

**EWART UNIT NO. 10  
WATERFLOOD EOR PROJECT  
  
ANNUAL REPORT FOR 2017**

**March 26, 2018**

**Tundra Oil and Gas Partnership**

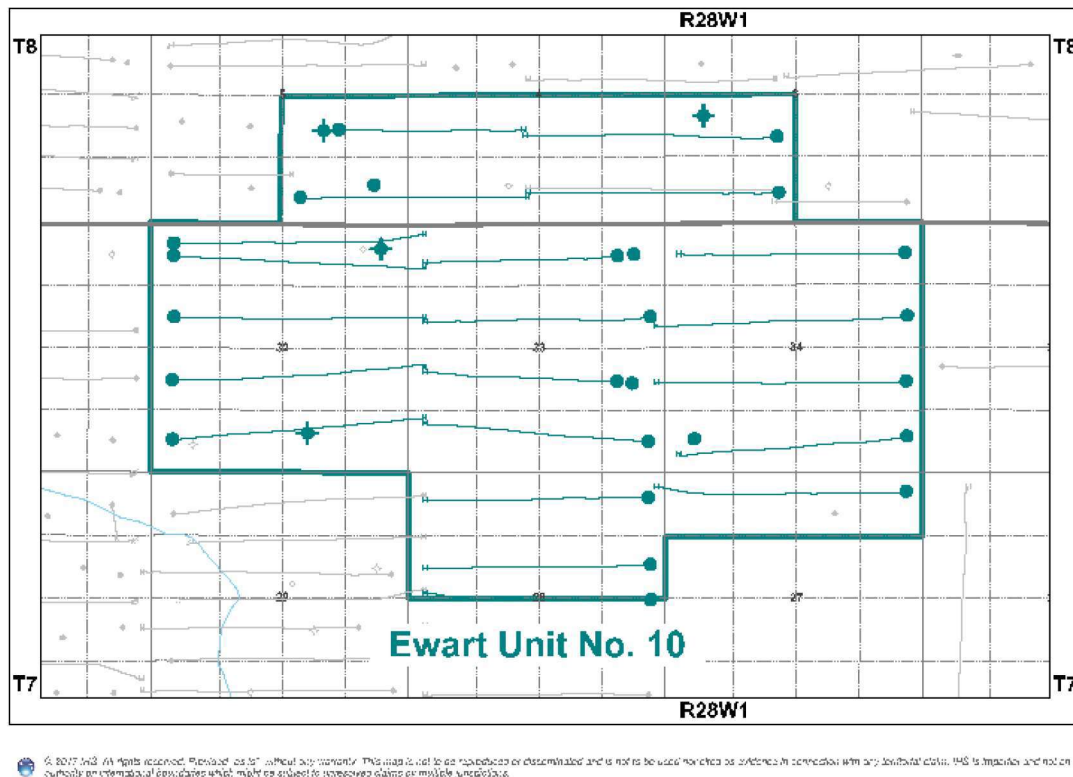
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## **INTRODUCTION**

Ewart Unit No. 10 Enhanced Oil Recovery (EOR) Waterflood Project was approved under Waterflood Order No. 56, effective October 1, 2016 with Tundra Oil and Gas (Tundra) as Operator. The EOR project area, outlined in green in Figure 1, contains 8 vertical (4 abandoned and 4 producing) and 21 horizontal producing wells in 76 LSDs in Township 7, Range 28W1. Well list and well status is available in Appendix A.

**Figure 1: Ewart Unit No. 10 Area Outline**



In accordance with Section 73 of the Manitoba Drilling and Production Regulation, Tundra submits the following 2017 Annual Progress Report for Ewart Unit No. 10.

## **DISCUSSION**

### **Production History**

For the wells included in Ewart Unit No. 10, production started in March 2005 with the 00/02-32 and 00/04-34-007-28W1 wells. Oil production peaked at 4.8 m<sup>3</sup>/d per well in October 2010. This production was coming from 25 wells and totaled 120.2 m<sup>3</sup>/d for the Unit. In December 2017, the Unit was producing 7.07 m<sup>3</sup>/d of oil and 62.28 m<sup>3</sup>/d of water. Water injection commenced in Ewart Unit No. 10 in February 2017. The rates and WOR are presented in Figure 2.

**Figure 2: Ewart Unit No. 10 Production/Injection Rates and WOR vs. Time**

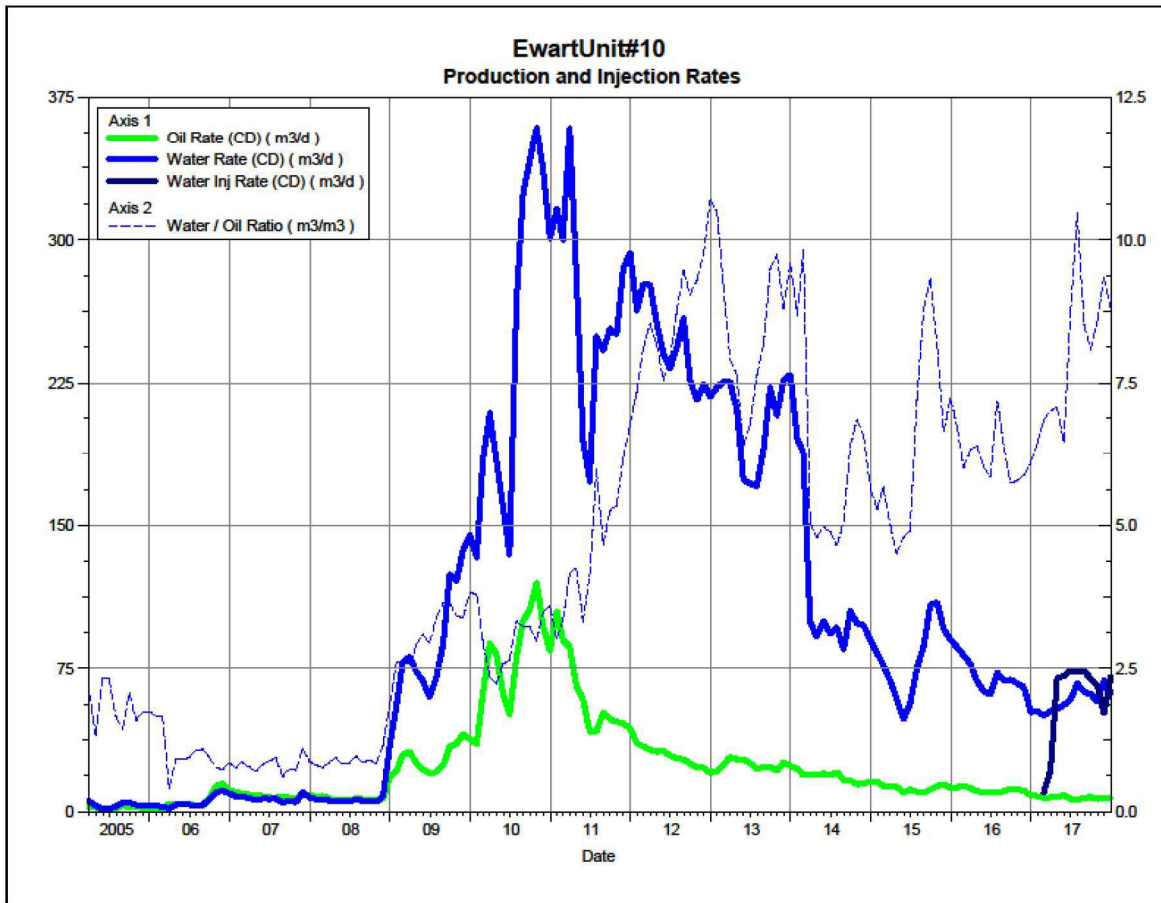
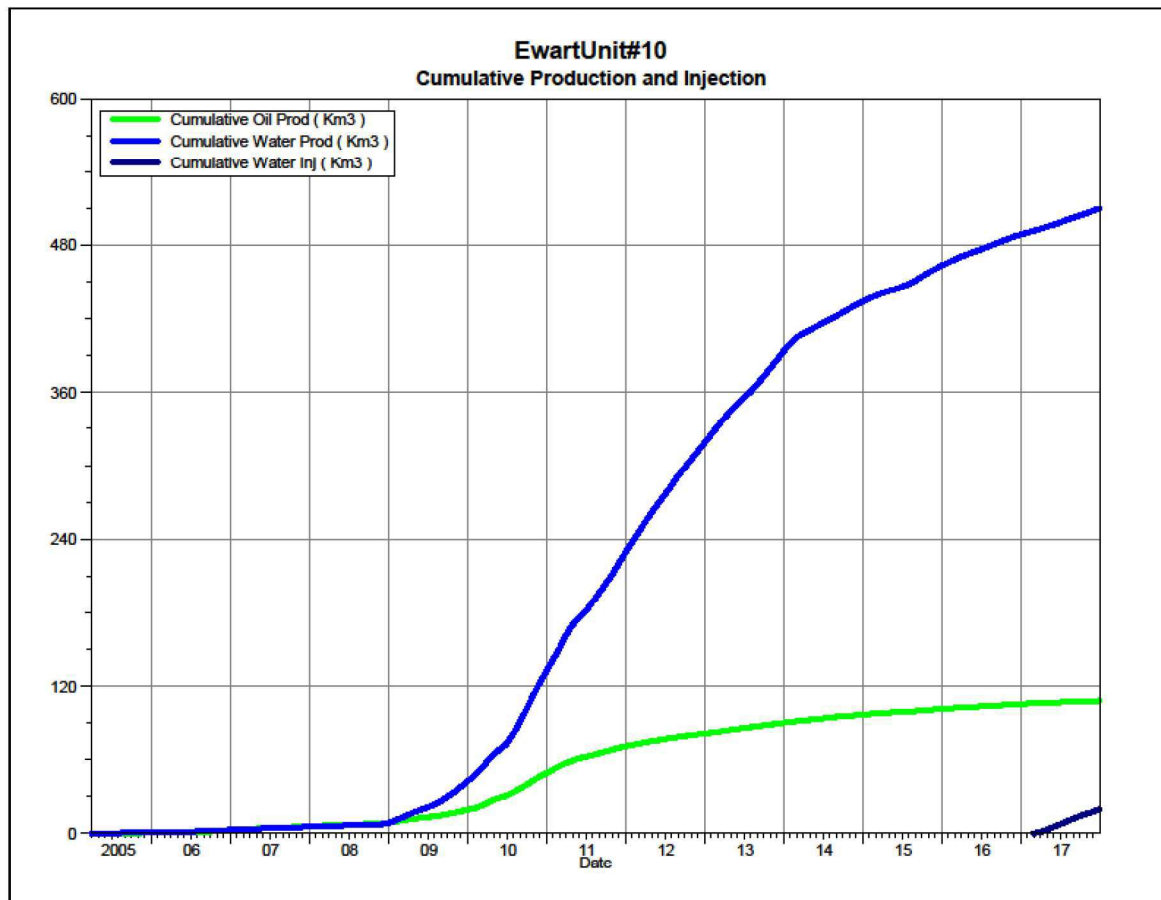


Figure 3 shows the cumulative production for Ewart Unit No. 10 to the end of December 2017 as 108.2 e³m³ of oil and 510.0 e³m³ of water, representing a 4.1% recovery factor of the OOIP. The cumulative water injected is 19.91 e³m³.



**Figure 3: Ewart Unit No. 10 Cumulative Oil, Water and Water Injected vs. Time**



### **Waterflood History**

Ewart Unit No. 10 is still in the development phase at the end of 2017. Tundra plans to convert nine (9) of the existing horizontal producing wells to horizontal injection wells which will result in effective 40 acre waterflood patterns within Ewart Unit No. 10. Since the proposed horizontal injection wells have already been on production for a period of time there will not be a need for an additional pre-production period within this unit. In December 2016, the 00/05-32 and 00/01-34-007-28W1 wells were converted to injection and injection commenced in February 2017. All of the horizontal wells are fracture stimulated to improve the injection rates.

Production performance by injector pattern are summarized in Appendix B.

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 Operating Strategy and Performance**

### **Water Source and Quality**

The injection water for Ewart Unit No. 10 will be sourced from the 02/14-30-007-28W1 well (Mannville formation). The water is treated at the 04-01-008-29W1 filtration plant where it is filtered to 0.1 microns and has scale inhibitor and biocide added. The injection water is then distributed to the injectors through the dedicated infrastructure system.

### **Injection Wellhead Pressures**

Injection started in this Unit in February 2017. The average monthly wellhead injection pressure for each injector is summarized in Appendix D. Since injection in this Unit is still in the early stages, the injectors are still building up to a target injection pressure of 6300 kPa(a).

### **Reservoir Pressure**

Where practical, Tundra is committed to collecting pressure data from newly drilled wells. For Ewart Unit No. 10, pressure data is currently available for the 02/09-28 and 02/13-32-007-28W1 location (Appendix C). The reservoir pressures are corrected to a common datum of -450m SS for comparison with other units in the area.

### **Well Servicing**

Table 1 lists the maintenance that was required in Ewart Unit No. 10 in 2017.

**Table 1: Service and Maintenance in Ewart Unit No. 10**

102.09-28-007-28W1.00	Pump change	9/14/2017
102.09-28-007-28W1.00	Tubing Leak	10/31/2017
100.16-33-007-28W1.00	Broken Polish Rod	2/27/2017

### **Waterflood Performance Discussion**

At the end of 2017, Ewart Unit No. 10 had 2 injection patterns in place, 00/05-32 and 00/01-34-007-28W1. Since injection started in February 2017, there is no waterflood analysis that can be done at this time.

Plots of the production and injection data along with the VRR information is presented in Appendix E for each of the injection patterns.

## **List of Appendices**

Appendix A: Well List and Well Status

Appendix B: Injection Pattern Summary

Appendix C: Reservoir Pressure Summary

Appendix D: Average Monthly Injection Pressures

Appendix E: Injector Pattern Production/Injection Rates, Cumulative and VRR Plots for  
the following injectors:

00/05-32-007-28W1/0

00/01-34-007-28W1/0

## Appendix A

<i>UWI</i>	<i>Surface Location</i>	<i>Type</i>	<i>Well Status</i>
100/16-27-007-28W1/0	100/16-28-007-28W1/0	Horizontal	Capable of OIL Prod
100/09-28-007-28W1/0	100/12-28-007-28W1/0	Horizontal	Capable of OIL Prod
102/09-28-007-28W1/0	102/12-28-007-28W1/0	Horizontal	Capable of OIL Prod
100/16-28-007-28W1/0	100/13-28-007-28W1/0	Horizontal	Capable of OIL Prod
100/02-32-007-28W1/0		Vertical	Abandoned
102/04-32-007-28W1/0	102/04-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/05-32-007-28W1/0	100/05-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/12-32-007-28W1/0	100/12-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/13-32-007-28W1/0	100/13-33-007-28W1/0	Horizontal	Capable of OIL Prod
102/13-32-007-28W1/0	102/13-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/16-32-007-28W1/0		Vertical	Abandoned
100/01-33-007-28W1/0	100/04-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/08-33-007-28W1/0		Vertical	Capable of OIL Prod
102/08-33-007-28W1/0	102/05-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/09-33-007-28W1/0	100/12-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/16-33-007-28W1/0		Vertical	Capable of OIL Prod
102/16-33-007-28W1/0	102/13-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/01-34-007-28W1/0	100/04-34-007-28W1/0	Horizontal	Capable of OIL Prod
100/04-34-007-28W1/0		Vertical	Capable of OIL Prod
100/08-34-007-28W1/0	100/08-33-007-28W1/0	Horizontal	Capable of OIL Prod
100/09-34-007-28W1/0	100/09-33-007-28W1/0	Horizontal	Suspended
100/16-34-007-28W1/0	100/13-34-007-28W1/0	Horizontal	Capable of OIL Prod
100/03-03-008-28W1/0	100/03-04-008-28W1/0	Horizontal	Capable of OIL Prod
100/05-03-008-28W1/0		Vertical	Abandoned
100/06-03-008-28W1/0	100/06-04-008-28W1/0	Horizontal	Capable of OIL Prod
100/01-05-008-28W1/0		Vertical	Capable of OIL Prod
100/02-05-008-28W1/0	100/03-04-008-28W1/0	Horizontal	Capable of OIL Prod
100/07-05-008-28W1/0		Vertical	Abandoned
102/07-05-008-28W1/0	102/06-04-008-28W1/0	Horizontal	Capable of OIL Prod

Appendix B

Ewart Unit No. 10 Pattern Summary as of December 2017

Pattern Name	Injector BH Location (007-28W1)	Status	No. of Supported Wells	Supported Wells (007-28W1)	Allocation Factor	Pattern Prod Start Month	Ini Start Month	Oil Rate (m <sup>3</sup> /d)	Water Rate (m <sup>3</sup> /d)	WOR (m <sup>3</sup> /m <sup>3</sup> )	Water Injection (m <sup>3</sup> /d)	Cum Oil (E <sup>3</sup> m <sup>3</sup> )	Cum Water (E <sup>3</sup> m <sup>3</sup> )	Cum Inj Water (E <sup>3</sup> m <sup>3</sup> )	Monthly VRR	Cum VRR
00/05-32-007-28 Injector	00/05-32	Capable of Oil Prod	3	02-32 02/04-32, 12-32	0.3 0.5	Mar 2005	Feb 2017	0.66	4.39	6.68	37.4	9.8	30.7	9.8	7.328	0.239
00/01-34-007-28 Injector	00/01-34	Capable of Oil Prod	3	16-27, 08-34 04-34	0.5 1.0	Mar 2005	Mar 2017	0.89	6.35	7.10	33.5	12.7	47.3	10.1	4.580	0.165



## APPENDIX C

### Ewart Unit No. 10 - Pressure Summary

Location	Test Date	Final Pressure (kPaa)	MPP (mTVD)	KB	Datum Depth	Gradient	Pressure @ -450 masl
102/09-28-007-28W1/00	Feb 25 - March 7, 2015	6601.0	963.6	499.9	-450	8.25	6489
102/13-32-007-28W1/00	July 23 - Sept 18, 2013	6349.2	952.4	502.6	-450	8.25	6351





## TUNDRA OIL & GAS PARTNERSHIP

TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28

102/09-28-007-28W1/00

LICENSE #: 10319

LYLETON B FORMATION

RESERVOIR PRESSURE SURVEY TEST

FEBRUARY 25<sup>th</sup> – MARCH 7<sup>th</sup>, 2015

Prepared by: **DOLLCO Well Data Services**  
e-mail: [dollco@shaw.ca](mailto:dollco@shaw.ca)

PO Box 326  
417A Mississippian Drive  
Esteron, SK  
S4A 2A4

Cell: (306) 421 - 7330  
Fax: (306) 634 - 7976  
Res: (306) 634 - 8761

E-mail: [qualityw@sasktel.net](mailto:qualityw@sasktel.net)

# Pressure Survey Report

## Company Information

Company Name  
Contact  
e-mail  
Phone  
Site Contact  
Site Phone

TUNDRA OIL & GAS PARTNERSHIP  
TYLER ROUTLEDGE  
tyler.routledge@tundraoilandgas.com  
(204) 851-1947  
KIM [REDACTED]  
(204) 851-0543

## Well Information

Well Name  
Unique Well ID  
Surface Location  
Well License Number  
Well Type  
Well Fluid Type  
Field

TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28  
102/09-28-007-28W1/00  
12B-28 / A9A-28-7-28W1  
10319  
Horizontal  
01 Oil  
SINCLAIR

KB Elevation (SL)  
CF Elevation (SL)  
GL Elevation (SL)  
Distance from KB to CF (Log)  
KB-GL Offset

499.93 m  
495.98 m  
495.83 m  
3.95 m  
4.10 m

Tubing ID  
Tubing OD  
Tubing Depth(Log KB)  
Tubing Depth(TVD KB)  
Casing ID  
Casing OD  
Casing Depth(Log KB)  
Casing Depth(TVD KB)  
PBTD(Log KB)  
PBTD(TVD KB)

mm  
mm  
m  
m  
mm  
177.8 mm  
931.26000 m  
911.53900 m  
m  
m

# Pressure Survey Report

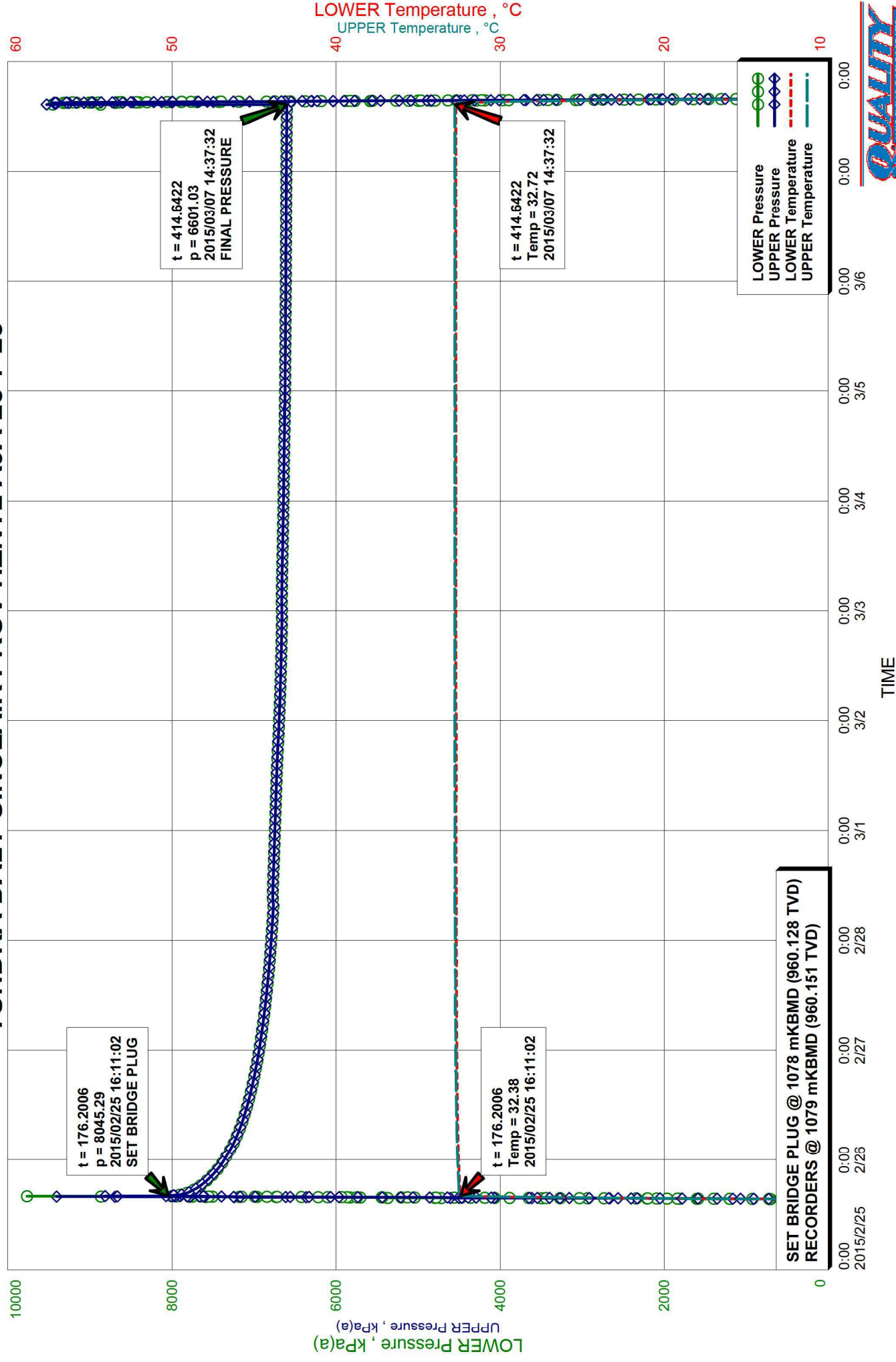
## Test Information

Well Name	TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28
Unique Well ID	102/09-28-007-28W1/00
Surface Location	12B-28 / A9A-28-7-28W1
Well License Number	10319
Well Fluid Type	01 Oil
Test Purpose	Initial Test
Test Type	RESERVOIR PRESSURE SURVEY
Formation	LYLETON B
Well Type Indicator	Horizontal
Test/Prod. Interval Top KB (Log)	2311.22 m
Test/Prod. Interval Base KB (Log)	2329.00 m
MPP(Log KB)	2320.11 m
Test/Prod Interval Top KB (TVD)	963.58 m
Test/Prod. Interval Base m KB (TVD)	963.56 m
MPP(TVD KB)	963.57 m
Tubing Pressure Initial	93.00 kPa(a)
Casing Pressure Initial	93.00 kPa(a)
Tubing Pressure: Final	93.00 kPa(a)
Casing Pressure: Final	93.00 kPa(a)
Time/Date Well Shut-In	2015/02/25 16:11:00
Final Test Date/Time	2015/03/07 14:38:00
Gauge Serial Number Used in Summary	2727
Last Measured Pressure at Run Depth	6601.03 kPa(a)
Reservoir Temperature	32.72 °C
Service Company	Quality Wireline Services Ltd.
Representative	BART [REDACTED]
Prepared By	DOLLCO Well Data Services
Qualified By	RICK DOLL
Report Date	2014/03/11

RECORDERS RAN INTO WELL BELOW A BRIDGE PLUG  
OPEN HOLE: 2311.22 - 2329.0 mKBMD (963.577 - 963.560 TVD)  
114.3 mm CASING LINER FROM 919.21 - 2311.22 mKBMD (903.219 - 963.577 TVD)  
FRAC PORTS ARE CLOSED

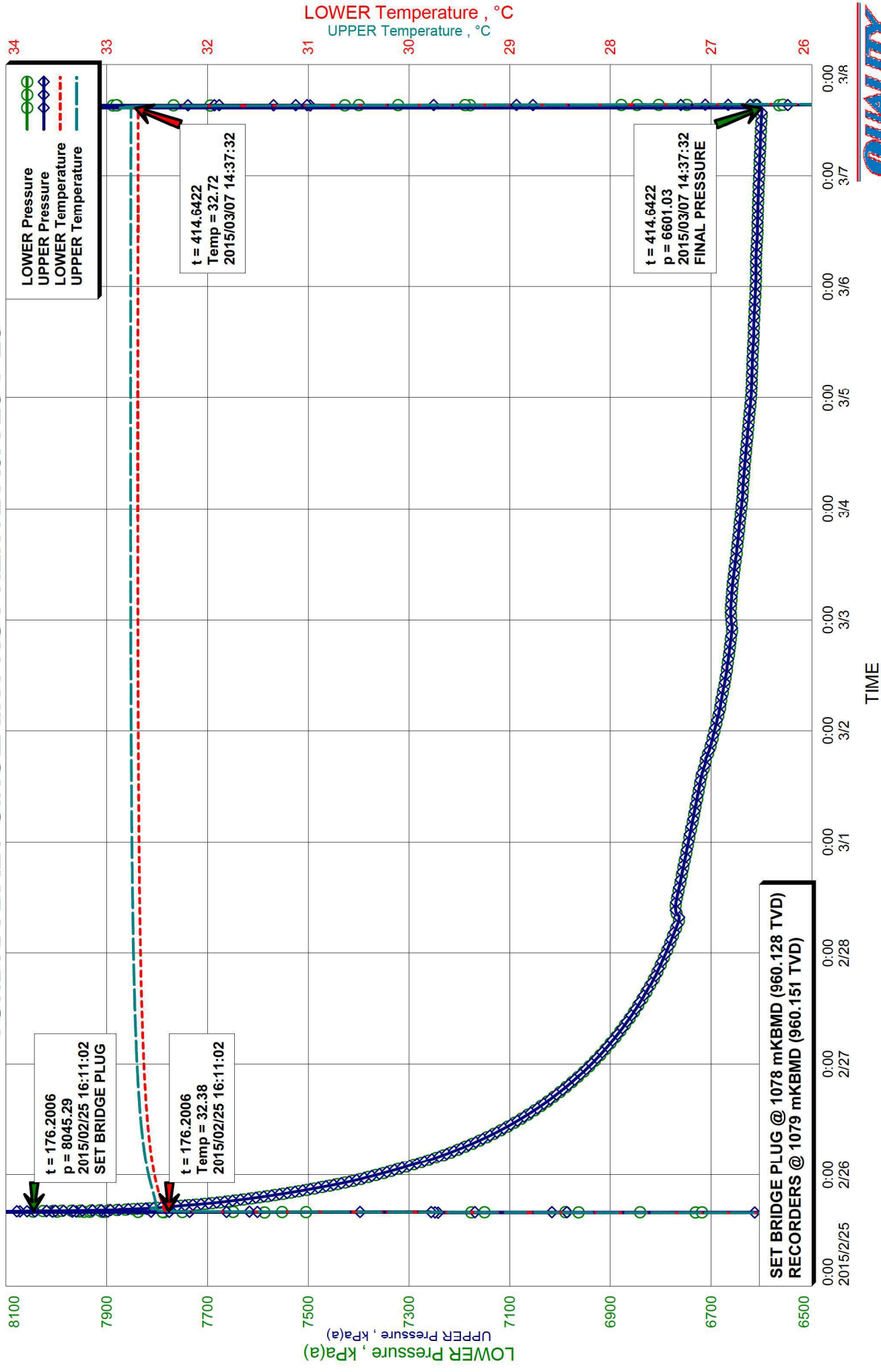


**TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28**

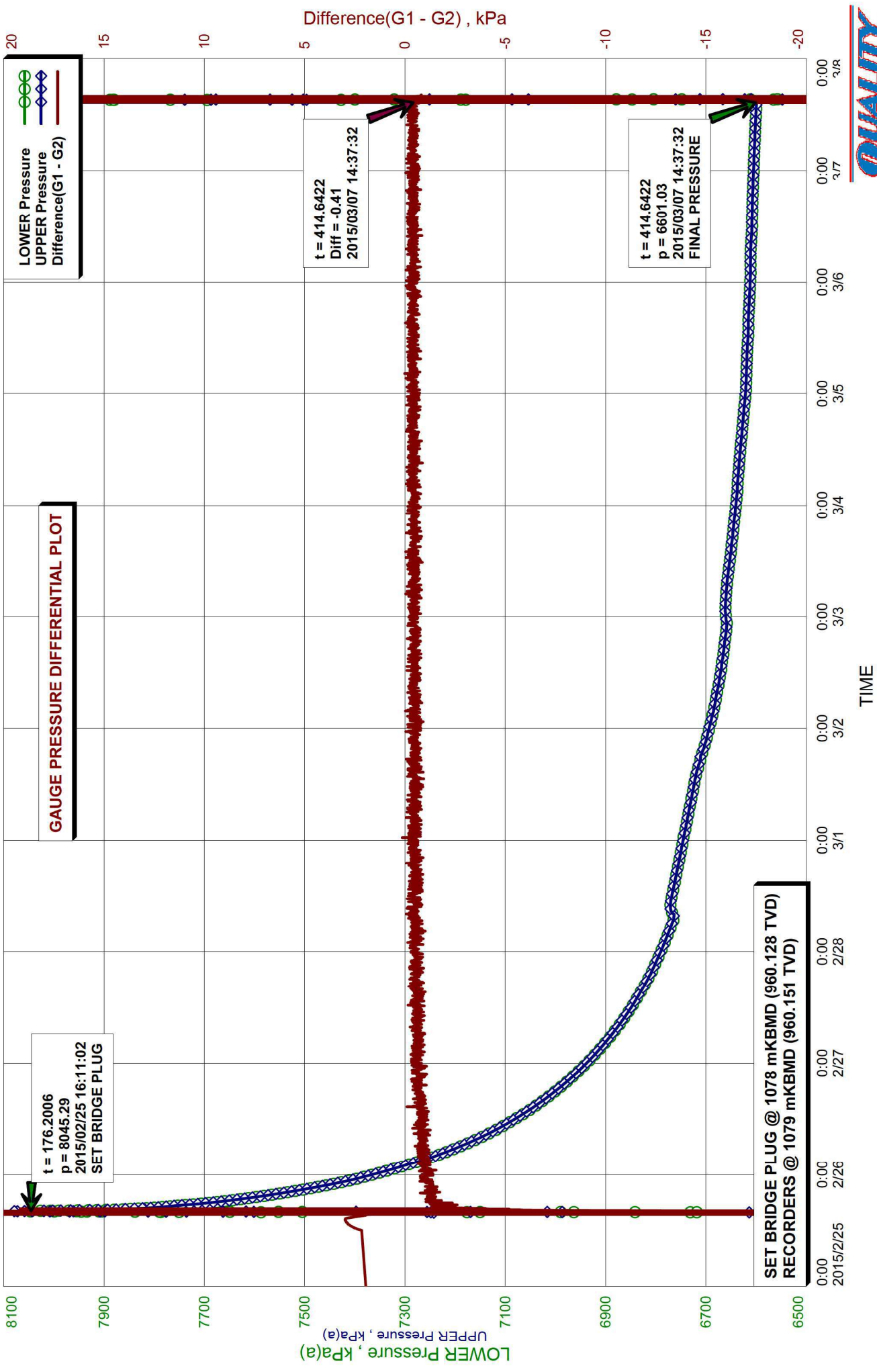




# TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28



# TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28





# Recorder Information

Company Name	TUNDRA OIL & GAS PARTNERSHIP
Unique Well ID	102/09-28-007-28W1/00
Well Name	TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28
Formation	LYLETON B
Start Test Date	2015/02/25
Final Test Date	2015/03/07

## Gauge 1

Gauge Name	LOWER	Gauge Type	ELECTRONIC
Gauge Serial Number	2727	Gauge Manufacturer	PIONEER PETROTECH SERVICES
Run Depth (Log KB)	1079.00 m	Gauge Model	SILICON SAPPHIRE
Date of Last Calibration	2013/06/12	Maximum Recorder Range	20680.00 kPa
Gauge Start Date	2015/02/18	Gauge Start Time	07:59:00
Gauge Stop Date	2015/03/07	Gauge Stop Time	16:15:02
Date Gauge On Bottom	2015/02/25	Time Gauge On Bottom	16:00:00
Date Gauge Off Bottom	2015/03/07	Time Gauge Off Bottom	15:01:00

## Gauge 2

Gauge Name	UPPER	Gauge Type	ELECTRONIC
Gauge Serial Number	2717	Gauge Manufacturer	PIONEER PETROTECH SERVICES
Run Depth (Log KB)	1079.00 m	Gauge Model	SILICON SAPPHIRE
Date of Last Calibration	2013/06/12	Maximum Recorder Range	20680.00 kPa
Gauge Start Date	2015/02/18	Gauge Start Time	07:59:00
Gauge Stop Date	2015/03/07	Gauge Stop Time	16:15:02
Date Gauge On Bottom	2015/02/25	Time Gauge On Bottom	16:00:00
Date Gauge Off Bottom	2015/03/07	Time Gauge Off Bottom	15:01:00

TUNDRA OIL & GAS PARTNERSHIP  
102/09-28-007-28W1/00  
Start Test Date: 2015/02/25  
Final Test Date: 2015/03/07

TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28  
**RESERVOIR PRESSURE SURVEY**  
Formation: LYLETON B  
**RECORDERS @ 1079 mKBMD (960.151 TVD)**

	LOWER Date yyyy/mm/dd	LOWER Clk Time hh:mm:ss	LOWER Time hr	LOWER Pres. kPa(a)	LOWER Temp. °C	UPPER Time hr	UPPER Pres. kPa(a)	UPPER Temp. °C	Diff. G1 - G2 kPa
1	2015/02/18	07:59:01	0.0003	112.57	23.91	0.0003	113.27	20.34	-0.69
2	2015/02/18	07:59:01	0.0003	ACTIVATE RECORDERS S/N: 2727(L) & 2717(U)					
3	2015/02/18	07:59:02	0.0006	112.57	23.92	0.0006	113.27	20.38	-0.69
4	2015/02/25	12:00:02	172.0172	113.33	-15.29	172.0172	111.17	-13.82	2.16
5	2015/02/25	13:00:02	173.0172	113.50	-16.65	173.0172	110.78	-14.90	2.72
6	2015/02/25	14:00:02	174.0172	113.59	-16.99	174.0172	110.64	-15.19	2.95
7	2015/02/25	14:00:02	174.0172	RUN IN HOLE WITH RECORDERS BELOW BRIDGE PLUG					
8	2015/02/25	14:00:32	174.0256	113.59	-17.00	174.0256	110.64	-15.20	2.95
9	2015/02/25	15:00:02	175.0172	113.87	-14.24	175.0172	111.56	-13.89	2.32
10	2015/02/25	16:00:02	176.0172	7648.97	31.42	176.0172	7776.11	31.24	-127.14
11	2015/02/25	16:00:02	176.0172	RECORDERS @ 1079 mKBMD (960.151 TVD)					
12	2015/02/25	16:00:32	176.0256	7789.40	31.54	176.0256	7735.71	31.42	53.69
13	2015/02/25	16:11:02	176.2006	8045.29	32.38	176.2006	8044.73	32.44	0.56
14	2015/02/25	16:11:02	176.2006	SET BRIDGE PLUG @ 1078 mKBMD (960.128 TVD)					
15	2015/02/25	16:11:32	176.2089	8043.39	32.39	176.2089	8051.28	32.45	-7.89
16	2015/02/25	17:00:02	177.0172	7784.27	32.44	177.0172	7786.28	32.51	-2.01
17	2015/02/25	18:00:02	178.0172	7680.61	32.45	178.0172	7682.03	32.52	-1.41
18	2015/02/25	19:00:02	179.0172	7606.21	32.47	179.0172	7607.72	32.52	-1.51
19	2015/02/25	20:00:02	180.0172	7544.24	32.48	180.0172	7545.05	32.54	-0.80
20	2015/02/25	21:00:02	181.0172	7489.84	32.50	181.0172	7491.20	32.55	-1.37
21	2015/02/25	22:00:02	182.0172	7441.50	32.51	182.0172	7442.74	32.56	-1.23
22	2015/02/25	23:00:02	183.0172	7398.58	32.52	183.0172	7399.59	32.57	-1.01
23	2015/02/26	00:00:02	184.0172	7363.25	32.53	184.0172	7364.28	32.58	-1.03
24	2015/02/26	01:00:02	185.0172	7329.64	32.54	185.0172	7330.45	32.60	-0.81
25	2015/02/26	02:00:02	186.0172	7298.85	32.54	186.0172	7299.89	32.61	-1.04
26	2015/02/26	03:00:02	187.0172	7267.30	32.55	187.0172	7268.47	32.61	-1.17
27	2015/02/26	04:00:02	188.0172	7239.93	32.56	188.0172	7240.87	32.62	-0.95
28	2015/02/26	05:00:02	189.0172	7215.10	32.56	189.0172	7216.10	32.63	-0.99
29	2015/02/26	06:00:02	190.0172	7192.19	32.57	190.0172	7193.06	32.63	-0.87
30	2015/02/26	07:00:02	191.0172	7170.51	32.57	191.0172	7171.30	32.64	-0.79
31	2015/02/26	08:00:02	192.0172	7149.81	32.58	192.0172	7150.78	32.64	-0.97
32	2015/02/26	09:00:02	193.0172	7130.75	32.58	193.0172	7131.90	32.65	-1.15
33	2015/02/26	10:00:02	194.0172	7113.29	32.59	194.0172	7113.85	32.65	-0.56
34	2015/02/26	11:00:02	195.0172	7096.23	32.59	195.0172	7097.12	32.66	-0.89
35	2015/02/26	12:00:02	196.0172	7080.34	32.60	196.0172	7081.14	32.66	-0.80
36	2015/02/26	13:00:02	197.0172	7065.42	32.60	197.0172	7066.37	32.67	-0.96
37	2015/02/26	14:00:02	198.0172	7050.92	32.61	198.0172	7051.79	32.67	-0.87
38	2015/02/26	15:00:02	199.0172	7037.38	32.61	199.0172	7037.96	32.68	-0.58
39	2015/02/26	16:00:02	200.0172	7023.99	32.61	200.0172	7024.67	32.68	-0.68
40	2015/02/26	17:00:02	201.0172	7011.47	32.62	201.0172	7012.43	32.68	-0.95

LOWER Serial Number: 2727 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00  
UPPER Serial Number: 2717 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00  
Print Filter: Print every 1 hour



TUNDRA OIL & GAS PARTNERSHIP  
102/09-28-007-28W1/00  
Start Test Date: 2015/02/25  
Final Test Date: 2015/03/07

TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28  
**RESERVOIR PRESSURE SURVEY**  
Formation: LYLETON B  
**RECORDERS @ 1079 mKBMD (960.151 TVD)**

	LOWER Date yyyy/mm/dd	LOWER Clk Time hh:mm:ss	LOWER Time hr	LOWER Pres. kPa(a)	LOWER Temp. °C	UPPER Time hr	UPPER Pres. kPa(a)	UPPER Temp. °C	Diff. G1 - G2 kPa
41	2015/02/26	18:00:02	202.0172	6999.75	32.62	202.0172	7000.31	32.69	-0.56
42	2015/02/26	19:00:02	203.0172	6988.30	32.62	203.0172	6988.74	32.69	-0.44
43	2015/02/26	20:00:02	204.0172	6977.43	32.62	204.0172	6977.88	32.69	-0.45
44	2015/02/26	21:00:02	205.0172	6966.70	32.63	205.0172	6967.66	32.69	-0.96
45	2015/02/26	22:00:02	206.0172	6956.66	32.63	206.0172	6957.10	32.70	-0.44
46	2015/02/26	23:00:02	207.0172	6946.81	32.63	207.0172	6947.42	32.70	-0.61
47	2015/02/27	00:00:02	208.0172	6937.47	32.63	208.0172	6938.21	32.70	-0.75
48	2015/02/27	01:00:02	209.0172	6928.75	32.63	209.0172	6929.21	32.70	-0.45
49	2015/02/27	02:00:02	210.0172	6919.90	32.64	210.0172	6920.54	32.70	-0.64
50	2015/02/27	03:00:02	211.0172	6911.63	32.64	211.0172	6912.29	32.71	-0.65
51	2015/02/27	04:00:02	212.0172	6903.65	32.64	212.0172	6904.29	32.71	-0.64
52	2015/02/27	05:00:02	213.0172	6895.74	32.64	213.0172	6896.63	32.71	-0.89
53	2015/02/27	06:00:02	214.0172	6888.28	32.64	214.0172	6888.90	32.71	-0.61
54	2015/02/27	07:00:02	215.0172	6880.96	32.64	215.0172	6881.73	32.71	-0.77
55	2015/02/27	08:00:02	216.0172	6874.15	32.65	216.0172	6874.59	32.72	-0.43
56	2015/02/27	09:00:02	217.0172	6867.52	32.65	217.0172	6868.09	32.72	-0.57
57	2015/02/27	10:00:02	218.0172	6860.56	32.65	218.0172	6861.24	32.72	-0.68
58	2015/02/27	11:00:02	219.0172	6854.40	32.65	219.0172	6854.89	32.72	-0.49
59	2015/02/27	12:00:02	220.0172	6848.44	32.65	220.0172	6848.96	32.72	-0.51
60	2015/02/27	13:00:02	221.0172	6842.76	32.65	221.0172	6843.21	32.72	-0.44
61	2015/02/27	14:00:02	222.0172	6837.00	32.65	222.0172	6837.62	32.73	-0.62
62	2015/02/27	15:00:02	223.0172	6831.64	32.66	223.0172	6832.12	32.73	-0.48
63	2015/02/27	16:00:02	224.0172	6826.14	32.66	224.0172	6826.54	32.73	-0.40
64	2015/02/27	17:00:02	225.0172	6821.16	32.66	225.0172	6821.80	32.73	-0.64
65	2015/02/27	18:00:02	226.0172	6816.03	32.66	226.0172	6816.56	32.73	-0.52
66	2015/02/27	19:00:02	227.0172	6810.94	32.66	227.0172	6811.53	32.73	-0.60
67	2015/02/27	20:00:02	228.0172	6806.73	32.66	228.0172	6807.25	32.73	-0.53
68	2015/02/27	21:00:02	229.0172	6802.14	32.66	229.0172	6802.54	32.73	-0.40
69	2015/02/27	22:00:02	230.0172	6798.12	32.66	230.0172	6798.54	32.73	-0.42
70	2015/02/27	23:00:02	231.0172	6793.88	32.67	231.0172	6794.42	32.74	-0.54
71	2015/02/28	00:00:02	232.0172	6789.83	32.67	232.0172	6790.20	32.74	-0.38
72	2015/02/28	01:00:02	233.0172	6785.91	32.67	233.0172	6786.36	32.74	-0.45
73	2015/02/28	02:00:02	234.0172	6781.94	32.67	234.0172	6782.40	32.74	-0.46
74	2015/02/28	03:00:02	235.0172	6778.38	32.67	235.0172	6778.63	32.74	-0.25
75	2015/02/28	04:00:02	236.0172	6774.30	32.67	236.0172	6774.92	32.74	-0.62
76	2015/02/28	05:00:02	237.0172	6770.63	32.67	237.0172	6771.21	32.74	-0.58
77	2015/02/28	06:00:02	238.0172	6766.87	32.67	238.0172	6767.45	32.74	-0.58
78	2015/02/28	07:00:02	239.0172	6763.73	32.67	239.0172	6764.13	32.74	-0.40
79	2015/02/28	08:00:02	240.0172	6764.65	32.67	240.0172	6764.83	32.74	-0.18
80	2015/02/28	09:00:02	241.0172	6770.08	32.67	241.0172	6770.36	32.74	-0.28

LOWER Serial Number: 2727 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00  
UPPER Serial Number: 2717 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00  
Print Filter: Print every 1 hour



	LOWER Date yyyy/mm/dd	LOWER Clk Time hh:mm:ss	LOWER Time hr	LOWER Pres. kPa(a)	LOWER Temp. °C	UPPER Time hr	UPPER Pres. kPa(a)	UPPER Temp. °C	Diff. G1 - G2 kPa
81	2015/02/28	10:00:02	242.0172	6770.33	32.67	242.0172	6770.83	32.74	-0.50
82	2015/02/28	11:00:02	243.0172	6769.43	32.67	243.0172	6770.01	32.74	-0.58
83	2015/02/28	12:00:02	244.0172	6767.56	32.67	244.0172	6767.97	32.75	-0.40
84	2015/02/28	13:00:02	245.0172	6765.82	32.68	245.0172	6766.40	32.75	-0.58
85	2015/02/28	14:00:02	246.0172	6763.86	32.68	246.0172	6764.13	32.75	-0.26
86	2015/02/28	15:00:02	247.0172	6761.47	32.68	247.0172	6762.09	32.75	-0.62
87	2015/02/28	16:00:02	248.0172	6759.61	32.68	248.0172	6760.07	32.75	-0.47
88	2015/02/28	17:00:02	249.0172	6757.82	32.68	249.0172	6758.20	32.75	-0.38
89	2015/02/28	18:00:02	250.0172	6755.83	32.68	250.0172	6756.19	32.75	-0.36
90	2015/02/28	19:00:02	251.0172	6754.43	32.68	251.0172	6754.59	32.75	-0.17
91	2015/02/28	20:00:02	252.0172	6752.52	32.68	252.0172	6752.83	32.75	-0.31
92	2015/02/28	21:00:02	253.0172	6750.23	32.68	253.0172	6750.59	32.75	-0.36
93	2015/02/28	22:00:02	254.0172	6748.74	32.68	254.0172	6749.32	32.75	-0.58
94	2015/02/28	23:00:02	255.0172	6746.82	32.68	255.0172	6747.41	32.75	-0.59
95	2015/03/01	00:00:02	256.0172	6745.16	32.68	256.0172	6745.65	32.75	-0.49
96	2015/03/01	01:00:02	257.0172	6743.39	32.68	257.0172	6744.00	32.75	-0.62
97	2015/03/01	02:00:02	258.0172	6741.13	32.68	258.0172	6741.61	32.75	-0.48
98	2015/03/01	03:00:02	259.0172	6739.33	32.68	259.0172	6739.76	32.75	-0.43
99	2015/03/01	04:00:02	260.0172	6737.87	32.68	260.0172	6738.27	32.75	-0.40
100	2015/03/01	05:00:02	261.0172	6735.50	32.68	261.0172	6735.87	32.75	-0.37
101	2015/03/01	06:00:02	262.0172	6733.98	32.68	262.0172	6734.07	32.75	-0.10
102	2015/03/01	07:00:02	263.0172	6732.21	32.68	263.0172	6732.75	32.75	-0.53
103	2015/03/01	08:00:02	264.0172	6729.81	32.68	264.0172	6730.13	32.75	-0.33
104	2015/03/01	09:00:02	265.0172	6728.90	32.68	265.0172	6729.39	32.76	-0.50
105	2015/03/01	10:00:02	266.0172	6726.94	32.69	266.0172	6727.47	32.76	-0.53
106	2015/03/01	11:00:02	267.0172	6724.73	32.69	267.0172	6725.36	32.76	-0.63
107	2015/03/01	12:00:02	268.0172	6723.07	32.69	268.0172	6723.67	32.76	-0.60
108	2015/03/01	13:00:02	269.0172	6721.44	32.69	269.0172	6722.04	32.76	-0.60
109	2015/03/01	14:00:02	270.0172	6719.43	32.69	270.0172	6719.89	32.76	-0.45
110	2015/03/01	15:00:02	271.0172	6717.60	32.69	271.0172	6718.04	32.76	-0.44
111	2015/03/01	16:00:02	272.0172	6714.52	32.69	272.0172	6715.08	32.76	-0.56
112	2015/03/01	17:00:02	273.0172	6711.38	32.69	273.0172	6711.75	32.76	-0.37
113	2015/03/01	18:00:02	274.0172	6710.37	32.69	274.0172	6710.96	32.76	-0.59
114	2015/03/01	19:00:02	275.0172	6706.66	32.69	275.0172	6707.32	32.76	-0.66
115	2015/03/01	20:00:02	276.0172	6703.23	32.69	276.0172	6703.80	32.76	-0.56
116	2015/03/01	21:00:02	277.0172	6700.31	32.69	277.0172	6700.90	32.76	-0.59
117	2015/03/01	22:00:02	278.0172	6698.04	32.69	278.0172	6698.63	32.76	-0.60
118	2015/03/01	23:00:02	279.0172	6695.97	32.69	279.0172	6696.25	32.76	-0.28
119	2015/03/02	00:00:02	280.0172	6693.25	32.69	280.0172	6694.03	32.76	-0.78
120	2015/03/02	01:00:02	281.0172	6691.00	32.69	281.0172	6691.71	32.76	-0.71

LOWER Serial Number: 2727 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00

UPPER Serial Number: 2717 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00

Print Filter: Print every 1 hour



	LOWER Date yyyy/mm/dd	LOWER Clk Time hh:mm:ss	LOWER Time hr	LOWER Pres. kPa(a)	LOWER Temp. °C	UPPER Time hr	UPPER Pres. kPa(a)	UPPER Temp. °C	Diff. G1 - G2 kPa
121	2015/03/02	02:00:02	282.0172	6688.39	32.69	282.0172	6688.72	32.76	-0.33
122	2015/03/02	03:00:02	283.0172	6686.58	32.69	283.0172	6687.17	32.76	-0.59
123	2015/03/02	04:00:02	284.0172	6684.17	32.69	284.0172	6684.85	32.76	-0.69
124	2015/03/02	05:00:02	285.0172	6682.14	32.69	285.0172	6682.69	32.76	-0.55
125	2015/03/02	06:00:02	286.0172	6680.30	32.69	286.0172	6680.83	32.76	-0.53
126	2015/03/02	07:00:02	287.0172	6678.95	32.69	287.0172	6679.34	32.76	-0.39
127	2015/03/02	08:00:02	288.0172	6677.04	32.69	288.0172	6677.69	32.76	-0.65
128	2015/03/02	09:00:02	289.0172	6675.54	32.69	289.0172	6675.99	32.76	-0.46
129	2015/03/02	10:00:02	290.0172	6673.68	32.69	290.0172	6674.12	32.76	-0.45
130	2015/03/02	11:00:02	291.0172	6672.06	32.69	291.0172	6672.74	32.76	-0.68
131	2015/03/02	12:00:02	292.0172	6670.56	32.69	292.0172	6671.04	32.76	-0.48
132	2015/03/02	13:00:02	293.0172	6668.85	32.69	293.0172	6669.18	32.76	-0.33
133	2015/03/02	14:00:02	294.0172	6668.09	32.69	294.0172	6668.66	32.76	-0.57
134	2015/03/02	15:00:02	295.0172	6666.67	32.69	295.0172	6666.92	32.76	-0.25
135	2015/03/02	16:00:02	296.0172	6665.28	32.69	296.0172	6665.77	32.76	-0.49
136	2015/03/02	17:00:02	297.0172	6664.04	32.69	297.0172	6664.40	32.76	-0.36
137	2015/03/02	18:00:02	298.0172	6663.02	32.69	298.0172	6663.37	32.76	-0.35
138	2015/03/02	19:00:02	299.0172	6661.37	32.69	299.0172	6661.68	32.76	-0.31
139	2015/03/02	20:00:02	300.0172	6660.32	32.69	300.0172	6660.90	32.76	-0.58
140	2015/03/02	21:00:02	301.0172	6659.37	32.69	301.0172	6659.77	32.76	-0.40
141	2015/03/02	22:00:02	302.0172	6658.41	32.69	302.0172	6658.88	32.76	-0.47
142	2015/03/02	23:00:02	303.0172	6658.81	32.69	303.0172	6659.21	32.76	-0.40
143	2015/03/03	00:00:02	304.0172	6660.15	32.69	304.0172	6660.42	32.76	-0.28
144	2015/03/03	01:00:02	305.0172	6660.70	32.69	305.0172	6661.21	32.76	-0.51
145	2015/03/03	02:00:02	306.0172	6660.89	32.69	306.0172	6661.17	32.76	-0.28
146	2015/03/03	03:00:02	307.0172	6660.51	32.69	307.0172	6661.03	32.76	-0.52
147	2015/03/03	04:00:02	308.0172	6659.77	32.69	308.0172	6660.34	32.76	-0.57
148	2015/03/03	05:00:02	309.0172	6659.14	32.69	309.0172	6659.46	32.76	-0.33
149	2015/03/03	06:00:02	310.0172	6658.72	32.69	310.0172	6659.08	32.76	-0.36
150	2015/03/03	07:00:02	311.0172	6657.78	32.69	311.0172	6658.24	32.76	-0.46
151	2015/03/03	08:00:02	312.0172	6657.02	32.69	312.0172	6657.64	32.76	-0.62
152	2015/03/03	09:00:02	313.0172	6656.08	32.69	313.0172	6656.61	32.76	-0.53
153	2015/03/03	10:00:02	314.0172	6654.70	32.69	314.0172	6655.10	32.76	-0.41
154	2015/03/03	11:00:02	315.0172	6653.49	32.69	315.0172	6653.99	32.76	-0.50
155	2015/03/03	12:00:02	316.0172	6652.16	32.69	316.0172	6652.67	32.76	-0.51
156	2015/03/03	13:00:02	317.0172	6651.32	32.69	317.0172	6651.83	32.76	-0.51
157	2015/03/03	14:00:02	318.0172	6649.69	32.69	318.0172	6649.91	32.76	-0.22
158	2015/03/03	15:00:02	319.0172	6648.94	32.69	319.0172	6649.51	32.76	-0.57
159	2015/03/03	16:00:02	320.0172	6648.06	32.69	320.0172	6648.45	32.76	-0.39
160	2015/03/03	17:00:02	321.0172	6646.91	32.69	321.0172	6647.25	32.76	-0.34

LOWER Serial Number: 2727 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00

UPPER Serial Number: 2717 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00

Print Filter: Print every 1 hour



	LOWER Date yyyy/mm/dd	LOWER Clk Time hh:mm:ss	LOWER Time hr	LOWER Pres. kPa(a)	LOWER Temp. °C	UPPER Time hr	UPPER Pres. kPa(a)	UPPER Temp. °C	Diff. G1 - G2 kPa
161	2015/03/03	18:00:02	322.0172	6646.12	32.69	322.0172	6646.19	32.76	-0.07
162	2015/03/03	19:00:02	323.0172	6645.04	32.69	323.0172	6645.50	32.76	-0.46
163	2015/03/03	20:00:02	324.0172	6644.18	32.69	324.0172	6644.65	32.76	-0.48
164	2015/03/03	21:00:02	325.0172	6643.31	32.69	325.0172	6643.63	32.76	-0.32
165	2015/03/03	22:00:02	326.0172	6641.89	32.69	326.0172	6642.57	32.76	-0.69
166	2015/03/03	23:00:02	327.0172	6640.99	32.69	327.0172	6641.52	32.76	-0.54
167	2015/03/04	00:00:02	328.0172	6640.19	32.69	328.0172	6640.74	32.76	-0.55
168	2015/03/04	01:00:02	329.0172	6639.11	32.69	329.0172	6639.70	32.76	-0.59
169	2015/03/04	02:00:02	330.0172	6638.13	32.69	330.0172	6638.64	32.76	-0.52
170	2015/03/04	03:00:02	331.0172	6637.17	32.69	331.0172	6637.49	32.76	-0.32
171	2015/03/04	04:00:02	332.0172	6637.01	32.69	332.0172	6637.57	32.76	-0.57
172	2015/03/04	05:00:02	333.0172	6636.43	32.69	333.0172	6637.03	32.76	-0.60
173	2015/03/04	06:00:02	334.0172	6635.76	32.69	334.0172	6636.32	32.76	-0.57
174	2015/03/04	07:00:02	335.0172	6635.06	32.69	335.0172	6635.50	32.76	-0.44
175	2015/03/04	08:00:02	336.0172	6634.01	32.69	336.0172	6634.48	32.76	-0.47
176	2015/03/04	09:00:02	337.0172	6633.42	32.69	337.0172	6633.99	32.76	-0.58
177	2015/03/04	10:00:02	338.0172	6632.61	32.69	338.0172	6632.92	32.76	-0.31
178	2015/03/04	11:00:02	339.0172	6631.98	32.69	339.0172	6632.53	32.76	-0.55
179	2015/03/04	12:00:02	340.0172	6631.07	32.69	340.0172	6631.23	32.76	-0.16
180	2015/03/04	13:00:02	341.0172	6630.30	32.69	341.0172	6630.74	32.76	-0.43
181	2015/03/04	14:00:02	342.0172	6629.15	32.69	342.0172	6629.40	32.76	-0.26
182	2015/03/04	15:00:02	343.0172	6628.13	32.69	343.0172	6628.52	32.76	-0.39
183	2015/03/04	16:00:02	344.0172	6627.82	32.69	344.0172	6627.91	32.76	-0.09
184	2015/03/04	17:00:02	345.0172	6626.83	32.69	345.0172	6627.07	32.76	-0.24
185	2015/03/04	18:00:02	346.0172	6625.95	32.69	346.0172	6626.21	32.76	-0.26
186	2015/03/04	19:00:02	347.0172	6625.31	32.69	347.0172	6625.72	32.76	-0.41
187	2015/03/04	20:00:02	348.0172	6624.31	32.69	348.0172	6624.57	32.76	-0.26
188	2015/03/04	21:00:02	349.0172	6623.62	32.69	349.0172	6624.26	32.76	-0.64
189	2015/03/04	22:00:02	350.0172	6622.66	32.69	350.0172	6623.17	32.76	-0.51
190	2015/03/04	23:00:02	351.0172	6621.52	32.69	351.0172	6621.89	32.76	-0.37
191	2015/03/05	00:00:02	352.0172	6620.68	32.69	352.0172	6621.40	32.76	-0.72
192	2015/03/05	01:00:02	353.0172	6620.04	32.69	353.0172	6620.39	32.76	-0.35
193	2015/03/05	02:00:02	354.0172	6619.92	32.69	354.0172	6620.19	32.76	-0.27
194	2015/03/05	03:00:02	355.0172	6619.41	32.69	355.0172	6619.83	32.76	-0.41
195	2015/03/05	04:00:02	356.0172	6619.04	32.69	356.0172	6619.53	32.76	-0.49
196	2015/03/05	05:00:02	357.0172	6618.99	32.69	357.0172	6619.28	32.76	-0.29
197	2015/03/05	06:00:02	358.0172	6618.63	32.69	358.0172	6619.14	32.76	-0.50
198	2015/03/05	07:00:02	359.0172	6617.82	32.69	359.0172	6618.16	32.76	-0.33
199	2015/03/05	08:00:02	360.0172	6617.91	32.69	360.0172	6618.41	32.76	-0.50
200	2015/03/05	09:00:02	361.0172	6617.75	32.69	361.0172	6617.90	32.76	-0.16

LOWER Serial Number: 2727 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00

UPPER Serial Number: 2717 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00

Print Filter: Print every 1 hour



TUNDRA OIL & GAS PARTNERSHIP  
102/09-28-007-28W1/00  
Start Test Date: 2015/02/25  
Final Test Date: 2015/03/07

**RESERVOIR PRESSURE SURVEY**  
**RECORDERS @ 1079 mKBMD (960.151 TVD)**

TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28  
Formation: LYLETON B

	LOWER Date yyyy/mm/dd	LOWER Clk Time hh:mm:ss	LOWER Time hr	LOWER Pres. kPa(a)	LOWER Temp. °C	UPPER Time hr	UPPER Pres. kPa(a)	UPPER Temp. °C	Diff. G1 - G2 kPa
201	2015/03/05	10:00:02	362.0172	6617.14	32.69	362.0172	6617.49	32.76	-0.36
202	2015/03/05	11:00:02	363.0172	6616.69	32.69	363.0172	6616.96	32.76	-0.27
203	2015/03/05	12:00:02	364.0172	6615.83	32.69	364.0172	6616.38	32.76	-0.56
204	2015/03/05	13:00:02	365.0172	6615.50	32.69	365.0172	6615.92	32.76	-0.43
205	2015/03/05	14:00:02	366.0172	6615.25	32.69	366.0172	6615.60	32.76	-0.35
206	2015/03/05	15:00:02	367.0172	6615.30	32.69	367.0172	6615.84	32.76	-0.54
207	2015/03/05	16:00:02	368.0172	6615.22	32.69	368.0172	6615.59	32.76	-0.38
208	2015/03/05	17:00:02	369.0172	6614.36	32.69	369.0172	6615.01	32.76	-0.65
209	2015/03/05	18:00:02	370.0172	6614.30	32.69	370.0172	6614.80	32.76	-0.50
210	2015/03/05	19:00:02	371.0172	6613.82	32.69	371.0172	6614.13	32.76	-0.31
211	2015/03/05	20:00:02	372.0172	6613.40	32.69	372.0172	6613.78	32.76	-0.39
212	2015/03/05	21:00:02	373.0172	6612.85	32.69	373.0172	6613.21	32.76	-0.36
213	2015/03/05	22:00:02	374.0172	6612.17	32.69	374.0172	6612.91	32.76	-0.73
214	2015/03/05	23:00:02	375.0172	6611.99	32.69	375.0172	6612.21	32.76	-0.22
215	2015/03/06	00:00:02	376.0172	6611.56	32.69	376.0172	6612.01	32.76	-0.44
216	2015/03/06	01:00:02	377.0172	6611.31	32.69	377.0172	6611.48	32.76	-0.17
217	2015/03/06	02:00:02	378.0172	6610.79	32.69	378.0172	6611.24	32.76	-0.45
218	2015/03/06	03:00:02	379.0172	6610.87	32.69	379.0172	6611.50	32.76	-0.63
219	2015/03/06	04:00:02	380.0172	6611.11	32.69	380.0172	6611.43	32.76	-0.32
220	2015/03/06	05:00:02	381.0172	6610.72	32.69	381.0172	6611.21	32.76	-0.50
221	2015/03/06	06:00:02	382.0172	6610.76	32.69	382.0172	6611.25	32.76	-0.49
222	2015/03/06	07:00:02	383.0172	6610.57	32.69	383.0172	6610.83	32.76	-0.26
223	2015/03/06	08:00:02	384.0172	6610.18	32.69	384.0172	6610.35	32.76	-0.17
224	2015/03/06	09:00:02	385.0172	6609.57	32.69	385.0172	6609.88	32.76	-0.31
225	2015/03/06	10:00:02	386.0172	6608.68	32.69	386.0172	6609.19	32.76	-0.51
226	2015/03/06	11:00:02	387.0172	6608.14	32.69	387.0172	6608.49	32.76	-0.35
227	2015/03/06	12:00:02	388.0172	6607.86	32.69	388.0172	6608.41	32.76	-0.54
228	2015/03/06	13:00:02	389.0172	6608.05	32.69	389.0172	6608.28	32.76	-0.23
229	2015/03/06	14:00:02	390.0172	6607.80	32.69	390.0172	6608.26	32.76	-0.46
230	2015/03/06	15:00:02	391.0172	6607.47	32.69	391.0172	6607.76	32.76	-0.29
231	2015/03/06	16:00:02	392.0172	6607.28	32.69	392.0172	6607.59	32.76	-0.31
232	2015/03/06	17:00:02	393.0172	6607.21	32.69	393.0172	6607.34	32.76	-0.13
233	2015/03/06	18:00:02	394.0172	6606.85	32.69	394.0172	6607.23	32.76	-0.38
234	2015/03/06	19:00:02	395.0172	6606.44	32.69	395.0172	6607.00	32.76	-0.56
235	2015/03/06	20:00:02	396.0172	6605.99	32.69	396.0172	6606.57	32.76	-0.58
236	2015/03/06	21:00:02	397.0172	6605.88	32.69	397.0172	6606.27	32.76	-0.39
237	2015/03/06	22:00:02	398.0172	6605.67	32.69	398.0172	6606.31	32.76	-0.64
238	2015/03/06	23:00:02	399.0172	6605.34	32.69	399.0172	6605.64	32.76	-0.31
239	2015/03/07	00:00:02	400.0172	6604.79	32.69	400.0172	6605.40	32.76	-0.61
240	2015/03/07	01:00:02	401.0172	6604.42	32.69	401.0172	6604.87	32.76	-0.46

LOWER Serial Number: 2727 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00  
UPPER Serial Number: 2717 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00  
Print Filter: Print every 1 hour



TUNDRA OIL & GAS PARTNERSHIP  
102/09-28-007-28W1/00  
Start Test Date: 2015/02/25  
Final Test Date: 2015/03/07

**RESERVOIR PRESSURE SURVEY**  
**RECORDERS @ 1079 mKBMD (960.151 TVD)**

TUNDRA DALY SINCLAIR PROV HZNTL A9A-28-7-28  
Formation: LYLETON B

	LOWER Date yyyy/mm/dd	LOWER Clk Time hh:mm:ss	LOWER Time hr	LOWER Pres. kPa(a)	LOWER Temp. °C	UPPER Time hr	UPPER Pres. kPa(a)	UPPER Temp. °C	Diff. G1 - G2 kPa
241	2015/03/07	02:00:02	402.0172	6604.04	32.69	402.0172	6604.32	32.76	-0.28
242	2015/03/07	03:00:02	403.0172	6603.75	32.69	403.0172	6604.31	32.76	-0.56
243	2015/03/07	04:00:02	404.0172	6603.42	32.69	404.0172	6603.78	32.76	-0.36
244	2015/03/07	05:00:02	405.0172	6603.02	32.69	405.0172	6603.36	32.76	-0.34
245	2015/03/07	06:00:02	406.0172	6602.48	32.69	406.0172	6602.88	32.76	-0.40
246	2015/03/07	07:00:02	407.0172	6602.06	32.69	407.0172	6602.61	32.76	-0.56
247	2015/03/07	08:00:02	408.0172	6602.03	32.69	408.0172	6602.31	32.76	-0.28
248	2015/03/07	09:00:02	409.0172	6601.34	32.69	409.0172	6601.82	32.76	-0.48
249	2015/03/07	10:00:02	410.0172	6601.26	32.69	410.0172	6601.57	32.76	-0.31
250	2015/03/07	11:00:02	411.0172	6600.45	32.69	411.0172	6600.88	32.76	-0.43
251	2015/03/07	12:00:02	412.0172	6600.29	32.69	412.0172	6600.58	32.76	-0.29
252	2015/03/07	13:00:02	413.0172	6599.73	32.69	413.0172	6599.99	32.76	-0.25
253	2015/03/07	14:00:02	414.0172	6599.29	32.69	414.0172	6599.50	32.76	-0.21
254	2015/03/07	14:37:32	414.6422	6601.03	32.72	414.6422	6601.45	32.79	-0.41
255	2015/03/07	14:37:32	414.6422	FINAL PRESSURE, UNSETTING BRIDGE PLUG					
256	2015/03/07	14:38:02	414.6506	8870.27	32.77	414.6506	9527.98	32.82	-657.71
257	2015/03/07	14:38:02	414.6506	BRIDGE PLUG IS UNSET					
258	2015/03/07	14:38:32	414.6589	9452.36	32.78	414.6589	9460.67	32.85	-8.31
259	2015/03/07	15:00:02	415.0172	9387.61	32.67	415.0172	9462.05	32.72	-74.44
260	2015/03/07	15:01:02	415.0339	9265.00	32.62	415.0339	9440.47	32.69	-175.47
261	2015/03/07	15:01:02	415.0339	TOOLS ARE PULLED FROM THE WELL BY THE SERVICE RIG					
262	2015/03/07	15:01:32	415.0422	9414.83	32.59	415.0422	9164.70	32.65	250.13
263	2015/03/07	16:00:02	416.0172	112.46	9.30	416.0172	113.21	9.24	-0.75
264	2015/03/07	16:05:02	416.1006	112.40	9.24	416.1006	113.18	9.23	-0.78
265	2015/03/07	16:05:02	416.1006	RECORDERS AT SURFACE					
266	2015/03/07	16:05:32	416.1089	112.39	9.23	416.1089	113.18	9.23	-0.79
267	2015/03/07	16:15:02	416.2672	112.46	9.52	416.2672	113.28	8.31	-0.82

LOWER Serial Number: 2727 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00  
UPPER Serial Number: 2717 Start Date: 2015/02/18 07:59:00 Run Depth: 1079.00  
Print Filter: Print every 1 hour



DATE: February 25 - March 7, 2015	COMPANY: Tundra Oil & Gas Partnership
WELLNAME: Sinclair (12-28) Hz 09-28-007-28 WPM	ADDRESS: Virden, MB
LOCATION: (12-28) 09-28-007-28WPM	UWI: 102.09-28-007-28W1.00
FIELD: Sinclair	FORMATION: Lyleton B
CO HQ REP: Tyler Routledge	PHONE: 204-851-1947
FIELD REP: Kim Cowan	PHONE: 204-851-0543

REPORTS TO (NAME & EMAIL ADDRESS):

Brett [REDACTED] - brett.howell@tundraoilandgas.com  
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 Tyler [REDACTED] - tyler.routledge@tundraoilandgas.com  
 Geoff [REDACTED] - geoff.puckett@tundraoilandgas.com

STATUS: Oil well (work over)		TEST TYPE: fall off
ESTIMATED H2S CONTENT: <10 ppm		ESTIMATED CO2 CONTENT: 0%
PRODUCING THROUGH: tubing		SHUT IN TIME/DATE: 16:11 Feb 25, 2015
KOP: 772 mKB	TVD: see survey	LICENCE #: 10319
PBTD: n/a	TD: 2329.0 mKB	WELL TYPE: horizontal
CASING SIZE: 177.8 mm	CSG WEIGHT: 34.2&29.7kg/m	CSG DEPTH: 931.26 mKB
LINER SIZE: 114.3 mm	LNR WEIGHT: 17.26 kg/m	LNR DEPTH: 919.21 - 2311.22 mKB
Elevations KB: 499.93 m	GRD: 495.83 m	CF: 495.98 m

PRODUCING INTERVAL

TYPE: open hole	SIZE: 159 mm	INTERVAL: 2311.22 - 2329.00 mKB
Frac Ports	N/a	(mBK) FRAC PORTS ARE CLOSED 2292.53, 2234.47, 2176.38, 2118.29, 2060.21, 2002.12, 1944.08, 1886.01, 1827.92, 1769.87, 1712.14, 1654.69, 1596.95, 1539.56, 1495.46, 1451.37, 1406.90, 1362.33, 1317.74, 1273.53, 1228.96, 1184.33, 1139.74, 1095.16

RECORDER INFORMATION

TOP S/N: 2717	FILE NAME: 12-28-9-28-7-28w1,6874.pps	RANGE: 20,680 kPa
BOTTOM S/N: 2727	FILE NAME: 12-28-9-28-7-28w1,6874.pps	RANGE: 20,680 kPa
TOP BATTERY S/N: PPS1109C	BOTTOM BATTERY S/N: PPS1118C	
CONNECT TIME: 07:59 Feb 18, 2015	DISCONNECT TIME: 16:15 March 7, 2015	

SURFACE TEMP: 4 deg C	LEASE CONDITION: good
WIRELINE OPERATOR: Bart Royan	PHONE: 306-421-9700
WIRELINE ASSISTANT: n/a	
DIRECTIONS: from highway #2 go north on hwy #256 for 2.4km, east and south on lease road to well.	

DWG WELL HEAD PRESSURES:

TUBING (before survey): 0 kPa	CASING (before survey): 0 kPa
TUBING (after survey): 0 kPa	CASING (after survey): 0 kPa

FLUID LEVEL: n/a	RUN DEPTH: 1079 mKB
TIME ON BOTTOM: 16:00 Feb 25, 2015	TIME OFF BOTTOM: 15:01 March 7, 2015

GRADIENT STOPS

DEPTH mKB:	none	FROM:	n/a	UNTIL:	n/a
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COMMENTS:
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DESCRIPTION OF WORK DONE:

February 25, 2015

14:00 RIH with 21 mPA PPS recorders below a Tryton 114.3mm bridge plug by the service rig.

16:00 Tools are at set depth.

16:11 Bridge plug is set, well is shut in.

March 7, 2015

14:38 The bridge plug is unset.

15:01 Tools are pulled from the well by the service rig.

16:05 Recorders are at surface.

16:15 Disconnect batteries from recorders, download data and do a preliminary report.

## Appendix D

### Average Monthly Injection Pressure (kPag)

Month	100/05-32	100/01-34
Jan-17	-	-
Feb-17	185	0
Mar-17	73	110
Apr-17	2366	-94
May-17	2979	-94
Jun-17	3274	-94
Jul-17	3683	-93
Aug-17	3992	141
Sep-17	4100	-93
Oct-17	4287	9
Nov-17	4259	-84
Dec-17	4727	596

**Appendix E**  
**Rates and VRR Plots**



# Pattern: 00/05-32-007-28Inj Set: EwartUnit#10

Oil Formation Vol Factor : 1.07100 m3/m3

Water Formation Vol Factor : 1.00150 m3/m3

Water / Oil Ratio : 6.56 m3/m3

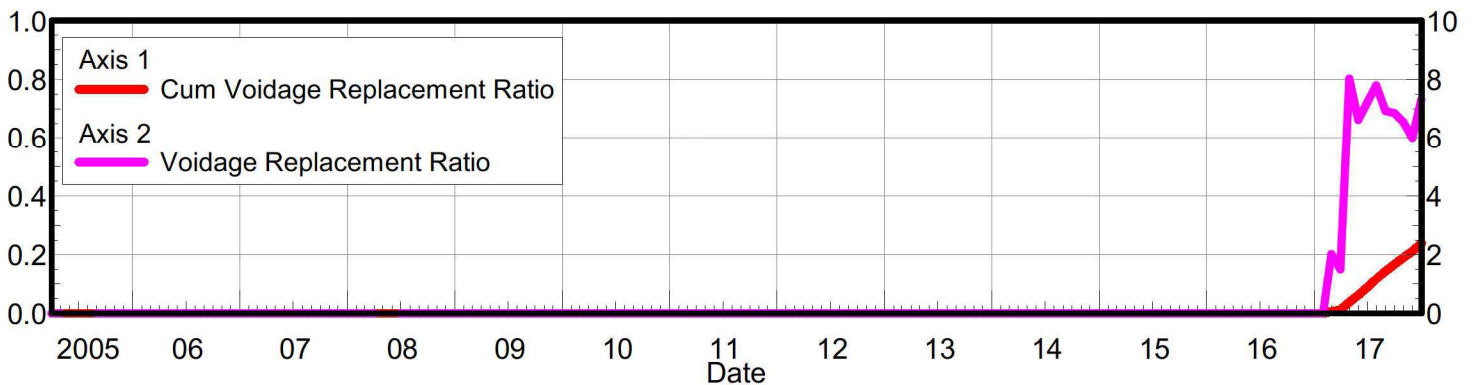
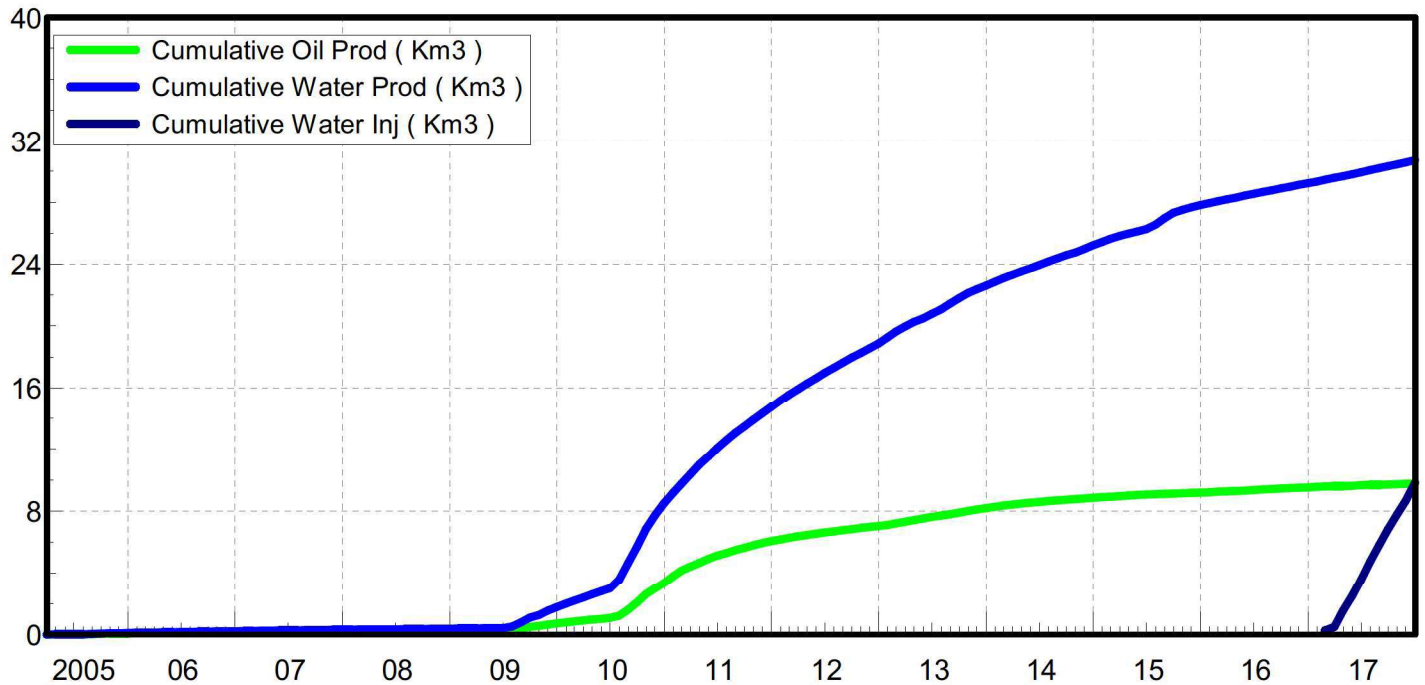
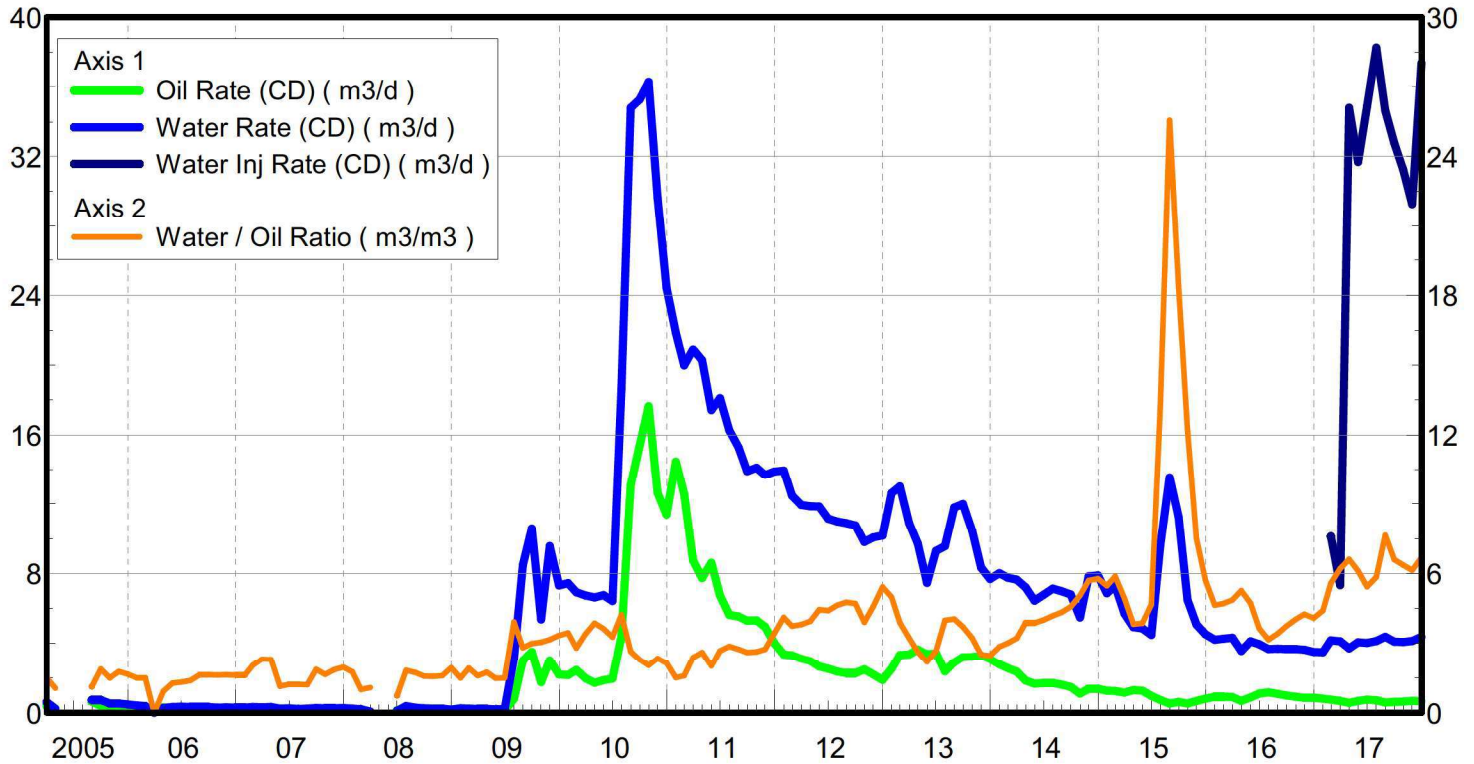
March 06, 2018

Operator: TUNDRA\_OIL\_AND\_GAS\_PARTNER

Oil Rate (CD) : 0.66 m3/d

Water Rate (CD) : 4.39 m3/d

Water Inj Rate (CD) : 37.35 m3/d



# Pattern: 00/01-34-007-28Inj Set: EwartUnit#10

Oil Formation Vol Factor : 1.07100 m3/m3

Water Formation Vol Factor : 1.00150 m3/m3

Water / Oil Ratio : 10.79 m3/m3

March 06, 2018

Operator: TUNDRA\_OIL\_AND\_GAS\_PARTNER

Oil Rate (CD) : 0.89 m3/d

Water Rate (CD) : 6.35 m3/d

Water Inj Rate (CD) : 33.45 m3/d

