



Directional Survey

DELAWARE BASIN UNRESTRICTED

Well Name: RIO BLANCO 4-33 FED COM 2H

Sub-Division DELAWARE BASIN	Region LEA COUNTY CORE	Field Name GAUCHO/RED BULL	County LEA	State/Province NM
Surface Legal Location SEC 4-23S-34E	API/UMI 3002543245	Latitude (°) 32° 20' 1.249" N	Longitude (°) 103° 28' 56.921" W	Orig KB Elevation (ft) 3,439.40
			Ground Elev MSL (ft) 3,415.90	KB - GL (ft) 23.50

Wellbores

Wellbore Name OH	Parent Wellbore	SAP Well ID 41755	Vertical Section Direction (°) 359.57
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Kick Offs & Key Depths

Date	Type CURVE	Top Depth (ftKB) 9,300.0
Actual Deviation Survey COMPOSITE OH, Proposed? No	Definite? No	Proposed? No
Proposed Deviation Survey		

Deviation Survey

Date 11/8/2017	Description COMPOSITE OH
MD Tie In (ftB) 0.00	TVD Tie In (ftB) 0.00
Inclination Tie In (°) 0.00	Azimuth Tie In (°) 0.00
NS Tie In (ft) 0.00	EW Tie In (ft) 0.00

Survey Data

Date	MD (ftB)	Incl (°)	Azm (°)	TVD (ftB)	VS (ft)	N/S (ft)	EW (ft)	DLS (°/100ft)	Survey Tool	Survey Company
11/8/2017	136.00	0.30	148.80	136.00	-0.31	-0.30	0.18	0.22	MWD	WEATHERFORD
11/8/2017	225.00	0.16	119.87	225.00	-0.57	-0.57	0.41	0.20	MWD	WEATHERFORD
11/8/2017	316.00	1.00	95.44	315.99	-0.71	-0.70	1.31	0.94	MWD	WEATHERFORD
11/9/2017	407.00	1.57	97.87	406.97	-0.98	-0.95	3.34	0.63	MWD	WEATHERFORD
11/9/2017	567.00	1.65	93.33	566.91	-1.44	-1.38	7.81	0.09	MWD	WEATHERFORD
11/9/2017	658.00	2.06	92.21	657.86	-1.60	-1.52	10.75	0.45	MWD	WEATHERFORD
11/9/2017	750.00	1.29	95.20	749.82	-1.78	-1.68	13.44	0.84	MWD	WEATHERFORD
11/10/2...	841.00	1.73	95.45	840.79	-2.02	-1.90	15.82	0.48	MWD	WEATHERFORD
11/10/2...	934.00	1.66	101.46	933.75	-2.44	-2.31	18.54	0.21	MWD	WEATHERFORD
11/10/2...	1,026.00	1.22	120.63	1,025.72	-3.22	-3.07	20.69	0.70	MWD	WEATHERFORD
11/11/2...	1,117.00	1.14	132.49	1,116.70	-4.34	-4.17	22.19	0.28	MWD	WEATHERFORD
11/11/2...	1,209.00	1.21	148.85	1,208.68	-5.80	-5.62	23.37	0.37	MWD	WEATHERFORD
11/11/2...	1,300.00	1.38	166.72	1,299.66	-7.69	-7.51	24.12	0.48	MWD	WEATHERFORD
11/11/2...	1,392.00	2.25	195.10	1,391.61	-10.51	-10.33	23.90	1.33	MWD	WEATHERFORD
11/12/2...	1,485.00	3.11	203.23	1,484.51	-14.58	-14.42	22.43	1.01	MWD	WEATHERFORD
11/13/2...	1,573.00	3.58	208.73	1,572.36	-19.17	-19.02	20.17	0.65	MWD	WEATHERFORD
11/14/2...	1,669.00	3.63	211.62	1,668.17	-24.36	-24.23	17.13	0.20	MWD	WEATHERFORD
11/14/2...	1,761.00	3.78	217.79	1,759.98	-29.21	-29.11	13.75	0.46	MWD	WEATHERFORD
11/14/2...	1,852.00	3.50	222.09	1,850.79	-33.62	-33.54	10.05	0.43	MWD	WEATHERFORD
11/20/2...	2,044.00	2.93	225.63	2,042.49	-41.34	-41.32	2.61	0.31	MWD	WEATHERFORD
11/20/2...	2,139.00	3.17	223.18	2,137.36	-44.93	-44.94	-0.92	0.29	MWD	WEATHERFORD
11/20/2...	2,234.00	3.08	223.19	2,232.22	-48.68	-48.71	-4.46	0.09	MWD	WEATHERFORD
11/20/2...	2,328.00	2.70	219.69	2,326.10	-52.20	-52.26	-7.61	0.45	MWD	WEATHERFORD
11/20/2...	2,422.00	2.70	222.23	2,419.99	-55.52	-55.60	-10.51	0.13	MWD	WEATHERFORD
11/20/2...	2,516.00	2.72	229.83	2,513.89	-58.57	-58.68	-13.70	0.38	MWD	WEATHERFORD
11/20/2...	2,611.00	2.43	228.84	2,608.79	-61.33	-61.46	-16.94	0.31	MWD	WEATHERFORD
11/20/2...	2,706.00	2.17	231.15	2,703.71	-63.76	-63.91	-19.86	0.29	MWD	WEATHERFORD
11/20/2...	2,801.00	1.75	235.15	2,798.66	-65.70	-65.87	-22.45	0.46	MWD	WEATHERFORD
11/20/2...	2,896.00	1.61	243.39	2,893.62	-67.11	-67.30	-24.83	0.29	MWD	WEATHERFORD
11/20/2...	2,991.00	1.03	234.81	2,988.59	-68.18	-68.39	-26.72	0.64	MWD	WEATHERFORD
11/20/2...	3,087.00	0.64	224.02	3,084.58	-69.06	-69.27	-27.80	0.44	MWD	WEATHERFORD
11/20/2...	3,181.00	0.35	217.78	3,178.58	-69.66	-69.87	-28.34	0.31	MWD	WEATHERFORD
11/20/2...	3,276.00	0.25	155.05	3,273.58	-70.07	-70.29	-28.43	0.34	MWD	WEATHERFORD
11/21/2...	3,370.00	0.35	132.30	3,367.58	-70.46	-70.67	-28.13	0.16	MWD	WEATHERFORD
11/21/2...	3,414.00	0.22	152.98	3,411.57	-70.62	-70.84	-27.99	0.37	MWD	WEATHERFORD
11/24/2...	3,500.00	0.14	112.04	3,497.57	-70.81	-71.02	-27.82	0.17	MWD	WEATHERFORD
11/24/2...	3,594.00	0.16	56.45	3,591.57	-70.78	-70.99	-27.61	0.15	MWD	WEATHERFORD
11/24/2...	3,689.00	0.29	48.72	3,686.57	-70.55	-70.76	-27.32	0.14	MWD	WEATHERFORD
11/24/2...	3,782.00	0.38	65.71	3,779.57	-70.27	-70.48	-26.86	0.14	MWD	WEATHERFORD
11/24/2...	3,972.00	0.63	12.40	3,969.57	-69.00	-69.20	-26.06	0.27	MWD	WEATHERFORD
11/24/2...	4,160.00	0.85	24.54	4,157.55	-66.73	-66.92	-25.26	0.14	MWD	WEATHERFORD
11/24/2...	4,349.00	1.26	53.00	4,346.52	-64.22	-64.39	-23.02	0.35	MWD	WEATHERFORD
11/26/2...	4,445.00	0.99	52.60	4,442.50	-63.09	-63.26	-21.51	0.28	MWD	WEATHERFORD
11/26/2...	4,540.00	0.83	61.11	4,537.49	-62.27	-62.43	-20.26	0.22	MWD	WEATHERFORD
11/26/2...	4,635.00	1.29	24.02	4,632.47	-60.97	-61.12	-19.22	0.85	MWD	WEATHERFORD
11/26/2...	4,730.00	0.72	33.29	4,727.46	-59.50	-59.64	-18.46	0.62	MWD	WEATHERFORD
11/25/2...	4,825.00	0.70	33.21	4,822.45	-58.52	-58.66	-17.81	0.02	MWD	WEATHERFORD
11/26/2...	4,920.00	0.31	23.37	4,917.45	-57.80	-57.93	-17.39	0.42	MWD	WEATHERFORD
11/26/2...	5,015.00	0.49	20.82	5,012.44	-57.19	-57.32	-17.15	0.19	MWD	WEATHERFORD
11/25/2...	5,105.00	0.50	11.61	5,102.44	-56.45	-56.57	-16.93	0.09	MWD	WEATHERFORD
11/28/2...	5,202.00	0.35	8.49	5,199.44	-55.74	-55.87	-16.80	0.16	MWD	WEATHERFORD
11/28/2...	5,296.00	0.38	306.20	5,293.44	-55.27	-55.40	-17.01	0.40	MWD	WEATHERFORD
11/28/2...	5,391.00	0.66	292.23	5,388.43	-54.87	-55.01	-17.77	0.32	MWD	WEATHERFORD
11/28/2...	5,485.00	1.01	349.96	5,482.42	-53.85	-53.98	-18.42	0.92	MWD	WEATHERFORD
11/28/2...	5,579.00	1.19	344.92	5,576.41	-52.08	-52.23	-18.82	0.22	MWD	WEATHERFORD
11/28/2...	5,674.00	1.20	335.27	5,671.39	-50.22	-50.37	-19.49	0.21	MWD	WEATHERFORD
11/28/2...	5,768.00	1.69	9.96	5,765.36	-47.96	-48.11	-19.66	1.04	MWD	WEATHERFORD
11/28/2...	5,862.00	2.02	10.51	5,859.31	-44.97	-45.12	-19.12	0.35	MWD	WEATHERFORD
11/28/2...	5,957.00	1.73	9.32	5,954.26	-41.92	-42.06	-18.58	0.31	MWD	WEATHERFORD
11/28/2...	6,052.00	1.64	6.06	6,049.22	-39.15	-39.29	-18.21	0.14	MWD	WEATHERFORD
11/28/2...	6,146.00	1.47	6.34	6,143.18	-36.62	-36.75	-17.93	0.18	MWD	WEATHERFORD
11/28/2...	6,241.00	2.38	25.88	6,238.13	-33.64	-33.77	-16.94	1.17	MWD	WEATHERFORD
11/28/2...	6,336.00	2.59	28.15	6,333.04	-29.99	-30.10	-15.06	0.24	MWD	WEATHERFORD

HOBBS OCD
MAY 04 2018
RECEIVED



Weatherford

Evaluation, Drilling & Intervention
10000 West County Rd. 116
P.O. Box 61028
Midland, TX USA 79711
Tel. (432) 561-8892 Fax (432) 561-8895

Devon Energy
333 W. Sheridan Ave
Oklahoma City, OK, 73102

Date: December 15, 2017

Attention: Ian Norwalk

Re: Devon Energy
Well: Rio Blanco 4-33 Fed Com 2H
Lea County, New Mexico

Enclosed, please find the original survey performed on the referenced well by Precision Energy Services, Inc., a Weatherford company. Other information required by your office is as follows:

<u>Name & Title Of Surveyor</u>	<u>Well Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Andrew Schmidt MWD Supervisor	2H	136' MD 17,130' MD	11/08/2017 12/14/2017	Measurement While Drilling

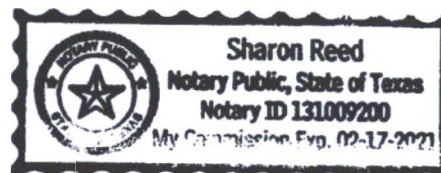
A notarized plan vs. actual is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Jonathan Leger
MWD Ops Coordinator

On this, the 18th day of December, 2017 before me a notary public, the undersigned officer, personally appeared Jonathan Leger, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

In witness hereof, I hereunto set my hand and official seal.

Notary Public





5D Survey Report

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*
Site Name: *Rio Blanco 4-33 Fed Com Pad*
Well Name: *Rio Blanco 4-33 Fed Com 2H*
Survey: *Definitive survey*

15 December 2017





Rio Blanco 4-33 Fed Com 2H

Field Name: Lea Co, NM Nad 83 NMEZ	Map Units: US ft	Company Name: Devon Energy	
	Vertical Reference Datum (VRD): Mean Sea Level		
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)		
	Comment:		
Site: Rio Blanco 4-33 Fed Com Pad	Units: US ft	North Reference: Grid	Convergence Angle: 0.46
	Elevation above MSL: 3415.80 US ft		
Comment:			
Slot: Rio Blanco 4-33 Fed Com 2H	Slot TVD Reference: Ground Elevation		
	Elevation above MSL: 3415.90 US ft		
	Comment:		
Well: Rio Blanco 4-33 Fed Com 2H	Type: Main well	UWI:	
	File Number:	Comment:	
	Closure Distance: 7626.08 US ft	Closure Azimuth: 359.69°	
	Vertical Section: Position of Origin (Relative to Slot centre)		
	+N/-S: 0.00 US ft	+E/-W: -0.00 US ft	Az: 359.57°
Drill floor: Survey Name: Definitive Survey			
Rig Height (Drill Floor): 24.10 US ft	Elevation above MSL: 3440.00 US ft	Inclination: 0.00°	Azimuth: 0.00°
Survey Name: Definitive Survey			
Date: 27/Sep/2017	Survey Tool: See Survey Tool Ranges below.	Comment:	Company:
Magnetic Model:			
Model Name: bggm2017	Date: 08/Nov/2017	Field Strength: 48048.5 nT	Declination: 6.94° Dip: 60.16°
Tie Point:			
MD: 0.00 US ft	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00 US ft North Offset: 0.00 US ft East Offset: -0.00 US ft
Survey Tool Ranges:			
Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	0.00	1392.00	MWD 1
MWD	1392.00	3414.00	MWD 2
MWD	3414.00	5105.00	MWD 3
MWD	5105.00	9300.00	MWD 4

SD Survey Report

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	9300.00	10153.00	MWD 5
MWD	10153.00	12042.00	MWD 6
MWD	12042.00	12516.00	MWD 7
MWD	12516.00	14034.00	MWD 8
MWD	14034.00	15915.00	MWD 9
MWD	15915.00	17201.00	MWD 10

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)

MD US ft	Inc (°)	As (°)	TVD US ft	Vs US ft	N Offset US ft	E Offset US ft	DLS 100US ft	Northing US ft	Easting US ft	Comment
0.00	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	486168.69	804136.96	
136.00	0.30	148.80	136.00	-0.31	-0.30	0.18	0.22	486168.39	804137.14	First WFT MWD Svy
225.00	0.16	119.87	225.00	-0.57	-0.57	0.41	0.20	486168.12	804137.37	
316.00	1.00	95.44	315.99	-0.71	-0.70	1.31	0.94	486167.99	804138.27	
407.00	1.57	97.87	406.97	-0.98	-0.95	3.34	0.63	486167.74	804140.30	
567.00	1.65	93.33	566.91	-1.44	-1.38	7.81	0.09	486167.31	804144.77	
658.00	2.06	92.21	657.86	-1.60	-1.52	10.75	0.45	486167.17	804147.71	
750.00	1.29	95.20	749.82	-1.78	-1.68	13.44	0.84	486167.01	804150.40	
841.00	1.73	95.45	840.79	-2.02	-1.90	15.82	0.48	486166.79	804152.78	
934.00	1.66	101.46	933.75	-2.44	-2.31	18.54	0.21	486166.38	804155.50	
1026.00	1.22	120.63	1025.72	-3.22	-3.07	20.69	0.70	486165.62	804157.65	
1117.00	1.14	132.49	1116.70	-4.34	-4.17	22.19	0.28	486164.52	804159.15	
1209.00	1.21	148.85	1208.68	-5.80	-5.62	23.37	0.37	486163.07	804160.33	
1300.00	1.38	166.72	1299.66	-7.69	-7.51	24.12	0.48	486161.18	804161.08	
1392.00	2.25	195.10	1391.61	-10.51	-10.33	23.90	1.33	486158.36	804160.86	
1485.00	3.11	203.23	1484.51	-14.58	-14.42	22.43	1.01	486154.27	804159.39	
1573.00	3.58	208.73	1572.36	-19.17	-19.02	20.17	0.65	486149.67	804157.13	
1669.00	3.63	211.62	1668.17	-24.36	-24.23	17.13	0.20	486144.46	804154.09	
1761.00	3.78	217.79	1759.98	-29.21	-29.11	13.75	0.46	486139.58	804150.71	
1852.00	3.50	222.09	1850.79	-33.62	-33.54	10.05	0.43	486135.15	804147.01	
2044.00	2.93	225.63	2042.49	-41.34	-41.32	2.61	0.31	486127.37	804139.57	
2139.00	3.17	223.18	2137.36	-44.93	-44.94	-0.92	0.29	486123.75	804136.04	
2234.00	3.08	223.19	2232.22	-48.68	-48.71	-4.46	0.09	486119.98	804132.50	
2328.00	2.70	219.69	2326.10	-52.20	-52.26	-7.61	0.45	486116.43	804129.35	
2422.00	2.70	222.23	2419.99	-55.52	-55.60	-10.51	0.13	486113.09	804126.45	
2516.00	2.72	229.83	2513.89	-58.57	-58.68	-13.70	0.38	486110.01	804123.26	
2611.00	2.43	228.84	2608.79	-61.33	-61.46	-16.94	0.31	486107.23	804120.02	
2706.00	2.17	231.15	2703.71	-63.76	-63.91	-19.86	0.29	486104.78	804117.10	
2801.00	1.75	235.15	2798.66	-65.70	-65.87	-22.45	0.46	486102.82	804114.51	
2896.00	1.61	243.39	2893.62	-67.11	-67.30	-24.83	0.29	486101.39	804112.13	
2991.00	1.03	234.81	2988.59	-68.18	-68.39	-26.72	0.64	486100.30	804110.24	
3087.00	0.64	224.02	3084.58	-69.06	-69.27	-27.80	0.44	486099.42	804109.16	
3181.00	0.35	217.78	3178.58	-69.66	-69.87	-28.34	0.31	486098.82	804108.62	
3276.00	0.25	155.05	3273.58	-70.07	-70.29	-28.43	0.34	486098.40	804108.53	
3370.00	0.35	132.30	3367.58	-70.46	-70.67	-28.13	0.16	486098.02	804108.83	
3414.00	0.22	152.98	3411.57	-70.62	-70.84	-27.99	0.37	486097.85	804108.97	
3500.00	0.14	112.04	3497.57	-70.81	-71.02	-27.82	0.17	486097.67	804109.14	
3594.00	0.16	56.45	3591.57	-70.78	-70.99	-27.61	0.15	486097.70	804109.35	
3689.00	0.29	48.72	3686.57	-70.55	-70.76	-27.32	0.14	486097.93	804109.64	
3782.00	0.38	65.71	3779.57	-70.27	-70.48	-26.86	0.14	486098.21	804110.10	
3972.00	0.63	12.40	3969.57	-69.00	-69.20	-26.06	0.27	486099.49	804110.90	
4160.00	0.85	24.54	4157.55	-66.73	-66.92	-25.26	0.14	486101.77	804111.70	
4349.00	1.26	53.00	4346.52	-64.22	-64.39	-23.02	0.35	486104.30	804113.94	
4445.00	0.99	52.60	4442.50	-63.09	-63.26	-21.51	0.28	486105.43	804115.45	
4540.00	0.83	61.11	4537.49	-62.27	-62.43	-20.26	0.22	486106.26	804116.70	
4635.00	1.29	24.02	4632.47	-60.97	-61.12	-19.22	0.85	486107.57	804117.74	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
ID (US ft)	Inc (°)	As (ft)	TVD (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	DLS ($\times 100$ US ft)	Northing (US ft)	Easting (US ft)	Equipment
4730.00	0.72	33.29	4727.46	-59.50	-59.64	-18.46	0.62	486109.05	804118.50	
4825.00	0.70	33.21	4822.45	-58.52	-58.66	-17.81	0.02	486110.03	804119.15	
4920.00	0.31	23.37	4917.45	-57.80	-57.93	-17.39	0.42	486110.76	804119.57	
5015.00	0.49	20.82	5012.44	-57.19	-57.32	-17.15	0.19	486111.37	804119.81	
5105.00	0.50	11.61	5102.44	-56.45	-56.57	-16.93	0.09	486112.12	804120.03	
5202.00	0.35	8.49	5199.44	-55.74	-55.87	-16.80	0.16	486112.82	804120.16	
5296.00	0.38	306.20	5293.44	-55.27	-55.40	-17.01	0.40	486113.29	804119.95	
5391.00	0.66	292.23	5388.43	-54.87	-55.01	-17.77	0.32	486113.68	804119.19	
5485.00	1.01	349.96	5482.42	-53.85	-53.98	-18.42	0.92	486114.71	804118.54	
5579.00	1.19	344.92	5576.41	-52.08	-52.23	-18.82	0.22	486116.46	804118.14	
5674.00	1.20	335.27	5671.39	-50.22	-50.37	-19.49	0.21	486118.32	804117.47	
5768.00	1.69	9.96	5765.36	-47.96	-48.11	-19.66	1.04	486120.58	804117.30	
5862.00	2.02	10.51	5859.31	-44.97	-45.12	-19.12	0.35	486123.57	804117.84	
5957.00	1.73	9.32	5954.26	-41.92	-42.06	-18.58	0.31	486126.63	804118.38	
6052.00	1.64	6.06	6049.22	-39.15	-39.29	-18.21	0.14	486129.40	804118.75	
6146.00	1.47	6.34	6143.18	-36.62	-36.75	-17.93	0.18	486131.94	804119.03	
6241.00	2.38	25.88	6238.13	-33.64	-33.77	-16.94	1.17	486134.92	804120.02	
6336.00	2.59	28.15	6333.04	-29.99	-30.10	-15.06	0.24	486138.59	804121.90	
6430.00	2.41	25.52	6426.95	-26.34	-26.44	-13.21	0.23	486142.25	804123.75	
6525.00	2.16	23.16	6521.87	-22.91	-23.00	-11.64	0.28	486145.69	804125.32	
6619.00	1.82	22.12	6615.82	-19.91	-19.98	-10.38	0.36	486148.71	804126.58	
6714.00	2.73	31.24	6710.74	-16.59	-16.65	-8.64	1.03	486152.04	804128.32	
6809.00	3.12	29.24	6805.62	-12.41	-12.46	-6.21	0.42	486156.23	804130.75	
6903.00	2.69	29.23	6899.50	-8.27	-8.30	-3.88	0.46	486160.39	804133.08	
6998.00	2.48	30.25	6994.40	-4.57	-4.58	-1.76	0.23	486164.11	804135.20	
7092.00	2.38	30.20	7088.31	-1.14	-1.14	0.25	0.11	486167.55	804137.21	
7187.00	1.64	23.17	7183.26	1.80	1.81	1.78	0.82	486170.50	804138.74	
7282.00	1.07	357.32	7278.23	3.93	3.95	2.27	0.87	486172.64	804139.23	
7376.00	0.82	332.28	7372.22	5.41	5.42	1.92	0.51	486174.11	804138.88	
7470.00	0.49	309.10	7466.21	6.26	6.27	1.29	0.44	486174.96	804138.25	
7565.00	1.15	8.46	7561.20	7.46	7.47	1.12	1.05	486176.16	804138.08	
7660.00	2.33	10.28	7656.16	10.30	10.31	1.60	1.24	486179.00	804138.56	
7755.00	2.94	354.21	7751.06	14.63	14.64	1.70	1.00	486183.33	804138.66	
7849.00	2.55	347.03	7844.95	19.07	19.07	0.99	0.55	486187.76	804137.95	
7944.00	1.94	342.76	7939.88	22.67	22.67	0.04	0.67	486191.36	804137.00	
8038.00	2.38	10.22	8033.81	26.11	26.11	-0.09	1.18	486194.80	804136.87	
8132.00	3.34	3.88	8127.69	30.76	30.76	0.44	1.07	486199.45	804137.40	
8227.00	3.16	1.15	8222.54	36.14	36.14	0.68	0.25	486204.83	804137.64	
8322.00	2.70	0.46	8317.42	40.99	41.00	0.75	0.49	486209.69	804137.71	
8417.00	1.93	0.58	8412.34	44.83	44.83	0.79	0.81	486213.52	804137.75	
8511.00	1.75	354.32	8506.29	47.84	47.85	0.66	0.29	486216.54	804137.62	
8605.00	2.77	4.53	8600.22	51.53	51.54	0.70	1.16	486220.23	804137.66	
8699.00	2.87	0.96	8694.10	56.15	56.16	0.92	0.21	486224.85	804137.88	
8795.00	2.13	353.74	8790.01	60.32	60.33	0.76	0.84	486229.02	804137.72	
8889.00	1.98	334.32	8883.95	63.53	63.53	-0.13	0.75	486232.22	804136.83	
8984.00	2.31	338.43	8978.88	66.80	66.79	-1.55	0.38	486235.48	804135.41	
9079.00	2.79	352.71	9073.79	70.88	70.87	-2.54	0.83	486239.56	804134.42	
9173.00	2.45	346.52	9167.69	75.11	75.09	-3.30	0.47	486243.78	804133.66	
9268.00	1.93	355.27	9262.62	78.68	78.66	-3.91	0.65	486247.35	804133.05	
9300.00	2.52	352.79	9294.60	79.92	79.89	-4.04	1.87	486248.58	804132.92	
9363.00	2.89	350.77	9357.53	82.87	82.83	-4.47	0.61	486251.52	804132.49	
9410.00	8.26	4.39	9404.29	87.40	87.37	-4.40	11.69	486256.06	804132.56	
9458.00	13.17	7.25	9451.44	96.26	96.24	-3.45	10.29	486264.93	804133.51	
9505.00	19.08	4.37	9496.57	109.24	109.22	-2.18	12.69	486277.91	804134.78	
9552.00	23.76	3.17	9540.31	126.35	126.35	-1.07	10.00	486295.04	804135.89	
9599.00	28.92	0.64	9582.42	147.18	147.18	-0.42	11.23	486315.87	804136.54	
9647.00	33.80	358.48	9623.40	172.15	172.15	-0.65	10.43	486340.84	804136.31	
9694.00	38.90	357.72	9661.24	199.98	199.98	-1.58	10.89	486368.67	804135.38	
9742.00	42.03	356.25	9697.75	231.10	231.08	-3.23	6.82	486399.77	804133.73	

SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
TID (US ft)	Inc (°)	Alt (ft)	TVD (US ft)	VS (US ft)	N Offset (US ft)	E Offset (US ft)	E.S. (100US ft)	Northing (US ft)	Eastng (US ft)	Comment
9789.00	46.98	356.94	9731.26	263.99	263.96	-5.18	10.58	486432.65	804131.78	
9836.00	49.06	356.31	9762.70	298.88	298.83	-7.24	4.54	486467.52	804129.72	
9883.00	53.23	357.95	9792.18	335.44	335.38	-9.06	9.28	486504.07	804127.90	
9931.00	57.26	359.29	9819.54	374.86	374.79	-9.99	8.70	486543.48	804126.97	
9962.00	60.22	359.07	9835.62	401.35	401.29	-10.37	9.57	486569.98	804126.59	
9994.00	63.31	358.84	9850.76	429.54	429.47	-10.89	9.68	486598.16	804126.07	
10026.00	66.42	359.97	9864.35	458.51	458.44	-11.19	10.23	486627.13	804125.77	
10058.00	70.11	0.79	9876.20	488.22	488.16	-10.99	11.77	486656.85	804125.97	
10089.00	73.86	0.75	9885.78	517.69	517.63	-10.59	12.10	486686.32	804126.37	
10121.00	77.70	359.97	9893.64	548.70	548.64	-10.40	12.23	486717.33	804126.56	
10153.00	82.14	359.54	9899.24	580.20	580.14	-10.53	13.94	486748.83	804126.43	
10181.00	84.66	359.01	9902.46	608.01	607.95	-10.89	9.19	486776.64	804126.07	
10213.00	88.75	358.31	9904.30	639.95	639.88	-11.63	12.97	486808.57	804125.33	
10244.00	90.46	358.04	9904.51	670.94	670.86	-12.62	5.58	486839.55	804124.34	
10339.00	91.82	358.83	9902.62	765.90	765.81	-15.21	1.66	486934.50	804121.75	
10434.00	90.46	358.04	9900.73	860.86	860.75	-17.81	1.66	487029.44	804119.15	
10528.00	90.68	358.31	9899.80	954.82	954.70	-20.80	0.37	487123.39	804116.16	
10622.00	90.29	358.13	9899.00	1048.79	1048.65	-23.72	0.46	487217.34	804113.24	
10716.00	90.37	359.36	9898.46	1142.78	1142.62	-25.78	1.31	487311.31	804111.18	
10811.00	90.11	0.06	9898.06	1237.78	1237.62	-26.26	0.79	487406.31	804110.70	
10906.00	90.55	0.86	9897.52	1332.77	1332.61	-25.50	0.96	487501.30	804111.46	
11001.00	91.08	0.59	9896.16	1427.74	1427.59	-24.30	0.63	487596.28	804112.66	
11096.00	92.18	0.50	9893.46	1522.68	1522.55	-23.39	1.16	487691.24	804113.57	
11191.00	91.21	0.59	9890.65	1617.63	1617.50	-22.49	1.03	487786.19	804114.47	
11287.00	90.73	1.03	9889.03	1713.59	1713.48	-21.13	0.68	487882.17	804115.83	
11380.00	89.36	0.59	9888.95	1806.57	1806.47	-19.82	1.55	487975.16	804117.14	
11476.00	89.32	0.50	9890.06	1902.55	1902.46	-18.91	0.10	488071.15	804118.05	
11570.00	88.75	359.62	9891.64	1996.53	1996.44	-18.81	1.12	488165.13	804118.15	
11665.00	88.62	359.19	9893.82	2091.50	2091.41	-19.79	0.47	488260.10	804117.17	
11759.00	90.20	359.27	9894.79	2185.49	2185.40	-21.06	1.68	488354.09	804115.90	
11854.00	88.92	359.27	9895.52	2280.49	2280.38	-22.27	1.35	488449.07	804114.69	
11949.00	89.14	359.45	9897.13	2375.47	2375.36	-23.33	0.30	488544.05	804113.63	
12042.00	90.95	0.59	9897.06	2468.46	2468.36	-23.30	2.30	488637.05	804113.66	
12139.00	89.36	359.89	9896.79	2565.45	2565.35	-22.89	1.79	488734.04	804114.07	
12233.00	88.62	359.98	9898.45	2659.44	2659.34	-23.00	0.79	488828.03	804113.96	
12328.00	88.22	1.03	9901.07	2754.39	2754.30	-22.16	1.18	488922.99	804114.80	
12422.00	87.65	0.94	9904.46	2848.29	2848.22	-20.54	0.61	489016.91	804116.42	
12516.00	89.14	1.21	9907.09	2942.22	2942.16	-18.78	1.61	489110.85	804118.18	
12611.00	89.80	1.38	9907.97	3037.18	3037.14	-16.63	0.72	489205.83	804120.33	
12705.00	90.95	359.10	9907.35	3131.16	3131.13	-16.24	2.72	489299.82	804120.72	
12801.00	90.90	359.71	9905.80	3227.15	3227.11	-17.24	0.64	489395.80	804119.72	
12896.00	91.16	359.19	9904.10	3322.13	3322.09	-18.15	0.61	489490.78	804118.81	
12991.00	90.90	359.27	9902.39	3417.11	3417.06	-19.42	0.29	489585.75	804117.54	
13086.00	90.33	359.71	9901.37	3512.11	3512.05	-20.27	0.76	489680.74	804116.69	
13180.00	89.98	359.45	9901.11	3606.11	3606.05	-20.96	0.46	489774.74	804116.00	
13275.00	89.80	0.33	9901.30	3701.10	3701.05	-21.14	0.95	489869.74	804115.82	
13370.00	89.85	0.42	9901.59	3796.09	3796.05	-20.52	0.11	489964.74	804116.44	
13465.00	91.12	0.86	9900.78	3891.07	3891.03	-19.46	1.41	490059.72	804117.50	
13560.00	90.77	1.82	9899.22	3986.01	3985.99	-17.24	1.08	490154.68	804119.72	
13655.00	90.51	0.77	9898.15	4080.96	4080.96	-15.09	1.14	490249.65	804121.87	
13750.00	91.12	0.33	9896.80	4175.94	4175.95	-14.18	0.79	490344.64	804122.78	
13845.00	90.51	0.33	9895.45	4270.92	4270.94	-13.63	0.64	490439.63	804123.33	
13939.00	89.85	359.45	9895.16	4364.92	4364.93	-13.81	1.17	490533.62	804123.15	
14034.00	89.45	359.36	9895.74	4459.91	4459.93	-14.80	0.43	490628.62	804122.16	
14119.00	89.86	358.92	9896.25	4544.91	4544.92	-16.07	0.71	490713.61	804120.89	
14213.00	90.07	357.93	9896.31	4638.89	4638.88	-18.66	1.08	490807.57	804118.30	
14307.00	89.44	358.25	9896.71	4732.86	4732.83	-21.79	0.75	490901.52	804115.17	
14402.00	88.67	358.11	9898.27	4827.81	4827.76	-24.81	0.82	490996.45	804112.15	
14496.00	88.39	358.42	9900.69	4921.76	4921.69	-27.65	0.44	491090.38	804109.31	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
TD US ft	Incl °	Asl ft	TVD US ft	YS US ft	N Offset US ft	E Offset US ft	DGS 1000US ft	Northing US ft	Easting US ft	Comment
14591.00	88.04	358.55	9903.65	5016.70	5016.61	-30.16	0.39	491185.30	804106.80	
14685.00	88.88	358.75	9906.17	5110.65	5110.55	-32.38	0.92	491279.24	804104.58	
14780.00	90.21	359.50	9906.93	5205.64	5205.53	-33.83	1.61	491374.22	804103.13	
14874.00	90.28	0.39	9906.52	5299.64	5299.53	-33.92	0.95	491468.22	804103.04	
14969.00	90.84	0.11	9905.60	5394.62	5394.52	-33.50	0.66	491563.21	804103.46	
15064.00	90.84	0.13	9904.20	5489.61	5489.51	-33.30	0.02	491658.20	804103.66	
15158.00	90.63	1.66	9903.00	5583.57	5583.49	-31.84	1.64	491752.18	804105.12	
15253.00	90.70	0.88	9901.89	5678.52	5678.46	-29.73	0.82	491847.15	804107.23	
15347.00	90.98	0.21	9900.52	5772.50	5772.45	-28.84	0.77	491941.14	804108.12	
15442.00	90.21	359.64	9899.53	5867.49	5867.44	-28.96	1.01	492036.13	804108.00	
15537.00	88.32	359.37	9900.75	5962.48	5962.42	-29.78	2.01	492131.11	804107.18	
15631.00	89.16	358.63	9902.82	6056.45	6056.39	-31.42	1.19	492225.08	804105.54	
15726.00	91.05	358.11	9902.64	6151.43	6151.34	-34.12	2.06	492320.03	804102.84	
15820.00	91.75	357.70	9900.34	6245.36	6245.25	-37.56	0.86	492413.94	804099.40	
15915.00	91.75	358.06	9897.44	6340.27	6340.14	-41.07	0.38	492508.83	804095.89	
16010.00	91.54	358.96	9894.72	6435.22	6435.07	-43.54	0.97	492603.76	804093.42	
16105.00	90.42	359.99	9893.09	6530.20	6530.05	-44.41	1.60	492698.74	804092.55	
16199.00	90.14	359.96	9892.63	6624.19	6624.05	-44.45	0.30	492792.74	804092.51	
16294.00	90.14	359.78	9892.40	6719.19	6719.05	-44.67	0.19	492887.74	804092.29	
16389.00	90.49	359.82	9891.88	6814.19	6814.04	-45.00	0.37	492982.73	804091.96	
16483.00	90.77	359.99	9890.84	6908.18	6908.04	-45.16	0.35	493076.73	804091.80	
16578.00	89.86	359.68	9890.32	7003.18	7003.04	-45.43	1.01	493171.73	804091.53	
16673.00	90.00	359.54	9890.44	7098.18	7098.03	-46.08	0.21	493266.72	804090.88	
16767.00	90.14	0.02	9890.32	7192.18	7192.03	-46.44	0.53	493360.72	804090.52	
16861.00	90.70	0.45	9889.63	7286.17	7286.03	-46.05	0.75	493454.72	804090.91	
16956.00	90.63	1.02	9888.53	7381.14	7381.01	-44.83	0.60	493549.70	804092.13	
17051.00	90.91	0.75	9887.25	7476.11	7475.99	-43.37	0.41	493644.68	804093.59	
17130.00	90.49	0.75	9886.29	7555.09	7554.98	-42.33	0.53	493723.67	804094.63	Last WFT MWD Svy
17201.00	90.49	0.75	9885.68	7626.07	7625.97	-41.40	0.00	493794.66	804095.56	Proj to TD