



WELL DETAILS: 697-26A-12

Ground Level: 8400' & RKB 24' @ 8424.00ft (H&P 324)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1617787.88 2242958.41 39° 29' 56.083 N 108° 10' 59.299 W K

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well 697-26A-12 - Slot K, True North
Vertical (TVD) Reference: GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
Section (VS) Reference: Slot - K(0.00N, 0.00E)
Measured Depth Reference: GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
Calculation Method: Minimum Curvature
Local North: True
Location: Sec 26 T6S R97W

PROJECT DETAILS: Garfield County, CO NAD 83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Central Zone

Design: OH (697-26A-12/OH)

Created By: Rex Hall Date: 2010-06-02



Scientific Drilling
Rocky Mountain Operations

Marathon Oil Co.

Garfield County, CO NAD 83

697-26A Pad

697-26A-12 - Slot K

OH

Design: OH

Standard Survey Report

02 June, 2010



Company:	Marathon Oil Co.	Local Co-ordinate Reference:	Well 697-26A-12 - Slot K
Project:	Garfield County, CO NAD 83	TVD Reference:	GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
Site:	697-26A Pad	MD Reference:	GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
Well:	697-26A-12	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.16 Multi-User Db

Project	Garfield County, CO NAD 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		697-26A Pad, Sec 26 T6S R97W			
Site Position:		Northing:	1,617,794.11 ft	Latitude:	39° 29' 56.147 N
From:	Map	Easting:	2,242,966.23 ft	Longitude:	108° 10' 59.202 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.69 °

Well	697-26A-12 - Slot K, 848' FNL & 1434' FWL					
Well Position	+N/-S	0.00 ft	Northing:	1,617,787.88 ft	Latitude:	39° 29' 56.083 N
	+E/-W	0.00 ft	Easting:	2,242,958.41 ft	Longitude:	108° 10' 59.299 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,400.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2009/12/31	10.60	65.76	52,382

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	24.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	24.00	0.00	0.00	302.04	

Survey Program	Date	2010/06/02			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
27.74	134.75	Survey #1 - Slot K Conductor Gyro (OH)	Standard Keeper 103	Standard Wireline Keeper ver 1.0.3	
154.00	2,190.00	Survey #2 - Surface MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	
2,305.00	9,030.00	Survey #3 - Production MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Bulld Rate (°/100ft)	Turn Rate (°/100ft)
24.00	0.00	0.00	24.00	0.00	0.00	0.00	0.00	0.00	0.00
27.74	0.11	212.37	27.74	0.00	0.00	0.00	2.94	2.94	0.00
First SDI Conductor Gyro Survey									
29.00	0.11	216.52	29.00	-0.01	0.00	0.00	0.63	0.00	329.37
34.00	0.15	228.80	34.00	-0.01	-0.01	0.00	0.97	0.80	245.60
39.00	0.17	238.19	39.00	-0.02	-0.02	0.01	0.66	0.40	187.80
44.00	0.22	237.68	44.00	-0.03	-0.04	0.01	1.00	1.00	-10.20
49.00	0.24	237.16	49.00	-0.04	-0.05	0.02	0.40	0.40	-10.40
54.00	0.25	235.54	54.00	-0.05	-0.07	0.03	0.24	0.20	-32.40
59.00	0.24	239.28	59.00	-0.06	-0.09	0.04	0.38	-0.20	74.80
64.00	0.13	283.84	64.00	-0.07	-0.10	0.05	3.47	-2.20	891.20

Company:	Marathon Oil Co.	Local Co-ordinate Reference:	Well 697-26A-12 - Slot K
Project:	Garfield County, CO NAD 83	TVD Reference:	GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
Site:	697-26A Pad	MD Reference:	GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
Well:	697-26A-12	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 2003.16 Multi-User Db

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
69.00	0.14	336.61	69.00	-0.06	-0.11	0.06	2.41	0.20	1,055.40
74.00	0.13	341.13	74.00	-0.05	-0.12	0.07	0.29	-0.20	90.40
79.00	0.15	351.64	79.00	-0.04	-0.12	0.08	0.65	0.40	210.20
84.00	0.14	356.23	84.00	-0.03	-0.12	0.09	0.31	-0.20	91.80
89.00	0.19	9.47	89.00	-0.01	-0.12	0.09	1.25	1.00	264.80
94.00	0.21	15.72	94.00	0.00	-0.12	0.10	0.59	0.40	125.00
99.00	0.18	25.88	99.00	0.02	-0.11	0.10	0.91	-0.60	203.20
104.00	0.18	91.00	104.00	0.03	-0.10	0.10	3.87	0.00	1,302.40
109.00	0.29	117.38	109.00	0.02	-0.08	0.08	3.03	2.20	527.60
114.00	0.27	117.54	114.00	0.01	-0.06	0.05	0.40	-0.40	3.20
119.00	0.24	111.15	119.00	0.00	-0.04	0.03	0.83	-0.60	-127.80
124.00	0.20	105.99	124.00	0.00	-0.02	0.01	0.89	-0.80	-103.20
129.00	0.15	107.83	129.00	-0.01	0.00	0.00	1.01	-1.00	36.80
134.00	0.17	66.44	134.00	-0.01	0.01	-0.01	2.29	0.40	-827.80
134.75	0.17	65.55	134.75	-0.01	0.01	-0.01	0.35	0.00	-118.67
Last SDI Conductor Gyro Survey									
154.00	0.09	43.45	154.00	0.02	0.05	-0.03	0.48	-0.42	-114.81
First SDI Surface MWD Survey									
186.00	0.26	14.36	186.00	0.10	0.08	-0.01	0.58	0.53	-90.91
217.00	0.53	324.87	217.00	0.29	0.02	0.14	1.33	0.87	-159.65
248.00	1.76	320.00	247.99	0.77	-0.37	0.72	3.98	3.97	-15.71
279.00	2.37	312.75	278.97	1.57	-1.15	1.81	2.14	1.97	-23.39
309.00	2.81	313.62	308.94	2.50	-2.14	3.14	1.47	1.47	2.90
340.00	3.52	318.72	339.89	3.74	-3.31	4.79	2.46	2.29	16.45
370.00	3.96	315.96	369.83	5.18	-4.64	6.68	1.58	1.47	-9.20
401.00	4.57	314.50	400.74	6.81	-6.27	8.93	2.00	1.97	-4.71
431.00	5.01	310.99	430.64	8.51	-8.11	11.39	1.76	1.47	-11.70
462.00	5.10	308.09	461.52	10.25	-10.21	14.09	0.87	0.29	-9.35
523.00	5.72	300.79	522.25	13.47	-14.96	19.83	1.52	1.02	-11.97
614.00	6.24	294.46	612.75	17.84	-23.36	29.27	0.92	0.57	-6.96
705.00	6.77	297.37	703.17	22.36	-32.62	39.51	0.69	0.58	3.20
796.00	6.51	312.22	793.56	28.29	-41.21	49.94	1.90	-0.29	16.32
888.00	6.16	310.37	885.00	34.99	-48.83	59.96	0.44	-0.38	-2.01
980.00	5.80	305.10	976.50	40.86	-56.39	69.48	0.71	-0.39	-5.73
1,072.00	6.42	303.17	1,067.98	46.35	-64.50	79.27	0.71	0.67	-2.10
1,165.00	6.16	299.04	1,160.42	51.62	-73.22	89.45	0.56	-0.28	-4.44
1,260.00	6.60	305.36	1,254.83	57.25	-82.13	99.99	0.87	0.46	6.65
1,353.00	6.07	304.31	1,347.26	63.11	-90.55	110.24	0.58	-0.57	-1.13
1,448.00	6.24	309.23	1,441.72	69.21	-98.69	120.38	0.58	0.18	5.18
1,542.00	6.60	313.71	1,535.13	76.17	-106.56	130.74	0.66	0.38	4.77
1,636.00	5.98	308.44	1,628.56	82.95	-114.30	140.89	0.90	-0.66	-5.61
1,730.00	6.07	307.38	1,722.04	89.01	-122.08	150.71	0.15	0.10	-1.13
1,823.00	6.41	310.99	1,814.49	95.40	-129.91	160.73	0.56	0.37	3.88
1,918.00	6.77	316.70	1,908.86	102.96	-137.75	171.39	0.79	0.38	6.01
2,012.00	5.80	314.50	2,002.30	110.32	-144.94	181.39	1.06	-1.03	-2.34
2,106.00	5.63	306.42	2,095.83	116.39	-152.04	190.62	0.87	-0.18	-8.60
2,190.00	5.72	298.95	2,179.42	120.86	-159.01	198.91	0.89	0.11	-8.89
Last SDI Surface MWD Survey									
2,305.00	6.16	289.02	2,293.81	125.64	-169.86	210.64	0.97	0.38	-8.63
First SDI Production MWD Survey									
2,398.00	5.28	300.70	2,386.35	129.45	-178.26	219.78	1.56	-0.95	12.56
2,493.00	5.01	309.49	2,480.97	134.32	-185.22	228.27	0.88	-0.28	9.25
2,587.00	7.12	319.07	2,574.44	141.34	-192.20	237.91	2.48	2.24	10.19
2,681.00	7.21	316.53	2,667.70	150.02	-200.08	249.19	0.35	0.10	-2.70

Company: Marathon Oil Co.
Project: Garfield County, CO NAD 83
Site: 697-26A Pad
Well: 697-26A-12
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 697-26A-12 - Slot K
TVD Reference: GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
MD Reference: GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Multi-User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Buird Rate (°/100ft)	Turn Rate (°/100ft)
2,776.00	6.77	312.22	2,762.00	158.11	-208.33	260.47	0.72	-0.46	-4.54
2,871.00	6.60	310.99	2,856.35	165.45	-216.60	271.38	0.23	-0.18	-1.29
2,965.00	6.07	308.35	2,949.78	172.08	-224.57	281.65	0.64	-0.56	-2.81
3,060.00	5.72	302.02	3,044.28	177.71	-232.52	291.38	0.78	-0.37	-6.66
3,154.00	6.60	307.30	3,137.73	183.46	-240.79	301.44	1.11	0.94	5.62
3,247.00	5.89	303.61	3,230.18	189.34	-249.02	311.54	0.88	-0.76	-3.97
3,341.00	7.83	305.01	3,323.50	195.69	-258.28	322.75	2.07	2.06	1.49
3,436.00	8.00	312.66	3,417.60	203.88	-268.44	335.71	1.12	0.18	8.05
3,530.00	7.74	312.39	3,510.71	212.58	-277.93	348.37	0.28	-0.28	-0.29
3,624.00	6.60	304.84	3,603.98	219.93	-287.04	359.99	1.57	-1.21	-8.03
3,718.00	6.86	317.58	3,697.34	227.16	-295.26	370.80	1.61	0.28	13.55
3,811.00	6.51	313.89	3,789.71	234.92	-302.80	381.31	0.60	-0.38	-3.97
3,906.00	6.51	313.71	3,884.09	242.37	-310.58	391.85	0.02	0.00	-0.19
4,000.00	5.98	314.42	3,977.54	249.48	-317.93	401.86	0.57	-0.56	0.76
4,095.00	6.16	313.71	4,072.00	256.47	-325.15	411.68	0.21	0.19	-0.75
4,189.00	5.89	311.69	4,165.48	263.16	-332.39	421.37	0.37	-0.29	-2.15
4,283.00	5.63	308.53	4,259.01	269.24	-339.60	430.71	0.44	-0.28	-3.36
4,376.00	5.63	313.19	4,351.56	275.21	-346.50	439.72	0.49	0.00	5.01
4,471.00	5.54	310.02	4,446.11	281.34	-353.41	448.83	0.34	-0.09	-3.34
4,565.00	5.10	305.98	4,539.71	286.72	-360.26	457.49	0.61	-0.47	-4.30
4,659.00	5.89	319.25	4,633.28	292.83	-366.79	466.27	1.59	0.84	14.12
4,752.00	5.80	317.67	4,725.79	299.91	-373.07	475.35	0.20	-0.10	-1.70
4,846.00	5.10	316.17	4,819.37	306.44	-379.16	483.98	0.76	-0.74	-1.60
4,941.00	4.57	307.30	4,914.03	311.78	-385.10	491.84	0.96	-0.56	-9.34
5,035.00	4.57	297.80	5,007.73	315.80	-391.39	499.31	0.80	0.00	-10.11
5,130.00	5.54	310.37	5,102.37	320.53	-398.23	507.62	1.54	1.02	13.23
5,225.00	5.28	308.53	5,196.94	326.22	-405.14	516.50	0.33	-0.27	-1.94
5,319.00	5.19	304.66	5,290.55	331.34	-412.02	525.04	0.39	-0.10	-4.12
5,413.00	4.84	305.10	5,384.19	336.03	-418.77	533.25	0.37	-0.37	0.47
5,508.00	4.92	307.47	5,478.85	340.82	-425.28	541.31	0.23	0.08	2.49
5,602.00	5.01	308.79	5,572.49	345.84	-431.68	549.40	0.15	0.10	1.40
5,697.00	4.66	305.98	5,667.16	350.71	-438.03	557.37	0.44	-0.37	-2.96
5,791.00	4.75	310.46	5,760.84	355.48	-444.08	565.03	0.40	0.10	4.77
5,885.00	4.57	302.29	5,854.53	360.00	-450.21	572.62	0.73	-0.19	-8.69
5,979.00	2.64	306.24	5,948.34	363.28	-455.12	578.53	2.07	-2.05	4.20
6,074.00	3.43	293.06	6,043.21	365.69	-459.50	583.52	1.10	0.83	-13.87
6,169.00	1.67	299.91	6,138.11	367.49	-463.32	587.71	1.88	-1.85	7.21
6,264.00	0.26	64.02	6,233.10	368.28	-464.32	588.98	1.92	-1.48	130.64
6,359.00	0.35	333.49	6,328.09	368.63	-464.26	589.11	0.46	0.09	-95.29
6,454.00	0.18	282.78	6,423.09	368.92	-464.54	589.50	0.29	-0.18	-53.38
6,548.00	0.35	283.48	6,517.09	369.02	-464.96	589.91	0.18	0.18	0.74
6,642.00	0.53	329.27	6,611.09	369.46	-465.46	590.57	0.40	0.19	48.71
6,737.00	0.88	312.48	6,706.08	370.33	-466.22	591.68	0.42	0.37	-17.67
6,832.00	1.41	300.79	6,801.06	371.43	-467.76	593.56	0.61	0.56	-12.31
6,926.00	1.06	267.13	6,895.04	371.97	-469.63	595.43	0.84	-0.37	-35.81
7,019.00	1.41	260.54	6,988.02	371.74	-471.61	596.99	0.41	0.38	-7.09
7,113.00	0.97	275.48	7,082.00	371.63	-473.55	598.57	0.57	-0.47	15.89
7,207.00	1.67	242.96	7,175.98	371.08	-475.56	599.99	1.06	0.74	-34.60
7,302.00	1.85	251.31	7,270.93	369.96	-478.24	601.67	0.33	0.19	8.79
7,396.00	1.67	249.55	7,364.89	369.00	-480.97	603.46	0.20	-0.19	-1.87
7,491.00	2.02	259.13	7,459.84	368.20	-483.91	605.53	0.49	0.37	10.08
7,586.00	1.93	268.54	7,554.78	367.84	-487.15	608.09	0.35	-0.09	9.91
7,680.00	1.93	267.57	7,648.73	367.73	-490.31	610.72	0.03	0.00	-1.03
7,775.00	2.29	266.69	7,743.66	367.56	-493.81	613.58	0.38	0.38	-0.93
7,869.00	2.55	263.44	7,837.58	367.21	-497.76	616.75	0.31	0.28	-3.46

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Project: Garfield County, CO NAD 83
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Wellbore: OH
Design: OH

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MD Reference: GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
North Reference: True
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Database: EDM 2003.16 Multi-User Db

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Bulld Rate (°/100ft)	Turn Rate (°/100ft)
7,964.00	2.81	266.60	7,932.48	366.83	-502.18	620.30	0.31	0.27	3.33
8,057.00	3.25	264.76	8,025.35	366.45	-507.08	624.25	0.48	0.47	-1.98
8,152.00	3.43	262.47	8,120.18	365.83	-512.58	628.59	0.24	0.19	-2.41
8,246.00	3.69	261.68	8,214.00	365.03	-518.36	633.06	0.28	0.28	-0.84
8,341.00	3.87	265.55	8,308.80	364.34	-524.58	637.97	0.33	0.19	4.07
8,435.00	3.96	266.95	8,402.58	363.92	-530.99	643.17	0.14	0.10	1.49
8,530.00	4.66	265.11	8,497.31	363.41	-538.11	648.94	0.75	0.74	-1.94
8,625.00	4.92	262.74	8,591.98	362.57	-546.00	655.18	0.34	0.27	-2.49
8,719.00	4.66	267.31	8,685.65	361.88	-553.81	661.43	0.49	-0.28	4.86
8,814.00	4.48	271.09	8,780.35	361.77	-561.37	667.79	0.37	-0.19	3.98
8,908.00	4.40	271.53	8,874.06	361.94	-568.65	674.04	0.09	-0.09	0.47
8,982.00	4.48	268.54	8,947.84	361.94	-574.37	678.90	0.33	0.11	-4.04
Last SDI Production MWD Survey									
9,030.00	4.48	268.54	8,995.70	361.84	-578.12	682.02	0.00	0.00	0.00
Projection To TD									

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
697-26A-12 PBHL	0.00	0.00	9,052.00	328.68	-545.14	1,618,132.51	2,242,423.21	39° 29' 59.331 N	108° 11' 6.254 W
- actual wellpath misses target center by 73.20ft at 9030.00ft MD (8995.70 TVD, 361.84 N, -578.12 E)									
- Rectangle (sides W100.00 H200.00 D0.00)									

Checked By: _____ Approved By: _____ Date: _____