

District I
1525 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised October 12, 2005
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

"As Drilled"

*API Number 30-034-30749	*Pool Code 97232 / 72319 / 71599	*Pool Name BASIN MANCOS / BLANCO MESAVERDE / BASIN DAKOTA
*Property Code 17033	*Property Name ROSA UNIT	*Well Number 160
*GRID No 120782	*Operator Name WILLIAMS PRODUCTION COMPANY	*Elevation 6355'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	14	31N	6W		1015	SOUTH	1300	WEST	RIO ARriba

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	14	31N	6W		2034	SOUTH	1974	WEST	RIO ARriba

¹² Dedicated Acres 320.0 Acres - (W/2)	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No. RCVD AUG 10 '09 OIL CONS. DIV.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION DIST. 3

¹⁶ 8/11/09 LEASE SF-078771 5280.00' 1974' N33°21.3'E 1212.1' 1300' 1015' SURFACE LOCATION 5280.00' 2034' BOTTOM-HOLE LOCATION 5280.00' 14 BOTTOM-HOLE LAT: 36.89790 °N LONG: 107.43445 °W DATUM: NAD1983 SURFACE LOCATION LAT: 36.89513 °N LONG: 107.43674 °W DATUM: NAD1983	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom-hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Heather Riley 8/10/09 Signature Date Heather Riley Printed Name ¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief Survey Date: NOVEMBER 16, 2008 Signature and Seal of Professional Surveyor JASON C. EDWARDS NEW MEXICO 15269 REGISTERED PROFESSIONAL SURVEYOR JASON C. EDWARDS Certificate Number 15269
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ROSA UNIT #16D
RIO ARriba CO., NEW MEXICO

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	35.20	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	35.20	400.00	0.00	0.00	0.00	0.00	0.00	
3	1107.90	28.32	35.20	1079.43	140.05	98.80	4.00	35.20	171.39	
4	2494.52	28.32	35.20	2300.13	677.50	477.93	0.00	0.00	829.11	
5	3910.31	0.00	35.20	3659.00	957.61	675.52	2.00	180.00	1171.90	Int. Csg. Pt.
6	8275.31	0.00	35.20	8024.00	957.61	675.52	0.00	35.20	1171.90	Pbhl

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#16D	0.00	0.00	2147279.56	1293404.99	36°53'42.468N	107°26'12.264W	N/A

TARGET DETAILS

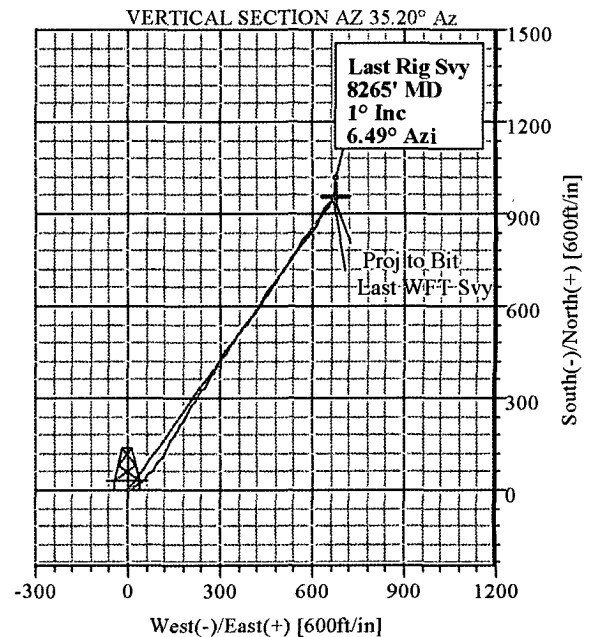
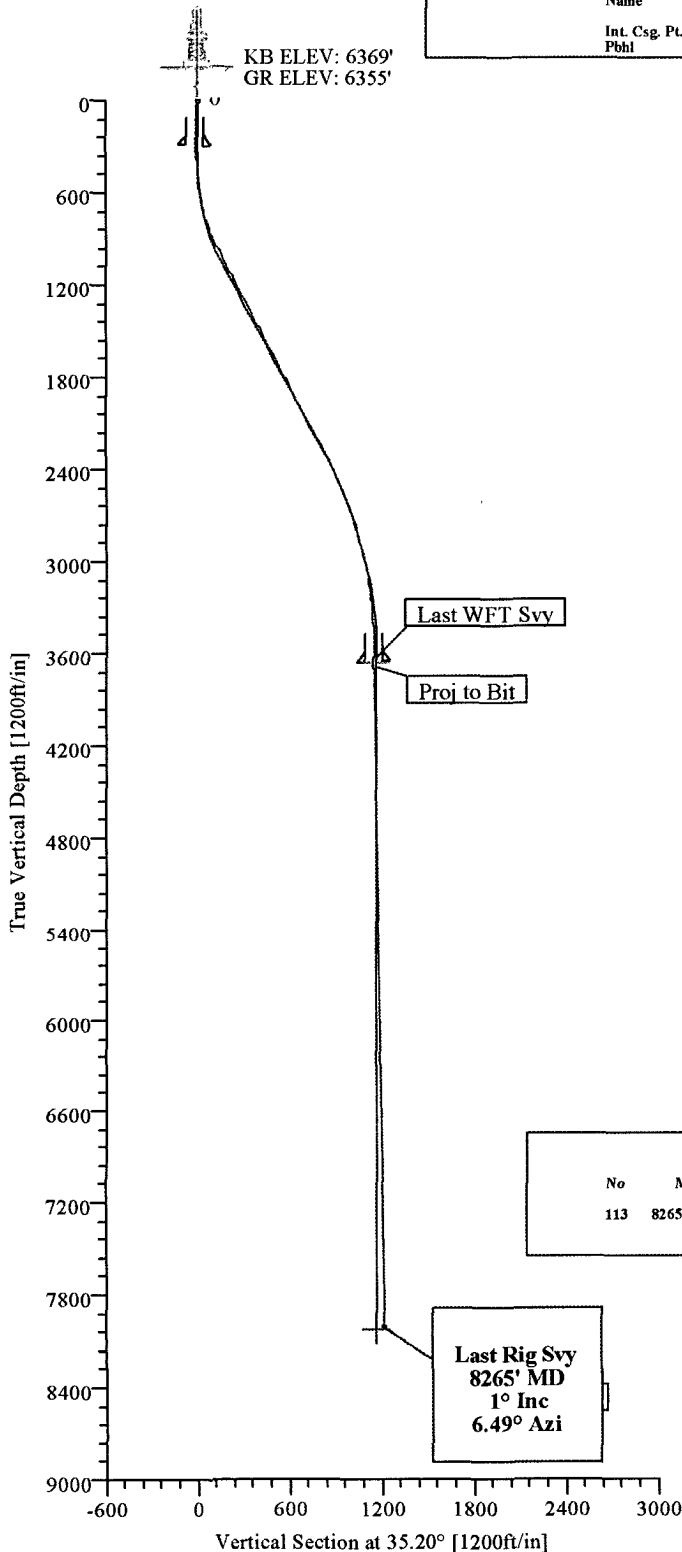
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Int. Csg. Pt.	3659.00	957.61	675.52	36°53'51.936N	107°26'03.948W	Point
Pbhl	8024.00	957.61	675.52	36°53'51.936N	107°26'03.948W	Point

FORMATION TOP DETAILS

No.	TVDPath	MDPath	Formation
1	2389.00	2595.67	Ojo Alamo Ss.
2	2509.00	2726.77	Kirtland Sh.
3	2939.00	3181.28	Fruitland Fm.
4	3184.00	3431.03	Pictured Cliff Ss.
5	3479.00	3727.42	Lewis Sh.
6	5059.00	5307.67	Cliff House Ss. Trans.
7	5374.00	5622.71	Cliff House Ss.
8	5414.00	5662.72	Menefee Fm.
9	5669.00	5917.75	Point Lookout Ss.
10	6009.00	6257.80	Mancos Sh.
11	6979.00	7227.94	Gallup Ss.
12	7699.00	7948.05	Greenhorn Ls.
13	7759.00	8008.06	Graneros Ss.
14	7894.00	8143.08	Dakota Ss.



Azimuths to True North
Magnetic North 10 03°
Magnetic Field
Strength 51160nT
Dip Angle 63 72°
Date 4/17/2009
Model igrf200510
Total Correction to True North: 10 03°



No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
113	8265.00	1.00	6.49	8015.90	1019.46	674.21	0.00	0.00	1221.68



RCVD AUG 10 '09
OIL CONS. DIV.
DIST. 3

Survey: WFT SVY (#16D/1)

Created By: Lindsey Maddux

Date: 7/28/2009



Weatherford International, Inc.

Survey Report



Weatherford®

Company: WILLIAMS PRODUCTION	Date: 7/28/2009	Time: 11:17:18	Page: 1
Field: RIO ARRIBA CO. NM (NAD 83)	Co-ordinate(NE) Reference:	Well: #16D, True North	
Site: Rosa Unit #16D	Vertical (TVD) Reference:	SITE 6369.0	
Well: #16D	Section (VS) Reference:	Well (0.00N,0.00E,35.20Azi)	
Wellpath: 1	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Field: RIO ARRIBA CO. NM (NAD 83)

Map System: US State Plane Coordinate System 1983
Geo Datum: GRS 1980
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Central Zone
Coordinate System: Well Centre
Geomagnetic Model: igrf200510

Site: Rosa Unit #16D

Site Position:	Northing: 2147279.56 ft	Latitude: 36 53 42.468 N
From: Geographic	Easting: 1293404.99 ft	Longitude: 107 26 12.264 W
Position Uncertainty: 0.00 ft		North Reference: True
Ground Level: 6355.00 ft		Grid Convergence: -0.71 deg

Well: #16D

Slot Name:

Well Position: +N/-S 0.00 ft	Northing: 2147279.56 ft	Latitude: 36 53 42.468 N
+E/-W 0.00 ft	Easting: 1293404.99 ft	Longitude: 107 26 12.264 W
Position Uncertainty: 0.00 ft		

Wellpath: 1

Current Datum: SITE	Height 6369.00 ft	Drilled From: Surface
Magnetic Data: 4/17/2009		Tie-on Depth: 0.00 ft
Field Strength: 51160 nT		Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD)		Declination: 10.03 deg
ft	+N/-S ft	Mag Dip Angle: 63.72 deg
	+E/-W ft	Direction deg
0.00	0.00	35.20

Survey: WFT SVY

Start Date: 7/10/2009

Company: Weatherford International Ltd.
Tool: MWD;MWD - Standard

Engineer: Jayme Wilson
Tied-to: From Surface

Survey: WFT SVY

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD
380.00	0.87	127.22	379.99	-1.75	2.30	-0.10	0.23	0.23	0.00	MWD
411.00	1.68	87.22	410.98	-1.87	2.94	0.17	3.73	2.61	-129.03	MWD
442.00	2.98	67.44	441.95	-1.53	4.14	1.13	4.87	4.19	-63.81	MWD
473.00	3.95	57.15	472.90	-0.65	5.78	2.80	3.70	3.13	-33.19	MWD
504.00	4.75	56.27	503.81	0.65	7.74	4.99	2.59	2.58	-2.84	MWD
534.00	5.94	54.65	533.67	2.23	10.04	7.61	4.00	3.97	-5.40	MWD
565.00	7.56	55.27	564.46	4.32	13.03	11.04	5.23	5.23	2.00	MWD
596.00	8.94	55.27	595.14	6.86	16.68	15.22	4.45	4.45	0.00	MWD
627.00	10.31	53.90	625.70	9.87	20.90	20.11	4.48	4.42	-4.42	MWD
658.00	12.25	54.40	656.10	13.41	25.82	25.84	6.27	6.26	1.61	MWD
689.00	13.63	52.65	686.31	17.54	31.40	32.44	4.63	4.45	-5.65	MWD
719.00	14.31	51.65	715.42	21.99	37.11	39.36	2.41	2.27	-3.33	MWD
750.00	15.75	48.65	745.36	27.15	43.28	47.13	5.28	4.65	-9.68	MWD
781.00	17.50	46.90	775.07	33.11	49.84	55.79	5.87	5.65	-5.65	MWD
811.00	18.63	45.40	803.59	39.56	56.55	64.92	4.07	3.77	-5.00	MWD
842.00	20.00	43.15	832.84	46.90	63.70	75.04	5.03	4.42	-7.26	MWD
872.00	21.75	40.52	860.87	54.87	70.82	85.66	6.62	5.83	-8.77	MWD
904.00	23.13	39.60	890.45	64.22	78.68	97.83	4.45	4.31	-2.87	MWD
967.00	25.28	35.05	947.91	84.77	94.29	123.63	4.52	3.41	-7.22	MWD
999.00	26.90	34.20	976.65	96.36	102.29	137.70	5.20	5.06	-2.66	MWD
1031.00	27.48	32.41	1005.12	108.58	110.31	152.31	3.13	1.81	-5.59	MWD
1062.00	28.17	31.68	1032.53	120.84	117.99	166.76	2.48	2.23	-2.35	MWD
1094.00	28.35	29.97	1060.72	133.85	125.75	181.86	2.59	0.56	-5.34	MWD



Weatherford International, Inc.

Survey Report

**Weatherford**

Company:	WILLIAMS PRODUCTION	Date:	7/28/2009	Time:	11:17:18	Page:	2
Field:	RIO ARRIBA CO. NM (NAD 83)	Co-ordinate(NE) Reference:	Well: #16D, True North				
Site:	Rosa Unit #16D	Vertical (TVD) Reference:	SITE 6369.0				
Well:	#16D	Section (VS) Reference:	Well (0.00N,0.00E,35.20Azi)				
Wellpath:	1	Survey Calculation Method:	Minimum Curvature			Db:	Sybase

Survey: WFT SVY

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
1125.00	28.74	30.06	1087.95	146.68	133.16	196.62	1.27	1.26	0.29	MWD
1156.00	28.26	30.25	1115.19	159.47	140.59	211.35	1.58	-1.55	0.61	MWD
1187.00	28.24	31.38	1142.50	172.07	148.11	225.98	1.73	-0.06	3.65	MWD
1219.00	27.94	32.15	1170.73	184.88	156.04	241.02	1.47	-0.94	2.41	MWD
1249.00	27.91	31.38	1197.24	196.82	163.44	255.04	1.21	-0.10	-2.57	MWD
1281.00	28.25	31.29	1225.47	209.69	171.27	270.07	1.07	1.06	-0.28	MWD
1313.00	28.69	31.77	1253.60	222.69	179.25	285.29	1.55	1.37	1.50	MWD
1344.00	28.00	30.77	1280.88	235.27	186.89	299.98	2.70	-2.23	-3.23	MWD
1375.00	28.31	30.52	1308.22	247.86	194.34	314.56	1.07	1.00	-0.81	MWD
1407.00	27.38	30.40	1336.51	260.74	201.92	329.45	2.91	-2.91	-0.37	MWD
1438.00	27.44	31.40	1364.03	272.98	209.25	343.68	1.50	0.19	3.23	MWD
1469.00	27.00	32.65	1391.60	285.01	216.77	357.84	2.33	-1.42	4.03	MWD
1501.00	27.25	32.65	1420.08	297.29	224.64	372.42	0.78	0.78	0.00	MWD
1533.00	27.00	31.77	1448.56	309.63	232.41	386.99	1.48	-0.78	-2.75	MWD
1565.00	27.31	31.52	1477.03	322.07	240.08	401.56	1.03	0.97	-0.78	MWD
1596.00	27.69	31.90	1504.53	334.24	247.60	415.85	1.35	1.23	1.23	MWD
1627.00	27.19	31.77	1532.04	346.38	255.14	430.11	1.62	-1.61	-0.42	MWD
1659.00	27.58	32.03	1560.45	358.88	262.91	444.81	1.27	1.22	0.81	MWD
1691.00	27.88	31.52	1588.78	371.53	270.75	459.67	1.20	0.94	-1.59	MWD
1723.00	27.49	30.63	1617.12	384.27	278.43	474.50	1.78	-1.22	-2.78	MWD
1755.00	27.63	30.65	1645.49	397.01	285.97	489.26	0.44	0.44	0.06	MWD
1786.00	26.88	31.27	1673.04	409.18	293.28	503.41	2.59	-2.42	2.00	MWD
1818.00	26.50	33.02	1701.63	421.35	300.92	517.77	2.73	-1.19	5.47	MWD
1849.00	27.19	34.52	1729.29	432.98	308.70	531.76	3.12	2.23	4.84	MWD
1880.00	26.94	35.02	1756.90	444.57	316.75	545.86	1.09	-0.81	1.61	MWD
1912.00	27.07	35.24	1785.41	456.45	325.11	560.39	0.51	0.41	0.69	MWD
1944.00	27.38	35.15	1813.86	468.42	333.55	575.03	0.98	0.97	-0.28	MWD
1975.00	27.31	34.90	1841.40	480.08	341.72	589.27	0.43	-0.23	-0.81	MWD
2007.00	27.63	35.52	1869.79	492.14	350.23	604.03	1.34	1.00	1.94	MWD
2039.00	27.50	35.77	1898.16	504.17	358.86	618.84	0.54	-0.41	0.78	MWD
2071.00	27.60	35.78	1926.53	516.18	367.51	633.64	0.31	0.31	0.03	MWD
2103.00	27.59	35.73	1954.89	528.21	376.17	648.46	0.08	-0.03	-0.16	MWD
2134.00	28.41	36.02	1982.26	540.00	384.70	663.02	2.68	2.65	0.94	MWD
2166.00	28.75	35.96	2010.36	552.39	393.70	678.32	1.07	1.06	-0.19	MWD
2198.00	29.02	35.43	2038.38	564.94	402.72	693.78	1.16	0.84	-1.66	MWD
2230.00	29.09	34.93	2066.36	577.64	411.67	709.32	0.79	0.22	-1.56	MWD
2261.00	28.83	34.94	2093.48	589.95	420.27	724.33	0.84	-0.84	0.03	MWD
2292.00	28.60	34.66	2120.67	602.18	428.77	739.22	0.86	-0.74	-0.90	MWD
2324.00	29.06	34.65	2148.70	614.87	437.54	754.65	1.44	1.44	-0.03	MWD
2355.00	29.31	34.77	2175.76	627.30	446.15	769.77	0.83	0.81	0.39	MWD
2387.00	28.94	34.40	2203.72	640.12	454.99	785.34	1.29	-1.16	-1.16	MWD
2419.00	28.69	34.02	2231.76	652.88	463.66	800.76	0.97	-0.78	-1.19	MWD
2451.00	28.94	34.02	2259.79	665.66	472.29	816.19	0.78	0.78	0.00	MWD
2481.00	27.82	33.38	2286.19	677.52	480.20	830.44	3.87	-3.73	-2.13	MWD
2513.00	26.88	33.77	2314.61	689.77	488.33	845.13	2.99	-2.94	1.22	MWD
2544.00	26.06	33.90	2342.36	701.25	496.03	858.95	2.65	-2.65	0.42	MWD
2576.00	25.38	34.27	2371.19	712.75	503.81	872.83	2.18	-2.12	1.16	MWD
2608.00	24.47	35.14	2400.21	723.84	511.49	886.32	3.07	-2.84	2.72	MWD
2639.00	24.02	35.62	2428.48	734.22	518.86	899.05	1.58	-1.45	1.55	MWD
2671.00	23.59	35.42	2457.75	744.73	526.36	911.96	1.37	-1.34	-0.62	MWD
2703.00	23.13	34.15	2487.13	755.15	533.60	924.65	2.13	-1.44	-3.97	MWD
2735.00	22.88	33.15	2516.59	765.56	540.53	937.15	1.45	-0.78	-3.12	MWD
2799.00	22.22	29.74	2575.69	786.48	553.34	961.63	2.29	-1.03	-5.33	MWD



Weatherford International, Inc.

Survey Report



Weatherford

Company: WILLIAMS PRODUCTION
Field: RIO ARRIBA CO. NM (NAD 83)
Site: Rosa Unit #16D
Well: #16D
Wellpath: 1

Date: 7/28/2009 Time: 11:17:18 Page: 3
Co-ordinate(NE) Reference: Well: #16D, True North
Vertical (TVD) Reference: SITE 6369 0
Section (VS) Reference: Well (0.00N,0.00E,35.20Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: WFT SVY

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2830.00	21.26	27.68	2604.49	796.55	558.86	973.04	3.96	-3.10	-6.65	MWD
2862.00	19.81	25.77	2634.46	806.57	563.91	984.14	4.99	-4.53	-5.97	MWD
2894.00	19.13	28.02	2664.63	816.08	568.73	994.69	3.16	-2.12	7.03	MWD
2926.00	18.56	34.65	2694.91	824.90	574.09	1004.99	6.92	-1.78	20.72	MWD
2957.00	18.16	38.42	2724.34	832.75	579.90	1014.75	4.04	-1.29	12.16	MWD
2989.00	17.61	39.47	2754.79	840.39	586.07	1024.55	1.99	-1.72	3.28	MWD
3021.00	17.55	38.08	2785.30	847.93	592.12	1034.20	1.33	-0.19	-4.34	MWD
3052.00	17.44	35.42	2814.86	855.39	597.70	1043.51	2.60	-0.35	-8.58	MWD
3083.00	17.16	34.27	2844.46	862.96	602.97	1052.73	1.43	-0.90	-3.71	MWD
3115.00	16.38	33.90	2875.10	870.60	608.14	1061.96	2.46	-2.44	-1.16	MWD
3147.00	15.39	36.53	2905.88	877.76	613.19	1070.72	3.82	-3.09	8.22	MWD
3179.00	14.53	38.66	2936.79	884.31	618.22	1078.97	3.19	-2.69	6.66	MWD
3211.00	13.72	35.01	2967.83	890.55	622.91	1086.77	3.76	-2.53	-11.41	MWD
3241.00	13.13	30.15	2997.01	896.41	626.66	1093.72	4.24	-1.97	-16.20	MWD
3272.00	12.50	28.02	3027.23	902.42	630.00	1100.56	2.54	-2.03	-6.87	MWD
3303.00	11.19	31.02	3057.57	907.96	633.13	1106.89	4.67	-4.23	9.68	MWD
3335.00	9.50	39.40	3089.05	912.66	636.41	1112.62	7.06	-5.28	26.19	MWD
3366.00	8.81	45.15	3119.66	916.31	639.71	1117.51	3.69	-2.23	18.55	MWD
3398.00	8.25	46.77	3151.31	919.61	643.12	1122.17	1.90	-1.75	5.06	MWD
3429.00	8.06	46.15	3181.99	922.64	646.31	1126.48	0.68	-0.61	-2.00	MWD
3461.00	7.88	44.15	3213.68	925.77	649.46	1130.85	1.03	-0.56	-6.25	MWD
3493.00	7.75	42.15	3245.39	928.94	652.43	1135.16	0.94	-0.41	-6.25	MWD
3524.00	6.69	39.90	3276.14	931.88	654.99	1139.04	3.54	-3.42	-7.26	MWD
3556.00	5.75	38.15	3307.95	934.57	657.18	1142.50	3.00	-2.94	-5.47	MWD
3587.00	4.94	35.40	3338.82	936.88	658.91	1145.38	2.74	-2.61	-8.87	MWD
3619.00	4.00	32.65	3370.72	938.94	660.31	1147.87	3.01	-2.94	-8.59	MWD
3651.00	3.02	32.73	3402.66	940.59	661.37	1149.83	3.06	-3.06	0.25	MWD
3683.00	2.56	35.76	3434.62	941.88	662.24	1151.39	1.51	-1.44	9.47	MWD
3714.00	2.50	47.77	3465.59	942.89	663.15	1152.74	1.72	-0.19	38.74	MWD
3746.00	2.28	49.81	3497.56	943.77	664.15	1154.04	0.74	-0.69	6.37	MWD
3778.00	1.67	50.04	3529.54	944.48	665.00	1155.10	1.91	-1.91	0.72	MWD
3810.00	1.03	33.39	3561.53	945.02	665.51	1155.84	2.33	-2.00	-52.03	MWD
3841.00	0.93	17.35	3592.53	945.49	665.74	1156.36	0.94	-0.32	-51.74	MWD
3880.00	0.93	6.49	3631.52	946.11	665.87	1156.94	0.45	0.00	-27.85	Last WFT Svy
3930.00	0.93	6.49	3681.52	946.92	665.96	1157.65	0.00	0.00	0.00	Proj to Bit
8265.00	1.00	6.49	8015.90	1019.46	674.21	1221.68	0.00	0.00	0.00	Last Rig Svy

Annotation

MD ft	TVD ft	
3880.00	3631.52	Last WFT Svy
3930.00	3681.52	Proj to Bit
8265.00	8015.90	Last Rig Svy