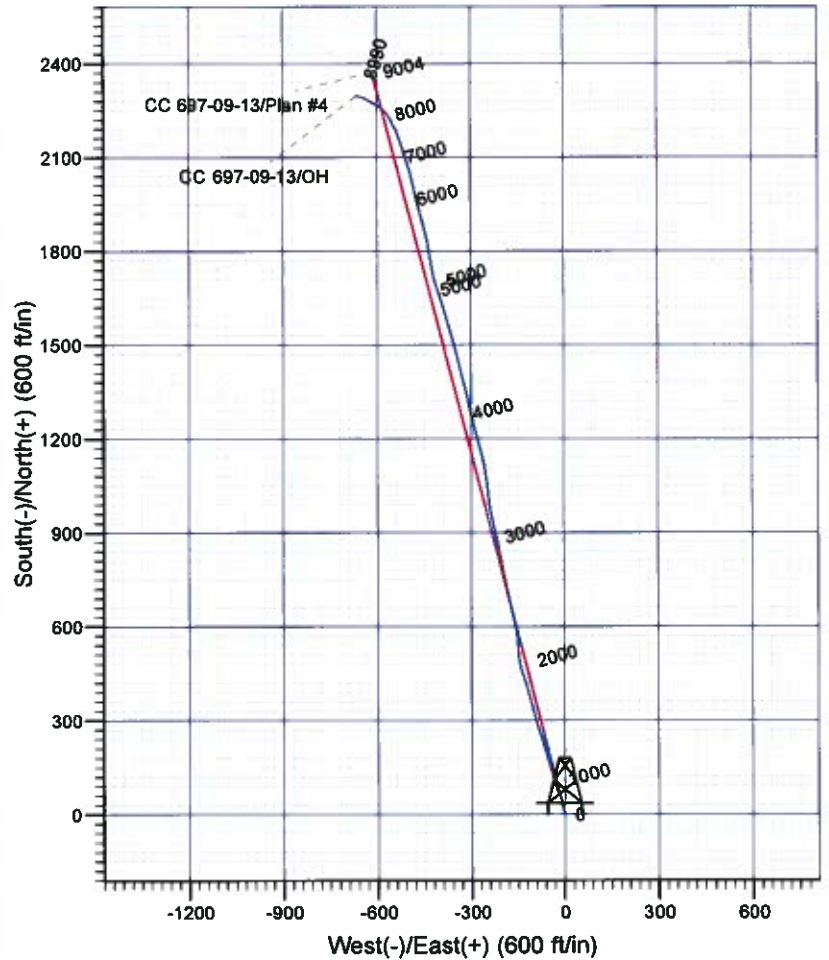
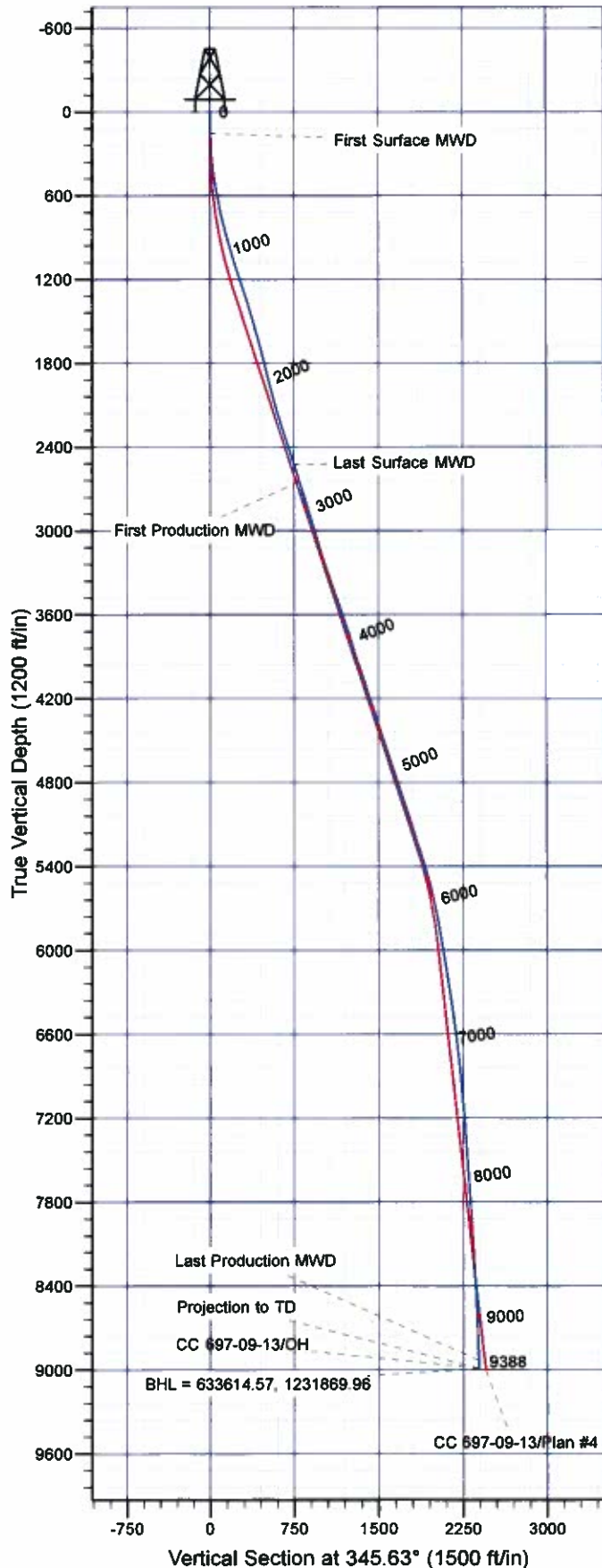




Scientific Drilling

Rocky Mountain Operations

Company: OXY USA RMA
 Project: Garfield County, CO NAD27
 Site: Cascade Creek 609-33 Pad
 Well: CC 697-09-13
 Wellbore: OH
 Design: OH



Well Details: CC 697-09-13

+N/-S	+E/-W	North	East	Latitude	Longitude	Slot
0.00	0.00	631298.91	1232465.23	39° 32' 6.803 N	108° 13' 18.019 W	A

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-09-13 - Slot A, True North
 Vertical (TVD) Reference: GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
 Section (VS) Reference: Slot - A(0.00N, 0.00E)
 Measured Depth Reference: GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
 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

11:08, June 08 2011
 Created By: Janie Cooke

OXY USA RMAT

Garfield County, CO NAD27

Cascade Creek 609-33 Pad

CC 697-09-13 - Slot A

OH

Design: OH

Standard Survey Report

08 June, 2011





Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-13 - Slot A
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
Well:	CC 697-09-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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

Site	Cascade Creek 609-33 Pad, Sec 9 T6S R97W				
Site Position:		Northing:	631,314.66 usft	Latitude:	39° 32' 6.734 N
From:	Map	Easting:	1,232,383.54 usft	Longitude:	108° 13' 19.067 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.72 °

Well	CC 697-09-13 - Slot A					
Well Position	+N/-S	0.00 ft	Northing:	631,298.91 usft	Latitude:	39° 32' 6.603 N
	+E/-W	0.00 ft	Easting:	1,232,465.23 usft	Longitude:	108° 13' 18.019 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,381.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/30/2011	10.48	65.73	52,243

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00		345.63

Survey Program	Date	6/8/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
156.00	2,653.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,785.00	9,388.00	Survey #2 - Production MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	

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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
156.00	2.14	346.63	155.96	2.83	-0.67	2.91	1.37	1.37	0.00	
First Surface MWD										
248.00	3.41	351.10	247.85	7.21	-1.49	7.35	1.40	1.38	4.86	
341.00	6.36	350.16	340.51	15.02	-2.80	15.24	3.17	3.17	-1.01	
432.00	9.50	347.63	430.62	27.32	-5.27	27.78	3.47	3.45	-2.78	
524.00	12.69	339.09	520.90	44.18	-10.51	45.41	3.89	3.47	-9.28	
616.00	13.37	334.27	610.53	63.21	-18.73	65.88	1.39	0.74	-5.24	
708.00	14.51	342.01	699.83	83.75	-26.91	87.81	2.37	1.24	8.41	
800.00	17.32	344.82	788.30	107.94	-34.06	113.01	3.17	3.05	3.05	



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-13 - Slot A
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
Well:	CC 697-09-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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)
892.00	18.47	344.47	875.84	135.20	-41.55	141.28	1.26	1.25	-0.38
983.00	20.31	342.97	961.68	164.19	-50.03	171.47	2.09	2.02	-1.65
1,078.00	20.40	343.68	1,050.75	195.84	-59.51	204.48	0.28	0.09	0.75
1,172.00	22.07	342.80	1,138.36	228.44	-69.34	238.50	1.81	1.78	-0.94
1,267.00	24.45	342.10	1,225.63	264.20	-80.66	275.95	2.52	2.51	-0.74
1,362.00	21.98	344.82	1,312.94	300.07	-91.36	313.36	2.83	-2.60	2.86
1,456.00	20.31	345.52	1,400.61	332.85	-100.05	347.27	1.80	-1.78	0.74
1,551.00	19.96	343.94	1,489.80	364.39	-108.66	379.96	0.68	-0.37	-1.66
1,645.00	20.14	343.59	1,578.10	395.34	-117.67	412.17	0.23	0.19	-0.37
1,740.00	18.73	342.10	1,667.69	425.54	-126.98	443.74	1.57	-1.48	-1.57
1,834.00	17.32	340.78	1,757.07	453.12	-136.22	472.75	1.56	-1.50	-1.40
1,929.00	16.36	348.51	1,848.01	479.58	-143.54	500.20	2.56	-1.01	8.14
2,024.00	17.50	355.63	1,938.90	506.94	-147.30	527.64	2.49	1.20	7.49
2,118.00	19.26	356.16	2,028.10	536.50	-149.41	556.80	1.88	1.87	0.56
2,213.00	19.43	352.29	2,117.74	567.80	-152.58	587.90	1.36	0.18	-4.07
2,308.00	20.58	348.25	2,207.01	599.80	-158.10	620.28	1.89	1.21	-4.25
2,402.00	23.04	347.46	2,294.28	633.94	-165.46	655.17	2.64	2.62	-0.84
2,497.00	22.34	347.63	2,381.93	669.72	-173.36	691.80	0.74	-0.74	0.18
2,591.00	21.90	347.19	2,469.01	704.27	-181.08	727.17	0.50	-0.47	-0.47
2,653.00	21.72	347.11	2,526.57	726.73	-186.20	750.20	0.29	-0.29	-0.13
Last Surface MWD									
2,785.00	21.54	348.41	2,649.27	774.27	-196.52	798.82	0.39	-0.14	0.98
First Production MWD									
2,879.00	21.63	348.06	2,736.68	808.13	-203.57	833.37	0.17	0.10	-0.37
2,974.00	21.81	349.38	2,824.94	842.60	-210.44	868.47	0.55	0.19	1.39
3,069.00	20.66	347.88	2,913.49	876.34	-217.22	902.83	1.34	-1.21	-1.58
3,163.00	20.14	346.92	3,001.59	908.31	-224.36	935.58	0.66	-0.55	-1.02
3,258.00	19.52	345.86	3,090.96	939.63	-231.94	967.80	0.75	-0.65	-1.12
3,352.00	21.46	350.87	3,179.01	971.84	-238.50	1,000.63	2.78	2.06	5.33
3,447.00	23.48	354.30	3,266.80	1,007.84	-243.14	1,036.65	2.53	2.13	3.61
3,542.00	24.18	353.42	3,353.70	1,046.00	-247.25	1,074.64	0.83	0.74	-0.93
3,637.00	23.65	351.22	3,440.55	1,084.16	-252.39	1,112.88	1.09	-0.56	-2.32
3,731.00	22.69	347.44	3,526.97	1,120.49	-259.21	1,149.77	1.88	-1.02	-4.02
3,826.00	23.39	345.68	3,614.39	1,156.65	-267.86	1,186.94	1.03	0.74	-1.85
3,921.00	21.90	344.89	3,702.07	1,192.03	-277.14	1,223.51	1.60	-1.57	-0.83
4,016.00	20.05	344.89	3,790.77	1,224.86	-286.01	1,257.52	1.95	-1.95	0.00
4,110.00	21.98	345.51	3,878.51	1,257.45	-294.61	1,291.22	2.07	2.05	0.66
4,205.00	22.42	347.79	3,966.47	1,292.37	-302.89	1,327.10	1.02	0.46	2.40
4,300.00	23.13	346.74	4,054.06	1,328.24	-311.00	1,363.86	0.86	0.75	-1.11
4,394.00	21.54	347.18	4,141.01	1,363.03	-319.07	1,399.57	1.70	-1.69	0.47
4,489.00	22.86	345.25	4,228.96	1,397.89	-327.63	1,435.46	1.59	1.39	-2.03
4,583.00	21.72	345.86	4,315.94	1,432.41	-336.53	1,471.12	1.24	-1.21	0.65
4,678.00	21.72	346.21	4,404.19	1,466.53	-345.02	1,506.27	0.14	0.00	0.37



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-13 - Slot A
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
Well:	CC 697-09-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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)
4,773.00	22.34	342.96	4,492.26	1,500.86	-354.50	1,541.89	1.44	0.65	-3.42
4,867.00	22.51	343.93	4,579.15	1,535.23	-364.71	1,577.72	0.43	0.18	1.03
4,962.00	21.90	344.81	4,667.11	1,569.81	-374.39	1,613.61	0.73	-0.64	0.93
5,057.00	21.98	344.01	4,755.23	1,604.00	-383.93	1,649.10	0.33	0.08	-0.84
5,152.00	23.65	341.99	4,842.79	1,639.21	-394.72	1,685.89	1.94	1.76	-2.13
5,246.00	21.46	340.24	4,929.60	1,673.33	-406.36	1,721.83	2.44	-2.33	-1.86
5,341.00	21.46	343.84	5,018.02	1,706.38	-417.08	1,756.50	1.39	0.00	3.79
5,436.00	22.25	349.64	5,106.20	1,740.76	-425.15	1,791.81	2.42	0.83	6.11
5,530.00	22.34	350.87	5,193.17	1,775.91	-431.18	1,827.36	0.51	0.10	1.31
5,625.00	22.07	351.31	5,281.13	1,811.38	-436.74	1,863.10	0.33	-0.28	0.46
5,720.00	21.02	346.65	5,369.49	1,845.60	-443.38	1,897.90	2.11	-1.11	-4.91
5,814.00	19.79	344.63	5,457.60	1,877.35	-451.49	1,930.66	1.51	-1.31	-2.15
5,909.00	16.97	345.77	5,547.74	1,906.30	-459.16	1,960.61	2.99	-2.97	1.20
6,004.00	15.30	346.48	5,639.00	1,931.93	-465.50	1,987.01	1.77	-1.76	0.75
6,099.00	14.42	344.89	5,730.82	1,955.54	-471.51	2,011.37	1.02	-0.93	-1.67
6,193.00	12.66	344.98	5,822.20	1,976.79	-477.23	2,033.38	1.87	-1.87	0.10
6,288.00	12.05	347.62	5,915.00	1,996.53	-482.06	2,053.70	0.87	-0.64	2.78
6,383.00	11.52	348.50	6,008.00	2,015.51	-486.07	2,073.08	0.59	-0.56	0.93
6,478.00	10.99	347.00	6,101.17	2,033.63	-490.00	2,091.61	0.64	-0.56	-1.58
6,572.00	11.43	344.45	6,193.38	2,051.33	-494.51	2,109.88	0.71	0.47	-2.71
6,667.00	11.34	343.22	6,286.51	2,069.34	-499.73	2,128.62	0.27	-0.09	-1.29
6,762.00	10.99	340.41	6,379.71	2,086.82	-505.47	2,146.97	0.68	-0.37	-2.96
6,856.00	10.73	343.58	6,472.03	2,103.65	-510.94	2,164.64	0.69	-0.28	3.37
6,951.00	9.32	343.49	6,565.58	2,119.51	-515.63	2,181.17	1.48	-1.48	-0.09
7,045.00	7.65	340.94	6,658.54	2,132.72	-519.84	2,195.01	1.82	-1.78	-2.71
7,140.00	7.47	336.37	6,752.72	2,144.36	-524.38	2,207.41	0.66	-0.19	-4.81
7,235.00	7.30	345.42	6,846.93	2,155.86	-528.37	2,219.54	1.24	-0.18	9.53
7,329.00	6.86	342.87	6,940.22	2,167.00	-531.53	2,231.12	0.58	-0.47	-2.71
7,424.00	6.60	337.25	7,034.56	2,177.46	-535.31	2,242.19	0.74	-0.27	-5.92
7,518.00	6.24	333.20	7,127.98	2,187.00	-539.70	2,252.52	0.62	-0.38	-4.31
7,613.00	6.24	328.63	7,222.41	2,196.02	-544.72	2,262.50	0.52	0.00	-4.81
7,707.00	5.19	338.92	7,315.95	2,204.34	-548.91	2,271.61	1.56	-1.12	10.95
7,802.00	5.28	335.67	7,410.55	2,212.34	-552.25	2,280.18	0.33	0.09	-3.42
7,897.00	5.01	327.40	7,505.17	2,219.81	-556.29	2,288.42	0.83	-0.28	-8.71
7,991.00	5.10	333.47	7,598.80	2,227.01	-560.37	2,296.41	0.58	0.10	6.46
8,086.00	5.28	328.37	7,693.42	2,234.51	-564.55	2,304.71	0.52	0.19	-5.37
8,181.00	5.36	319.05	7,788.01	2,241.58	-569.75	2,312.85	0.91	0.08	-9.81
8,275.00	5.28	310.88	7,881.60	2,247.73	-575.89	2,320.33	0.81	-0.09	-8.69
8,370.00	5.72	310.62	7,976.17	2,253.67	-582.79	2,327.80	0.46	0.46	-0.27
8,465.00	6.07	311.76	8,070.66	2,260.10	-590.13	2,335.85	0.39	0.37	1.20
8,559.00	6.16	304.64	8,164.13	2,266.28	-597.99	2,343.78	0.81	0.10	-7.57
8,654.00	6.33	294.97	8,258.57	2,271.39	-606.93	2,350.95	1.12	0.18	-10.18
8,748.00	5.98	297.17	8,352.03	2,275.81	-615.98	2,357.48	0.45	-0.37	2.34
8,843.00	5.10	300.33	8,446.58	2,280.20	-624.03	2,363.74	0.98	-0.93	3.33



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-09-13 - Slot A
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
Site:	Cascade Creek 609-33 Pad	MD Reference:	GL 8381' & RKB 30' @ 8411.00ft (H&P 353)
Well:	CC 697-09-13	North Reference:	True
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Rockies Compass Server

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)
8,938.00	4.04	299.54	8,541.28	2,283.98	-630.59	2,369.03	1.12	-1.12	-0.83
9,032.00	4.48	293.65	8,635.02	2,287.09	-636.83	2,373.58	0.66	0.47	-6.27
9,127.00	4.22	294.18	8,729.75	2,290.01	-643.42	2,378.05	0.28	-0.27	0.56
9,221.00	4.66	287.24	8,823.47	2,292.56	-650.22	2,382.20	0.74	0.47	-7.38
9,331.00	5.28	286.45	8,933.05	2,295.31	-659.34	2,387.14	0.57	0.56	-0.72
Last Production MWD									
9,388.00	5.28	286.45	8,989.81	2,296.80	-664.37	2,389.83	0.00	0.00	0.00
Projection to TD - BHL = 633614.57, 1231869.96									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
156.00	155.96	2.83	-0.67	First Surface MWD
2,653.00	2,526.57	726.73	-186.20	Last Surface MWD
2,785.00	2,649.27	774.27	-196.52	First Production MWD
9,331.00	8,933.05	2,295.31	-659.34	Last Production MWD
9,388.00	8,989.81	2,296.80	-664.37	Projection to TD
9,388.00	8,989.81	2,296.80	-664.37	BHL = 633614.57, 1231869.96

Checked By: _____ Approved By: _____ Date: _____