

JASON C. EDWARDS
Certificate Number 15269

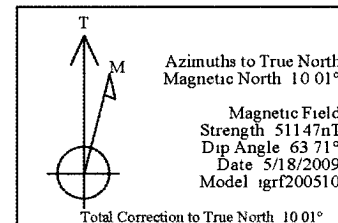
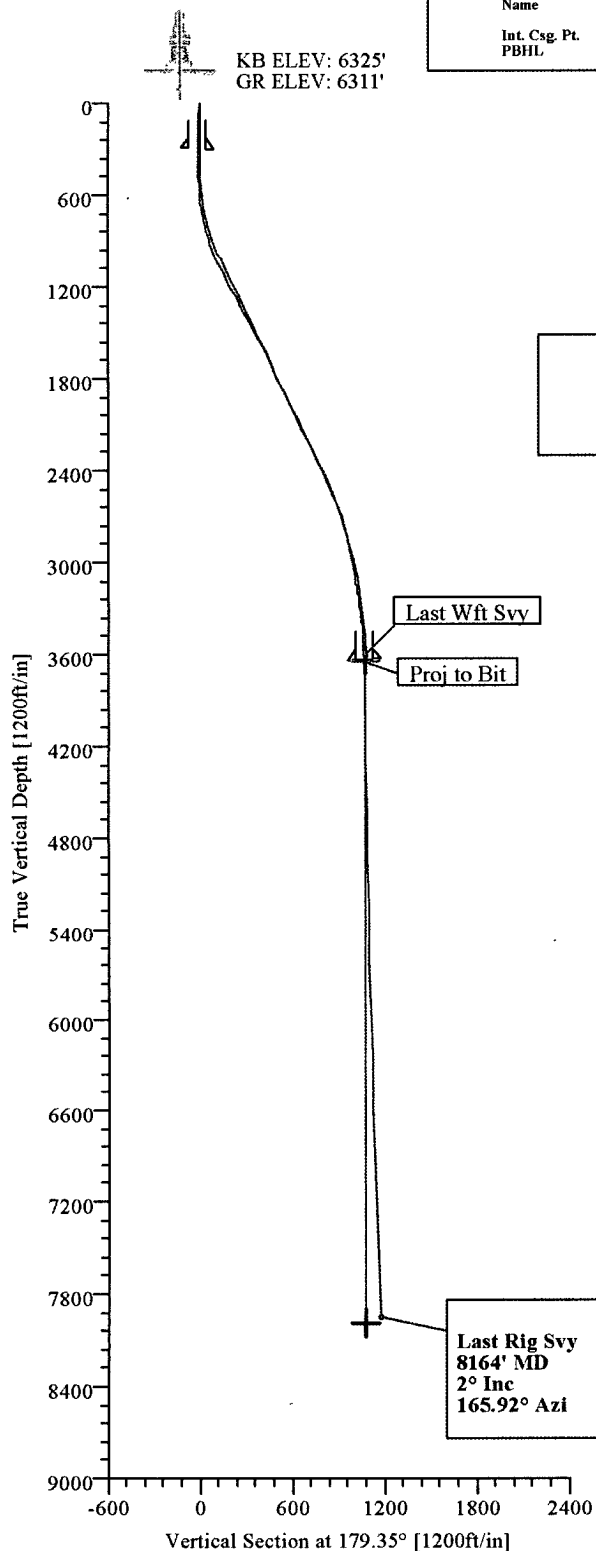


ROSA UNIT #19D
RIO ARriba CO., NEW MEXICO

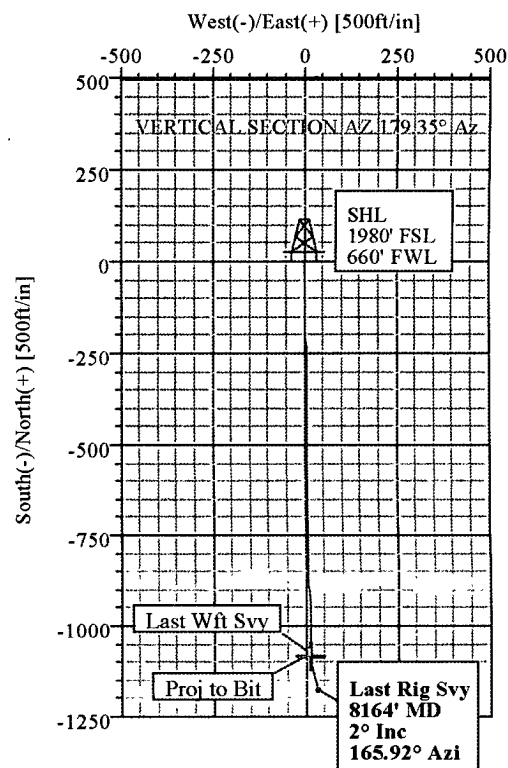
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	179.35	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	179.35	400.00	0.00	0.00	0.00	0.00	0.00	
3	1039.21	25.57	179.35	1018.21	-140.27	1.58	4.00	179.35	140.27	
4	2569.45	25.57	179.35	2398.58	-800.66	9.03	0.00	0.00	800.71	
5	3847.87	0.00	179.35	3635.00	-1081.19	12.19	2.00	180.00	1081.26	Int. Csg. Pt.
6	8197.87	0.00	179.35	7985.00	-1081.19	12.19	0.00	179.35	1081.26	PBHL

WELL DETAILS							
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
19D	0.00	0.00	2142915.22	1297989.80	36°52'59.880N	107°25'15.170W	N/A

TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Int. Csg. Pt.	3635.00	-1081.19	12.19	2141833.96	1297988.72	36°52'49.190N	107°25'15.020W	Point
PBHL	7985.00	-1081.19	12.19	2141833.96	1297988.72	36°52'49.190N	107°25'15.020W	Point



Last Rig Survey									
No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
87	8164.00	2.00	165.92	7944.43	-1177.40	33.58	0.03	0.00	1177.70



RCVD SEP 18 '09
OIL CONS. DIV.
DIST. 3





Weatherford International, Inc.

Survey Report



Weatherford®

Company: WILLIAMS PRODUCTION	Date: 9/15/2009	Time: 09:21:55	Page: 1
Field: Rio Arriba Co., NM (NAD 83)	Co-ordinate(NE) Reference: Well: 19D, True North		
Site: Rosa Unit #19D	Vertical (TVD) Reference: SITE 6325.0		
Well: 19D	Section (VS) Reference: Well (0.00N,0.00E,179.35Azi)		
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: igr200510

Site: Rosa Unit #19D

Site Position: Northing: 2142915.22 ft Latitude: 36 52 59.880 N
From: Geographic Easting: 1297989.80 ft Longitude: 107 25 15.170 W
Position Uncertainty: 0.00 ft North Reference: True
Ground Level: 6311.00 ft Grid Convergence: -0.70 deg

Well: 19D

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 2142915.22 ft Latitude: 36 52 59.880 N
+E/-W 0.00 ft Easting: 1297989.80 ft Longitude: 107 25 15.170 W
Position Uncertainty: 0.00 ft

Wellpath: 1

Current Datum: SITE Height 6325.00 ft
Magnetic Data: 5/18/2009
Field Strength: 51147 nT
Vertical Section: Depth From (TVD) +N/-S
ft ft
0.00 0.00 0.00 179.35

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 10.01 deg
Mag Dip Angle: 63.71 deg
+E/-W Direction
ft deg
0.00 179.35

Survey: WFT SVY

Start Date: 8/28/2009

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
350.00	0.58	25.62	349.99	1.60	0.77	-1.59	0.17	0.17	0.00	MWD
381.00	0.44	357.98	380.99	1.86	0.83	-1.85	0.90	-0.45	-89.16	MWD
412.00	0.23	196.20	411.99	1.92	0.81	-1.91	2.14	-0.68	-521.87	MWD
442.00	0.69	174.72	441.99	1.68	0.81	-1.67	1.61	1.53	-71.60	MWD
443.00	0.69	174.72	442.99	1.67	0.81	-1.66	0.00	0.00	0.00	MWD
472.00	1.44	183.85	471.99	1.13	0.80	-1.12	2.64	2.59	31.48	MWD
503.00	2.25	182.35	502.97	0.13	0.75	-0.12	2.62	2.61	-4.84	MWD
534.00	3.19	184.22	533.93	-1.34	0.66	1.34	3.05	3.03	6.03	MWD
564.00	3.94	183.22	563.88	-3.20	0.54	3.20	2.51	2.50	-3.33	MWD
595.00	4.81	183.85	594.79	-5.56	0.39	5.56	2.81	2.81	2.03	MWD
626.00	5.63	177.85	625.66	-8.37	0.36	8.38	3.17	2.65	-19.35	MWD
657.00	6.69	174.85	656.48	-11.69	0.58	11.70	3.57	3.42	-9.68	MWD
687.00	8.13	172.97	686.23	-15.54	1.00	15.55	4.87	4.80	-6.27	MWD
718.00	9.38	173.35	716.86	-20.22	1.56	20.24	4.04	4.03	1.23	MWD
749.00	10.75	176.35	747.39	-25.62	2.04	25.64	4.73	4.42	9.68	MWD
780.00	12.25	177.22	777.76	-31.79	2.38	31.81	4.87	4.84	2.81	MWD
810.00	13.75	176.47	806.99	-38.53	2.76	38.55	5.03	5.00	-2.50	MWD
841.00	15.31	177.22	837.00	-46.29	3.18	46.32	5.07	5.03	2.42	MWD
871.00	16.63	178.10	865.84	-54.54	3.51	54.57	4.47	4.40	2.93	MWD
903.00	18.31	178.85	896.37	-64.14	3.77	64.18	5.30	5.25	2.34	MWD
935.00	20.19	179.22	926.58	-74.69	3.94	74.73	5.89	5.87	1.16	MWD
966.00	21.81	179.60	955.52	-85.80	4.06	85.84	5.24	5.23	1.23	MWD
998.00	23.69	179.85	985.03	-98.17	4.12	98.21	5.88	5.87	0.78	MWD



Weatherford International, Inc.

Survey Report



Weatherford

Company:	WILLIAMS PRODUCTION	Date:	9/15/2009	Time:	09:21:55	Page:	2
Field:	Rio Arriba Co., NM (NAD 83)	Co-ordinate(NE) Reference:	Well: 19D, True North				
Site:	Rosa Unit #19D	Vertical (TVD) Reference:	SITE 6325.0				
Well:	19D	Section (VS) Reference:	Well (0.00N,0.00E,179.35Azi)				
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
1061.00	25.81	179.60	1042.23	-124.54	4.24	124.58	3.37	3.37	-0.40	MWD
1125.00	26.75	179.35	1099.62	-152.88	4.50	152.92	1.48	1.47	-0.39	MWD
1189.00	27.44	180.22	1156.60	-182.03	4.61	182.07	1.24	1.08	1.36	MWD
1251.00	27.63	178.35	1211.57	-210.68	4.97	210.73	1.43	0.31	-3.02	MWD
1313.00	27.81	177.97	1266.46	-239.51	5.90	239.56	0.41	0.29	-0.61	MWD
1376.00	27.81	178.85	1322.18	-268.89	6.71	268.95	0.65	0.00	1.40	MWD
1439.00	27.94	179.47	1377.87	-298.34	7.14	298.40	0.50	0.21	0.98	MWD
1500.00	28.56	180.60	1431.61	-327.21	7.12	327.27	1.34	1.02	1.85	MWD
1563.00	28.81	179.97	1486.87	-357.45	6.97	357.51	0.62	0.40	-1.00	MWD
1625.00	27.19	179.10	1541.62	-386.56	7.20	386.61	2.69	-2.61	-1.40	MWD
1688.00	25.63	179.22	1598.04	-414.57	7.62	414.63	2.48	-2.48	0.19	MWD
1750.00	25.13	177.97	1654.06	-441.14	8.26	441.20	1.18	-0.81	-2.02	MWD
1845.00	26.01	178.88	1739.75	-482.12	9.39	482.20	1.01	0.93	0.96	MWD
1939.00	25.88	179.47	1824.28	-523.25	9.98	523.33	0.31	-0.14	0.63	MWD
2034.00	25.92	179.90	1909.73	-564.74	10.21	564.82	0.20	0.04	0.45	MWD
2127.00	24.69	180.72	1993.81	-604.49	10.00	604.57	1.38	-1.32	0.88	MWD
2190.00	25.75	179.60	2050.80	-631.33	9.93	631.40	1.85	1.68	-1.78	MWD
2283.00	26.63	183.10	2134.26	-672.35	8.94	672.41	1.91	0.95	3.76	MWD
2378.00	25.69	182.60	2219.53	-714.18	6.86	714.21	1.02	-0.99	-0.53	MWD
2472.00	26.13	180.97	2304.08	-755.23	5.58	755.25	0.89	0.47	-1.73	MWD
2533.00	25.94	179.97	2358.89	-782.00	5.36	782.01	0.78	-0.31	-1.64	MWD
2564.00	26.06	179.47	2386.75	-795.59	5.43	795.60	0.81	0.39	-1.61	MWD
2595.00	25.56	179.60	2414.66	-809.09	5.54	809.10	1.62	-1.61	0.42	MWD
2627.00	24.81	180.47	2443.62	-822.71	5.53	822.72	2.61	-2.34	2.72	MWD
2659.00	24.06	180.10	2472.75	-835.94	5.46	835.95	2.39	-2.34	-1.16	MWD
2691.00	23.56	180.10	2502.03	-848.86	5.44	848.87	1.56	-1.56	0.00	MWD
2722.00	23.00	180.60	2530.50	-861.11	5.37	861.12	1.92	-1.81	1.61	MWD
2753.00	22.44	181.60	2559.10	-873.08	5.14	873.09	2.19	-1.81	3.23	MWD
2785.00	21.81	182.60	2588.74	-885.13	4.70	885.12	2.29	-1.97	3.12	MWD
2817.00	20.63	182.67	2618.57	-896.70	4.17	896.69	3.69	-3.69	0.22	MWD
2848.00	19.69	181.85	2647.67	-907.37	3.74	907.36	3.17	-3.03	-2.65	MWD
2880.00	18.75	181.85	2677.89	-917.90	3.40	917.88	2.94	-2.94	0.00	MWD
2912.00	17.69	180.85	2708.28	-927.90	3.17	927.88	3.45	-3.31	-3.12	MWD
2975.00	16.19	180.60	2768.55	-946.26	2.93	946.23	2.38	-2.38	-0.40	MWD
3006.00	15.50	181.40	2798.37	-954.72	2.78	954.69	2.33	-2.23	2.58	MWD
3037.00	14.86	181.83	2828.29	-962.83	2.56	962.80	2.10	-2.06	1.39	MWD
3068.00	14.06	181.22	2858.31	-970.57	2.35	970.54	2.63	-2.58	-1.97	MWD
3100.00	13.19	179.97	2889.41	-978.11	2.27	978.07	2.87	-2.72	-3.91	MWD
3131.00	12.25	179.97	2919.64	-984.93	2.27	984.90	3.03	-3.03	0.00	MWD
3162.00	11.44	181.47	2949.98	-991.30	2.20	991.26	2.80	-2.61	4.84	MWD
3193.00	10.88	183.60	2980.40	-997.29	1.93	997.25	2.24	-1.81	6.87	MWD
3225.00	10.23	183.54	3011.86	-1003.14	1.57	1003.09	2.03	-2.03	-0.19	MWD
3256.00	9.63	178.35	3042.39	-1008.48	1.47	1008.43	3.47	-1.94	-16.74	MWD
3288.00	9.25	177.22	3073.96	-1013.72	1.67	1013.68	1.32	-1.19	-3.53	MWD
3320.00	9.25	174.85	3105.54	-1018.85	2.03	1018.81	1.19	0.00	-7.41	MWD
3352.00	9.23	174.29	3137.13	-1023.97	2.52	1023.93	0.29	-0.06	-1.75	MWD
3383.00	8.81	176.10	3167.74	-1028.81	2.92	1028.78	1.63	-1.35	5.84	MWD
3415.00	8.19	177.35	3199.39	-1033.53	3.20	1033.50	2.02	-1.94	3.91	MWD
3446.00	8.00	178.85	3230.08	-1037.90	3.34	1037.87	0.92	-0.61	4.84	MWD
3478.00	8.19	179.22	3261.77	-1042.40	3.42	1042.37	0.62	0.59	1.16	MWD
3510.00	7.80	179.97	3293.45	-1046.85	3.45	1046.82	1.26	-1.22	2.34	MWD
3541.00	7.50	176.10	3324.18	-1050.97	3.59	1050.95	1.92	-0.97	-12.48	MWD
3573.00	7.38	171.47	3355.91	-1055.09	4.04	1055.07	1.91	-0.37	-14.47	MWD



Weatherford International, Inc.

Survey Report



Weatherford

Company: WILLIAMS PRODUCTION Date: 9/15/2009 Time: 09:21:55 Page: 3
Field: Rio Arriba Co., NM (NAD 83) Co-ordinate(NE) Reference: Well: 19D, True North
Site: Rosa Unit #19D Vertical (TVD) Reference: SITE 6325.0
Well: 19D Section (VS) Reference: Well (0.00N,0.00E,179.35Azi)
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
3604.00	7.44	166.85	3386.65	-1059.01	4.79	1059.00	1.93	0.19	-14.90	MWD
3636.00	7.94	167.35	3418.36	-1063.19	5.74	1063.18	1.58	1.56	1.56	MWD
3667.00	7.00	168.85	3449.10	-1067.13	6.58	1067.14	3.10	-3.03	4.84	MWD
3698.00	5.06	173.35	3479.93	-1070.34	7.10	1070.35	6.44	-6.26	14.52	MWD
3729.00	3.38	170.72	3510.84	-1072.60	7.41	1072.62	5.45	-5.42	-8.48	MWD
3761.00	2.00	174.47	3542.81	-1074.09	7.61	1074.11	4.35	-4.31	11.72	MWD
3792.00	1.19	152.85	3573.79	-1074.91	7.81	1074.93	3.21	-2.61	-69.74	MWD
3818.00	0.79	165.92	3599.79	-1075.33	7.98	1075.35	1.76	-1.54	50.27	Last Wft Svy
3872.00	0.79	165.92	3653.78	-1076.05	8.16	1076.07	0.00	0.00	0.00	Proj to Bit
8164.00	2.00	165.92	7944.43	-1177.40	33.58	1177.70	0.03	0.03	0.00	Last Rig Svy

Annotation

MD ft	TVD ft	
3818.00	3599.79	Last Wft Svy
3872.00	3653.78	Proj to Bit
8164.00	7944.43	Last Rig Svy