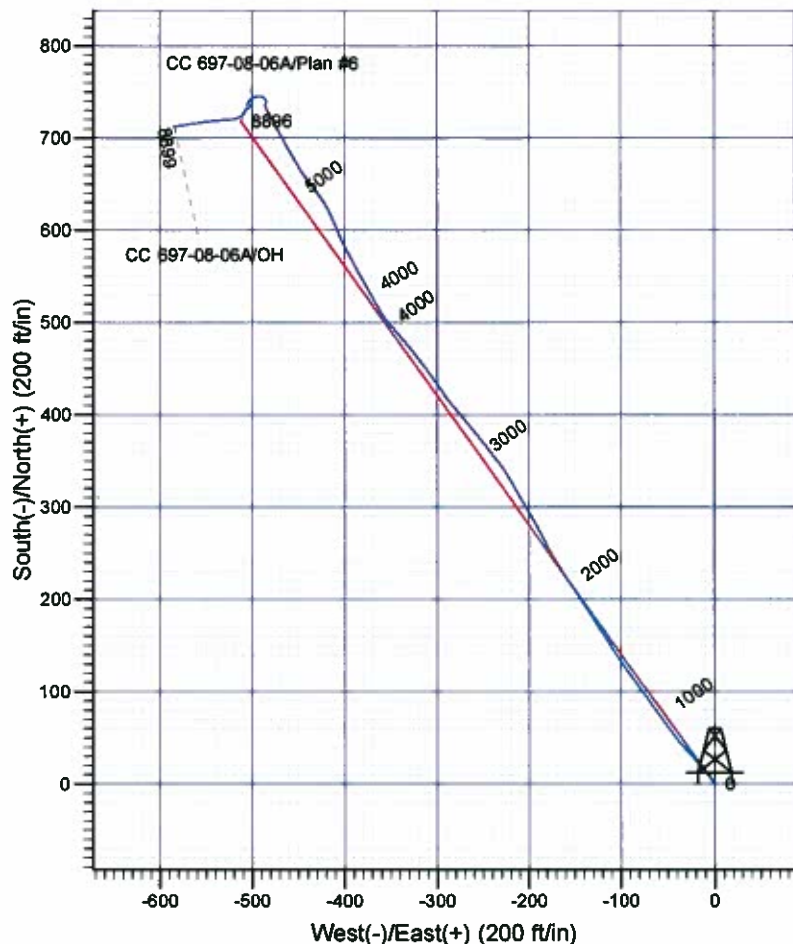
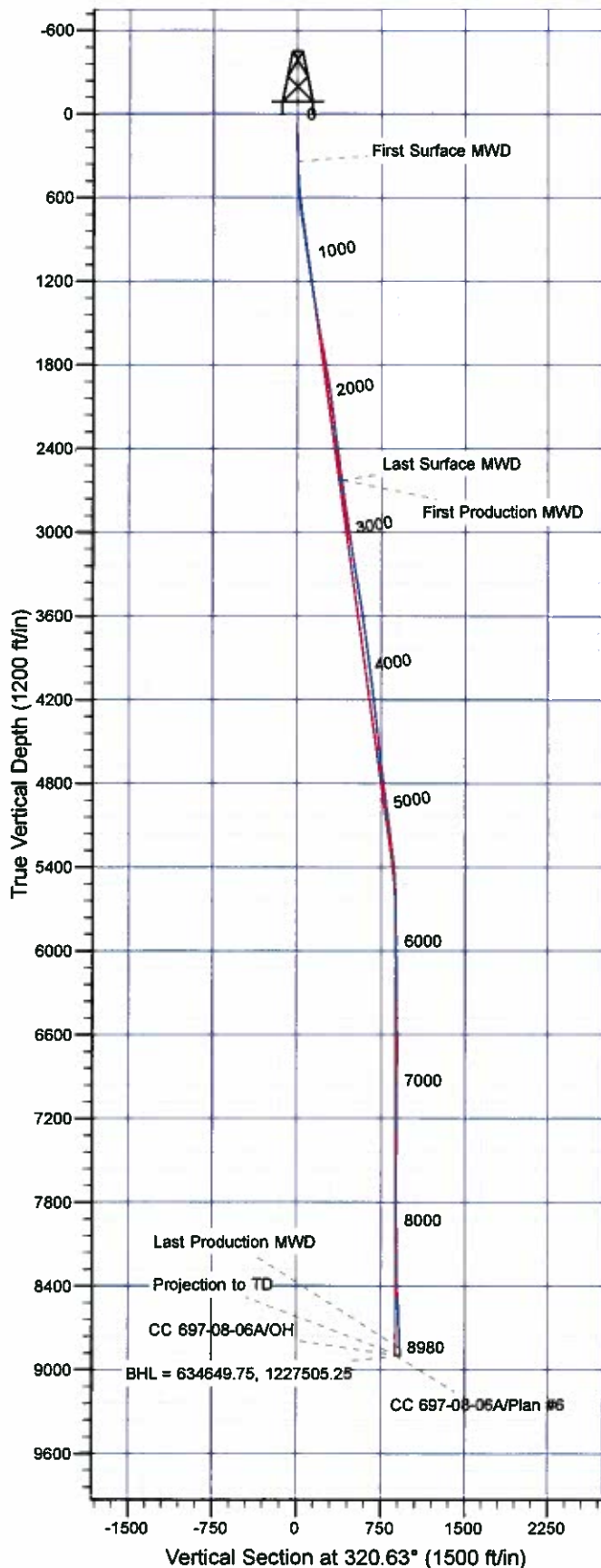




**Scientific Drilling**  
Rocky Mountain Operations

Company: OXY USA RMAT  
Project: Garfield County, CO NAD27  
Site: Cascade Creek 608-41 Pad  
Well: CC 697-08-06A  
Wellbore: OH  
Design: OH



#### Well Details: CC 697-08-06A

+N/-S	+E/-W	North	East	Latitude	Longitude	Slot
0.00	0.00	633920.05	1228068.01	39° 32' 31.192 N	108° 14' 15.126 W	G

#### REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-08-06A - Slot G, True North  
Vertical (TVD) Reference: GL 8407' & RKB 30' @ 8437.00ft (H&P)  
Section (VS) Reference: Slot - G(0.00N, 0.00E)  
Measured Depth Reference: GL 8407' & RKB 30' @ 8437.00ft (H&P)  
Calculation Method: Minimum Curvature

#### PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)  
Datum: NAD 1927 (NADCON CONUS)  
Ellipsoid: Clarke 1866  
Zone: Colorado Central 502

System Datum: Mean Sea Level

Plan: OH

16:43, April 05 2011  
Created By: Janie Cooke

# **OXY USA RMAT**

**Garfield County, CO NAD27**

**Cascade Creek 608-41 Pad**

**CC 697-08-06A - Slot G**

**OH**

**Design: OH**

## **Standard Survey Report**

**05 April, 2011**

**Scientific Drilling International, Inc.**  
Survey Report

<b>Company:</b>	OXY USA RMAT	<b>Local Co-ordinate Reference:</b>	Well CC 697-08-06A - Slot G
<b>Project:</b>	Garfield County, CO NAD27	<b>TVD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Site:</b>	Cascade Creek 608-41 Pad	<b>MD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Well:</b>	CC 697-08-06A	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM-R5000-JanieCooke-Local

<b>Project</b>	Garfield County, CO NAD27		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado Central 502		

<b>Site</b>	Cascade Creek 608-41 Pad, Section 8 T6S R97W		
<b>Site Position:</b>		<b>Northing:</b>	633,968.95 usft
<b>From:</b>	Map	<b>Easting:</b>	1,228,168.67 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	39° 32' 31.685 N
		<b>Longitude:</b>	108° 14' 13.859 W
		<b>Grid Convergence:</b>	-1.73 °

<b>Well</b>	CC 697-08-06A - Slot G,		
<b>Well Position</b>	+N/-S	0.00 ft	<b>Northing:</b> 633,920.05 usft
	+E/-W	0.00 ft	<b>Easting:</b> 1,228,088.01 usft
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	39° 32' 31.192 N
		<b>Longitude:</b>	108° 14' 15.126 W
		<b>Ground Level:</b>	8,407.00 ft

<b>Wellbore</b>	OH		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	10/15/2008	10.80
			<b>Dip Angle (°)</b> 65.80
			<b>Field Strength (nT)</b> 52,494

<b>Design</b>	OH		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	0.00	0.00	0.00
			<b>Direction (°)</b> 320.63

<b>Survey Program</b>	<b>Date</b>	4/5/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
340.00	2,664.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA
2,786.00	8,980.00	Survey #2 - Production MWD (OH)	MWD-SDI	MWD - Standard ISCWSA

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
340.00	1.83	324.75	339.94	4.43	-3.13	5.42	0.54	0.54	0.00
<b>First Surface MWD</b>									
432.00	2.86	330.63	431.86	7.63	-5.11	9.14	1.15	1.12	6.39
523.00	3.43	323.57	522.73	11.80	-7.84	14.10	0.76	0.63	-7.76
615.00	5.89	316.45	614.42	17.44	-12.72	21.55	2.74	2.67	-7.74
707.00	9.32	318.91	705.59	26.48	-20.88	33.71	3.74	3.73	2.67
801.00	11.52	317.86	798.04	39.18	-32.18	50.70	2.35	2.34	-1.12
895.00	10.20	324.62	890.36	52.92	-43.29	68.38	1.95	-1.40	7.19
990.00	10.29	324.45	983.84	66.68	-53.10	85.23	0.10	0.09	-0.18

# Scientific Drilling International, Inc.

## Survey Report

<b>Company:</b>	OXY USA RMAT	<b>Local Co-ordinate Reference:</b>	Well CC 697-08-06A - Slot G
<b>Project:</b>	Garfield County, CO NAD27	<b>TVD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Site:</b>	Cascade Creek 608-41 Pad	<b>MD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Well:</b>	CC 697-08-06A	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM-R5000-JanieCooke-Local

### 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)
1,084.00	11.26	323.92	1,076.18	80.93	-63.38	102.77	1.04	1.03	-0.56
1,179.00	10.20	325.59	1,169.52	95.37	-73.80	120.41	1.16	-1.12	1.76
1,273.00	10.64	325.77	1,261.97	109.41	-83.19	137.35	0.47	0.47	0.19
1,368.00	12.05	322.95	1,355.11	124.58	-94.09	155.99	1.59	1.48	-2.97
1,463.00	12.66	327.70	1,447.91	141.29	-105.83	176.23	1.25	0.64	5.00
1,557.00	13.10	327.26	1,539.55	158.96	-116.90	197.04	0.48	0.47	-0.47
1,652.00	12.93	327.00	1,632.11	176.93	-128.51	218.29	0.19	-0.18	-0.27
1,746.00	12.40	327.00	1,723.82	194.21	-139.73	238.78	0.56	-0.56	0.00
1,841.00	11.52	325.94	1,816.76	210.63	-150.60	258.36	0.95	-0.93	-1.12
1,935.00	10.55	325.59	1,909.02	225.50	-160.72	276.28	1.03	-1.03	-0.37
2,030.00	10.64	329.37	2,002.40	240.22	-170.11	293.61	0.74	0.09	3.98
2,125.00	9.94	331.65	2,095.87	254.99	-178.47	310.33	0.85	-0.74	2.40
2,219.00	9.15	333.50	2,188.57	268.82	-185.66	325.58	0.90	-0.84	1.97
2,313.00	9.85	329.98	2,281.28	282.47	-193.01	340.80	0.97	0.74	-3.74
2,408.00	9.76	328.67	2,374.89	296.38	-201.26	356.79	0.25	-0.09	-1.38
2,502.00	9.32	329.19	2,467.59	309.72	-209.31	372.21	0.48	-0.47	0.55
2,597.00	9.15	331.39	2,561.36	322.96	-216.86	387.23	0.41	-0.18	2.32
2,684.00	9.50	328.93	2,627.48	332.37	-222.27	397.94	0.79	0.52	-3.67
Last Surface MWD - First Production MWD									
2,786.00	9.37	321.75	2,747.83	348.80	-233.61	417.83	0.97	-0.11	-5.89
2,880.00	10.42	320.65	2,840.43	361.38	-243.74	433.98	1.13	1.12	-1.17
2,975.00	11.36	323.53	2,933.72	375.55	-254.75	451.92	1.14	0.99	3.03
3,069.00	10.37	319.55	3,026.04	389.43	-265.74	469.62	1.32	-1.05	-4.23
3,164.00	9.94	318.54	3,119.55	402.08	-276.72	486.37	0.49	-0.45	-1.06
3,259.00	11.29	323.15	3,212.92	415.67	-287.72	503.85	1.68	1.42	4.85
3,353.00	12.53	325.71	3,304.90	431.48	-298.99	523.20	1.43	1.32	2.72
3,448.00	12.49	324.15	3,397.64	448.30	-310.81	543.72	0.36	-0.04	-1.64
3,542.00	11.50	322.32	3,489.59	463.95	-322.49	563.23	1.13	-1.05	-1.95
3,637.00	9.94	320.32	3,582.93	477.76	-333.51	580.90	1.69	-1.64	-2.11
3,731.00	9.23	317.15	3,675.62	489.53	-343.82	596.54	0.94	-0.76	-3.37
3,825.00	9.85	321.81	3,768.32	501.38	-353.92	612.10	1.05	0.66	4.96
3,920.00	10.02	330.69	3,861.90	514.97	-362.99	628.36	1.62	0.18	9.35
4,014.00	9.58	330.42	3,954.53	528.91	-370.85	644.12	0.47	-0.47	-0.29
4,109.00	9.15	331.39	4,048.26	542.41	-378.37	659.33	0.48	-0.45	1.02
4,204.00	8.88	331.57	4,142.09	555.49	-385.48	673.95	0.29	-0.28	0.19
4,298.00	8.27	330.34	4,235.03	567.75	-392.28	687.74	0.68	-0.65	-1.31
4,393.00	8.18	334.73	4,329.06	579.79	-398.55	701.03	0.67	-0.09	4.62
4,487.00	7.21	333.32	4,422.21	591.11	-404.05	713.27	1.05	-1.03	-1.50
4,582.00	8.27	338.95	4,516.35	602.82	-409.18	725.58	1.37	1.12	5.93
4,676.00	9.41	335.43	4,609.23	616.11	-414.81	739.42	1.34	1.21	-3.74
4,771.00	9.15	328.67	4,702.99	629.63	-421.96	754.41	1.18	-0.27	-7.12
4,865.00	8.79	323.13	4,795.84	641.76	-430.16	768.99	1.00	-0.38	-5.89
4,960.00	9.15	321.02	4,889.68	653.44	-439.27	783.79	0.51	0.38	-2.22



**Scientific Drilling International, Inc.**  
Survey Report

<b>Company:</b>	OXY USA RMAT	<b>Local Co-ordinate Reference:</b>	Well CC 697-08-06A - Slot G
<b>Project:</b>	Garfield County, CO NAD27	<b>TVD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Site:</b>	Cascade Creek 608-41 Pad	<b>MD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Well:</b>	CC 697-08-06A	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM-R5000-JanieCooke-Local

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)
5,054.00	9.41	329.54	4,982.45	665.87	-447.86	798.86	1.49	0.28	9.06
5,149.00	9.15	330.60	5,076.21	679.15	-455.51	813.97	0.33	-0.27	1.12
5,243.00	8.88	330.16	5,169.05	691.95	-462.79	828.49	0.30	-0.29	-0.47
5,338.00	8.88	331.21	5,262.91	704.74	-469.97	842.93	0.17	0.00	1.11
5,432.00	7.65	333.32	5,355.93	716.69	-476.27	856.16	1.35	-1.31	2.24
5,527.00	6.16	329.19	5,450.24	726.72	-481.72	867.37	1.65	-1.57	-4.35
5,621.00	2.46	338.51	5,543.96	732.93	-485.04	874.28	3.99	-3.94	9.91
5,716.00	1.23	16.65	5,638.91	735.80	-485.50	876.79	1.76	-1.29	40.15
5,810.00	1.14	11.82	5,732.89	737.68	-485.02	877.94	0.14	-0.10	-5.14
5,905.00	0.88	359.25	5,827.88	739.34	-484.83	879.11	0.36	-0.27	-13.23
6,000.00	1.32	354.24	5,922.86	741.16	-484.95	880.59	0.47	0.46	-5.27
6,094.00	1.14	319.88	6,016.84	742.95	-485.68	882.42	0.79	-0.19	-36.55
6,189.00	1.14	300.63	6,111.82	744.15	-487.09	884.26	0.40	0.00	-20.26
6,283.00	1.06	285.16	6,205.80	744.86	-488.73	885.84	0.33	-0.09	-16.46
6,378.00	1.14	280.33	6,300.78	745.26	-490.51	887.28	0.13	0.08	-5.08
6,472.00	1.85	266.53	6,394.75	745.33	-492.94	888.88	0.84	0.76	-14.68
6,567.00	2.64	249.56	6,489.68	744.48	-496.52	890.49	1.08	0.83	-17.86
6,661.00	2.02	242.18	6,583.60	742.95	-500.02	891.52	0.73	-0.66	-7.85
6,756.00	1.32	224.78	6,678.56	741.39	-502.27	891.75	0.90	-0.74	-18.32
6,850.00	0.88	175.38	6,772.55	739.90	-502.97	891.04	1.07	-0.47	-52.55
6,945.00	1.14	190.41	6,867.53	738.24	-503.09	889.84	0.39	0.27	15.82
7,039.00	1.41	169.32	6,961.51	736.19	-503.04	888.22	0.57	0.29	-22.44
7,134.00	0.70	149.63	7,056.49	734.54	-502.53	886.62	0.83	-0.75	-20.73
7,228.00	0.26	157.54	7,150.49	733.85	-502.16	885.85	0.47	-0.47	8.41
7,323.00	0.79	229.09	7,245.48	733.22	-502.57	885.62	0.79	0.56	75.32
7,417.00	2.02	244.91	7,339.45	732.09	-504.56	886.01	1.36	1.31	16.83
7,512.00	1.49	230.05	7,434.41	730.59	-507.02	886.41	0.73	-0.56	-15.64
7,606.00	0.62	148.67	7,528.40	729.37	-507.70	885.90	1.62	-0.93	-86.57
7,701.00	0.62	181.98	7,623.39	728.42	-507.45	885.00	0.37	0.00	35.06
7,795.00	1.41	224.52	7,717.38	727.08	-508.28	884.50	1.11	0.84	45.26
7,890.00	0.97	227.68	7,812.36	725.71	-509.69	884.33	0.47	-0.46	3.33
7,984.00	1.49	223.20	7,906.33	724.28	-511.11	884.13	0.56	0.55	-4.77
8,079.00	1.93	240.42	8,001.29	722.59	-513.35	884.25	0.71	0.48	18.13
8,173.00	2.20	250.36	8,095.23	721.20	-516.43	885.12	0.48	0.29	10.57
8,267.00	2.90	263.01	8,189.14	720.31	-520.49	887.01	0.95	0.74	13.46
8,362.00	3.61	265.47	8,283.99	719.78	-525.85	890.00	0.76	0.75	2.59
8,456.00	4.48	265.38	8,377.75	719.25	-532.46	893.78	0.93	0.93	-0.10
8,551.00	5.36	265.03	8,472.40	718.57	-540.58	898.41	0.93	0.93	-0.37
8,645.00	5.54	262.66	8,565.97	717.61	-549.46	903.29	0.31	0.19	-2.52
8,739.00	5.80	261.69	8,659.51	716.34	-558.66	908.15	0.29	0.28	-1.03
8,834.00	6.33	261.25	8,753.98	714.85	-568.58	913.29	0.56	0.56	-0.46
8,925.00	6.33	261.34	8,844.43	713.33	-578.50	918.41	0.01	0.00	0.10
Last Production MWD									
8,980.00	6.33	261.34	8,899.09	712.42	-584.49	921.51	0.00	0.00	0.00

# Scientific Drilling International, Inc.

## Survey Report

<b>Company:</b>	OXY USA RMAT	<b>Local Co-ordinate Reference:</b>	Well CC 697-08-06A - Slot G
<b>Project:</b>	Garfield County, CO NAD27	<b>TVD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Site:</b>	Cascade Creek 608-41 Pad	<b>MD Reference:</b>	GL 8407' & RKB 30' @ 8437.00ft (H&P)
<b>Well:</b>	CC 697-08-06A	<b>North Reference:</b>	True
<b>Wellbore:</b>	OH	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	OH	<b>Database:</b>	EDM-R5000-JanieCooke-Local

### 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)
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Projection to TD - BHL = 634649.75, 1227505.25

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
340.00	339.94	4.43	-3.13	First Surface MWD
2,664.00	2,627.48	332.37	-222.27	Last Surface MWD
2,664.00	2,627.48	332.37	-222.27	First Production MWD
8,925.00	8,844.43	713.33	-578.50	Last Production MWD
8,980.00	8,899.09	712.42	-584.49	Projection to TD
8,980.00	8,899.09	712.42	-584.49	BHL = 634649.75, 1227505.25

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_