



DRILLTECH MWD SURVEY REPORT

Company: EOG Resources, Inc.
Well: Ross Draw 8 Fed #7H
Location: Eddy County, NM
Rig: H&P 415

Job Number: 2015-073-EODT-NM
Vertical Section Plane: 179.00
WELL API #: 30-015-42264
Tie Into: Surface

Calculation Method Minimum Curvature

Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')
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Tie In	Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	MWD	190.00	0.50	263.80	190	190.00	0.08	0.09	S	0.82	W	0.83	263.80	0.26		0.26		0.26
2	MWD	376.00	0.90	275.80	186	375.98	-0.02	0.03	S	3.08	W	3.08	269.45	0.23		0.23		0.22
3	MWD	405.00	0.90	280.30	29	404.98	-0.10	0.03	N	3.53	W	3.54	270.55	0.24		0.24		0.00
4	MWD	497.00	0.40	269.60	92	496.97	-0.24	0.16	N	4.57	W	4.57	272.02	0.56		0.56		-0.54
5	MWD	590.00	0.40	314.30	93	589.97	-0.47	0.39	N	5.12	W	5.14	274.30	0.33		0.33		0.00
6	MWD	776.00	0.50	0.70	186	775.97	-1.75	1.65	N	5.58	W	5.82	286.48	0.20		0.20		0.05
7	MWD	965.00	1.40	63.60	189	964.94	-3.56	3.50	N	3.50	W	4.95	315.01	0.66		0.66		0.48
8	MWD	1059.00	1.60	96.50	94	1058.91	-3.88	3.86	N	1.17	W	4.04	343.18	0.93		0.93		0.21
9	MWD	1154.00	1.80	121.20	95	1153.87	-2.92	2.94	N	1.43	E	3.27	25.87	0.79		0.79		0.21
10	MWD	1248.00	0.90	121.40	94	1247.84	-1.73	1.79	N	3.32	E	3.77	61.64	0.96		0.96		-0.96
11	MWD	1342.00	1.20	112.50	94	1341.83	-0.95	1.03	N	4.86	E	4.97	78.03	0.36		0.36		0.32
12	MWD	1425.00	1.60	113.50	83	1424.80	-0.12	0.24	N	6.72	E	6.73	87.99	0.48		0.48		0.48
13	MWD	1540.00	1.60	129.70	115	1539.76	1.59	1.43	S	9.43	E	9.54	98.62	0.39		0.39		0.00
14	MWD	1634.00	1.40	156.40	94	1633.73	3.51	3.32	S	10.90	E	11.40	106.94	0.77		0.77		-0.21
15	MWD	1728.00	1.60	182.20	94	1727.70	5.88	5.68	S	11.31	E	12.66	116.68	0.74		0.74		0.21
16	MWD	1823.00	0.40	30.40	95	1822.69	6.92	6.72	S	11.43	E	13.26	120.47	2.06		2.06		-1.26
17	MWD	2012.00	1.10	21.20	189	2011.67	4.68	4.46	S	12.42	E	13.20	109.77	0.37		0.37		0.37
18	MWD	2107.00	2.60	6.50	95	2106.62	1.70	1.47	S	12.99	E	13.07	96.47	1.64		1.64		1.58
19	MWD	2201.00	3.30	4.90	94	2200.49	-3.11	3.34	N	13.46	E	13.87	76.06	0.75		0.75		0.74
20	MWD	2296.00	3.30	359.60	95	2295.33	-8.56	8.80	N	13.68	E	16.26	57.24	0.32		0.32		0.00
21	MWD	2390.00	3.30	1.00	94	2389.18	-13.97	14.21	N	13.71	E	19.74	43.96	0.09		0.09		0.00
22	MWD	2485.00	3.30	1.90	95	2484.02	-19.43	19.68	N	13.84	E	24.06	35.13	0.05		0.05		0.00
23	MWD	2579.00	3.20	4.00	94	2577.87	-24.75	25.00	N	14.12	E	28.71	29.45	0.17		0.17		-0.11
24	MWD	2673.00	3.20	357.70	94	2671.72	-29.99	30.24	N	14.20	E	33.40	25.15	0.37		0.37		0.00
25	MWD	2768.00	3.00	359.40	95	2766.58	-35.12	35.37	N	14.06	E	38.07	21.68	0.23		0.23		-0.21
26	MWD	2863.00	3.20	356.80	95	2861.45	-40.26	40.51	N	13.89	E	42.82	18.93	0.26		0.26		0.21
27	MWD	2957.00	3.20	355.60	94	2955.30	-45.50	45.74	N	13.54	E	47.70	16.49	0.07		0.07		0.00
28	MWD	3051.00	3.00	356.40	94	3049.16	-50.57	50.81	N	13.19	E	52.49	14.55	0.22		0.22		-0.21
29	MWD	3146.00	3.30	350.80	95	3144.02	-55.76	55.99	N	12.59	E	57.39	12.67	0.45		0.45		0.32
30	MWD	3240.00	3.30	346.20	94	3237.86	-61.08	61.29	N	11.51	E	62.36	10.64	0.28		0.28		0.00
31	MWD	3335.00	3.20	348.90	95	3332.71	-66.36	66.55	N	10.35	E	67.35	8.84	0.19		0.19		-0.11
32	MWD	3429.00	2.30	359.40	94	3426.60	-70.83	71.01	N	9.83	E	71.69	7.88	1.09		1.09		-0.96
33	MWD	3524.00	2.30	355.00	95	3521.52	-74.63	74.81	N	9.64	E	75.43	7.34	0.19		0.19		0.00
34	MWD	3618.00	1.80	3.80	94	3615.46	-77.99	78.17	N	9.57	E	78.75	6.98	0.63		0.63		-0.53
35	MWD	3712.00	1.60	21.10	94	3709.42	-80.67	80.86	N	10.14	E	81.50	7.15	0.58		0.58		-0.21
36	MWD	3817.00	1.10	51.80	105	3814.39	-82.64	82.85	N	11.46	E	83.64	7.88	0.82		0.82		-0.48
37	MWD	3983.00	1.20	19.30	166	3980.36	-85.24	85.48	N	13.29	E	86.51	8.84	0.39		0.39		0.06



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Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates		Closure		Dogleg Severity (d/100')	Build Rate (d/100')
								N/S (ft)	E/W (ft)	Distance (ft)	Angle (deg)		
38	MWD	4077.00	1.90	355.20	94	4074.33	-87.71	87.96 N	13.49 E	88.99	8.72	1.00	0.74
39	MWD	4172.00	2.80	354.70	95	4169.25	-91.60	91.84 N	13.14 E	92.78	8.14	0.95	0.95
40	MWD	4266.00	2.50	358.60	94	4263.15	-95.94	96.18 N	12.88 E	97.04	7.63	0.37	-0.32
41	MWD	4361.00	3.70	3.30	95	4358.01	-101.07	101.31 N	13.00 E	102.14	7.31	1.29	1.26
42	MWD	4455.00	4.40	8.20	94	4451.77	-107.65	107.91 N	13.69 E	108.77	7.23	0.83	0.74
43	MWD	4550.00	4.20	7.50	95	4546.50	-114.69	114.96 N	14.67 E	115.89	7.27	0.22	-0.21
44	MWD	4739.00	4.60	11.40	189	4734.95	-128.94	129.25 N	17.07 E	130.38	7.52	0.26	0.21
45	MWD	4833.00	4.60	9.80	94	4828.64	-136.32	136.66 N	18.45 E	137.90	7.69	0.14	0.00
46	MWD	4927.00	4.80	11.90	94	4922.33	-143.86	144.23 N	19.91 E	145.59	7.86	0.28	0.21
47	MWD	5021.00	4.80	8.00	94	5016.00	-151.57	151.97 N	21.26 E	153.45	7.97	0.35	0.00
48	MWD	5116.00	4.60	9.30	95	5110.68	-159.25	159.66 N	22.43 E	161.23	8.00	0.24	-0.21
49	MWD	5210.00	4.90	8.20	94	5204.36	-166.92	167.36 N	23.62 E	169.01	8.03	0.33	0.32
50	MWD	5304.00	5.10	5.80	94	5298.00	-175.03	175.49 N	24.61 E	177.20	7.98	0.31	0.21
51	MWD	5399.00	5.10	8.00	95	5392.62	-183.39	183.87 N	25.62 E	185.65	7.93	0.21	0.00
52	MWD	5493.00	5.30	10.20	94	5486.24	-191.78	192.28 N	26.97 E	194.16	7.99	0.30	0.21
53	MWD	5588.00	5.30	10.50	95	5580.83	-200.38	200.91 N	28.55 E	202.93	8.09	0.03	0.00
54	MWD	5682.00	4.90	8.60	94	5674.46	-208.60	209.15 N	29.94 E	211.28	8.15	0.46	-0.43
55	MWD	5777.00	4.80	5.80	95	5769.12	-216.54	217.12 N	30.95 E	219.31	8.11	0.27	-0.11
56	MWD	5871.00	4.80	9.50	94	5862.79	-224.32	224.91 N	32.00 E	227.17	8.10	0.33	0.00
57	MWD	5965.00	4.60	11.20	94	5956.47	-231.87	232.48 N	33.38 E	234.87	8.17	0.26	-0.21
58	MWD	6060.00	3.50	14.50	95	6051.23	-238.38	239.03 N	34.84 E	241.56	8.29	1.18	-1.16
59	MWD	6154.00	3.30	17.90	94	6145.07	-243.71	244.38 N	36.39 E	247.08	8.47	0.30	-0.21
60	MWD	6248.00	2.50	9.60	94	6238.95	-248.28	248.98 N	37.57 E	251.80	8.58	0.96	-0.85
61	MWD	6342.00	2.30	3.10	94	6332.87	-252.18	252.88 N	38.01 E	255.72	8.55	0.36	-0.21
62	MWD	6437.00	2.30	354.30	95	6427.79	-255.98	256.68 N	37.93 E	259.47	8.40	0.37	0.00
63	MWD	6531.00	2.10	359.60	94	6521.72	-259.58	260.28 N	37.73 E	263.00	8.25	0.30	-0.21
64	MWD	6625.00	1.90	6.60	94	6615.66	-262.85	263.55 N	37.89 E	266.26	8.18	0.34	-0.21
65	MWD	6720.00	1.80	6.80	95	6710.61	-265.89	266.60 N	38.25 E	269.33	8.17	0.11	-0.11
66	MWD	6814.00	1.20	14.20	94	6804.58	-268.30	269.02 N	38.67 E	271.78	8.18	0.67	-0.64
67	MWD	6909.00	0.90	28.10	95	6899.56	-269.91	270.64 N	39.26 E	273.47	8.25	0.41	-0.32
68	MWD	7003.00	0.50	5.90	94	6993.56	-270.97	271.70 N	39.65 E	274.58	8.30	0.51	-0.43
69	MWD	7098.00	0.70	24.60	95	7088.55	-271.90	272.64 N	39.94 E	275.55	8.33	0.29	0.21
70	MWD	7192.00	0.40	56.40	94	7182.55	-272.60	273.34 N	40.45 E	276.32	8.42	0.44	-0.32
71	MWD	7287.00	0.40	21.90	95	7277.55	-273.08	273.83 N	40.85 E	276.86	8.48	0.25	0.00
72	MWD	7381.00	0.20	72.70	94	7371.54	-273.43	274.19 N	41.13 E	277.26	8.53	0.33	-0.21
73	MWD	7476.00	0.20	125.60	95	7466.54	-273.38	274.14 N	41.42 E	277.25	8.59	0.19	0.00
74	MWD	7571.00	0.70	143.40	95	7561.54	-272.81	273.58 N	41.90 E	276.77	8.71	0.54	0.53
75	MWD	7665.00	0.70	156.20	94	7655.53	-271.81	272.59 N	42.48 E	275.88	8.86	0.17	0.00
76	MWD	7765.00	5.80	176.60	100	7755.34	-266.19	266.99 N	43.02 E	270.43	9.15	5.15	5.10
77	MWD	7812.00	11.80	181.00	47	7801.77	-259.01	259.80 N	43.08 E	263.35	9.41	12.84	12.77
78	MWD	7860.00	16.40	181.00	48	7848.31	-247.33	248.11 N	42.88 E	251.79	9.80	9.58	9.58



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Survey #	Survey Tool Type	Survey Depth (ft)	Inclination (deg)	Azimuth (deg)	Course Length (ft)	True Vertical Depth (ft)	Vertical Section (ft)	Coordinates N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Angle (deg)	Dogleg Severity (d/100')	Build Rate (d/100')
79	MWD	7907.00	20.10	180.80	47	7892.94	-232.62	233.40 N	42.65 E	237.26	10.35	7.87	7.87
80	MWD	7955.00	23.90	178.60	48	7937.43	-214.65	215.43 N	42.77 E	219.63	11.23	8.10	7.92
81	MWD	8002.00	29.00	177.80	47	7979.50	-193.72	194.51 N	43.44 E	199.30	12.59	10.88	10.85
82	MWD	8049.00	34.70	178.20	47	8019.41	-168.93	169.73 N	44.30 E	175.42	14.63	12.14	12.13
83	MWD	8096.00	39.20	178.90	47	8056.96	-140.69	141.50 N	45.00 E	148.48	17.64	9.62	9.57
84	MWD	8144.00	42.10	179.10	48	8093.37	-109.42	110.24 N	45.55 E	119.28	22.45	6.05	6.04
85	MWD	8191.00	46.30	177.10	47	8127.06	-76.67	77.50 N	46.66 E	90.46	31.05	9.41	8.94
86	MWD	8238.00	48.60	182.60	47	8158.86	-42.08	42.90 N	46.72 E	63.43	47.44	9.91	4.89
87	MWD	8285.00	50.00	181.90	47	8189.50	-6.51	7.30 N	45.32 E	45.90	80.85	3.19	2.98
88	MWD	8333.00	53.10	181.70	48	8219.35	31.04	30.27 S	44.14 E	53.52	124.44	6.47	6.46
89	MWD	8380.00	58.40	181.00	47	8245.79	69.84	69.09 S	43.23 E	81.51	147.97	11.34	11.28
90	MWD	8427.00	62.50	179.10	47	8268.97	110.71	109.97 S	43.21 E	118.15	158.55	9.41	8.72
91	MWD	8475.00	66.30	178.00	48	8289.70	153.98	153.23 S	44.31 E	159.51	163.87	8.18	7.92
92	MWD	8521.00	70.60	176.80	46	8306.60	196.74	195.96 S	46.26 E	201.35	166.72	9.66	9.35
93	MWD	8568.00	73.00	176.30	47	8321.28	241.35	240.53 S	48.95 E	245.46	168.50	5.21	5.11
94	MWD	8616.00	77.20	175.90	48	8333.61	287.66	286.80 S	52.10 E	291.49	169.70	8.79	8.75
95	MWD	8663.00	79.00	175.70	47	8343.31	333.58	332.66 S	55.47 E	337.25	170.53	3.85	3.83
96	MWD	8710.00	84.60	177.50	47	8350.01	380.04	379.08 S	58.22 E	383.52	171.27	12.50	11.91
97	MWD	8746.00	90.10	180.00	36	8351.67	415.98	415.01 S	59.01 E	419.19	171.91	16.78	15.28
98	MWD	8840.00	93.40	178.40	94	8348.80	509.92	508.95 S	60.32 E	512.51	173.24	3.90	3.51
99	MWD	8935.00	92.20	176.80	95	8344.16	604.77	603.74 S	64.29 E	607.16	173.92	2.10	-1.26
100	MWD	9029.00	86.20	179.10	94	8345.47	698.70	697.63 S	67.65 E	700.90	174.46	6.84	-6.38
101	MWD	9123.00	87.80	178.60	94	8350.39	792.57	791.47 S	69.54 E	794.52	174.98	1.78	1.70
102	MWD	9218.00	89.20	177.30	95	8352.88	887.51	886.38 S	72.93 E	889.37	175.30	2.01	1.47
103	MWD	9312.00	89.90	178.20	94	8353.62	981.49	980.30 S	76.62 E	983.29	175.53	1.21	0.74
104	MWD	9407.00	89.90	178.70	95	8353.78	1076.48	1075.26 S	79.19 E	1078.18	175.79	0.53	0.00
105	MWD	9501.00	91.30	177.50	94	8352.80	1170.46	1169.20 S	82.31 E	1172.10	175.97	1.96	1.49
106	MWD	9595.00	91.70	177.30	94	8350.34	1264.39	1263.07 S	86.57 E	1266.04	176.08	0.48	0.43
107	MWD	9689.00	89.90	178.70	94	8349.03	1358.36	1357.00 S	89.85 E	1359.97	176.21	2.43	-1.91
108	MWD	9784.00	89.90	179.30	95	8349.19	1453.36	1451.99 S	91.51 E	1454.87	176.39	0.63	0.00
109	MWD	9878.00	90.30	180.80	94	8349.03	1547.34	1545.98 S	91.43 E	1548.68	176.62	1.65	0.43
110	MWD	9973.00	90.80	181.40	95	8348.11	1642.27	1640.96 S	89.60 E	1643.41	176.87	0.82	0.53
111	MWD	10067.00	91.70	181.00	94	8346.06	1736.18	1734.92 S	87.64 E	1737.13	177.11	1.05	0.96
112	MWD	10161.00	90.10	180.80	94	8344.59	1830.12	1828.89 S	86.16 E	1830.92	177.30	1.72	-1.70
113	MWD	10256.00	89.20	180.10	95	8345.17	1925.08	1923.88 S	85.41 E	1925.78	177.46	1.20	-0.95
114	MWD	10350.00	90.80	179.80	94	8345.17	2019.07	2017.88 S	85.50 E	2019.69	177.57	1.73	1.70
115	MWD	10445.00	85.50	175.90	95	8348.24	2113.95	2112.71 S	89.05 E	2114.59	177.59	6.92	-5.58
116	MWD	10539.00	85.30	176.40	94	8355.77	2207.53	2206.20 S	95.34 E	2208.26	177.53	0.57	-0.21
117	MWD	10570.00	87.30	177.50	31	8357.77	2238.44	2237.09 S	96.99 E	2239.19	177.52	7.36	6.45
118	MWD	10601.00	88.70	179.60	31	8358.86	2269.42	2268.06 S	97.77 E	2270.16	177.53	8.14	4.52
119	MWD	10633.00	89.70	179.80	32	8359.30	2301.41	2300.05 S	97.94 E	2302.14	177.56	3.19	3.13

