

District I
1625 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
"As DRILLED"

30-039-30109 WELL LOCATION AND ACREAGE DEDICATION PLAT

*API Number	*Pool Code	*Pool Name
97232 / 72319 / 71599	BASIN MANCOS / BLANCO MESAVERDE / BASIN DAKOTA	
*Property Code	*Property Name	*Well Number
17033	ROSA UNIT	164C
*GRID No.	*Operator Name	*Elevation
120782	WILLIAMS PRODUCTION COMPANY	6358'

¹⁰ Surface Location

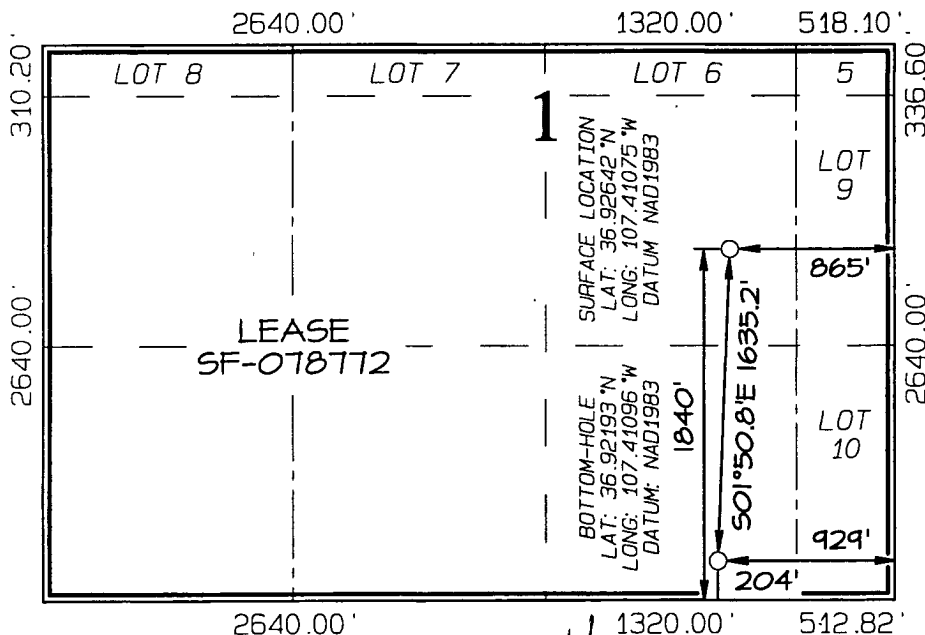
UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	1	31N	6W		1840	SOUTH	865	EAST	RIO ARRIBA

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
0	1	31N	6W		204	SOUTH	929	EAST	RIO ARRIBA

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
303.88 Acres - Entire Section			RCVD MAY 21 '09 OIL CONS. DIV. DIST. 3

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



P.A. MV

HOLD C104 FOR NSLMn, DK

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.

Signature: Larry Higgins Date: 5-20-09

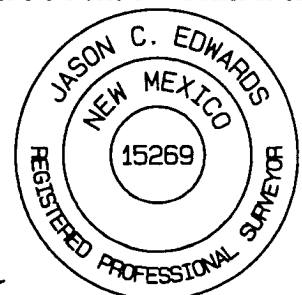
Printed Name: LARRY HIGGINS

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.

Date Revised: MAY 20, 2009
Date of Survey: MARCH 21, 2006

Signature and Seal of Professional Surveyor



JASON C. EDWARDS
Certificate Number 15269



ROSA UNIT #164C
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	179.67	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	179.67	400.00	0.00	0.00	0.00	0.00	0.00	
3	1239.92	33.60	179.67	1192.61	-239.27	1.38	4.00	179.67	239.28	
4	2959.81	33.60	179.67	2625.19	-1190.95	6.86	0.00	0.00	1190.96	
5	4079.69	0.00	179.67	3682.00	-1509.97	8.70	3.00	180.00	1510.00	Int. Csg. Pt.
6	8489.69	0.00	179.67	8092.00	-1509.97	8.70	0.00	179.67	1510.00	PBHL

WELL DETAILS

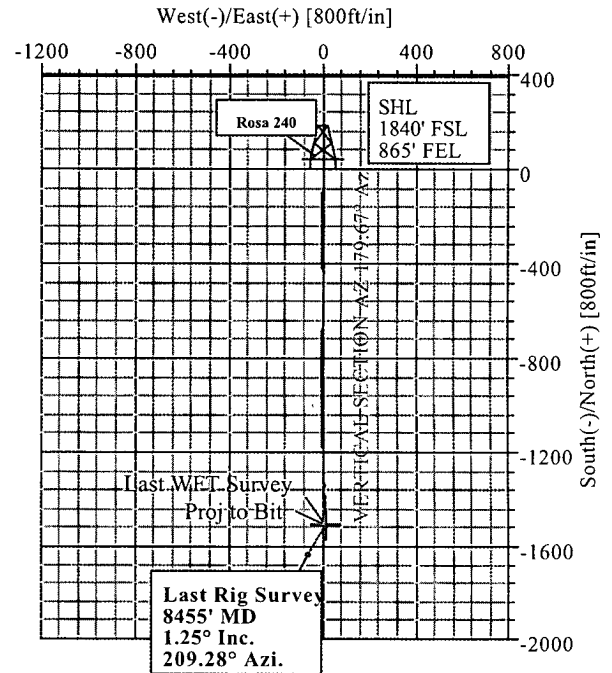
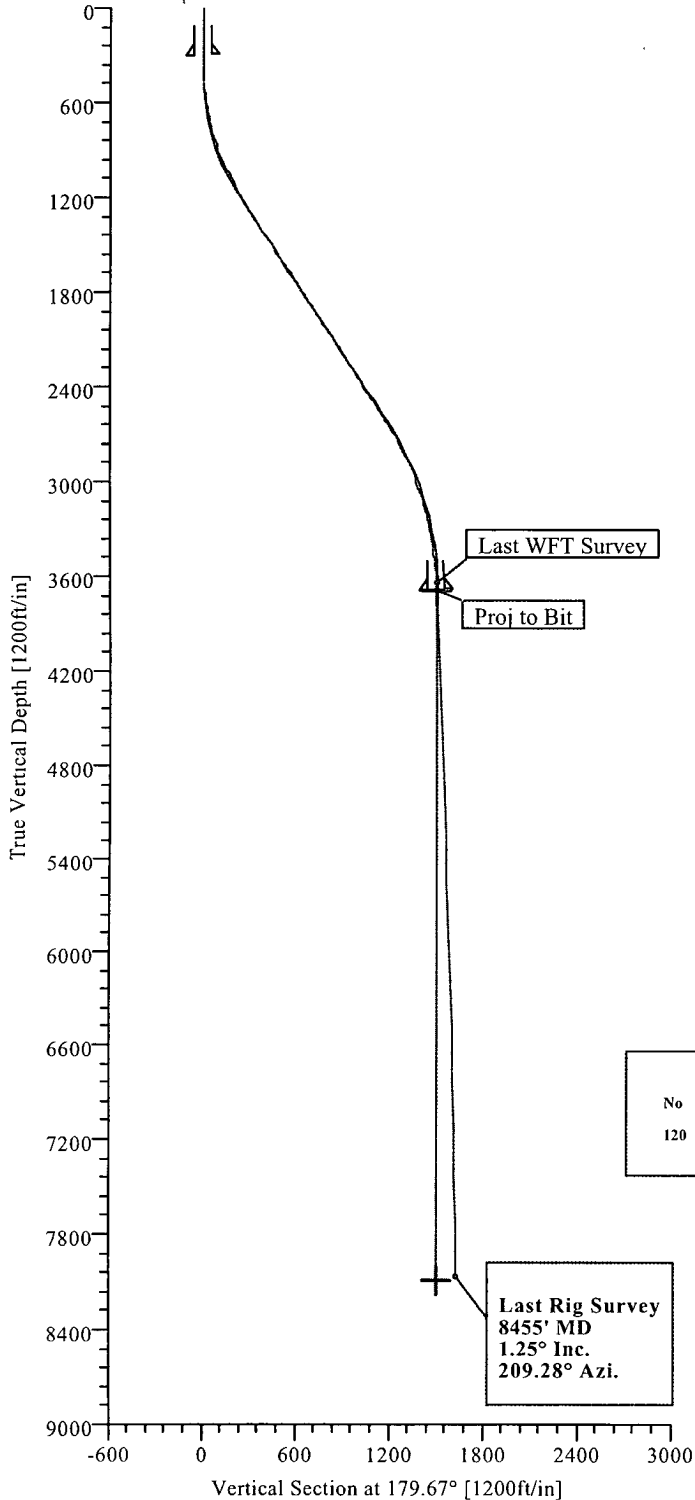
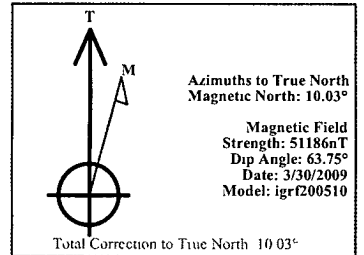
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
#164C	0.00	0.00	2158577.90	1301143.65	36°55'35.110N	107°24'38.700W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Int. Csg. Pt.	3682.00	-1509.97	8.70	36°55'20.181N	107°24'38.593W	Point
PBHL	8092.00	-1509.97	8.70	36°55'20.181N	107°24'38.593W	Point



KB ELEV. 6372'
GR ELEV. 6358'



Last Rig Survey (#164C/1)

No	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
120	8455.00	1.25	209.28	8064.55	-1636.07	-63.86	0.03	180.00	1635.68



Weatherford

Survey. WFT SVY (#164C/1)

Created By. Lindsey Maddux

Date: 5/18/2009



Weatherford International, Inc.

Survey Report



Weatherford

Company: WILLIAMS PRODUCTION Date: 5/18/2009 Time: 14:29:00 Page: 1
 Field: Rio Arriba Co., NM (NAD 83) Co-ordinate(NE) Reference: Well: #164C, True North
 Site: Rosa Unit #164C Vertical (TVD) Reference: SITE 6372.0
 Well: #164C Section (VS) Reference: Well (0.00N,0.00E,179.67Azi)
 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 #164C

1840' FSL 865' FEL of SEC 1 T31N R6W

Site Position: Northing: 2158577.90 ft Latitude: 36 55 35.110 N
 From: Geographic Easting: 1301143.65 ft Longitude: 107 24 38.700 W
 Position Uncertainty: 0.00 ft North Reference: True
 Ground Level: 6358.00 ft Grid Convergence: -0.70 deg

Well: #164C

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 2158577.90 ft Latitude: 36 55 35.110 N
 +E/-W 0.00 ft Easting: 1301143.65 ft Longitude: 107 24 38.700 W
 Position Uncertainty: 0.00 ft

Wellpath: 1

Current Datum: SITE Height 6372.00 ft Drilled From: Surface
 Magnetic Data: 3/30/2009 Tie-on Depth: 0.00 ft
 Field Strength: 51186 nT Above System Datum: Mean Sea Level
 Vertical Section: Depth From (TVD) +N/-S +E/-W Declination: 10.03 deg
 ft ft ft Mag Dip Angle: 63.75 deg
 deg
 0.00 0.00 0.00 179.67

Survey: WFT SVY

Start Date: 5/4/2009

Company: Weatherford International, Inc
 Tool: MWD, MWD - Standard

Engineer: Lindsey Maddux
 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
386.00	1.48	173.00	385.96	-4.95	0.61	4.95	0.38	0.38	0.00	MWD
416.00	2.41	168.47	415.94	-5.95	0.78	5.95	3.14	3.10	-15.10	MWD
447.00	2.77	176.39	446.91	-7.34	0.96	7.34	1.63	1.16	25.55	MWD
478.00	3.73	176.74	477.86	-9.09	1.06	9.10	3.10	3.10	1.13	MWD
508.00	4.86	176.04	507.77	-11.33	1.21	11.34	3.77	3.77	-2.33	MWD
538.00	5.96	180.20	537.64	-14.16	1.29	14.17	3.89	3.67	13.87	MWD
568.00	6.97	181.42	567.45	-17.54	1.24	17.54	3.40	3.37	4.07	MWD
599.00	8.41	181.09	598.17	-21.68	1.15	21.69	4.65	4.65	-1.06	MWD
630.00	9.60	180.05	628.79	-26.53	1.10	26.54	3.87	3.84	-3.35	MWD
660.00	10.55	179.62	658.32	-31.78	1.12	31.79	3.18	3.17	-1.43	MWD
691.00	11.87	180.68	688.73	-37.81	1.10	37.81	4.31	4.26	3.42	MWD
722.00	13.79	181.39	718.96	-44.69	0.97	44.70	6.21	6.19	2.29	MWD
753.00	15.37	180.18	748.96	-52.49	0.87	52.50	5.19	5.10	-3.90	MWD
783.00	16.35	181.09	777.81	-60.69	0.78	60.69	3.37	3.27	3.03	MWD
814.00	17.26	181.04	807.49	-69.65	0.61	69.65	2.94	2.94	-0.16	MWD
845.00	18.16	180.57	837.02	-79.08	0.48	79.08	2.94	2.90	-1.52	MWD
876.00	19.86	182.21	866.33	-89.17	0.23	89.17	5.75	5.48	5.29	MWD
906.00	21.82	181.60	894.36	-99.84	-0.12	99.84	6.57	6.53	-2.03	MWD
937.00	23.35	181.48	922.99	-111.74	-0.44	111.74	4.94	4.94	-0.39	MWD
968.00	23.95	181.49	951.38	-124.17	-0.77	124.17	1.94	1.94	0.03	MWD
999.00	24.16	180.05	979.69	-136.81	-0.94	136.80	2.01	0.68	-4.65	MWD
1030.00	25.02	180.62	1007.88	-149.71	-1.01	149.70	2.88	2.77	1.84	MWD
1061.00	25.56	180.66	1035.91	-162.95	-1.16	162.94	1.74	1.74	0.13	MWD



Weatherford International, Inc.

Survey Report



Weatherford

Company: WILLIAMS PRODUCTION	Date: 5/18/2009	Time: 14:29:00	Page: 2
Field: Rio Arriba Co., NM (NAD 83)	Co-ordinate(NE) Reference: Well. #164C, True North		
Site: Rosa Unit #164C	Vertical (TVD) Reference: SITE 6372.0		
Well: #164C	Section (VS) Reference: Well (0.00N,0.00E,179.67Azi)		
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
1091.00	26.38	179.84	1062.88	-176.09	-1.22	176.08	2.98	2.73	-2.73	MWD
1122.00	26.79	179.57	1090.60	-189.96	-1.14	189.95	1.38	1.32	-0.87	MWD
1153.00	27.65	179.64	1118.17	-204.14	-1.05	204.13	2.78	2.77	0.23	MWD
1183.00	28.49	179.61	1144.64	-218.25	-0.95	218.24	2.80	2.80	-0.10	MWD
1213.00	29.74	179.85	1170.85	-232.85	-0.89	232.84	4.18	4.17	0.80	MWD
1245.00	30.65	180.15	1198.51	-248.94	-0.89	248.93	2.88	2.84	0.94	MWD
1277.00	31.06	180.03	1225.98	-265.36	-0.91	265.35	1.30	1.28	-0.37	MWD
1309.00	32.00	180.79	1253.25	-282.09	-1.03	282.08	3.19	2.94	2.37	MWD
1341.00	32.42	180.30	1280.33	-299.14	-1.20	299.13	1.55	1.31	-1.53	MWD
1373.00	32.29	179.38	1307.36	-316.27	-1.15	316.26	1.59	-0.41	-2.87	MWD
1404.00	32.56	179.46	1333.53	-332.89	-0.98	332.88	0.88	0.87	0.26	MWD
1436.00	32.75	179.48	1360.47	-350.16	-0.82	350.15	0.59	0.59	0.06	MWD
1468.00	33.27	179.97	1387.30	-367.59	-0.74	367.58	1.83	1.62	1.53	MWD
1499.00	33.53	179.74	1413.18	-384.65	-0.69	384.64	0.93	0.84	-0.74	MWD
1531.00	33.63	178.60	1439.84	-402.35	-0.44	402.34	2.00	0.31	-3.56	MWD
1563.00	34.12	178.74	1466.41	-420.18	-0.02	420.17	1.55	1.53	0.44	MWD
1594.00	34.51	178.78	1492.01	-437.65	0.36	437.65	1.26	1.26	0.13	MWD
1626.00	34.35	178.43	1518.41	-455.74	0.80	455.74	0.80	-0.50	-1.09	MWD
1658.00	34.87	179.46	1544.75	-473.91	1.13	473.91	2.45	1.62	3.22	MWD
1690.00	34.18	179.74	1571.11	-492.05	1.26	492.05	2.21	-2.16	0.87	MWD
1722.00	34.29	180.41	1597.57	-510.05	1.23	510.05	1.23	0.34	2.09	MWD
1754.00	33.79	180.26	1624.08	-527.96	1.13	527.96	1.58	-1.56	-0.47	MWD
1786.00	33.41	179.61	1650.74	-545.67	1.15	545.67	1.64	-1.19	-2.03	MWD
1818.00	33.63	179.84	1677.41	-563.34	1.23	563.34	0.79	0.69	0.72	MWD
1850.00	34.26	179.83	1703.96	-581.21	1.28	581.21	1.97	1.97	-0.03	MWD
1881.00	33.29	180.42	1729.73	-598.45	1.25	598.44	3.30	-3.13	1.90	MWD
1913.00	32.65	180.60	1756.57	-615.86	1.09	615.85	2.02	-2.00	0.56	MWD
1945.00	32.86	181.08	1783.49	-633.17	0.84	633.16	1.04	0.66	1.50	MWD
1977.00	33.20	180.95	1810.31	-650.61	0.53	650.60	1.09	1.06	-0.41	MWD
2009.00	33.08	181.73	1837.11	-668.10	0.12	668.09	1.38	-0.37	2.44	MWD
2041.00	33.29	181.89	1863.89	-685.61	-0.43	685.59	0.71	0.66	0.50	MWD
2072.00	33.18	181.88	1889.82	-702.59	-0.99	702.57	0.36	-0.35	-0.03	MWD
2103.00	33.24	181.17	1915.76	-719.56	-1.44	719.54	1.27	0.19	-2.29	MWD
2135.00	33.51	180.69	1942.48	-737.16	-1.73	737.14	1.18	0.84	-1.50	MWD
2166.00	33.74	180.33	1968.29	-754.33	-1.88	754.30	0.98	0.74	-1.16	MWD
2198.00	34.13	182.10	1994.84	-772.18	-2.26	772.16	3.32	1.22	5.53	MWD
2230.00	34.68	182.82	2021.24	-790.25	-3.04	790.22	2.14	1.72	2.25	MWD
2262.00	34.73	181.98	2047.55	-808.45	-3.80	808.42	1.50	0.16	-2.62	MWD
2293.00	33.96	180.80	2073.15	-825.93	-4.23	825.90	3.28	-2.48	-3.81	MWD
2325.00	33.00	180.24	2099.84	-843.59	-4.39	843.55	3.15	-3.00	-1.75	MWD
2357.00	33.20	181.05	2126.64	-861.06	-4.59	861.02	1.52	0.62	2.53	MWD
2389.00	32.93	180.29	2153.46	-878.52	-4.79	878.48	1.55	-0.84	-2.37	MWD
2421.00	32.30	179.94	2180.42	-895.76	-4.83	895.72	2.06	-1.97	-1.09	MWD
2453.00	32.31	179.37	2207.46	-912.87	-4.72	912.82	0.95	0.03	-1.78	MWD
2484.00	32.55	179.56	2233.63	-929.49	-4.57	929.45	0.84	0.77	0.61	MWD
2516.00	32.59	180.56	2260.60	-946.72	-4.59	946.67	1.69	0.12	3.12	MWD
2548.00	32.53	179.46	2287.57	-963.94	-4.59	963.89	1.86	-0.19	-3.44	MWD
2580.00	32.69	179.26	2314.52	-981.18	-4.40	981.14	0.60	0.50	-0.62	MWD
2612.00	32.16	178.77	2341.53	-998.34	-4.10	998.30	1.85	-1.66	-1.53	MWD
2643.00	32.41	179.48	2367.74	-1014.89	-3.85	1014.85	1.47	0.81	2.29	MWD
2675.00	32.84	180.11	2394.69	-1032.14	-3.79	1032.11	1.71	1.34	1.97	MWD
2707.00	32.61	180.45	2421.61	-1049.44	-3.87	1049.40	0.92	-0.72	1.06	MWD
2738.00	32.58	179.68	2447.73	-1066.14	-3.89	1066.10	1.34	-0.10	-2.48	MWD



Weatherford International, Inc.

Survey Report



Weatherford

Company: WILLIAMS PRODUCTION
Field: Rio Arriba Co., NM (NAD 83)
Site: Rosa Unit #164C
Well: #164C
Wellpath: 1

Date: 5/18/2009
Co-ordinate(NE) Reference: Well: #164C, True North
Vertical (TVD) Reference: SITE 6372.0
Section (VS) Reference: Well (0.00N,0.00E,179.67Azi)
Survey Calculation Method: Minimum Curvature

Page: 3
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
2770.00	32.70	179.39	2474.68	-1083.40	-3.75	1083.36	0.62	0.37	-0.91	MWD
2802.00	33.03	178.05	2501.56	-1100.76	-3.36	1100.72	2.50	1.03	-4.19	MWD
2834.00	33.07	177.33	2528.38	-1118.20	-2.66	1118.17	1.23	0.12	-2.25	MWD
2866.00	33.42	176.93	2555.14	-1135.72	-1.78	1135.69	1.29	1.09	-1.25	MWD
2916.00	34.27	177.74	2596.67	-1163.54	-0.49	1163.51	1.92	1.70	1.62	MWD
2931.00	34.17	178.27	2609.07	-1171.97	-0.19	1171.95	2.10	-0.67	3.53	MWD
2963.00	33.52	178.78	2635.65	-1189.78	0.27	1189.77	2.22	-2.03	1.59	MWD
2995.00	32.01	177.50	2662.56	-1207.09	0.82	1207.08	5.19	-4.72	-4.00	MWD
3027.00	30.54	175.73	2689.91	-1223.67	1.80	1223.66	5.42	-4.59	-5.53	MWD
3058.00	29.66	175.96	2716.73	-1239.18	2.93	1239.18	2.86	-2.84	0.74	MWD
3090.00	29.48	175.60	2744.56	-1254.93	4.09	1254.93	0.79	-0.56	-1.12	MWD
3122.00	28.36	176.05	2772.57	-1270.36	5.22	1270.37	3.57	-3.50	1.41	MWD
3153.00	27.31	176.69	2799.98	-1284.81	6.13	1284.82	3.52	-3.39	2.06	MWD
3184.00	26.75	177.25	2827.59	-1298.87	6.88	1298.89	1.98	-1.81	1.81	MWD
3216.00	25.99	177.01	2856.26	-1313.07	7.59	1313.09	2.40	-2.37	-0.75	MWD
3247.00	24.90	178.06	2884.26	-1326.38	8.17	1326.40	3.81	-3.52	3.39	MWD
3279.00	23.23	180.18	2913.47	-1339.42	8.37	1339.45	5.88	-5.22	6.62	MWD
3311.00	21.95	180.65	2943.02	-1351.71	8.29	1351.74	4.04	-4.00	1.47	MWD
3342.00	21.07	180.88	2971.86	-1363.08	8.13	1363.10	2.85	-2.84	0.74	MWD
3374.00	20.36	177.41	3001.79	-1374.39	8.30	1374.42	4.43	-2.22	-10.84	MWD
3406.00	19.35	175.84	3031.89	-1385.24	8.93	1385.27	3.57	-3.16	-4.91	MWD
3437.00	18.32	174.85	3061.23	-1395.21	9.74	1395.25	3.48	-3.32	-3.19	MWD
3468.00	17.62	175.18	3090.72	-1404.74	10.58	1404.78	2.28	-2.26	1.06	MWD
3500.00	16.47	180.14	3121.31	-1414.10	10.97	1414.14	5.79	-3.59	15.50	MWD
3531.00	14.95	181.06	3151.15	-1422.50	10.89	1422.54	4.97	-4.90	2.97	MWD
3563.00	13.97	181.77	3182.14	-1430.49	10.69	1430.52	3.11	-3.06	2.22	MWD
3595.00	13.94	179.92	3213.20	-1438.20	10.58	1438.24	1.40	-0.09	-5.78	MWD
3626.00	13.85	177.09	3243.29	-1445.64	10.77	1445.68	2.21	-0.29	-9.13	MWD
3657.00	13.24	178.73	3273.43	-1452.90	11.04	1452.93	2.33	-1.97	5.29	MWD
3688.00	12.11	179.63	3303.67	-1459.70	11.14	1459.74	3.70	-3.65	2.90	MWD
3719.00	10.80	182.21	3334.05	-1465.85	11.05	1465.89	4.54	-4.23	8.32	MWD
3750.00	10.30	179.41	3364.53	-1471.52	10.96	1471.56	2.31	-1.61	-9.03	MWD
3782.00	9.89	181.12	3396.03	-1477.13	10.94	1477.17	1.59	-1.28	5.34	MWD
3814.00	9.21	179.12	3427.59	-1482.44	10.92	1482.48	2.36	-2.12	-6.25	MWD
3844.00	8.75	176.88	3457.22	-1487.12	11.09	1487.16	1.93	-1.53	-7.47	MWD
3875.00	8.07	175.99	3487.89	-1491.64	11.37	1491.69	2.23	-2.19	-2.87	MWD
3907.00	6.84	179.84	3519.62	-1495.79	11.53	1495.83	4.15	-3.84	12.03	MWD
3938.00	5.57	186.02	3550.44	-1499.13	11.38	1499.17	4.62	-4.10	19.94	MWD
3969.00	4.43	196.80	3581.32	-1501.78	10.87	1501.81	4.75	-3.68	34.77	MWD
4001.00	3.46	201.95	3613.24	-1503.85	10.15	1503.89	3.22	-3.03	16.09	MWD
4028.00	2.62	209.28	3640.20	-1505.15	9.55	1505.18	3.42	-3.11	27.15	Last WFT Survey
4080.00	2.62	209.28	3692.15	-1507.22	8.38	1507.25	0.00	0.00	0.00	Proj to Bit
8455.00	1.25	209.28	8064.55	-1636.07	-63.86	1635.68	0.03	-0.03	0.00	Last Rig Survey

Annotation

MD ft	TVD ft	
4028.00	3640.20	Last WFT Survey
4080.00	3692.15	Proj to Bit
8455.00	8064.55	Last Rig Survey