – This occurs in distinct sandy intervals with a wide range of grain sizes and primary sedimentary structures.
4. Massive sandstone – This lithology occurs in thin intervals and usually associated with the laminated sandstones facies. Beds are usually light grey to reddish grey in color and coarse to medium – grained.

DISCUSSION

Board Order No. PM 58 provided for pressure maintenance operations in Waskada Unit No.2. From the startup of injection in December 1983, injection rates fluctuated to the same degree in each injector, making it difficult to link any production responses to any injector. The Unit includes 9 injection wells, at the end of 2014 none are currently active, and 19 active producers. Pressure maintenance by water injection ceased in May 2012.

Please refer to Attachment 2 – A Summary of the Unit Well List and History.

Please refer to Attachment 3 – A Production and Injection plot of the Unit.

Please refer to Attachment 4 – A Summary of Unit Annual Volumes and Rates.

Please refer to Attachment 5 – A Cumulative Production and Injection plot of the Unit.

Voidage Replacement Ratio Calculation:

The Cumulative VRR from production start reached a maximum of 1 in the mid-1986 and remained stable around 0.9 till 2010. It has declined in the last 4 years to 0.58. The Cumulative VRR from injection start stabilized at approximately 1, dropping in the last 4 years to 0.62. The decline in both Cumulative VRR's in the last 4 years is coincident with reduced Monthly VRR's in 2010, essentially no injection in 2012, 2013 and 2014 and the startup of new producers from 2010 to 2012. Currently there are no active injectors in this Unit and PennWest has no plans to reactivate at this time any of the old injectors.

Please refer to Attachment 6 – A Unit Voidage Replacement Ratio Plot.

Please refer to Attachment 7 – Individual Injection Well Performance Plots.

Pressure Surveys:

There were no pressure surveys conducted in 2014.

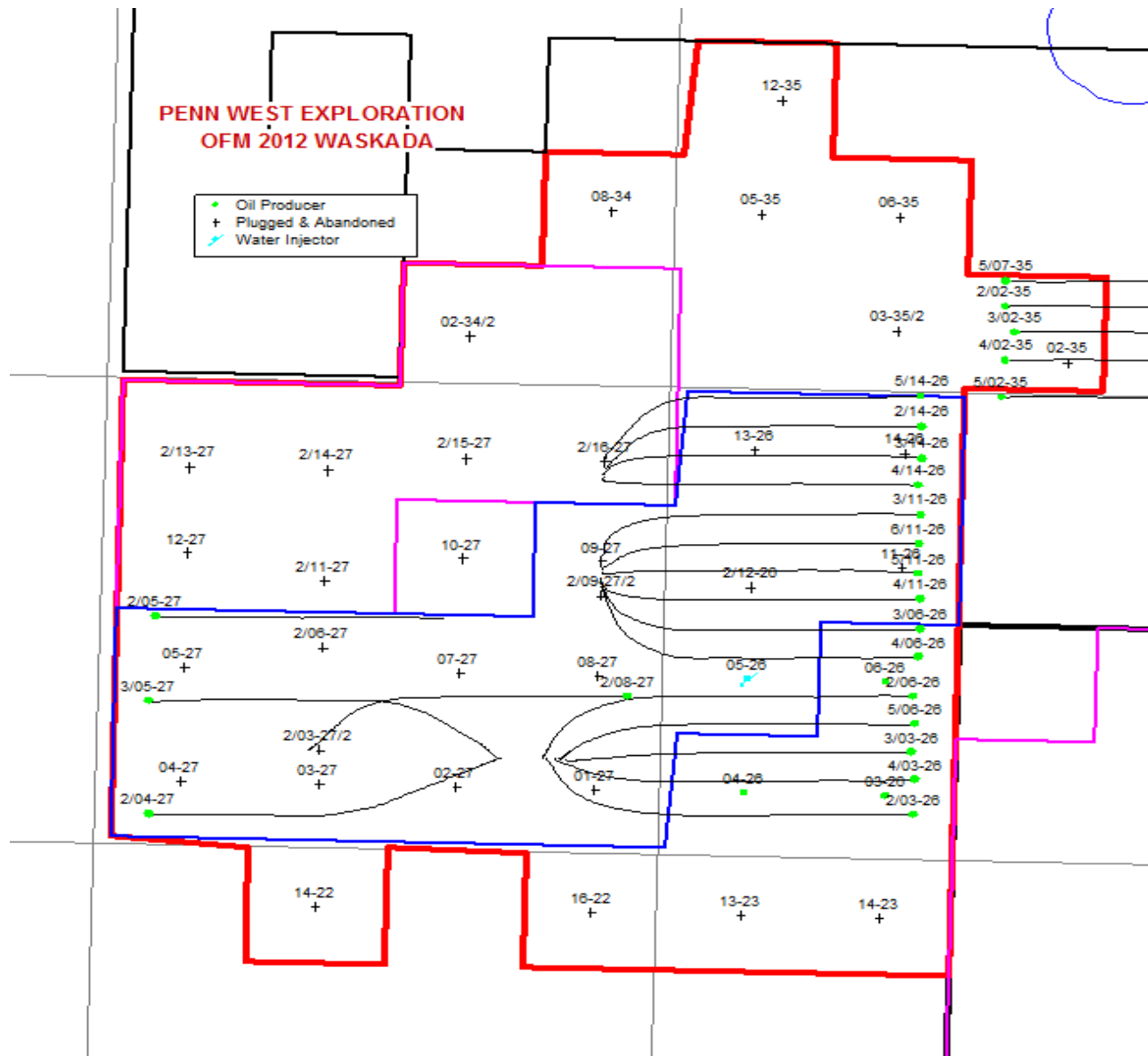
Corrosion and Scale Prevention Program:

Scale corrosion programs are implemented throughout the field. Wells and pipelines have mitigation measures in place.

SUMMARY AND RECOMMENDATIONS

The behavior of Waskada Unit 2 producers are indicated by good initial oil productivity, rapidly declining to low rates, with almost no discernible water flood response. It is also believed that fracture stimulation treatments, performed on these wells prior to initiation of water injection, “broke through” into the higher productivity Mississippian and that the majority of injected water to date has entered this zone. This is one of the major explanations for lack of waterflood response to date and the continued decline in oil productivities.

ATTACHMENT 1 – UNIT AREA MAP



ATTACHMENT 2- UNIT HISTORY

Unit History : Waskada -Unit # 2

<i>UWI</i>	<i>Completion Date</i>	<i>Operator</i>	<i>Status</i>	<i>New Drills</i>	<i>Kb Elevation</i>	<i>Total Depth</i>	<i>First Prd Date</i>	<i>Cum Oil Prd</i>	<i>Cum Water Prd</i>	<i>Last Prd Date</i>	<i>First Inj Date</i>	<i>Cum Water Inj</i>	<i>Cum Gas Inj</i>	<i>Last Inj Date</i>
					<i>m</i>	<i>m</i>		<i>m3</i>	<i>m3</i>			<i>m3</i>	<i>scm</i>	
00/01-27-001-26W1/0	11/19/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	466.50	955.00	12/1/1982	3814.10	22881.00	8/1/1988		0.00	0.00	
00/02-27-001-26W1/0	8/22/1982	PENN_WEST	ABD-OIL	<N/A>	466.40	956.00	11/1/1982	2720.80	10452.70	12/1/1991		0.00	0.00	
00/02-34-001-26W1/2	3/16/1983	OMEGA_HYDROC	ABD-OIL	<N/A>	469.50	964.00	8/1/1983	1073.10	7922.50	3/1/1990		0.00	0.00	
00/02-35-001-26W1/0	9/6/1981	OMEGA_HYDROC	ABD-OIL	<N/A>	467.10	964.00	11/1/1981	1236.90	1020.20	2/1/1989		0.00	0.00	
00/03-26-001-26W1/0	6/22/1982	PENN_WEST	OIL	<N/A>	470.50	941.00	7/1/1982	12237.40	15790.40	4/1/2012		0.00	0.00	
00/03-27-001-26W1/0	10/29/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	465.80	950.00	3/1/1983	1812.00	14399.50	6/1/1988		0.00	0.00	
00/03-35-001-26W1/2	7/25/1983	OMEGA_HYDROC	ABD-OIL	<N/A>	471.50	970.00	3/1/1984	439.50	9279.00	10/1/1989		0.00	0.00	
00/04-26-001-26W1/0	7/20/1982	PENN_WEST	OIL	<N/A>	465.20	947.00	10/1/1982	22619.70	59341.10	5/1/2013		0.00	0.00	
00/04-27-001-26W1/0	12/7/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	464.30	954.00	2/1/1983	3241.10	24521.80	5/1/1988		0.00	0.00	
00/05-26-001-26W1/0	6/17/1982	PENN_WEST	WTR-INJ	<N/A>	469.10	955.00	7/1/1982	4452.20	559.90	1/1/1984	1/1/1984	144213.20	0.00	5/1/2012
00/05-27-001-26W1/0	9/23/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	466.00	951.80	12/1/1982	1918.40	3489.80	1/1/1984	1/1/1984	70884.50	0.00	3/1/1987
00/05-35-001-26W1/0	7/22/1983	PENN_WEST	ABD-OIL	<N/A>	470.20	950.00	10/1/1983	627.80	6047.00	9/1/1985	10/1/1985	23570.10	0.00	10/1/1992
00/06-26-001-26W1/0	2/27/1982	PENN_WEST	OIL	<N/A>	470.00	948.00	6/1/1982	17216.20	8483.10	5/1/2013		0.00	0.00	
00/06-35-001-26W1/0	11/29/1982	PENN_WEST	ABD-OIL	<N/A>	471.40	948.50	12/1/1982	3515.10	13752.00	4/1/1991		0.00	0.00	
00/07-27-001-26W1/0	8/27/1982	PENN_WEST	ABD-WINJ	<N/A>	467.30	955.00	12/1/1982	2287.80	3673.20	1/1/1984	2/1/1984	102312.70	0.00	3/1/1999
00/08-27-001-26W1/0	6/26/1982	PENN_WEST	ABD-OIL	<N/A>	469.20	955.00	8/1/1982	9203.70	34446.80	4/1/1992		0.00	0.00	
00/08-34-001-26W1/0	6/4/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	468.40	951.00	2/1/1983	1499.70	14809.60	2/1/1990		0.00	0.00	
00/09-27-001-26W1/0	8/28/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	467.80	951.00	12/1/1982	1821.90	6784.90	1/1/1990		0.00	0.00	
00/10-27-001-26W1/0	9/1/1982	PENN_WEST	ABD-OIL	<N/A>	467.00	951.00	12/1/1982	4358.20	11773.50	12/1/1995		0.00	0.00	
00/11-26-001-26W1/0	6/13/1982	PENN_WEST	ABD-OIL	<N/A>	471.00	942.00	7/1/1982	5291.40	9748.00	6/1/1996		0.00	0.00	
00/12-27-001-26W1/0	8/30/1982	PENN_WEST	ABD-OIL	<N/A>	466.00	948.00	11/1/1982	8116.10	27663.90	5/1/1993		0.00	0.00	
00/12-35-001-26W1/0	10/8/1983	PENN_WEST	ABD-OIL	<N/A>	469.90	965.00	10/1/1983	697.50	7886.80	11/1/1989		0.00	0.00	
00/13-23-001-26W1/0	6/6/1983	PENN_WEST	ABD-OIL	<N/A>	470.40	948.00	6/1/1983	1444.60	22331.60	2/1/1988	2/1/1988	16299.80	0.00	3/1/1994
00/13-26-001-26W1/0	12/17/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	469.10	950.10	3/1/1983	455.70	3106.30	1/1/1984	2/1/1984	57700.30	0.00	3/1/1987
00/14-22-001-26W1/0	10/31/1985	OMEGA_HYDROC	ABD-OIL	<N/A>	464.60	959.00	11/1/1985	364.80	5808.20	4/1/1987		0.00	0.00	
00/14-23-001-26W1/0	8/15/1982	PENN_WEST	ABD-OIL	<N/A>	469.90	952.00	10/1/1982	10111.60	14240.40	4/1/1996		0.00	0.00	
00/14-26-001-26W1/0	6/29/1982	OMEGA_HYDROC	ABD-OIL	<N/A>	470.40	954.00	11/1/1982	1262.70	17091.60	10/1/1989		0.00	0.00	
00/16-22-001-26W1/0	8/12/1982	OMEGA_HYDROC	ABD	<N/A>	468.80	949.00		0.00	0.00		12/1/1983	61797.80	0.00	2/1/1988
02/02-35-001-26W1/0	8/13/2012	PENN_WEST	OIL	<N/A>	472.50	1722.00	10/1/2012	1452.30	1581.00	9/1/2013		0.00	0.00	

02/03-26-001-26W1/0	2/1/2011	PENN_WEST	OIL	<N/A>	467.90	1855.00	8/1/2011	5128.80	13470.80	1/1/2015		0.00	0.00	
02/03-27-001-26W1/2	7/5/1983	PENN_WEST	ABD	<N/A>	466.30	950.00	11/1/1988	0.00	1277.00	2/1/1989		0.00	0.00	
02/04-27-001-26W1/0	11/18/2010	PENN_WEST	OIL	<N/A>	467.00	1807.00	12/1/2010	2396.40	44593.70	1/1/2015		0.00	0.00	
02/05-27-001-26W1/0	1/7/2010	PENN_WEST	OIL	<N/A>	468.70	1660.00	3/1/2010	3622.30	19842.80	1/1/2015		0.00	0.00	
02/06-26-001-26W1/0	2/8/2011	PENN_WEST	OIL	<N/A>	466.90	1866.00	8/1/2011	4086.70	9615.10	1/1/2015		0.00	0.00	
02/06-27-001-26W1/0	6/21/1983	PENN_WEST	ABD-OIL	<N/A>	468.40	948.00	7/1/1983	9371.40	22334.50	3/1/1993		0.00	0.00	
02/08-27-001-26W1/0	7/15/2010	PENN_WEST	OIL	<N/A>	464.80	1737.00	9/1/2010	6569.30	15232.20	1/1/2015		0.00	0.00	
02/09-27-001-26W1/2	7/8/1983	PENN_WEST	ABD-OIL	<N/A>	466.50	950.00	3/1/1987	527.50	2827.10	4/1/1992		0.00	0.00	
02/11-27-001-26W1/0	6/30/1983	OMEGA_HYDROC	ABD-OIL	<N/A>	467.90	950.00	8/1/1983	1755.20	28320.20	4/1/1989		0.00	0.00	
02/12-26-001-26W1/0	6/15/1983	PENN_WEST	ABD-OIL	<N/A>	469.20	951.00	6/1/1983	10870.70	23413.60	5/1/1996		0.00	0.00	
02/13-27-001-26W1/0	6/22/1983	PENN_WEST	ABD-OIL	<N/A>	466.10	957.00	7/1/1983	1431.00	1348.30	1/1/1984	2/1/1984	65794.70	0.00	12/1/1986
02/14-26-001-26W1/0	12/19/2011	PENN_WEST	OIL	<N/A>	467.90	1752.00	3/1/2012	2091.70	11756.30	1/1/2015		0.00	0.00	
02/14-27-001-26W1/0	6/27/1983	PENN_WEST	ABD-OIL	<N/A>	468.00	946.00	8/1/1983	23444.00	50261.20	12/1/1995		0.00	0.00	
02/15-27-001-26W1/0	6/5/1983	OMEGA_HYDROC	ABD-OIL	<N/A>	468.80	952.00	6/1/1983	1832.70	380.90	1/1/1984	1/1/1984	75779.80	0.00	12/1/1987
02/16-27-001-26W1/0	6/9/1983	PENN_WEST	ABD-OIL	<N/A>	468.80	954.00	6/1/1983	3332.50	26565.20	5/1/1990		0.00	0.00	
03/02-35-001-26W1/0	8/2/2012	PENN_WEST	OIL	<N/A>	472.50	1700.00	10/1/2012	2074.10	2670.90	1/1/2015		0.00	0.00	
03/03-26-001-26W1/0	1/29/2012	PENN_WEST	OIL	<N/A>	467.70	1779.00	4/1/2012	3973.50	8871.10	1/1/2015		0.00	0.00	
03/05-27-001-26W1/0	11/24/2010	PENN_WEST	OIL	<N/A>	467.00	1773.00	12/1/2010	2806.00	24781.90	1/1/2015		0.00	0.00	
03/06-26-001-26W1/0	12/4/2011	PENN_WEST	OIL	<N/A>	467.70	1760.00	3/1/2012	2649.40	6046.90	1/1/2015		0.00	0.00	
03/11-26-001-26W1/0	1/20/2012	PENN_WEST	OIL	<N/A>	467.80	1752.00	3/1/2012	2958.20	7108.70	5/1/2014		0.00	0.00	
03/14-26-001-26W1/0	12/11/2011	PENN_WEST	OIL	<N/A>	468.10	1728.00	3/1/2012	2682.10	10597.40	1/1/2015		0.00	0.00	
04/02-35-001-26W1/0	8/7/2012	PENN_WEST	OIL	<N/A>	472.50	1716.00	10/1/2012	2575.30	3405.30	1/1/2015		0.00	0.00	
04/03-26-001-26W1/0	2/14/2012	PENN_WEST	OIL	<N/A>	467.30	1803.00	4/1/2012	2853.10	4690.30	12/1/2014		0.00	0.00	
04/06-26-001-26W1/0	11/25/2011	PENN_WEST	OIL	<N/A>	468.40	1803.00	3/1/2012	4024.30	7497.00	5/1/2014		0.00	0.00	
04/11-26-001-26W1/0	12/13/2011	PENN_WEST	OIL	<N/A>	468.40	1734.00	3/1/2012	2330.20	7195.30	1/1/2015		0.00	0.00	
04/14-26-001-26W1/0	12/4/2011	PENN_WEST	OIL	<N/A>	468.10	1719.00	3/1/2012	3043.30	8125.80	1/1/2015		0.00	0.00	
05/02-35-001-26W1/0	8/17/2012	PENN_WEST	OIL	<N/A>	470.50	1717.00	10/1/2012	4668.10	3887.20	1/1/2015		0.00	0.00	
05/06-26-001-26W1/0	2/6/2012	PENN_WEST	OIL	<N/A>	467.40	1803.00	4/1/2012	4461.80	6900.30	1/1/2015		0.00	0.00	
05/07-35-001-26W1/0	8/18/2012	PENN_WEST	OIL	<N/A>	472.50	1780.00	10/1/2012	2762.40	2054.50	1/1/2015		0.00	0.00	
05/11-26-001-26W1/0	1/6/2012	PENN_WEST	OIL	<N/A>	467.70	1727.00	3/1/2012	2607.90	7395.00	1/1/2015		0.00	0.00	
05/14-26-001-26W1/0	1/4/2012	PENN_WEST	OIL	<N/A>	467.90	1768.00	3/1/2012	1881.30	15620.80	12/1/2014		0.00	0.00	
06/11-26-001-26W1/0	1/13/2012	PENN_WEST	OIL	<N/A>	467.60	1728.00	3/1/2012	3167.00	10344.50	1/1/2015		0.00	0.00	

ATTACHMENT 3 – UNIT PRODUCTION AND INJECTION PLOT

PENN WEST

UNIT: WASKADA_UNIT_NO_2_-_PM_58

Last Prod/Inj Date: 201501

Cumulative Water Prod : 787.32 Mm3

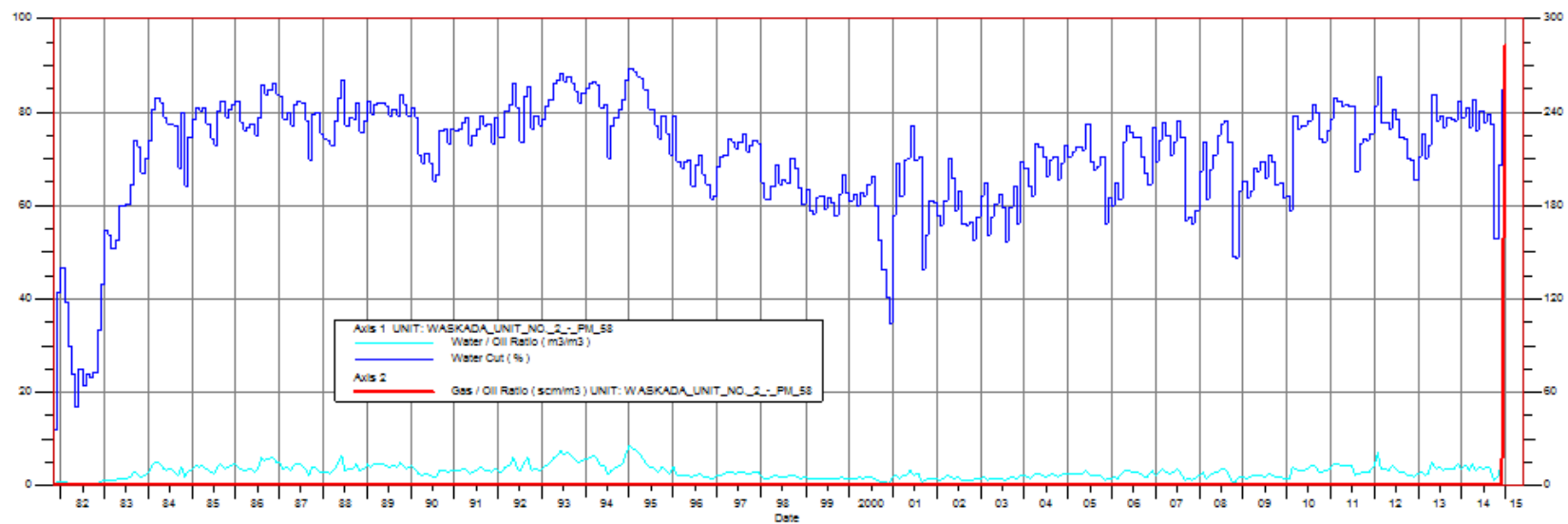
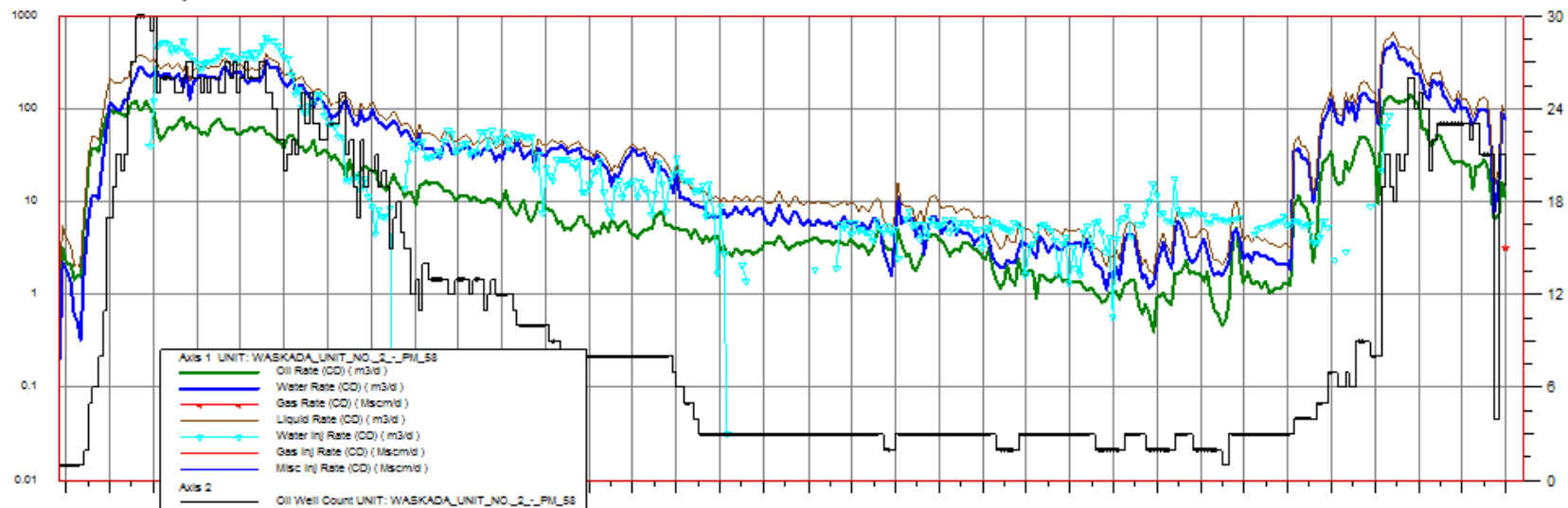
Cumulative Oil Prod : 253.27 Mm3

Cumulative Gas Prod : 0.10 MMscm

Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 618.35 Mm3

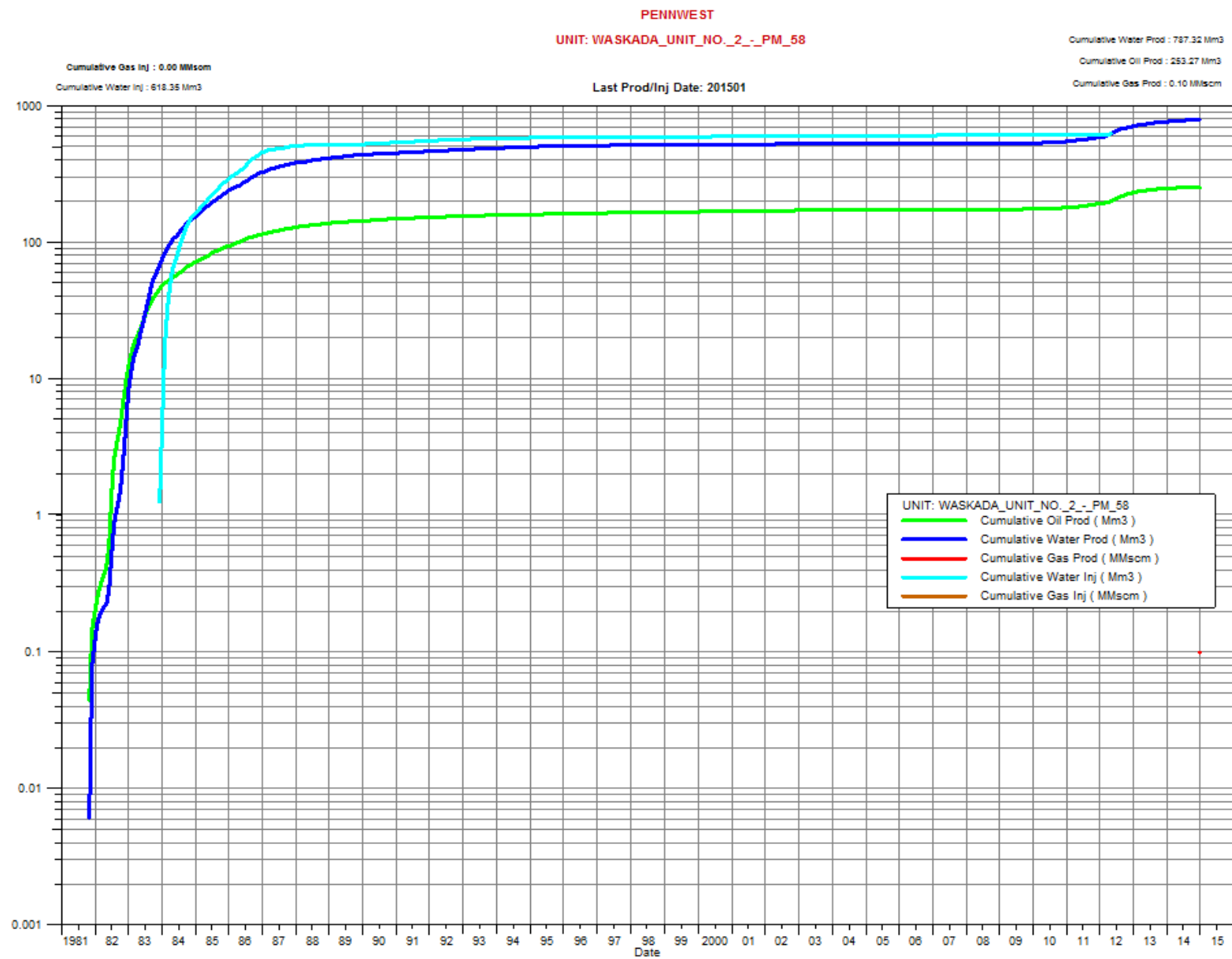
Cumulative Misc Inj : 0.00 MMscm



ATTACHMENT 4 – RATES AND VOLUME HISTORY

<i>Unit : Waskada - Unit # 2</i>								
<i>Rates and Volume History</i>								
<i>Date</i>	<i>Annual Oil Prd</i>	<i>Annual Oil Rate</i>	<i>Annual Water Prod</i>	<i>Annual Water Prod Rate</i>	<i>Annual Water Inj</i>	<i>Annual Water Inj Rate</i>	<i>Annual Gas Inj</i>	<i>Annual Gas Inj rate</i>
	<i>m3</i>	<i>m3/d</i>	<i>m3</i>	<i>m3/d</i>	<i>m3</i>	<i>m3/d</i>	<i>Mscm</i>	<i>Mscm/d</i>
1/1/1981	145.80	0.40	77.60	0.21	0	0.00	0.00	0.00
1/1/1982	9220.00	25.26	4445.00	12.18	0	0.00	0.00	0.00
1/1/1983	36384.10	99.68	63552.20	174.12	1239	3.39	0.00	0.00
1/1/1984	24119.90	65.90	79843.20	218.15	153606	419.69	0.00	0.00
1/1/1985	22558.80	61.80	85327.70	233.77	126181	345.70	0.00	0.00
1/1/1986	20364.00	55.79	87504.00	239.74	160776	440.48	0.00	0.00
1/1/1987	14682.30	40.23	56167.80	153.88	61485	168.45	0.00	0.00
1/1/1988	9025.30	24.66	32920.70	89.95	12461	34.05	0.00	0.00
1/1/1989	5778.20	15.83	24659.20	67.56	3834	10.51	0.00	0.00
1/1/1990	5145.30	14.10	13878.10	38.02	14370	39.37	0.00	0.00
1/1/1991	3887.20	10.65	12753.70	34.94	15978	43.78	0.00	0.00
1/1/1992	3269.70	8.93	12726.50	34.77	15440	42.19	0.00	0.00
1/1/1993	2364.90	6.48	12922.20	35.40	8431	23.10	0.00	0.00
1/1/1994	1970.10	5.40	9266.60	25.39	5612	15.38	0.00	0.00
1/1/1995	2063.80	5.65	9529.60	26.11	5405	14.81	0.00	0.00
1/1/1996	1646.90	4.50	3642.40	9.95	5289	14.45	0.00	0.00
1/1/1997	1084.40	2.97	2866.50	7.85	469	1.28	0.00	0.00
1/1/1998	1326.50	3.63	2462.80	6.75	0	0.00	0.00	0.00
1/1/1999	1378.50	3.78	2186.90	5.99	639	0.00	0.00	0.00
1/1/2000	1300.40	3.55	1779.20	4.86	1818	4.97	0.00	0.00
1/1/2001	1198.30	3.28	2168.20	5.94	1816	4.97	0.00	0.00
1/1/2002	1213.10	3.32	1780.90	4.88	2044	5.60	0.00	0.00
1/1/2003	711.20	1.95	1068.00	2.93	1921	5.26	0.00	0.00
1/1/2004	554.00	1.51	1214.40	3.32	1437	3.92	0.00	0.00
1/1/2005	421.40	1.15	998.70	2.74	1383	3.79	0.00	0.00
1/1/2006	359.50	0.98	905.90	2.48	2275	6.23	0.00	0.00
1/1/2007	526.90	1.44	1189.60	3.26	3093	8.47	0.00	0.00
1/1/2008	648.00	1.77	1062.20	2.90	2396	6.55	0.00	0.00
1/1/2009	471.40	1.29	912.20	2.50	1378	3.77	0.00	0.00
1/1/2010	3880.60	10.63	12271.60	33.62	1905	5.22	0.00	0.00
1/1/2011	11868.30	32.52	39940.80	109.43	432	1.18	0.00	0.00
1/1/2012	38636.10	105.56	118622.00	324.10	5240	14.32	0.00	0.00
1/1/2013	17530.00	48.03	57243.40	156.83	0	0.00	0.00	0.00
1/1/2014	7188.70	19.70	26968.70	73.89	0	0.00	0.00	0.00
Sum	252923.60		784858.50		618353			

ATTACHMENT 5 –UNIT CUMULATIVE PRODUCTION AND INJECTION PLOT



ATTACHMENT 6 – UNIT VOIDAGE REPLACEMENT RATIO PLOT

PENNWEST

UNIT: WASKADA_UNIT_NO._2_-_PM_58

Cumulative Water Prod : 787.32 Mm3

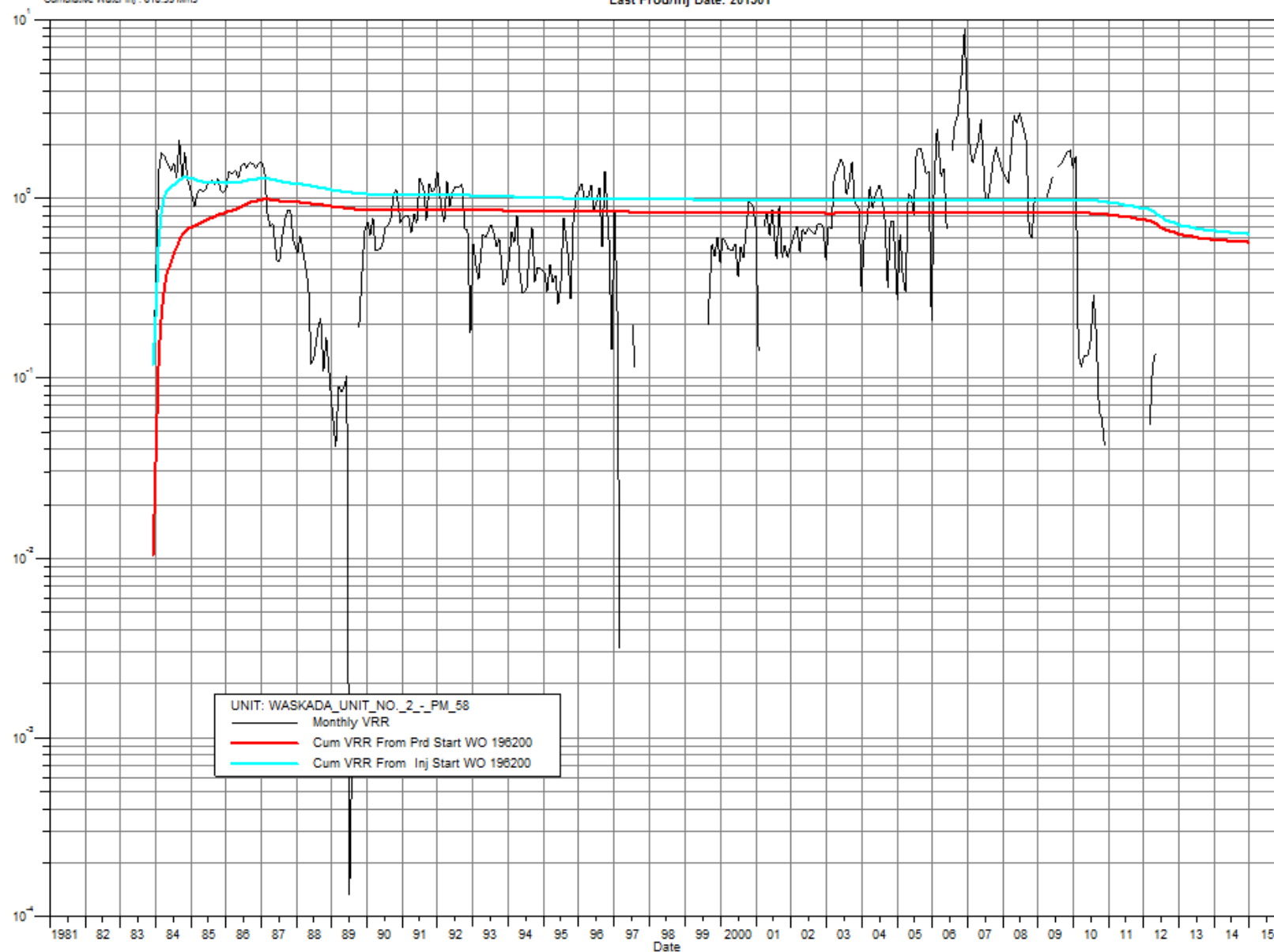
Cumulative Oil Prod : 253.27 Mm3

Cumulative Gas Prod : 0.10 Mm3scm

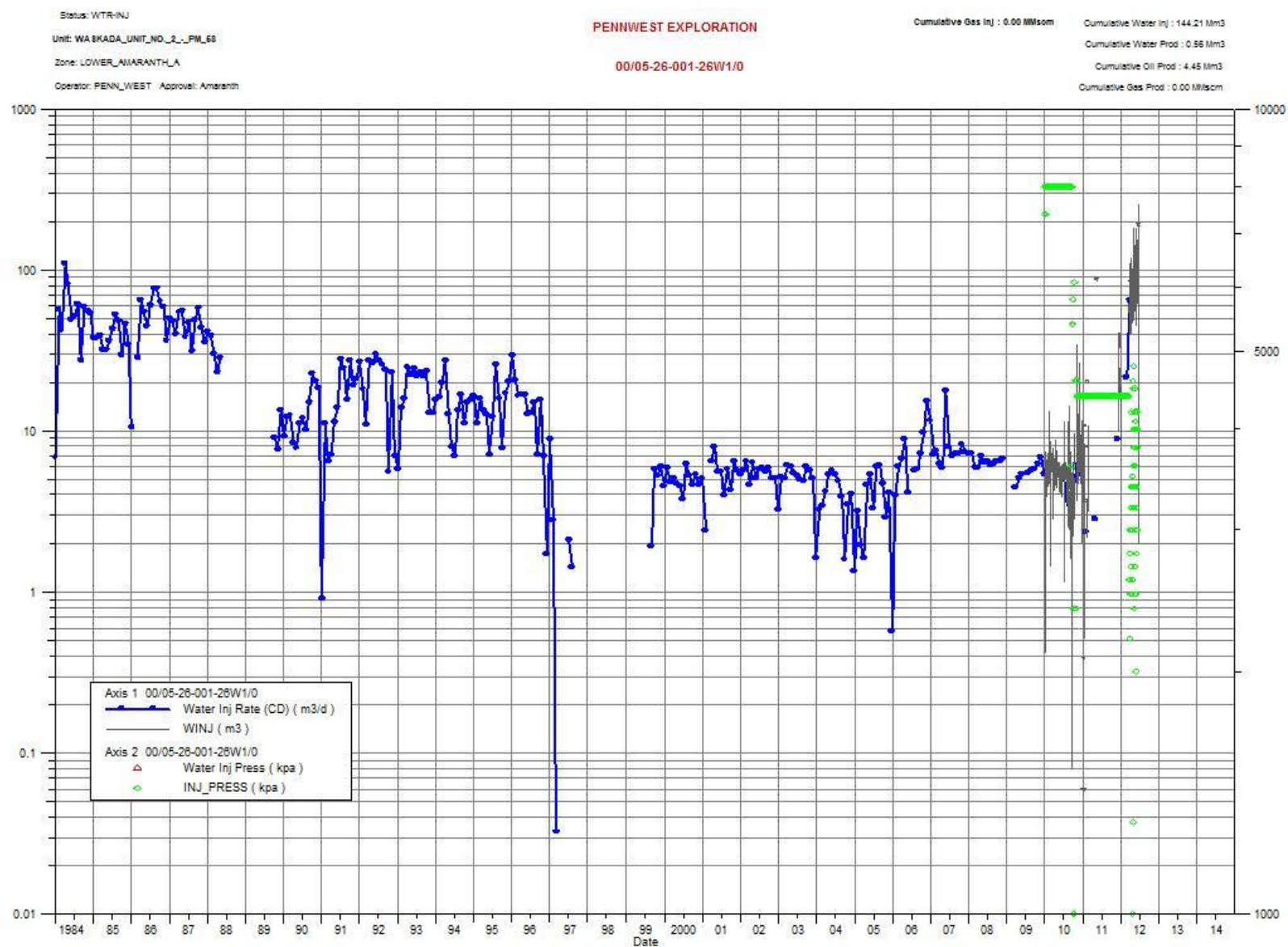
Cumulative Gas Inj : 0.00 Mm3scm

Cumulative Water Inj : 619.35 Mm3

Last Prod/Inj Date: 201501



ATTACHMENT 7 – INDIVIDUAL INJECTION WELL PERFORMANCE PLOTS (9 WELLS)



Status: ABO-OIL

Unit: WABKADA_UNIT_NO_2_PW_68

Zone: LOWER_AMARANTH_A

Operator: OMEGA_HYDROCO Approval: Amaranth

PENNWEST EXPLORATION

00/05-27-001-26W1/0

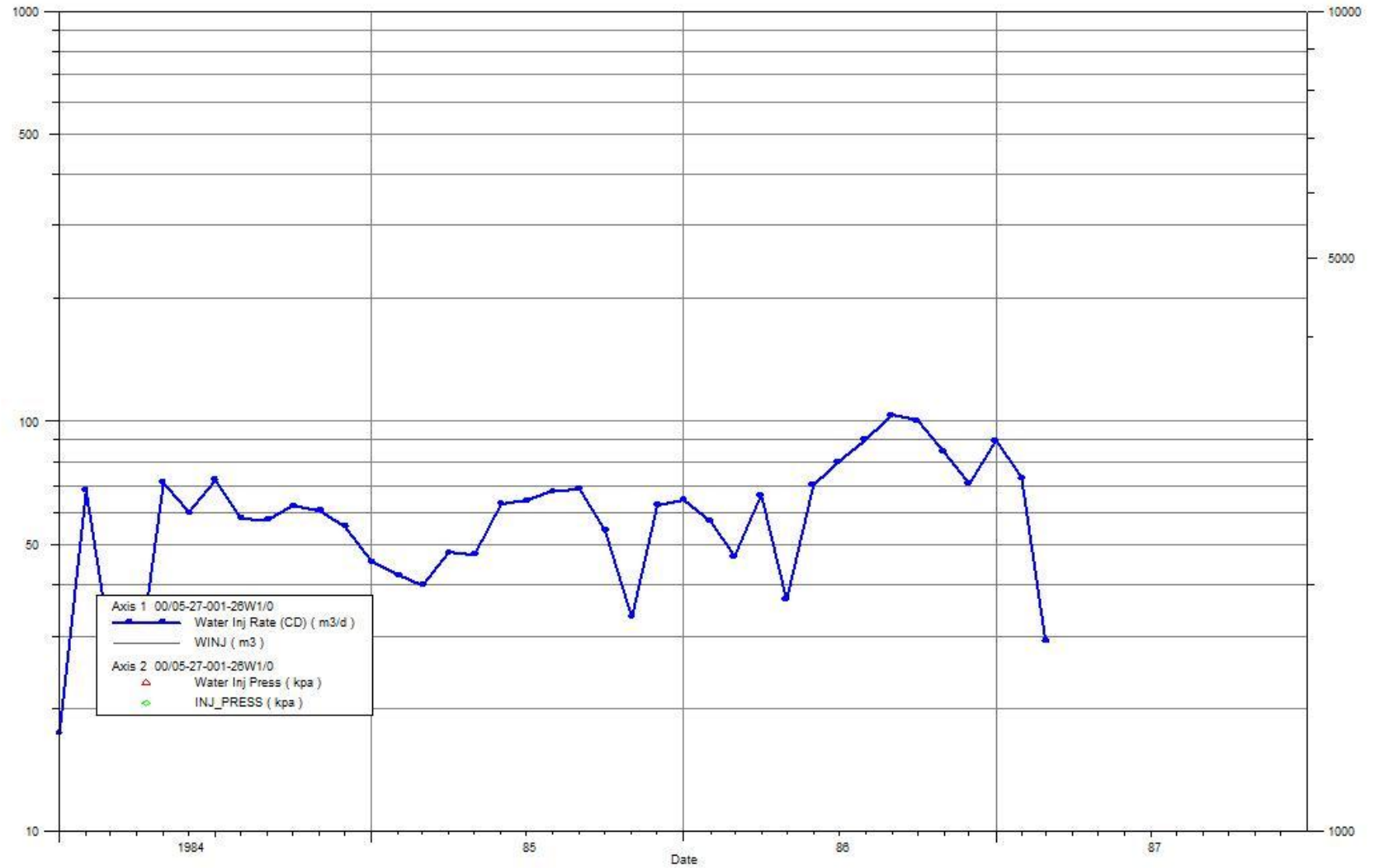
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 70.88 Mm3

Cumulative Water Prod : 3.49 Mm3

Cumulative Oil Prod : 1.92 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: ABO-OIL

Unit: WABKADA_UNIT_NO_2_P1M_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amarant

PENNWEST EXPLORATION

00/05-35-001-26W1/0

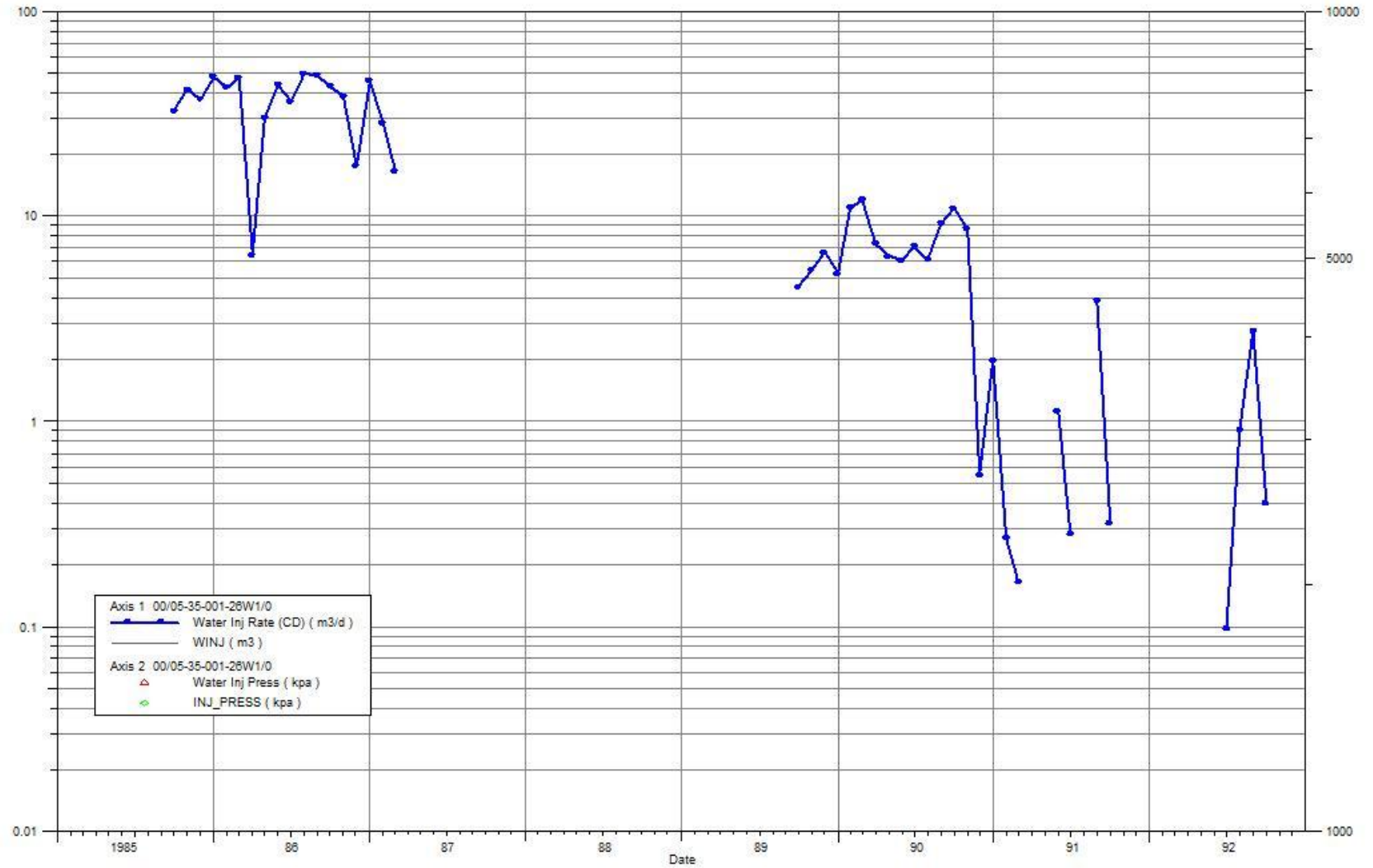
Cumulative Gas Inj : 0.00 MMsm

Cumulative Water Inj : 23.57 Mm3

Cumulative Water Prod : 6.05 Mm3

Cumulative Oil Prod : 0.63 Mm3

Cumulative Gas Prod : 0.00 Mm3sm

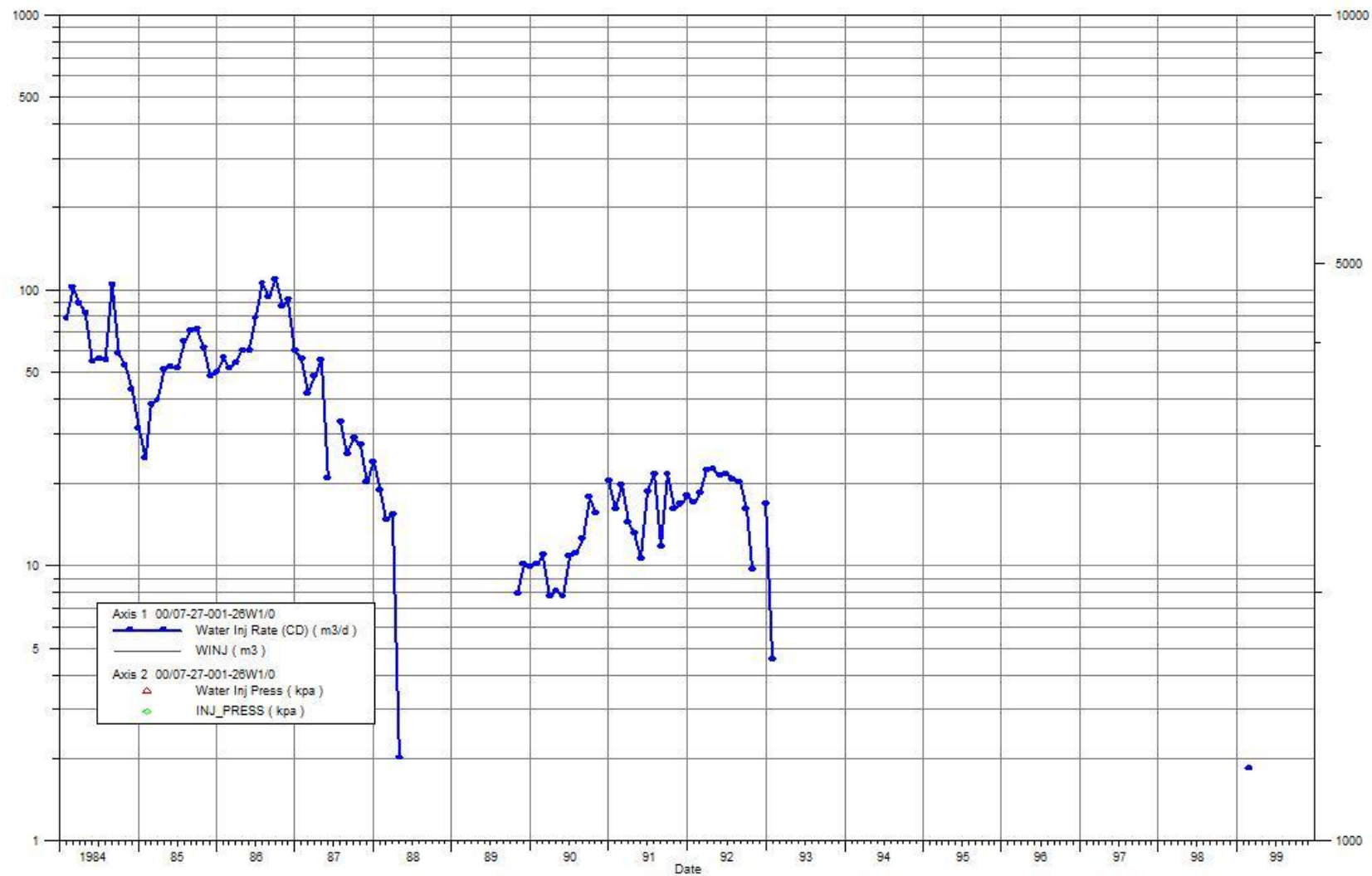


Status: ASD-WINJ
Unit: WASKADA_UNIT_NO_2_U_PW_68
Zone: LOWER_AMARANTH_A
Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/07-27-001-26W1/0

Cumulative Gas Inj : 0.00 MMscm
Cumulative Water Inj : 102.31 Mm3
Cumulative Water Prod : 3.67 Mm3
Cumulative Oil Prod : 2.29 Mm3
Cumulative Gas Prod : 0.00 MMscm



Status: ASD-OIL

Unit: WASKADA_UNIT_NO_2_U_PW_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

00/13-23-001-26W1/0

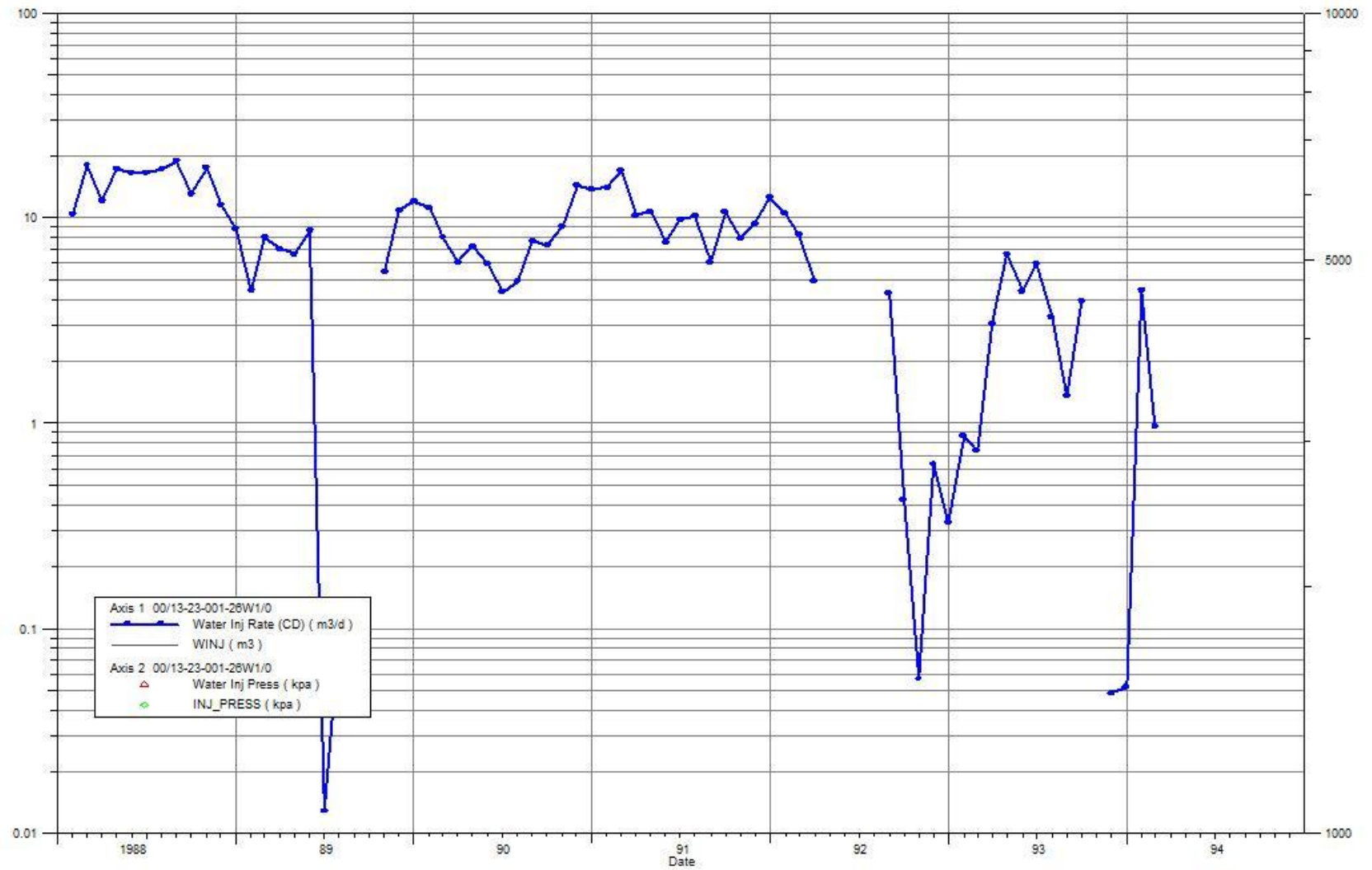
Cumulative Gas Inj : 0.00 MMsm

Cumulative Water Inj : 16.30 Mm3

Cumulative Water Prod : 22.33 Mm3

Cumulative Oil Prod : 1.44 Mm3

Cumulative Gas Prod : 0.00 MMsm



Status: ASD-OIL

Unit: WABKADA_UNIT_NO_2_U_PW_68

Zone: LOWER_AMARANTH_A

Operator: OMEGA_HYDROCO Approval: Amarant

PENNWEST EXPLORATION

00/13-26-001-26W1/0

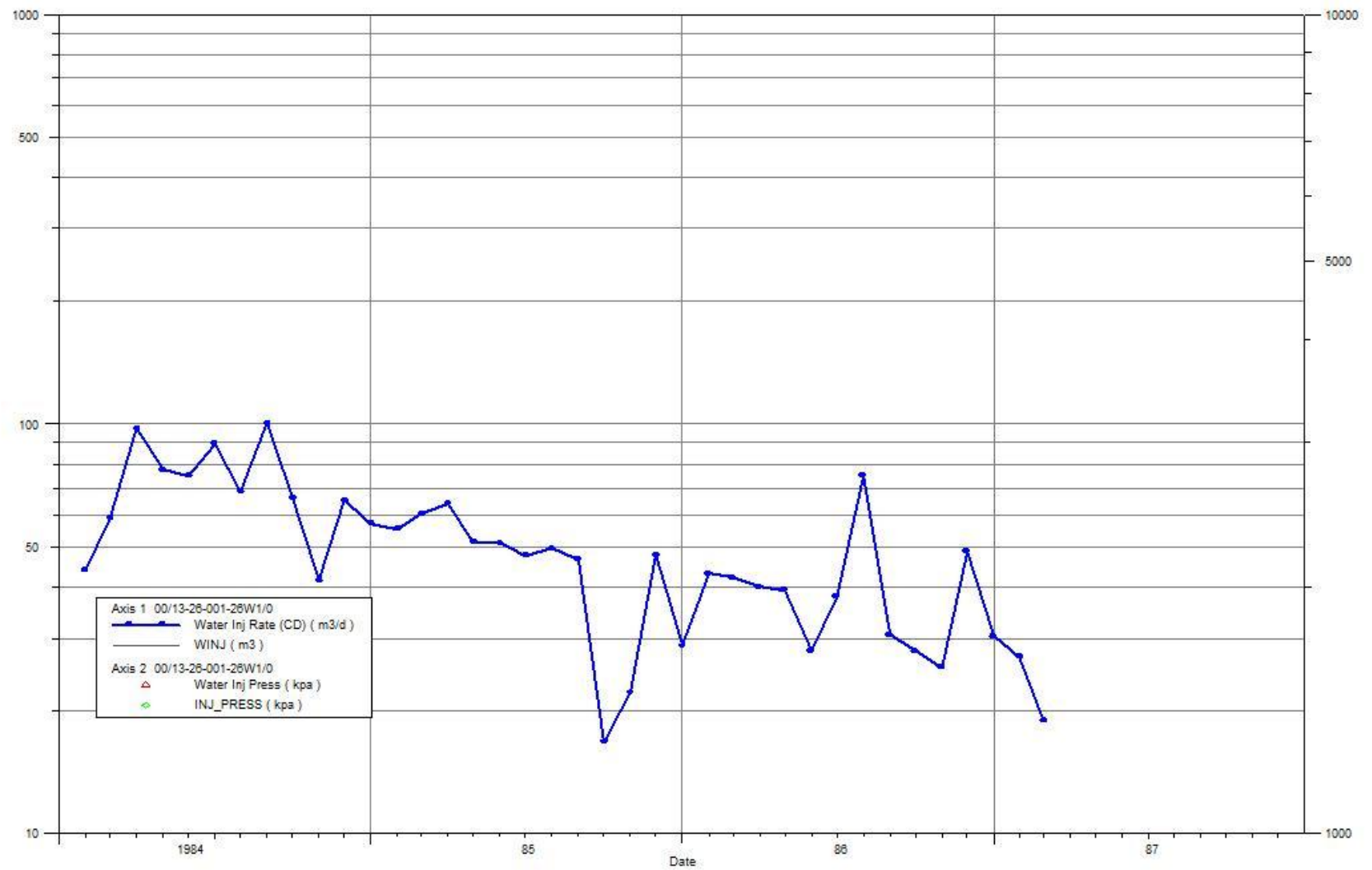
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 57.70 Mm3

Cumulative Water Prod : 3.11 Mm3

Cumulative Oil Prod : 0.46 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: ABO

Unit: WABKADA_UNIT_NO_2_P166

Zone: LOWER_AMARANTH_A

Operator: OMEGA_HYDRO Approval: Amaranth

PENNWEST EXPLORATION

00/16-22-001-26W1/0

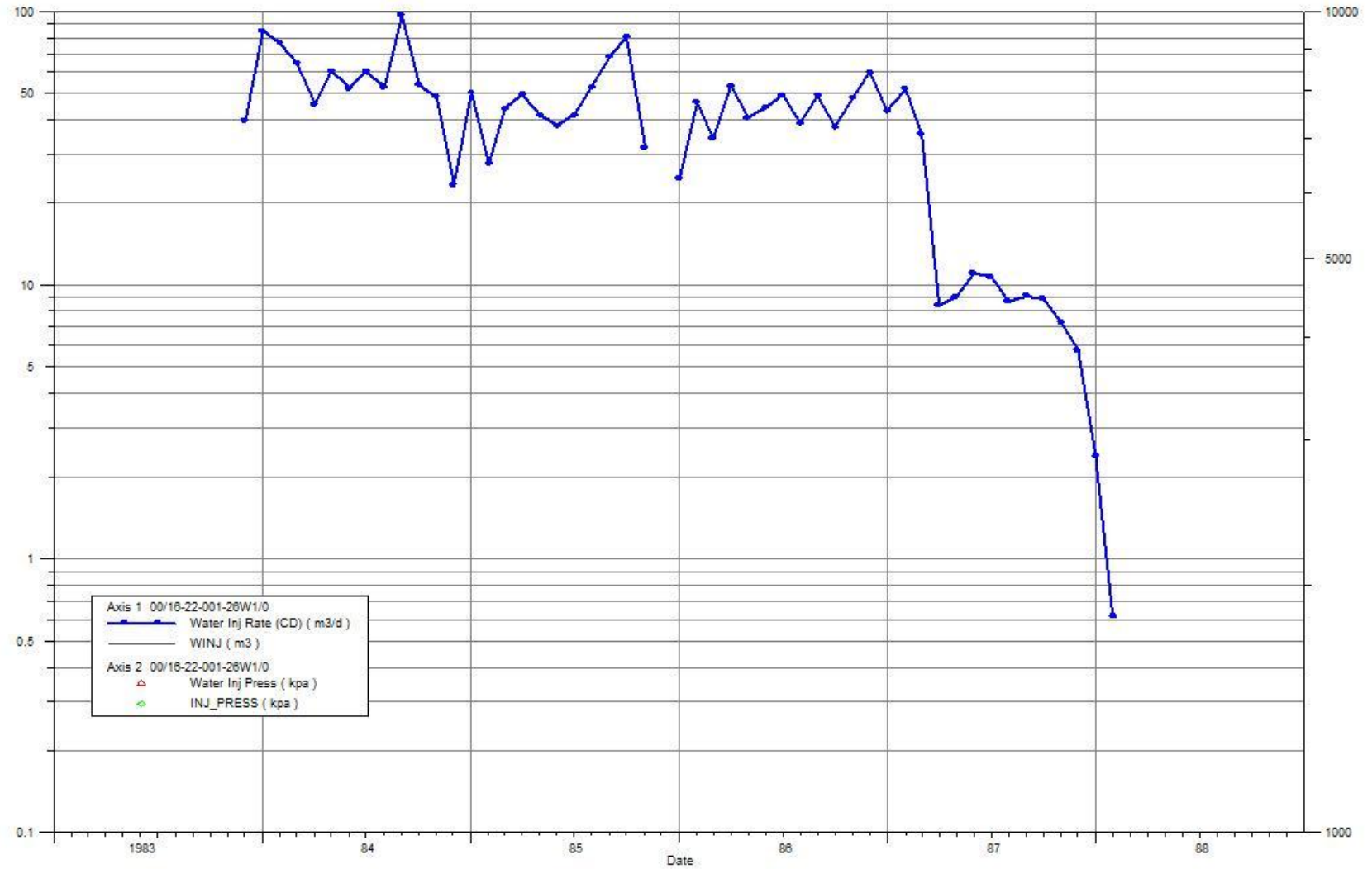
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 61.80 Mm3

Cumulative Water Prod : ~ Mm3

Cumulative Oil Prod : ~ Mm3

Cumulative Gas Prod : ~ MMscm



Status: ABD-OIL

Unit: WABKADA_UNIT_NO_3_PW_68

Zone: LOWER_AMARANTH_A

Operator: PENN_WEST Approval: Amaranth

PENNWEST EXPLORATION

02/13-27-001-26W1/0

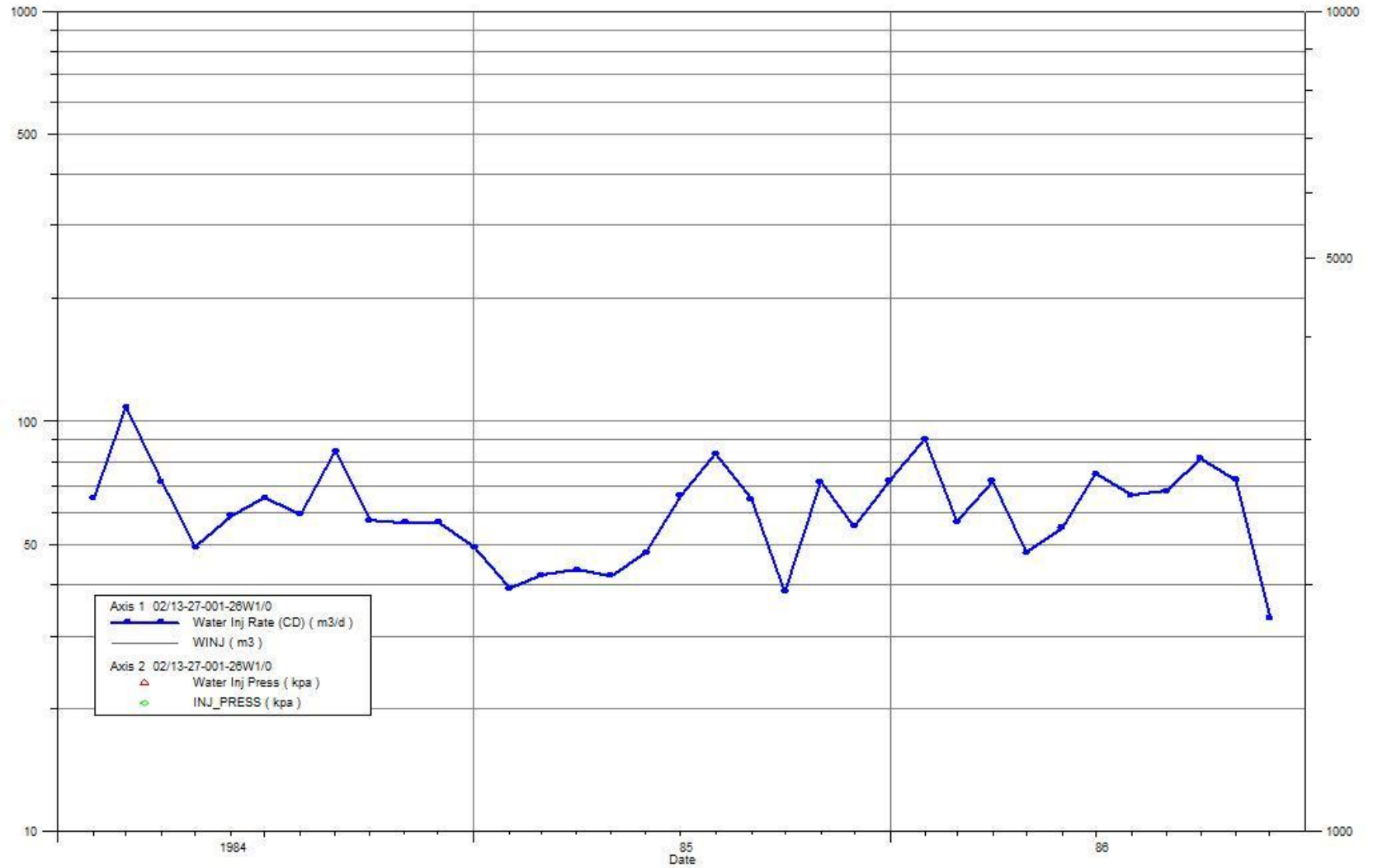
Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 65.79 Mm3

Cumulative Water Prod : 1.35 Mm3

Cumulative Oil Prod : 1.43 Mm3

Cumulative Gas Prod : 0.00 MMscm



Status: ABD-OIL

Unit: WABKADA_UNIT_NO_3_1_PM_68

Zone: LOWER_AMARANTH_A

Operator: OMEGA_HYDROCO Approval: Amaranth

PENNWEST EXPLORATION

02/15-27-001-26W1/0

Cumulative Gas Inj : 0.00 MMscm

Cumulative Water Inj : 75.78 Mm3

Cumulative Water Prod : 0.38 Mm3

Cumulative Oil Prod : 1.83 Mm3

Cumulative Gas Prod : 0.00 Mm3scm

