

**WASKADA UNIT NO. 5
WATERFLOOD EOR PROJECT**

ANNUAL WATERFLOOD PROGRESS REPORT FOR 2016

May 10, 2017

Tundra Oil and Gas Partnership

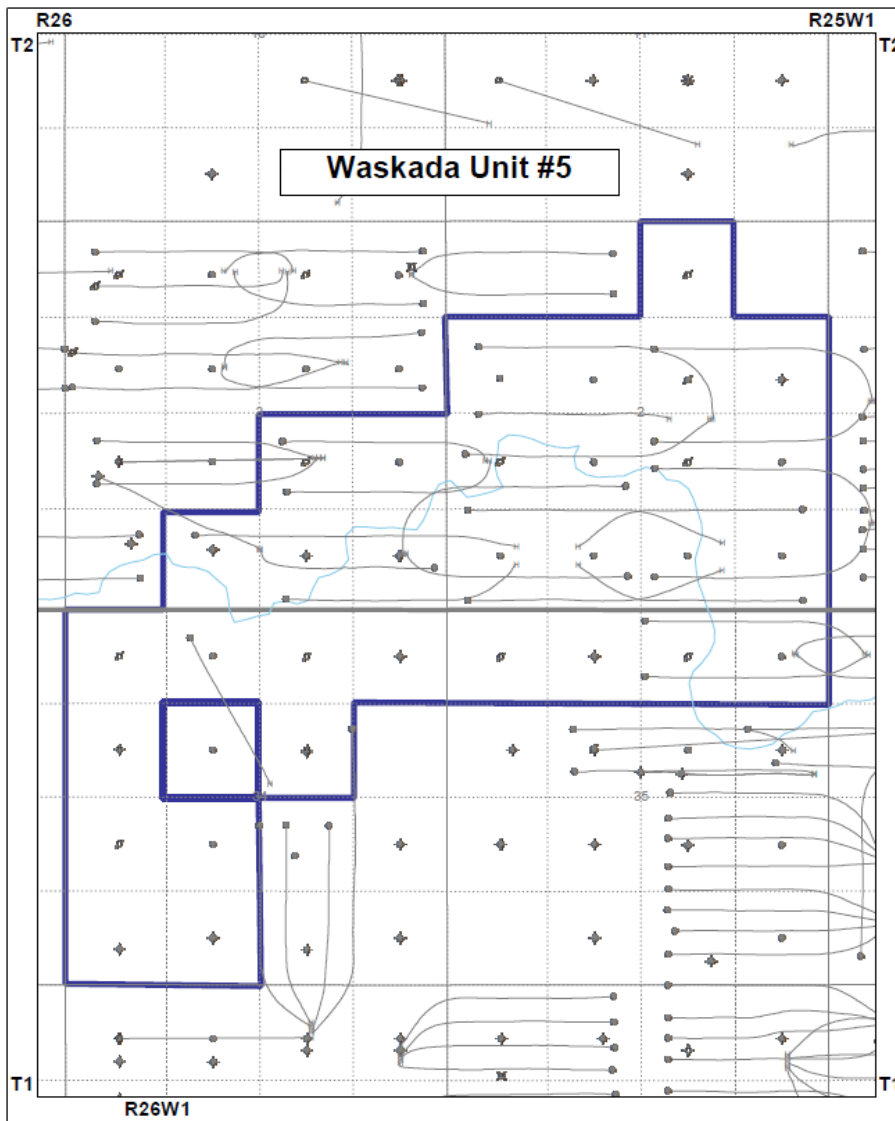
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INTRODUCTION

Waskada Unit No. 5 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Board Order No. PM58 effective January 1985. The Unit area contains 32 abandoned/suspended wells, including 9 inactive/abandoned injectors, and 20 producing wells in 32 LSDs in Townships 1 and 2, Range 26 W1 as shown in the figure below.

Figure 1: Waskada Unit 5 Area Outline



In accordance with Section 73 of the Manitoba Drilling and Production Regulation, Tundra hereby submits the following 2016 Annual Progress Report for Waskada Unit No. 5.

DISCUSSION

Production History

For the wells included in Waskada Unit No. 5, production started in June 1981 with the 00/03-34-001-26W1/0 Vertical well. Average oil production peaked for the first time at 4.8 m³/d per well in November 1983. This production was coming from 16 wells and totaled 76.4 m³/d for the whole Unit. The production at the end of December 2016 averaged 0.57 m³/d per well, totaling 2.9 m³/d for the Unit. Water was being injected into Waskada Unit No. 5 from January 1985 until end of 2003, then on short periods throughout 2004, 2005 and 2006. The rates and WOR are presented in Figure 2. There was no water injection through 2016, and there are no plans for injector re-activation.

Figure 2: Waskada Unit 5 Production/Injection Rates and WOR vs Time

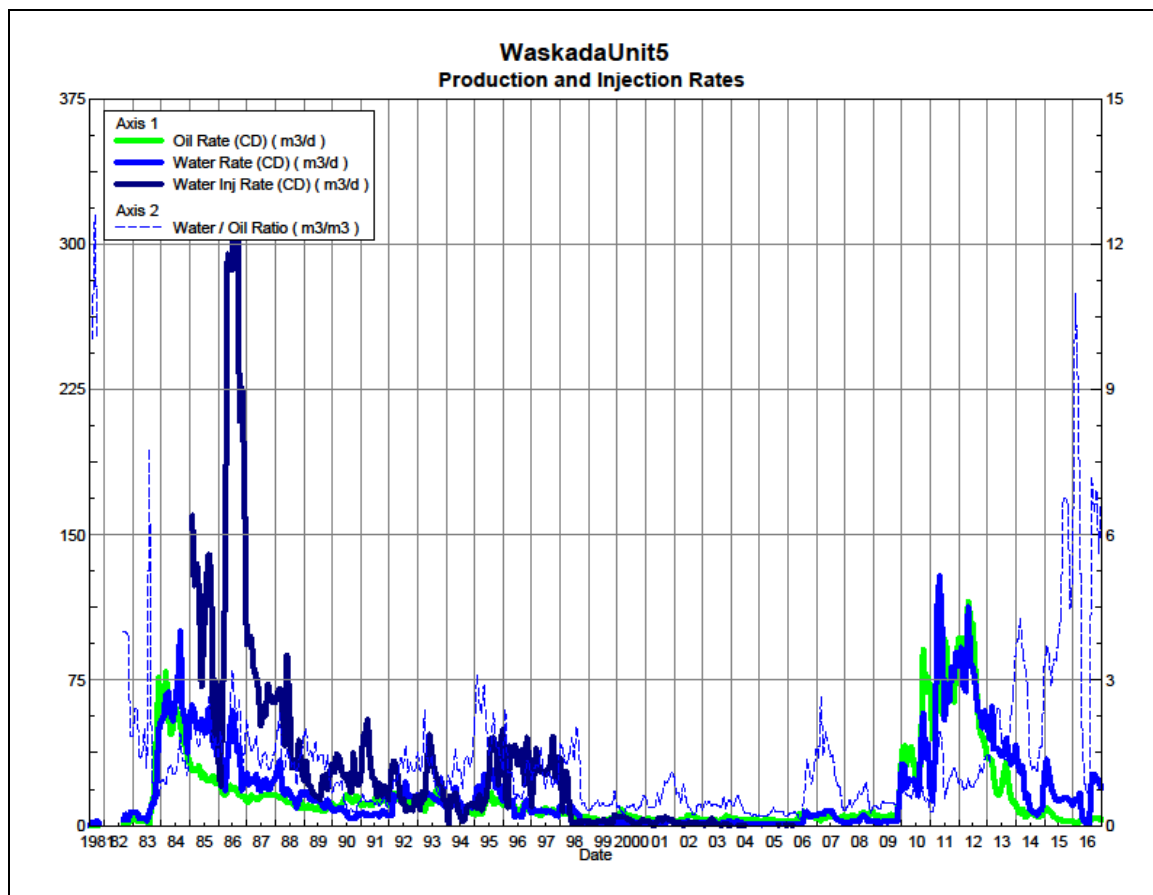
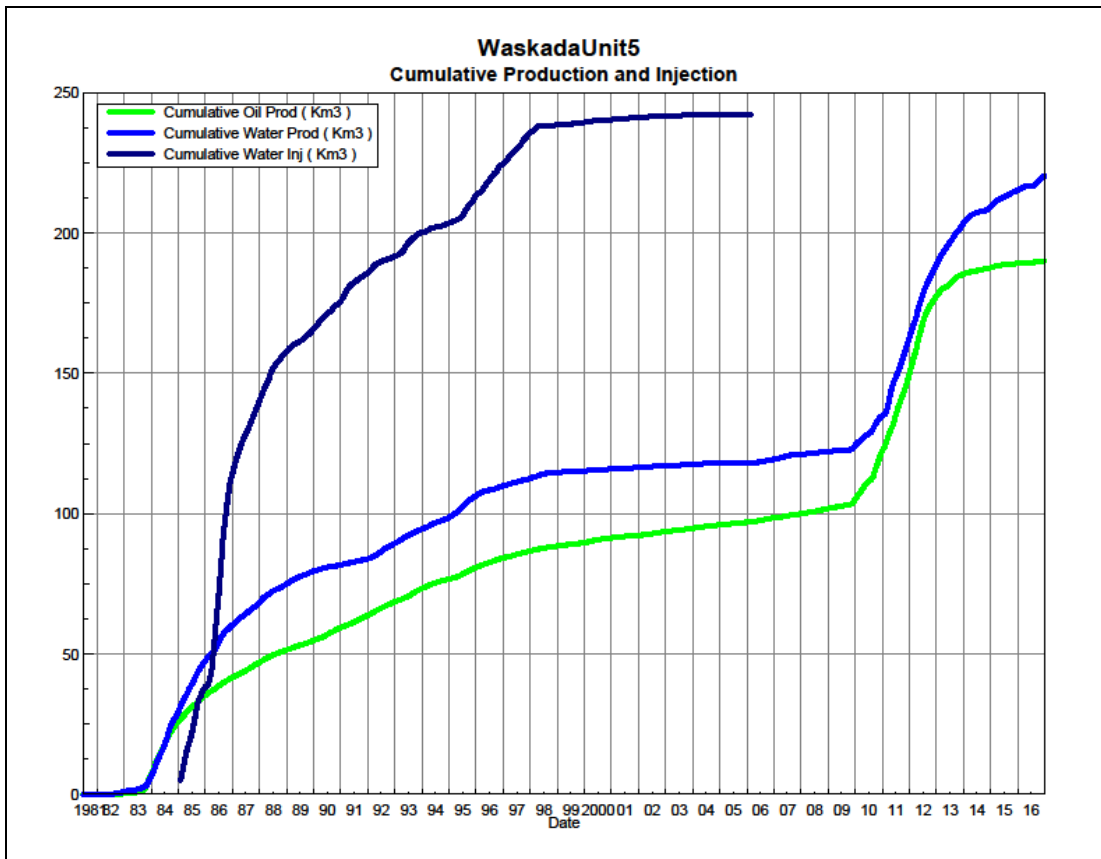


Figure 3 shows the cumulative production for Waskada Unit No. 5 to the end of December 2016 as 190.0 e³m³ of oil, and 220.3 e³m³ of water.

Figure 3: Waskada Unit 5 Cumulative Oil, Water and Water Injected vs Time



Waterflood EOR Operating Strategy and Performance

Corrosion and Scale Prevention

The facilities in Unit 5 are currently using cathodic and chemical protection against corrosion and scale in the new horizontal wells. All facilities are monitored every 3 months to assess the corrosion and ensure that proper electrical current is being supplied. There have been no issues with corrosion or scale to date.

Injection Wellhead Pressures

No injection wellhead pressures were recorded in 2016.

Reservoir Pressure

Where practical, Tundra is committed to collecting pressure data from newly drilled injection wells. Since no new wells were drilled in the Unit, therefore, no pressure surveys were conducted in 2016.

Well Servicing

The following table illustrates the maintenance done on the Waskada Unit 5 wells in 2016.

UWI	Workover Type	Date
100.02-04-002-25W1.00	Tubing Change	2-Aug-16
103.01-02-002-26W1.00	Pump Change	31-Aug-16
102.05-02-002-26W1.00	Tubing Change	4-Aug-16
102.07-02-002-26W1.00	Cemented Liner Cleanout	5-Mar-16
102.03-03-002-26W1.00	Pump change	2-Sep-16

Waterflood Performance Discussion

From January 1 to December 31 in 2016, Waskada Unit No. 5 produced 6.0 e³m³ of fluid (0.9 e³m³ of Oil, 5.1 e³m³ of Water). There is no active injection in this Unit, and Tundra Oil and Gas has no plans to reactivate injection in the near future. Due to the horizontal wells being produced and no pressure support occurring in the Unit, the cumulative VRR has dropped in the last 10 years, down to 0.551.

Table 2 summarizes the yearly and cumulative VRR for Waskada Unit No. 5.

Figure 4: Waskada Unit 5 Production and Injection Rate

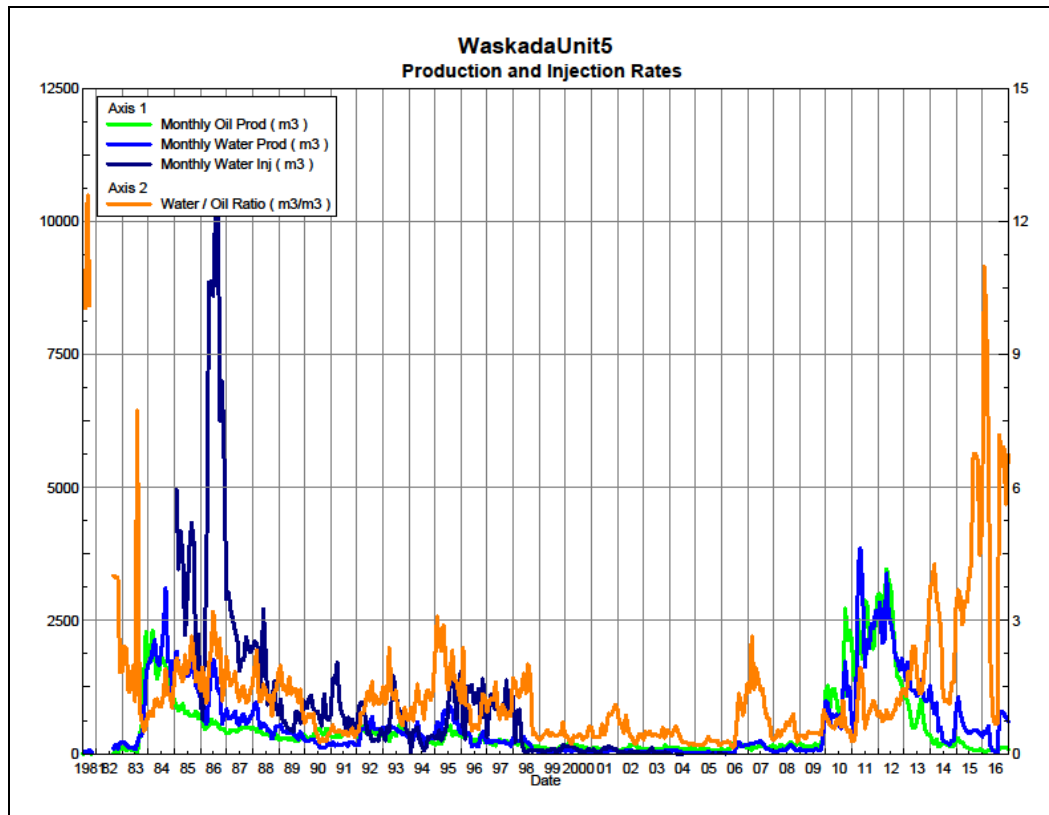


TABLE NO. 1: WASKADA UNIT NO. 5 WELL SUMMARY

<i>UWI</i>	<i>Type</i>	<i>Status</i>	<i>On Prod Date</i>	<i>Cum Prd Oil (m3)</i>	<i>Cum Prd Water (m3)</i>	<i>Last Prod Date</i>	<i>Cum Inj Water (m3)</i>	<i>Last Inj Date</i>
100/03-34-001-26W1/0	Vertical	Abandoned	6/1/1981	1535.2	5834.5	12/31/1989	0	
100/04-34-001-26W1/0	Vertical	Abandoned	7/1/1984	352.9	10302.4	2/29/1988	0	
100/05-34-001-26W1/0	Vertical	Injection	7/1/1984	821.6	4442.4	2/28/1986	20335	4/30/1998
100/06-34-001-26W1/0	Vertical	Producing	2/1/1984	5049.5	32844	9/30/2008	0	
102/10-34-001-26W1/0	Vertical	Abandoned	12/1/1983	651.8	7152.2	1/31/1990	0	
100/12-34-001-26W1/2	Vertical	Abandoned	6/1/1984	2757.1	11032.5	4/30/1996	0	
100/13-34-001-26W1/0	Vertical	Injection	10/1/1983	806.9	2737.8	2/28/1986	30344.3	5/31/2000
100/14-34-001-26W1/2	Vertical	Comingled	8/1/1983	2191.4	4042.5	11/30/2011	0	
100/15-34-001-26W1/0	Vertical	Suspended	2/1/1984	455.3	1768.6	2/28/1986	52436.1	4/30/1998
100/16-34-001-26W1/0	Vertical	Abandoned	1/1/1984	255.6	1995.7	4/30/1989	0	
100/13-35-001-26W1/0	Vertical	Injection	10/1/1983	802.1	1401.7	12/31/1984	20297.7	10/31/2003
100/14-35-001-26W1/2	Vertical	Producing	10/1/1983	6005.8	6250.6	4/30/2012	0	
100/15-35-001-26W1/0	Vertical	Injection	10/1/1983	1240.1	279.8	12/31/1984	24849.7	2/28/2006
102/15-35-001-26W1/0	Horizontal	Suspended	11/1/2011	2936.3	2549.7	1/31/2014	0	
103/15-35-001-26W1/0	Horizontal	Producing	11/1/2011	12064.8	3563.7	12/31/2016	0	
100/16-35-001-26W1/0	Vertical	Producing	10/1/1983	13266.6	2143.9	9/30/2012	0	
100/02-04-002-25W1/0	Horizontal	Producing	4/1/2011	5758.2	31749.8	12/31/2016	0	
100/01-02-002-26W1/0	Vertical	Producing	11/1/1983	10171.2	3136.4	3/31/2012	0	
102/01-02-002-26W1/0	Horizontal	Suspended	7/1/2010	4224.5	2949.3	9/30/2012	0	
103/01-02-002-26W1/0	Horizontal	Producing	7/1/2010	5785.8	3976.7	12/31/2016	0	
100/02-02-002-26W1/0	Vertical	Producing	11/1/1983	6742.9	1264.1	2/28/2011	0	
102/02-02-002-26W1/0	Horizontal	Suspended	3/1/2011	1674.4	3215.3	5/31/2014	0	
100/03-02-002-26W1/0	Vertical	Producing	2/1/1984	4775.8	1643.3	11/30/2012	0	
102/03-02-002-26W1/0	Horizontal	Suspended	9/1/2011	1324.4	2325.9	6/30/2015	0	
100/04-02-002-26W1/0	Vertical	Producing	11/1/1983	6025.5	1250.1	8/31/2011	0	
102/04-02-002-26W1/0	Horizontal	Suspended	11/1/2009	5279.7	3346.3	5/31/2014	0	
103/04-02-002-26W1/0	Horizontal	Producing	11/1/2009	4312.6	5433.7	1/31/2016	0	
100/05-02-002-26W1/0	Vertical	Injection	1/1/1984	894.2	322.3	12/31/1984	20882.6	10/31/2003
102/05-02-002-26W1/0	Horizontal	Producing	2/1/2011	3982.9	3522.3	12/31/2016	0	
100/06-02-002-26W1/0	Vertical	Producing	8/1/1983	5833	1413.2	10/31/2013	0	
102/06-02-002-26W1/0	Horizontal	Suspended	9/1/2011	912.2	2017.6	4/30/2013	0	
100/07-02-002-26W1/0	Vertical	Injection	11/1/1983	722.3	298.9	12/31/1984	21327	6/30/2004
102/07-02-002-26W1/0	Horizontal	Producing	3/1/2011	2036.4	2116.9	12/31/2016	0	
103/07-02-002-26W1/0	Horizontal	Suspended	3/1/2011	1550.3	2858.9	7/31/2013	0	
100/08-02-002-26W1/0	Vertical	Producing	11/1/1983	4609.3	1444.4	6/30/2008	0	
100/09-02-002-26W1/0	Vertical	Abandoned	1/1/1984	2107.7	569.2	3/31/1991	0	
100/10-02-002-26W1/0	Vertical	Suspended	1/1/1984	3206.3	920.2	5/31/2008	0	
102/10-02-002-26W1/0	Horizontal	Suspended	3/1/2011	2344.3	3293.8	12/31/2013	0	
100/11-02-002-26W1/0	Vertical	Producing	1/1/1984	7295.9	9128.9	6/30/2011	0	
100/12-02-002-26W1/0	Vertical	Producing	9/1/1983	5700.2	1735.4	7/31/2011	0	
102/12-02-002-26W1/0	Horizontal	Suspended	3/1/2010	5635	4841.7	2/28/2015	0	
103/12-02-002-26W1/0	Horizontal	Suspended	2/1/2011	3720.5	2592.3	4/30/2014	0	
100/15-02-002-26W1/0	Vertical	Suspended	11/1/1982	1039	636.5	1/31/1986	24389.2	4/30/1998
100/01-03-002-26W1/0	Vertical	Abandoned	5/1/1984	2717.4	1436.8	10/31/1996	0	
100/02-03-002-26W1/0	Vertical	Abandoned	3/1/1984	1650.1	895.7	4/30/1990	0	
102/02-03-002-26W1/0	Horizontal	Suspended	7/1/2010	1913	1541.3	10/31/2012	0	
100/03-03-002-26W1/0	Vertical	Abandoned	3/1/1984	1441.5	2967.8	7/31/1986	0	
102/03-03-002-26W1/0	Horizontal	Producing	7/1/2010	9726.1	8274.6	12/31/2016	0	
100/07-03-002-26W1/0	Vertical	Suspended	9/1/1983	1405.9	716.5	2/28/1986	27111.6	4/30/1998
102/07-03-002-26W1/0	Horizontal	Suspended	3/1/2012	3374.4	2320	12/31/2015	0	
103/07-03-002-26W1/0	Horizontal	Suspended	3/1/2012	3862	3328.4	4/30/2014	0	
100/08-03-002-26W1/0	Vertical	Producing	6/1/1984	5107	2517.5	8/31/2013	0	
				190054.9	220344.0		241973.2	

TABLE NO. 2 - VRR Calculations

Date	Mth Oil Prod m3	Cum Oil Prod Km3	Mth Water Prod m3	Cum Water Prod Km3	Water Oil Ratio m3/m3	Mth Water Inj m3	Cum Water Inj Km3	VRR	Cum VRR
12/31/1981	15	0.015	197	0.197	13.03	0	0.000	0.000	0.000
12/31/1982	311	0.326	758	0.955	2.44	0	0.000	0.000	0.000
12/31/1983	6802	7.128	5551	6.506	0.82	0	0.000	0.000	0.000
12/31/1984	18806	25.934	22874	29.380	1.22	0	0.000	0.000	0.000
12/31/1985	9418	35.352	18212	47.592	1.93	38316	38.316	1.319	0.434
12/31/1986	6226	41.578	12759	60.351	2.05	75812	114.128	3.806	1.055
12/31/1987	5464	47.042	7974	68.325	1.46	25875	140.002	1.815	1.144
12/31/1988	4450	51.492	6636	74.961	1.49	17778	157.780	1.513	1.176
12/31/1989	3362	54.854	4542	79.503	1.35	7984	165.765	0.950	1.163
12/31/1990	4526	59.380	2268	81.771	0.50	9757	175.521	1.306	1.170
12/31/1991	4439	63.819	2155	83.926	0.49	10083	185.604	1.389	1.180
12/31/1992	4824	68.643	5584	89.510	1.16	6146	191.750	0.552	1.138
12/31/1993	4717	73.359	4984	94.494	1.06	8476	200.225	0.814	1.119
12/31/1994	3346	76.705	4039	98.533	1.21	3292	203.518	0.417	1.090
12/31/1995	4084	80.789	7705	106.238	1.89	10010	213.528	0.807	1.072
12/31/1996	3455	84.244	3653	109.892	1.06	10941	224.468	1.435	1.086
12/31/1997	2461	86.704	2678	112.570	1.09	11485	235.953	2.085	1.112
12/31/1998	1786	88.490	2161	114.731	1.21	2491	238.444	0.591	1.101
12/31/1999	1192	89.682	539	115.270	0.45	921	239.365	0.483	1.096
12/31/2000	1685	91.366	632	115.902	0.38	985	240.350	0.383	1.088
12/31/2001	955	92.321	593	116.495	0.62	900	241.250	0.532	1.083
12/31/2002	1284	93.605	540	117.036	0.42	367	241.617	0.182	1.075
12/31/2003	1229	94.833	555	117.590	0.45	328	241.946	0.167	1.067
12/31/2004	1162	95.995	399	117.989	0.34	2	241.947	0.001	1.059
12/31/2005	939	96.934	234	118.223	0.25	25	241.973	0.019	1.053
12/31/2006	1553	98.487	1129	119.352	0.73	1	241.973	0.000	1.040
12/31/2007	1515	100.002	1824	121.176	1.20	0	241.973	0.000	1.025
12/31/2008	1866	101.867	997	122.173	0.53	0	241.973	0.000	1.011
12/31/2009	3103	104.970	2078	124.251	0.67	0	241.973	0.000	0.988
12/31/2010	17420	122.390	10622	134.873	0.61	0	241.973	0.000	0.878
12/31/2011	27168	149.558	27601	162.474	1.02	0	241.973	0.000	0.723
12/31/2012	27883	177.441	26264	188.739	0.94	0	241.973	0.000	0.616
12/31/2013	7941	185.382	14675	203.413	1.85	0	241.973	0.000	0.581
12/31/2014	2227	187.609	5691	209.104	2.56	0	241.973	0.000	0.570
12/31/2015	1503	189.111	6099	215.203	4.06	0	241.973	0.000	0.559
12/31/2016	944	190.054	5141	220.344	5.45	0	241.973	0.000	0.551

TABLE NO. 3

**Tundra Oil and Gas
Waskada Unit No. 5
2016 Injection Volumes**

Well Location	Date	Hours On	H ₂ O Inj Cal-d avg (m ³ /d)	Monthly Injected H ₂ O (m ³)
Unit No. 5 Total:				
	Jan-16	0	0.0	0.00
	Feb-16	0	0.0	0.00
	Mar-16	0	0.0	0.00
	Apr-16	0	0.0	0.00
	May-16	0	0.0	0.00
	Jun-16	0	0.0	0.00
	Jul-16	0	0.0	0.00
	Aug-16	0	0.0	0.00
	Sep-16	0	0.0	0.00
	Oct-16	0	0.0	0.00
	Nov-16	0	0.0	0.00
	Dec-16	0	0.0	0.00
2016 Group Totals:				0.00
Unit No. 5 Total:				
	1981	0	0	0.00
	1982	0	0	0.00
	1983	0	0	0.00
	1984	0	0	0.00
	1985	0	105.15	38,315.80
	1986	0	206.94	75,811.90
	1987	0	71.05	25,874.60
	1988	0	48.61	17,778.00
	1989	0	21.86	7,984.30
	1990	0	26.83	9,756.50
	1991	0	27.73	10,082.60
	1992	0	16.9	6,146.00
	1993	0	23.2	8,475.50
	1994	0	9.1	3,292.40
	1995	0	27.4	10,010.00
	1996	0	29.8	10,940.70
	1997	0	31.6	11,484.70
	1998	0	7.0	2,490.80
	1999	0	2.5	921.30
	2000	0	2.7	985.00
	2001	0	2.5	900.30
	2002	0	1.0	366.80
	2003	0	0.9	328.40
	2004	0	0.0	1.80
	2005	0	0.3	25.30
	2006	0	0.0	0.50
	2007	0	0.0	0.00
	2008	0	0.0	0.00
	2009	0	0.0	0.00
	2010	0	0.0	0.00
	2011	0	0.0	0.00
	2012	0	0.0	0.00
	2013	0	0.0	0.01
	2014	0	0.0	0.00
	2015	0	0.0	0.00
	2016	0	0.0	0.00
Group Totals:				241,973.21

TABLE NO. 4

**Tundra Oil and Gas
Waskada Unit No. 5
2016 Production Volumes**

Date	Hours On	Oil Rate (CD) m3/d	Monthly Oil Prod m3	Water Rate (CD) m3/d	Monthly Water Prod m3	Water Oil Ratio m3/m3	Well Count
Jan-16	1,512	1.23	38	13.49	418	11	2
Feb-16	1,392	1.39	40	13.41	389	10	2
Mar-16	1,968	2.46	76	16.55	513	7	3
Apr-16	1,320	2.39	72	4.23	127	2	2
May-16	1,464	2.20	68	1.91	59	1	2
Jun-16	1,440	1.98	59	1.33	40	1	2
Jul-16	1,488	1.46	45	0.97	30	1	2
Aug-16	2,568	3.30	102	23.72	735	7	3
Sep-16	3,432	4.11	123	26.64	799	6	5
Oct-16	3,672	3.49	108	24.06	746	7	5
Nov-16	4,224	4.05	122	22.82	685	6	6
Dec-16	3,600	2.87	89	19.34	599	7	5
	28,080		944		5,141		

Date	Hours On	Oil Rate (CD) m3/d	Monthly Oil Prod m3	Water Rate (CD) m3/d	Monthly Water Prod m3	Water Oil Ratio m3/m3	Well Count
31/12/1981	2208	0.10	15	1.29	197	26.93	1
31/12/1982	3552	2.04	311	4.97	758	3.13	1
31/12/1983	40872	18.57	6,802	15.15	5551	1.86	5
31/12/1984	234480	51.49	18,806	62.43	22874	1.25	27
31/12/1985	223662	25.83	9,418	49.94	18212	1.94	26
31/12/1986	170800	17.05	6,226	34.91	12759	2.02	20
31/12/1987	148366	14.98	5,464	21.86	7974	1.47	17
31/12/1988	111192	12.17	4,450	18.18	6636	1.48	13
31/12/1989	103776	9.22	3,362	12.45	4542	1.38	12
31/12/1990	112176	12.39	4,526	6.24	2268	0.54	13
31/12/1991	117144	12.17	4,439	5.90	2155	0.49	14
31/12/1992	119880	13.20	4,824	15.26	5584	1.16	14
31/12/1993	105912	12.92	4,717	13.66	4984	1.14	12
31/12/1994	101880	9.19	3,346	11.07	4039	1.25	12
31/12/1995	112872	11.17	4,084	21.10	7705	2.01	13
31/12/1996	108744	9.45	3,455	9.99	3653	1.03	12
31/12/1997	80832	6.74	2,461	7.33	2678	1.12	9
31/12/1998	73344	4.90	1,786	5.93	2161	1.18	8
31/12/1999	48744	3.27	1,192	1.48	539	0.45	6
31/12/2000	61464	4.62	1,685	1.73	632	0.40	7
31/12/2001	45240	2.62	955	1.62	593	0.67	5
31/12/2002	51576	3.51	1,284	1.48	540	0.47	6
31/12/2003	55080	3.36	1,229	1.52	555	0.45	6
31/12/2004	55440	3.18	1,162	1.09	399	0.33	6
31/12/2005	50856	2.58	939	0.64	234	0.25	6
31/12/2006	65660	4.24	1,553	3.07	1129	0.68	8
31/12/2007	74,278	4.14	1,515	5.01	1824	1.27	9
31/12/2008	81,214	5.09	1,866	2.72	997	0.54	9
31/12/2009	79,324	8.46	3,103	5.66	2078	0.52	9
31/12/2010	97,593	47.71	17,420	29.10	10622	0.66	11
31/12/2011	139,734	74.43	27,168	75.43	27601	1.02	16
31/12/2012	163,974	76.31	27,883	71.83	26264	1.01	19
31/12/2013	138,151	21.80	7,941	40.34	14675	2.06	16
31/12/2014	61,089	6.09	2,227	15.61	5691	2.43	7
31/12/2015	44,856	4.14	1,503	16.77	6099	4.58	5
31/12/2016	28,080	2.58	944	14.04	5141	5.35	3
	3,314,045		190,055		220,344		