Manitoba
Innovation, Energy and Mines

APPLICATION FOR WELL LICENCE

In compliance with The Oil and Gas Act and the Drilling and Production Regulation, application is hereby made for a well licence for:

Well Name EOG Pierson HZNTL 15-06-02-28 (WPM)

Well Location 15 (LSD) C (Quadrant) 06 (Section) 02 (Township) 28 (Range) (WPM)

Name of Well Owner EOG RESOURCES CANADA INC.

Manitoba Corporation No 20855

Address of Well Owner 1300, 700 - 9TH AVENUE SW CALGARY, AB. T2P 3V4

Telephone (403)-663-8402 **Fax** (403)-663-8502

Surface Location 13 (LSD) C (Quadrant) 05 (Section) 02 (Township) 28 (Range) (WPM)

Ground Elevation 460.90 metres above sea level

Surface Co-ordinates	Directional or Horizontal Well BottomHole Co-ordinates
51.00m S of N of Sec 5	94.91m S of N of Sec 6
67.00m E of W of Sec 5	697.54m W of E of Sec 6

Surface Owner Dale Curtis Gardiner

Occupant none

Royalty Owner(s) R. Murray and Edith Erixon, Theodore and Rebecca Atrz, Don Harley Insurance

Freehold Oil and Gas Rights Leased By Standard Land (Mikala Hansen and Neil Hughes)
(Name of Oil and Gas Lease Agent and Corporation)

Crown Reservation or Lease No.

Type of Well OIL

Projected Total Depth 1650m in Triassic

	Casing Size O.D. mm	Weight Kg/m	Grade	From	To	Estimated Cemented Interval
1.	219.10	35.70	J-55	Surface	150.00	Surface
2.	139.70	23.10	J-55	Surface	1650.00	Surface
3.						

Drilling Contractor Precision Drilling (1987) Ltd. **Rig No.** 195

Expected Spud Date 30-Jun-2011

Responsible Agent of Company at Well Jim Brown **Telephone** (403)-844-1894

18-Apr-2011
(Date) DD/MMM/YYYY

(Signature of applicant)

For assistance in completing this form contact Paulette Seymour at (204) 945-6575 or Dan Surzyshyn at (204) 945-8102.

For Department Use Only

Well Licence No.: 8001 **UWI:** 100.15-06-002-28W1.00

Well Classification:DEVELOPMENT (NON CONFIDENTIAL)
Please see attached conditions.

18-May-2011
Date of Issue

Reviewed by:

Director of Petroleum

Lic. No. 8001 EOG Pierson HZNTL 15-06-02-28 (WPM)

A licence to drill a well known as EOG Pierson HZNTL 15-06-02-28 (WPM) is hereby granted to EOG RESOURCES CANADA INC..

The Licensee shall comply with all the provisions of the Oil and Gas Act, the Drilling and Production Regulation and the following terms and conditions:

1. The Petroleum Branch will forward a copy of the surface lease for the above location to the Surface Rights Board to satisfy the requirements of Section 15 of the Surface Rights Act

2. Two copies of the final directional survey are to be submitted to the Branch with the drilling tour reports as soon as drilling is finished. If the well is found to be less than 100 m from any of the boundaries of the northeast quarter of Section 6, then an off-target penalty may apply as per Section 13 and 14 of the Drilling and Production regulations.

3. The proposed drainage unit for the well includes Lsd’s 15 and 16 of Section 6-2-28 (WPM).

4. EOG is to submit mandatory digital submission of multi-spacing unit production allocation as per Informational Notice 11-03.

Lic. No. 8001 EOG Pierson HZNTL 15-06-02-28 (WPM)

MANITOBA SUBMISSION REQUIREMENTS FOR NEW WELLS

The following notifications and information must be provided to the appropriate district office.

OPERATIONS IN TOWNSHIPS 1 TO 6
Dept. of Innovation, Energy and Mines
Petroleum Branch
Box 220
23 Railway Avenue
Waskada MB R0M 2E0
Phone: 204-673-2472 (24 hour service)
Fax: 204-673-2767

OPERATIONS NORTH OF TOWNSHIP 6
Dept. of Innovation, Energy and Mines
Petroleum Branch
Box 1359
227 King Street West
Virden MB R0M 2C0
204-748-4260 (24 hour service)
204-748-2208

FOR DEPT. USE ONLY

DRILLING, COMPLETION AND INITIAL PRODUCTION SUBMISSION REQUIREMENTS

RECEIVED

COMPANY REPRESENTATIVE AT WELLSITE IS RESPONSIBLE FOR ITEMS 1 TO 9.

1. 24 hours advance notice of intent to spud a well. _____
2. 2 hours advance notice of intent to run and cement surface casing or production casing. _____
3. 2 hours advance notice of intent to pull pipe after running a DST. _____
4. 2 hours advance notice of a dry hole abandonment. Verbal approval to abandon must be obtained from the district office. _____
5. Weekly status reports on all activities up to rig release. Reports to be called in each MONDAY MORNING prior to 9 a.m. _____
6. A complete copy of the drilling tours. _____
7. Two (2) copies of field prints of all logs. _____
8. Tagged image files of all open hole logs and cased hole logs and LAS (Log ASCII) Files) for any log that may be represented in LAS format (submitted on 1.44 floppy disk, CD or DVD format) as per Informational Notice 05-05. _____
9. Two (2) copies of any directional surveys run (submitted in digital format as per Informational _____
10. A one (1) litre sample of drilling fluids. Squeezing of a pit is not to proceed without the consent of the district office. _____
11. Any drill cutting samples and cores are to be shipped to: Rock Preparation Lab, 10 Midland Street, Winnipeg MB, R3E 2Y6. _____
12. Two (2) copies of all reports of drill stem tests, core analyses or of any other test. (E.g. fluid analyses, pressure surveys, etc.) _____
13. Two (2) copies of any Geological Report. _____
14. Chronological report of all completion operations including full details. _____
15. Two (2) copies of all completion logs. _____
16. Two (2) copies of the Initial Production Report (forms attached). _____

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 5.0, Report Date: 9/21/2012

Security Status: General

UWI	Surface Legal Location	License #	Field Name	Province
100/15-06-002-28W1/00	13C-05-002-28W1	8001	Pierson	Manitoba

Well Configuration Type	KB Elevation (mKB)	KB-Ground Distance (mKB)	KB-Casing Flange Distance (mKB)	KB-Tubing Head Distance (mKB)
HORIZONTAL	465.3	4.4	4.0	

Type	Sub Type
Initial Completion	

Objective

Contractor	Rig Number
	Falcon 4

AFE Number	Total AFE Amount (Cost)	Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)
12J0056	531,090	213,975	537,847

Weather	T (°C)	Road Condition	Tubing Pressure (kPa)	Casing Pressure (kPa)	Rig Time (hr)
Sunny	17	Good		450	6.00

Job Contact	Title	Contact Number
Richard Thomas	Consultant	(403)-921-5051

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
07:00	12:00	5.00	LOCL	Lock Wellhead & Secure	Well shut in.
12:00	12:30	0.50	SMTG	Safety Meeting	Conducted a walk around inspection of the lease and equip. Held a safety/procedures meeting with the crew and issued EOG Job Hazard Analysis / Work Permit.
12:30	13:00	0.50	SRIG	Rig Up/Down	Rigged up the rig and equip to EOG, Falcon Ent, MIED&M, CAODC and OH&S specs. Unloaded Fontanas trailer.
13:00	13:30	0.50	FBCK	Flowback Well	Bled off well to the rig tank. (all water no oil)
13:30	14:00	0.50	BOPT	Pressure Test BOP's	Function and pressure tested class II BOP's from 1.40 MPa Low to 14.0 MPa high - tested good.
14:00	14:30	0.50	BOPI	Install BOP's	Removed bonnet, frac valve and installed BOP's. Rigged in work floor and 73.00 mm tubing equipment.
14:30	16:00	1.50	RUTB	Run Tubing	Tallied drifted and ran in to 1123.01 mKb with 0.5 m stick up on jt # 116.
16:00	17:30	1.50	CLN	Clean Out Hole	Rigged up and reverse circulated well. Observed circ after 0.72 m3, circulated clean for 1.5 hrs at 570 L/min. Observed sand and a small amount of oil in returns. Lost 4.86 m3 salt water.
17:30	18:00	0.50	PULT	Pull Tubing	Pull and lay down 11 jts with 14 jts left on the trailer. TBG as follows. Stretch for 7,000 dN tension (0.20 m), KB-TH 3.27 m 94 - 73 mm J-55 9.67 Kg/m TBG (905.06 m) 1 - 139.7 mm x 73 mm KDA-L left set 50,000 # shear TBG anchor (0.89 m) 19 - 73 mm J-55 9.67 Kg/m TBG (182.87 m) 1 - API PSN (0.34 m) 1 - 73 mm J-55 9.67 Kg/m tail joint (9.64 m) 1 - 73 mm x 125.7 mm gas separator (3.24 m)
18:00	18:15	0.25	GOP	General Operations	Anchor at 909.82 mKb, PSN at 1006.40 mKb, and BOT at 1019.25 mKb, flowed the well over night to the 400 Bbl tanks
18:15	07:15	13.00	LOCL	Lock Wellhead & Secure	Secured the well, cleaned up lease. SDFN 17:30.

Report Fluids Summary

Fluid	To well (m³)	From well (m³)	To lease (m³)	From lease (m³)
Water	22.00	14.00	36.00	0.00

Safety Checks

Time	Des	Type	Com
12:00		Safety Meeting	12:00 Held a safety/procedures meeting with the crew and issued a EOG safe work permit. Conducted a walk around inspection of the lease and equip. Discussed: - Slips trips & falls - proper PPE at all times - muster points - Flammable gas - overhead hazards - pinch points - wind direction - pressure - good communication - proper lifting techniques - communication

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 5.0, Report Date: 9/21/2012

Security Status: General

UWI	Surface Legal Location	License #	Field Name	Province
100/15-06-002-28W1/00	13C-05-002-28W1	8001	Pierson	Manitoba
Well Configuration Type	**KB Elevation (mKB)**	**KB-Ground Distance (mKB)**	**KB-Casing Flange Distance (mKB)**	**KB-Tubing Head Distance (mKB)**
HORIZONTAL	465.3	4.4	4.0	

Logs

Date	Type	Top (mKB)	Btm (mKB)	Cased?

Perforations

Date	Zone	Top (mKB)	Btm (mKB)	Current Status

<typ> on <dttm>

Date	Zone	Type	Stim/Treat Company

Stg #	Stage Type	Top (mKB)	Btm (mKB)	Fluid Volume (m³)

Other In Hole

Des	Run Date	OD (mm)	Top (mKB)	Btm (mKB)

Cement

Des	Start Date	Cement Comp

Daily Completion and Workover

eog resources

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 6.0, Report Date: 9/22/2012

Security Status: General

UWI	Surface Legal Location	License #	Field Name	Province
100/15-06-002-28W1/00	13C-05-002-28W1	8001	Pierson	Manitoba

Well Configuration Type	KB Elevation (mKB)	KB-Ground Distance (mKB)	KB-Casing Flange Distance (mKB)	KB-Tubing Head Distance (mKB)
HORIZONTAL	465.3	4.4	4.0	

Type	Sub Type
Initial Completion	

Objective

Contractor	Rig Number
	Falcon 4

AFE Number	Total AFE Amount (Cost)	Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)
12J0056	531,090	5,931	543,778

Weather	T (°C)	Road Condition	Tubing Pressure (kPa)	Casing Pressure (kPa)	Rig Time (hr)
Sunny	15	Good	-10	50	5.00

Job Contact	Title	Contact Number
Richard Thomas	Consultant	(403)-921-5051

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
07:00	07:30	0.50	LOCL	Lock Wellhead & Secure	Well shut in.
07:30	08:00	0.50	SMTG	Safety Meeting	7:30 Held safety/procedure meeting with crew and issued EOG Job Hazard Analysis/Work Permit. Conducted inspection of the lease and equipment. SITP = -10 kPa. SICP = 50 kPa.
08:00	08:45	0.75	DTIM	Downtime	Air lines froze on the rig overnight, could not get any air pressure, bypassed the frozen line.
08:45	09:30	0.75	GOP	General Operations	Removed and secured BOP.Set 1 - 139.7 mm x 73 mm KDA-L left set 50,000 # shear tubing anchor w/ 7,000 daN over string weight. Installed bonnet, built wellhead.
09:30	11:00	1.50	RURP	Run Rods & Pump	Rigged in work floor, rod BOP, and rod equipment. Surface tested 1 - BHP # CEFV-55712, 25x200 RSAC 18-1, 20 Ring PA (tested good). Torqued rods to spec. Ran rods as follows: 1 - BHP # CEFV- 55712, 25x200 RSAC 18-1, 20 Ring PA 37 - 19.1 mm x 7.62 m x 63.5 mm NETB scr. 8/per, D-75 w/ rollers (3/12) 22 - 19.1 mm x 7.62 m x 63.5 mm NETB scr. 8/per D-75 (3/12) 68 - 22.2 mm x 7.62 m x 63.5 mm TB scr. 6/per D-75 (7/12) 1 - 22.2 mm x 3.06 m x 63.5 mm TB scr. pony rod, D-75 1 - 22.2 mm x 2.44 m x 63.5 mm TB scr. pony rod, D-75 1 - 38.1 mm x 9.14 m Polish Rod Rigged out rod equipment.
11:00	11:15	0.25	GOP	General Operations	Tagged PSN, spaced out, installed polish rod seated BHP and secured stuffing box.
11:15	11:30	0.25	PTST	Pressure Test	Stroked up with rig to 7.0 MPa - tested good.
11:30	12:00	0.50	GOP	General Operations	Hung horse's head on Weatherford Ampscot 320 jack.
12:00	12:30	0.50	SRIG	Rig Up/Down	Rigged out service rig and associated equipment.
12:30	12:45	0.25	RMOV	Rig Move	Moved Falcon rig 4 over to 100/11-35-2-28w1.
12:45	07:45	19.00	LOCL	Lock Wellhead & Secure	Secured the well, cleaned up lease. Ready for production. Left 3.18 m stick up. SDFN 12:30

Report Fluids Summary

Fluid	To well (m³)	From well (m³)	To lease (m³)	From lease (m³)
Water	0.00	44.00	0.00	44.00

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 6.0, Report Date: 9/22/2012

Security Status: General

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Logs

Date	Type	Top (mKB)	Btm (mKB)	Cased?

Perforations

Date	Zone	Top (mKB)	Btm (mKB)	Current Status

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Date	Zone	Type	Stim/Treat Company

Stg #	Stage Type	Top (mKB)	Btm (mKB)	Fluid Volume (m³)

Other In Hole

Des	Run Date	OD (mm)	Top (mKB)	Btm (mKB)

Cement

Des	Start Date	Cement Comp

Daily Completion and Workover

eog resources

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 6.0, Report Date: 9/22/2012

Security Status: General

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HORIZONTAL	465.3	4.4	4.0	

Type	Sub Type
Initial Completion	

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Water	0.00	44.00	0.00	44.00

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 6.0, Report Date: 9/22/2012

Security Status: General

UWI	Surface Legal Location	License #	Field Name	Province
100/15-06-002-28W1/00	13C-05-002-28W1	8001	Pierson	Manitoba
Well Configuration Type	**KB Elevation (mKB)**	**KB-Ground Distance (mKB)**	**KB-Casing Flange Distance (mKB)**	**KB-Tubing Head Distance (mKB)**
HORIZONTAL	465.3	4.4	4.0	

Safety Checks

Time	Des	Type	Com
07:30		Safety Meeting	07:30 Held a safety/procedures meeting with the crew and issued a EOG safe work permit. Conducted a walk around inspection of the lease and equip. Discussed: - fatigue - wind direction - pressure - good communication - proper lifting techniques - organization - communication - Slips trips & falls - proper PPE at all times - muster points - Flammable gas - overhead hazards - pinch points - vehicle inspections - winter gear

Logs

Date	Type	Top (mKB)	Btm (mKB)	Cased?

Perforations

Date	Zone	Top (mKB)	Btm (mKB)	Current Status

<typ> on <dttm>

Date	Zone	Type	Stim/Treat Company

Stg #	Stage Type	Top (mKB)	Btm (mKB)	Fluid Volume (m³)

Other In Hole

Des	Run Date	OD (mm)	Top (mKB)	Btm (mKB)

Cement

Des	Start Date	Cement Comp

EOG Downhole Schematic

eog resources

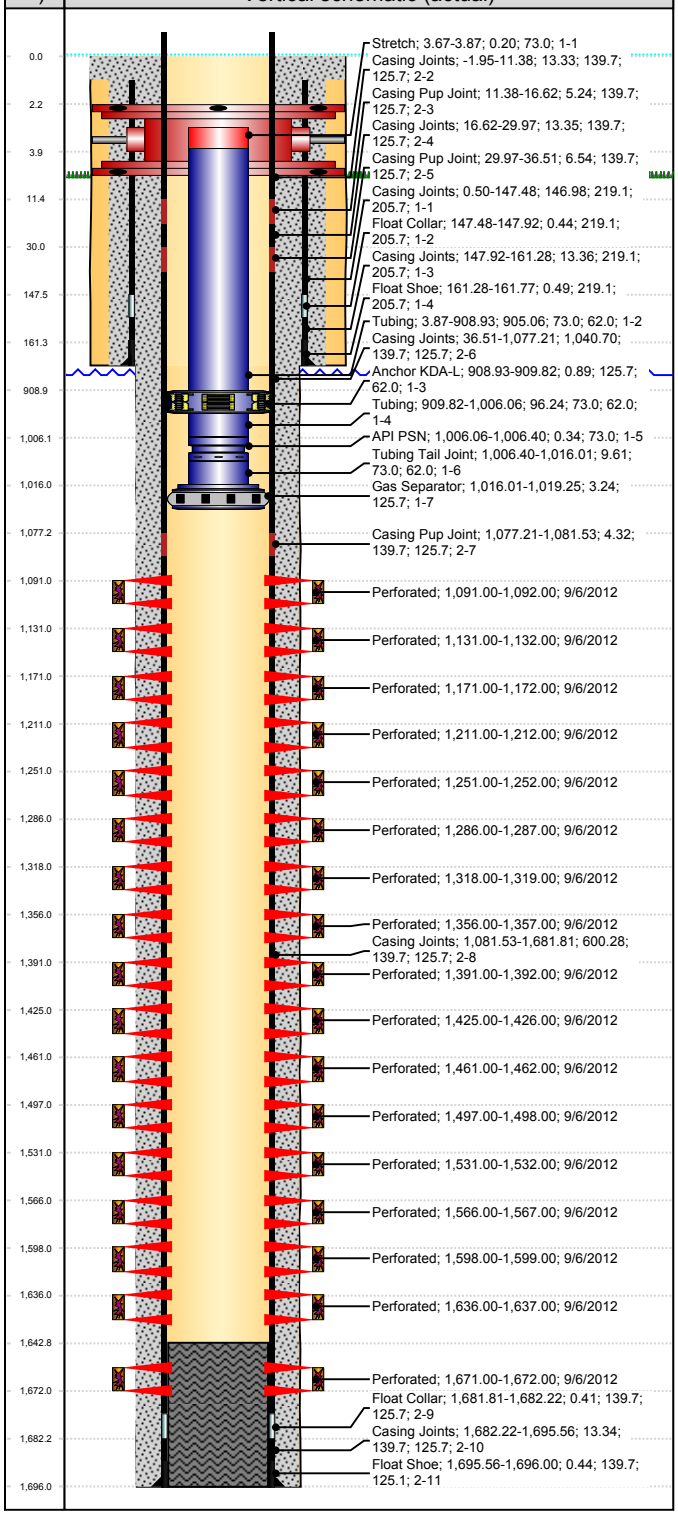
Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Security Status: General

UWI	Surface Legal Location	Field Name	Province	License #	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	Manitoba	8001	HORIZONTAL

KB Elevation (mKB)	Ground Elevation (mKB)	KB-CF (mKB)	KB-TH (mKB)	Total Depth (mKB)	Spud Date	Rig Release
465.3	460.9	4.0		1,696.0	8/26/2012	8/30/2012

HORIZONTAL - Original Hole, 9/21/2012 4:46:00 PM



Casing Strings

Csg Des	OD (mm)	Wt/Len (kg/m)	Grade	Set Depth (mKB)
Surface	219.1	35.716	J-55	161.77
Production	139.7	23.067	J-55	1,696.00

Cement Stages

Des	Type	Top (mKB)	Btm (mKB)	Stroke (m)	Recip Rate (spm)	Vol Cement Ret (m³)
Surface Casing Cement	Casing	0.00	161.80	2.00	2	2.00
Production Casing Cement	Casing	0.00	1,696.00	5.00	6	5.00

Perforations

Zone	Top (mKB)	Btm (mKB)	Current Status
Spearfish, Original Hole	1,091.0	1,092.0	Open - Not Flowing (1,091.0 - 1,092.0)
Spearfish, Original Hole	1,131.0	1,132.0	Open - Not Flowing (1,131.0 - 1,132.0)
Spearfish, Original Hole	1,171.0	1,172.0	Open - Not Flowing (1,171.0 - 1,172.0)
Spearfish, Original Hole	1,211.0	1,212.0	Open - Not Flowing (1,211.0 - 1,212.0)
Spearfish, Original Hole	1,251.0	1,252.0	Open - Not Flowing (1,251.0 - 1,252.0)
Spearfish, Original Hole	1,286.0	1,287.0	Open - Not Flowing (1,286.0 - 1,287.0)
Spearfish, Original Hole	1,318.0	1,319.0	Open - Not Flowing (1,318.0 - 1,319.0)
Spearfish, Original Hole	1,356.0	1,357.0	Open - Not Flowing (1,356.0 - 1,357.0)
Spearfish, Original Hole	1,391.0	1,392.0	Open - Not Flowing (1,391.0 - 1,392.0)
Spearfish, Original Hole	1,425.0	1,426.0	Open - Not Flowing (1,425.0 - 1,426.0)
Spearfish, Original Hole	1,461.0	1,462.0	Open - Not Flowing (1,461.0 - 1,462.0)
Spearfish, Original Hole	1,497.0	1,498.0	Open - Not Flowing (1,497.0 - 1,498.0)
Spearfish, Original Hole	1,531.0	1,532.0	Open - Not Flowing (1,531.0 - 1,532.0)
Spearfish, Original Hole	1,566.0	1,567.0	Open - Not Flowing (1,566.0 - 1,567.0)
Spearfish, Original Hole	1,598.0	1,599.0	Open - Not Flowing (1,598.0 - 1,599.0)
Spearfish, Original Hole	1,636.0	1,637.0	Open - Not Flowing (1,636.0 - 1,637.0)
Spearfish, Original Hole	1,671.0	1,672.0	Open - Not Flowing (1,671.0 - 1,672.0)

Other Picks

Formation Name	Top Depth (mKB)	Bottom Depth (mKB)

Tubing Strings

Tubing - Production set at 1,019.25mKB on 9/21/2012 15:00

Tubing Description	String Max N...	Wt (kg/m)	String Grade	Set Depth (mKB)
Tubing - Production	73.0	9.673	J-55	1,019.25

Comment

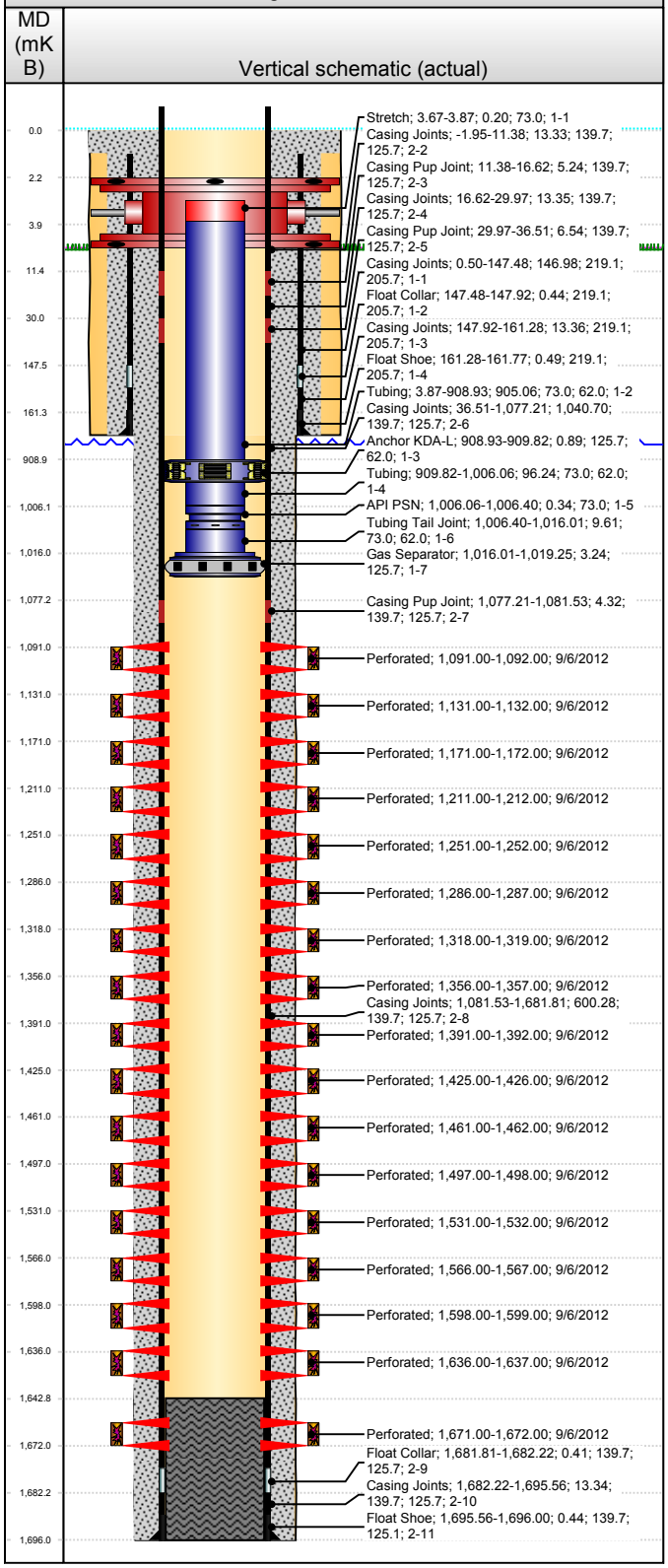
Item #	Jts	Item Des	OD (mm)	ID (mm)	Len (m)	Top (mKB)	Btm (mKB)
1-1	1	Stretch	73.0		0.20	3.7	3.87

EOG Downhole Schematic

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Security Status: General

HORIZONTAL - Original Hole, 9/21/2012 4:46:00 PM



Item #	Jts	Item Des	OD (mm)	ID (mm)	Len (m)	Top (mKB)	Btm (mKB)
1-2	94	Tubing	73.0	62.0	905.06	3.9	908.93
1-3	1	Anchor KDA-L	125.7	62.0	0.89	908.9	909.82
1-4	10	Tubing	73.0	62.0	96.24	909.8	1,006.06
1-5	1	API PSN	73.0		0.34	1,006.1	1,006.40
1-6	1	Tubing Tail Joint	73.0	62.0	9.61	1,006.4	1,016.01
1-7	1	Gas Separator	125.7		3.24	1,016.0	1,019.25

Wellheads

Casing bowl, Woodgroup on 8/26/2012 19:45

Type	Make
Casing bowl	Woodgroup

Section	Des	Make	Model	WP (kPa)	Service	Com
	Casing Bowl	Woodgroup		14,000		

Rod and Pump Details

eog resources

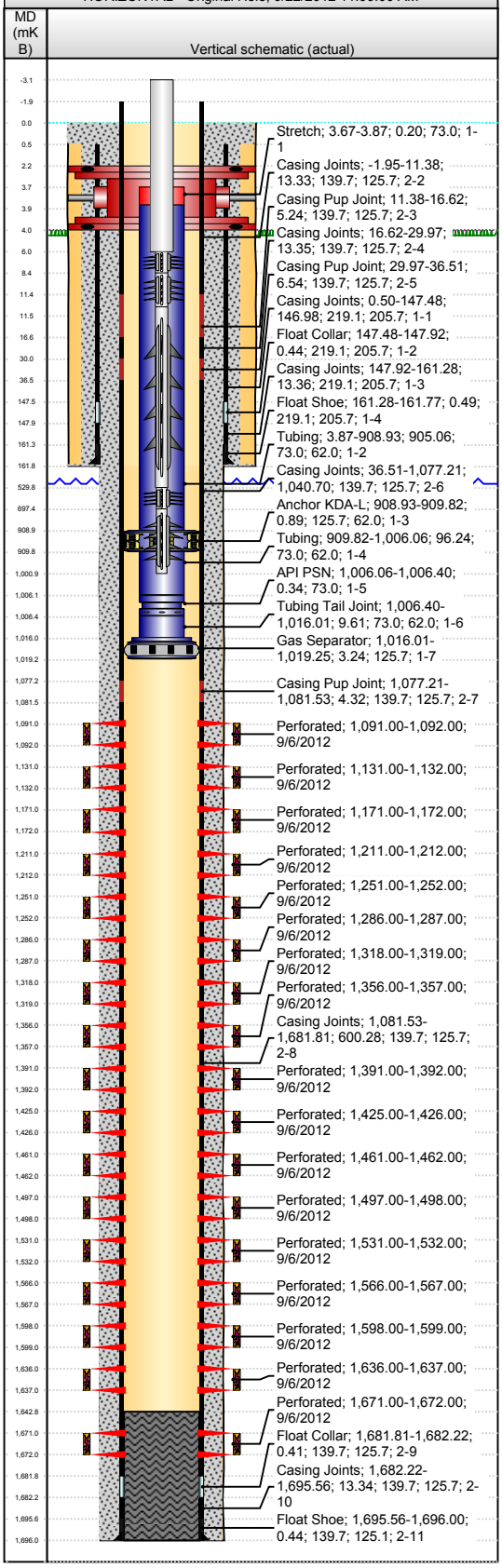
Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Security Status: General

UWI	Surface Legal Location	License #	Field Name	Province
100/15-06-002-28W1/00	13C-05-002-28W1	8001	Pierson	Manitoba

Well Configuration Type	KB Elevation (mKB)	KB-Ground Distance (mKB)	KB-Casing Flange Distance (mKB)	KB-Tubing Head Distance (mKB)
HORIZONTAL	465.3	4.4	4.0	

HORIZONTAL - Original Hole, 9/22/2012 11:00:00 AM



Rod Description	Set Depth (mKB)	Run Date	Pull Date
Rod	1,006.40	9/22/2012	

Rod Components

Jts	Item Description	OD (mm)	Wt (kg/m)	Grade	Scraper Description	Length (m)	Top (mKB)	Btm (mKB)
1	Polished rod	38.1		NULL		9.10	-3.14	5.96
1	Scrapered TB pony	22.2		D	TB FCE	2.44	5.96	8.40
1	Scrapered TB pony	22.2		D	TB FCE	3.06	8.40	11.46
68	Scrapered TB rods	22.2		D	TB	518.30	11.46	529.76
22	Scrapered NETB rods	19.0		D	NETB	167.68	529.76	697.44
37	Scrapered NETB rods w/ rollers	19.0		D	NETB	303.47	697.44	1,000.91
1	CEFV 55712 25-200 RSAC 18-1 20 R.P.A. 184"					5.49	1,000.91	1,006.40

Pump Details

Make	Model	Serial Number

Pump Bore (mm)	API Pump Type	API Barrel Type	API Anchor Type	Seating Assembly Type

Barrel Length (m)	Nominal Plunger Length (m)	Upper Extension Length (m)	Lower Extension Length (m)

Plung OD Clr (mm)	Seating Assembly Description	Seating Assembly Size (mm)

API Barrel Material	API Plunger Material	Gas Anc OD (mm)	Gas Anchor Length (m)

Traveling Valve Ball Material	Traveling Valve Seat Material	Standing Valve Ball Material	Standing Valve Seat Material

Rod and Pump Details

eog resources

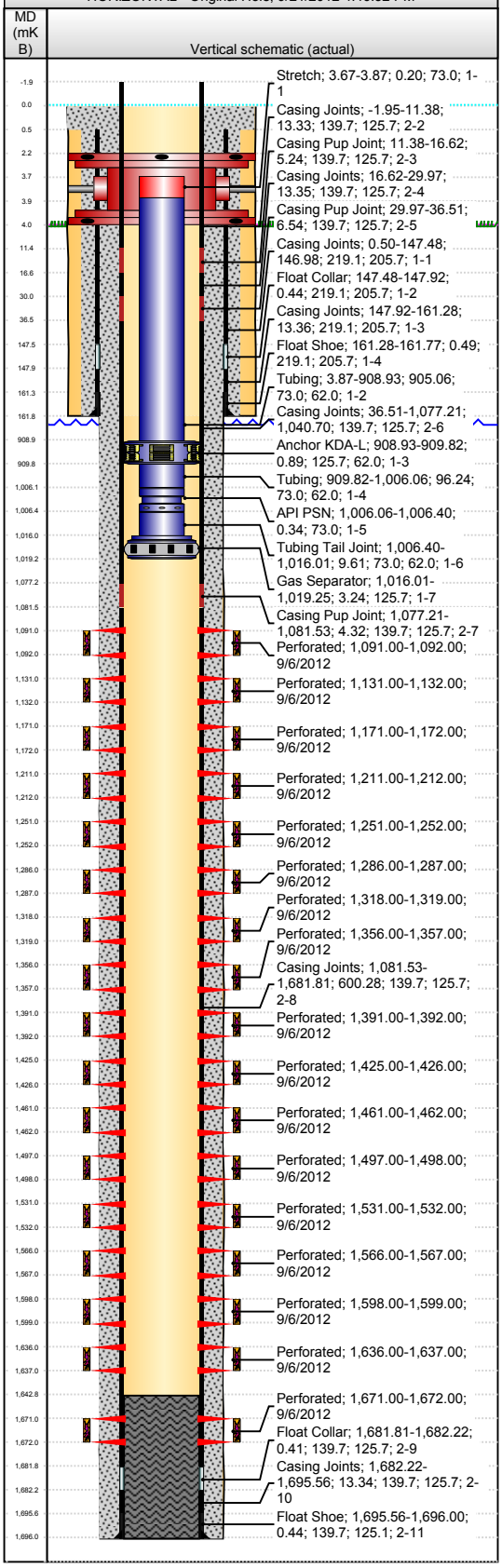
Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Security Status: General

UWI	Surface Legal Location	License #	Field Name	Province
100/15-06-002-28W1/00	13C-05-002-28W1	8001	Pierson	Manitoba

Well Configuration Type	KB Elevation (mKB)	KB-Ground Distance (mKB)	KB-Casing Flange Distance (mKB)	KB-Tubing Head Distance (mKB)
HORIZONTAL	465.3	4.4	4.0	

HORIZONTAL - Original Hole, 9/21/2012 4:46:32 PM



Rod Description	Set Depth (mKB)	Run Date	Pull Date

Rod Components

Jts	Item Description	OD (mm)	Wt (kg/m)	Grade	Scraper Description	Length (m)	Top (mKB)	Btm (mKB)

EOG Downhole Schematic

eog resources

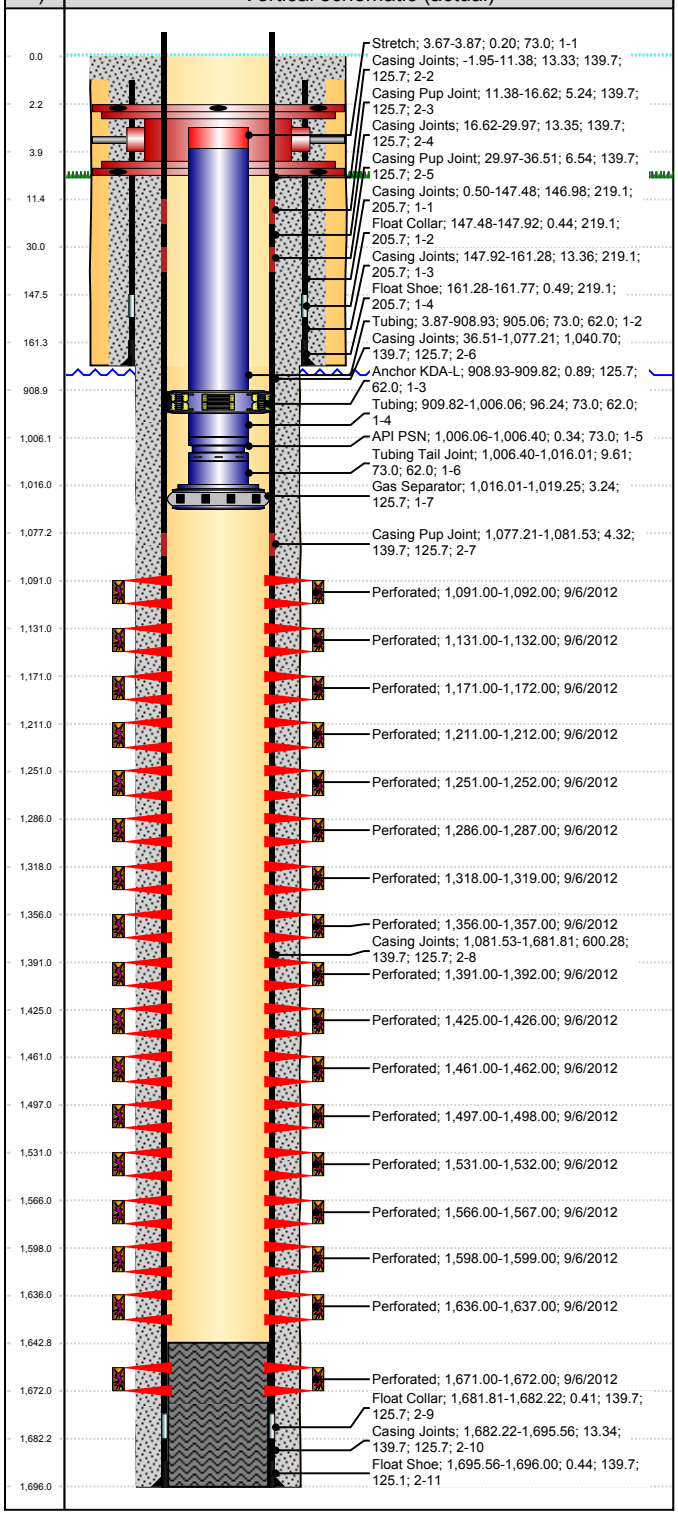
Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Security Status: General

UWI	Surface Legal Location	Field Name	Province	License #	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	Manitoba	8001	HORIZONTAL

KB Elevation (mKB)	Ground Elevation (mKB)	KB-CF (mKB)	KB-TH (mKB)	Total Depth (mKB)	Spud Date	Rig Release
465.3	460.9	4.0		1,696.0	8/26/2012	8/30/2012

HORIZONTAL - Original Hole, 9/21/2012 4:46:00 PM



Casing Strings

Csg Des	OD (mm)	Wt/Len (kg/m)	Grade	Set Depth (mKB)
Surface	219.1	35.716	J-55	161.77
Production	139.7	23.067	J-55	1,696.00

Cement Stages

Des	Type	Top (mKB)	Btm (mKB)	Stroke (m)	Recip Rate (spm)	Vol Cement Ret (m³)
Surface Casing Cement	Casing	0.00	161.80	2.00	2	2.00
Production Casing Cement	Casing	0.00	1,696.00	5.00	6	5.00

Perforations

Zone	Top (mKB)	Btm (mKB)	Current Status
Spearfish, Original Hole	1,091.0	1,092.0	Open - Not Flowing (1,091.0 - 1,092.0)
Spearfish, Original Hole	1,131.0	1,132.0	Open - Not Flowing (1,131.0 - 1,132.0)
Spearfish, Original Hole	1,171.0	1,172.0	Open - Not Flowing (1,171.0 - 1,172.0)
Spearfish, Original Hole	1,211.0	1,212.0	Open - Not Flowing (1,211.0 - 1,212.0)
Spearfish, Original Hole	1,251.0	1,252.0	Open - Not Flowing (1,251.0 - 1,252.0)
Spearfish, Original Hole	1,286.0	1,287.0	Open - Not Flowing (1,286.0 - 1,287.0)
Spearfish, Original Hole	1,318.0	1,319.0	Open - Not Flowing (1,318.0 - 1,319.0)
Spearfish, Original Hole	1,356.0	1,357.0	Open - Not Flowing (1,356.0 - 1,357.0)
Spearfish, Original Hole	1,391.0	1,392.0	Open - Not Flowing (1,391.0 - 1,392.0)
Spearfish, Original Hole	1,425.0	1,426.0	Open - Not Flowing (1,425.0 - 1,426.0)
Spearfish, Original Hole	1,461.0	1,462.0	Open - Not Flowing (1,461.0 - 1,462.0)
Spearfish, Original Hole	1,497.0	1,498.0	Open - Not Flowing (1,497.0 - 1,498.0)
Spearfish, Original Hole	1,531.0	1,532.0	Open - Not Flowing (1,531.0 - 1,532.0)
Spearfish, Original Hole	1,566.0	1,567.0	Open - Not Flowing (1,566.0 - 1,567.0)
Spearfish, Original Hole	1,598.0	1,599.0	Open - Not Flowing (1,598.0 - 1,599.0)
Spearfish, Original Hole	1,636.0	1,637.0	Open - Not Flowing (1,636.0 - 1,637.0)
Spearfish, Original Hole	1,671.0	1,672.0	Open - Not Flowing (1,671.0 - 1,672.0)

Other Picks

Formation Name	Top Depth (mKB)	Bottom Depth (mKB)

Tubing Strings

Tubing - Production set at 1,019.25mKB on 9/21/2012 15:00

Tubing Description	String Max N...	Wt (kg/m)	String Grade	Set Depth (mKB)
Tubing - Production	73.0	9.673	J-55	1,019.25

Comment

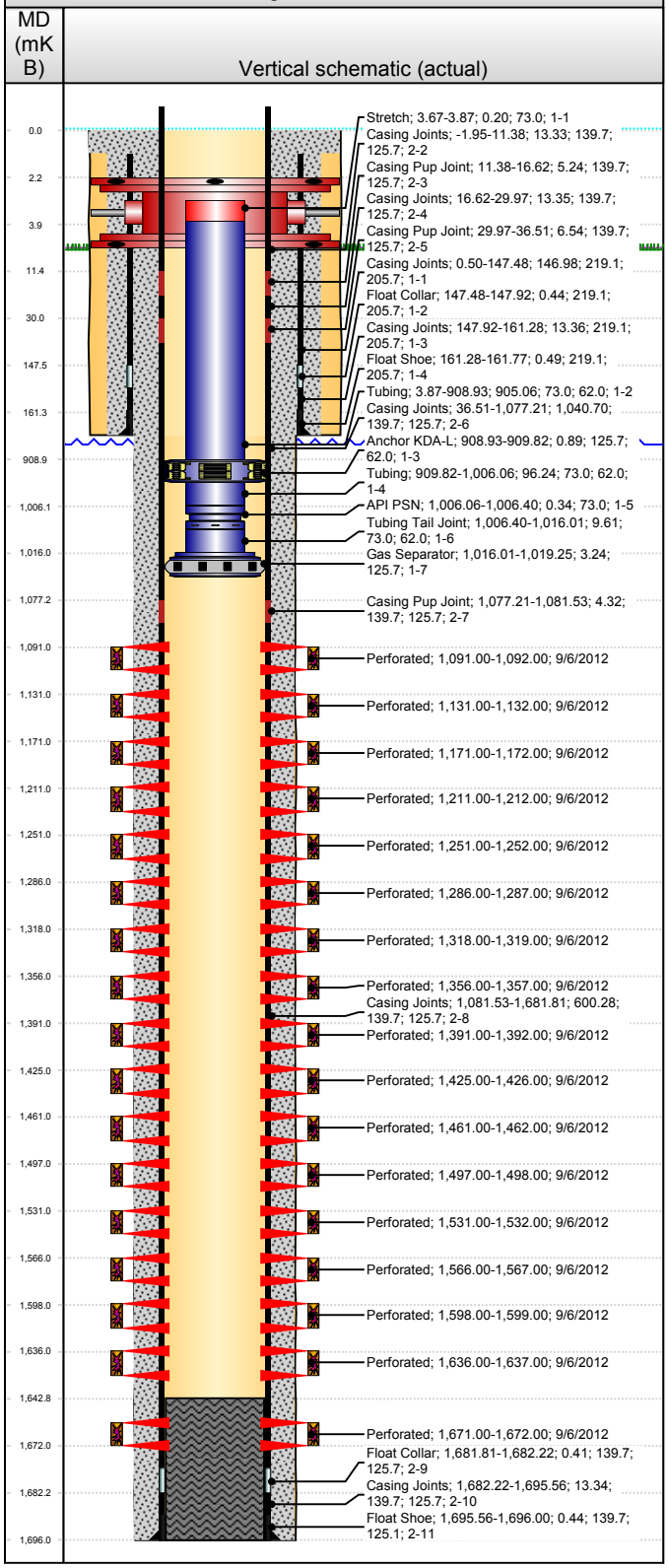
Item #	Jts	Item Des	OD (mm)	ID (mm)	Len (m)	Top (mKB)	Btm (mKB)
1-1	1	Stretch	73.0		0.20	3.7	3.87

EOG Downhole Schematic

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Security Status: General

HORIZONTAL - Original Hole, 9/21/2012 4:46:00 PM



Item #	Jts	Item Des	OD (mm)	ID (mm)	Len (m)	Top (mKB)	Btm (mKB)
1-2	94	Tubing	73.0	62.0	905.06	3.9	908.93
1-3	1	Anchor KDA-L	125.7	62.0	0.89	908.9	909.82
1-4	10	Tubing	73.0	62.0	96.24	909.8	1,006.06
1-5	1	API PSN	73.0		0.34	1,006.1	1,006.40
1-6	1	Tubing Tail Joint	73.0	62.0	9.61	1,006.4	1,016.01
1-7	1	Gas Separator	125.7		3.24	1,016.0	1,019.25

Wellheads

Casing bowl, Woodgroup on 8/26/2012 19:45

Type	Make
Casing bowl	Woodgroup

Section	Des	Make	Model	WP (kPa)	Service	Com
	Casing Bowl	Woodgroup		14,000		

Tubing

eog resources

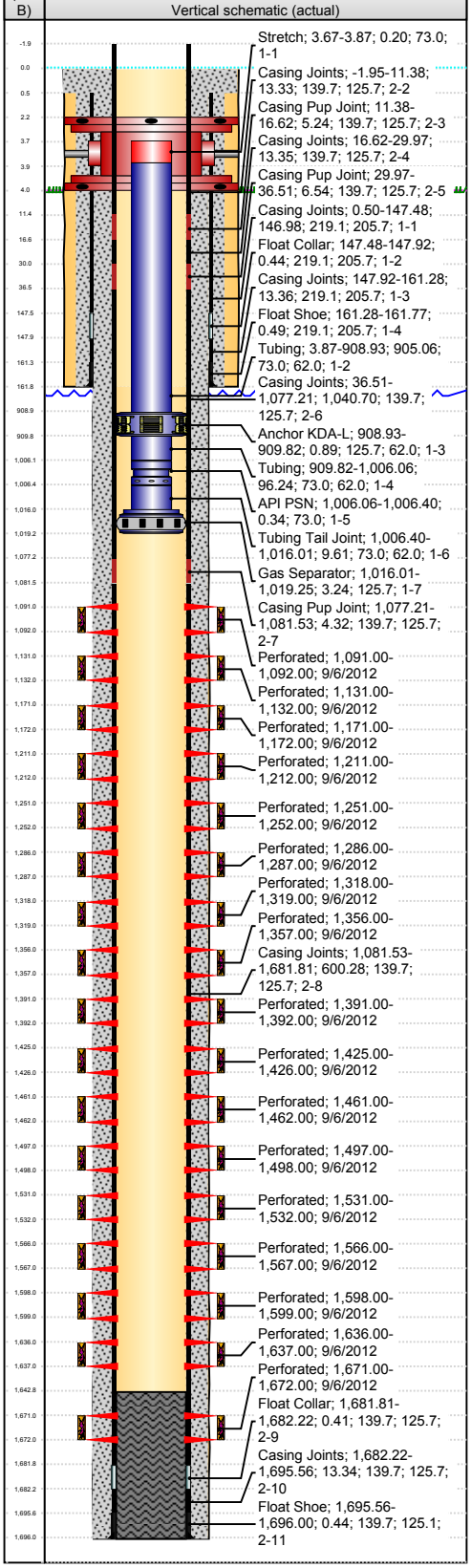
Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Security Status: General

UWI	Surface Legal Location	License #	Field Name	Province
100/15-06-002-28W1/00	13C-05-002-28W1	8001	Pierson	Manitoba

Well Configuration Type	KB Elevation (mKB)	KB-Ground Distance (mKB)	KB-Casing Flange Distance (mKB)	KB-Tubing Head Distance (mKB)
HORIZONTAL	465.3	4.4	4.0	

HORIZONTAL - Original Hole, 9/21/2012 3:00:00 PM



Tubing

Tubing Description	Set Depth (mKB)	Run Date	Pull Date
Tubing - Production	1,019.25	9/21/2012	

Jts	Item Des	OD (mm)	ID (mm)	Wt (kg/m)	Grade	Top Thread	Len (m)	Top (mKB)	Btm (mKB)
1	Stretch	73.0					0.20	3.7	3.87
94	Tubing	73.0	62.0	9.673	J-55		905.06	3.9	908.93
1	Anchor KDA-L	125.7	62.0				0.89	908.9	909.82
10	Tubing	73.0	62.0	9.673	J-55		96.24	909.8	1,006.06
1	API PSN	73.0					0.34	1,006.1	1,006.40
1	Tubing Tail Joint	73.0	62.0	9.673	J-55		9.61	1,006.4	1,016.01
1	Gas Separator	125.7					3.24	1,016.0	1,019.25

Tubing

eog resources

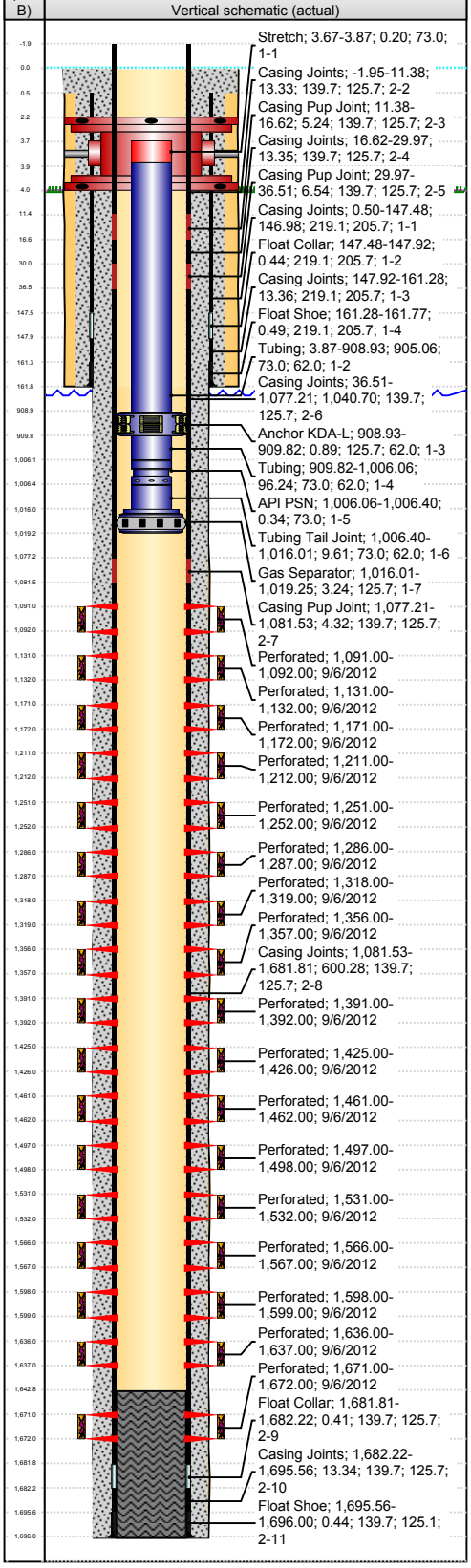
Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Security Status: General

UWI	Surface Legal Location	License #	Field Name	Province
100/15-06-002-28W1/00	13C-05-002-28W1	8001	Pierson	Manitoba

Well Configuration Type	KB Elevation (mKB)	KB-Ground Distance (mKB)	KB-Casing Flange Distance (mKB)	KB-Tubing Head Distance (mKB)
HORIZONTAL	465.3	4.4	4.0	

HORIZONTAL - Original Hole, 9/21/2012 3:00:00 PM



Tubing

Tubing Description	Set Depth (mKB)	Run Date	Pull Date
Tubing - Production	1,019.25	9/21/2012	

Jts	Item Des	OD (mm)	ID (mm)	Wt (kg/m)	Grade	Top Thread	Len (m)	Top (mKB)	Btm (mKB)
1	Stretch	73.0					0.20	3.7	3.87
94	Tubing	73.0	62.0	9.673	J-55		905.06	3.9	908.93
1	Anchor KDA-L	125.7	62.0				0.89	908.9	909.82
10	Tubing	73.0	62.0	9.673	J-55		96.24	909.8	1,006.06
1	API PSN	73.0					0.34	1,006.1	1,006.40
1	Tubing Tail Joint	73.0	62.0	9.673	J-55		9.61	1,006.4	1,016.01
1	Gas Separator	125.7					3.24	1,016.0	1,019.25

TUNDRA OIL & GAS

EVERYONE HOME SAFE EVERY DAY.

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 1.0, Report Date: 8/31/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Primary Job Type	Secondary Job Type
Initial Completion	

Objective	Target Formation

Rigs / Coil Tubing Units

Contractor	Rig Number	Rig Start Date
	Falcon 4	9/21/2012
Rig Subtype	**Coil Tubing Size (mm)**	**Coil Tubing Length (ft)**
Land		

Job Contacts

Contact Name	Title	Phone Mobile
Scott Dalziel	Completions Foreman	(204) 522-0075
Ryan McGregor	Completions Foreman	(204) 522-0732
Peter Kindl	Consultant	(780) 933-7383
Richard Thomas	Consultant	(403)-921-5051
Lucas Graham	Consultant	(204) 851-5623
Ryan McGregor	Consultant	(204) 522-0732

AFE Number	Total AFE + Supp Amount (Cost)	Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)
12J0056	531,090.00	6,490.00	6,490.00

Daily Readings

Weather	Temperature (°F)	Road Condition	Rig Time (hr)
Sunny	82.4	Soft	3.00

Operations Summary

10:00. Had Woodgroup (Sto/Van) cut & dress casing, install casing vent, primary and secondary seal, and Woodgroup 3000# 7 1/16" Tubing Head SN P0000 36374 - 0100 - 005. Pressure tested the seals and R49 ring gasket to 14,000 kPa. held OK. 13:00

Operations Next Report Period

Well is shut in.

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
10:00	10:30	0.50	SMTG	Safety Meeting	Held a safety and procedures meeting with Woodgroup and issued a safe work permit. Discussed high pressure, pinch points and overhead hazards.
10:30	12:30	2.00	IWHD	Install Wellhead	Cut and dressed the 139.7 mm casing. Installed the Primary Seal. Installed Woodgroup 3000# 7 1/16" Tubing Head SN P0000 36374 - 0100 - 005 c/w Secondary Seal. Installed the Surface Casing Vent.
12:30	13:00	0.50	PTST	Pressure Test	Pressure tested the Tubing Head, R-49 ring gasket and seals to 14,000 kPa, held OK for 15 minutes.
13:00	07:00	18.00	inactive	inactive	Secured the well. Ready for service rig.

Report Fluids Summary

Fluid	To well (bbl)	From well (bbl)	To lease (bbl)	From lease (bbl)

Safety Checks

Time	Des	Type	Com

Logs

Time	Type	Top (ftKB)	Btm (ftKB)	Cased?

Perforations

Time	Top (ftKB)	Btm (ftKB)	Current Status	Linked Zone

Stimulations Summary

Type	Subtype	Stim/Treat Company

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)

Tubing Run

Run Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 1.0, Report Date: 8/31/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Tubing Pulled

Pull Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Other in Hole Run (Bridge Plugs, etc)

Run Time	Des	OD (in)	Top (ftKB)	Btm (ftKB)

Other in Hole Pulled (Bridge Plugs, etc)

Pull Time	Des	Top (ftKB)	Btm (ftKB)	OD (in)

Cement

Start Time	Des	Type	String	Cement Comp

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 2.0, Report Date: 9/6/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Primary Job Type	Secondary Job Type
Initial Completion	

Objective	Target Formation

Rigs / Coil Tubing Units

Contractor	Rig Number	Rig Start Date
	Falcon 4	9/21/2012
Rig Subtype	**Coil Tubing Size (mm)**	**Coil Tubing Length (ft)**
Land		

Job Contacts

Contact Name	Title	Phone Mobile
Scott Dalziel	Completions Foreman	(204) 522-0075
Ryan McGregor	Completions Foreman	(204) 522-0732
Peter Kindl	Consultant	(780) 933-7383
Richard Thomas	Consultant	(403)-921-5051
Lucas Graham	Consultant	(204) 851-5623
Ryan McGregor	Consultant	(204) 522-0732

AFE Number	Total AFE + Supp Amount (Cost)	Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)
12J0056	531,090.00	40,760.55	47,250.55

Daily Readings

Weather	Temperature (°F)	Road Condition	Rig Time (hr)
Overcast	73.4	Good	11.00

Operations Summary

07:30 Held a safety/procedures meeting with the crew and issued a EOG safe work permit. Conducted a inspection of the lease and equip. SICP = 0. Rigged up. Made up and ran 17 - 1 m 86 mm EHSC TBG conveyed guns with 9 spm 0 degree phasing (orientated up) with 16.5 g DP charges c/w fill flows (2/interval), subs, swivels, 8,900 kPa firing heads and a mechanical CCL above the gun assembly on 60.3 mm work string. Casing displaced while running in the hole. Picked top marker at 1078.41 mKB giving a correction of -1.20 m, picked the bottom of the marker at 1082.69 mKB giving a correction of -1.16 m. Pick collar at 1095.98 mKB giving a correction of -1.11 m. Tagged PBTD at 1682.93 mKB, 1.12 m deeper by tubing tally (uncorrected). Pick collar at 1095.98 mKB giving a correction of -1.11 m. Raised guns 7.16 m into position with top shot at 1091.0 mKB with 4.62 m in on #162.

Hole was full, reverse circulated well bore for 10 min, closed TBG side in and slowly pressured up to 3,500 kPa then quickly pressured up. Guns could be felt going off at 8,900 kPa, continued pumping approx 5 sec to 9,500 kPa.

Perforated 17 intervals as follows:
1671 - 1672 mKB
1636 - 1637 mKB
1598 - 1599 mKB
1566 - 1567 mKB
1531 - 1532 mKB
1497 - 1498 mKB
1461 - 1462 mKB
1425 - 1426 mKB
1391 - 1392 mKB
1356 - 1357 mKB
1318 - 1319 mKB
1286 - 1287 mKB
1251 - 1252 mKB
1211 - 1212 mKB
1171 - 1172 mKB
1131 - 1132 mKB
1091 - 1092 mKB

Pulled and laid down tubing onto trailer. Laid down 17 guns. Note: all guns and all shots fired, observed no oil on guns, no gas blows. Removed BOP and secured well. Rigged out and moved service rig to EOG 103/3-26-1-25W1.

Operations Next Report Period
Well is shut in.

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
07:00	07:30	0.50	LOCL	Lock Wellhead & Secure	Well shut in.
07:30	08:00	0.50	SMTG	Safety Meeting	7:30 Held a safety/procedures meeting with the crew and issued a EOG safe work permit. Contacted MIED&M Waskada and notified them via e-mail of rig move and scope of operations.
08:00	08:45	0.75	SRIG	Rig Up/Down	Rigged up the rig and equipment to EOG, Falcon, MIED&M, CAODC and OH&S specs.

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 2.0, Report Date: 9/6/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
08:45	11:30	2.75	RUTB	Run Tubing	Made up and ran 17 - 1 m 86 mm EHSC TBG conveyed guns with 9 spm 0 degree phasing (orientated up) with 16.5 g DP charges c/w fill flows (2/interval), subs, swivels, 8,900 kPa firing heads and a mechanical CCL above the gun assembly on 60.3 mm work string. Casing displaced while running in the hole. Picked top marker at 1078.41 mKB giving a correction of -1.20 m, picked the bottom of the marker at 1082.69 mKB giving a correction of -1.16 m. Pick collar at 1095.98 mKB giving a correction of -1.11 m. Tagged PBTD at 1682.93 mKB, 1.12 m deeper by tubing tally (uncorrected). Pick collar at 1095.98 mKB giving a correction of -1.11 m. Raised guns 7.16 m into position with top shot at 1091.0 mKB with 4.62 m in on #162.
11:30	12:00	0.50	PFRT	Perforating	Hole was full, reverse circulated well bore for 10 min, closed TBG side in and slowly pressured up to 3,500 kPa then quickly pressured up. Guns could be felt going off at 8,900 kPa, continued pumping approx 5 sec to 9,500 kPa. 11:40 Perforated 17 intervals as follows: 1671 - 1672 mKB 1636 - 1637 mKB 1598 - 1599 mKB 1566 - 1567 mKB 1531 - 1532 mKB 1497 - 1498 mKB 1461 - 1462 mKB 1425 - 1426 mKB 1391 - 1392 mKB 1356 - 1357 mKB 1318 - 1319 mKB 1286 - 1287 mKB 1251 - 1252 mKB 1211 - 1212 mKB 1171 - 1172 mKB 1131 - 1132 mKB 1091 - 1092 mKB
12:00	15:00	3.00	PULT	Pull Tubing	Pulled and laid out 162 - 60.3 mm tubing jts. onto the trailer. Laid down 17 guns. Note that all guns and all shots fired, observed no oil on guns, no gas blows.
15:00	15:30	0.50	BOPR	Remove BOP's	Removed and secured BOP. Secured well.
15:30	17:00	1.50	SRIG	Rig Up/Down	Rigged out service rig, and equipment. Changed out weight indicator on rig.
17:00	18:30	1.50	RMOV	Rig Move	Moved service rig and associated equipment to EOG 103/3-26-1-25W1. SDFN 18:30 hrs.
18:30	07:00	12.50	LOCL	Lock Wellhead & Secure	Well shut in.

Report Fluids Summary

Fluid	To well (bbl)	From well (bbl)	To lease (bbl)	From lease (bbl)
Water	62.9	78.6	62.9	78.6

Safety Checks

Time	Des	Type	Com

Logs

Time	Type	Top (ftKB)	Btm (ftKB)	Cased?

Perforations

Time	Top (ftKB)	Btm (ftKB)	Current Status	Linked Zone
11:40	3,579.4	3,582.7	Open - Not Flowing (3,579.4 - 3,582.7 ftKB)	Spearfish, Original Hole
11:40	3,710.6	3,713.9	Open - Not Flowing (3,710.6 - 3,713.9 ftKB)	Spearfish, Original Hole
11:40	3,841.9	3,845.1	Open - Not Flowing (3,841.9 - 3,845.1 ftKB)	Spearfish, Original Hole
11:40	3,973.1	3,976.4	Open - Not Flowing (3,973.1 - 3,976.4 ftKB)	Spearfish, Original Hole
11:40	4,104.3	4,107.6	Open - Not Flowing (4,104.3 - 4,107.6 ftKB)	Spearfish, Original Hole
11:40	4,219.2	4,222.4	Open - Not Flowing (4,219.2 - 4,222.4 ftKB)	Spearfish, Original Hole
11:40	4,324.1	4,327.4	Open - Not Flowing (4,324.1 - 4,327.4 ftKB)	Spearfish, Original Hole

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 2.0, Report Date: 9/6/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Perforations

Time	Top (ftKB)	Btm (ftKB)	Current Status	Linked Zone
11:40	4,448.8	4,452.1	Open - Not Flowing (4,448.8 - 4,452.1 ftKB)	Spearfish, Original Hole
11:40	4,563.6	4,566.9	Open - Not Flowing (4,563.6 - 4,566.9 ftKB)	Spearfish, Original Hole
11:40	4,675.2	4,678.5	Open - Not Flowing (4,675.2 - 4,678.5 ftKB)	Spearfish, Original Hole
11:40	4,793.3	4,796.6	Open - Not Flowing (4,793.3 - 4,796.6 ftKB)	Spearfish, Original Hole
11:40	4,911.4	4,914.7	Open - Not Flowing (4,911.4 - 4,914.7 ftKB)	Spearfish, Original Hole
11:40	5,023.0	5,026.2	Open - Not Flowing (5,023.0 - 5,026.2 ftKB)	Spearfish, Original Hole
11:40	5,137.8	5,141.1	Open - Not Flowing (5,137.8 - 5,141.1 ftKB)	Spearfish, Original Hole
11:40	5,242.8	5,246.1	Open - Not Flowing (5,242.8 - 5,246.1 ftKB)	Spearfish, Original Hole
11:40	5,367.5	5,370.7	Open - Not Flowing (5,367.5 - 5,370.7 ftKB)	Spearfish, Original Hole
11:40	5,482.3	5,485.6	Open - Not Flowing (5,482.3 - 5,485.6 ftKB)	Spearfish, Original Hole

Stimulations Summary

Type	Subtype	Stim/Treat Company

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)

Tubing Run

Run Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Tubing Pulled

Pull Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Other in Hole Run (Bridge Plugs, etc)

Run Time	Des	OD (in)	Top (ftKB)	Btm (ftKB)

Other in Hole Pulled (Bridge Plugs, etc)

Pull Time	Des	Top (ftKB)	Btm (ftKB)	OD (in)

Cement

Start Time	Des	Type	String	Cement Comp

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 3.0, Report Date: 9/18/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Primary Job Type	Secondary Job Type
Initial Completion	

Objective	Target Formation

Rigs / Coil Tubing Units

Contractor	Rig Number	Rig Start Date
	Falcon 4	9/21/2012
Rig Subtype	**Coil Tubing Size (mm)**	**Coil Tubing Length (ft)**
Land		

Job Contacts

Contact Name	Title	Phone Mobile
Scott Dalziel	Completions Foreman	(204) 522-0075
Ryan McGregor	Completions Foreman	(204) 522-0732
Peter Kindl	Consultant	(780) 933-7383
Richard Thomas	Consultant	(403)-921-5051
Lucas Graham	Consultant	(204) 851-5623
Ryan McGregor	Consultant	(204) 522-0732

AFE Number	Total AFE + Supp Amount (Cost)	Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)
12J0056	531,090.00	19,649.57	66,900.12

Daily Readings

Weather	Temperature (°F)	Road Condition	Rig Time (hr)
Sunny	64.4	Good	12.00

Operations Summary

19:00. Moved in and spotted Halliburton Energy Services (Boots & Coots) Medicine Hat coil rig # CM-2 mast unit c/w 2,115.0 m of QT 900 73.00 mm (6.82 m³ volume) coil tubing. SICP = 0. Held a safety meeting with all personnel on-site. Issued a safe work permit.

Rigged in and prepared to do the 17 interval x 4.0 tonne frac. Rigged up the coil rig. Function test BOPs. Installed and pressure tested the BOPs. Pressure tested the coil connector. Pressure test lubricator, and main line.

Ran in the hole pressure testing in vertical and horizontal. Correct to marker joint. Tag PBTD and reverse circulate to clean up TBG. Conducted 4 T fracs on intervals #1 - #2. 7:00

Operations Next Report Period

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
19:00	19:15	0.25		Safety Meeting	19:00 Ryan McGregor held a safety and procedures meeting discussing use of spotters on very small lease, ERP, whip checks, and MSDSs. Issued a EOG safe work permit.
19:15	21:15	2.00	RMOV	Rig Move	Contacted MIED&M and notified them of operations. Moved in and spotted Halliburton Energy Services Medicine Hat frac crew and coil rig # CM-2 mast unit c/w 2,115.00 m of QT 900 73.00 mm (6.82 m³ volume) coil tubing. SICP = 0.
21:15	00:15	3.00	SRIG	Rig Up/Down	Rigged in and prepared to do the 17 interval X 4.0 tonne frac. Rigged up the coil rig. Installed and pressure tested the BOPs.
00:15	01:30	1.25	PTST	Pressure Test	Filled coil with fresh water. Pressure tested coil connection to 15 mPa held. Installed 139.7 mm EasyTrieve frac packer with hydraulic hold down head and 10 K gauges. Pressure tested the lubricator to 15.0 mPa. Pressure test mainline to 45 mPa held O.K. Opened up the 7 1/16" Frac valve.
01:30	04:15	2.75		Run Tubing	Ran in with the packer and pressure tested to 15.0 mPa @ 360.64 mKB, held good. Unset the packer and continued in the hole and located and corrected +0.8 m to the marker at 1077.21 - 1081.53 mKB. Set packer and pressure test to 15 mPa @ 1071.90 mKB, held good. Continued in the hole with the packer and tagged PBTD at 1680.74 mKB. Pulled up and cycled over interval #1. Reverse circulated 15.0 m³ @ 0.5 m³/min to clean up the tubing. Set the packer across interval #1.

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 3.0, Report Date: 9/18/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
04:15	07:00	2.75	FRAC	Frac. Job	Frac'd the following intervals with Versa Gel (LGC-5 at 25 lbs/m³ loading + CL-11) fluid system using a rate of 600 L/min with 7.0 m³ linear gel pad, 0.25 m³ 15% HCL followed by 1.0 m³ of 50 kg/m³ sand scour, 9.0 m³ of 50 - 600 Kg/m³ ramp and 1.7 m³ of 600 Kg/m³ flatline for a total of 4.0 tonne of 20/40 mesh sand. #1 - 1671 - 1672. Break = 20.8 mPa. Bullhead 7.0 m³ Linear Pad, Pumped 0.25 m³ of 15% HCL acid 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 622 kg/m³. End = 11.3 mPa. ISIP = 8.2 mPa. #2 - 1636 - 1637. Break = 14.3 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 606 kg/m³. End = 11.2 mPa. ISIP = 8.6 mPa. 7:00

Report Fluids Summary

Fluid	To well (bbl)	From well (bbl)	To lease (bbl)	From lease (bbl)
Water	2,956.2	182.4	2,956.2	182.4

Safety Checks

Time	Des	Type	Com

Logs

Time	Type	Top (ftKB)	Btm (ftKB)	Cased?

Perforations

Time	Top (ftKB)	Btm (ftKB)	Current Status	Linked Zone

Stimulations Summary

Type	Subtype	Stim/Treat Company
Sand Frac		Halliburton Energy Services

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)
1	Sand Frac	5,482.3	5,485.6
2	Sand Frac	5,367.5	5,370.7
3	Sand Frac	5,242.8	5,246.1
4	Sand Frac	5,137.8	5,141.1
5	Sand Frac	5,023.0	5,026.2
6	Sand Frac	4,911.4	4,914.7
7	Sand Frac	4,793.3	4,796.6
8	Sand Frac	4,675.2	4,678.5
9	Sand Frac	4,563.6	4,566.9
10	Sand Frac	4,448.8	4,452.1
11	Sand Frac	4,324.1	4,327.4
12	Sand Frac	4,219.2	4,222.4
13	Sand Frac	4,104.3	4,107.6
14	Sand Frac	3,973.1	3,976.4
15	Sand Frac	3,841.9	3,845.1
16	Sand Frac	3,710.6	3,713.9
17	Sand Frac	3,579.4	3,582.7
18	Sand Frac		
19	Sand Frac		

Tubing Run

Run Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Tubing Pulled

Pull Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Other in Hole Run (Bridge Plugs, etc)

Run Time	Des	OD (in)	Top (ftKB)	Btm (ftKB)

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 3.0, Report Date: 9/18/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Other in Hole Pulled (Bridge Plugs, etc)

Pull Time	Des	Top (ftKB)	Btm (ftKB)	OD (in)

Cement

Start Time	Des	Type	String	Cement Comp

TUNDRA OIL & GAS

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 4.0, Report Date: 9/19/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Primary Job Type	Secondary Job Type
Initial Completion	

Objective	Target Formation

Rigs / Coil Tubing Units

Contractor	Rig Number	Rig Start Date
	Falcon 4	9/21/2012
Rig Subtype	**Coil Tubing Size (mm)**	**Coil Tubing Length (ft)**
Land		

Job Contacts

Contact Name	Title	Phone Mobile
Scott Dalziel	Completions Foreman	(204) 522-0075
Ryan McGregor	Completions Foreman	(204) 522-0732
Peter Kindl	Consultant	(780) 933-7383
Richard Thomas	Consultant	(403)-921-5051
Lucas Graham	Consultant	(204) 851-5623
Ryan McGregor	Consultant	(204) 522-0732

AFE Number	Total AFE + Supp Amount (Cost)	Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)
12J0056	531,090.00	261,113.13	328,013.25

Daily Readings

Weather	Temperature (°F)	Road Condition	Rig Time (hr)
Sunny	69.8	Good	24.00

Operations Summary

07:00. Conducted a walkaround Safety inspection of the lease and equipment. SICP = 0.
Held a safety and procedures meeting with all personnel on-site. Issued a Safe Work permit.

Frac'd the following intervals with Versa Gel (LGC-5 at 25 lbs/m³ loading + CL-11) fluid system using a rate of 600 L/min with 7.0 m³ Linear pad, 0.25 m³ of 15% HCL acid followed by 1.0 m³ of 50 kg/m³ sand scour, 9.0 m³ of 50 - 600 Kg/m³ ramp and 1.7 m³ of 600 Kg/m³ flatline for a total of 4.0 tonne of 20/40 mesh sand.

Conducted 4 T fracs on intervals #03 - #15.

Crew change / hand over, Ryan McGregor held a safety meeting and continued the frac. 19:00

Conducted 4 T fracs on intervals #16 - #17. Ran out of sand on interval #17, 3.5 T total.

POOH with the packer. The packer appeared to be in good condition. Downloaded the pressure recorders. There was no communication below the packer on any of the intervals. Blow coil dry with 800 SCM of N2. Rigged out the Halliburton frac equipment and coil rig. Moved to 100/11-35-002-28W1 23:00

Operations Next Report Period

Finish the Frac. Rig out and move to 100/11-35-002-28W1

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
07:00	07:15	0.25		Safety Meeting	07:00 Lucas Graham Held a safety and procedures meeting discussing scope of job to follow and any special duties that may be involved. Hazards, location and road conditions and speed limits were discussed. Leaving the lease clean of any garbage. Discussed hydraulic pressure injection, to take the time to shut down the hydraulic system prior to locating leaks or maintenance

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 4.0, Report Date: 9/19/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
07:15	14:00	6.75	FRAC	Frac. Job	Continue Frac: Frac'd the following intervals with Versa Gel (LGC-5 at 25 lbs/m³ loading + CL-11) fluid system using a rate of 600 L/min with 7.0 m³ Linear pad, 0.25 m³ of 15% HCL acid followed by 1.0 m³ of 50 kg/m³ sand scour, 9.0 m³ of 50 - 600 Kg/m³ ramp and 1.7 m³ of 600 Kg/m³ flatline for a total of 4.0 tonne of 20/40 mesh sand. #3 - 1,598 - 1,599. Break = 15.8 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 617 kg/m³. End = 11.8 mPa. ISIP = 9.0 mPa. #4 - 1,566 - 1,567. Break = 13.9 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 619 kg/m³. End = 11.0 mPa. ISIP = 8.1 mPa. #5 - 1,531 - 1,532. Break = 15.8 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 623 kg/m³. End = 11.4 mPa. ISIP = 8.9 mPa. #6 - 1,497 - 1,498. Break = 14.8 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 617 kg/m³. End = 12.2 mPa. ISIP = 7.9 mPa. #7 - 1,461 - 1,462. Break = 15.5 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 623 kg/m³. End = 10.9 mPa. ISIP = 8.3 mPa. #8 - 1,425 - 1,426. Break = 16.7 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 635 kg/m³. End = 12.6 mPa. ISIP = 8.2 mPa. #9 - 1,391 - 1,392. Break = 14.7 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 622 kg/m³. End = 11.6 mPa. ISIP = 8.0 mPa. #10 - 1,356 - 1,357. Break = 16 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 628 kg/m³. End = 11.5 mPa. ISIP = 8.4 mPa.
14:00	18:45	4.75	FRAC	Frac. Job	Frac Continued: #11 - 1,318 - 1,319. Break = 18.4 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 625 kg/m³. End = 11.9 mPa. ISIP = 8.4 mPa. #12 - 1,286 - 1,287. Break = 15.5 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 626 kg/m³. End = 12.2 mPa. ISIP = 8.7 mPa. #13 - 1,251 - 1,252. Break = 17.5 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 618 kg/m³. End = 11.5 mPa. ISIP = 8.0 mPa. #14 - 1,211 - 1,212. Break = 16.4 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 618 kg/m³. End = 12.0 mPa. ISIP = 8.1 mPa. #15 - 1,171 - 1,172. Break = 17.4 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 612 kg/m³. End = 11.7 mPa. ISIP = 7.8 mPa.
18:45	19:00	0.25	SMTG	Safety Meeting	Crew change / hand over, Ryan McGregor held a safety meeting and continued the frac.

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 4.0, Report Date: 9/19/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
19:00	20:30	1.50	FRAC	Frac. Job	Frac Continued: #16 - 1,131 - 1,132. Break = 17.5 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 4.0 T of sand in, max conc = 612 kg/m³. End = 12.4 mPa. ISIP = 7.8 mPa. #17 - 1,091 - 1,092. Break = 15.1 mPa. Pumped 0.25 m³ of 15% HCL acid, 7.0 m³ Linear Pad, 1.0 m³ of 50 kg/m³ sand scour, 3.5 T of sand in, max conc = 618 kg/m³. End = 12.0 mPa. ISIP = 7.3 mPa. Ran out of sand early
20:30	22:00	1.50	PULT	Pull Tubing	POOH with the packer. The packer appeared to be in good conditions. Downloaded the pressure recorders. There was no communication below the packer on any intervals.
22:00	22:45	0.75	SRIG	Rig Up/Down	Rig in Halliburton N2 pumper and blow coil dry with 800 SCM of N2. Rigged out Halliburton frac equipment and Boots & Coots coil rig.
22:45	23:00	0.25	LOCL	Lock Wellhead & Secure	Shut in and secured the wellhead. Rigged out the Halliburton frac equipment and coil rig. Moved to 100/11-35-002-28W1/00 23:00

Report Fluids Summary

Fluid	To well (bbl)	From well (bbl)	To lease (bbl)	From lease (bbl)
Water		276.8		276.8

Safety Checks

Time	Des	Type	Com

Logs

Time	Type	Top (ftKB)	Btm (ftKB)	Cased?

Perforations

Time	Top (ftKB)	Btm (ftKB)	Current Status	Linked Zone

Stimulations Summary

Type	Subtype	Stim/Treat Company
Sand Frac		Halliburton Energy Services

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)
1	Sand Frac	5,482.3	5,485.6
2	Sand Frac	5,367.5	5,370.7
3	Sand Frac	5,242.8	5,246.1
4	Sand Frac	5,137.8	5,141.1
5	Sand Frac	5,023.0	5,026.2
6	Sand Frac	4,911.4	4,914.7
7	Sand Frac	4,793.3	4,796.6
8	Sand Frac	4,675.2	4,678.5
9	Sand Frac	4,563.6	4,566.9
10	Sand Frac	4,448.8	4,452.1
11	Sand Frac	4,324.1	4,327.4
12	Sand Frac	4,219.2	4,222.4
13	Sand Frac	4,104.3	4,107.6
14	Sand Frac	3,973.1	3,976.4
15	Sand Frac	3,841.9	3,845.1
16	Sand Frac	3,710.6	3,713.9
17	Sand Frac	3,579.4	3,582.7
18	Sand Frac		
19	Sand Frac		
20	Sand Frac		
21	Sand Frac		
22	Sand Frac		
23	Sand Frac		
24	Sand Frac		
25	Sand Frac		
26	Sand Frac		
27	Sand Frac		

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 4.0, Report Date: 9/19/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)
28	Sand Frac		
29	Sand Frac		
30	Sand Frac		
31	Sand Frac		
32	Sand Frac		
33	Sand Frac		

Tubing Run

Run Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Tubing Pulled

Pull Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Other in Hole Run (Bridge Plugs, etc)

Run Time	Des	OD (in)	Top (ftKB)	Btm (ftKB)

Other in Hole Pulled (Bridge Plugs, etc)

Pull Time	Des	Top (ftKB)	Btm (ftKB)	OD (in)

Cement

Start Time	Des	Type	String	Cement Comp

TUNDRA OIL & GAS

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Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 5.0, Report Date: 9/21/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Primary Job Type	Secondary Job Type
Initial Completion	

Objective	Target Formation

Rigs / Coil Tubing Units

Contractor	Rig Number	Rig Start Date
	Falcon 4	9/21/2012
Rig Subtype	**Coil Tubing Size (mm)**	**Coil Tubing Length (ft)**
Land		

Job Contacts

Contact Name	Title	Phone Mobile
Scott Dalziel	Completions Foreman	(204) 522-0075
Ryan McGregor	Completions Foreman	(204) 522-0732
Peter Kindl	Consultant	(780) 933-7383
Richard Thomas	Consultant	(403)-921-5051
Lucas Graham	Consultant	(204) 851-5623
Ryan McGregor	Consultant	(204) 522-0732

AFE Number	Total AFE + Supp Amount (Cost)	Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)
12J0056	531,090.00	221,196.90	549,210.15

Daily Readings

Weather	Temperature (°F)	Road Condition	Rig Time (hr)
Sunny	62.6	Good	6.00

Operations Summary

12:00 Held safety/procedure meeting with crew and issued EOG Job Hazard Analysis/Work Permit. Conducted inspection of the lease and equipment. SICP = 450 kPa. Bled off well to the rig tank. Pressure tested and installed BOP's.

Tallied drifted and ran in to 1123.01 mKb with 0.5 m stick up on jt # 116.
Rigged up and reverse circulated well. Observed circ after 0.72 m3, circulated clean for 1.5 hrs at 570 L/min. Observed sand and a small amount of oil in returns. Lost 4.86 m3 salt water.

Pull and lay down 11 jts with 14 jts left on the trailer. TBG as follows.
Stretch for 7,000 dN tension (0.20 m), KB-TH 3.27 m
94 - 73 mm J-55 9.67 Kg/m TBG (905.06 m)
1 - 139.7 mm x 73 mm KDA-L left set 50,000 # shear TBG anchor (0.89 m)
19 - 73 mm J-55 9.67 Kg/m TBG (182.87 m)
1 - API PSN (0.34 m)
1 - 73 mm J-55 9.67 Kg/m tail joint (9.64 m)
1 - 73 mm x 125.7 mm gas separator (3.24 m)

Anchor at 909.82 mKb, PSN at 1006.40 mKb, and BOT at 1019.25 mKb, flowed the well over night to the 400 Bbl tanks

Secured well and SDFN 17:30

Operations Next Report Period

Run pump and rods, rig out.

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
07:00	12:00	5.00	LOCL	Lock Wellhead & Secure	Well shut in.
12:00	12:30	0.50	SMTG	Safety Meeting	Conducted a walk around inspection of the lease and equip. Held a safety/procedures meeting with the crew and issued EOG Job Hazard Analysis / Work Permit.
12:30	13:00	0.50	SRIG	Rig Up/Down	Rigged up the rig and equip to EOG, Falcon Ent, MIED&M, CAODC and OH&S specs. Unloaded Fontanas trailer.
13:00	13:30	0.50	FBCK	Flowback Well	Bled off well to the rig tank. (all water no oil)
13:30	14:00	0.50	BOPT	Pressure Test BOP's	Function and pressure tested class II BOP's from 1.40 MPa Low to 14.0 MPa high - tested good.
14:00	14:30	0.50	BOPI	Install BOP's	Removed bonnet, frac valve and installed BOP's. Rigged in work floor and 73.00 mm tubing equipment.
14:30	16:00	1.50	RUTB	Run Tubing	Tallied drifted and ran in to 1123.01 mKb with 0.5 m stick up on jt # 116.
16:00	17:30	1.50	CLN	Clean Out Hole	Rigged up and reverse circulated well. Observed circ after 0.72 m3, circulated clean for 1.5 hrs at 570 L/min. Observed sand and a small amount of oil in returns. Lost 4.86 m3 salt water.

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 5.0, Report Date: 9/21/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
17:30	18:00	0.50	PULT	Pull Tubing	Pull and lay down 11 jts with 14 jts left on the trailer. TBG as follows. Stretch for 7,000 dN tension (0.20 m), KB-TH 3.27 m 94 - 73 mm J-55 9.67 Kg/m TBG (905.06 m) 1 - 139.7 mm x 73 mm KDA-L left set 50,000 # shear TBG anchor (0.89 m) 19 - 73 mm J-55 9.67 Kg/m TBG (182.87 m) 1 - API PSN (0.34 m) 1 - 73 mm J-55 9.67 Kg/m tail joint (9.64 m) 1 - 73 mm x 125.7 mm gas separator (3.24 m)
18:00	18:15	0.25	GOP	General Operations	Anchor at 909.82 mKb, PSN at 1006.40 mKb, and BOT at 1019.25 mKb, flowed the well over night to the 400 Bbl tanks
18:15	07:15	13.00	LOCL	Lock Wellhead & Secure	Secured the well, cleaned up lease. SDFN 17:30.

Report Fluids Summary

Fluid	To well (bbl)	From well (bbl)	To lease (bbl)	From lease (bbl)
Water	138.4	88.1	138.4	88.1

Safety Checks

Time	Des	Type	Com
12:00		Safety Meeting	12:00 Held a safety/procedures meeting with the crew and issued a EOG safe work permit. Conducted a walk around inspection of the lease and equip. Discussed: - Slips trips & falls - proper PPE at all times - muster points - Flammable gas - overhead hazards - pinch points - wind direction - pressure - good communication - proper lifting techniques - communication

Logs

Time	Type	Top (ftKB)	Btm (ftKB)	Cased?

Perforations

Time	Top (ftKB)	Btm (ftKB)	Current Status	Linked Zone

Stimulations Summary

Type	Subtype	Stim/Treat Company
Sand Frac		Halliburton Energy Services

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)
1	Sand Frac	5,482.3	5,485.6
2	Sand Frac	5,367.5	5,370.7
3	Sand Frac	5,242.8	5,246.1
4	Sand Frac	5,137.8	5,141.1
5	Sand Frac	5,023.0	5,026.2
6	Sand Frac	4,911.4	4,914.7
7	Sand Frac	4,793.3	4,796.6
8	Sand Frac	4,675.2	4,678.5
9	Sand Frac	4,563.6	4,566.9
10	Sand Frac	4,448.8	4,452.1
11	Sand Frac	4,324.1	4,327.4
12	Sand Frac	4,219.2	4,222.4
13	Sand Frac	4,104.3	4,107.6
14	Sand Frac	3,973.1	3,976.4
15	Sand Frac	3,841.9	3,845.1
16	Sand Frac	3,710.6	3,713.9
17	Sand Frac	3,579.4	3,582.7
18	Sand Frac		
19	Sand Frac		

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 5.0, Report Date: 9/21/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)
20	Sand Frac		
21	Sand Frac		
22	Sand Frac		
23	Sand Frac		
24	Sand Frac		
25	Sand Frac		
26	Sand Frac		
27	Sand Frac		
28	Sand Frac		
29	Sand Frac		
30	Sand Frac		
31	Sand Frac		
32	Sand Frac		
33	Sand Frac		

Tubing Run

Run Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade
15:00	Tubing - Production	3,344.0	2 7/8	6.50	J-55

Tubing Pulled

Pull Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Other in Hole Run (Bridge Plugs, etc)

Run Time	Des	OD (in)	Top (ftKB)	Btm (ftKB)

Other in Hole Pulled (Bridge Plugs, etc)

Pull Time	Des	Top (ftKB)	Btm (ftKB)	OD (in)

Cement

Start Time	Des	Type	String	Cement Comp

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 6.0, Report Date: 9/22/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Primary Job Type	Secondary Job Type
Initial Completion	

Objective	Target Formation

Rigs / Coil Tubing Units

Contractor	Rig Number	Rig Start Date
	Falcon 4	9/21/2012
Rig Subtype	**Coil Tubing Size (mm)**	**Coil Tubing Length (ft)**
Land		

Job Contacts

Contact Name	Title	Phone Mobile
Scott Dalziel	Completions Foreman	(204) 522-0075
Ryan McGregor	Completions Foreman	(204) 522-0732
Peter Kindl	Consultant	(780) 933-7383
Richard Thomas	Consultant	(403)-921-5051
Lucas Graham	Consultant	(204) 851-5623
Ryan McGregor	Consultant	(204) 522-0732

AFE Number	Total AFE + Supp Amount (Cost)	Daily Field Est Total (Cost)	Cum Field Est To Date (Cost)
12J0056	531,090.00	45,348.55	594,558.70

Daily Readings

Weather	Temperature (°F)	Road Condition	Rig Time (hr)
Sunny	59.0	Good	5.00

Operations Summary

7:30 Held safety/procedure meeting with crew and issued EOG Job Hazard Analysis/Work Permit. Conducted inspection of the lease and equipment. SITP = -10 kPa. SICP = 50 kPa.

Removed and secured BOP.Set 1 - 139.7 mm x 73 mm KDA-L left set 50,000 # shear tubing anchor w/ 7,000 daN over string weight. Installed bonnet, built wellhead.

Rigged in work floor, rod BOP, and rod equipment. Surface tested 1 - BHP # CEFV- 55712, 25x200 RSAC 18-1, 20 Ring PA (tested good).

Torqued rods to spec. Ran rods as follows:
1 - BHP # CEFV- 55712, 25x200 RSAC 18-1, 20 Ring PA
37 - 19.1 mm x 7.62 m x 63.5 mm NETB scr. 8/per, D-75 w/ rollers (3/12)
22 - 19.1 mm x 7.62 m x 63.5 mm NETB scr. 8/per D-75 (3/12)
68 - 22.2 mm x 7.62 m x 63.5 mm TB scr. 6/per D-75 (7/12)
1 - 22.2 mm x 3.06 m x 63.5 mm TB scr. pony rod, D-75
1 - 22.2 mm x 2.44 m x 63.5 mm TB scr. pony rod, D-75
1 - 38.1 mm x 9.14 m Polish Rod
Rigged out rod equipment.

Seated pump in PSN, secured stuffing box. Filled tubing with 0.10 m3 clean fluid, stoke test pump to 7.0 MPa - tested good. Rigged out service rig and associated equipment. Moved to 100/11-35-2-28W1.
SDFN 12:30

Operations Next Report Period

Well put on production.

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
07:00	07:30	0.50	LOCL	Lock Wellhead & Secure	Well shut in.
07:30	08:00	0.50	SMTG	Safety Meeting	7:30 Held safety/procedure meeting with crew and issued EOG Job Hazard Analysis/Work Permit. Conducted inspection of the lease and equipment. SITP = -10 kPa. SICP = 50 kPa.
08:00	08:45	0.75	DTIM	Downtime	Air lines froze on the rig overnight, could not get any air pressure, bypassed the frozen line.
08:45	09:30	0.75	GOP	General Operations	Removed and secured BOP.Set 1 - 139.7 mm x 73 mm KDA-L left set 50,000 # shear tubing anchor w/ 7,000 daN over string weight. Installed bonnet, built wellhead.

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 6.0, Report Date: 9/22/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Time Log

Start Time	End Time	Dur (hr)	Code 1	Code 2	Com
09:30	11:00	1.50	RURP	Run Rods & Pump	Rigged in work floor, rod BOP, and rod equipment. Surface tested 1 - BHP # CEFV-55712, 25x200 RSAC 18-1, 20 Ring PA (tested good). Torqued rods to spec. Ran rods as follows: 1 - BHP # CEFV- 55712, 25x200 RSAC 18-1, 20 Ring PA 37 - 19.1 mm x 7.62 m x 63.5 mm NETB scr. 8/per, D-75 w/ rollers (3/12) 22 - 19.1 mm x 7.62 m x 63.5 mm NETB scr. 8/per D-75 (3/12) 68 - 22.2 mm x 7.62 m x 63.5 mm TB scr. 6/per D-75 (7/12) 1 - 22.2 mm x 3.06 m x 63.5 mm TB scr. pony rod, D-75 1 - 22.2 mm x 2.44 m x 63.5 mm TB scr. pony rod, D-75 1 - 38.1 mm x 9.14 m Polish Rod Rigged out rod equipment.
11:00	11:15	0.25	GOP	General Operations	Tagged PSN, spaced out, installed polish rod seated BHP and secured stuffing box.
11:15	11:30	0.25	PTST	Pressure Test	Stroked up with rig to 7.0 MPa - tested good.
11:30	12:00	0.50	GOP	General Operations	Hung horse's head on Weatherford Ampscot 320 jack.
12:00	12:30	0.50	SRIG	Rig Up/Down	Rigged out service rig and associated equipment.
12:30	12:45	0.25	RMOV	Rig Move	Moved Falcon rig 4 over to 100/11-35-2-28w1.
12:45	07:45	19.00	LOCL	Lock Wellhead & Secure	Secured the well, cleaned up lease. Ready for production. Left 3.18 m stick up. SDFN 12:30

Report Fluids Summary

Fluid	To well (bbl)	From well (bbl)	To lease (bbl)	From lease (bbl)
Water		276.8		276.8

Safety Checks

Time	Des	Type	Com
07:30		Safety Meeting	07:30 Held a safety/procedures meeting with the crew and issued a EOG safe work permit. Conducted a walk around inspection of the lease and equip. Discussed: - fatigue - wind direction - pressure - good communication - proper lifting techniques - organization - communication - Slips trips & falls - proper PPE at all times - muster points - Flammable gas - overhead hazards - pinch points - vehicle inspections - winter gear

Logs

Time	Type	Top (ftKB)	Btm (ftKB)	Cased?

Perforations

Time	Top (ftKB)	Btm (ftKB)	Current Status	Linked Zone

Stimulations Summary

Type	Subtype	Stim/Treat Company
Sand Frac		Halliburton Energy Services

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)
1	Sand Frac	5,482.3	5,485.6
2	Sand Frac	5,367.5	5,370.7
3	Sand Frac	5,242.8	5,246.1
4	Sand Frac	5,137.8	5,141.1
5	Sand Frac	5,023.0	5,026.2
6	Sand Frac	4,911.4	4,914.7
7	Sand Frac	4,793.3	4,796.6
8	Sand Frac	4,675.2	4,678.5
9	Sand Frac	4,563.6	4,566.9
10	Sand Frac	4,448.8	4,452.1

Daily Completion and Workover

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # 6.0, Report Date: 9/22/2012

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Stimulation Intervals

Interval Number	Type	Top (ftKB)	Btm (ftKB)
11	Sand Frac	4,324.1	4,327.4
12	Sand Frac	4,219.2	4,222.4
13	Sand Frac	4,104.3	4,107.6
14	Sand Frac	3,973.1	3,976.4
15	Sand Frac	3,841.9	3,845.1
16	Sand Frac	3,710.6	3,713.9
17	Sand Frac	3,579.4	3,582.7
18	Sand Frac		
19	Sand Frac		
20	Sand Frac		
21	Sand Frac		
22	Sand Frac		
23	Sand Frac		
24	Sand Frac		
25	Sand Frac		
26	Sand Frac		
27	Sand Frac		
28	Sand Frac		
29	Sand Frac		
30	Sand Frac		
31	Sand Frac		
32	Sand Frac		
33	Sand Frac		

Tubing Run

Run Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Tubing Pulled

Pull Time	Tubing Description	Set Depth (ftKB)	String Max Nominal OD (in)	Weight/Length (lb/ft)	String Grade

Other in Hole Run (Bridge Plugs, etc)

Run Time	Des	OD (in)	Top (ftKB)	Btm (ftKB)

Other in Hole Pulled (Bridge Plugs, etc)

Pull Time	Des	Top (ftKB)	Btm (ftKB)	OD (in)

Cement

Start Time	Des	Type	String	Cement Comp

Fluid Tracking Summary

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Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

Report # , Report Date: , AFE # 12J0056

UWI	Surface Legal Location	License #	Well Configuration Type	Ground Elevation (ft)	Casing Flange Elevation (ft)	KB-Ground Distance (ft)	KB-Casing Flange Distance (ft)
100/15-06-002-28W1/00	13C-05-002-28W1	8001	HORIZONTAL	1,511.98	1,513.42	14.60	13.16

Start Date	Fluid	Fluid Sub Type	To Lease (bbl)	Source	From Lease (bbl)	Dest	Carrier	Ticket #	Note
9/6/2012	Water		0.0	100/15-6-2-28W1	78.6	15-9-2-25W1	Spearing	855995	Empty rig tank
9/6/2012	Water		62.9	15-21-1-25W1	0.0	100/15-6-2-28W1	Spearing	873661	Clean salt water in
9/18/2012	Water		440.3	Gardiner's Fresh Water			Jaytan Ltd		Filled Frac Tanks.
9/18/2012	Water		1,258.0	Gardiner's Fresh Water			Jaytan Ltd		Filled Frac Tanks.
9/18/2012	Water		1,258.0	Gardiner's Fresh Water			Jaytan Ltd		Filled Frac Tanks.
9/18/2012	Water				44.0	15-02-03-21 Batt	Spearing Service L.P.	877458	Emptied Flowback Tank.
9/18/2012	Water				138.4	15-02-03-21 Batt	Spearing Service L.P.	874312	Emptied Flowback Tank.
9/19/2012	Water				138.4	15-2-3-21 Batt	Spearing Service L.P.	877460	Emptied Flowback Tank.
9/19/2012	Water				138.4	15-2-3-21 Batt	Spearing Service L.P.	870327	Emptied Flowback Tank.
9/19/2012	Water					15-2-3-21 Batt	Spearing Service L.P.		Emptied Flowback Tank.
9/21/2012	Water		138.4	15-21 Battery		100/15-6-2-28W1	Spearing	818842	Water for circulating
9/21/2012	Water			100/15-6-2-28W1	88.1	9-26-1-26	Spearing	818843	Emptied 400 Bbl tanks
9/22/2012	Water			100/15-6-2-28W1	138.4	9-26-battery	Spearing	857205	Emptied 400 Bbl tanks
9/22/2012	Water			100/15-6-2-28W1	138.4	9-26 battery	Spearing	818844	Emptied rig tank

TUNDRA OIL & GAS

Tubing Ran Details

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

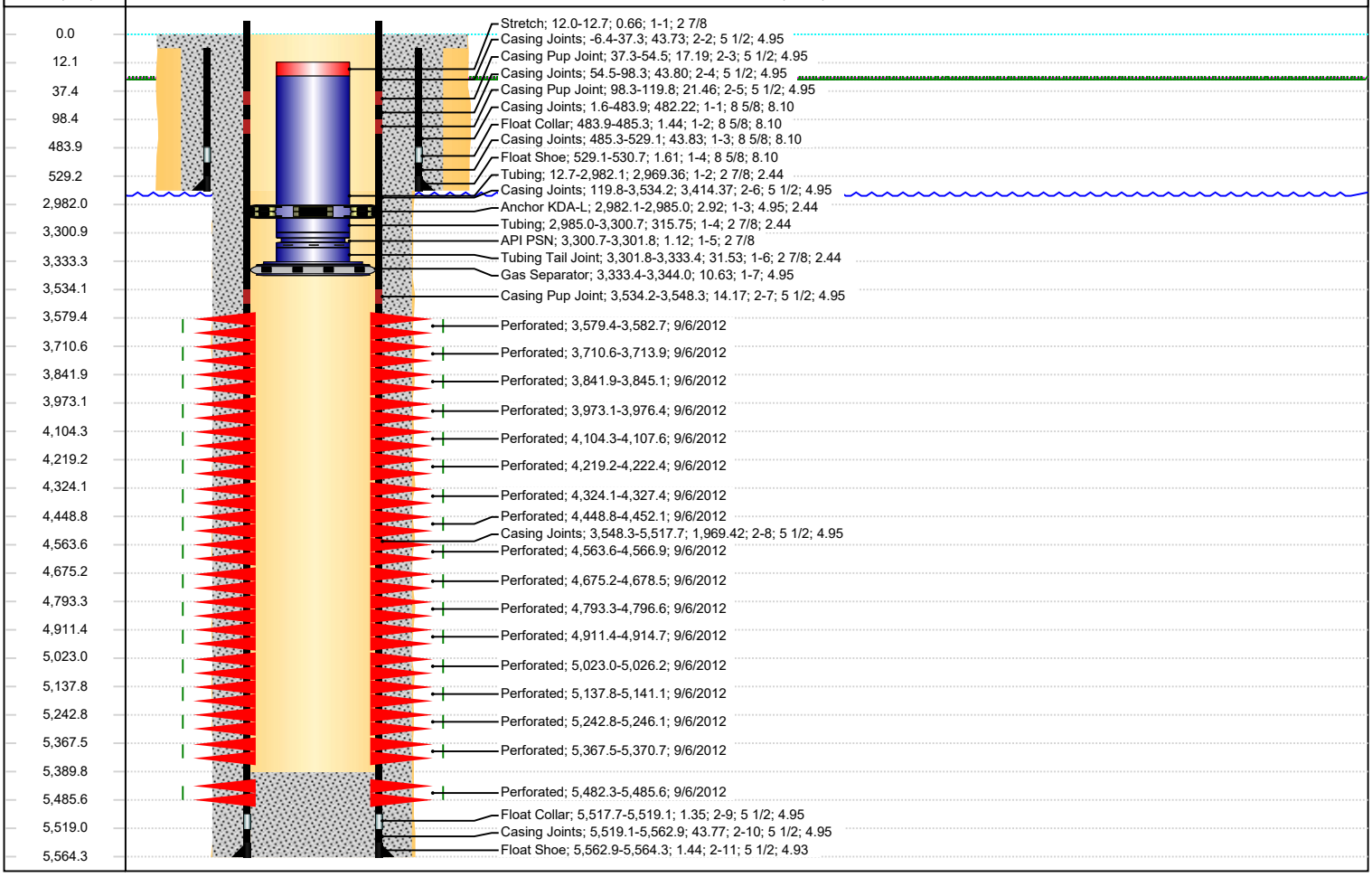
Tubing

Tubing Description	Set Depth (ftKB)	Run Date	Pull Date
Tubing - Production	3,344.0	9/21/2012	

Comment

Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Len (ft)	Top (ftKB)	Btm (ftKB)	Com
1	Stretch	2 7/8					0.66	12.0	12.7	
94	Tubing	2 7/8	2.44	6.50	J-55		2,969.36	12.7	2,982.1	
1	Anchor KDA-L	4.9488	2.44				2.92	2,982.1	2,985.0	
10	Tubing	2 7/8	2.44	6.50	J-55		315.75	2,985.0	3,300.7	
1	API PSN	2 7/8					1.12	3,300.7	3,301.8	
1	Tubing Tail Joint	2 7/8	2.44	6.50	J-55		31.53	3,301.8	3,333.4	
1	Gas Separator	4.9488					10.63	3,333.4	3,344.0	

HORIZONTAL, Original Hole, 9/21/2012 3:00:00 PM



TUNDRA OIL & GAS

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Rod and Pump Details

Well Name: EOG PIERSON HZNTL 15-06-002-28(WPM)

UWI	Surface Legal Location	Field Name	License #	Province	Well Configuration Type
100/15-06-002-28W1/00	13C-05-002-28W1	Pierson	8001	Manitoba	HORIZONTAL
Original KB Elevation (ft)	**Ground Elevation (ft)**	**KB-Tubing Head Distance (ft)**	**Spud Date**	**PBTD (All) (ftKB)**	**Total Depth All (TVD) (ftKB)**
1,526.57	1,511.98		8/26/2012 19:30	Original Hole - 0.0	Original Hole - 3,262.4

Rod Description	Set Depth (ftKB)	Run Date	Pull Date
Rod	3,301.8	9/22/2012	

Comment

Rod String Compoents

Jts	Item Des	OD (in)	Len (ft)	Top (ftKB)	Btm (ftKB)	Rod Manufacture Date	Cond Run
1	Polished rod	1 1/2	29.86	-10.3	19.6		New
1	Scrapered TB pony	7/8	8.01	19.6	27.6		New
1	Scrapered TB pony	7/8	10.04	27.6	37.6		New
68	Scrapered TB rods	0.874	1,700.46	37.6	1,738.1		New
22	Scrapered NETB rods	0.748	550.13	1,738.1	2,288.2		New
37	Scrapered NETB rods w/ rollers	0.748	995.64	2,288.2	3,283.8		New
1	CEFV 55712 25-200 RSAC 18-1 20 R.P.A. 184"		18.01	3,283.8	3,301.8		New

Pump Details

Make	Model	Serial Number

Comment

Pump Bore (in)	API Pump Type	API Barrel Type	API Anchor Type	Seating Assembly Type

Barrel Length (ft)	Nominal Plunger Length (ft)	Upper Extension Length (ft)	Lower Extension Length (ft)
Plung OD Clr (in)	Seating Assembly Description		Seating Assembly Size (in)
API Barrel Material	API Plunger Material	Gas Anc OD (in)	Gas Anchor Length (ft)
Traveling Valve Ball Material	Traveling Valve Seat Material	Standing Valve Ball Material	Standing Valve Seat Material

EOG WASKADA
Winter 2011
54 Wells

December 21, 2010

Katie McQuoid

All changes and any deviations to this program will be reported to Scot Brodie & Katie McQuoid. Any issues will be documented in Wellview under the Lessons & Problems report.

SITE SPECIFIC INFORMATION:

Please find stick diagram & survey and in Wellview.

GOVERNMENT REGULATIONS:

Required Notifications to the Waskada Petroleum Branch:

- 24 hours advance notice of intent to spud a well.
- 2 hours advance notice of intent to run and cement surface casing or production casing.
- Weekly status reports on all activities up to rig release. Reports are to be emailed in each MONDAY MORNING prior to 9:00 am

Required Submissions to the Waskada Petroleum Branch:

- 1 hard copy of the final drilling tour sheets.
- 2 hard copies of the final directional surveys & plots.
- 1 copy of Pressure test chart to be made at the Petroleum branch in Waskada

Manitoba Industry, Economic Development and Mines

Petroleum Branch
Box 220
23 Railway Avenue
Waskada, MB
R0M 2E0

- Lorne Barsness Office: 204.673.2472 Email: lbarsness@gov.mb.ca
- Twila Jolly Office: 204.673.2472 Email: tjolly@gov.mb.ca

- Petroleum Branch Web Page with Regulations: www.gov.mb.ca/iedm/petroleum

EOG REQUIREMENTS:

- Wellview Reports:

1. Casing Tallies with all float and centralization equipment.
2. Material transfer form
3. Cement report with all information filled in; volumes, returns, type, stroke length, circulation time….
4. Daily drilling reports completed in full.
5. BHA details and performance including mud motor details

6. Daily mud with accurate inventories.
7. Lessons and Problems and Problem Time Summary.
8. Daily and End of well costs – completed and within 1% of actual.

- End of Well Submission:

1. Tour Sheets – Confirm they are accurate to EOG daily drilling reports.
2. Deliveries – Casing, mud, cement, fuel tickets
3. Safety Meetings and Incident Reporting – Have all forms completed in full.
4. Send casing report & material transfer report to both Fontana's & Volant.
5. Scan and attach a signed copy of the rig inspection and directional checklist
6. Well files completed and sent in to Calgary within two weeks.
7. Have all files, paperwork, inventories and operations on lease in an orderly fashion prior to supervisor relief arriving on location.

KEY NOTES:

- Drilling Foreman to ensure that all contractors have an approved MSA with EOG.
- **Directional checklist must be filled out prior to drill out**
- Potential water flow in main hole sections.
- Horizontal well. Contact Directional Company to line up proper equipment connections.
- Make sure gas detector is turned on & recording from drill out of surface casing.
- Hole problems possible in build section in the Reston & Upper Ameranth
- Only slick mud motors are to be ran in the BHA.
- Upper zones will need to be identified (Jurassic, Melita, Reston, Ameranth formations) in order to correlate landing point at 90º in the middle of the Spearfish purple sand target.
- Samples to be taken every 5m in the Build section, & every 10m in the Horizontal.
- Gamma while drilling from under the shoe to TD, Manitoba Industry guidelines.
- Monitor Vac truck activity, Cuttings go into the Shale Pit, & Cement into Cement pit.
- Land spread all drilling fluids
- Ensure all contractors stay on EOG access for all operations. NO TRESPASSING!
- Production cement is not to be mobilized until the Calgary office approves the test results.
- All field tickets must match Final Invoice and Wellview Daily Cost Report

WELL DATA:

Well Name	EOG WASKADA HZNTL 1-24, 2-25 & 1-25WPM
UWI	Refer to Stick
Surface	Refer to Stick
Zone of Interest	Spearfish
Ground Level	Refer to Stick
KB Elevation	Refer to Stick
Surface Hole	±150m
KOP	±650m
Landing Point	±900m TVD, ±1050m MD
Lateral Section - TD	±900m TVD, ±1650m MD
Directional	Horizontal
Licence No.	Refer to Well Licence
AFE No.	As listed
AFE $	±$430,000.00
Estimated Days	5
Well Category	Sweet Oil
Sample Point	±750m
Sample Intervals	Take Samples every 5m in Build, & 10m in Lateral
Gas Chromatograph	Yes
Open Hole Logs	No – Gamma While Drilling Only
Comments	This well will be drilled without an intermediate string. Casing will be run and cemented from TD to surface.

SURFACE HOLE

DRILLING PROCEDURES

1. Rig up Pason Gas Detection, EDR, PVT and Wellview.

2. BHA for 311 mm hole (recommended):
   - 311 mm Bit
   - Bit Sub
   - Mud Motor
   - Crossover sub
   - 10 x 160 mm DC,
   - 114.5 mm DP to Surface.

3. Spud with water and soap sticks to prevent mud rings (refer to Mud Program).
4. Keep pump & RPM at a minimum until at least first 3 collars are buried.
5. Drill 311.1mm surface hole to 150m.
6. Survey min. every 50m, or as required, to maintain deviation at or below 1.0 degree.
7. Wiper trip as required.
8. Circulate and condition hole.

POTENTIAL PROBLEMS

Slight Lost Circulation:
- Reduce pump speed until first few collars are buried.
- Ensure hole is being adequately cleaned to lower risk of packing off.

Gavel and boulders near surface:
- Pump 80+ s/L gel viscous sweeps to assist with hole cleaning.
- If severe, increase viscosity to reduce sloughing.
- Raise visc only as high as required to minimize potential for mud rings.
- Ensure hole is being adequately cleaned to lower risk of packing off.
- Mix LCM pill if lost circulation.
- Be aware of Plugged jets.

Mud rings:
- Minor : Disperse with Detergent
- Major : Disperse with Desco and or SAPP.
- Ensure hole is being adequately cleaned to lower risk of packing off.

SURFACE CASING PROGRAM

1. Verify hole is static prior to running casing
2. Running procedures to be followed:
   - Visually inspect all joints of casing for thread and tube damage.
   - Tally and drift casing with API drift.
   - Inspect the float shoe and float collar for proper operation.

- Strap casing and verify grade, weight, and drift.

3. Run 219.1mm 35.72 kg/m J-55 surface casing bottom up as follows:
   - One (1) float shoe (PDC drillable)
   - One (1) surface casing joint
   - One (1) float collar (PDC drillable)
   - Casing to surface.
   - Threadlock float shoe, first joint of casing, float collar and one joint above.
   - Install centralizers on the 3rd, 5th joint and every third joint to surface.
   - All centralizers to be installed on stop collars.

4. Run 219.1mm surface casing to 150mKB

Casing Properties:

219.1mm, 35.72kg/m J-55 ST&C

Casing Design Ratings:

Size (mm)	Weight (kg/m)	Grade	Threads	Collapse (kPa)	Burst (kPa)	Tensile (daN)
219.1	35.72	J-55	ST&C	9,000	20,000	108,000

Casing Dimensions & Capacity:

Weight (kg/m)	Grade	ID (mm)	Drift (mm)	OD (coupling) (mm)	Capacity (m^3/m)	Ann. Vol (m^3/m)
35.72	J-55	205.7	202.5	244.5	0.03322	0.03834

Recommended Casing Make-up Torque:

Weight (kg/m)	Grade	Optimal ft-lb (N-m)
35.72	J-55	**2,440 (3,310)**

SURFACE CEMENTING PROGRAM

1. On bottom break circulation slowly
2. Circulate and work casing on bottom for minimum of 1-2 circulations.
3. Pressure test surface lines (80% internal yield of casing) prior to proceeding with cementing operation.
4. Cement with 40% Excess Minimum. Adjust excess as required for hole conditions.
   - 2.0 m^3 fresh water preflush

- 9.05 m^3 TSC 1700 + 0.2% AFA-4s + 3% $CaCl_2$ at 1700kg/ m^3

5. Use rubber plug to displace cement.
6. Slow pump rate near the end of displacement and bump the plug using 3,500-kPa (500-psi) over final pumping pressure.
    - At no time shall pressures exceed 60% of casing burst pressure.
    - Do Not over displace volume calculated to float collar by more than one half (1/2) the calculated volume of the shoe joint

7. Record cement returns in logbook and on daily drilling reports
    - If floats do not hold,
        i. Record volume of fluid returned
        ii. Rebump plug to 1,000-kPa over final circulating pressure
        iii. Close valve on plug loading head
        iv. Install a pressure gauge and monitor pressure
        v. Maintain pressure as required
        vi. Co-ordinate with Calgary for WOC time

8. Check cement quality before slacking off landing joint.
9. Cut casing leaving minimum 6". stick-up above original ground level.
10. Provide sample of mix water to cementing company for compatibility testing.

*** IF RIGGING ON TO PRESET SURFACE ***
A full EOG rig inspection and well control drill must be done PRIOR to drill out

CASING BOWL AND BOP INSTALLATION

1. Verify stack up heights and ensure casing bowl flange is 6"above original ground level (use spacer nipples if required).
2. Install 219.1mm x 229mm x 14MPA screw on casing bowl.
    - Casing bowl specs must be available at the rig
3. Nipple up BOP stack as per regulations.
    - Pressure test each ram, annular, kill line, lower kelly cock, stabbing valve, inside BOP, all valves in the stack and manifold to 1,400-kPa low and 7,000-kPa high.
    - Each pressure test to be held for 10 minutes.
    - Function test Accumulator (minimum allowable remaining pressure 8400 kPa)
    - No equipment leaks will be tolerated.
    - Repressure test after each repair.
    - All pressure test details must be recorded in drilling logbook and charts to be submitted to Manitoba Innovation Energy & Mines.

4. The drill pipe stabbing valve is to be on the rig floor at all times.

BUILD SECTION

DRILLING PROCEDURES

1. Ensure Mud is properly mixed before drilling out shoe. Refer to drilling fluid program for mud details.

2. BHA for 200 mm hole (recommended):
    - 200.0mm Shear SD413E PDC with 10.3mm nozzles
    - 1 x 181mm 7/8 Lobe 4.8 Stage 2.12 ABH mud motor **must be slick
    - Gamma Tool/ MWD Tool Carrier
    - 3 x 165mm NMDC
    - Exciter tool & pick up sub
    - 66 x 165mm DP*
    - 40 x 114.3mm HWDP
    - 114.3 mm DP to Surface.

    *Do not Drill HWDP past 30º inclination in the build section

3. Drill through float and shoe joint with 4 pails of Amine in the mud system for shale inhibition.
4. Conduct a blow out drill <u>before drilling out the surface casing shoe</u> and record in the tour book.
    - Ensure flow checks, closing times, half pump rate pressures, and hole fill data are recorded in tour sheets.

5. Drill through shoe
    - PVT Must be adjusted and maintained to alarm with $\pm 1.5m^3$ change in total volume.
    - Cement must be allowed to cure for sufficient time that 4,900kPa compressive strength is achieved. Refer to area specific cement program

6. Maintain mud properties as per service company mud program or as hole conditions warrant.

Vertical Hole	Density: ALAP (Floc Water) Viscosity: 28-30s/L Fluid Loss: No Control pH: 8.5-9.5 YP:4-6 Pa
KOP-Landing Point	Density: 1020-1050kg/m³ Viscosity: 45-55s/L Fluid Loss: 4-6ml/30min pH: 8.5-9.5 YP:4-6 Pa

7. Survey minimum every 150m, or as required, to maintain hole deviation at or below 2 degrees.
8. Drill to KOP (±650m) trying to maximize ROP based on formations
9. Survey at every connection with directional tools.
10. Build curve & land well according to directional plan.
11. If well is crossing over another well ensure that DD is running an anti-collision analysis at every survey.
12. Do not allow DL to be greater then 10º
13. Communicate with geologist as to what depth the build section geological markers are.
14. Condition & circulate mud by increasing pump while working pipe.

POTENTIAL PROBLEMS

Swan River Water Flow (±600m):

- Mud up as required
- Increase density if ECD insufficient for a trip.

Difficulty Achieving Required Build Rate:

- Build section can get very ratty through the Reston & Upper Ameranth. The lower Ameranth is much easier to get your build rates through.

Mud rings:

- Minor : Disperse with Detergent
- Major : Disperse with Desco and or SAPP.
- Ensure hole is being adequately cleaned to lower risk of packing off.

LATERAL SECTION

DRILLING PROCEDURES

1. When on bottom (landing point) clean hole with rotation of drill string, pump at maximum rate and rotate top drive to 70 – 80 RPM
2. Maintain mud properties as per service company mud program or as hole conditions warrant.

Lateral Hole	Density: 1020-1050kg/m³ Viscosity: 45-55s/L Fluid Loss: 4-6ml/30min pH: 8.5-9.5 YP:5-7 Pa

3. Drill ahead at a maximum rate or as samples will allow.
4. Survey every connection using MWD tool.
5. Follow the target formation as per geologist. Limit DLS to less than more than 2º/30m.
6. It is critical to make sure that Geologists are in close contact with Directional Drillers at all times while drilling lateral
7. Expected TD will be □600m of lateral or as listed on stick.
8. At TD condition hole, pump at 1.6m3/min and reciprocate string 13m for .5 hr, then circulate and increase string RPM to 60 while on bottom for 15 min. Alternate between stroking and rotating the pipe every 15 minutes.
9. Total time circulating should be 3 bottoms up (1.5 hr) or until shakers are clean.
10. Wiper trip hole back to above KOP circulate well until shaker cleans up then POOH.
11. Spot Walnut pill in lateral section
12. Run ±1650m of 139.7mm casing, tag bottom
13. Circulate casing a minimum of 4hrs on bottom before pumping cement job

POTENTIAL PROBLEMS

Packing Off/Hole Cleaning:

- Keep viscosity & YP of mud as low as possible

High Mud Density:

- Run centrifuge and high mesh screens on shaker to control

PRODUCTION CASING PROGRAM

1. Verify hole is static prior to running casing
2. Running procedures to be followed:
    - Visually inspect all joints of casing for thread and tube damage.
    - Tally and drift casing with API drift.

- Inspect the float shoe, float collar and latch down plug receiver for proper operation.
- Strap casing and verify grade, weight, and drift.

3. Run 139.7mm 23.07 kg/m J-55 surface casing bottom up as follows:
   - One (1) float shoe
   - One (1) production casing joint with a stop collar & 2 Volant Centralizers
   - One (1) float collar
   - Latch Down Receiver
   - Marker Joint one full joint of casing above landing point
   - Install centralizers

     Two (2) Volant Centralizers and 1 stop collar on every joint of casing back to where build section is at 70º inclination.
     One (1) Volant centralizers per joint back to KOP.
     One (1) bowspring centralizer over every 4th joint over coupling back to surface.

4. Threadlock float shoe, first joint of casing, float collar and one joint above

5. Wash down last 2 joints and tag bottom

6. Reciprocate casing 13m and condition hole for 4 hrs minimum or until hole clean while pumping 1.2m³/min. (bring pump rates up slowly at start)

Casing Properties:

139.7mm, 23.07kg/m J-55 LT&C

Casing Design Ratings:

Size (mm)	Weight (kg/m)	Grade	Threads	Collapse (kPa)	Burst (kPa)	Tensile (daN)
139.7	23.07	J-55	LT&C	28,000	33,000	106,000

Casing Dimensions & Capacity:

Weight (kg/m)	Grade	ID (mm)	Drift (mm)	OD (coupling) (mm)	Capacity (m^3/m)	Ann. Vol (Open Hole) (m^3/m)	Ann. Vol (Csg) (m^3/m)
35.72	J-55	125.7	122.5	153.7	0.0124	0.0161	0.0179

Recommended Casing Make-up Torque:

Weight (kg/m)	Grade	Optimal ft-lb (N-m)
23.07	J-55	**2390 (3,240)**

PRODUCTION CEMENTING PROGRAM

1. Cement job is not to be pumped is not to be pumped until confirmation is received that lab test results are satisfactory.
2. Circulate and work casing on bottom for minimum of 3 hrs or until hole is clean
3. Consult cementers and mud man for mud properties prior to cementing, viscosity of mud should be ± 55 sec/L.
4. Conduct a pre-job safety meeting with all personnel
5. A pump rate of at least 1.0 m^3/min or as high as possible while mixing cement slurry
6. A 1.5 m^3/min pump rate is recommended for displacement.
7. Work casing string throughout pumping and displacement
8. Pressure test surface lines and equipment to 21,000kPa prior to proceeding with cementing operation.
9. Cement with 60 % excess for fill cement & 40% excess for tail cement. Adjust excess as required for hole conditions.
    - 2.5m^3 fresh water preflush
    - 5.0 m^3 OptiFlush @ 1200kg/ m^3
    - 5.0 m^3 Titanium-1400 + 1.0% TA-3, + 2.0% Trican LCM + 0.4% AFA-4s@ 1300kg/ m^3. Yield: 2.44 m^3
    - Titanium-1400 + 1.0% TA-3, + 2.0% Trican LCM + 0.4% AFA-4s@ 1400kg/ m^3 from 650m to Surface. Yield: 1.54 m^3
    - 0: 1:0 Class G + 0.4% CFL-2 + 1.0% TA-1 + 0.2% AFA-4s + 0.5% CaCl2 @ 1900 kg/m^3 from 1650m to 650m. Yield 0.757 m^3/ton
    - Displacement Fluid: Fresh Water with granulated sugar in first 3 m^3 & shale inhibitor

10. Use rig pump as a back up to the cementing unit. Do not repair or tear apart during cement job.
11. After tail cement, stop & flush lines to the shaker.
12. Slow pump rate near the end of displacement and bump the plug using 3,500-kPa (500-psi) over final pumping pressure. Pump at 0.5 m^3 /min to bump.
    - Hold pressure for 5 minutes, bleed back & check that floats are holding
    - At no time shall pressures exceed 60% of casing burst pressure.

13. Record cement returns in logbook and on daily drilling reports
    - If floats do not hold,
        i. Record volume of fluid returned
        ii. Rebump plug to 1,000-kPa over final circulating pressure
        iii. Close valve on plug loading head
        iv. Install a pressure gauge and monitor pressure
        v. Maintain pressure as required
        vi. Co-ordinate with Calgary for WOC time

RIG RELEASE

1. Nipple down BOPs
2. Set casing slips with as cemented string weight
3. Install slips and primary seal.
4. Cut casing to a min of 6” above casing bowl flange.
5. Secure 5.5” casing with casing cap.
6. Release Rig & have trucks on location ready to move after tear out.

SAFETY

- EOG Resources HEALTH AND SAFETY USB Key
  Drilling supervisors will be provided with the EOG Resources USB Key. This is to be accessible at all times. Supervisors will ensure EOG Safety Policies, as well as all Statutory Regulations, Provincial Health and Safety Regulations and Environmental Laws are strictly adhered to.

- SITE ORIENTATION
  All personal on location must sign in at well site supervisors shack. If individual has not been on an EOG site previously an EOG safety orientation pamphlet will given and explained to the individual. The well site supervisor will explain all hazards and policies. The individual will then sign off on form and adhere the sticker to his hard hat. The sign off sheet will be given to the field safety hand to be sent into the Calgary office.

- RIG INSPECTIONS
  Daily walk around inspections are to be done and documented. Deficiencies are to be highlighted and corrected within a designated time frame. A full rig inspection will be completed prior to spud or drillout if rigging onto preset surface. A copy of this inspection will be scanned and uploaded into Wellview

- BOP PRESSURE TESTING
  The drilling supervisor will be responsible to ensure BOP stack up is in accordance with statutory regulations. Accumulator checks must be carried out and documented while pressure testing the stack. Accumulator function test form must be filled out.

- NIGHT MOVES
  No move will be started at night. Moves will be planned such that all loads are on new drilling location before sun down.

- EMERGENCY RESPONSE PLANNING
  Each drilling supervisor is responsible to have a list of emergency contact numbers. Emergency contact numbers are to be discussed with the Drilling Superintendent.

- DRUGS AND ALCOHOL
  There will be zero tolerance for use of drugs or alcohol on company property.

- VENDOR MANAGEMENT
  All vendors used must be green on ISN net. If you are unable to find a vendor who is green contact Drilling Superintendent.

- SAFETY
  Speeding or unsafe driving will not be tolerated on EOG roads.

POST IN DOGHOUSE

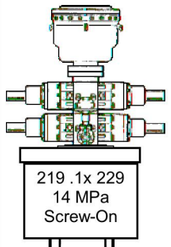
EOG Resources Canada

DRILLING OUTLINE

Horizontal Monobore

UWI:	100/15-06-002-28W1
Surf:	13C-05-002-28W1
Licence #:	
AFE#:	
AFE Amt:	
W.I.%:	EOG 100%
Rig:	Precision 195
Security:	Non Confidential
Target(s):	Spearfish Oil
Lahee Class:	01

EOG PIERSON HZNTL 15-6-2-28WPM



Elevations

KB Elev:	464.90	m (est.)
KB - GL:	4.00	m
GL Elev:	460.90	m (surv.)

Co-ordinates

Surface:	51.00m S & 67.00m E of Bdry of Section 5
Bottom Hole:	94.91m S & 697.54m W Bdry of Section 6

	Casing Depth		Casing size
Surface Set @	**0 - 150**	**mKB**	**219.1 mm, 35.72 kg/m J-55, ST&C, 8Rd**
Production Set @	**0 - 1645**	**mKB**	**139.7 mm, 23.07 kg/m**
Marker joints one joint above landing point			**J-55, LT&C, 8Rd**

Notes:
(1) GR with Directional Tools
(2) Install Casing Bowl 15cm above original ground level
(3) Ensure Mouse and Rathole are Cement filled prior to moving off location.
(4) Material transfer to be filled in for movement of all stock.
(5) Gas Detection Req'd

KOP = 675 mKB

Prognosis

Formation Tops	Lith	H_2S (%)	KB Depth TVD (m)	KB Depth MD (m)	Plan Inc.	Plan Azm.
Surf Csg Pt.		0	*150.00*			
Bash Fish Scales	shale	0	560.45			
Swan River	sand	0	611.95			
Jurassic top	shale/sand	0	663.45			
Upper Melita	sand	0	683.45	683.5	6.9	90.29
Lower Melita	sand/shale	0	753.95	756.9	24.0	90.29
Reston	limestone	0	802.45	813.4	37.2	90.29
Upper Amaranth	anhydrite	0	842.65	869.1	50.2	90.29
Lower Amaranth	silt	0	879.45	939.5	66.6	90.29
Lower Amaranth 'A' Marker	silt	0	883.55	950.3	69.1	90.29
Spearfish Target	silt	0	900.55	1024.0	85.1	90.18
Heel	silt	**0.00**	901.45	1044.6	89.9	90.14
Toe	silt	**0.00**	902.45	***1644.5***	**89.9**	90.14

Contacts:

Petroleum	Waskada		(204) 673-2472
	Lorne Barsness/Twila Jolly		
Operator:	EOG Resources Canada		
	Suite 1300, 700 - 9th Ave SW		
	Calgary, Alberta	Main:	
	T2P 3V4	Fax:	
Area Sup:	Cam Turnbull	Office:	204-673-2732
		Cell:	403-823-0343
Area Frmn:	Brent Lesy	Office:	204-673-2732
		Cell:	204-522-5490
Ops Mgr:	Dennis Taylor	Office:	403-297-9190
		Cell:	403-990-1818
Drilling:	Scot Brodie	Office:	403-297-9124
		Cell:	403-391-1062
	Katie McQuoid	Office:	403-297-9189
		Cell:	403-850-3185
Reservoir:	Allyson Frank	Office:	403-663-8468
Geology:	Emily Gillis	Office:	403 355-6202
		Cell:	
Environmental:	Jaimie Boden	Office:	403-355-6226
Safety(Office):	Gordon Goodman	Office:	403-297-9116
		Cell:	403-934-0793
Safety (Field):	Ken Armstrong	Cell:	403-357-6651
Rig Sup:	**Mike Weiler**	Cell:	403-510-3254
	Wade Wondrasek	Cell:	780-837-4594
	Allen Ingram	Cell:	780-872-1275
	Rick Higgins	Cell:	780-842-0970
	Ryan Olney	Cell:	306-421-4299
	Brad Mikalson	Cell:	403-837-4594
Enviromental:	Jim Meggison	Cell:	780-718-3581
Construction:	Mark Fenske	Cell:	403-743-7758
	Jim Brown	Cell:	403-844-1894
	Terry Neugebauer	Cell:	306-861-1938
Mud:	Prairie Mud		403-860-4660
Cementing:	Trican		306-637-2060
Directional:	Phoenix		403-860-0034
Csg/Fl. Equip:	Fontana's		204-748-2261
Centralizers:	Volant (Chris Flickinger)		1.866.886.5268
Solids Control:	Tecumseh		403-464-0280
Vac & Water:	Bulldog		403-990-4600
Wellsite Trailors:	Winatlta		403-875-8909
Logging:	NA - Gamma with Directional Tools Only		
HWDP:	Al Lawrence		403-826-1637
Medic:	HSE Integrated		403-710-3439
Camp:	PTI		403-998-7003

SURFACE — Hole size: 311.2 mm

Mud	Cement	Potential Problems
Spud with Water	**Preflush:** Water 3.0 m^3 @ 1000kg/m^3	Hole Deviation 1 deg. Max
Density: 1080 - 1120 kg/m^3	**Fill:** TSC 1700	Gravel/Boulders Increase Vis with Gel
Visc: 40-60 s/L	0.2% AFE-4s + 3% CaCl2	Mud rings Use SAPP (if req'd)
pH: 9.0 - 9.5	Yield 0.905m3/t @1700kg/m3	Lost Circulation Spot LCM Pill
Fluidloss: No Control	Cement to Surface	Ensure LCM on location

PRODUCTION — Hole size: 200.03mm

Mud	Cement	Potential Problems
Drill out with floc & Inhibidrill	**Preflush:** Optiflush 5.0 m^3 @ 1200kg/m^3	Mud Rings/Bit Balling Run sawdust sweep Detergent as required
Drill out to KOP Density: ALAP Drilling Visc: 28-30 s/L Fluid Loss: no control pH: 8.5 - 9.5 YP: 4 - 6 Pa	**Scavenger:** Titanium-1400 5.0 m^3 @ 1300kg/m^3 Yield: 2.033m3/t **Fill:** Titanium-1400 (0- 650m) + 2.00% LCM + 1.00% TA-3 (accelerator) + 0.40% AFA-4s Yield: 1.54m3/t 60% Excess over Guage Free Water: 0.4%	Swan River Water Flow Increase density if ECD insufficent for trip Maintain vis as required
KOP-Landing Point Density: 1020 - 1050 kg/m3 Drilling Visc: 40-45 s/L Fluid Loss: 4-6 mL/30min pH: 8.5 - 9.5 YP: 4 - 6 Pa	**Fill:** 0:1:0 CLASS G (650-1650m)+ 1% TA-1 + 0.5% TA-2 (accelerator) + 0.20% AFA-4s + 0.50% CLF-2 Yield: 0.757 m3/t Fluid Loss: 26mL/30min 38% Excess over Guage Free Water: 0%	Maintain vis as required Mud Up Ratty build section
Density: 1020 - 1050 kg/m3 Drilling Visc: 45-55 s/L Fluid Loss: 4-6 mL/30min pH: 8.5 - 9.5 YP: 5 - 7 Pa Have fluid checked daily by mud man and contact	Cement to Surface	Packing Off/Hole cleaning Keep Vis/Yield ALAP High Mud Density Run centrifuge and high mesh screens on shaker in order to control

Smpls:	Type		Interval	Zone
	Cuttings: GOV	5m	650 - TD	1 set for Government

Logs:	Type	Interval	Note
	No open hole logging		
	Gamma with Directional tools Only		

Manitoba
Innovation, Energy and Mines

New Well Summary - Horizontal

Licence: 8001

Well Name & Location: EOG Pierson HZNTL 15-06-02-28 WPM
(as noted on well licence)

Elevations:
Ground Elev: 460.90
Cut or fill: 0.0
Revised GE: 460.90
Rig K.B.: 4.40
Well KB: 465.30

Surface Location: 13C-05-02-28 WPM

Engineer: Chris Evanyshyn
Phone: 403-348-9003
Push: Jim Raycraft

With: EOG Resources Canada
Email/Fax: pd191eog@gmail.com
Rig Name: PD #191 and Number

SPUD DATE & TIME: Dec/06/2011 @ 09:00 hrs.

IE & M notified? Yes

SURFACE CASING: IE & M Notified? Yes Surface TD: 161.27m

Casing run: Dec/06/2011 # of Joints: 12 Size: 219.11 mm
Weight: 35.716kg/m Grade: J55 Landed at: 161.27m
Cement: 10t of TSC 1700 & 3.0 % $CaCl_2$ Returns: 2.0m^3
Plug Down: 18:40 hrs Cement Co: Trican Kick-Off Point for Build: 772m

INTERMEDIATE/PRODUCTION CASING: IE & M Notified? Yes TD Date: Aug/29/2012m TD: 1696

Casing run: Aug/30/2012 # of Joints: 126 Size: 139.7mm
Weight: 23.067kg/m Grade: J-55 Landed at: 1696m
Fill: 19.0t of Titanium 1400 Tail: 28.0t of 0:1:0 "G"
Calc. Cement Top: 0 m Cement Co: Trican Returns: 10.0m Plug Down: 09:27 hrs

Frac Ports Used: No Frac Port Type: _____ # of Frac Ports: _____

FIRST LEG: Date: Aug/28/2012 Kick-Off Point: 1090m

TD Date & Time: Aug/29/2012 @ 12:30hrs TD: 1696m TVD: 994.38m
Bottom Hole Co-ordinates: 792.93 m West of Surface LSD 56.62 m South
Misc. Details: _____

LINER DETAILS: IE & M Notified? Yes **LINER HUNG:** Yes **LINER CEMENTED:** Yes

Liner run: _____/_____/_____ # of Joints: _____ Size: _____mm
Weight: _____kg/m Grade: _____ Liner Top: _____ m MD Liner Bottom: _____ m MD
Fill: _____t of _____ Tail: _____t of _____
Calc. Cement Top: _____ m Cement Co: _____ Plug Down: _____ hrs
Packer Depth: 1. _____ m MD 2. _____ m MD

SECOND LEG: Date: _____/_____/_____ Kick-Off Point: _____m

TD Date & Time: _____/_____/_____ @ _____hrs TD: _____m TVD: _____m
Bottom Hole Co-ordinates: _____ m West of Surface LSD _____ m North
Misc. Details: _____

LINER DETAILS: IE & M Notified? Yes **LINER HUNG:** Yes **LINER CEMENTED:** Yes

Liner run: _____/_____/_____ # of Joints: _____ Size: _____mm
Weight: _____kg/m Grade: _____ Liner Top: _____ m MD Liner Bottom: _____ m MD
Fill: _____t of _____ Tail: _____t of _____
Calc. Cement Top: _____ m Cement Co: _____ Plug Down: _____ hrs
Packer Depth: 1. _____ m MD 2. _____ m MD

Submit Directional Surveys with tours

Fluid Loss: NO Volume: _____ Depth: _____

Displacement Fluid: _____ Bridge Plug Set at: _____m

Rig Release: Aug/30/2012 @ 13:00hrs Well Status: Waiting on Service Rig
(Waiting on Service Rig or Plugged & Abandoned Dry)

Rig Moving To: EOG Pierson HZNTL 11-35-02-28WPM License # 8916

Weekly Report:
_____/_____/_____ @ 0800: _____
(Date)

IE & M – Petroleum Branch – Virden (204)748-4260 - Fax (204)748-2208 Waskada (204)673-2472 – Fax (204)673-2767

Remarks: _____

Tours _____ Sample _____ Well Check: _____/_____/_____

Enseco Directional Drilling
500, 500 - 4th Avenue SW
Calgary, AB
T2P 2V6

Tel: 1-866-806-0088
www.enseco.ca

Enseco Planning Report

09 February, 2010

EOG RESOURCES

WASKADA
L.S. SEC. TWP. RGE. WM
EOG

Well Licence #

Plan: PROPOSAL

ENSECO
Directional Drilling

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	
Company:	EOG RESOURCES	**TVD Reference:**	KB @ 487.50m
Project:	WASKADA	**MD Reference:**	KB @ 487.50m
Site:		**North Reference:**	True
Well:		**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Well Licence #		
Design:			

Project WASKADA

Map System:	Universal Transverse Mercator	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 14N (102 W to 96 W)		Using geodetic scale factor

Site

Site Position:		**Northing:**	5,441,148.39m	**Latitude:**	49° 6' 40.106 N
From:	Map	**Easting:**	378,370.62m	**Longitude:**	100° 39' 59.954 W
Position Uncertainty:	0.00 m	**Slot Radius:**	mm	**Grid Convergence:**	-1.26 °

Well

Well Position	**+N/-S**	0.00 m	**Northing:**	5,441,148.39 m	**Latitude:**	49° 6' 40.106 N
	+E/-W	0.00 m	**Easting:**	378,370.62 m	**Longitude:**	100° 39' 59.954 W
Position Uncertainty		0.00 m	**Wellhead Elevation:**	487.50 m	**Ground Level:**	483.50 m

Wellbore Well Licence #

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	6.69	74.32	57,460

Design

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (m)	+N/-S (m)	+E/-W (m)	Direction (°)
	0.00	0.00	0.00	269.88

Plan Sections

MD (m)	Inc (°)	Azi (°)	Vertical Depth	SS (m)	+N/-S (m)	+E/-W (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)	TFO (°)	Target
0.00	0.00	0.00	0.00	-487.50	0.00	0.00	0.000	0.000	0.000	0.00	
641.23	0.00	0.00	641.23	153.73	0.00	0.00	0.000	0.000	0.000	0.00	
903.73	70.00	269.88	843.13	355.63	-0.29	-141.37	8.000	8.000	0.000	269.88	
923.08	70.00	269.88	849.75	362.25	-0.33	-159.56	0.000	0.000	0.000	0.00	
1,015.39	90.00	269.88	865.70	378.20	-0.51	-250.00	6.500	6.500	0.000	0.00	PROPOSED HEEL
1,575.65	90.00	269.88	865.70	378.20	-1.66	-810.26	0.000	0.000	0.000	0.00	PROPOSED TOE

Database:	EDM 2003.21 Single User Db	**Local Co-ordinate Reference:**	
Company:	EOG RESOURCES	**TVD Reference:**	KB @ 487.50m
Project:	WASKADA	**MD Reference:**	KB @ 487.50m
Site:		**North Reference:**	True
Well:		**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Well Licence #		
Design:			

Planned Survey

MD (m)	Inc (°)	Azi (°)	TVD (m)	SS (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
KICK OFF POINT (8°/30m BUR)										
641.23	0.00	0.00	641.23	-153.73	0.00	0.00	0.00	0.000	0.00	0.00
JURASSIC TOP										
651.50	2.74	269.88	651.50	-164.00	0.00	-0.25	0.25	8.000	8.00	0.00
UPPER MELITA										
652.51	3.01	269.88	652.50	-165.00	0.00	-0.30	0.30	8.000	8.00	0.00
660.00	5.00	269.88	659.98	-172.48	0.00	-0.82	0.82	8.000	8.00	0.00
690.00	13.00	269.88	689.58	-202.08	-0.01	-5.51	5.51	8.000	8.00	0.00
720.00	21.00	269.88	718.25	-230.75	-0.03	-14.28	14.28	8.000	8.00	0.00
LOWER MELITA										
722.42	21.65	269.88	720.50	-233.00	-0.03	-15.16	15.16	8.000	8.00	0.00
750.00	29.00	269.88	745.41	-257.91	-0.06	-26.95	26.95	8.000	8.00	0.00
RESTON										
777.44	36.32	269.88	768.50	-281.00	-0.09	-41.75	41.75	8.000	8.00	0.00
780.00	37.00	269.88	770.55	-283.05	-0.09	-43.28	43.28	8.000	8.00	0.00
810.00	45.00	269.88	793.17	-305.67	-0.13	-62.94	62.94	8.000	8.00	0.00
UPPER AMARANTH										
828.23	49.87	269.88	805.50	-318.00	-0.16	-76.36	76.36	8.000	8.00	0.00
840.00	53.00	269.88	812.84	-325.34	-0.18	-85.57	85.57	8.000	8.00	0.00
870.00	61.00	269.88	829.16	-341.66	-0.23	-110.71	110.71	8.000	8.00	0.00
900.00	69.00	269.88	841.83	-354.33	-0.28	-137.88	137.88	8.000	8.00	0.00
END OF BUILD TO 70° INC										
903.73	70.00	269.88	843.13	-355.63	-0.29	-141.37	141.37	8.000	8.00	0.00
LOWER AMARANTH										
906.56	70.00	269.88	844.10	-356.60	-0.30	-144.03	144.03	0.000	0.00	0.00
LOWER AMARANTH A MKR										
920.01	70.00	269.88	848.70	-361.20	-0.32	-156.66	156.66	0.000	0.00	0.00
END OF TANGENT (PUMP)										
923.08	70.00	269.88	849.75	-362.25	-0.33	-159.56	159.56	0.000	0.00	0.00
930.00	71.50	269.88	852.03	-364.53	-0.34	-166.09	166.09	6.500	6.50	0.00
960.00	78.00	269.88	859.92	-372.42	-0.40	-195.01	195.01	6.500	6.50	0.00
990.00	84.50	269.88	864.48	-376.98	-0.46	-224.65	224.65	6.500	6.50	0.00
TOP PURPLE SAND										
992.39	85.02	269.88	864.70	-377.20	-0.47	-227.02	227.02	6.500	6.50	0.00
PROPOSED HEEL										
1,015.39	90.00	269.88	865.70	-378.20	-0.51	-250.00	250.00	6.500	6.50	0.00
1,020.00	90.00	269.88	865.70	-378.20	-0.52	-254.61	254.61	0.000	0.00	0.00
1,050.00	90.00	269.88	865.70	-378.20	-0.58	-284.61	284.61	0.000	0.00	0.00
1,080.00	90.00	269.88	865.70	-378.20	-0.64	-314.61	314.61	0.000	0.00	0.00
1,110.00	90.00	269.88	865.70	-378.20	-0.71	-344.61	344.61	0.000	0.00	0.00
1,140.00	90.00	269.88	865.70	-378.20	-0.77	-374.61	374.61	0.000	0.00	0.00
1,170.00	90.00	269.88	865.70	-378.20	-0.83	-404.61	404.61	0.000	0.00	0.00
1,200.00	90.00	269.88	865.70	-378.20	-0.89	-434.61	434.61	0.000	0.00	0.00
1,230.00	90.00	269.88	865.70	-378.20	-0.95	-464.61	464.61	0.000	0.00	0.00
1,260.00	90.00	269.88	865.70	-378.20	-1.01	-494.61	494.61	0.000	0.00	0.00
1,290.00	90.00	269.88	865.70	-378.20	-1.07	-524.61	524.61	0.000	0.00	0.00
1,320.00	90.00	269.88	865.70	-378.20	-1.14	-554.61	554.61	0.000	0.00	0.00
1,350.00	90.00	269.88	865.70	-378.20	-1.20	-584.61	584.61	0.000	0.00	0.00
1,380.00	90.00	269.88	865.70	-378.20	-1.26	-614.61	614.61	0.000	0.00	0.00
1,410.00	90.00	269.88	865.70	-378.20	-1.32	-644.61	644.61	0.000	0.00	0.00
1,440.00	90.00	269.88	865.70	-378.20	-1.38	-674.61	674.61	0.000	0.00	0.00
1,470.00	90.00	269.88	865.70	-378.20	-1.44	-704.61	704.61	0.000	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	
Company:	EOG RESOURCES	TVD Reference:	KB @ 487.50m
Project:	WASKADA	MD Reference:	KB @ 487.50m
Site:		North Reference:	True
Well:		Survey Calculation Method:	Minimum Curvature
Wellbore:	Well Licence #		
Design:			

Planned Survey

MD (m)	Inc (°)	Azi (°)	TVD (m)	SS (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
1,500.00	90.00	269.88	865.70	-378.20	-1.51	-734.61	734.61	0.000	0.00	0.00
1,530.00	90.00	269.88	865.70	-378.20	-1.57	-764.61	764.61	0.000	0.00	0.00
1,560.00	90.00	269.88	865.70	-378.20	-1.63	-794.61	794.61	0.000	0.00	0.00
PROPOSED TOE										
1,575.65	90.00	269.88	865.70	-378.20	-1.66	-810.26	810.26	0.000	0.00	0.00

Formations

MD (m)	TVD (m)	Name	Lithology	Dip (°)	Dip Direction (°)
461.50	461.50	KELD		0.00	
523.50	523.50	BFS		0.00	
542.50	542.50	SKULL CREEK		0.00	
573.50	573.50	SWAN RIVER		0.00	
651.50	651.50	JURASSIC TOP		0.00	
652.51	652.50	UPPER MELITA		0.00	
722.42	720.50	LOWER MELITA		0.00	
777.44	768.50	RESTON		0.00	
828.23	805.50	UPPER AMARANTH		0.00	
906.56	844.10	LOWER AMARANTH		0.00	
920.01	848.70	LOWER AMARANTH A MKR		0.00	
992.39	864.70	TOP PURPLE SAND		0.00	

Plan Annotations

MD (m)	TVD (m)	Local Coordinates +N/-S (m)	Local Coordinates +E/-W (m)	Comment
641.23	641.23	0.00	0.00	KICK OFF POINT (8°/30m BUR)
903.73	843.13	-0.29	-141.37	END OF BUILD TO 70° INC
923.08	849.75	-0.33	-159.56	END OF TANGENT (PUMP)
1,015.39	865.70	-0.51	-250.00	PROPOSED HEEL
1,575.65	865.70	-1.66	-810.26	PROPOSED TOE

Project: WASKADA

eog resources

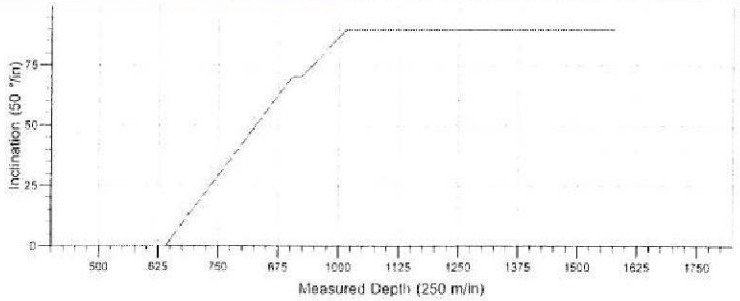
ENSECO Directional Drilling

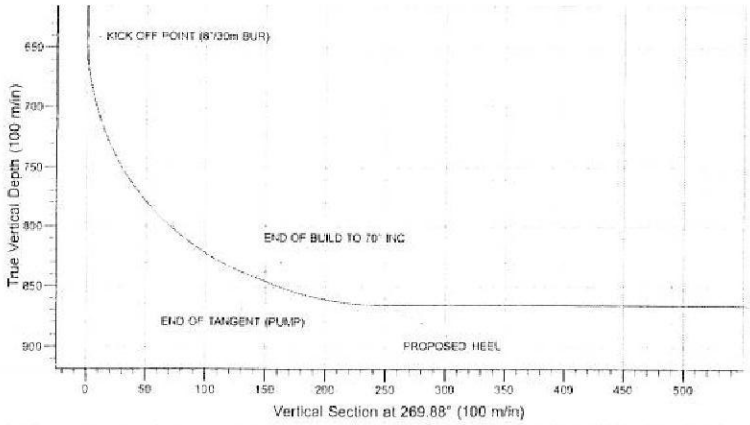
ANNOTATIONS

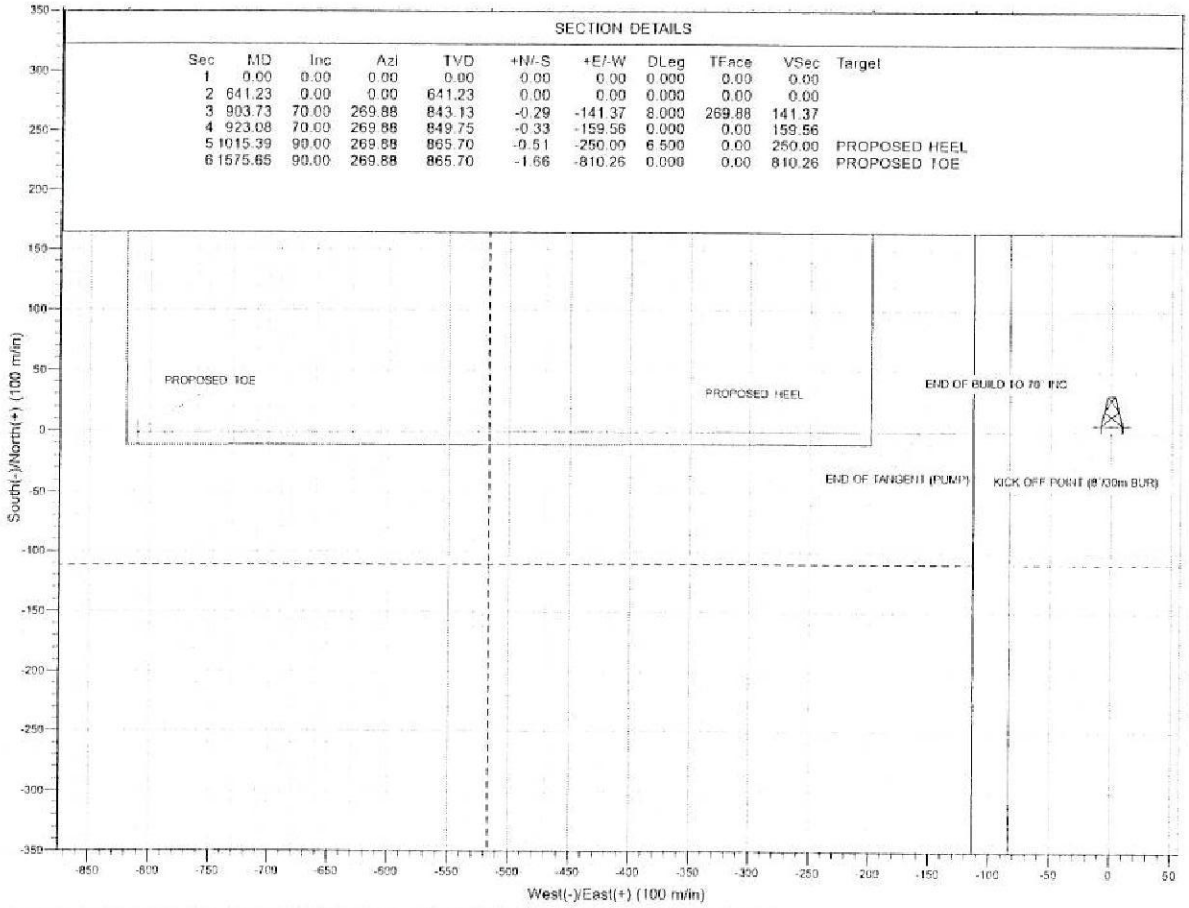
TVD	MD	Annotation
641.23	641.23	KICK OFF POINT (8°/30m BUR)
843.13	903.73	END OF BUILD TO 70° INC
849.75	923.08	END OF TANGENT (PUMP)
865.70	1015.39	PROPOSED 100/10-7 HEEL
865.70	1575.65	PROPOSED 100/10-7 TOE

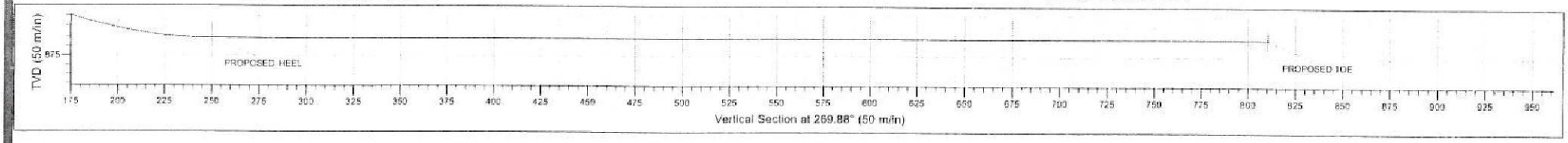
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	0.00	
2	641.23	0.00	0.00	641.23	0.00	0.00	0.000	0.00	0.00	
3	903.73	70.00	269.88	843.13	-0.29	-141.37	8.000	269.88	141.37	
4	923.08	70.00	269.88	849.75	-0.33	-159.56	0.000	0.00	159.56	
5	1015.39	90.00	269.88	865.70	-0.51	-250.00	6.500	0.00	250.00	PROPOSED HEEL
6	1575.65	90.00	269.88	865.70	-1.66	-810.26	0.000	0.00	810.26	PROPOSED TOE







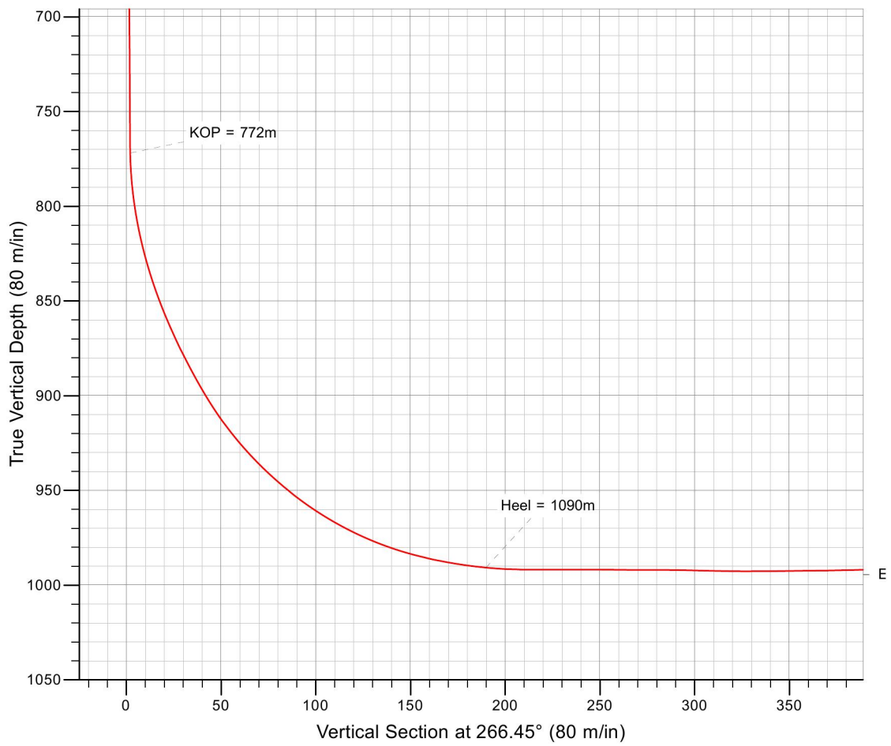


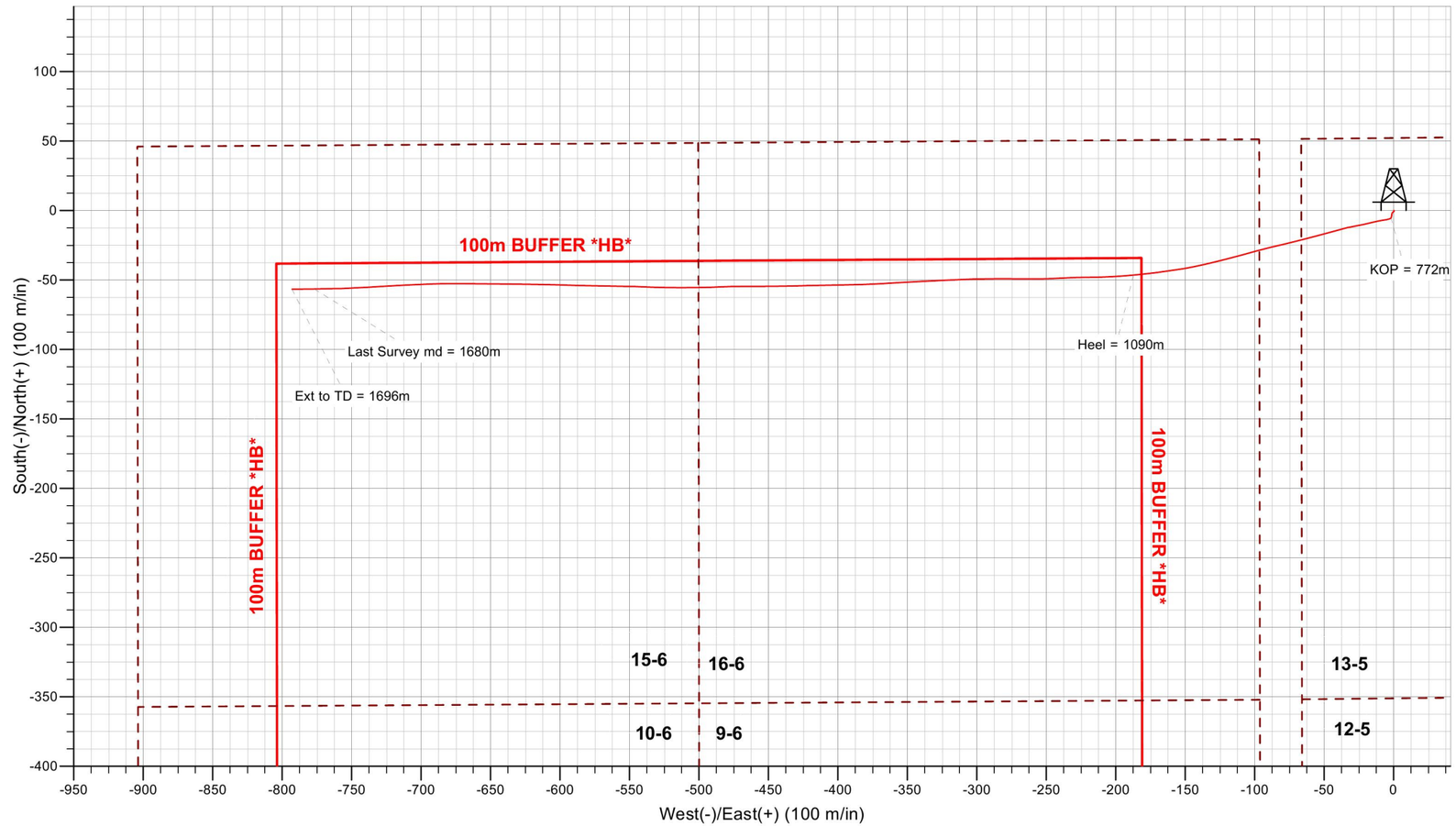
Project: PIERSON
Site: L.S. 13C SEC. 5 TWP, 2 RGE. 28 WPM
Well: EOG 100 PIERSON HZ 15-6-2-28
Wellbore: WELL LICENCE # 8001
Design: 125411403R Surveys

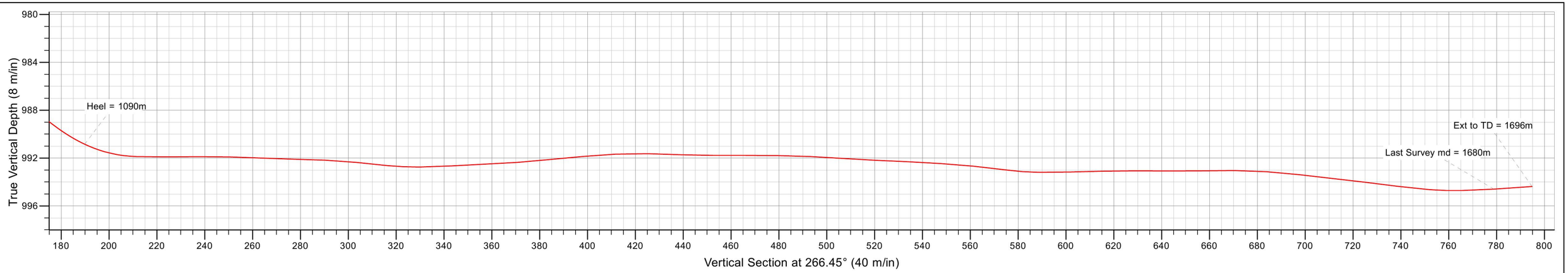
PHOENIX TECHNOLOGY SERVICES LP

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
771.94	772.00	1.84	213.70	-5.33	-1.73	2.06	7.36	KOP = 772m
990.85	1090.00	84.62	264.52	-46.50	-187.33	189.85	197.80	Heel = 1090m
994.60	1680.00	90.80	269.50	-56.48	-776.94	778.94	787.72	Last Survey md = 1680m
994.38	1696.00	90.80	269.50	-56.62	-792.93	794.92	803.72	Ext to TD = 1696m







Phoenix Technology Services LP

Survey Report

Database:	Canada Compass DB	**Local Co-ordinate Reference:**	Well EOG 100 PIERSON HZ 15-6-2-28
Company:	EOG RESOURCES	**TVD Reference:**	Actual KB @ 465.30m
Project:	PIERSON	**MD Reference:**	Actual KB @ 465.30m
Site:	L.S. 13C SEC. 5 TWP, 2 RGE. 28 WPM	**North Reference:**	True
Well:	EOG 100 PIERSON HZ 15-6-2-28	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WELL LICENCE # 8001		
Job Number	125411403R Surveys		

Project PIERSON

Map System:	Universal Transverse Mercator	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 14N (102 W to 96 W)		Using geodetic scale factor

Site L.S. 13C SEC. 5 TWP, 2 RGE. 28 WPM

Site Position:		**Northing:**	5,440,868.85 m	**Latitude:**	49.10
From:	Map	**Easting:**	339,144.00 m	**Longitude:**	-101.20
Position Uncertainty:	0.00 m	**Slot Radius:**	335.28 mm	**Grid Convergence:**	-1.67 °

Well EOG 100 PIERSON HZ 15-6-2-28

Well Position	**+N/-S**	0.00 m	**Northing:**	5,441,176.88 m	**Latitude:**	49° 6' 8.554 N
	+E/-W	0.00 m	**Easting:**	339,094.58 m	**Longitude:**	101° 12' 16.155 W
Position Uncertainty		0.00 m	**Wellhead Elevation:**	m	**Ground Level:**	460.90 m

Wellbore WELL LICENCE # 8001

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/24/2011	7.05	74.21	57,299

Job Number 125411403R Surveys

Audit Notes:

Version: 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00

Vertical Section:	Depth From (TVD) (m)	+N/-S (m)	+E/-W (m)	Direction (°)
	0.00	0.00	0.00	266.45

Survey Program **Date** 8/30/2012

From ()	To (m)	Survey (Wellbore)	Tool Name	Description
0.00	1,696.00	125411403R Surveys (WELL LICENCE #	MWD	MWD - Standard

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
0.00	0.00	0.01	0.00	465.30	0.00	0.00	0.00	0.000	0.000	0.000
166.00	0.29	118.80	166.00	299.30	-0.20	0.37	-0.35	0.052	0.052	0.000
171.66	0.30	118.80	171.66	293.64	-0.22	0.39	-0.38	0.053	0.053	0.000
294.48	0.20	264.90	294.48	170.82	-0.39	0.46	-0.44	0.117	-0.024	35.686
403.59	0.40	195.50	403.59	61.71	-0.77	0.17	-0.12	0.104	0.055	-19.082
512.69	0.50	280.90	512.69	-47.39	-1.05	-0.40	0.46	0.169	0.027	23.483
621.81	0.80	195.60	621.80	-156.50	-1.69	-1.07	1.17	0.250	0.082	-23.451
716.89	1.80	186.40	716.85	-251.55	-3.82	-1.42	1.65	0.321	0.316	-2.903
756.37	1.50	194.00	756.32	-291.02	-4.94	-1.61	1.91	0.282	-0.228	5.775

Database:	Canada Compass DB	**Local Co-ordinate Reference:**	Well EOG 100 PIERSON HZ 15-6-2-28
Company:	EOG RESOURCES	**TVD Reference:**	Actual KB @ 465.30m
Project:	PIERSON	**MD Reference:**	Actual KB @ 465.30m
Site:	L.S. 13C SEC. 5 TWP, 2 RGE. 28 WPM	**North Reference:**	True
Well:	EOG 100 PIERSON HZ 15-6-2-28	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WELL LICENCE # 8001		
Job Number	125411403R Surveys		

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
769.49	1.50	195.40	769.43	-304.13	-5.27	-1.70	2.02	0.084	0.000	3.201
KOP = 772m										
772.00	1.84	213.70	771.94	-306.64	-5.33	-1.73	2.06	7.509	4.064	218.725
782.62	4.10	242.80	782.55	-317.25	-5.65	-2.16	2.51	7.480	6.384	82.203
795.79	7.30	251.10	795.65	-330.35	-6.14	-3.37	3.75	7.508	7.289	18.907
808.95	10.90	260.40	808.64	-343.34	-6.61	-5.39	5.79	8.839	8.207	21.201
822.09	14.00	261.00	821.47	-356.17	-7.07	-8.19	8.61	7.084	7.078	1.370
835.27	16.80	258.10	834.18	-368.88	-7.71	-11.62	12.08	6.608	6.373	-6.601
848.40	20.30	256.00	846.63	-381.33	-8.65	-15.69	16.20	8.140	7.997	-4.798
861.57	23.10	257.40	858.86	-393.56	-9.77	-20.43	21.00	6.486	6.378	3.189
874.71	25.20	258.80	870.85	-405.55	-10.88	-25.69	26.32	4.969	4.795	3.196
887.85	27.80	259.30	882.61	-417.31	-11.99	-31.45	32.13	5.958	5.936	1.142
900.99	30.30	254.40	894.10	-428.80	-13.45	-37.65	38.41	7.875	5.708	-11.187
914.16	32.80	254.50	905.32	-440.02	-15.30	-44.29	45.15	5.696	5.695	0.228
927.33	37.80	255.10	916.06	-450.76	-17.29	-51.63	52.61	11.417	11.390	1.367
940.50	41.40	255.00	926.21	-460.91	-19.45	-59.74	60.83	8.202	8.200	-0.228
953.68	45.20	255.70	935.80	-470.50	-21.74	-68.49	69.70	8.718	8.649	1.593
966.81	48.80	257.50	944.75	-479.45	-23.96	-77.83	79.16	8.758	8.225	4.113
979.98	52.70	255.80	953.09	-487.79	-26.32	-87.75	89.21	9.376	8.884	-3.872
993.16	57.00	255.40	960.67	-495.37	-29.00	-98.18	99.79	9.816	9.788	-0.910
1,006.33	61.20	254.70	967.43	-502.13	-31.91	-109.10	110.87	9.664	9.567	-1.595
1,019.47	65.10	255.20	973.37	-508.07	-34.96	-120.42	122.35	8.962	8.904	1.142
1,032.63	69.40	256.80	978.46	-513.16	-37.89	-132.19	134.28	10.363	9.802	3.647
1,045.79	73.60	258.70	982.63	-517.33	-40.53	-144.38	146.62	10.418	9.574	4.331
1,058.93	77.10	261.40	985.95	-520.65	-42.73	-156.90	159.25	9.970	7.991	6.164
1,072.10	80.50	262.80	988.51	-523.21	-44.50	-169.70	172.13	8.353	7.745	3.189
1,085.28	83.40	263.80	990.36	-525.06	-46.02	-182.66	185.16	6.975	6.601	2.276
Heel = 1090m										
1,090.00	84.62	264.52	990.85	-525.55	-46.50	-187.33	189.85	8.991	7.754	4.576
1,098.44	86.80	265.80	991.48	-526.18	-47.21	-195.71	198.26	8.979	7.749	4.550
1,111.57	89.70	269.00	991.88	-526.58	-47.81	-208.82	211.38	9.864	6.626	7.312
1,124.72	90.10	268.80	991.91	-526.61	-48.06	-221.97	224.52	1.020	0.913	-0.456
1,137.90	90.00	267.70	991.89	-526.59	-48.46	-235.14	237.69	2.514	-0.228	-2.504
1,151.07	89.80	267.60	991.92	-526.62	-49.00	-248.30	250.86	0.509	-0.456	-0.228
1,164.25	89.40	270.20	992.01	-526.71	-49.25	-261.47	264.02	5.988	-0.910	5.918
1,177.41	89.80	270.60	992.10	-526.80	-49.16	-274.63	277.15	1.290	0.912	0.912
1,190.55	89.50	269.70	992.18	-526.88	-49.13	-287.77	290.27	2.166	-0.685	-2.055
1,203.70	88.80	268.30	992.38	-527.08	-49.36	-300.92	303.40	3.571	-1.597	-3.194
1,216.87	88.90	267.40	992.64	-527.34	-49.85	-314.08	316.56	2.062	0.228	-2.050
1,230.05	90.10	267.70	992.76	-527.46	-50.42	-327.24	329.74	2.815	2.731	0.683
1,243.70	90.70	266.50	992.66	-527.36	-51.11	-340.88	343.39	2.949	1.319	-2.637
1,257.34	90.50	267.00	992.52	-527.22	-51.88	-354.49	357.03	1.184	-0.440	1.100
1,270.98	90.70	266.90	992.37	-527.07	-52.60	-368.11	370.67	0.492	0.440	-0.220

Database:	Canada Compass DB	**Local Co-ordinate Reference:**	Well EOG 100 PIERSON HZ 15-6-2-28
Company:	EOG RESOURCES	**TVD Reference:**	Actual KB @ 465.30m
Project:	PIERSON	**MD Reference:**	Actual KB @ 465.30m
Site:	L.S. 13C SEC. 5 TWP, 2 RGE. 28 WPM	**North Reference:**	True
Well:	EOG 100 PIERSON HZ 15-6-2-28	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WELL LICENCE # 8001		
Job Number	125411403R Surveys		

Survey

Measured Depth (m)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	Subsea Depth (m)	+N/-S (m)	+E/-W (m)	Vertical Section (m)	Dogleg Rate (°/30m)	Build Rate (°/30m)	Turn Rate (°/30m)
1,284.64	91.30	268.10	992.14	-526.84	-53.20	-381.76	384.32	2.946	1.318	2.635
1,298.29	90.90	269.00	991.87	-526.57	-53.55	-395.40	397.96	2.164	-0.879	1.978
1,311.94	90.70	268.70	991.68	-526.38	-53.82	-409.05	411.60	0.792	-0.440	-0.659
1,325.59	89.60	269.00	991.65	-526.35	-54.09	-422.69	425.23	2.506	-2.418	0.659
1,339.25	89.70	268.60	991.73	-526.43	-54.38	-436.35	438.88	0.905	0.220	-0.878
1,352.90	89.90	269.90	991.78	-526.48	-54.56	-450.00	452.52	2.891	0.440	2.857
1,366.54	90.10	269.80	991.78	-526.48	-54.59	-463.64	466.13	0.492	0.440	-0.220
1,380.24	89.70	268.50	991.80	-526.50	-54.80	-477.34	479.82	2.978	-0.876	-2.847
1,393.89	89.60	268.00	991.89	-526.59	-55.21	-490.98	493.46	1.121	-0.220	-1.099
1,407.54	89.10	269.80	992.04	-526.74	-55.48	-504.63	507.10	4.106	-1.099	3.956
1,421.18	89.60	270.10	992.20	-526.90	-55.49	-518.27	520.71	1.282	1.100	0.660
1,434.84	89.40	272.20	992.31	-527.01	-55.21	-531.92	534.32	4.633	-0.439	4.612
1,448.50	89.30	271.90	992.47	-527.17	-54.73	-545.57	547.92	0.694	-0.220	-0.659
1,462.15	88.80	270.80	992.70	-527.40	-54.40	-559.22	561.51	2.655	-1.099	-2.418
1,475.80	88.60	270.70	993.01	-527.71	-54.23	-572.86	575.12	0.491	-0.440	-0.220
1,489.46	89.80	271.60	993.20	-527.90	-53.95	-586.52	588.73	3.294	2.635	1.977
1,503.11	90.40	271.80	993.17	-527.87	-53.55	-600.16	602.33	1.390	1.319	0.440
1,516.75	90.20	271.00	993.10	-527.80	-53.21	-613.80	615.91	1.814	-0.440	-1.760
1,530.40	90.00	270.30	993.08	-527.78	-53.06	-627.45	629.53	1.600	-0.440	-1.538
1,544.05	89.90	270.70	993.09	-527.79	-52.94	-641.10	643.14	0.906	-0.220	0.879
1,557.71	90.20	271.10	993.08	-527.78	-52.72	-654.75	656.76	1.098	0.659	0.878
1,571.35	90.00	269.80	993.05	-527.75	-52.62	-668.39	670.37	2.893	-0.440	-2.859
1,585.00	89.20	269.80	993.15	-527.85	-52.66	-682.04	684.00	1.758	-1.758	0.000
1,598.64	88.70	267.20	993.40	-528.10	-53.02	-695.67	697.62	5.822	-1.100	-5.718
1,612.29	88.70	267.30	993.71	-528.41	-53.68	-709.30	711.27	0.220	0.000	0.220
1,625.92	88.70	266.70	994.02	-528.72	-54.39	-722.91	724.89	1.320	0.000	-1.321
1,639.56	88.40	266.70	994.36	-529.06	-55.17	-736.53	738.53	0.660	-0.660	0.000
1,653.20	89.20	267.60	994.65	-529.35	-55.85	-750.15	752.16	2.648	1.760	1.979
1,666.83	90.20	268.80	994.72	-529.42	-56.28	-763.77	765.79	3.438	2.201	2.641
Last Survey md = 1680m										
1,680.00	90.80	269.50	994.60	-529.30	-56.48	-776.94	778.94	2.100	1.367	1.595
Ext to TD = 1696m										
1,696.00	90.80	269.50	994.38	-529.08	-56.62	-792.93	794.92	0.000	0.000	0.000

Survey Annotations

Measured Depth ()	Vertical Depth ()	Local Coordinates +N/-S ()	Local Coordinates +E/-W ()	Comment
772.00	771.94	-5.33	-1.73	KOP = 772m
1,090.00	990.85	-46.50	-187.33	Heel = 1090m
1,680.00	994.60	-56.48	-776.94	Last Survey md = 1680m
1,696.00	994.38	-56.62	-792.93	Ext to TD = 1696m

Database:	Canada Compass DB	**Local Co-ordinate Reference:**	Well EOG 100 PIERSON HZ 15-6-2-28
Company:	EOG RESOURCES	**TVD Reference:**	Actual KB @ 465.30m
Project:	PIERSON	**MD Reference:**	Actual KB @ 465.30m
Site:	L.S. 13C SEC. 5 TWP, 2 RGE. 28 WPM	**North Reference:**	True
Well:	EOG 100 PIERSON HZ 15-6-2-28	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	WELL LICENCE # 8001		
Job Number	125411403R Surveys		

Checked By: _____ Approved By: _____ Date: _____

8001

Geological Report

eog resources

EOG Pierson HZNTL
100/15-06-02-28WPM
August, 2012
Geological Report

SURFACE LOCATION:	13C-05-02-28 WPM
WELL LOCATION:	15C-06-02-28WPM
LICENCE NUMBER:	8001
UWI:	100/15-06-002-28W1/00
RIG RELEASE DATE:	August 30, 2012

Prepared for: Kade Holladay
Prepared by: Kim Heinemann, Steven Gould

Pro Geo Consultants

TABLE OF CONTENTS

STRIP LOGS IN BACK POCKET

GENERAL WELL DATA

OPERATOR:	EOG Resources Canada Inc.	
WELL NAME:	**EOG PIERSON 15-06-02-28WPM**	
WELL LOCATION:	15C-06-02-28WPM	
CO-ORDINATES:	94.91m South of North Boundary, Section 6 697.54m West of East Boundary, Section 6	
ELEVATIONS:	Ground: 460.90 m	Kelly Bushing: 465.30 m
LICENCE NUMBER:	8001	**UWI: 100/15-06-02-28W1/00**
AFE#:	12J0056	
PRIMARY OBJECTIVE:	Lower Amaranth Oil Production	
CONTRACTOR:	Precision Drilling Rig #191 Tool Push: Jim Raycraft	
SPUD DATE:	12-08-26 19:30 hrs	
KICK-OFF POINT:	771.0 m MD	
TOTAL DEPTH:	1696.0 m MD	**Date and Time**: 12-08-29 12:30 hrs
HOLE SIZE:	**Surface**: 311 mm;	**Build & Lateral**: 200 mm
SURFACE CASING:	Ran 12 joints of 219.1 mm, 35.72 kg/m, J-55, Fedmet casing with guide shoe & float collar. Total length: 161.27m. Landed @ 166.0 m MD. Drilled out: 12-08-27 0300 hrs.	
SAMPLES:	One set of five meter samples from 1025 m to 1120 m and one set of ten meter samples from 1120 m to 1696.0 m for Manitoba Energy & Mines. No sets required for EOG Resources Canada Inc.	

OPERATIONS

DATE	TIME	OPERATION
12-08-27	0300	Finished drilling out preset surface casing plug and start drilling vertical section. Mud motor set at 2.12°.
12-08-27	2150	Mud up at approximately 700 m MD.
12-08-28	0000	Reach Kick Off Point at 745.0 m MD.
12-08-28	1555	Reach sample point at 1025 m MD.
12-08-28	1830	Lateral Heel landed at 1090.0 m MD and begins drilling lateral section.
12-08-29	1230	Reach Total Depth (Toe) at 1696.0 m MD.

Drilling Supervisor: Chris Evanyshyn / Dave Pledger`

GEOLOGICAL MARKERS

(K.B.: 465.30 m)

Formation	Measured Depth (m)	True Vertical Depth (m)	Subsea (m)	Isopach (m)
Kick Off Point	771.0	771.0		
Jurassic	728.4	771.1	-263.1	42.8
Upper Melita	771.2	827.8	-305.8	56.6
Lower Melita	828.6	885.4	-362.5	57.6
Reston	891.0	885.4	-420.1	44.1
Upper Amaranth	945.0	929.5	-464.2	37.3
Lower Amaranth	1005.0	966.8	-501.5	4.6
Lower Amaranth 'A' Marker	1015.0	971.4	-506.1	17.0
Lateral Heel	1090.0	990.9	525.6	
Green Sand	1079.8	989.6	-524.3	1.2
Blue Sand	1090.5	990.8	-525.5	1.1
Purple Sand	1113.25	991.9	-526.6	1.0
Brown Sand (in)	1164.0	992.0	-526.7	
Brown Sand (out)	1250.0	992.6	-527.3	
Extrapolated Total Depth (Toe)	1696.0	994.4	-529.5	

DAILY MUD PROPERTIES

DATE TIME	DEPTH (m)	DENSITY	VISCOSITY	WATER LOSS	pH	CHLOR.	CALC.
No mud reports							

Note: Mud up at approximately 700 m MD, 12-08-27 21:50 hrs.

BIT RECORD

BIT #	MAKE	TYPE	SIZE (mm)	DEPTH IN (m)	DEPTH OUT (m)	METERS DRILLED	ROTATING HOURS	AVERAGE ROP (m/hr)
1	Shear	PDC	200	166.0	1696.0	1530.0	39.8	38.4

DAILY DRILLING SUMMARY

Date	Depth @ 2400 hrs (m)	Daily Progress (m)	Rotating Hours	Rate (m/hr)	Drilling Activity
12-08-26	166	0	0.0	0.0	Rigging up / Pressure testing
12-08-27	772	606	11.0	55.1	Drilling 200 mm Build Section
12-08-28	1273	501	19.5	25.7	Drilling 200mm Lateral Section
12-08-29	1696	423	9.3	45.5	Total Depth

TOTAL ROTATING HOURS: 39.8 hrs.

DIRECTIONAL

Directional Company: Phoenix Technology Services LP
Directional Hands: **Day**: Jayce Muir **Night**: Jesse Baker
MWD Operators: **Day**: Drew Beaupre **Night**: Noah Liremann
Motors: **Vertical**: 2.12° **Build**: 2.12° **Lateral**: 2.12°

SURVEYS

Phoenix Technology Services LP

Company: EOG Resources Canada Inc.
Well: EOG Pierson HZNTL 15-06-02-28 WPM Location: 15C-06-02-28 WPM
Reference: True North

KB Elevation: 465.30 m Ground Elevation: 460.90 m
License: 8001 UWI: 100/15-06-02-28W1/00

Vertical Section Calculated Along Azimuth 266.45°

	Measured	Incl	Drift	TRUE	Vertical	CLOSURE	CLOSURE	Dogleg		
	Depth	Angle	Direction	Vertical	N-S	E-W	Section	Distance	Direction	Severity
	Meters	Deg	Deg	Depth	Meters	Meters	Meters	Meters	Deg	Deg/30
	0	0	0.01	0	0	0	0	0	0	0
Surface	Casing									
	166	0.29	118.8	166	-0.2	0.37	-0.36	0.42	118.8	0.05
	171.66	0.3	118.8	171.66	-0.22	0.39	-0.38	0.45	118.8	0.05
	294.48	0.2	264.9	294.48	-0.39	0.46	-0.44	0.6	130.2	0.12
	403.59	0.4	195.5	403.59	-0.77	0.17	-0.12	0.79	167.57	0.1
	512.69	0.5	280.9	512.69	-1.05	-0.4	0.46	1.12	200.76	0.17
	621.81	0.8	195.6	621.8	-1.7	-1.07	1.17	2.01	212.29	0.25
	716.89	1.8	186.4	716.85	-3.82	-1.42	1.65	4.07	200.35	0.32
	756.37	1.5	194	756.32	-4.94	-1.61	1.91	5.19	198.07	0.28
	769.49	1.5	195.4	769.43	-5.27	-1.7	2.02	5.53	197.86	0.08
KOP										
	772	1.84	213.7	771.94	-5.33	-1.73	2.06	5.61	197.96	7.49
	782.62	4.1	242.8	782.55	-5.65	-2.16	2.51	6.05	200.93	7.49
	795.79	7.3	251.1	795.65	-6.13	-3.37	3.74	7	208.79	7.51
	808.95	10.9	260.4	808.64	-6.61	-5.39	5.79	8.53	219.18	8.84
	822.09	14	261	821.47	-7.07	-8.19	8.61	10.82	229.18	7.08
	835.27	16.8	258.1	834.18	-7.71	-11.62	12.08	13.95	236.44	6.61
	848.4	20.3	256	846.63	-8.65	-15.69	16.2	17.92	241.12	8.14
	861.57	23.1	257.4	858.86	-9.77	-20.43	21	22.65	244.44	6.49
	874.71	25.2	258.8	870.85	-10.88	-25.69	26.32	27.9	247.05	4.97
	887.85	27.8	259.3	882.61	-11.99	-31.45	32.13	33.66	249.13	5.96
	900.99	30.3	254.4	894.1	-13.45	-37.65	38.41	39.98	250.34	7.88
	914.16	32.8	254.5	905.32	-15.3	-44.29	45.15	46.86	250.95	5.7
	927.33	37.8	255.1	916.06	-17.29	-51.63	52.61	54.45	251.49	11.42
	940.5	41.4	255	926.21	-19.45	-59.74	60.83	62.83	251.96	8.2
	953.68	45.2	255.7	935.8	-21.74	-68.49	69.7	71.85	252.39	8.72
	966.81	48.8	257.5	944.75	-23.96	-77.83	79.16	81.43	252.89	8.76
	979.98	52.7	255.8	953.09	-26.32	-87.75	89.21	91.61	253.3	9.38
	993.16	57	255.4	960.67	-29	-98.18	99.79	102.37	253.55	9.82
	1006.33	61.2	254.7	967.43	-31.91	-109.1	110.86	113.67	253.69	9.66
	1019.47	65.1	255.2	973.37	-34.96	-120.42	122.35	125.39	253.81	8.96

	1032.63	69.4	256.8	978.46	-37.89	-132.19	134.28	137.51	254.01	10.36
	1045.79	73.6	258.7	982.63	-40.53	-144.38	146.62	149.96	254.32	10.42
	1058.93	77.1	261.4	985.95	-42.73	-156.9	159.25	162.62	254.77	9.97
	1072.1	80.5	262.8	988.51	-44.5	-169.7	172.13	175.43	255.31	8.35
	1085.28	83.4	263.8	990.36	-46.02	-182.66	185.15	188.36	255.86	6.97
Lateral	Heel									
	1090	84.62	264.52	990.85	-46.5	-187.33	189.84	193.01	256.06	8.98
	1098.44	86.8	265.8	991.48	-47.21	-195.71	198.26	201.32	256.44	8.98
	1111.57	89.7	269	991.88	-47.81	-208.82	211.38	214.22	257.11	9.86
	1124.72	90.1	268.8	991.91	-48.06	-221.97	224.52	227.11	257.78	1.02
	1137.9	90	267.7	991.89	-48.46	-235.14	237.69	240.08	258.35	2.51
	1151.07	89.8	267.6	991.92	-49	-248.3	250.86	253.09	258.84	0.51
	1164.25	89.4	270.2	992.01	-49.25	-261.47	264.02	266.07	259.33	5.99
	1177.41	89.8	270.6	992.1	-49.16	-274.63	277.15	279	259.85	1.29
	1190.55	89.5	269.7	992.18	-49.13	-287.77	290.26	291.94	260.31	2.17
	1203.7	88.8	268.3	992.38	-49.36	-300.92	303.4	304.94	260.69	3.57
	1216.87	88.9	267.4	992.64	-49.85	-314.08	316.56	318.01	260.98	2.06
	1230.05	90.1	267.7	992.76	-50.41	-327.24	329.74	331.1	261.24	2.82
	1243.7	90.7	266.5	992.66	-51.11	-340.88	343.39	344.69	261.47	2.95
	1257.34	90.5	267	992.52	-51.88	-354.49	357.03	358.27	261.67	1.18
	1270.98	90.7	266.9	992.37	-52.6	-368.11	370.66	371.85	261.87	0.49
	1284.64	91.3	268.1	992.14	-53.2	-381.76	384.32	385.45	262.07	2.95
	1298.29	90.9	269	991.87	-53.55	-395.4	397.96	399.01	262.29	2.16
	1311.94	90.7	268.7	991.68	-53.82	-409.05	411.59	412.57	262.5	0.79
	1325.59	89.6	269	991.65	-54.09	-422.69	425.23	426.14	262.71	2.51
	1339.25	89.7	268.6	991.73	-54.38	-436.35	438.88	439.73	262.9	0.91
	1352.9	89.9	269.9	991.78	-54.56	-450	452.51	453.29	263.09	2.89
	1366.54	90.1	269.8	991.78	-54.59	-463.64	466.13	466.84	263.28	0.49
	1380.24	89.7	268.5	991.8	-54.8	-477.34	479.81	480.47	263.45	2.98
	1393.89	89.6	268	991.89	-55.21	-490.98	493.46	494.08	263.58	1.12
	1407.54	89.1	269.8	992.04	-55.48	-504.63	507.09	507.67	263.73	4.11
	1421.18	89.6	270.1	992.2	-55.49	-518.27	520.71	521.23	263.89	1.28
	1434.84	89.4	272.2	992.31	-55.21	-531.92	534.32	534.78	264.07	4.63
	1448.5	89.3	271.9	992.47	-54.72	-545.57	547.91	548.31	264.27	0.69
	1462.15	88.8	270.8	992.7	-54.4	-559.22	561.51	561.86	264.44	2.66
	1475.8	88.6	270.7	993.01	-54.22	-572.86	575.12	575.42	264.59	0.49

	1489.46	89.8	271.6	993.2	-53.95	-586.52	588.73	588.99	264.74	3.29
	1503.11	90.4	271.8	993.17	-53.55	-600.16	602.32	602.54	264.9	1.39
	1516.75	90.2	271	993.1	-53.21	-613.8	615.91	616.1	265.05	1.81
	1530.4	90	270.3	993.08	-53.06	-627.45	629.53	629.68	265.17	1.6
	1544.05	89.9	270.7	993.09	-52.94	-641.09	643.14	643.28	265.28	0.91
	1557.71	90.2	271.1	993.08	-52.72	-654.75	656.76	656.87	265.4	1.1
	1571.35	90	269.8	993.05	-52.62	-668.39	670.37	670.46	265.5	2.89
	1585	89.2	269.8	993.15	-52.66	-682.04	683.99	684.07	265.58	1.76
	1598.64	88.7	267.2	993.4	-53.02	-695.67	697.62	697.69	265.64	5.82
	1612.29	88.7	267.3	993.71	-53.68	-709.3	711.27	711.33	265.67	0.22
	1625.92	88.7	266.7	994.02	-54.39	-722.91	724.89	724.96	265.7	1.32
	1639.56	88.4	266.7	994.36	-55.17	-736.53	738.53	738.59	265.72	0.66
	1653.2	89.2	267.6	994.65	-55.85	-750.14	752.16	752.22	265.74	2.65
	1666.83	90.2	268.8	994.72	-56.28	-763.77	765.79	765.84	265.79	3.44
	1680	90.8	269.5	994.61	-56.48	-776.94	778.94	778.99	265.84	2.1
Extrapolation	to	TD								
	1696	90.8	269.5	994.38	-56.62	-792.93	794.92	794.95	265.92	0

SAMPLE DESCRIPTIONS

BUILD SECTION

1,020.00 to 1,030.00 100% (10.00) **SILTSTONE**
light to pale orange, tan to light brown, red brown in part, very fine to coarse silt locally grading to very fine grain sandstone, subrounded, poorly to moderately sorted, well consolidated, anhydritic in part with common anhydrite inclusions & nodules, common dolomitic & anhydritic cement, shaly in part, occasional loose quartz grains, tight to very rare very poor intergranular porosity, rare very spotty light to buff brown oil staining associated with dull amber to trace bright yellow fluorescence (<3%), slow yellow white cut; occasional walnut shells.

1,030.00 to 1,050.00 100% (20.00) **SILTSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, slightly sandy, grading to very fine grain sandstone in part, subrounded, poorly to moderately sorted, well consolidated, anhydritic with common anhydrite inclusions & nodules, common dolomitic & anhydritic cement, shaly in part, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (<3%), no visible cut.

1,050.00 to 1,065.00 100% (15.00) **SILTSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, grading to very fine grain sandstone in part, subrounded, poorly to moderately sorted, well consolidated, anhydritic with common anhydrite inclusions & nodules, common dolomitic & anhydritic cement, shaly in part, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (3%), faint milky white cut.

1,065.00 to 1,075.00 100% (10.00) **SILTSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, grading to very fine grain sandstone in part, subrounded, poorly to moderately sorted, well consolidated, anhydritic with common anhydrite inclusions & nodules, common dolomitic & anhydritic cement, shaly in part, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (3-5%), very slow milky white cut.

Green Sand: 1,079.89 MD, 989.60 TVD, -524.30 SSL

1,075.00 to 1,095.00 100% (20.00) **SILTSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, slightly sandy, grading to very fine grain sandstone in part, subrounded, poorly to moderately sorted, well consolidated, anhydritic with common anhydrite inclusions & nodules, common dolomitic & anhydritic cement, shaly in part, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10%), very slow milky white cut.

LATERAL HEEL @ 1090.0m MD; 990.85m TVD; -525.55m SSL;

46.50m South, 187.33 West, 189.84m VS
Extrapolated Inc: 84.6 degrees
Extrapolated Azi: 264.5 degrees

LATERAL DESCRIPTIONS

1,095.00 to 1,105.00 100% (10.00) **SILTSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement,, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), slow-mod milky yellow white cut.

Purple Sand: 1,113.00 MD, 991.88 TVD, -526.58 SSL

1,105.00 to 1,115.00 100% (10.00) **SILTSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, common unconsolidated quartzose sandstone, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate milky yellow white cut, rare visible oil in wash.

1,115.00 to 1,125.00 100% (10.00) **SILTSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, abundant unconsolidated quartzose sandstone grains (20%), occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), slow-mod milky yellow white cut, rare visible oil in wash.

1,125.00 to 1,140.00 100% (15.00) **SILTSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, abundant unconsolidated quartzose sandstone grains (15%), occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), slow-mod milky yellow white cut, rare visible oil in wash.

1,140.00 to 1,160.00 100% (20.00) **SANDSTONE**
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, abundant unconsolidated quartzose sandstone grains (20%), occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate milky yellowish white cut, rare visible oil in wash.

Brown Sand (in): 1,164.00 MD, 992.01 TVD, -526.71 SSL

1,160.00 to 1,180.00 100% (20.00)

SANDSTONE
clear, quartzose, upper fine to upper medium, subround to round, moderate to well sorted, unconsolidated, inferred good intgr porosity, no shows; SILTSTONE(40%) light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate milky yellowish white cut, rare visible oil in wash.

1,180.00 to 1,200.00 100% (20.00)

SANDSTONE
clear, quartzose, upper fine to upper medium, subround to round, moderate to well sorted, unconsolidated, inferred good intgr porosity, no shows; SILTSTONE(40%) light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate milky yellowish white cut, rare visible oil in wash.

1,200.00 to 1,220.00 100% (20.00)

SANDSTONE
clear, quartzose, upper fine to upper medium, subround to round, moderate to well sorted, unconsolidated, inferred good intgr porosity, no shows; SILTSTONE(50%) light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers & nodules, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (25%), moderate to fast streaming milky yellowish white cut, common visible oil in wash.

1,220.00 to 1,240.00 100% (20.00)

SILTSTONE
light to pale orange, light to med brown, occasional red brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers & nodules, abundant unconsolidated sandstone grains (20%), common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (25%), moderate to fast streaming milky yellowish white cut, common visible oil in wash.

Brown Sand (out): 1,250.00 MD, 992.60 TVD, -527.30 SSL

1,240.00 to 1,260.00 100% (20.00) **SANDSTONE**
clear, quartzose, upper fine to upper medium, subround to round, moderate to well sorted, unconsolidated, no visible cement, inferred good intgr porosity, no shows; SILTSTONE(20%) light to pale orange, off white in part, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, very anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10%), slow to moderate yellowish white cut.

1,260.00 to 1,280.00 100% (20.00) **SANDSTONE**
clear, quartzose, upper fine to upper medium, subround to round, moderate to well sorted, unconsolidated, no visible cement, inferred good intgr porosity, no shows; SILTSTONE(40%) light to pale orange, off white in part, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, very anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10%), slow to moderate yellowish white cut.

1,280.00 to 1,300.00 100% (20.00) **SILTSTONE**
SILTSTONE: light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic in part, rare anhydrite stringers, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (15%), moderate yellowish white streaming cut; SANDSTONE(15%); clear, pink in part, quartzose, upper f- upper medium grains, frosted to clear quartz, subround to round, moderate to well sorted, unconsolidated, inferred good intergranular porosity, no shows.

1,300.00 to 1,320.00 100% (20.00) **SILTSTONE**
light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic in part, rare anhydrite stringers, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (15%), moderate yellowish white streaming cut; SANDSTONE(50%); clear, pink in part, quartzose, upper f- upper medium grains, frosted to clear quartz, subround to round, moderate to well sorted, unconsolidated, inferred good intergranular porosity, no shows.

1,320.00 to 1,340.00 100% (20.00)

SILTSTONE
light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic in part, rare anhydrite stringers, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (15%), moderate yellowish white streaming cut; SANDSTONE(15%); clear, pink in part, quartzose, upper f- upper medium grains, frosted to clear quartz, subround to round, moderate to well sorted, unconsolidated, inferred good intergranular porosity, no shows.

1,340.00 to 1,360.00 100% (20.00)

SILTSTONE
light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, very anhydritic in part, minor anhydrite stringers & nodules, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate yellowish white streaming cut; SANDSTONE(20%); clear, pink in part, quartzose, upper f- upper medium grains, frosted to clear quartz, subround to round, moderate to well sorted, unconsolidated, inferred good intergranular porosity, no shows.

1,360.00 to 1,380.00 100% (20.00)

SILTSTONE
light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, subrounded, poorly to moderately sorted, mod-w consolidated, very anhydritic in part, minor anhydrite stringers & nodules, common unconsolidated fine to medium quartz grains, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10%), moderate yellowish white streaming cut.

1,380.00 to 1,400.00 100% (20.00)

SILTSTONE
light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, rare imbedded & loose quartz grains, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic in part, minor anhydrite stringers & nodules, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate yellowish white streaming cut.

1,400.00 to 1,420.00 100% **SILTSTONE**
(20.00)
light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, rare imbedded quartz grains, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic in part, minor anhydrite stringers & nodules, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate yellowish white streaming cut; SANDSTONE(30%): clear, quartzose, upper f- upper medium, transparent to translucent quartz, subround to round, moderate to well sorted, unconsolidated, inferred good intergranular porosity, no shows.

1,420.00 to 1,440.00 100% **SANDSTONE**
(20.00)
clear, quartzose, upper f- upper medium, transparent to translucent quartz, subround to round, moderate to well sorted, unconsolidated, inferred good intergranular porosity, no shows; SILTSTONE(30%): light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, rare imbedded quartz grains, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic in part, minor anhydrite stringers & nodules, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate yellowish white streaming cut.

1,440.00 to 1,460.00 100% **SILTSTONE**
(20.00)
light to pale orange, occasional light brown, very fine to coarse silt, sandy in part, grades to very fine sandstone in part, rare imbedded quartz grains, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic in part, minor anhydrite stringers & nodules, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate yellowish white streaming cut; SANDSTONE(40%): clear, quartzose, upper f- upper medium, transparent to translucent quartz, subround to round, moderate to well sorted, unconsolidated, inferred good intergranular porosity, no shows.

1,460.00 to 1,480.00 100% **SILTSTONE**
(20.00)
light to pale orange, occasional light brown, very fine to coarse silt, locally sandy, grades to very fine sandstone in part, rare imbedded quartz grains, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic in part, minor anhydrite stringers & nodules, trace loose quartz grains, common dolomitic & anhydritic cement, occasionally tight with very patchy very poor intergranular porosity, spotty light to med brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), moderate yellowish white streaming cut.

1,480.00 to 1,490.00 100% (10.00)

SILTSTONE
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy, grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, abundant unconsolidated quartzose sandstone grains (20%), occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), slow-mod milky yellow white cut, rare visible oil in wash.

1,490.00 to 1,510.00 100% (20.00)

SILTSTONE
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, locally grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, trace unconsolidated quartzose sandstone grains, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10%), slow-mod milky yellow white cut, rare visible oil in wash.

1,510.00 to 1,540.00 100% (30.00)

SILTSTONE
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, becoming sandy, locally grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, trace loose quartz grains, common dolomitic & anhydritic cement, trace unconsolidated quartzose sandstone grains, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10%), very slow-mod milky yellow white cut.

1,540.00 to 1,560.00 100% (20.00)

SLIGHTLY SANDY SILTSTONE
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, sandy, grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, trace to occasional loose quartz grains, common dolomitic & anhydritic cement, trace unconsolidated quartzose sandstone grains, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), very slow-mod milky yellow white cut, rare oil in wash.

1,560.00 to 1,580.00 100% (20.00)

SILTSTONE
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, trace sandy, rare grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, trace to occasional loose quartz grains, common dolomitic & anhydritic cement, trace unconsolidated quartzose sandstone grains, occasionally tight with very patchy very poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), very slow-mod milky yellow white cut, rare oil in wash.

1,580.00 to 1,610.00 100% (30.00)

SLIGHTLY SANDY SILTSTONE
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, becoming sandy, locally grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, trace to occasional loose quartz grains, common dolomitic & anhydritic cement, trace unconsolidated quartzose sandstone grains, occasionally tight with very patchy very poor to poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), slow-mod milky yellow white cut, rare oil in wash.

1,610.00 to 1,640.00 100% (30.00)

SILTSTONE
light to pale orange, tan to light brown, occasional red brown, very fine to coarse silt, locally grades to very fine sandstone in part, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, common dolomitic & anhydritic cement, trace unconsolidated quartzose sandstone grains, occasionally tight with very patchy very poor to poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), very slow milky yellow white cut, rare oil in wash.

1,640.00 to 1,660.00 100% (20.00)

SANDY SILTSTONE
becoming tan to light brown, commonly light orange to red, occasional red brown, very fine to coarse silt, very sandy, locally grades to very fine sandstone, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, occasional loose quartz grains, common dolomitic & anhydritic cement, trace unconsolidated quartzose sandstone grains, occasionally tight with very patchy very poor to poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), very slow milky yellow white cut, rare oil in wash.

1,660.00 to 1,696.00 100% (36.00)

SANDY SILTSTONE
becoming tan to light brown, but still commonly light orange to red, occasional red brown, very fine to coarse silt, very sandy, grades to very fine sandstone, slight shaly, subrounded, poorly to moderately sorted, mod-w consolidated, anhydritic, common anhydrite stringers, occasional to common loose quartz grains, common dolomitic & anhydritic cement, trace unconsolidated quartzose sandstone grains, occasionally tight with very patchy very poor to poor intergranular porosity, spotty light to buff brown oil staining associated with pale yellow to dull yellow fluorescence (10-15%), slow milky yellow white cut, rare oil in wash.

EXTRAPOLATED TD @ 1696.0m MD, 994.4 TVD, -529.5 SSL
56.62m South, 729.93m West of Well Bore, Section 6
Extrapolated Inc: 90.8 degrees
Extrapolated Azi: 269.5 degrees

WELL SUMMARY

EOG PIERSON HZNTL 15-06-02-28 WPM was drilled as a horizontal well to develop the Lower Amaranth in the Pierson area. The Lower Amaranth was intersected at 1005.0 m MD (966.8 m TVD, -501.5 m MSL), the Lower Amaranth 'A' Marker was intersected at 1015.0 m MD (971.4 m TVD, -506.1 m MSL),. The Lateral Heel was landed at 1090.0 m MD (990.9 m TVD, -525.6 m MSL), approximately 0.3 m into the Purple Sand. The Green Sand top was intersected at 1071.0 m MD (988.4 m TVD, -523.1 m MSL). The Blue Sand top was intersected at 1090.5 m MD (990.8 m TVD, -525.5 m MSL). The Purple Sand was intersected at 1113.3 m MD (991.9 m TVD, -526.6 m MSL). The leg was drilled along a vertical section plane of 266.45° to a total measured depth of 1696.0 m MD (994.4 m TVD, -529.5 m MSL). It should be noted that at times the rock masked the colour of oil, so oil shows were estimated primarily from fluorescence.

Geology

The following intervals describe the geology of the primary zone of interest in the area.

Lower Amaranth

The Lower Amaranth was estimated to be approximately 40.2 meters thick in the area. The well-bore encountered 5 intervals over the Lower Amaranth and for the purposes of this report they were divided into the Lower Amaranth, the Lower Amaranth 'A' Marker, the Green and Blue Sand and the target zone – the Purple Sand.

From the top of the Lower Amaranth to the Lower Amaranth 'A' Marker was 4.6 meters thick. The rock was composed of silty shale interbedded with anhydrite. The shale was silty in part, commonly micromicaceous to earthy and showed no reservoir potential. The anhydrite was part grading to lower microcrystalline and part cryptocrystalline and dense and showed tight porosity with no oil shows. Gamma averaged 75 CPS over the interval and peaked at 108 CPS. Gas showed background levels and averaged 1-12 units per 10000 for the interval. This unit showed no reservoir potential.

The Lower Amaranth 'A' Marker was 17.0 meters thick and the rock was composed of a siltstone interbedded with shale, anhydrite and minor sandstone inclusions and stringers. The siltstone graded in part to very fine grained sandstone and was cemented with a dolomitic to siliceous cement. Minor very fine to fine unconsolidated and imbedded quartz grains were also observed over this section. Porosity was generally tight to very poor intergranular. The rock had no visible shows or cut throughout the first half of the interval, however in the rest of the interval showed a very patchy light brown oil stain (<5%), with a dull yellow fluorescence and associated very slow, very weak, yellow-white fluorescent cut. Gamma values averaged 110 CPS, and gas values averaged 15 units per 10000 over the interval and peaked to 45 units per 10000. This unit showed very poor to no reservoir potential.

Target Interval

The Target interval for this well was the Purple Sand. The Green Sand was estimated to be 1.2 meters thick and the rock was composed of a siltstone interbedded with rare to occasional sandstone and anhydrite inclusions and stringers. The siltstone in part graded to very fine grained sandstone and was cemented with a dolomitic to siliceous cement. Rare to occasional very fine to fine to rare medium unconsolidated quartz grains were also observed within the siltstone over this section. Porosity of the siltstone was described as generally tight to very poor to poor intergranular. The siltstone showed a patchy light brown oil stain (10%), with a dull to trace moderate yellow fluorescence with an associated slow to occasionally moderate, weak to occasionally moderate, yellow-white fluorescent cut. Gamma values averaged 87 CPS, and gas values averaged 220 units per 10000 and peaked to 370 units per 10000. This unit showed poor reservoir potential.

The Blue Sand was estimated to be approximately 1.1 meters thick and the rock was composed of a siltstone interbedded with rare to occasional sandstone and anhydrite inclusions and stringers. The siltstone in part graded to very fine grained sandstone and was cemented with a dolomitic to siliceous cement. Rare to occasional very fine to fine unconsolidated quartz grains were also observed within the siltstone over this section. Porosity was described as generally tight to very poor to trace poor intergranular. The rock showed a patchy, light brown oil stain (10-15%), with a dull to trace moderate yellow fluorescence with an associated slow to trace moderate, weak to trace moderate, yellow-white fluorescent cut. Gamma values averaged 75 CPS, and gas values averaged 284 units per 10000 and peaked to 492 units per 10000. This unit showed very poor reservoir potential.

The Purple Sand was estimated to be approximately 1.0 meters thick from offsetting wells and the rock was composed of a siltstone interbedded with rare to occasional sandstone and anhydrite inclusions and stringers. The siltstone in part graded to very fine grained sandstone and was cemented with a dolomitic to siliceous cement. Trace to occasional very fine to fine unconsolidated quartz grains were also observed within the siltstone over this section. Porosity was described as generally tight to very poor to poor to trace fair intergranular. The rock showed a patchy, light brown oil stain (10-25%), with a dull to trace moderate yellow fluorescence with an associated slow to moderate, weak to moderate, yellow-white fluorescent cut. Gamma values averaged 75 CPS, and gas values averaged 500 units per 10000 and peaked to 850 units per 10000. This unit showed poor reservoir potential.

The wellbore was drilled within the Purple Sand with a momentary entry into the lower Brown Sand just after landing and at the end of the lateral prior to TD. The wellbore traced the topography fairly consistent; however, minor sliding was required to keep doglegs to a minimum. TD was reached at 1696.0m MD.

RESERVOIR INTERVALS

Lateral Heel: 1090.0 m MD: (990.9 m TVD, -525.6 m MSL)

1090.0 m – 1205.0 m MD: Poor Reservoir (Total 115.0m of wellbore)
The wellbore was landed 0.3 m TVD within the Purple Sand. Here the wellbore had a slight downward trend through the zone until 1205 m when it momentarily dropped into the Top of the Brown Sand. The rock in this section was generally a siltstone that in part graded to a very fine grained sandstone and contained trace very fine to fine unconsolidated and imbedded quartz grains. The siltstone contained occasional to common anhydrite inclusions and was occasionally plugged with dolomitic and siliceous cement. Porosity was tight to poor intergranular, which showed very patchy, light brown oil stain (10-15%), with a dull to trace moderate yellow fluorescence and an associated slow to moderate, leaching yellow-white fluorescent cut. The rock was generally tight to trace poor intergranular porosity. Gamma counts averaged approximately 75 CPS and gas values averaged approximately 500 units and peaked at 868 units per 10000.

1205.0 m – 1240.0 m MD: Poor - Fair Reservoir (Total 35.0m of wellbore)
The wellbore momentarily entered the Top of the Brown Sand but quickly exited the formation when the wellbore bounced upward. The rock here was a silty sandstone with fine Upper grains, moderately well consolidated, poorly sorted with common loose quartz grains. Porosity was tight to poor intergranular, which showed very patchy, light brown oil stain (25%), with a dull to trace moderate yellow fluorescence and an associated slow to moderate, leaching yellow-white fluorescent cut. This rock was a buff – tan, very fine Upper grained rock that was poorly sorted, moderately well consolidated with common loose translucent quartz grains. The rock was generally tight to poor to trace fair intergranular porosity. Gamma counts averaged approximately 70 CPS and gas values averaged approximately 590 units and peaked at 1230 units per 10000.

1240.0 m – 1425.0 m MD: Poor Reservoir (Total 185.0m of wellbore)
The wellbore re-intersected the bottom of the Base of Purple Sand and continued to track the formation with a slight upward to flat trend. The rock in this section was generally a siltstone that in part graded to very fine grained sandstone and contained trace very fine to fine unconsolidated and imbedded quartz grains. The siltstone contained occasional to common anhydrite inclusions and was occasionally plugged with dolomitic and siliceous cement. Porosity was tight to poor intergranular, which showed very patchy, light brown oil stain (10-25%), with a dull to trace moderate yellow fluorescence and an associated slow to moderate, leaching yellow-white fluorescent cut. The rock was generally tight to trace poor intergranular porosity. Gamma counts averaged approximately 73 CPS and gas values averaged approximately 350 units and peaked at 729 units per 10000.

1425.0 m – 1588.0 m MD: Very Poor Reservoir (Total 163.0m of wellbore)
The wellbore continued to track within the Purple Sand roughly until the formation dropped at 1588m MD entering the Brown Sand. The rock in this section was generally a siltstone that in part graded to a very fine grained sandstone and contained trace very fine to fine unconsolidated and imbedded quartz grains. The siltstone contained occasional to common anhydrite inclusions and was occasionally plugged with dolomitic and siliceous cement. Porosity was tight to very poor intergranular, which showed very patchy, light brown oil stain (10-15%), with a dull to trace moderate yellow fluorescence and an associated very slow to moderate, leaching yellow-white fluorescent cut. Gamma counts averaged approximately 80CPS showing and gas values averaged approximately 300 units and peaked at 350 units per 10000.

1588.0 m – 1696.0 m MD: Poor Reservoir (Total 108.0m of wellbore)
Due to instructions not to slide in the last 100m, the wellbore dropped at roughly 88.5 degrees. The rock in this section was generally a siltstone that in part graded to very fine grained sandstone and contained trace very fine to fine unconsolidated and imbedded quartz grains. The siltstone contained occasional to common anhydrite inclusions and was occasionally plugged with dolomitic and siliceous cement. Porosity was tight to poor intergranular, which showed very patchy, light brown oil stain (10-25%), with a dull to trace moderate yellow fluorescence and an associated slow to moderate, leaching yellow-white fluorescent cut. The rock was generally tight to poor intergranular porosity. Gamma counts averaged approximately 80 CPS and gas values averaged approximately 268 units and peaked at 470 units per 10000.

1696.0 m MD: **Extrapolated Total Depth (Toe)** (994.4 m TVD, -529.5 m MSL)

RESERVOIR EVALUATION

Lower Amaranth Reservoir Characterization

	Total Reservoir Drilled:	606.0 m	100.0%
	Total Section Drilled:	606.0 m	100.0%
	6 - Good Reservoir:	0.0 m	0.0%
	5 - Fair Reservoir:	0.0 m	0.0%
	4 - Poor to Fair Reservoir:	198.0 m	32.7%
	3 - Poor Reservoir:	408.0 m	67.3%
	2 - Very Poor Reservoir:	0.0 m	0.0%
	1 - Non Reservoir:	0.0 m	0.0%

The reservoir intervals were broken down into six different reservoir qualities and are relative to the Lower Amaranth beds in the Pierson area. The six qualities are as follows:

1) Non Reservoir: Oil staining less than 5% and gas values generally less than 25 units.
2) Very Poor Reservoir: Oil staining ranging between 5% and 15% and gas values generally between 25 and 50 units.
3) Poor Reservoir: Oil staining ranging between 15% and 25% and gas values generally between 50 and 150 units.
4) Poor to Fair Reservoir: Oil staining ranging between 25% to 40% and gas values generally between 150 units to 500 units.
5) Fair Reservoir: Oil staining between 40% and 75% and gas values generally between 500 units to 1000 units.
6) Good Reservoir: Oil staining above >75% and gas values generally >1000 units.

Taking into consideration the above mentioned reservoir intervals, average oil shows and moderate gas response with respect to previously drilled wells in the Pierson area, EOG Pierson HZNTL 15-06-02-28 WPM should be a moderately successful oil producer after a fracture stimulation.

Kim Heinemann

8001
released
"29-Sep-2012"

Manitoba
Innovation, Energy and Mines

INITIAL PRODUCTION REPORT

Two (2) copies of this report are to be completed and submitted to the district office within days following the fifth after the well has been placed on normal production.

Well Name: **EOG PIERSON HZNTL 100/15-06-002-28W1/00**	License Number: 8001
Operating Company: EOG RESOURCES CANADA INC.	
Battery Well Produced To (name & locations): 15-9-2-25 BATTERY	

Completion Interval(s): 1091m to 1672m _____m to _____m
TVD: 991.65 to 994.72

Open Hole: ☐ Perforated: ☒ Formation: ~~SPEARFISH~~ L. Amar

Completion Oil:

Source of Completion Oil (Co. & location):
Volume Supplied: m^3

Date Supplied:* / /
YY MM DD

Date YY MM DD	Completion Oil Used (m^3)	Completion Oil Recovered (m^3)	Completion Oil To Be Recovered (m^3)	Water Produces (m^3)

(Continue on separate sheet if necessary)

Disposition of Recovered Completion Oil: _____m^3 to _____
(Co. & location)

On-Production Date:* 12/09/06
YY MM DD

* Official on-production date (i.e. date of first new oil production after completion oil recovered).
* Date in which the well produces oil in excess of the volume of completion oil used.

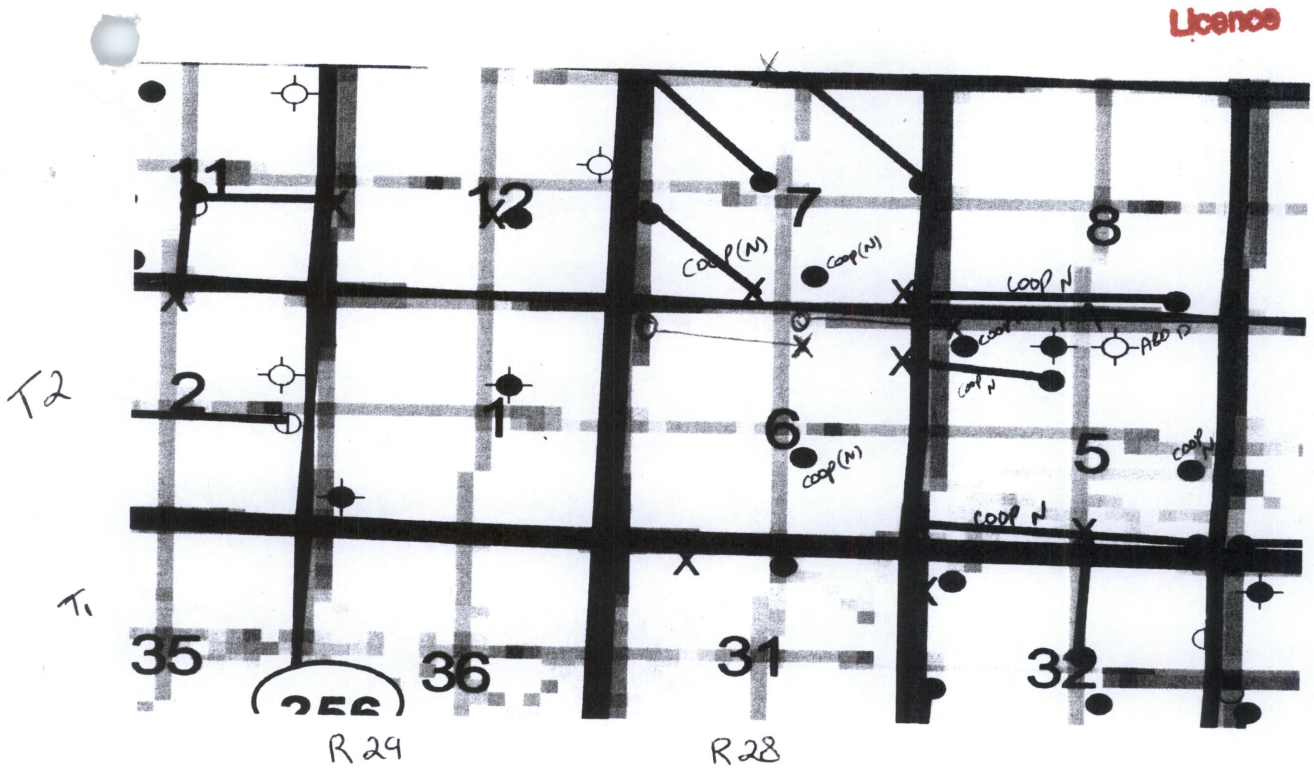
Production Test:

Date YY MM DD	Hours Produced	Oil Produced m^3	Water Produced m^3	Pumping	Flowing	Gas-Oil Ratio (m^3/m^3)	Oil Density (kg/m^3)
12 09 22	**16**	**5.91**	**0**	**X**		**50 est.**	**843 est.**
12 09 23	**24**	**10.49**	**0**	**X**		**50 est.**	**843 est.**
12 09 24	**24**	**30.73**	**0**	**X**		**50 est.**	**843 est.**
12 09 25	**24**	**26.33**	**0**	**X**		**50 est.**	**843 est.**
12 09 26	**24**	**31.01**	**0**	**X**		**50 est.**	**843 est.**
Totals	**112**	**104.47**	**0**				

Ellie Adams — Production Administrator — 204-673-2732
(Submitted By) (Position) (Telephone)

Remarks: Fresh water was used for the completion fluid. 0.48m3 of oil was produced on 12 09 06.
F/Pkle: 07 29B Reinstated by MOMR Nov 15th 2012

15C - 6 - 2 - 28



	Drainage	Inspected	Comments
100 BH: 13C-6-2-28 SL: 15B-6-2-28	LSD's 13,14 Sec 6	Yes	-No concerns
100 BH: 15C-6-2-28 SL: 13C-5-2-28	LSD's 15,16 Sec 6	Yes	- No ~~comments~~ concerns

Concerns.

5-7-2-28 # 6084 COOP
(3A-7) Non-conf

1-8-2-28 # 7225 COOP
(1A-7) Non conf

4 Star Ventures

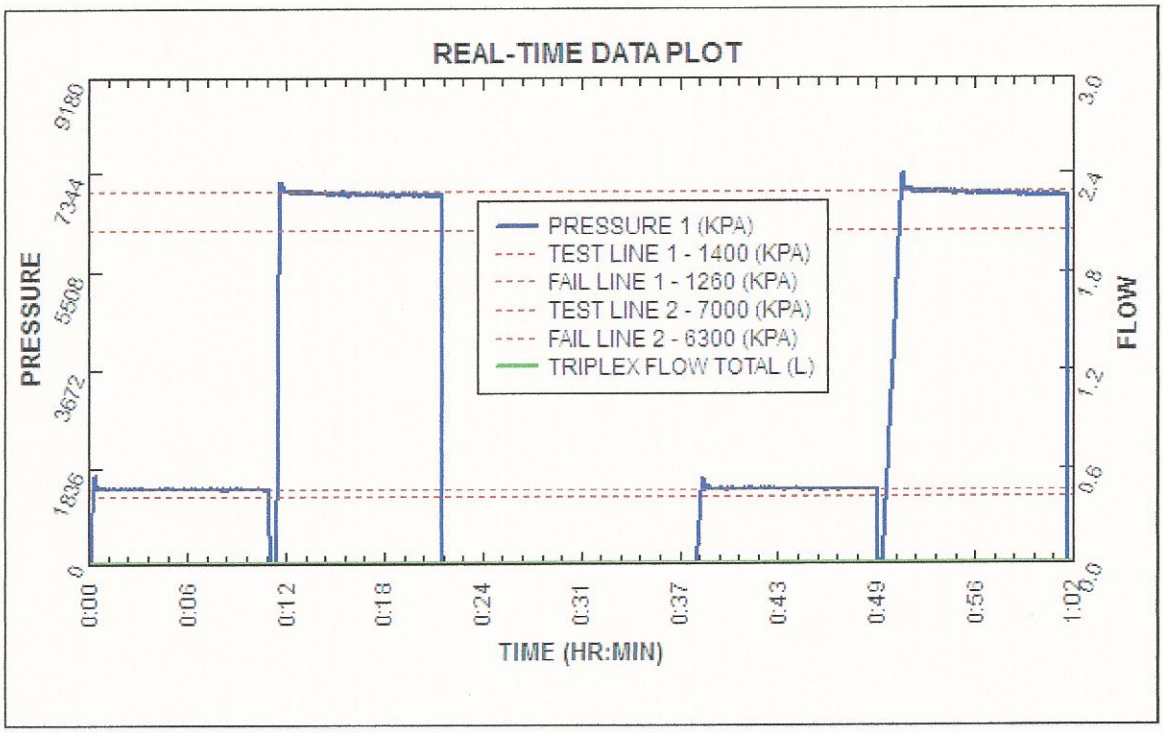
JOB REPORT

Company: EOG RESOURCES
Contact: CHRIS EVANYSHYN
Location: 13C-05-002-28 W1

Email:

Date August 26, 2012
Start Time 20:09:38
End Time 21:12:02
Test Type: Stack
Contractor: PD 191
LSD#: 13C-05-002-28W1
Operator 1: Kory

Unit#: 7
Client: EOG RESOURCES
Other: Lic 8001
Fluid Pumped: Water



Comments: TEST 4 PIPE
RAMS,STABBING V TEST
5BLIND RAMS,ISKLV,HYD
HCR,CASING

4 Star Ventures

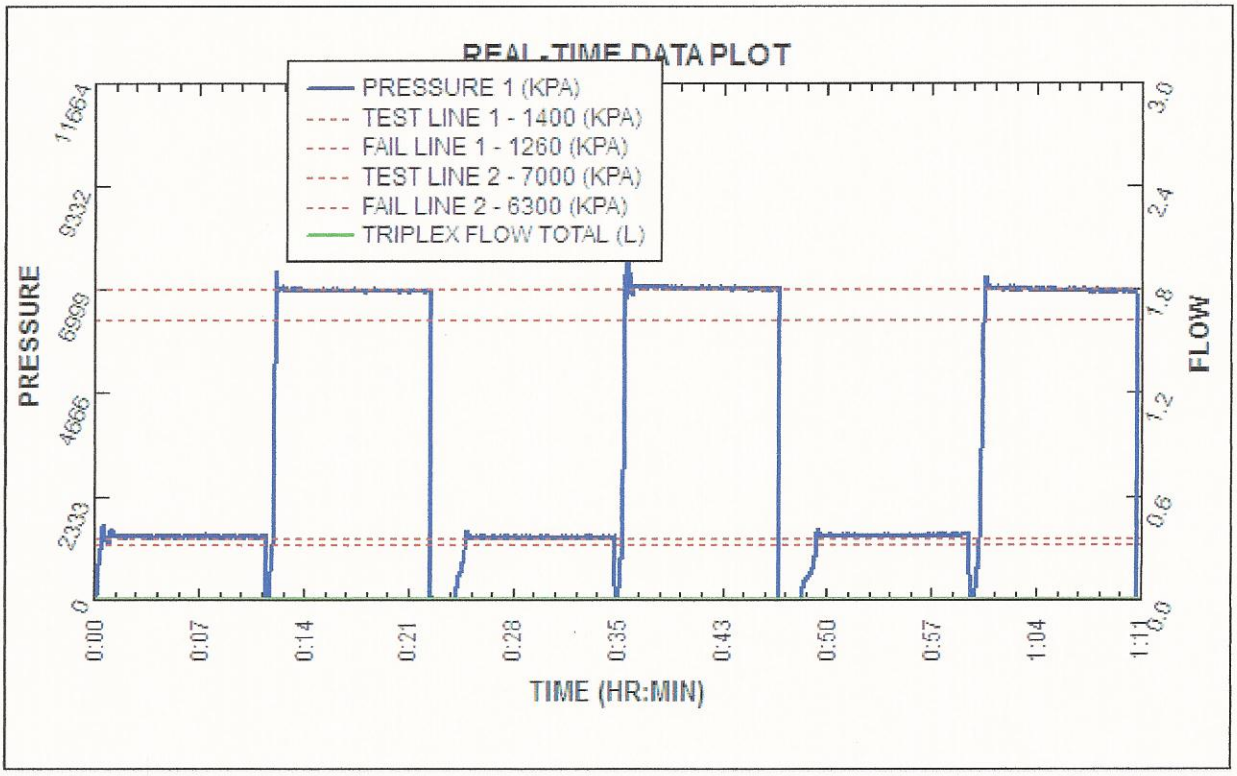
JOB REPORT

Company: EOG RESOURCES
Contact: CHRIS EVANYSHYN
Location: 13C-05-002-28 W1

Email:

Date August 26, 2012
Start Time 18:55:36
End Time 20:07:29
Test Type: MANIFOLD/STACK
Contractor: PD 191
LSD#: 13C-05-002-28-W1
Operator 1: Kory

Unit#: 7
Client: EOG RESOURCES
Other: Lic 800
Fluid Pumped: Water



Comments: MANIFOLD 11,1,2,3 ,MAN
HCR,CHOKE LINE TEST 2
MANIFOLD 4,5,6,7 ,MAN
HCR,CHOKE LINE TEST 3
ANN,OSKLV,ISBOP,CHOKE

4 STAR Ventures Ltd.
Pressure Testing

Box 193
Gull lake, SK S0N
Toll Free: 1-800-588-0551

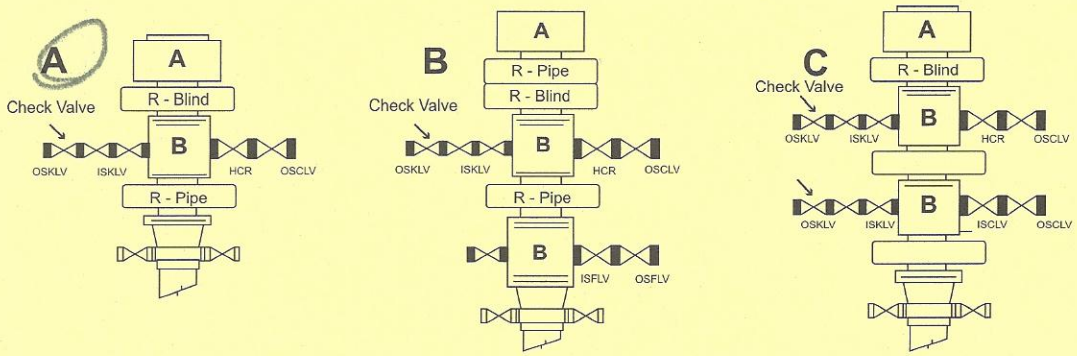
TICKET #

TEST DETAIL SHEET

OIL COMPANY	LOCATION	WELL NAME	CASING DEPTH
Eob Resources	13C-05-002-28W1	Pierson	

DATE	CONTRACTOR	MUD WEIGHT	CASING SIZE	WEIGHT	GRADE
Aug 26/12	PD # 191	Kg/m3	8 5/8 mm	Kg/m	

STACK TYPE



LOW PRESSURE TEST 1400 kPa FOR 10 MINUTES HIGH 7000 kPa FOR 10 MINUTES

	1	2	3	4	5	6	7	8	9
BLIND RAMS					5				
UPPER PIPE RAMS									
LOWER PIPE RAMS				4					
ANNULAR			3						
HYDRAULIC HCR					5				
MANUAL HCR	1	2							
ISKLV					5				
OSKLV			3						
ISFLV									
OSFLV									
CHECK VALVE									
UPPER KELLY COCK									
LOWER KELLY COCK									
STABBING VALVE				4					
I.S.B.O.P			3						
MANIFOLD V 1,1,2,3	1								
MANIFOLD V									
MANIFOLD V 4,5,6,7		2							
MANIFOLD V 8,9,10			3						
MAINFOLD V									
CHOKES A & B ✓✓									
CASING					5				
CHOKE LINE	1	2	3						

ACCUMULATOR "M" Valves

Press Rating 21,000 kPa Size 684 Litres

Operating Press 20,000 kPa Fluid Level 50% Full

Precharge Press 6200 kPa # of N2 Bottles 2

Comments:

Time to Close:

Annular 7 seconds Remaining Pressure 12,500

Pipes 2 seconds Remaining Pressure 11,000

~~Pipes~~ seconds ~~Remaining Pressure~~

HCR 1 seconds Remaining Pressure 10,500

Operating Controls Manifold Properly Marked yes

Locking Wheels Cellar Yes ✓ No

Manifold Pressure 10,500 kPa Annular Pressure 8000 kPa

Pressure After 3 Functions with Pump shut off 10,500 kPa

Time to Recharge 2 minutes 20 seconds

Nitrogen Bottle Pressure #1 2800 #2 2600

Motor Kill: Floor ✓ Yes No

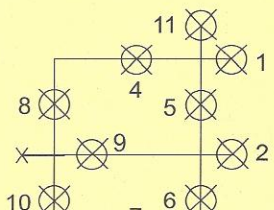
Pump ✓ Yes No

Remarks: Excellent Job, No Leak's

Thank's

Ken

(A)



EOG PIERSON HZNTL 15-6-2-28WPM

UWI

EOG PIERSON HZNTL 100.15.06.002.28WPM

WELL SITE AND ACCESS ROAD

TERMINUS

LSD. 15C - SEC. 6 - TWP. 2 - RGE. 28WPM

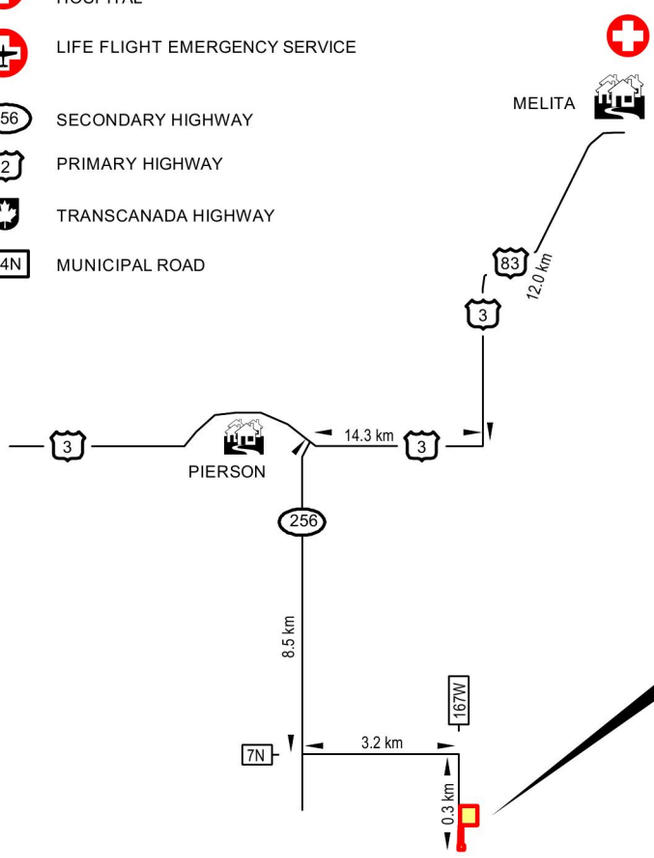
WELL SITE SURFACE LOCATION

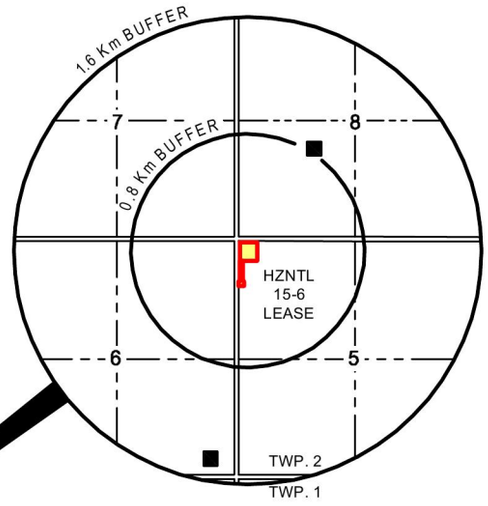
LSD. 13C - SEC. 5 - TWP. 2 - RGE. 28WPM

R.M. of EDWARD

LEGEND

- HOSPITAL
- LIFE FLIGHT EMERGENCY SERVICE
- 256 SECONDARY HIGHWAY
- 2 PRIMARY HIGHWAY
- TRANSCANADA HIGHWAY
- 44N MUNICIPAL ROAD





RESIDENCE SKETCH

- RESIDENCE
- ABND. RESIDENCE

LEGEND:

Distances are in metres. SCALE: 1:5000

Portions referred to shown thus:
Legal Survey Posts (found / placed)
Planted Wood Hub
Fence Lines
Oil / Gas Lines
Overhead Power Lines
Buried Power Cables
Buried Telecom Cables
Bush
Low Area / Slough
Water Covered Area

Surveyed Well Centre
Standing Well
Producer
Abandoned Producer
Abandoned Dry
Injection Well
Injection Well (Former Producer)
Abandoned Water Injection
Abandoned Water Injection (Former Producer)
Salt Water Disposal

Salt Water Disposal (Former Producer)
Abandoned Salt Water Disposal
Abd. Salt Water Disposal (Former Prod.)
Dual Completion
Abandoned Dual Completion
Junked and Abandoned
Surface Location - Horizontal / Directional / Slant
Water Supply Well
Abandoned Water Supply Well
Abandoned Structure Test Hole

OPERATOR:

eog resources

WELL LICENCE INFORMATION
THE PROPOSED WELL CENTRE IS:

	YES	NO
-At least 1.5 km from the Corporate Limits of a City, Town or Village	■	□
- At least 75m from any shoreline	■	□
-At least 75m from any Surface Improvements (O/H Power Line)	□	■
-At least 45m from any surveyed road	■	□
-At least 75m from any aircraft runway or taxiway	■	□
-At least 75m from any water well	■	□

-Approximately 5.1 km from the nearest urban centre (Lyleton)
-Approximately 0.8 km from the nearest residence (SW¼ 8-2-28WPM)

CALL BEFORE YOU DIG

FACILITIES SHOWN ON THIS PLAN ARE FOR INFORMATIONAL PURPOSES ONLY. PRIOR TO ANY CONSTRUCTION ON LEASE OR ACCESS ROAD, EOG RESOURCES CANADA INC. , MTS COMMUNICATIONS INC., MANITOBA HYDRO, AND MANITOBA HYDRO-GAS OPERATIONS **MUST** BE CONTACTED FOR LOCATION OF ANY UNDERGROUND FACILITIES THAT MAY EXIST.

There are no surface or underground improvements within 76m of well centre except as shown. OTHER FACILITIES MAY EXIST, OF WHICH WE WERE UNAWARE OF OR UNABLE TO LOCATE.

Altus Geomatics Manitoba
Toll Free: 1-800-465-6233
www.altusgeomaticsmb.com
MEMBER

All distances shown are horizontal and at ground level.

All bearings are NAD 83 (Zone 14) UTM grid bearings.
The Combined Scale Factor derived is 0.999844

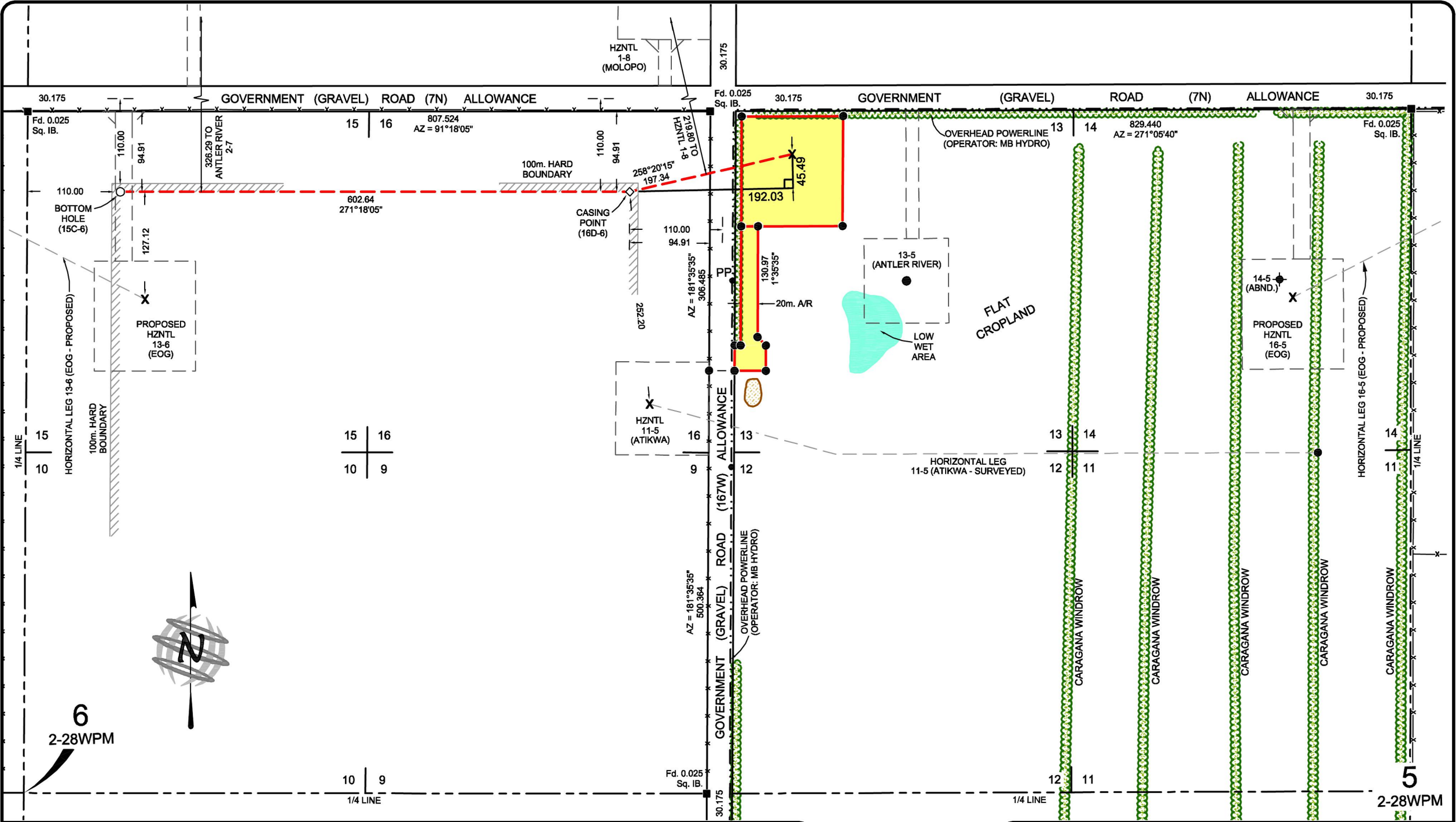
No.	DATE	DESCRIPTION	DWN	CKD
0	MAR.15, 2011	ISSUED	TJ	PFS
-	MAR.11, 2011	RE-ISSUED FOR REVIEW	TJ	PFS
-	FEB.22, 2011	ISSUED FOR REVIEW	TJ	PFS

REVISIONS

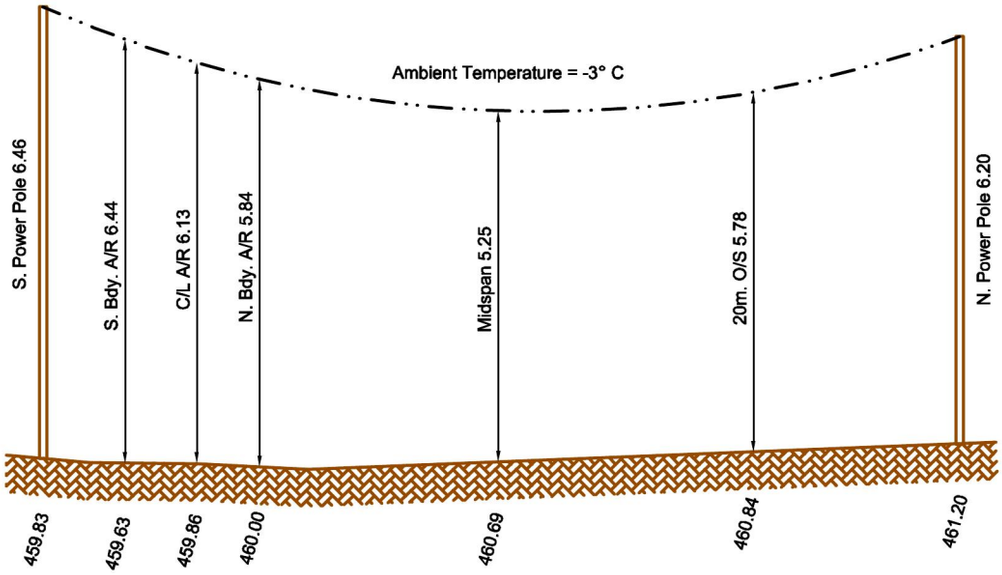
FIELD BOOK
V29
PAGE(S)
N/A

Surveyed by: KD
Drafted by: TJ
Checked by: PFS

Client File: N/A
NTS SHEET: 62 F/3
ALTUS GEOMATICS File: 135986



EOG PIERSON HZNTL 15-6-2-28WPM	UWI: EOG PIERSON HZNTL 100.15.06.002.28WPM	ALTUS GEOMATICS JOB No. 135986	REVISION: 0	PAGE 2 of 5



POWER LINE DETAIL
Not To Scale

SURFACE (13C-5)

LOCAL CO-ORDINATES
51.00 S of N
67.00 E of W } Sec.5

UTM CO-ORDINATES (NAD 83)
5441176.877 N
339094.580 E } CSRS

UTM CO-ORDINATES (NAD 27)
5440955.190 N
339121.238 E } CSRS

LATITUDE / LONGITUDE(LL83)
49°06'08.554"
101°12'16.155" } CSRS

LATITUDE / LONGITUDE(LL27)
49°06'08.495"
101°12'14.582" } CSRS

CASING POINT (16D-6)

LOCAL CO-ORDINATES
94.91 S of N
94.91 W of E } Sec.6

UTM CO-ORDINATES (NAD 83)
5441136.992 N
338901.342 E } CSRS

UTM CO-ORDINATES (NAD 27)
5440915.302 N
338927.997 E } CSRS

LATITUDE / LONGITUDE(LL83)
49°06'07.081"
101°12'25.621" } CSRS

LATITUDE / LONGITUDE(LL27)
49°06'07.022"
101°12'24.048" } CSRS

BOTTOM HOLE (15C-6)

LOCAL CO-ORDINATES
94.91 S of N
697.54 W of E } Sec.6

UTM CO-ORDINATES (NAD 83)
5441150.660 N
338298.954 E } CSRS

UTM CO-ORDINATES (NAD 27)
5440928.966 N
338325.604 E } CSRS

LATITUDE / LONGITUDE(LL83)
49°06'06.954"
101°12'55.328" } CSRS

LATITUDE / LONGITUDE(LL27)
49°06'06.895"
101°12'53.754" } CSRS

CARTESIAN CO-ORDINATES (NAD83)

Note:
All distances are cartesian referenced to the UTM GRID, NAD 83, ZONE 14

Casing Point is
39.89 South
193.27 West
of surface location

Bottom Hole is
26.22 South
795.75 West
of surface location

HZNTL 11-5 Surface is
291.45 South
175.34 West
of surface location

HZNTL 1-8 Surface is
194.14 North
146.78 West
of surface location

Vertical 2-7 is
297.81 North
692.61 West
of surface location

Proposed HZNTL 13-6 Surface is
153.96 South
769.42 West
of surface location

CARTESIAN CO-ORDINATES (TRUE NORTH)

Note:
All distances are cartesian referenced to True North (Grid Convergence = -1.6663°)

Casing Point is
45.49 South
192.03 West
of surface location

Bottom Hole is
49.35 South
794.65 West
of surface location

WELL CENTRE ELEVATION: 460.90

Elevations shown are in Geodetic Datum from the Province of Manitoba Mon. #82R760

CORNER ELEVATIONS:

N.E. CORNER	-	461.29
S.E. CORNER	-	461.51
S.W. CORNER	-	460.50
N.W. CORNER	-	461.00

NW ¼ Sec. 5 Twp. 2 Rge. 28WPM
Owner(s): DALE CURTIS GARDINER

C.T. No. 1647848

AREAS REQUIRED

WELL SITE	1.560 ha	3.85 ac
ACCESS ROAD	0.398 ha	0.98 ac
TOTAL	1.958 ha	4.83 ac

I certify that the survey represented by this plan is correct to the best of my knowledge and was completed on the 9th day of March, 2011.

MANITOBA LAND SURVEYOR

Witness

ASSOCIATION OF MANITOBA LAND SURVEYORS KEN W. BAILEY MEMBER

EOG PIERSON HZNTL 15-6-2-28WPM
WELL SITE AND ACCESS ROAD
UWI
EOG PIERSON HZNTL 100.15.06.002.28WPM

Altus Geomatics Manitoba
AMLS MEMBER

0 REVISION

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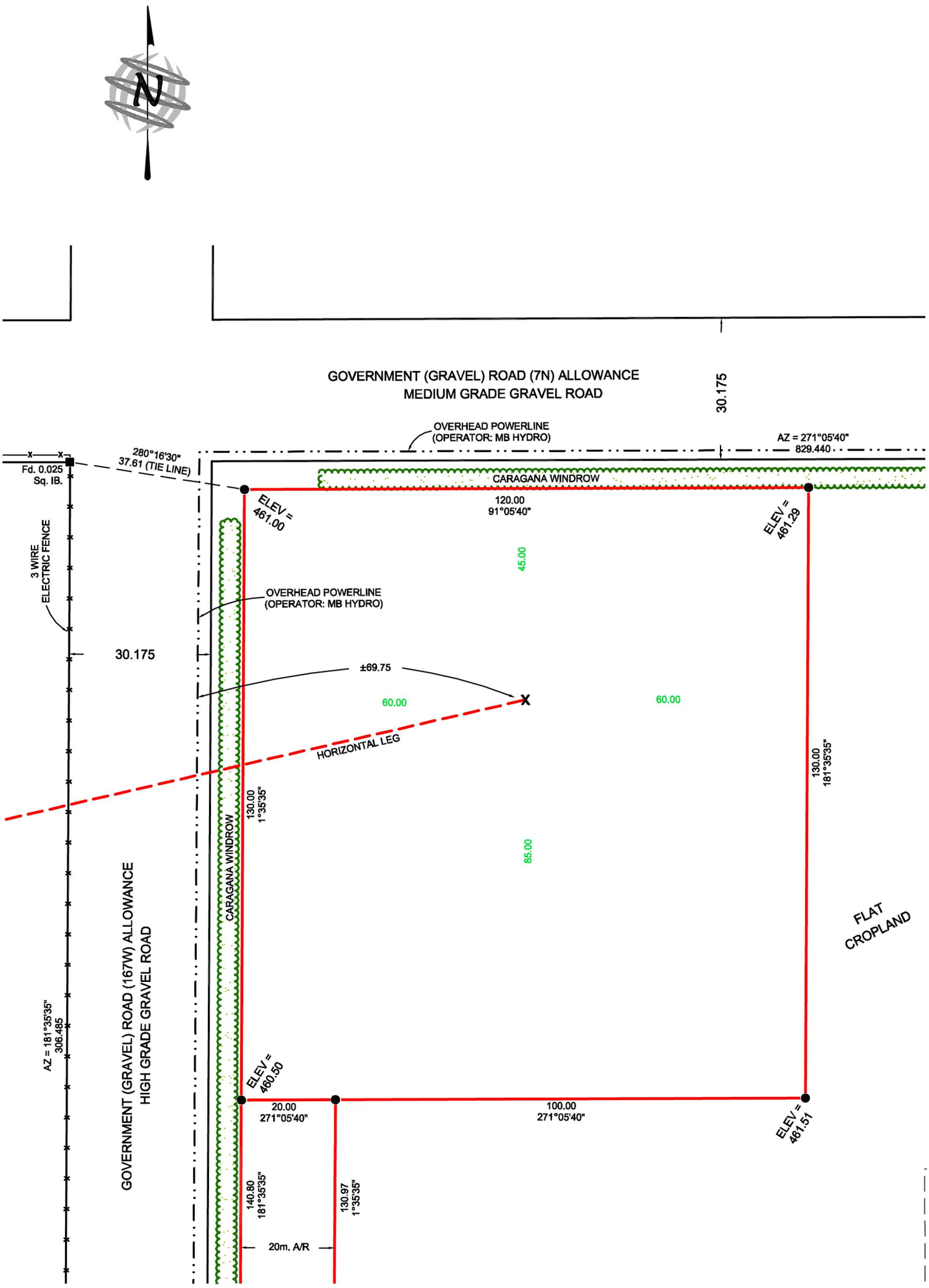
PAGE 3 of 5



DETAIL AT HZNTL 15-6 (13-5 SURFACE)
SCALE 1:1000

EOG PIERSON HZNTL 15-6-2-28WPM
WELL SITE AND ACCESS ROAD
UWI
EOG PIERSON HZNTL 100.15.06.002.28WPM

Altus Geomatics
Manitoba

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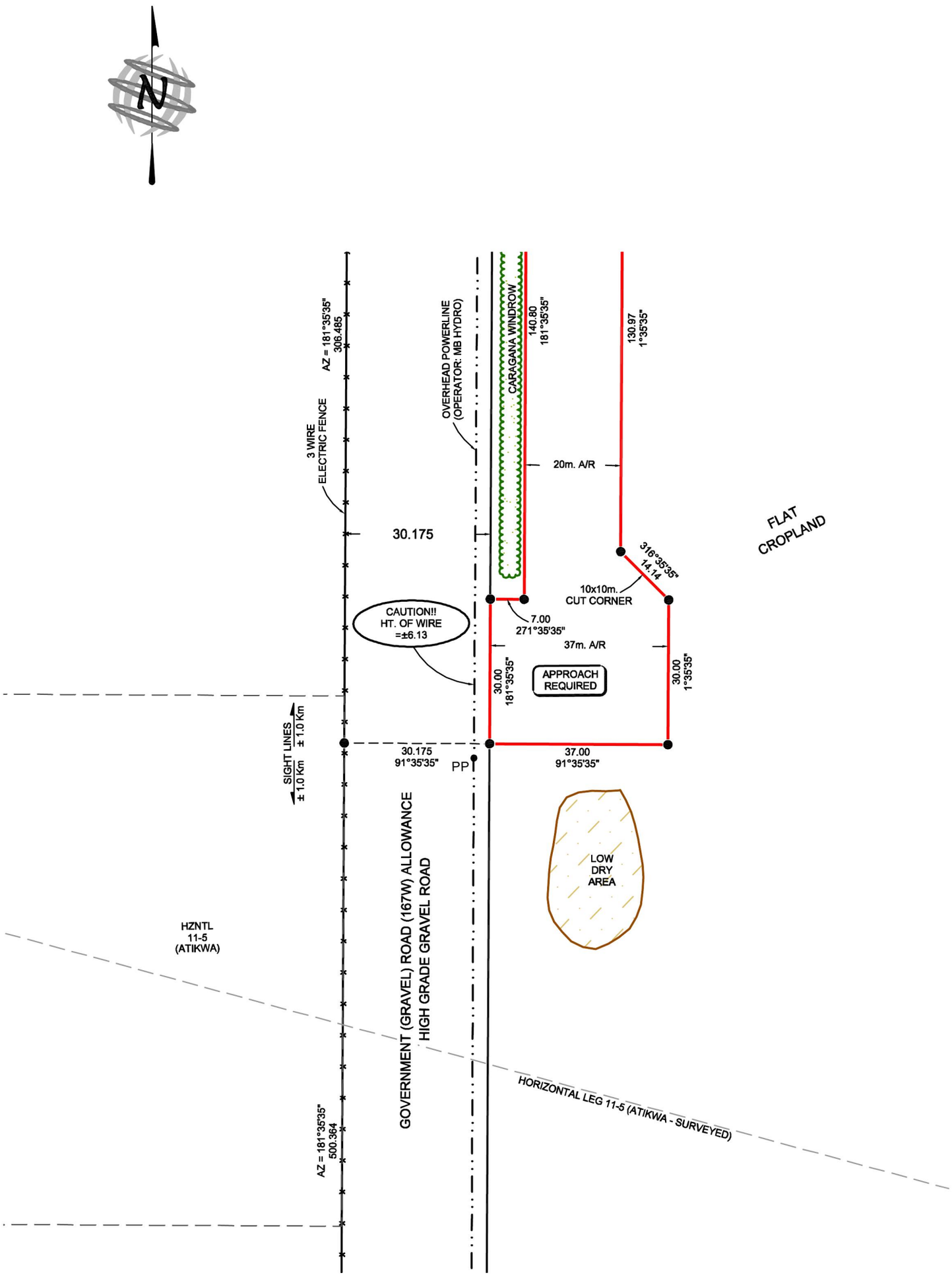

DETAIL
SCALE 1:1000

EOG PIERSON HZNTL 15-6-2-28WPM
WELL SITE AND ACCESS ROAD
UWI
EOG PIERSON HZNTL 100.15.06.002.28WPM

Altus Geomatics
Manitoba

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EOG RESOURCES CANADA INC.

Plan Showing Photo Mosaic of

EOG PIERSON HZNTL 15-6-2-28WPM

from a Surface Location in

L.S. 13 - Sec. 5 - Twp. 2 - Rge. 28WPM

Photo Date : May 20, 2006.
Photo No. : Orthographic Photo

WELL SITE PHOTO PLAN

0 50 100 200 300 400 500

SCALE - 1:10,000

Altus Geomatics Manitoba
Toll Free: 1-800-465-6233
www.altusgeomaticsmb.com

MEMBER

Client File No:		
REV. 0	Revision:	
	Date: March 15, 2011	Job No.: 135986-V
	File: 135986W	Initials: KD - TJ - PFS

LICENCE # 8001

EOG PIERSON HZNTL 15-6-2-28WPM

UWI

EOG PIERSON HZNTL 100.15-06-002-28W1.00

WELL SITE AND ACCESS ROAD

TERMINUS

LSD. 15C - SEC. 6 - TWP. 2 - RGE. 28WPM

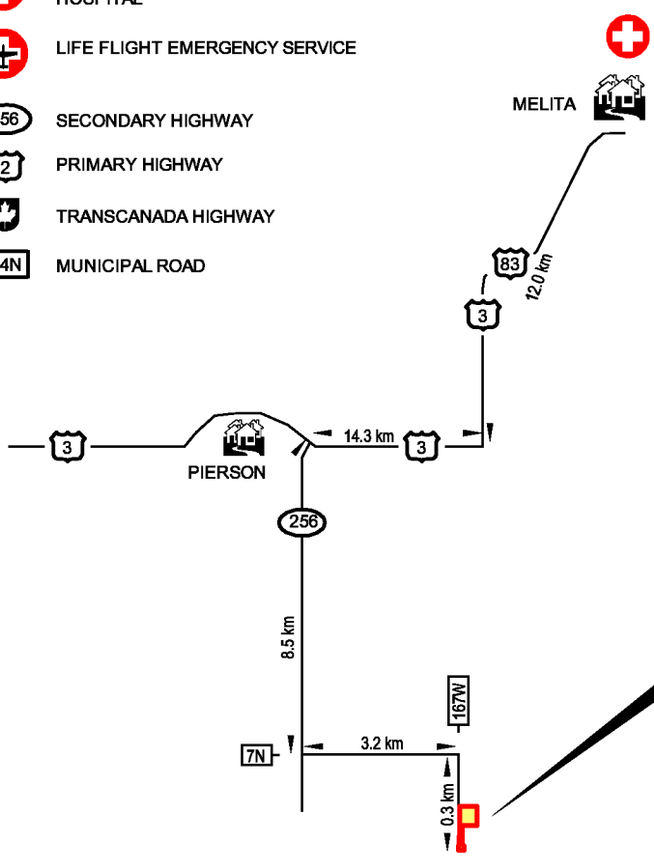
WELL SITE SURFACE LOCATION

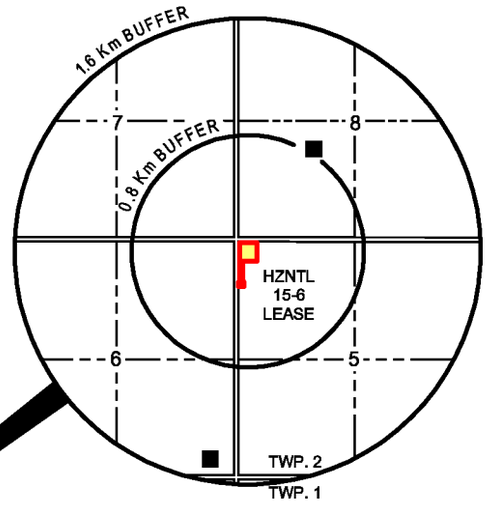
LSD. 13C - SEC. 5 - TWP. 2 - RGE. 28WPM

R.M. of EDWARD

LEGEND

- HOSPITAL
- LIFE FLIGHT EMERGENCY SERVICE
- 256 SECONDARY HIGHWAY
- 2 PRIMARY HIGHWAY
- TRANSCANADA HIGHWAY
- 44N MUNICIPAL ROAD





RESIDENCE SKETCH

- ■ RESIDENCE
- □ ABND. RESIDENCE

LEGEND:

Distances are in metres. SCALE: 1:5000

Portions referred to shown thus:
Legal Survey Posts (found / placed)
Planted Wood Hub
Fence Lines
Oil / Gas Lines
Overhead Power Lines
Buried Power Cables
Buried Telecom Cables
Bush
Low Area / Slough
Water Covered Area

Surveyed Well Centre
Standing Well
Producer
Abandoned Producer
Abandoned Dry
Injection Well
Injection Well (Former Producer)
Abandoned Water Injection
Abandoned Water Injection (Former Producer)
Salt Water Disposal

Salt Water Disposal (Former Producer)
Abandoned Salt Water Disposal
Abd. Salt Water Disposal (Former Prod.)
Dual Completion
Abandoned Dual Completion
Junked and Abandoned
Surface Location - Horizontal / Directional / Slant
Water Supply Well
Abandoned Water Supply Well
Abandoned Structure Test Hole

OPERATOR:

eog resources

WELL LICENCE INFORMATION
THE PROPOSED WELL CENTRE IS:

	YES	NO
-At least 1.5 km from the Corporate Limits of a City, Town or Village	■	□
- At least 75m from any shoreline	■	□
-At least 75m from any Surface Improvements (O/H Power Line)	□	■
-At least 45m from any surveyed road	■	□
-At least 75m from any aircraft runway or taxiway	■	□
-At least 75m from any water well	■	□

-Approximately 5.1 km from the nearest urban centre (Lyleton)
-Approximately 0.8 km from the nearest residence (SW¼ 8-2-28WPM)

CALL BEFORE YOU DIG

FACILITIES SHOWN ON THIS PLAN ARE FOR INFORMATIONAL PURPOSES ONLY. PRIOR TO ANY CONSTRUCTION ON LEASE OR ACCESS ROAD, EOG RESOURCES CANADA INC. , MTS COMMUNICATIONS INC., MANITOBA HYDRO, AND MANITOBA HYDRO-GAS OPERATIONS **MUST** BE CONTACTED FOR LOCATION OF ANY UNDERGROUND FACILITIES THAT MAY EXIST.

There are no surface or underground improvements within 76m of well centre except as shown. OTHER FACILITIES MAY EXIST, OF WHICH WE WERE UNAWARE OF OR UNABLE TO LOCATE.

Altus Geomatics Manitoba
Toll Free: 1-800-465-6233
www.altusgeomaticsmb.com
MEMBER

All distances shown are horizontal and at ground level.

All bearings are NAD 83 (Zone 14) UTM grid bearings.
The Combined Scale Factor derived is 0.999844

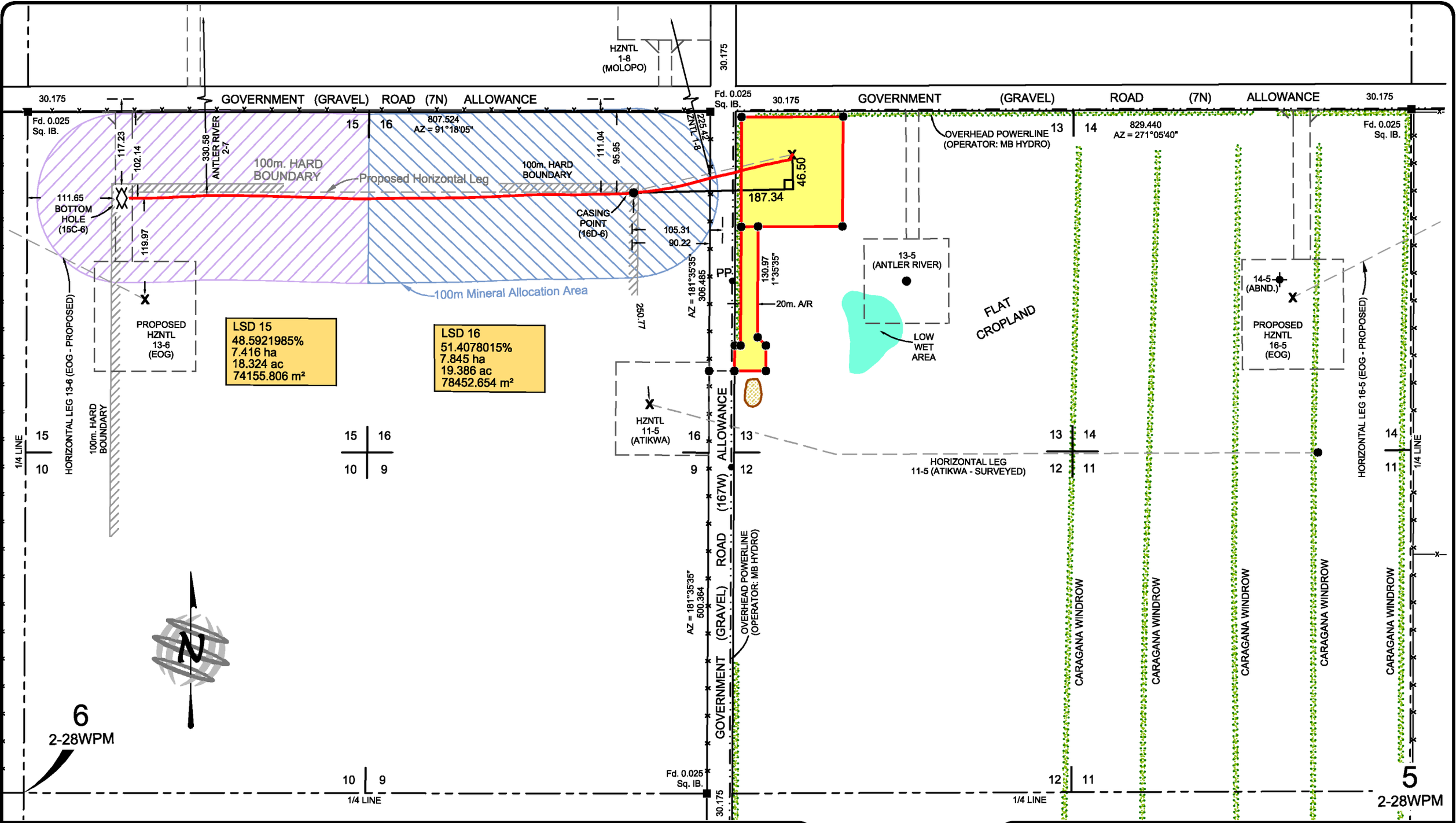
No.	DATE	DESCRIPTION	DWN	CKD
1	AUG. 31, 2012	ADDED HZNTL AS-DRILLED LEG AND MINERAL ALLOCATION	HB	CC
0	MAR.15, 2011	ISSUED	TJ	PFS
-	MAR.11, 2011	RE-ISSUED FOR REVIEW	TJ	PFS
-	FEB.22, 2011	ISSUED FOR REVIEW	TJ	PFS

REVISIONS

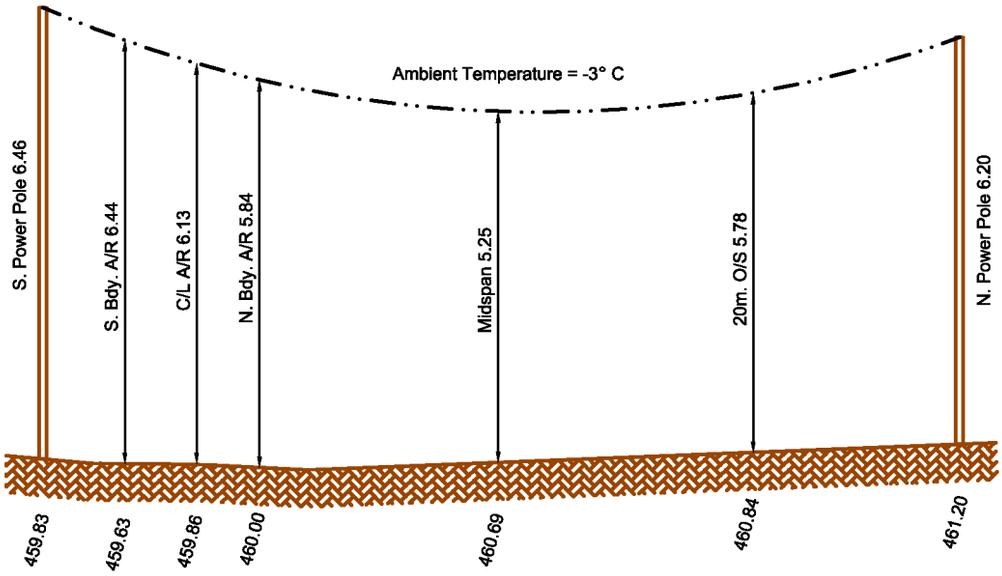
FIELD BOOK
V29
PAGE(S)
N/A

Surveyed by: KD
Drafted by: TJ
Checked by: PFS

Client File: N/A
NTS SHEET: 62 F/3
ALTUS GEOMATICS File: 135986



EOG PIERSON HZNTL 15-6-2-28WPM	UWI: EOG PIERSON HZNTL 100.15-06-002-28W1.00	ALTUS GEOMATICS JOB No. 135986	REVISION: 1	PAGE 2 of 5



POWER LINE DETAIL
Not To Scale

SURFACE (13C-5)

LOCAL CO-ORDINATES
51.00 S of N
67.00 E of W } Sec.5

UTM CO-ORDINATES (NAD 83)
5441176.880 N
339094.580 E } CSRS

UTM CO-ORDINATES (NAD 27)
5440955.193 N
339121.238 E } CSRS

LATITUDE / LONGITUDE(LL83)
49°06'08.553"
101°12'16.155" } CSRS

LATITUDE / LONGITUDE(LL27)
49°06'08.495"
101°12'14.582" } CSRS

CASING POINT (16D-6)

LOCAL CO-ORDINATES
95.95 S of N
90.22 W of E } Sec.6

UTM CO-ORDINATES (NAD 83)
5441135.850 N
338906.000 E } CSRS

UTM CO-ORDINATES (NAD 27)
5440914.160 N
338932.655 E } CSRS

LATITUDE / LONGITUDE(LL83)
49°06'07.083"
101°12'25.390" } CSRS

LATITUDE / LONGITUDE(LL27)
49°06'06.989"
101°12'23.817" } CSRS

BOTTOM HOLE (15C-6)

LOCAL CO-ORDINATES
102.14 S of N
695.90 W of E } Sec.6

UTM CO-ORDINATES (NAD 83)
5441143.350 N
338300.400 E } CSRS

UTM CO-ORDINATES (NAD 27)
5440921.656 N
338327.050 E } CSRS

LATITUDE / LONGITUDE(LL83)
49°06'06.719"
101°12'55.246" } CSRS

LATITUDE / LONGITUDE(LL27)
49°06'06.660"
101°12'53.672" } CSRS

CARTESIAN CO-ORDINATES (NAD83)

Note:
All distances are cartesian referenced to the UTM GRID, NAD 83, ZONE 14

Casing Point is
41.04 South
188.61 West
of surface location

Bottom Hole is
33.54 South
794.30 West
of surface location

HZNTL 11-5 Surface is
291.45 South
175.34 West
of surface location

HZNTL 1-8 Surface is
194.17 North
146.75 West
of surface location

Vertical 2-7 is
297.81 North
692.61 West
of surface location

Proposed HZNTL 13-6 Surface is
153.97 South
769.42 West
of surface location

CARTESIAN CO-ORDINATES (TRUE NORTH)

Note:
All distances are cartesian referenced to True North (Grid Convergence = -1.6663°)

Casing Point is
46.50 South
187.34 West
of surface location

Bottom Hole is
56.62 South
792.99 West
of surface location

Horizontal path information was obtained from the final survey of well lic. #8001 provided by Phoenix Technology Services LP dated August 30, 2012.

WELL CENTRE ELEVATION: 460.90

From original plat data.

WELL CENTRE ELEVATION: 460.90

From directional drilling data.

Elevations shown are in Geodetic Datum from the Province of Manitoba Mon. #82R760

CORNER ELEVATIONS:

N.E. CORNER	-	461.29
S.E. CORNER	-	461.51
S.W. CORNER	-	460.50
N.W. CORNER	-	461.00

NW ¼ Sec. 5 Twp. 2 Rge. 28WPM
Owner(s): DALE CURTIS GARDINER

C.T. No. 1647848

AREAS REQUIRED

WELL SITE	1.560 ha	3.85 ac
ACCESS ROAD	0.398 ha	0.98 ac
TOTAL	1.958 ha	4.83 ac

I certify that the survey represented by this plan is correct to the best of my knowledge and was completed on the 9th day of March, 2011.

MANITOBA LAND SURVEYOR

Witness

EOG PIERSON HZNTL 15-6-2-28WPM
WELL SITE AND ACCESS ROAD
UWI
EOG PIERSON HZNTL 100.15-06-002-28W1.00

Altus Geomatics Manitoba

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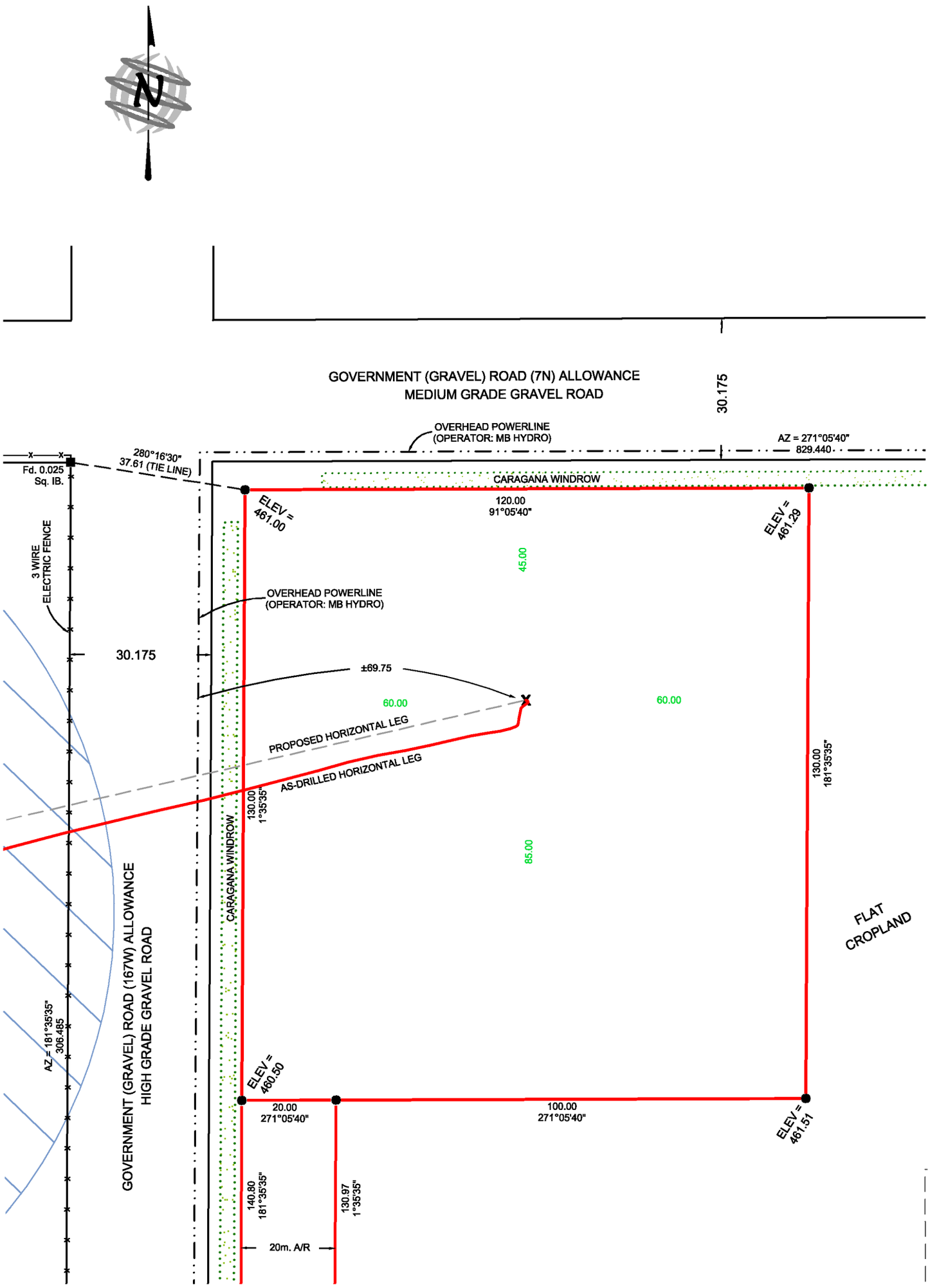

DETAIL AT HZNTL 15-6 (13-5 SURFACE)
SCALE 1:1000

EOG PIERSON HZNTL 15-6-2-28WPM
WELL SITE AND ACCESS ROAD
UWI
EOG PIERSON HZNTL 100.15-06-002-28W1.00

Altus Geomatics
Manitoba

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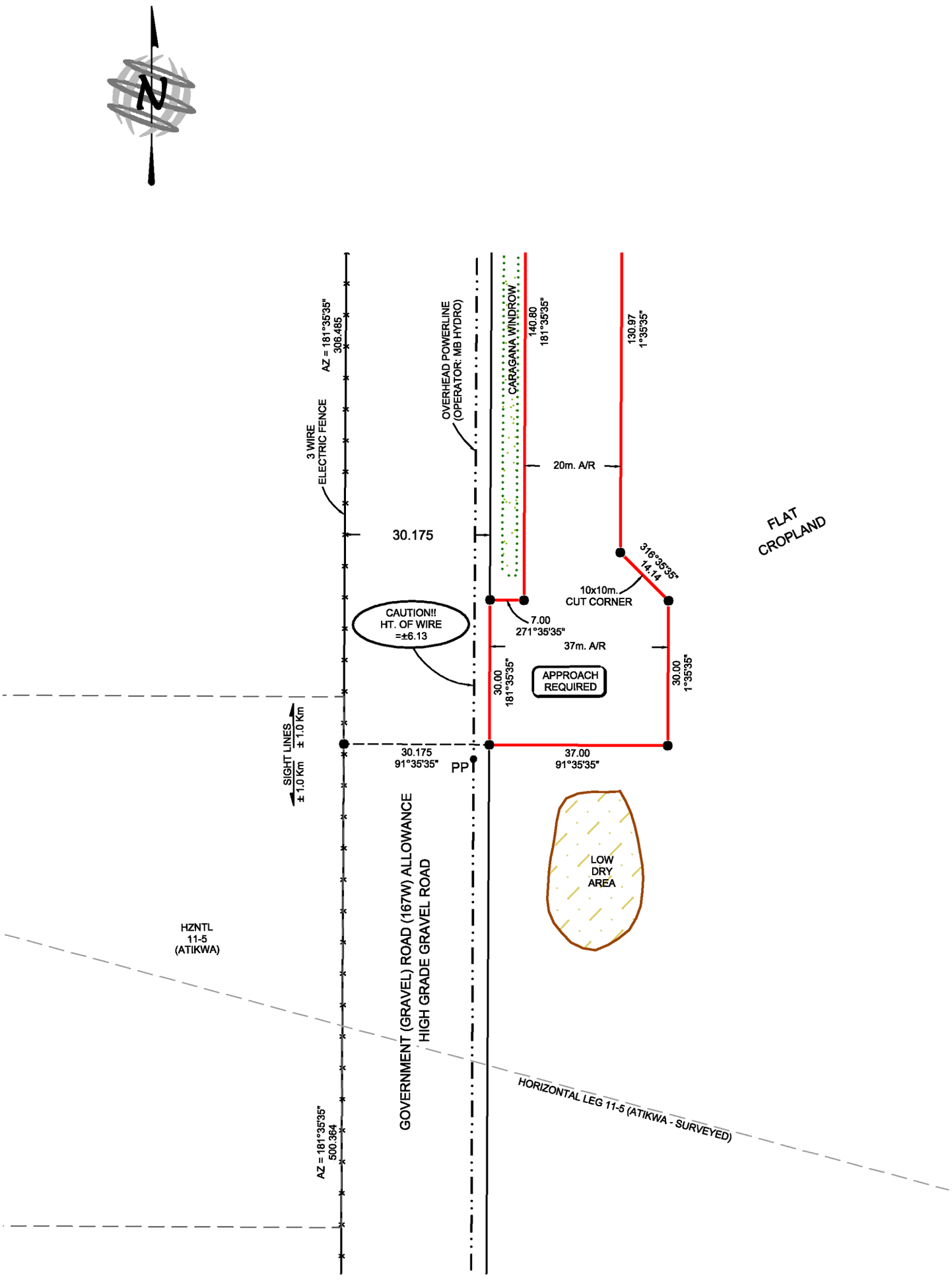

DETAIL
SCALE 1:1000

EOG PIERSON HZNTL 15-6-2-28WPM
WELL SITE AND ACCESS ROAD
UWI
EOG PIERSON HZNTL 100.15-06-002-28W1.00

Altus Geomatics
Manitoba

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FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120829_1B	Pason	2012	08	29

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30

Signature of Operator Representative	Signature of Contractor's Rig manager	Rig Release Date	Time
Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection	CE	JR
2) Detailed Inspection - Weekly (Using Check List)	CE	JR
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted	CE	JR
5) Flare Lines Staked	CE	JR
6) BOP Drills Performed	CE	JR
7) Visually Inspected BOPs - Flare Lines & Degasser Lines	CE	JR
1) Rig Site Health & Safety Meeting (one/crew/month)		JR
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		JR
3) Mast Inspection before Raising or Lowering		JR
4) Crown Saver Checked		JR
5) Motor Kills Checked		JR

FUEL @ 08:00 HOURS

Rig	6200
Boiler	0
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)
DC	4.5XH	NILL	165	161	146.60	6	165
DC	6-5/8 REG	NILL	203	179	216.90	3	203
HW	4.5XH	NEW	159	73	54.59	40	165.00

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)
SURFACE	Fedmet	J-55	219	206	35.72	12	161	4	166

MUD PUMPS

No.	Make	Stroke Length (mm)
1	BPMMP	254

GENERAL EQUIPMENT & SERVICES

Description	Hours
LOADER	24

CAODC Pason V.1.0

SHALE SHAKERS

No.	Top Screen Size	Top Screen Changed	Top Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Bottom Screen Size	Bottom Screen Changed	Bottom Screen New
1	215	NO	YES	215	NO	YES	215	NO	NO	215	NO	YES
2	180	NO	NO	215	NO	YES	115	NO	NO	180	NO	YES
		☐	☐		☐	☐		☐	☐		☐	☐

TOUR 1

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 00:00 — END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25
50	DP(4.5 IN)	114		682.08
40	HWDP(4.5 IN)	117		526.35
0	Drill Pipe	Stands (m)		0.00
22	Drill Pipe	Singles (m)		286.70
Weight of DC (kdaN)	8	Kelly Down (m)		0.00
Weight of string (kdaN)	22	Total (m)		1532.75

BITS

Bit Number	1			
Size (mm)	200			
IADC Code				
Manufacturer	SHEAR BIT			
Type	SD413E4			
Serial No	TJ1443			
Jets (mm)	8.7	8.7	9.5	9.5
	11.1	11.1		
Depth Out (m)	1532			
Depth In (m)	166			
Total Drilled (m)	1366			
Hrs Run Today	5.25			
Cumulative Hrs Run	32.50			
Entry Date	2012/08/27			

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	42.03
BRG			

MUD RECORD

Mud Type	Water [x] Oil [ ] Other		
Time	00:30	02:30	06:15
Density (kg/m³)	1110	1110	1120
Funnel Viscosity (s/l)	48	48	53
Fluid Loss (cm³)	8.5	8.5	8.0
pH	8	8	8
Location	shaker	shaker	shaker
Depth (m)	1287	1355	1479
PVT (m³)	28	30	29

MUD MATERIALS ADDED

Product	Amount	Type
Walnuts	9	SX
Graphite	9	SX
Aqua Block	9	SX
Staflo Reg	1	SX
Prairie K	1	PAILS
Polydrill 1330	1	PAILS
Sawdust	6	SX

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)
lynx 40	8	1120	1090	1950

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
DRILLING	65	1197

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)
1273	1532	DRILL	40	10

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
1	2800	@	58	@	1273
1	3000	@	58	@	1400
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1	SINGLE	152	120	9000	8

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
00:00	1270.98	90.7	267	
00:15	1284.64	91.3	268	
00:45	1298.29	90.9	269	
01:15	1311.94	90.7	269	
01:30	1325.59	89.6	269	
02:00	1339.25	89.7	269	
02:30	1352.90	89.9	270	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
00:00	02:45	2.75	2	Drill 200mm hole from 1273 to1409 m KB MD
02:45	04:00	1.25	10	Accumulated directional surveys
04:00	04:15	0.25	7	Rig service, function pipe rams, 3 sec. o/c
04:15	07:45	3.50	2	Drill 200mm hole from 1409 to 1532 m KB MD
07:45	08:00	0.25	21	Hand over meeting

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO — START TIME: 08:00 — END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25
50	DP(4.5 IN)	114		682.08
40	HWDP(4.5 IN)	117		526.35
0	Drill Pipe	Stands (m)		0.00
32	Drill Pipe	Singles (m)		436.78
Weight of DC (kdaN)	8	Kelly Down (m)		13.17
Weight of string (kdaN)	22	Total (m)		1696.00

BITS

Bit Number	1			
Size (mm)	200			
IADC Code				
Manufacturer	SHEAR BIT			
Type	SD413E4			
Serial No	TJ1443			
Jets (mm)	8.7	8.7	9.5	9.5
	11.1	11.1		
Depth Out (m)	1696			
Depth In (m)	166			
Total Drilled (m)	1530			
Hrs Run Today	3.00			
Cumulative Hrs Run	35.50			
Entry Date	2012/08/27			

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	43.10
BRG			

MUD RECORD

Mud Type	Water [x] Oil [ ] Other		
Time	09:00	12:00	16:00
Density (kg/m³)	1120	1120	1135
Funnel Viscosity (s/l)	53	55	54
Fluid Loss (cm³)	8.5	8.0	8.5
pH	8	8	8
Location	shaker	shaker	shaker
Depth (m)	1572	1677	
PVT (m³)	29	29	29

MUD MATERIALS ADDED

Product	Amount	Type
Aqua Block	7	SX
Gel	7	SX
Prairie K	3	PAILS
Staflo Reg	1	SX
Staflo Exlo	1	SX
Barite	84	SX
Soap Sticks	10	Sticks

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)
peak centerfuge	10	1140	1110	1485

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
Drilling/tripping	70	1181

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)
1532	1696	DRILL	40	10

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
1	2900	@	50	@	1550
1	3050	@	50	@	1696
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1	SINGLE	152	118	9000	8

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	9
Hole Drag Down (kdaN)	9
Torque at Bottom (Nm)	16500
Fill on Bottom (m)	0

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
08:15	1544.05	89.9	271	
08:30	1557.71	90.2	271	
09:00	1571.35	90.0	270	
09:30	1585.00	89.2	270	
10:00	1598.64	88.7	267	
10:15	1612.29	88.7	267	
10:30	1625.92	88.7	267	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
08:00	11:00	3.00	2	Drill 200mm hole from 1532 to 1696m KB MD
11:00	12:30	1.50	20A	Accumualted directional surveys
12:30	14:00	1.50	5	Circulate and reciprocate string
14:00	14:15	0.25	21	Safety meeting on tripping cont. to circulate
14:15	16:30	2.25	6B	Trip out of hole, flow ckecks at 1696m, 1611m, 888m, Trip data:Meas.=5.61m3,
				Cal.=4.77m3, Diff.=0.84m3
16:30	16:45	0.25	21	Safety meeting on tripping in
16:45	18:00	1.25	6A	Trip in hole
18:00	18:15	0.25	7	Rig service, function HCR 2 sec. c/o
18:15	19:45	1.50	5	Circulate and reciprocate string
19:45	20:00	0.25	21	Crew change handover meeting

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

TOUR 3

SIGNATURE OF DRILLER: ASHLEY SKIBA — START TIME: 20:00 — END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25
50	DP(4.5 IN)	114		682.08
40	HWDP(4.5 IN)	117		526.35
0	Drill Pipe	Stands (m)		0.00
32	Drill Pipe	Singles (m)		436.78
Weight of DC (kdaN)	8	Kelly Down (m)		13.17
Weight of string (kdaN)	22	Total (m)		1696.00

BITS

Bit Number	1			
Size (mm)	200			
IADC Code				
Manufacturer	SHEAR BIT			
Type	SD413E4			
Serial No	TJ1443			
Jets (mm)	8.7	8.7	9.5	9.5
	11.1	11.1		
Depth Out (m)	1696			
Depth In (m)	166			
Total Drilled (m)	1530			
Hrs Run Today	0.00			
Cumulative Hrs Run	35.50			
Entry Date	2012/08/27			

DULL GRADE

T_i	1	Gage (mm)	0
T_o	1	ODC	NO
MDC	WT	Reason Pulled	TD
LOC	A	Total Run (m/hr)	43.10
BRG	X		

MUD RECORD

Mud Type	Water [x] Oil [ ] Other		
Time	20:00		
Density (kg/m³)	1130		
Funnel Viscosity (s/l)	54		
Fluid Loss (cm³)	8.5		
pH	8		
Location	Shaker		
Depth (m)	1696		
PVT (m³)	24		

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
tripping out of hole	70	1181

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1		152	0	0	0

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
20:00	22:30	2.50	6	Trip out to run casing, flow checks at 1696m, 1614m, 876m, 52m.
22:30	22:45	0.25	21	Safety meeting on slip and cut.
22:45	23:15	0.50	9	Slip and cut 19.5m drill line.
23:15	23:30	0.25	21	Safety meeting with directional and MWD
23:30	24:00	0.50	20D	Lay down directional tools. Break bit and lay down mud motor. Trip data:
				Meas.=9.66m3, Cal.=8.89m3, Diff.=0.77m3. Flow check @ 0m.

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120829_1B	Pason	2012	08	29

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30
Signature of Operator Representative	**Signature of Contractor's Rig manager**	**Rig Release Date**	**Time**
Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection		
2) Detailed Inspection - Weekly (Using Check List)		
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted		
5) Flare Lines Staked		
6) BOP Drills Performed		
7) Visually Inspected BOPs - Flare Lines & Degasser Lines		
1) Rig Site Health & Safety Meeting (one/crew/month)		
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		
3) Mast Inspection before Raising or Lowering		
4) Crown Saver Checked		
5) Motor Kills Checked		

FUEL @ 08:00 HOURS

Rig	
Boiler	
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)

MUD PUMPS

No.	Make	Stroke Length (mm)

GENERAL EQUIPMENT & SERVICES

Description	Hours

CAODC Pason V.1.0

SHALE SHAKERS

No.	Top Screen			Middle Screen			Middle Screen			Bottom Screen		
	Size	Changed	New	Size	Changed	New	Size	Changed	New	Size	Changed	New
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐

TOUR 1

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 00:00 — END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
02:45	1366.54	90.1	270	
03:15	1380.24	89.7	268	
03:30	1393.89	89.6	268	
04:00	1407.54	89.1	270	
04:30	1421.18	89.6	270	
05:00	1434.84	89.4	272	
05:15	1448.50	89.3	272	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO — START TIME: 08:00 — END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
11:00	1639.56	88.4	267	
11:15	1653.20	89.2	268	
11:45	1666.83	90.2	269	
12:00	1680.00	90.8	270	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 3

SIGNATURE OF DRILLER: ASHLEY SKIBA — START TIME: 20:00 — END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120829_1B	Pason	2012	08	29

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30
Signature of Operator Representative	**Signature of Contractor's Rig manager**	**Rig Release Date**	**Time**
Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection		
2) Detailed Inspection - Weekly (Using Check List)		
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted		
5) Flare Lines Staked		
6) BOP Drills Performed		
7) Visually Inspected BOPs - Flare Lines & Degasser Lines		
1) Rig Site Health & Safety Meeting (one/crew/month)		
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		
3) Mast Inspection before Raising or Lowering		
4) Crown Saver Checked		
5) Motor Kills Checked		

FUEL @ 08:00 HOURS

Rig	
Boiler	
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)

MUD PUMPS

No.	Make	Stroke Length (mm)

GENERAL EQUIPMENT & SERVICES

Description	Hours

CAODC Pason V.1.0

SHALE SHAKERS

No.	Top Screen			Middle Screen			Middle Screen			Bottom Screen		
	Size	Changed	New	Size	Changed	New	Size	Changed	New	Size	Changed	New
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐

TOUR 1

SIGNATURE OF DRILLER: RYAN NEWBY | START TIME: 00:00 | END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)

Drill Pipe		Stands (m)	
Drill Pipe		Singles (m)	
Weight of DC (kdaN)		Kelly Down (m)	
Weight of string (kdaN)		Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
05:45	1462.15	88.8	271	
06:00	1475.80	88.6	271	
06:30	1489.46	89.8	272	
07:00	1503.11	90.4	272	
07:30	1516.75	90.2	271	
07:45	1530.40	90.0	270	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO | START TIME: 08:00 | END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)

Drill Pipe		Stands (m)	
Drill Pipe		Singles (m)	
Weight of DC (kdaN)		Kelly Down (m)	
Weight of string (kdaN)		Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 3

SIGNATURE OF DRILLER: ASHLEY SKIBA | START TIME: 20:00 | END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)

Drill Pipe		Stands (m)	
Drill Pipe		Singles (m)	
Weight of DC (kdaN)		Kelly Down (m)	
Weight of string (kdaN)		Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120826_2B	Pason	2012	08	26

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30
Signature of Operator Representative	**Signature of Contractor's Rig manager**	**Rig Release Date**	**Time**
Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection		JR
2) Detailed Inspection - Weekly (Using Check List)		JR
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted		JR
5) Flare Lines Staked		
6) BOP Drills Performed		
7) Visually Inspected BOPs - Flare Lines & Degasser Lines		

1) Rig Site Health & Safety Meeting (one/crew/month)	JR
2) CAODC Rig Safety Inspection Checklist (one/rig/month)	JR
3) Mast Inspection before Raising or Lowering	JR
4) Crown Saver Checked	JR
5) Motor Kills Checked	

FUEL @ 08:00 HOURS

Rig	6300
Boiler	0
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)
DC	4.5XH	NILL	165	161	146.60	6	165
DC	6-5/8 REG	NILL	203	179	216.90	3	203
HW	4.5XH	NEW	159	73	54.59	40	165.00

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)
SURFACE	Fedmet	J-55	219	206	35.72	12	161	4	166

MUD PUMPS

No.	Make	Stroke Length (mm)
1	BPMMP	254

GENERAL EQUIPMENT & SERVICES

Description	Hours
LOADER	24

CAODC Pason V.1.0

SHALE SHAKERS

No.	Top Screen Size	Top Screen Changed	Top Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Bottom Screen Size	Bottom Screen Changed	Bottom Screen New
1	215	NO	YES	215	NO	YES	215	NO	NO	215	NO	YES
2	180	NO	NO	215	NO	YES	115	NO	NO	180	NO	YES
		☐	☐		☐	☐		☐	☐		☐	☐

TOUR 1

SIGNATURE OF DRILLER: Jim Raycraft | START TIME: 00:00 | END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)

Drill Pipe		Stands (m)	
Drill Pipe		Singles (m)	
Weight of DC (kdaN)		Kelly Down (m)	
Weight of string (kdaN)		Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO | START TIME: 08:00 | END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)

Drill Pipe		Stands (m)	
Drill Pipe		Singles (m)	
Weight of DC (kdaN)		Kelly Down (m)	
Weight of string (kdaN)		Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
09:00	09:15	0.25	21	Held pre move safety meeting with Regulators trucking, oil company reps and
				crew
09:15	16:00	6.75	1A	Move rig from 100/13-06-02-28w1 and spot over pre set surface casing on
				100/15-06-02-28w1
16:00	17:00	1.00	1	Rig up power, Pason and water. Inspect and raise derrick.
17:00	19:00	2.00	1C	Continue to spot pipe tubs on new location, haul matting from old location
				to place at new location. New location punched out where there was no
				matting, bed trucks and loader stuck.
19:00	19:15	0.25	21	Crew change handover meeting
19:15	19:30	0.25	1	Finish rigging up to spud.
19:30	19:45	0.25	21	Held pre spud/nipple up BOP safety meeting with oil company rep and crew.
				Spud time @ 19:30hrs Aug 26 2012.
19:45	20:00	0.25	14	Remove casing collar and install casing bowl.

Remarks: Inspect mast and crown prior to raising

TOUR 3

SIGNATURE OF DRILLER: RYAN NEWBY | START TIME: 20:00 | END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25

0	Drill Pipe	Stands (m)	0.00
0	Drill Pipe	Singles (m)	0.00
Weight of DC (kdaN) 8		Kelly Down (m)	0.00
Weight of string (kdaN)		Total (m)	37.62

BITS

Bit Number	1			
Size (mm)				200
IADC Code				
Manufacturer	SHEAR BIT			
Type	SD413E4			
Serial No				TJ1443
Jets (mm)	8.7	8.7	9.5	9.5
	11.1			
Depth Out (m)				
Depth In (m)				166
Total Drilled (m)				
Hrs Run Today				
Cumulative Hrs Run				0.00
Entry Date	2012/08/26			

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☒ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type
Envirofloc	13	SX
Hyperdrill 204	1	SX
Sawdust	1	SX

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
PRESSER TEST		

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
20:00	21:00	1.00	14	Nipple up BOP
21:00	21:15	0.25	21	Held safety meeting prior to pressure test B.O.P.
21:15	23:30	2.25	15	Pressure test BOP's, Blind rams, HCR and Kill line valves, through manifold,
				Annular, Pipe rams, Casing bowl, Stabbing valve, Inside BOP, Upper and
				Hydraulic kelly cock. 7000 kPa high, 1400 kPa low, 10 mins each valve.
23:30	24:00	0.50	15	Held accumulator 3 function test: Start pressure: 20,000 kpa. End pressure:
				10,500 kpa. Time to recharge: 2 minute, 20 seconds. Precharge 6200 kPa,
				Nitrogen backup pressure: 1#: 2800 psi, 2#: 2600psi. Function engine kills.

Remarks: Inspect mast and crown prior to raising

Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system

Functioned crown saver, pvt alarms, mso's, all lockouts, and horn

Check acc., man., and ann. pressures, checked accumulator fluid level

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120828_1A	Pason	2012	08	28

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30

Signature of Operator Representative	Signature of Contractor's Rig manager	Rig Release Date	Time
Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection	CE	JR
2) Detailed Inspection - Weekly (Using Check List)	CE	JR
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted	CE	JR
5) Flare Lines Staked	CE	JR
6) BOP Drills Performed	CE	JR
7) Visually Inspected BOPs - Flare Lines & Degasser Lines	CE	JR
1) Rig Site Health & Safety Meeting (one/crew/month)		JR
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		JR
3) Mast Inspection before Raising or Lowering		JR
4) Crown Saver Checked		JR
5) Motor Kills Checked		JR

FUEL @ 08:00 HOURS

Rig	9500
Boiler	0
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)
DC	4.5XH	NILL	165	161	146.60	6	165
DC	6-5/8 REG	NILL	203	179	216.90	3	203
HW	4.5XH	NEW	159	73	54.59	40	165.00

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)
SURFACE	Fedmet	J-55	219	206	35.72	12	161	4	166

MUD PUMPS

No.	Make	Stroke Length (mm)
1	BPMMP	254

GENERAL EQUIPMENT & SERVICES

Description	Hours
LOADER	24

CAODC Pason V.1.0

SHALE SHAKERS

No.	Top Screen Size	Top Screen Changed	Top Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Bottom Screen Size	Bottom Screen Changed	Bottom Screen New
1	215	NO	165	215	NO	165	215	165	NO	215	NO	165
2	180	NO	NO	215	NO	165	115	NO	NO	180	NO	165
		☐	☐		☐	☐		☐	☐		☐	☐

TOUR 1

SIGNATURE OF DRILLER: RYAN NEWBY | START TIME: 00:00 | END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25
50	DP(4.5 IN)	114		682.08
13	HWDP(4.5 IN)	117		171.01

0	Drill Pipe	Stands (m)	0.00
0	Drill Pipe	Singles (m)	0.00
Weight of DC (kdaN)	8	Kelly Down (m)	0.00
Weight of string (kdaN)	22	Total (m)	890.71

BITS

Bit Number	1			
Size (mm)	200			
IADC Code				
Manufacturer	SHEAR BIT			
Type	SD413E4			
Serial No	TJ1443			
Jets (mm)	8.7	8.7	9.5	9.5
	11.1	11.1		
Depth Out (m)	890			
Depth In (m)	166			
Total Drilled (m)	724			
Hrs Run Today	6.25			
Cumulative Hrs Run	16.50			
Entry Date	2012/08/27			

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	43.88
BRG			

MUD RECORD

Mud Type	Water [x] Oil [ ] Other		
Time	00:30	02:30	04:30
Density (kg/m³)	1100	1110	1100
Funnel Viscosity (s/l)	40	42	42
Fluid Loss (cm³)	7.0	7.0	6.0
pH	8	8	8
Location	shaker	shaker	shaker
Depth (m)	776	806	827
PVT (m³)	20	20	18

MUD MATERIALS ADDED

Product	Amount	Type
Walnuts	7	SX
Aqua Block	9	SX
Staflo Exlo	1	SX
Prairie K	1	SX
Graphite	3	SX
Soap Sticks	4	Sticks

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)
lynx 40	3	1110	1100	1670

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
making conections		

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)
772	890	DRILL	40	10

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
1	2200	@	58	@	825
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1	SINGLE	152	120	7200	8

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
00:00	769.49	1.5	195	
01:00	782.62	4.1	243	
02:00	795.79	7.3	251	
02:30	808.95	10.9	260	
03:45	822.09	14.0	261	
05:00	835.27	16.8	258	
05:30	848.40	20.3	256	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
00:00	03:00	3.00	2	Drill 200mm hole from 772 to 825m KB MD
03:00	04:00	1.00	10	Accumulated directional surveys
04:00	04:15	0.25	7	Rig service, function pipe rams, 3 sec. o/c
04:15	07:45	3.50	2	Drill 200mm hole from 825 to 890 m KB MD
07:45	08:00	0.25	21	Hand over meeting

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO | START TIME: 08:00 | END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25
50	DP(4.5 IN)	114		682.08
31	HWDP(4.5 IN)	117		407.30

0	Drill Pipe	Stands (m)	0.00
0	Drill Pipe	Singles (m)	0.00
Weight of DC (kdaN)	8	Kelly Down (m)	0.00
Weight of string (kdaN)	22	Total (m)	1127.00

BITS

Bit Number	1			
Size (mm)	200			
IADC Code				
Manufacturer	SHEAR BIT			
Type	SD413E4			
Serial No	TJ1443			
Jets (mm)	8.7	8.7	9.5	9.5
	11.1	11.1		
Depth Out (m)				
Depth In (m)	166			
Total Drilled (m)	961			
Hrs Run Today	7.75			
Cumulative Hrs Run	24.25			
Entry Date	2012/08/27			

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water [x] Oil [ ] Other		
Time	08:30	11:00	13:00
Density (kg/m³)	1110	1100	1100
Funnel Viscosity (s/l)	45	42	43
Fluid Loss (cm³)	6.0	6.5	7.0
pH	8	8	8
Location	shaker	shaker	shaker
Depth (m)	891	943	975
PVT (m³)	20	22	24

MUD MATERIALS ADDED

Product	Amount	Type
Walnuts	20	SX
Graphite	15	SX
Desco	1	SX
Aqua Block	6	SX
Staflo Exlo	2	SX
Staflo Reg	2	SX
Prairie K	3	PAILS
Soap Sticks	15	Sticks

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)
peak centerfuge	11	1140	1100	1485

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
Makiong connections	42	1213

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)
890	1127	DRILL	40	18

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
1	2100	@	50	@	950
1	2230	@	50	@	1100
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1	SINGLE	152	117	7600	12

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	5
Hole Drag Down (kdaN)	4
Torque at Bottom (Nm)	10400
Fill on Bottom (m)	0

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
08:00	887.85	27.8	259	
09:00	900.99	30.3	254	
09:30	914.16	32.8	254	
10:15	927.33	37.8	255	
11:00	940.50	41.4	255	
11:45	953.68	45.2	256	
12:30	966.81	48.8	258	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
08:00	14:30	6.50	2	Drill 200mm hole from 890 to 1035m KB MD
14:30	16:00	1.50	20A	Accumulated directional surveys
16:00	16:15	0.25	7	Rig service, 2sec. c/o
16:15	19:45	3.50	2	Drill 200mm hole from 1035 to 1127m KB KD
19:45	20:00	0.25	21	Crew change handover meeting

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

TOUR 3

SIGNATURE OF DRILLER: RYAN NEWBY | START TIME: 20:00 | END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25
50	DP(4.5 IN)	114		682.08
140	HWDP(4.5 IN)	117		526.35

0	Drill Pipe	Stands (m)	0.00
2	Drill Pipe	Singles (m)	26.95
Weight of DC (kdaN)	8	Kelly Down (m)	0.00
Weight of string (kdaN)	22	Total (m)	1273.00

BITS

Bit Number	1			
Size (mm)	200			
IADC Code				
Manufacturer	SHEAR BIT			
Type	SD413E4			
Serial No	TJ1443			
Jets (mm)	8.7	8.7	9.5	9.5
	11.1	11.1		
Depth Out (m)				
Depth In (m)	166			
Total Drilled (m)	1107			
Hrs Run Today	3.00			
Cumulative Hrs Run	27.25			
Entry Date	2012/08/27			

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water [x] Oil [ ] Other		
Time	20:30	22:30	
Density (kg/m³)	1120	1100	
Funnel Viscosity (s/l)	45	45	
Fluid Loss (cm³)	8.5	8.5	
pH	8	8	
Location	shaker	shaker	
Depth (m)	1146	1219	
PVT (m³)	27	29	

MUD MATERIALS ADDED

Product	Amount	Type
Walnuts	9	SX
Graphite	9	SX
Aqua Block	5	SX
Staflo Reg	2	SX
Soap Sticks	4	Sticks
Prairie K	1	PAILS

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)
lynx 40	4	1120	1090	1790

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
HOUSE KEAPING	60	1197

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)
1127	1273	DRILL	40	13

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
1	2500	@	58	@	1128
1	2800	@	58	@	1273
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1	SINGLE	152	120	8100	4

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	6
Hole Drag Down (kdaN)	5
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
20:00	1124.72	90.1	269	
20:15	1137.90	90.0	268	
20:30	1151.07	89.8	268	
21:00	1164.25	89.4	270	
21:15	1177.41	89.8	271	
21:45	1190.55	89.5	270	
22:00	1203.70	88.8	268	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
20:00	23:00	3.00	2	Drill 200mm hole from 1127 to 1273m KB MD
23:00	24:00	1.00	10	Accumulated directional surveys

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120828_1A	Pason	2012	08	28

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30
Signature of Operator Representative	**Signature of Contractor's Rig manager**	**Rig Release Date**	**Time**
Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection		
2) Detailed Inspection - Weekly (Using Check List)		
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted		
5) Flare Lines Staked		
6) BOP Drills Performed		
7) Visually Inspected BOPs - Flare Lines & Degasser Lines		
1) Rig Site Health & Safety Meeting (one/crew/month)		
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		
3) Mast Inspection before Raising or Lowering		
4) Crown Saver Checked		
5) Motor Kills Checked		

FUEL @ 08:00 HOURS

Rig	
Boiler	
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)

MUD PUMPS

No.	Make	Stroke Length (mm)

GENERAL EQUIPMENT & SERVICES

Description	Hours

CAODC Pason V.1.0

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)

SHALE SHAKERS

No.	Top Screen			Middle Screen			Middle Screen			Bottom Screen		
	Size	Changed	New	Size	Changed	New	Size	Changed	New	Size	Changed	New
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐

TOUR 1

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 00:00 — END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time	06:30		
Density (kg/m³)	1100		
Funnel Viscosity (s/l)	43		
Fluid Loss (cm³)	5.5		
pH	8		
Location	shaker		
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
06:30	861.57	23.1	257	
07:15	874.71	25.2	259	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO — START TIME: 08:00 — END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time	17:00		
Density (kg/m³)	1110		
Funnel Viscosity (s/l)	46		
Fluid Loss (cm³)			
pH	8		
Location	shaker		
Depth (m)	1049		
PVT (m³)	24		

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
13:30	979.98	52.7	256	
14:15	993.16	57.0	255	
15:00	1006.33	61.2	255	
15:30	1019.47	65.1	255	
16:15	1032.63	69.4	257	
16:45	1045.79	73.6	259	
17:15	1058.93	77.1	261	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 3

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 20:00 — END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
22:30	1216.87	88.9	267	
22:45	1230.05	90.1	268	
23:15	1243.70	90.7	266	
23:30	1257.34	90.5	267	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120828_1A	Pason	2012	08	28

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30
Signature of Operator Representative	**Signature of Contractor's Rig manager**	**Rig Release Date**	**Time**
Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection		
2) Detailed Inspection - Weekly (Using Check List)		
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted		
5) Flare Lines Staked		
6) BOP Drills Performed		
7) Visually Inspected BOPs - Flare Lines & Degasser Lines		
1) Rig Site Health & Safety Meeting (one/crew/month)		
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		
3) Mast Inspection before Raising or Lowering		
4) Crown Saver Checked		
5) Motor Kills Checked		

FUEL @ 08:00 HOURS

Rig	
Boiler	
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)

MUD PUMPS

No.	Make	Stroke Length (mm)

GENERAL EQUIPMENT & SERVICES

Description	Hours

SHALE SHAKERS

No.	Top Screen			Middle Screen			Middle Screen			Bottom Screen		
	Size	Changed	New	Size	Changed	New	Size	Changed	New	Size	Changed	New
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐

Pason V.1.0

TOUR 1

SIGNATURE OF DRILLER: RYAN NEWBY | START TIME: 00:00 | END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO | START TIME: 08:00 | END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
17:45	1072.10	80.5	263	
18:15	1085.28	83.4	264	
18:45	1098.44	86.8	266	
19:30	1111.57	89.7	269	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 3

SIGNATURE OF DRILLER: RYAN NEWBY | START TIME: 20:00 | END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120827_1A	Pason	2012	08	27

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐
	Operator's AFE	Contractor's Job No	Spud Date	Time
	12J0056	14	2012/08/26	19:30
	Signature of Operator Representative	Signature of Contractor's Rig manager	Rig Release Date	Time
	Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection		JR
2) Detailed Inspection - Weekly (Using Check List)		JR
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted		JR
5) Flare Lines Staked		JR
6) BOP Drills Performed		JR
7) Visually Inspected BOPs - Flare Lines & Degasser Lines		JR
1) Rig Site Health & Safety Meeting (one/crew/month)		JR
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		JR
3) Mast Inspection before Raising or Lowering		JR
4) Crown Saver Checked		JR
5) Motor Kills Checked		JR

FUEL @ 08:00 HOURS

Rig	12700
Boiler	0
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)
DC	4.5XH	NILL	165	161	146.60	6	165
DC	6-5/8 REG	NILL	203	179	216.90	3	203
HW	4.5XH	NEW	159	73	54.59	40	165.00

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)
SURFACE	Fedmet	J-55	219	206	35.72	12	161	4	166

MUD PUMPS

No.	Make	Stroke Length (mm)
1	BPMMP	254

GENERAL EQUIPMENT & SERVICES

Description	Hours
LOADER	24

CAODC Pason V.1.0

SHALE SHAKERS

No.	Top Screen Size	Top Screen Changed	Top Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Bottom Screen Size	Bottom Screen Changed	Bottom Screen New
1	215	NO	YES	215	NO	YES	215	NO	NO	215	NO	YES
2	180	NO	NO	215	NO	YES	115	NO	NO	180	NO	YES
		☐	☐		☐	☐		☐	☐		☐	☐

TOUR 1

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 00:00 — END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25

0	Drill Pipe	Stands (m)	0.00
31	Drill Pipe	Singles (m)	422.89
Weight of DC (kdaN)		Kelly Down (m)	0.00
Weight of string (kdaN)		Total (m)	460.51

BITS

Bit Number	1
Size (mm)	200
IADC Code	
Manufacturer	SHEAR BIT
Type	SD413E4
Serial No	TJ1443
Jets (mm)	8.7 8.7 9.5 9.5 11.1 11.1
Depth Out (m)	
Depth In (m)	166
Total Drilled (m)	294
Hrs Run Today	3.50
Cumulative Hrs Run	3.50
Entry Date	2012/08/27

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water [x]	Oil ☐	Other
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type
Envirofloc	3	SX
Prairie K	2	SX
Soap Sticks	8	SX
TKPP	1	SX

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)
Lynx 40 Centrifuge	6	1010	1000	1590

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)
166	460	DRILL	40	8

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
1	1400	@	58	@	284
1	1700	@	58	@	370
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1	SINGLE	152	120	4500	6

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	2
Hole Drag Down (kdaN)	2
Torque at Bottom (Nm)	4300
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
03:00	166.00	0.3	119	
03:00	171.66	0.3	119	
04:45	294.48	0.2	265	
06:30	403.59	0.4	196	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
00:00	00:15	0.25	21	Safety meeting with directional hands
00:15	01:00	0.75	20D	Make up directional tools. Pick up mud motor, install bit. Pick up monels and install MWD tool.
01:00	01:15	0.25	6A	Run in hole with directional tools.
01:15	01:30	0.25	7	Rig service. Service top drive and drive lines.
01:30	01:45	0.25	21A	Held B.O.P drill with crew. Well secured in 90 seconds.
01:45	02:00	0.25	21F	Held Hazard Hunt with rig crew.
02:00	03:00	1.00	2C	Drill out float, cement and shoe. (Tag cement @ 142.5 mKB MD)
03:00	06:30	3.50	2	Drill 200mm hole from 166 to 460 mKB MD.
06:30	07:45	1.25	20A	Accumulated directional surveys
07:45	08:00	0.25	21	Crew change handover meeting

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO — START TIME: 08:00 — END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25

0	Drill Pipe	Stands (m)	0.00
46	Drill Pipe	Singles (m)	622.38
Weight of DC (kdaN) 8		Kelly Down (m)	0.00
Weight of string (kdaN) 22		Total (m)	660.00

BITS

Bit Number	1
Size (mm)	200
IADC Code	
Manufacturer	SHEAR BIT
Type	SD413E4
Serial No	TJ1443
Jets (mm)	8.7 8.7 9.5 9.5 11.1 11.1
Depth Out (m)	
Depth In (m)	166
Total Drilled (m)	494
Hrs Run Today	4.00
Cumulative Hrs Run	7.50
Entry Date	2012/08/27

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water [x]	Oil ☐	Other
Time	12:00	17:00	
Density (kg/m³)	1010	1090	
Funnel Viscosity (s/l)	34	40	
Fluid Loss (cm³)			
pH		8	
Location	shaker	shaker	
Depth (m)	582	657	
PVT (m³)	9	13	

MUD MATERIALS ADDED

Product	Amount	Type
Lime	1	SX
SAPP	1	SX
Prairie K	3	PAILS
Walnuts	3	SX
Barite	84	SX
Staflo Reg	3	SX
Cal Carb "0"	28	SX
Soap Sticks	15	Sticks

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)
peak centerfuge	8	1030	1000	1250

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
BOP drill, making connections, tirpping	31	1360

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)
460	660	DRILL	40	123

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
1	1560	@	52	@	500
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1	SINGLE	152	118	7500	12

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	3
Hole Drag Down (kdaN)	5
Torque at Bottom (Nm)	8500
Fill on Bottom (m)	0

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
10:00	512.70	0.5	281	
13:00	621.81	0.8	196	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
08:00	08:15	0.25	21	BOP drill, well secure in 1min. 39 sec.
08:15	12:15	4.00	2	Drill 200mm hole from 460 to 660 m KB MD
12:15	13:15	1.00	20A	Accumulated directional surveys
13:15	13:45	0.50	5	Circulate and work mud ring
13:45	14:00	0.25	21	Safety meeting on tripping
14:00	17:30	3.50	6B	Trip out for mud ring, flow checks at 657m, 610m, 310m, 52m, 0m, Trip data:Cal.=3.32m3, Meas.=3.66m3, Diff.=0.34m3. Function blind rams 2 seconds to close.
17:30	17:45	0.25	21	Safety meeting with directional
17:45	18:15	0.50	20D	Lay out tools, check bit and motor, pick up tools.
18:15	18:30	0.25	7	Rig service, function pipe rams 4 sec o/c
18:30	18:45	0.25	21	Safety meeting on tripping in
18:45	19:45	1.00	6A	Trip in hole flow check@ 0m 166,330

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

TOUR 3

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 20:00 — END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25
50	DP(4.5 IN)	114		682.08

0	Drill Pipe	Stands (m)	0.00
4	Drill Pipe	Singles (m)	52.30
Weight of DC (kdaN) 8		Kelly Down (m)	0.00
Weight of string (kdaN) 22		Total (m)	772.00

BITS

Bit Number	1
Size (mm)	200
IADC Code	
Manufacturer	SHEAR BIT
Type	SD413E4
Serial No	TJ1443
Jets (mm)	8.7 8.7 9.5 9.5 11.1 11.1
Depth Out (m)	
Depth In (m)	166
Total Drilled (m)	606
Hrs Run Today	2.75
Cumulative Hrs Run	10.25
Entry Date	2012/08/27

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water [x]	Oil ☐	Other
Time	20:30	22:30	
Density (kg/m³)	1050	1080	
Funnel Viscosity (s/l)	40	40	
Fluid Loss (cm³)	11.0	8.0	
pH	8	8	
Location	shaker	shaker	
Depth (m)	660	722	
PVT (m³)	14	17	

MUD MATERIALS ADDED

Product	Amount	Type
Cal Carb "0"	38	SX
Staflo Exlo	1	SX
Aqua Block	3	SX
Walnuts	3	SX
Prairie K	1	SX
Soap Sticks	3	Sticks

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)
tripping	35	

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)
660	772	DRILL	40	9

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
1	1600	@	58	@	717
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1	SINGLE	152	120	6200	4

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	3
Hole Drag Down (kdaN)	3
Torque at Bottom (Nm)	4000
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type
22:15	716.89	1.8	186	
23:30	756.37	1.5	194	

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
20:00	20:15	0.25	6A	Finish tripping in the hole to 660 mKB MD.
20:15	23:45	3.50	2	Drill 200mm hole from 660 to 772 m KB MD
23:45	24:00	0.25	10	Accumulated directional surveys

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120827_1A	Pason	2012	08	27

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30
Signature of Operator Representative	**Signature of Contractor's Rig manager**	**Rig Release Date**	**Time**
Chris Evanyshyn	Jim Raycraft		

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection		
2) Detailed Inspection - Weekly (Using Check List)		
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted		
5) Flare Lines Staked		
6) BOP Drills Performed		
7) Visually Inspected BOPs - Flare Lines & Degasser Lines		
1) Rig Site Health & Safety Meeting (one/crew/month)		
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		
3) Mast Inspection before Raising or Lowering		
4) Crown Saver Checked		
5) Motor Kills Checked		

FUEL @ 08:00 HOURS

Rig	
Boiler	
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)

MUD PUMPS

No.	Make	Stroke Length (mm)

GENERAL EQUIPMENT & SERVICES

Description	Hours

SHALE SHAKERS

No.	Top Screen			Middle Screen			Middle Screen			Bottom Screen		
	Size	Changed	New	Size	Changed	New	Size	Changed	New	Size	Changed	New
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐
		☐	☐		☐	☐		☐	☐		☐	☐

CAODC Pason V.1.0

TOUR 1

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 00:00 — END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

TOUR 2

SIGNATURE OF DRILLER: JOHN MUNRO — START TIME: 08:00 — END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
19:45	20:00	0.25	21	Crew change handover meeti

Remarks:

TOUR 3

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 20:00 — END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
	Drill Pipe		Stands (m)	
	Drill Pipe		Singles (m)	
Weight of DC (kdaN)			Kelly Down (m)	
Weight of string (kdaN)			Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water ☐ Oil ☐ Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)	Strokes/min	Depth (m)
	@	@	
	@	@	
	@	@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks:

FRONT PAGE SUMMARY

Tour Sheet Serial Number	Vendor Software Version	Year	Month	Day
0Y52191_20120830_1A	Pason	2012	08	30

Rig No.	Well Name	Surface Location	Prov	Loc Type	Unique Well Id	Kelly Bushing
191	EOG Pierson HZNTL 15-06-02-28(WPM)	13-05-002-28W1	MB	DLS	100/15-06-002-28W1/00	4.50

License No.	Operator	Contractor	Well Type	Re-Entry
8001	EOG RESOURCES CANADA (PARTNERSHIP)	PRECISION DRILLING, DIV OF PDC	HORIZ	☐

Operator's AFE	Contractor's Job No	Spud Date	Time
12J0056	14	2012/08/26	19:30
Signature of Operator Representative	**Signature of Contractor's Rig manager**	**Rig Release Date**	**Time**
Chris Evanyshyn	Jim Raycraft	2012/08/30	13:00

DAILY CHECKS

	OP	RM
1) Daily Walk Around Inspection	CE	JR
2) Detailed Inspection - Weekly (Using Check List)	CE	JR
3) H2S Signs Posted if Required		
4) Well Licence & Stick Diagram Posted	CE	JR
5) Flare Lines Staked	CE	JR
6) BOP Drills Performed	CE	JR
7) Visually Inspected BOPs - Flare Lines & Degasser Lines	CE	JR
1) Rig Site Health & Safety Meeting (one/crew/month)		JR
2) CAODC Rig Safety Inspection Checklist (one/rig/month)		JR
3) Mast Inspection before Raising or Lowering		JR
4) Crown Saver Checked		JR
5) Motor Kills Checked		JR

FUEL @ 08:00 HOURS

Rig	5000
Boiler	0
Op Fuel	

WEATHER

Time	
Temp	
Current Conditions	
Wind Direction	
Wind Strength	
Road Condition	

DRILL PIPE

Category	Thread Type	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Tool Joint OD (mm)
DC	4.5XH	NILL	165	161	146.60	6	165
DC	6-5/8 REG	NILL	203	179	216.90	3	203
HW	4.5XH	NEW	159	73	54.59	40	165.00

CASING

Category	Make	Grade	OD (mm)	ID (mm)	Linear Mass (kg/m)	No. of Joints	Total Length (m)	KB to CSG Head (m)	KB to CSG Bottom (m)
SURFACE	Fedmet	J-55	219	206	35.72	12	161	4	166
PRODUCTION	Fedmet	J-55	140	126	23.07	126	1698	4	1696

MUD PUMPS

No.	Make	Stroke Length (mm)
1	BPMMP	254

GENERAL EQUIPMENT & SERVICES

Description	Hours
LOADER	24

Pason V.1.0

SHALE SHAKERS

No.	Top Screen Size	Top Screen Changed	Top Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Middle Screen Size	Middle Screen Changed	Middle Screen New	Bottom Screen Size	Bottom Screen Changed	Bottom Screen New
1	215	NO	165	215	NO	165	215	NO	NO	215	NO	165
2	180	NO	NO	215	NO	165	115	NO	NO	180	NO	165
		☐	☐		☐	☐		☐	☐		☐	☐

TOUR 1

SIGNATURE OF DRILLER: ASHLEY SKIBA — START TIME: 00:00 — END TIME: 08:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)
1	BIT	200	0	0.21
1	MOTOR HS	185	0	8.72
1	ORIENT SUB	165	74	0.90
1	FLEX M0NEL	168	71	9.23
1	FLEX M0NEL	169	72	9.31
1	FLEX M0NEL	168	71	9.25
50	DP(4.5 IN)	114		682.08
40	HWDP(4.5 IN)	117		526.35

0	Drill Pipe	Stands (m)	0.00
32	Drill Pipe	Singles (m)	436.78
Weight of DC (kdaN)	8	Kelly Down (m)	13.17
Weight of string (kdaN)	22	Total (m)	1696.00

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water [x] Oil [ ] Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run
1		152	100	2500	8

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
00:00	00:15	0.25	7	Rig service, function blind rams while out of hole.
00:15	00:30	0.25	21	Held safety meeting prior to running casing.
00:30	04:30	4.00	12B	Rig up Volant tool and run 126 jts "Fedmet" 139.7mm, J-55, 23.07kg/m, LT&C,
				production casing + 3 marker jts. + float equipment. Total length 1697.95m.
				Landed @ 1696 mKB MD. PBTD @ 1681.81 mKB MD.
04:30	07:00	2.50	5	Condition mud, circulate and reciprocate casing.
07:00	07:15	0.25	21	Crew handover meeting.
07:15	07:30	0.25	21	Held meeting with Trican cementers prior to cementing casing
07:30	08:00	0.50	12	Cement 139.7mm production casing.

Remarks: Visually inspected: pipe arm, apachee, top drive, brakes and linkages, draw works, drill line, slips, dog collar, hand tools, hyd system
Functioned crown saver, pvt alarms, mso's, all lockouts, and horn
Check acc., man., and ann. pressures, checked accumulator fluid level

TOUR 2

SIGNATURE OF DRILLER: RYAN NEWBY — START TIME: 08:00 — END TIME: 20:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)

	Drill Pipe	Stands (m)	
	Drill Pipe	Singles (m)	
Weight of DC (kdaN)		Kelly Down (m)	
Weight of string (kdaN)		Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water [x] Oil [ ] Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type
Cal Carb "0"	56	SX
Prairie K	5	PAILS
Sugar	2	SX

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks
08:00	09:45	1.75	12	Cement csg w/2.44T (5.0m3) Scav @ 1300kg/m3, 16.56T (25.47m3) Tit 1400 @
				1400kg/m3, 28.0T (21.2m3) 0:1:0 "G" @ 1902 kg/m3. Displaced 20.88m3 H2O.
				Plug down @ 09:30 hrs, Aug 30 2012. Casing landed @ 1696 mKB MD.PBTD @
				1681.81mKB MD.
09:45	10:00	0.25	21	Held safety meeting prior to nipple down B.O.P.
10:00	10:30	0.50	14	Nipple down B.O.P, set casing slips with 25,000 daN, cut casing.
10:30	13:00	2.50	22	Clean tanks and tear out rig to move to 100/11-35-02-28w1. Rig Released @
				13:00 hours, Aug 30 2012.

Remarks:

TOUR 3

SIGNATURE OF DRILLER: Jim Raycraft — START TIME: 20:00 — END TIME: 24:00

DRILLING ASSEMBLY

No.	Component	OD (mm)	ID (mm)	Length (m)

	Drill Pipe	Stands (m)	
	Drill Pipe	Singles (m)	
Weight of DC (kdaN)		Kelly Down (m)	
Weight of string (kdaN)		Total (m)	

BITS

Bit Number	
Size (mm)	
IADC Code	
Manufacturer	
Type	
Serial No	
Jets (mm)	
Depth Out (m)	
Depth In (m)	
Total Drilled (m)	
Hrs Run Today	
Cumulative Hrs Run	
Entry Date	

DULL GRADE

T_i		Gage (mm)	
T_o		ODC	
MDC		Reason Pulled	
LOC		Total Run (m/hr)	
BRG			

MUD RECORD

Mud Type	Water [ ] Oil [ ] Other		
Time			
Density (kg/m³)			
Funnel Viscosity (s/l)			
Fluid Loss (cm³)			
pH			
Location			
Depth (m)			
PVT (m³)			

MUD MATERIALS ADDED

Product	Amount	Type

SOLIDS CONTROL

Equipment Name	Hours Run	Intake Density (kg/m³)	Over Flow Density (kg/m³)	Under Flow Density (kg/m³)

SAFETY

Safety Topic	MEHL (kdaN)	MACP (kpa)

METRES DRILLED

From (m)	To (m)	D-R-C	RPM	WOB (kdaN)

REDUCED PUMP SPEED

No.	Pressure (kpa)		Strokes/min		Depth (m)
		@		@	
		@		@	
		@		@	

CIRCULATION

Pump	Type	Liner Size (mm)	SPM	Pressure (kpa)	Hours Run

Remarks:

HOLE CONDITION

Hole Drag Up (kdaN)	
Hole Drag Down (kdaN)	
Torque at Bottom (Nm)	
Fill on Bottom (m)	

BOILER

No.	Hours Run	pH	Stack Temp (°C)

DEVIATION SURVEYS

Time	Depth (m)	Deviation	Direction	Type

TIME LOG

From	To	Elapsed	Code	Details of Operations in Sequence & Remarks

Remarks: