

BIRDTAIL UNIT NO. 1
WATERFLOOD EOR PROJECT
ANNUAL REPORT FOR 2015

April 26, 2016
Tundra Oil and Gas Partnership

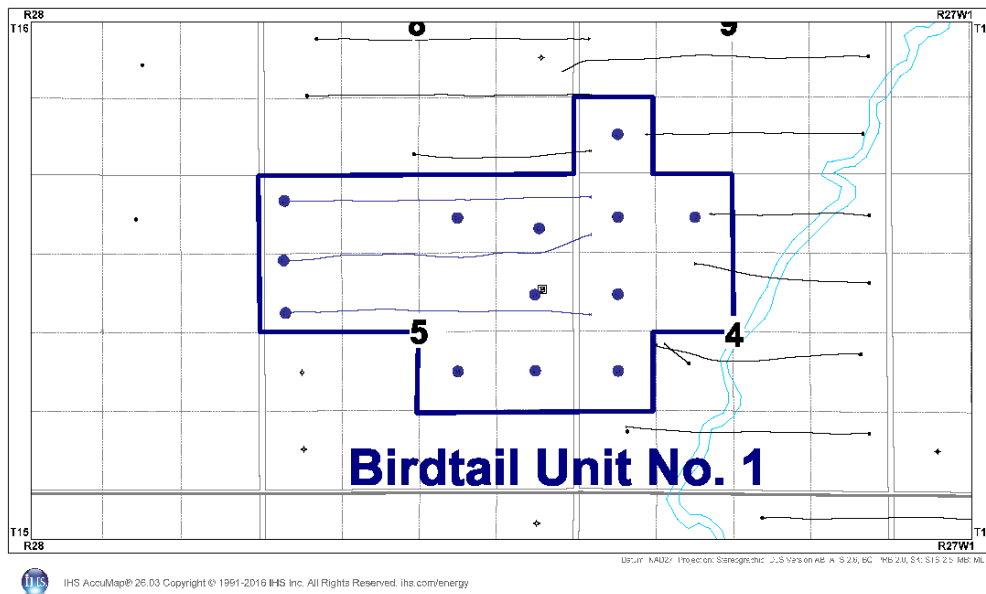
Table of Contents

INTRODUCTION	3
DISCUSSION.....	3
Production History.....	3
Waterflood History	5
Waterflood EOR Operations	6
Water Source and Quality	6
Injection Wellhead Pressures	6
Reservoir Pressure	6
Well Servicing	6
Voidage Replacement.....	6
Waterflood Performance Discussion.....	6
List of Appendices.....	7
Appendix A: Well Name and Well Status	
Appendix B: Average Monthly Injection Wellhead Pressures	
Appendix C: Injection Pattern Summary	
Appendix D: Injector Pattern Production/Injection Rates, Cumulative and VRRs, Plots and Tables	

INTRODUCTION

Birdtail Unit No. 1 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 7 effective August 1, 1999 with Progress Energy Production Partnership as Operator. Tundra acquired the unit from Progress Energy Production Partnership and become operator in October 2003. The EOR project area contains 13 wells in 16 LSDs in Township 16, Range 27 W1 as shown in the figure below. Well list and well status is available in Appendix A.

Figure 1: Birdtail Unit No. 1 Area Outline



In accordance with Section 73 of the Manitoba Drilling and Production Regulation, Tundra hereby submits the 2015 Annual Progress Report for Birdtail Unit No. 1 as required by Waterflood Order No. 7.

DISCUSSION

Production History

For the wells included in Birdtail Unit No. 1, production started September 1996 with the 00/16-05-016-27W1/0 well. Oil production peaked at 17.9 m³/d in October 1997. The Unit was producing 8.23 m³/d of oil and 27.88 m³/d of water in December 2015 and had an average WOR of 5.72 m³/m³ in 2015. The oil production rate, injection rate, and WOR for each injection pattern is presented in Appendix D. The rates and WOR are plotted in Figure 2.

Figure 2: Birdtail Unit No. 1 Production/Injection Rates and WOR vs. Time

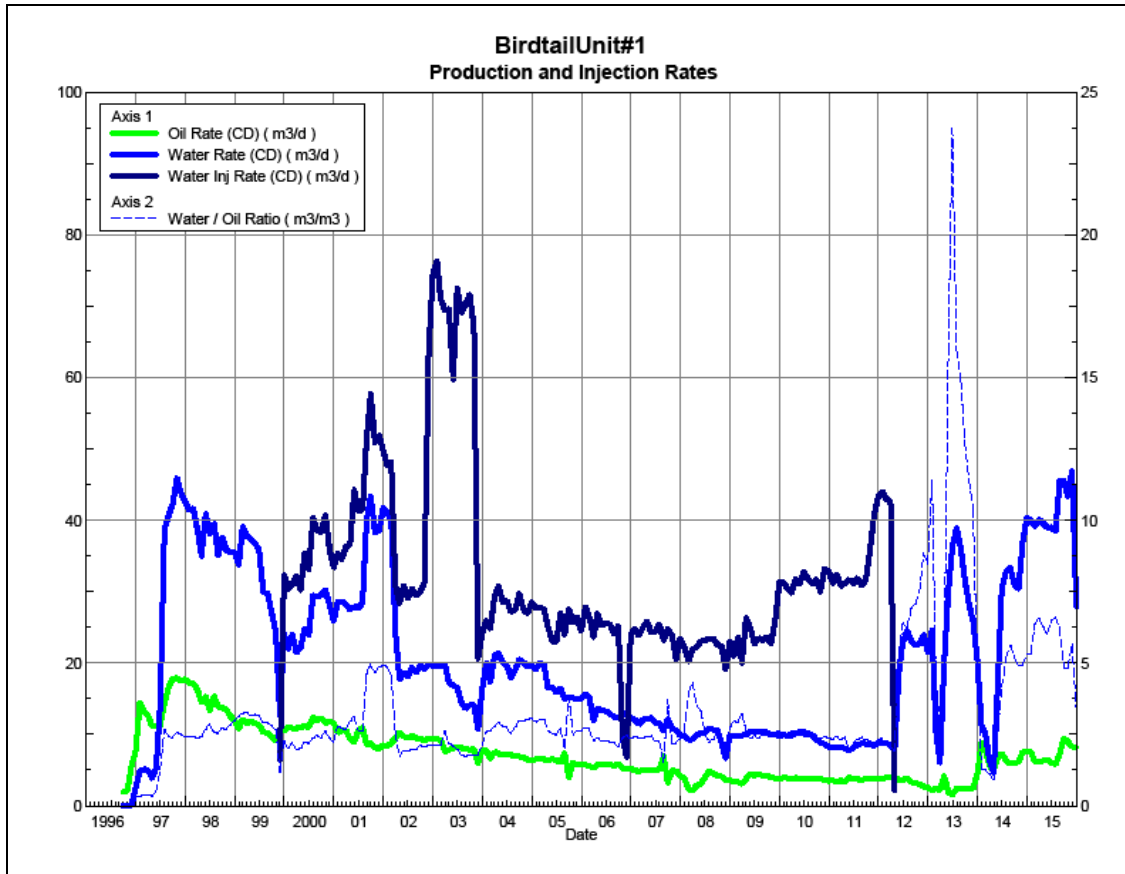
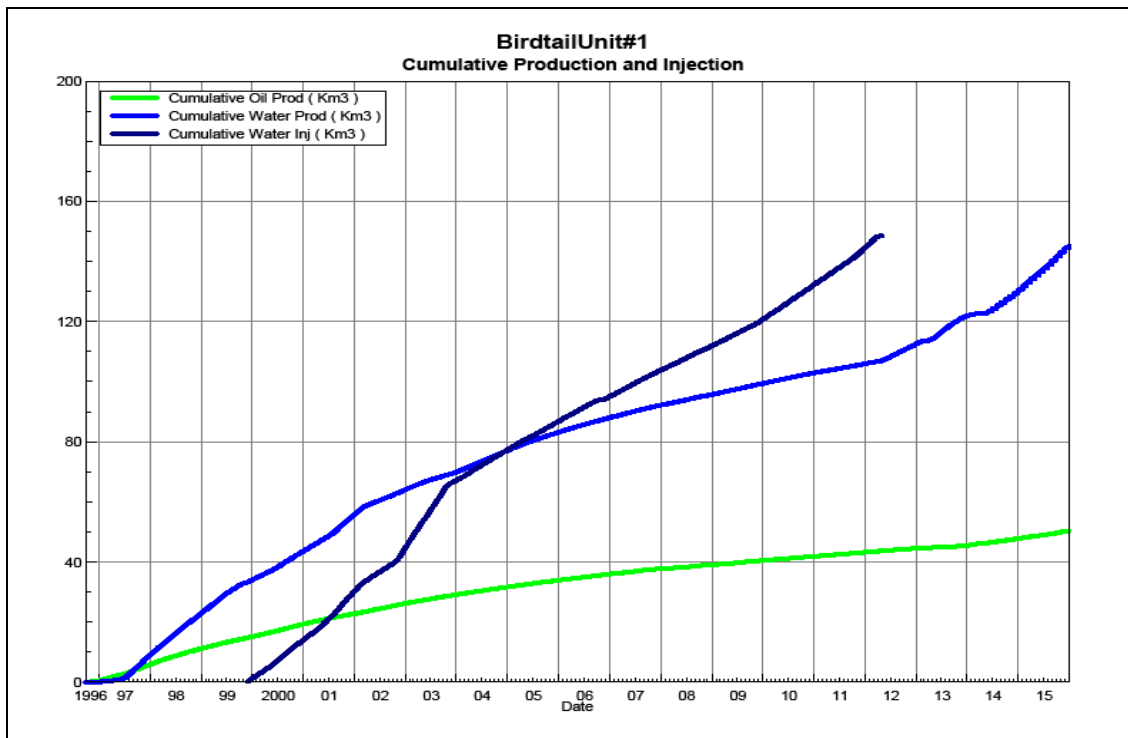


Figure 3 shows the cumulative production for Birdtail Unit No. 1 to the end of December 2015 as 50.03 e³m³ of oil, and 145.29 e³m³ of water. The cumulative water injected is 148.47 e³m³. The cumulative volume of oil, and water produced and fluid injected for each injection pattern is presented in Appendix D.

Figure 3: Birdtail Unit No. 1 Cumulative Oil, Water and Water Injected vs. Time



Waterflood History

Water injection started in November 1999 in the two injectors at 00/14-04-016-27W1 and 00/07-05-016-27W1. The 00/07-05-016-27W1 injector has been abandoned since July 2003. In April 2012, injection into the 00/14-04-016-27W1 well was suspended.

Tundra is in the process of redeveloping this unit. Tundra no longer wants to use produced water for injection in this Unit, so they currently have in place a new source of water at 00/02-32-016-27W1. As part of the redevelopment of this unit, Tundra drilled a horizontal producer at 00/13-05-016-27W1/0 in the north part of the unit in 2013 along with the construction of a new injection line coming from the Birdtail battery located at 09-05-016-27W1. This line will supply filtered source water to the unit.

In September 2014, Tundra drilled another horizontal producer at 00/12-05-016-27W1/0. Tundra also applied to expand the Unit to include the NE/4 of 05-016-27W1/0 in 2014. In July 2015, a produce first horizontal injector between the 00/12-05 and 00/13-05 producers was drilled at 02/12-05-016-27W1/0. Tundra also plans to convert a couple of vertical wells into injectors to improve the sweep efficiency of the waterflood.

Any future revisions to the waterflood development or surveillance plan would be based on new production or performance response data, technical studies, or observed reservoir behavior and reserves recovery interpretations.

Waterflood EOR Operations

Water Source and Quality

There is currently no injection in Birdtail Unit No. 1.

Injection Wellhead Pressures

The monthly wellhead injection pressure for the injection well is summarized in Appendix B, and shows injection pressures since 2003. Injection pressure for 00/14-04-16-27W1/0 has been consistent since 2003, averaging 6700 kPag. Injection was suspended in Birdtail Unit No. 1 in April 2012, so no wellhead injection pressures are available for 2015.

Reservoir Pressure

No reservoir pressure measurements were taken in Birdtail Unit No. 1 in 2015.

Well Servicing

Table 1 lists the maintenance that was required in Birdtail Unit No. 1 in 2015.

Table 1: Service and Maintenance in Birdtail Unit No. 1

00/12-04-016-27W1/0	Pump Change	11/13/2015
---------------------	-------------	------------

Voidage Replacement

Cumulative voidage for Birdtail Unit No. 1 was 0.760 in December 2015. From April 2002 until April 2012, the monthly voidage remained greater than 1. Calculation, plots and tables of the Voidage Replacement Ratio on a monthly and cumulative basis for each injection pattern is presented in Appendix D.

Waterflood Performance Discussion

The original oil-in-place (OOIP) of 572.4 e³m³ with cumulative oil recovered to date of 48.57 e³m³ results in a recovery factor of 8.5%. The ultimate expected recoverable reserve based on decline analysis is 52.5 e³m³ or an ultimate recovery factor of 9.2%.

The overall performance of this waterflood has been poor as indicated by the low recovery factor, and obvious lack of waterflood response in producers. This is likely due to the poorer than average reservoir quality of the injector wells, the location of the injectors, and the resulting poor areal sweep efficiency. No significant change in production trends for produced water or oil are expected until waterflood optimization operations are undertaken, possibly at the same time as facility enhancements to increase total fluid throughput.

List of Appendices

Appendix A: Well Name and Well Status

Appendix B: Average Monthly Injection Wellhead Pressures

Appendix C: Injection Pattern Summary

Appendix D: Injector Pattern Production/Injection Rates, Cumulative and VRRs,
Plots and Tables for the following injector:

02/12-05-016-27W1/0

Appendix A

UWI	Well Status
100/05-04-016-27W1/00	Capable of OIL Prod
100/12-04-016-27W1/00	Capable of OIL Prod
100/13-04-016-27W1/00	ABD Producer
100/14-04-016-27W1/00	WTR Injection
100/07-05-016-27W1/00	ABD WTR Injection
100/08-05-016-27W1/00	Capable of OIL Prod
100/09-05-016-27W1/00	Capable of OIL Prod
100/12-05-016-27W1/00	Capable of OIL Prod
102/12-05-016-27W1.00	Capable of OIL Prod
100/13-05-016-27W1/00	Capable of OIL Prod
100/15-05-016-27W1/00	Capable of OIL Prod
100/16-05-016-27W1/00	Capable of OIL Prod
100/04-09-016-27W1/00	ABD Producer

Appendix B

Average Monthly Injection Pressure (kPag)

Injection Pressure		Injection Pressure		Injection Pressure		Injection Pressure		Injection Pressure	
Month	100/14-04	Month	100/14-04	Month	100/14-04	Month	100/14-04	Month	100/14-04
		Jan-06	6729	Jan-09	6984	Jan-12	6548	Jan-15	-
		Feb-06	6814	Feb-09	6768	Feb-12	6448	Feb-15	-
		Mar-06	6777	Mar-09	6695	Mar-12	6458	Mar-15	-
		Apr-06	6933	Apr-09	6980	Apr-12	6053	Apr-15	-
		May-06	7090	May-09	7026	May-12	-	May-15	-
		Jun-06	6793	Jun-09	7320	Jun-12	-	Jun-15	-
		Jul-06	6839	Jul-09	7068	Jul-12	-	Jul-15	-
		Aug-06	6771	Aug-09	6892	Aug-12	-	Aug-15	-
		Sep-06	6362	Sep-09	7147	Sep-12	-	Sep-15	-
Oct-03	7220	Oct-06	5352	Oct-09	6871	Oct-12	-	Oct-15	-
Nov-03	6587	Nov-06	4522	Nov-09	7000	Nov-12	-	Nov-15	-
Dec-03	6445	Dec-06	6387	Dec-09	7065	Dec-12	-	Dec-15	-
Jan-04	6413	Jan-07	8106	Jan-10	7187	Jan-13	-		
Feb-04	6224	Feb-07	6468	Feb-10	7014	Feb-13	-		
Mar-04	6694	Mar-07	6594	Mar-10	7148	Mar-13	-		
Apr-04	6400	Apr-07	6693	Apr-10	7207	Apr-13	-		
May-04	6442	May-07	8645	May-10	6684	May-13	-		
Jun-04	6373	Jun-07	6593	Jun-10	6580	Jun-13	-		
Jul-04	6419	Jul-07	6681	Jul-10	6697	Jul-13	-		
Aug-04	6813	Aug-07	7019	Aug-10	6626	Aug-13	-		
Sep-04	6930	Sep-07	6753	Sep-10	6583	Sep-13	-		
Oct-04	6839	Oct-07	6797	Oct-10	6542	Oct-13	-		
Nov-04	6730	Nov-07	6937	Nov-10	6480	Nov-13	-		
Dec-04	6839	Dec-07	6616	Dec-10	6458	Dec-13	-		
Jan-05	6816	Jan-08	6710	Jan-11	6371	Jan-14	-		
Feb-05	6775	Feb-08	6741	Feb-11	6446	Feb-14	-		
Mar-05	6939	Mar-08	6713	Mar-11	6365	Mar-14	-		
Apr-05	6940	Apr-08	6850	Apr-11	6334	Apr-14	-		
May-05	6948	May-08	7006	May-11	6394	May-14	-		
Jun-05	6707	Jun-08	6987	Jun-11	6400	Jun-14	-		
Jul-05	6732	Jul-08	7113	Jul-11	6395	Jul-14	-		
Aug-05	6771	Aug-08	7068	Aug-11	6355	Aug-14	-		
Sep-05	6870	Sep-08	6970	Sep-11	6363	Sep-14	-		
Oct-05	7206	Oct-08	6748	Oct-11	6374	Oct-14	-		
Nov-05	7157	Nov-08	6807	Nov-11	6577	Nov-14	-		
Dec-05	6771	Dec-08	6958	Dec-11	6600	Dec-14	-		

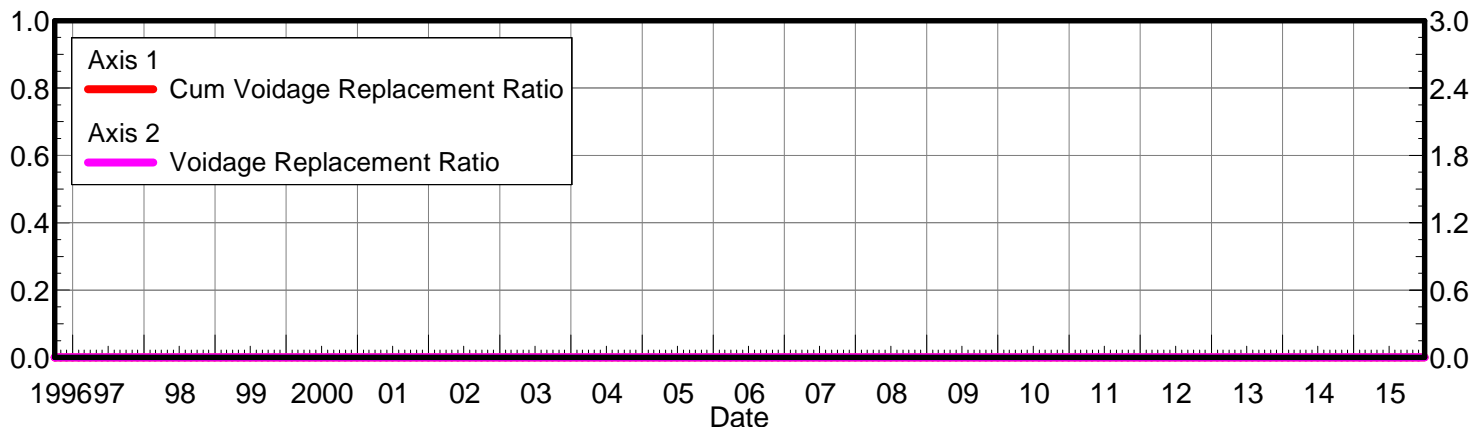
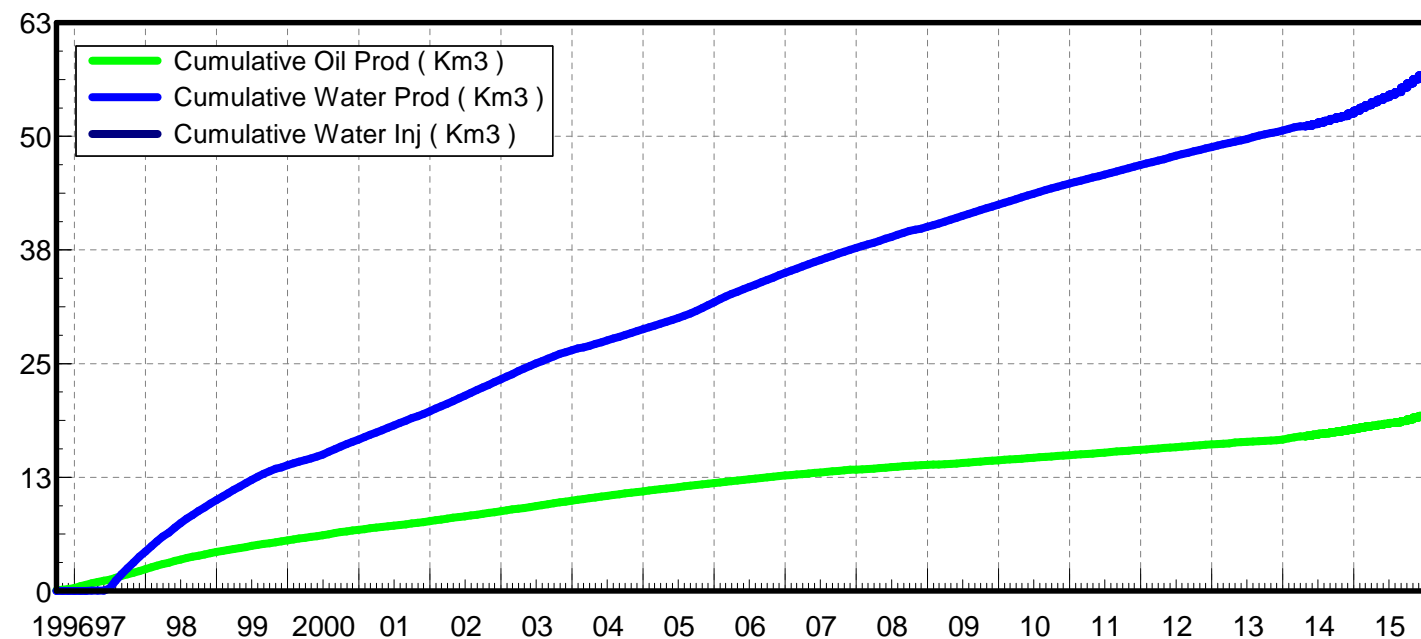
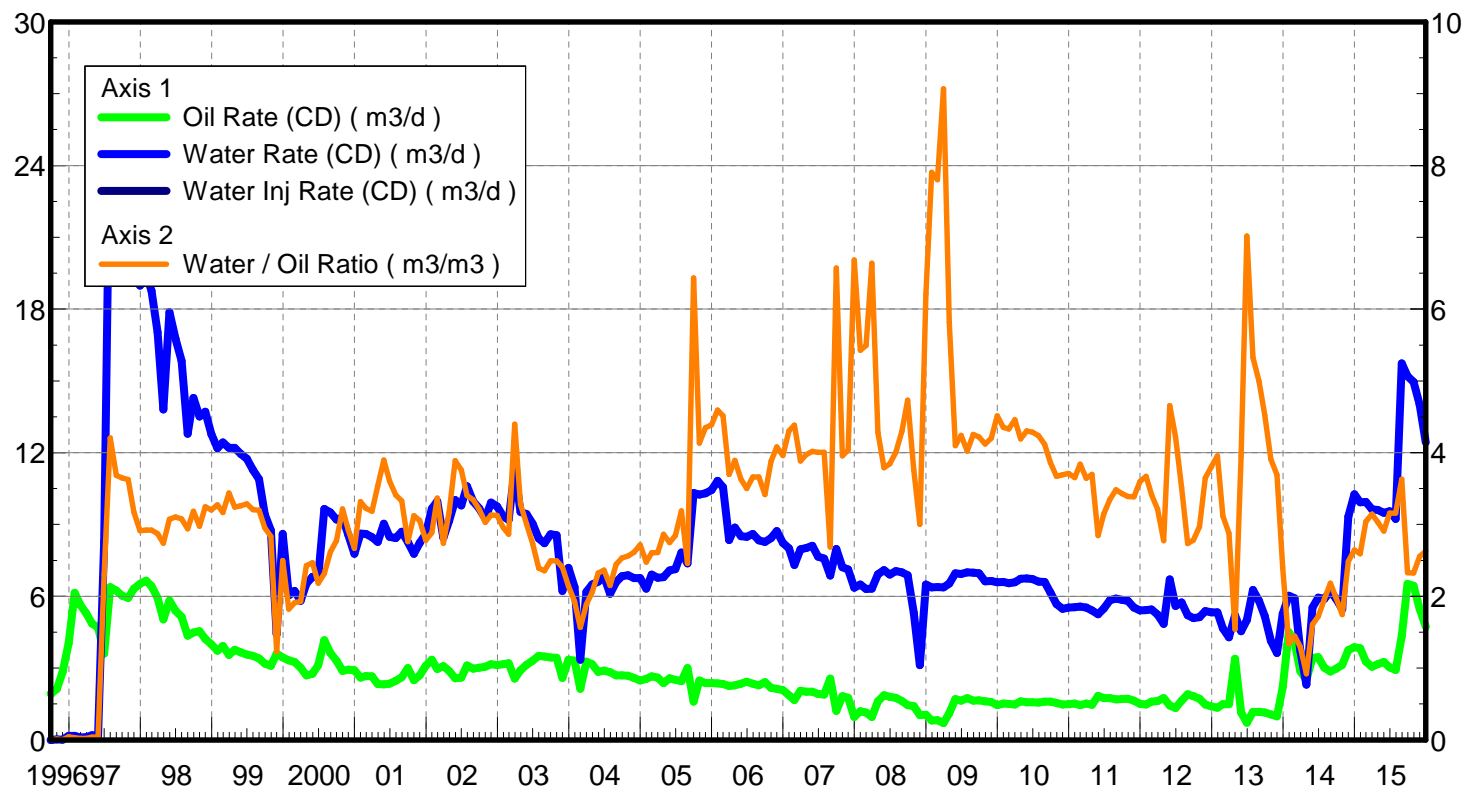
Appendix C

Birdtail Unit 1 Pattern Summary as of December 2015

[illegible]

Appendix D
Rates and VRR
Plots and Tables

Oil Formation Vol Factor : 1.00000 m3/m3
 Water Formation Vol Factor : 1.00000 m3/m3
 Water / Oil Ratio : 2.63 m3/m3
 Operator: TUNDRA_OIL_ & GAS_LIMITED
 Pattern: 02/12-05-16-27Inj Set: BirdtailUnit#1
 Oil Rate (CD) : 4.73 m3/d
 Water Rate (CD) : 12.43 m3/d
 Water Inj Rate (CD) : * m3/d
 April 26, 2016



Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
1/31/1997	6.15	0.17	0.03		0.19	0.01	0.00	0.000	0.000
2/28/1997	5.65	0.10	0.02		0.35	0.01	0.00	0.000	0.000
3/31/1997	5.29	0.12	0.02		0.51	0.01	0.00	0.000	0.000
4/30/1997	4.86	0.19	0.04		0.66	0.02	0.00	0.000	0.000
5/31/1997	4.70	0.19	0.04		0.80	0.02	0.00	0.000	0.000
6/30/1997	3.60	8.28	2.30		0.91	0.27	0.00	0.000	0.000
7/31/1997	6.38	26.84	4.20		1.11	1.10	0.00	0.000	0.000
8/31/1997	6.24	23.00	3.68		1.30	1.82	0.00	0.000	0.000
9/30/1997	6.02	21.97	3.65		1.48	2.48	0.00	0.000	0.000
10/31/1997	5.93	21.51	3.63		1.67	3.14	0.00	0.000	0.000
11/30/1997	6.31	20.02	3.17		1.86	3.74	0.00	0.000	0.000
12/31/1997	6.52	18.98	2.91		2.06	4.33	0.00	0.000	0.000
1/31/1998	6.66	19.45	2.92		2.27	4.93	0.00	0.000	0.000
2/28/1998	6.42	18.77	2.92		2.45	5.46	0.00	0.000	0.000
3/31/1998	5.93	17.02	2.87		2.63	5.99	0.00	0.000	0.000
4/30/1998	5.04	13.80	2.74		2.78	6.40	0.00	0.000	0.000
5/31/1998	5.82	17.87	3.07		2.96	6.96	0.00	0.000	0.000
6/30/1998	5.40	16.77	3.11		3.12	7.46	0.00	0.000	0.000
7/31/1998	5.15	15.84	3.08		3.28	7.95	0.00	0.000	0.000
8/31/1998	4.35	12.80	2.94		3.42	8.35	0.00	0.000	0.000
9/30/1998	4.49	14.29	3.18		3.55	8.78	0.00	0.000	0.000
10/31/1998	4.54	13.51	2.98		3.69	9.19	0.00	0.000	0.000
11/30/1998	4.22	13.71	3.25		3.82	9.61	0.00	0.000	0.000
12/31/1998	3.99	12.77	3.20		3.94	10.00	0.00	0.000	0.000
1/31/1999	3.73	12.19	3.27		4.06	10.38	0.00	0.000	0.000
2/28/1999	3.92	12.43	3.17		4.17	10.73	0.00	0.000	0.000
3/31/1999	3.55	12.20	3.44		4.28	11.11	0.00	0.000	0.000
4/30/1999	3.77	12.21	3.24		4.39	11.47	0.00	0.000	0.000
5/31/1999	3.66	11.94	3.26		4.50	11.84	0.00	0.000	0.000
6/30/1999	3.57	11.74	3.29		4.61	12.19	0.00	0.000	0.000
7/31/1999	3.52	11.28	3.21		4.72	12.54	0.00	0.000	0.000
8/31/1999	3.41	10.89	3.20		4.83	12.88	0.00	0.000	0.000
9/30/1999	3.19	9.42	2.95		4.92	13.16	0.00	0.000	0.000
10/31/1999	3.09	8.75	2.83		5.02	13.44	0.00	0.000	0.000
11/30/1999	3.60	4.42	1.23		5.13	13.57	0.00	0.000	0.000
12/31/1999	3.45	8.60	2.50		5.23	13.84	0.00	0.000	0.000
1/31/2000	3.32	6.04	1.82		5.34	14.02	0.00	0.000	0.000
2/29/2000	3.26	6.23	1.91		5.43	14.20	0.00	0.000	0.000
3/31/2000	3.01	5.81	1.93		5.52	14.38	0.00	0.000	0.000
4/30/2000	2.69	6.53	2.43		5.60	14.58	0.00	0.000	0.000
5/31/2000	2.76	6.81	2.47		5.69	14.79	0.00	0.000	0.000
6/30/2000	3.12	6.81	2.18		5.78	14.99	0.00	0.000	0.000
7/31/2000	4.16	9.65	2.32		5.91	15.29	0.00	0.000	0.000
8/31/2000	3.63	9.50	2.62		6.03	15.59	0.00	0.000	0.000
9/30/2000	3.32	9.21	2.78		6.12	15.86	0.00	0.000	0.000
10/31/2000	2.89	9.28	3.21		6.21	16.15	0.00	0.000	0.000

Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
11/30/2000	2.93	8.57	2.92		6.30	16.41	0.00	0.000	0.000
12/31/2000	2.91	7.78	2.67		6.39	16.65	0.00	0.000	0.000
1/31/2001	2.60	8.61	3.32		6.47	16.92	0.00	0.000	0.000
2/28/2001	2.67	8.61	3.23		6.55	17.16	0.00	0.000	0.000
3/31/2001	2.66	8.47	3.18		6.63	17.42	0.00	0.000	0.000
4/30/2001	2.34	8.27	3.54		6.70	17.67	0.00	0.000	0.000
5/31/2001	2.32	9.03	3.90		6.77	17.95	0.00	0.000	0.000
6/30/2001	2.35	8.48	3.60		6.84	18.20	0.00	0.000	0.000
7/31/2001	2.47	8.44	3.41		6.92	18.46	0.00	0.000	0.000
8/31/2001	2.61	8.69	3.33		7.00	18.73	0.00	0.000	0.000
9/30/2001	3.00	8.27	2.76		7.09	18.98	0.00	0.000	0.000
10/31/2001	2.49	7.78	3.12		7.17	19.22	0.00	0.000	0.000
11/30/2001	2.69	8.23	3.06		7.25	19.47	0.00	0.000	0.000
12/31/2001	3.09	8.60	2.78		7.34	19.74	0.00	0.000	0.000
1/31/2002	3.35	9.66	2.89		7.45	20.04	0.00	0.000	0.000
2/28/2002	2.96	9.97	3.37		7.53	20.32	0.00	0.000	0.000
3/31/2002	3.08	8.44	2.74		7.63	20.58	0.00	0.000	0.000
4/30/2002	2.88	9.15	3.17		7.71	20.85	0.00	0.000	0.000
5/31/2002	2.58	10.02	3.89		7.79	21.16	0.00	0.000	0.000
6/30/2002	2.60	9.79	3.76		7.87	21.46	0.00	0.000	0.000
7/31/2002	3.11	10.60	3.40		7.97	21.78	0.00	0.000	0.000
8/31/2002	2.98	9.97	3.35		8.06	22.09	0.00	0.000	0.000
9/30/2002	3.01	9.67	3.21		8.15	22.38	0.00	0.000	0.000
10/31/2002	3.05	9.25	3.03		8.24	22.67	0.00	0.000	0.000
11/30/2002	3.16	9.91	3.13		8.34	22.97	0.00	0.000	0.000
12/31/2002	3.12	9.76	3.13		8.44	23.27	0.00	0.000	0.000
1/31/2003	3.16	9.34	2.96		8.53	23.56	0.00	0.000	0.000
2/28/2003	3.21	9.19	2.87		8.62	23.82	0.00	0.000	0.000
3/31/2003	2.57	11.29	4.40		8.70	24.17	0.00	0.000	0.000
4/30/2003	2.90	9.53	3.28		8.79	24.45	0.00	0.000	0.000
5/31/2003	3.14	9.43	3.01		8.89	24.75	0.00	0.000	0.000
6/30/2003	3.31	9.04	2.73		8.99	25.02	0.00	0.000	0.000
7/31/2003	3.52	8.42	2.39		9.10	25.28	0.00	0.000	0.000
8/31/2003	3.49	8.22	2.36		9.20	25.53	0.00	0.000	0.000
9/30/2003	3.45	8.59	2.49		9.31	25.79	0.00	0.000	0.000
10/31/2003	3.43	8.55	2.49		9.41	26.06	0.00	0.000	0.000
11/30/2003	2.59	6.22	2.41		9.49	26.24	0.00	0.000	0.000
12/31/2003	3.35	7.18	2.14		9.60	26.46	0.00	0.000	0.000
1/31/2004	3.31	6.38	1.93		9.70	26.66	0.00	0.000	0.000
2/29/2004	2.14	3.35	1.57		9.76	26.76	0.00	0.000	0.000
3/31/2004	3.27	6.18	1.89		9.86	26.95	0.00	0.000	0.000
4/30/2004	3.16	6.50	2.06		9.96	27.15	0.00	0.000	0.000
5/31/2004	2.85	6.62	2.32		10.04	27.35	0.00	0.000	0.000
6/30/2004	2.89	6.83	2.36		10.13	27.56	0.00	0.000	0.000
7/31/2004	2.84	6.10	2.15		10.22	27.75	0.00	0.000	0.000
8/31/2004	2.70	6.60	2.45		10.30	27.95	0.00	0.000	0.000

Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
9/30/2004	2.70	6.84	2.54		10.38	28.16	0.00	0.000	0.000
10/31/2004	2.69	6.88	2.56		10.47	28.37	0.00	0.000	0.000
11/30/2004	2.59	6.76	2.61		10.55	28.57	0.00	0.000	0.000
12/31/2004	2.49	6.76	2.72		10.62	28.78	0.00	0.000	0.000
1/31/2005	2.55	6.32	2.48		10.70	28.98	0.00	0.000	0.000
2/28/2005	2.65	6.91	2.60		10.78	29.17	0.00	0.000	0.000
3/31/2005	2.60	6.77	2.61		10.86	29.38	0.00	0.000	0.000
4/30/2005	2.38	6.81	2.86		10.93	29.58	0.00	0.000	0.000
5/31/2005	2.58	7.08	2.75		11.01	29.80	0.00	0.000	0.000
6/30/2005	2.51	7.13	2.84		11.08	30.02	0.00	0.000	0.000
7/31/2005	2.45	7.83	3.19		11.16	30.26	0.00	0.000	0.000
8/31/2005	3.00	7.37	2.46		11.25	30.49	0.00	0.000	0.000
9/30/2005	1.60	10.31	6.43		11.30	30.80	0.00	0.000	0.000
10/31/2005	2.48	10.25	4.14		11.38	31.12	0.00	0.000	0.000
11/30/2005	2.37	10.31	4.35		11.45	31.43	0.00	0.000	0.000
12/31/2005	2.38	10.44	4.39		11.52	31.75	0.00	0.000	0.000
1/31/2006	2.36	10.83	4.59		11.59	32.08	0.00	0.000	0.000
2/28/2006	2.34	10.56	4.51		11.66	32.38	0.00	0.000	0.000
3/31/2006	2.26	8.35	3.70		11.73	32.64	0.00	0.000	0.000
4/30/2006	2.28	8.88	3.89		11.80	32.91	0.00	0.000	0.000
5/31/2006	2.35	8.51	3.63		11.87	33.17	0.00	0.000	0.000
6/30/2006	2.42	8.48	3.50		11.94	33.42	0.00	0.000	0.000
7/31/2006	2.35	8.60	3.66		12.02	33.69	0.00	0.000	0.000
8/31/2006	2.27	8.33	3.66		12.09	33.95	0.00	0.000	0.000
9/30/2006	2.42	8.27	3.42		12.16	34.20	0.00	0.000	0.000
10/31/2006	2.17	8.43	3.88		12.23	34.46	0.00	0.000	0.000
11/30/2006	2.14	8.73	4.08		12.29	34.72	0.00	0.000	0.000
12/31/2006	2.08	8.23	3.96		12.36	34.98	0.00	0.000	0.000
1/31/2007	1.86	8.01	4.30		12.41	35.22	0.00	0.000	0.000
2/28/2007	1.67	7.31	4.38		12.46	35.43	0.00	0.000	0.000
3/31/2007	2.05	7.96	3.89		12.52	35.68	0.00	0.000	0.000
4/30/2007	2.02	8.02	3.98		12.58	35.92	0.00	0.000	0.000
5/31/2007	2.02	8.12	4.02		12.65	36.17	0.00	0.000	0.000
6/30/2007	1.91	7.66	4.00		12.70	36.40	0.00	0.000	0.000
7/31/2007	1.89	7.57	4.01		12.76	36.63	0.00	0.000	0.000
8/31/2007	2.56	6.87	2.69		12.84	36.84	0.00	0.000	0.000
9/30/2007	1.21	7.97	6.57		12.88	37.08	0.00	0.000	0.000
10/31/2007	1.83	7.22	3.95		12.93	37.31	0.00	0.000	0.000
11/30/2007	1.76	7.12	4.04		12.99	37.52	0.00	0.000	0.000
12/31/2007	0.95	6.36	6.68		13.02	37.72	0.00	0.000	0.000
1/31/2008	1.20	6.50	5.43		13.05	37.92	0.00	0.000	0.000
2/29/2008	1.15	6.31	5.49		13.09	38.10	0.00	0.000	0.000
3/31/2008	0.95	6.32	6.64		13.12	38.30	0.00	0.000	0.000
4/30/2008	1.62	6.92	4.28		13.17	38.51	0.00	0.000	0.000
5/31/2008	1.87	7.10	3.79		13.22	38.73	0.00	0.000	0.000
6/30/2008	1.80	6.90	3.84		13.28	38.93	0.00	0.000	0.000

Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
7/31/2008	1.76	7.05	4.00		13.33	39.15	0.00	0.000	0.000
8/31/2008	1.63	7.00	4.30		13.38	39.37	0.00	0.000	0.000
9/30/2008	1.45	6.88	4.73		13.43	39.58	0.00	0.000	0.000
10/31/2008	1.41	5.32	3.76		13.47	39.74	0.00	0.000	0.000
11/30/2008	1.04	3.12	3.00		13.50	39.83	0.00	0.000	0.000
12/31/2008	1.05	6.49	6.21		13.53	40.03	0.00	0.000	0.000
1/31/2009	0.81	6.37	7.90		13.56	40.23	0.00	0.000	0.000
2/28/2009	0.82	6.38	7.80		13.58	40.41	0.00	0.000	0.000
3/31/2009	0.70	6.38	9.07		13.60	40.61	0.00	0.000	0.000
4/30/2009	1.12	6.53	5.81		13.64	40.80	0.00	0.000	0.000
5/31/2009	1.70	6.96	4.10		13.69	41.02	0.00	0.000	0.000
6/30/2009	1.63	6.93	4.24		13.74	41.23	0.00	0.000	0.000
7/31/2009	1.74	7.01	4.02		13.79	41.45	0.00	0.000	0.000
8/31/2009	1.64	6.98	4.25		13.84	41.66	0.00	0.000	0.000
9/30/2009	1.65	6.96	4.22		13.89	41.87	0.00	0.000	0.000
10/31/2009	1.61	6.62	4.12		13.94	42.08	0.00	0.000	0.000
11/30/2009	1.58	6.64	4.20		13.99	42.28	0.00	0.000	0.000
12/31/2009	1.46	6.58	4.51		14.04	42.48	0.00	0.000	0.000
1/31/2010	1.52	6.60	4.35		14.08	42.68	0.00	0.000	0.000
2/28/2010	1.51	6.54	4.33		14.12	42.87	0.00	0.000	0.000
3/31/2010	1.48	6.59	4.46		14.17	43.07	0.00	0.000	0.000
4/30/2010	1.61	6.73	4.19		14.22	43.27	0.00	0.000	0.000
5/31/2010	1.57	6.75	4.30		14.27	43.48	0.00	0.000	0.000
6/30/2010	1.57	6.73	4.28		14.31	43.68	0.00	0.000	0.000
7/31/2010	1.56	6.61	4.24		14.36	43.89	0.00	0.000	0.000
8/31/2010	1.60	6.60	4.12		14.41	44.09	0.00	0.000	0.000
9/30/2010	1.60	6.16	3.86		14.46	44.28	0.00	0.000	0.000
10/31/2010	1.55	5.68	3.67		14.51	44.46	0.00	0.000	0.000
11/30/2010	1.48	5.48	3.69		14.55	44.62	0.00	0.000	0.000
12/31/2010	1.49	5.53	3.71		14.60	44.79	0.00	0.000	0.000
1/31/2011	1.52	5.54	3.65		14.65	44.96	0.00	0.000	0.000
2/28/2011	1.45	5.57	3.84		14.69	45.12	0.00	0.000	0.000
3/31/2011	1.52	5.53	3.64		14.73	45.29	0.00	0.000	0.000
4/30/2011	1.46	5.41	3.70		14.78	45.45	0.00	0.000	0.000
5/31/2011	1.84	5.25	2.85		14.83	45.61	0.00	0.000	0.000
6/30/2011	1.74	5.49	3.15		14.89	45.78	0.00	0.000	0.000
7/31/2011	1.74	5.84	3.35		14.94	45.96	0.00	0.000	0.000
8/31/2011	1.69	5.90	3.48		14.99	46.14	0.00	0.000	0.000
9/30/2011	1.71	5.85	3.43		15.04	46.32	0.00	0.000	0.000
10/31/2011	1.71	5.81	3.39		15.10	46.50	0.00	0.000	0.000
11/30/2011	1.63	5.53	3.38		15.15	46.66	0.00	0.000	0.000
12/31/2011	1.50	5.41	3.60		15.19	46.83	0.00	0.000	0.000
1/31/2012	1.48	5.43	3.67		15.24	47.00	0.00	0.000	0.000
2/29/2012	1.59	5.44	3.42		15.29	47.16	0.00	0.000	0.000
3/31/2012	1.63	5.23	3.21		15.34	47.32	0.00	0.000	0.000
4/30/2012	1.75	4.85	2.77		15.39	47.47	0.00	0.000	0.000

Date	Oil Rate (CD) m3/d	Water Rate (CD) m3/d	Water Oil Ratio m3/m3	Water Inj Rate (CD) m3/d	Cum Oil Prod Km3	Cum Water Prod Km3	Cum Water Inj Km3	VRR	Cum VRR
5/31/2012	1.44	6.70	4.66		15.43	47.67	0.00	0.000	0.000
6/30/2012	1.33	5.60	4.22		15.47	47.84	0.00	0.000	0.000
7/31/2012	1.64	5.75	3.51		15.52	48.02	0.00	0.000	0.000
8/31/2012	1.90	5.20	2.73		15.58	48.18	0.00	0.000	0.000
9/30/2012	1.83	5.09	2.78		15.64	48.33	0.00	0.000	0.000
10/31/2012	1.73	5.13	2.97		15.69	48.49	0.00	0.000	0.000
11/30/2012	1.47	5.38	3.65		15.74	48.65	0.00	0.000	0.000
12/31/2012	1.40	5.33	3.81		15.78	48.82	0.00	0.000	0.000
1/31/2013	1.35	5.33	3.95		15.82	48.99	0.00	0.000	0.000
2/28/2013	1.50	4.66	3.12		15.86	49.12	0.00	0.000	0.000
3/31/2013	1.49	4.28	2.88		15.91	49.25	0.00	0.000	0.000
4/30/2013	3.39	5.21	1.54		16.01	49.40	0.00	0.000	0.000
5/31/2013	1.15	4.54	3.96		16.05	49.55	0.00	0.000	0.000
6/30/2013	0.71	5.01	7.02		16.07	49.70	0.00	0.000	0.000
7/31/2013	1.18	6.27	5.33		16.10	49.89	0.00	0.000	0.000
8/31/2013	1.16	5.82	4.99		16.14	50.07	0.00	0.000	0.000
9/30/2013	1.14	5.17	4.52		16.17	50.23	0.00	0.000	0.000
10/31/2013	1.06	4.15	3.91		16.21	50.35	0.00	0.000	0.000
11/30/2013	0.98	3.63	3.69		16.24	50.46	0.00	0.000	0.000
12/31/2013	2.20	5.27	2.39		16.30	50.63	0.00	0.000	0.000
1/31/2014	4.50	6.03	1.34		16.44	50.81	0.00	0.000	0.000
2/28/2014	4.09	5.92	1.45		16.56	50.98	0.00	0.000	0.000
3/31/2014	2.88	3.72	1.29		16.65	51.09	0.00	0.000	0.000
4/30/2014	2.50	2.31	0.92		16.72	51.16	0.00	0.000	0.000
5/31/2014	3.44	5.53	1.61		16.83	51.33	0.00	0.000	0.000
6/30/2014	3.46	5.95	1.72		16.93	51.51	0.00	0.000	0.000
7/31/2014	3.01	5.89	1.96		17.03	51.70	0.00	0.000	0.000
8/31/2014	2.85	6.22	2.18		17.11	51.89	0.00	0.000	0.000
9/30/2014	2.98	5.89	1.98		17.20	52.07	0.00	0.000	0.000
10/31/2014	3.14	5.47	1.74		17.30	52.23	0.00	0.000	0.000
11/30/2014	3.76	9.33	2.48		17.41	52.51	0.00	0.000	0.000
12/31/2014	3.88	10.26	2.65		17.53	52.83	0.00	0.000	0.000
1/31/2015	3.83	9.93	2.59		17.65	53.14	0.00	0.000	0.000
2/28/2015	3.27	9.95	3.04		17.74	53.42	0.00	0.000	0.000
3/31/2015	3.06	9.64	3.15		17.84	53.72	0.00	0.000	0.000
4/30/2015	3.17	9.61	3.03		17.93	54.01	0.00	0.000	0.000
5/31/2015	3.26	9.49	2.91		18.04	54.30	0.00	0.000	0.000
6/30/2015	3.02	9.55	3.16		18.13	54.59	0.00	0.000	0.000
7/31/2015	2.93	9.24	3.16		18.22	54.87	0.00	0.000	0.000
8/31/2015	4.34	15.74	3.63		18.35	55.36	0.00	0.000	0.000
9/30/2015	6.53	15.20	2.33		18.55	55.82	0.00	0.000	0.000
10/31/2015	6.44	14.96	2.32		18.75	56.28	0.00	0.000	0.000
11/30/2015	5.48	14.01	2.56		18.91	56.70	0.00	0.000	0.000
12/31/2015	4.73	12.43	2.63		19.06	57.09	0.00	0.000	0.000