



WELL DETAILS: 697-26A-14

Ground Level: 8400' & RKB 24' @ 8424.00ft (H&P 324)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1617776.14 2242967.76 39° 29' 55.970 N 108° 10' 59.175 W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well 697-26A-14 - Slot I, True North
Vertical (TVD) Reference: GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
Section (VS) Reference: Slot - I(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-14/OH)

Created By: Rex Hall Date: 2010-06-01



Scientific Drilling
Rocky Mountain Operations

Marathon Oil Co.

Garfield County, CO NAD 83

697-26A Pad

697-26A-14 - Slot I

OH

Design: OH

Standard Survey Report

01 June, 2010



Company:	Marathon Oil Co.	Local Co-ordinate Reference:	Well 697-26A-14 - Slot I
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-14	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-14 - Slot I, 859' FNL & 1424' FWL					
Well Position	+N/-S	0.00 ft	Northing:	1,617,776.14 ft	Latitude:	39° 29' 55.970 N
	+E/-W	0.00 ft	Easting:	2,242,967.76 ft	Longitude:	108° 10' 59.175 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) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	24.00	0.00	0.00	245.91	

Survey Program	Date	2010/06/01			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
28.55	134.50	Survey #1 - Slot I Conductor Gyro (OH)	Standard Keeper 103	Standard Wireline Keeper ver 1.0.3	
161.00	434.00	Survey #2 - Surface Wireline Gyro (OH)	Standard Keeper 103	Standard Wireline Keeper ver 1.0.3	
525.00	2,160.00	Survey #3 - Surface MWD (OH)	MWD SDI	MWD - Standard ver 1.0.1	
2,209.00	9,010.00	Survey #4 - 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)	Build 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
28.55	1.09	106.83	28.55	-0.01	0.04	-0.03	23.96	23.96	0.00
First SDI Conductor Gyro Survey									
29.00	1.09	106.72	29.00	-0.02	0.05	-0.04	0.47	0.00	-24.44
34.00	1.05	106.00	34.00	-0.04	0.14	-0.11	0.84	-0.80	-14.40
39.00	1.05	107.24	39.00	-0.07	0.23	-0.18	0.45	0.00	24.80
44.00	1.06	108.75	44.00	-0.10	0.31	-0.25	0.59	0.20	30.20
49.00	1.03	109.93	49.00	-0.13	0.40	-0.31	0.74	-0.60	23.60
54.00	1.00	110.88	54.00	-0.16	0.48	-0.38	0.69	-0.60	19.00
59.00	0.96	110.99	58.99	-0.19	0.56	-0.44	0.80	-0.80	2.20

Company: Marathon Oil Co.
Project: Garfield County, CO NAD 83
Site: 697-26A Pad
Well: 697-26A-14
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well 697-26A-14 - Slot I
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)	Build Rate (°/100ft)	Turn Rate (°/100ft)
64.00	0.90	110.70	63.99	-0.22	0.64	-0.50	1.20	-1.20	-5.80
69.00	0.90	109.68	68.99	-0.24	0.71	-0.55	0.32	0.00	-20.40
74.00	0.92	111.44	73.99	-0.27	0.79	-0.61	0.69	0.40	35.20
79.00	0.92	112.03	78.99	-0.30	0.86	-0.66	0.19	0.00	11.80
84.00	0.92	114.78	83.99	-0.33	0.94	-0.72	0.88	0.00	55.00
89.00	0.92	115.64	88.99	-0.37	1.01	-0.77	0.28	0.00	17.20
94.00	0.91	115.74	93.99	-0.40	1.08	-0.82	0.20	-0.20	2.00
99.00	0.90	112.99	98.99	-0.43	1.15	-0.87	0.89	-0.20	-55.00
104.00	0.93	115.29	103.99	-0.47	1.22	-0.93	0.95	0.60	46.00
109.00	0.98	118.35	108.99	-0.50	1.30	-0.98	1.43	1.00	61.20
114.00	0.98	122.44	113.99	-0.55	1.37	-1.03	1.40	0.00	81.80
119.00	0.91	126.03	118.99	-0.59	1.44	-1.07	1.83	-1.40	71.80
124.00	0.82	128.03	123.99	-0.64	1.50	-1.11	1.90	-1.80	40.00
129.00	0.74	125.50	128.99	-0.68	1.56	-1.14	1.74	-1.60	-50.60
134.00	0.74	130.65	133.99	-0.72	1.61	-1.17	1.33	0.00	103.00
134.50	0.82	139.09	134.49	-0.73	1.61	-1.18	27.96	16.00	1,688.00
Last SDI Conductor Gyro Survey									
161.00	0.59	122.29	160.98	-0.94	1.85	-1.31	1.16	-0.87	-63.40
First SDI Surface Wireline Gyro Survey									
192.00	0.40	171.74	191.98	-1.13	2.00	-1.36	1.45	-0.61	159.52
223.00	0.70	219.91	222.98	-1.39	1.90	-1.16	1.70	0.97	155.39
253.00	1.76	234.76	252.97	-1.79	1.40	-0.55	3.66	3.53	49.50
284.00	2.57	238.83	283.95	-2.43	0.42	0.61	2.66	2.61	13.13
314.00	3.41	240.52	313.91	-3.21	-0.93	2.16	2.82	2.80	5.63
345.00	3.80	238.44	344.85	-4.21	-2.61	4.10	1.33	1.26	-6.71
376.00	4.21	239.47	375.77	-5.32	-4.47	6.25	1.34	1.32	3.32
406.00	4.84	242.55	405.68	-6.46	-6.54	8.61	2.25	2.10	10.27
434.00	4.92	239.18	433.58	-7.62	-8.62	10.98	1.06	0.29	-12.04
Last SDI Surface Wireline Gyro Survey									
525.00	5.89	236.02	524.17	-12.23	-15.84	19.45	1.11	1.07	-3.47
First SDI Surface MWD Survey									
616.00	7.12	233.64	614.59	-18.19	-24.26	29.57	1.38	1.35	-2.62
707.00	7.39	242.61	704.86	-24.22	-33.99	40.92	1.28	0.30	9.86
798.00	7.83	241.38	795.06	-29.88	-44.63	52.94	0.52	0.48	-1.35
890.00	8.09	243.49	886.17	-35.77	-55.93	65.66	0.43	0.28	2.29
982.00	8.44	238.21	977.22	-42.22	-67.46	78.81	0.91	0.38	-5.74
1,074.00	7.39	245.69	1,068.34	-48.21	-78.59	91.42	1.60	-1.14	8.13
1,168.00	6.68	243.75	1,161.63	-53.12	-89.00	102.93	0.80	-0.76	-2.06
1,262.00	7.91	241.55	1,254.87	-58.62	-99.59	114.84	1.34	1.31	-2.34
1,356.00	8.44	242.79	1,347.92	-64.86	-111.41	128.18	0.59	0.56	1.32
1,450.00	8.00	246.21	1,440.95	-70.65	-123.53	141.61	0.70	-0.47	3.64
1,544.00	4.57	252.54	1,534.37	-74.41	-133.09	151.88	3.72	-3.65	6.73
1,636.00	3.69	254.30	1,626.13	-76.31	-139.44	158.45	0.97	-0.96	1.91
1,730.00	5.10	244.19	1,719.86	-78.95	-146.12	165.61	1.71	1.50	-10.76
1,824.00	5.45	239.80	1,813.46	-83.02	-153.73	174.23	0.57	0.37	-4.67
1,918.00	5.10	234.79	1,907.06	-87.67	-161.01	182.77	0.62	-0.37	-5.33
2,012.00	5.10	241.20	2,000.69	-92.09	-168.08	191.03	0.61	0.00	6.82
2,107.00	4.57	242.43	2,095.35	-95.88	-175.14	199.02	0.57	-0.56	1.29
2,160.00	4.66	241.03	2,148.18	-97.90	-178.89	203.27	0.27	0.17	-2.64
Last SDI Surface MWD Survey									
2,209.00	4.84	242.26	2,197.01	-99.82	-182.46	207.32	0.42	0.37	2.51
First SDI Production MWD Survey									
2,304.00	5.72	230.39	2,291.61	-104.71	-189.66	215.88	1.47	0.93	-12.49
2,398.00	4.13	231.45	2,385.26	-109.80	-195.91	223.67	1.69	-1.69	1.13

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Project: Garfield County, CO NAD 83
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Well: 697-26A-14
Wellbore: OH
Design: OH

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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)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,492.00	4.57	244.54	2,478.99	-113.52	-201.94	230.69	1.15	0.47	13.93
2,586.00	4.57	243.05	2,572.69	-116.83	-208.66	238.17	0.13	0.00	-1.59
2,681.00	4.57	239.97	2,667.39	-120.44	-215.31	245.72	0.26	0.00	-3.24
2,775.00	4.13	244.19	2,761.12	-123.79	-221.60	252.83	0.58	-0.47	4.49
2,870.00	3.69	244.45	2,855.90	-126.60	-227.44	259.30	0.46	-0.46	0.27
2,965.00	4.40	249.55	2,950.66	-129.19	-233.61	265.99	0.84	0.75	5.37
3,059.00	3.87	244.98	3,044.42	-131.79	-239.86	272.77	0.66	-0.56	-4.86
3,154.00	4.92	244.28	3,139.13	-134.91	-246.44	280.04	1.11	1.11	-0.74
3,247.00	5.01	247.09	3,231.79	-138.22	-253.77	288.09	0.28	0.10	3.02
3,341.00	5.01	240.94	3,325.43	-141.82	-261.14	296.28	0.57	0.00	-6.54
3,435.00	4.48	236.02	3,419.11	-145.86	-267.77	303.99	0.71	-0.56	-5.23
3,529.00	4.13	225.56	3,512.84	-150.28	-273.24	310.78	0.91	-0.37	-11.13
3,623.00	4.31	241.47	3,606.59	-154.34	-278.76	317.47	1.26	0.19	16.93
3,717.00	4.04	246.74	3,700.34	-157.34	-284.90	324.31	0.50	-0.29	5.61
3,810.00	5.10	241.73	3,793.04	-160.59	-291.55	331.70	1.22	1.14	-5.39
3,905.00	6.33	243.58	3,887.57	-164.92	-299.96	341.15	1.31	1.29	1.95
4,000.00	5.45	241.47	3,982.07	-169.40	-308.61	350.88	0.95	-0.93	-2.22
4,095.00	5.19	244.63	4,076.66	-173.40	-316.46	359.67	0.41	-0.27	3.33
4,189.00	5.01	244.19	4,170.29	-177.01	-324.00	368.03	0.20	-0.19	-0.47
4,283.00	4.66	241.29	4,263.95	-180.63	-331.04	375.94	0.45	-0.37	-3.09
4,376.00	3.96	240.41	4,356.69	-184.03	-337.15	382.90	0.76	-0.75	-0.95
4,471.00	4.13	236.11	4,451.45	-187.56	-342.84	389.53	0.37	0.18	-4.53
4,564.00	4.48	241.73	4,544.19	-191.14	-348.82	396.46	0.59	0.38	6.04
4,658.00	4.04	241.12	4,637.93	-194.48	-354.95	403.42	0.47	-0.47	-0.65
4,752.00	5.36	247.88	4,731.61	-197.73	-361.92	411.11	1.52	1.40	7.19
4,846.00	5.01	250.70	4,825.23	-200.74	-369.86	419.58	0.46	-0.37	3.00
4,940.00	3.96	258.34	4,918.94	-202.76	-376.91	426.84	1.28	-1.12	8.13
5,035.00	4.66	248.50	5,013.67	-204.83	-383.72	433.90	1.07	0.74	-10.36
5,129.00	4.31	244.89	5,107.38	-207.73	-390.47	441.25	0.48	-0.37	-3.84
5,224.00	3.96	243.31	5,202.14	-210.72	-396.63	448.09	0.39	-0.37	-1.66
5,318.00	5.36	242.08	5,295.82	-214.23	-403.41	455.72	1.49	1.49	-1.31
5,413.00	5.01	239.27	5,390.43	-218.43	-410.90	464.27	0.46	-0.37	-2.96
5,507.00	4.57	234.35	5,484.11	-222.71	-417.47	472.01	0.64	-0.47	-5.23
5,602.00	5.80	239.09	5,578.72	-227.38	-424.66	480.49	1.37	1.29	4.99
5,697.00	5.63	239.62	5,673.24	-232.21	-432.80	489.88	0.19	-0.18	0.56
5,790.00	5.45	240.41	5,765.81	-236.69	-440.58	498.81	0.21	-0.19	0.85
5,885.00	4.92	243.40	5,860.42	-240.75	-448.14	507.38	0.63	-0.56	3.15
5,979.00	4.48	247.44	5,954.10	-243.96	-455.14	515.07	0.59	-0.47	4.30
6,074.00	4.13	245.60	6,048.84	-246.80	-461.68	522.20	0.40	-0.37	-1.94
6,168.00	3.78	248.32	6,142.61	-249.34	-467.64	528.68	0.42	-0.37	2.89
6,263.00	3.87	251.49	6,237.40	-251.51	-473.59	535.00	0.24	0.09	3.34
6,358.00	3.69	244.37	6,332.20	-253.85	-479.39	541.25	0.53	-0.19	-7.49
6,453.00	2.46	231.10	6,427.06	-256.46	-483.73	546.28	1.49	-1.29	-13.97
6,547.00	1.85	209.30	6,520.99	-259.05	-486.04	549.44	1.08	-0.65	-23.19
6,642.00	1.14	238.57	6,615.96	-260.88	-487.60	551.61	1.07	-0.75	30.81
6,736.00	0.88	7.77	6,709.95	-260.65	-488.30	552.16	1.94	-0.28	137.45
6,831.00	1.32	357.39	6,804.94	-258.83	-488.25	551.37	0.51	0.46	-10.93
6,925.00	1.49	303.61	6,898.91	-257.08	-489.32	551.63	1.36	0.18	-57.21
7,019.00	2.20	259.48	6,992.87	-256.73	-492.11	554.04	1.63	0.76	-46.95
7,112.00	2.11	263.26	7,085.80	-257.25	-495.57	557.41	0.18	-0.10	4.06
7,206.00	4.13	257.02	7,179.66	-258.22	-500.58	562.38	2.18	2.15	-6.64
7,301.00	4.13	255.44	7,274.41	-259.85	-507.23	569.11	0.12	0.00	-1.66
7,396.00	4.40	251.75	7,369.15	-261.85	-514.00	576.11	0.41	0.28	-3.88
7,490.00	4.66	253.24	7,462.85	-264.08	-521.08	583.48	0.30	0.28	1.59

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MD Reference: GL 8400' & RKB 24' @ 8424.00ft (H&P 324)
North Reference: True
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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)
7,585.00	4.84	255.44	7,557.53	-266.20	-528.65	591.26	0.27	0.19	2.32
7,680.00	4.84	256.67	7,652.19	-268.13	-536.43	599.15	0.11	0.00	1.29
7,774.00	4.66	256.85	7,745.87	-269.91	-544.01	606.80	0.19	-0.19	0.19
7,869.00	4.75	255.44	7,840.55	-271.78	-551.57	614.47	0.15	0.09	-1.48
7,963.00	4.66	258.69	7,934.23	-273.51	-559.09	622.03	0.30	-0.10	3.46
8,057.00	4.57	261.68	8,027.92	-274.80	-566.54	629.36	0.27	-0.10	3.18
8,152.00	4.84	258.08	8,122.60	-276.17	-574.20	636.92	0.42	0.28	-3.79
8,246.00	5.01	256.50	8,216.26	-277.95	-582.07	644.83	0.23	0.18	-1.68
8,340.00	5.19	255.97	8,309.89	-279.94	-590.19	653.05	0.20	0.19	-0.56
8,435.00	4.92	260.10	8,404.52	-281.68	-598.37	661.23	0.48	-0.28	4.35
8,529.00	5.19	262.82	8,498.15	-282.91	-606.56	669.21	0.38	0.29	2.89
8,624.00	4.92	264.67	8,592.78	-283.82	-614.88	677.17	0.33	-0.28	1.95
8,719.00	5.01	263.62	8,687.42	-284.66	-623.06	684.98	0.13	0.09	-1.11
8,813.00	4.75	260.01	8,781.08	-285.79	-630.97	692.67	0.43	-0.28	-3.84
8,908.00	4.75	256.67	8,875.76	-287.38	-638.67	700.35	0.29	0.00	-3.52
8,957.00	4.75	257.73	8,924.59	-288.28	-642.63	704.33	0.18	0.00	2.16
Last SDI Production MWD Survey									
9,010.00	4.75	257.73	8,977.41	-289.21	-646.92	708.62	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-14 PBHL	0.00	0.00	9,033.00	-298.05	-554.21	1,617,494.59	2,242,404.99	39° 29' 53.024 N	108° 11' 6.246 W
- actual wellpath misses target center by 108.46ft at 9010.00ft MD (8977.41 TVD, -289.21 N, -646.92 E)									
- Rectangle (sides W100.00 H200.00 D0.00)									

Checked By: _____ Approved By: _____ Date: _____