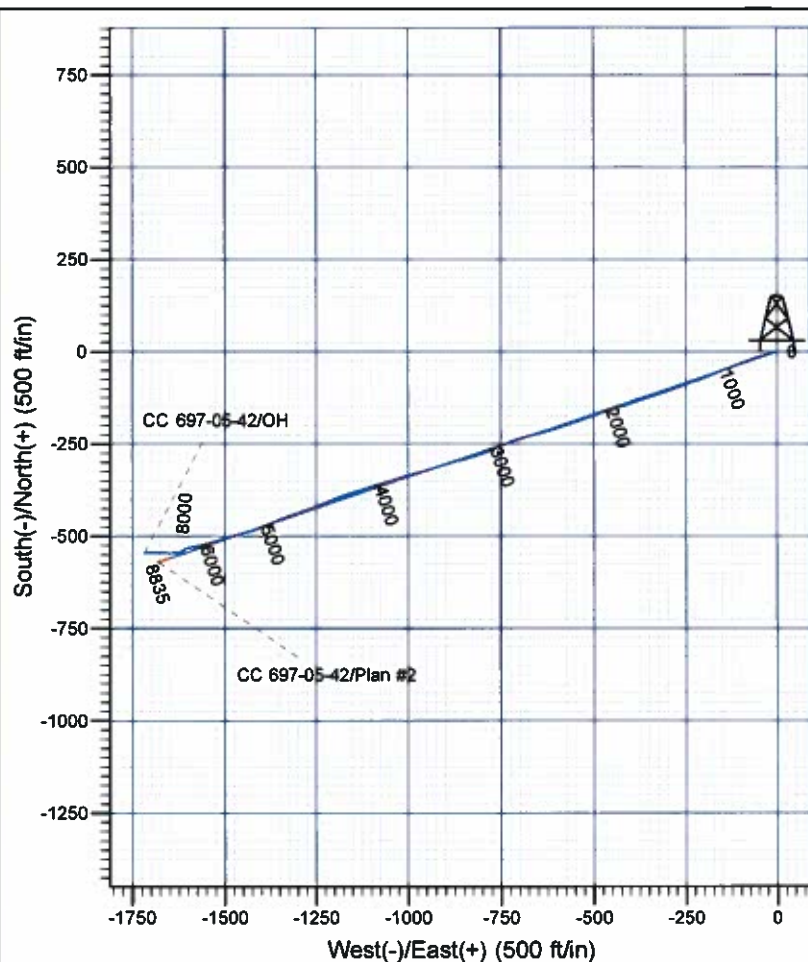
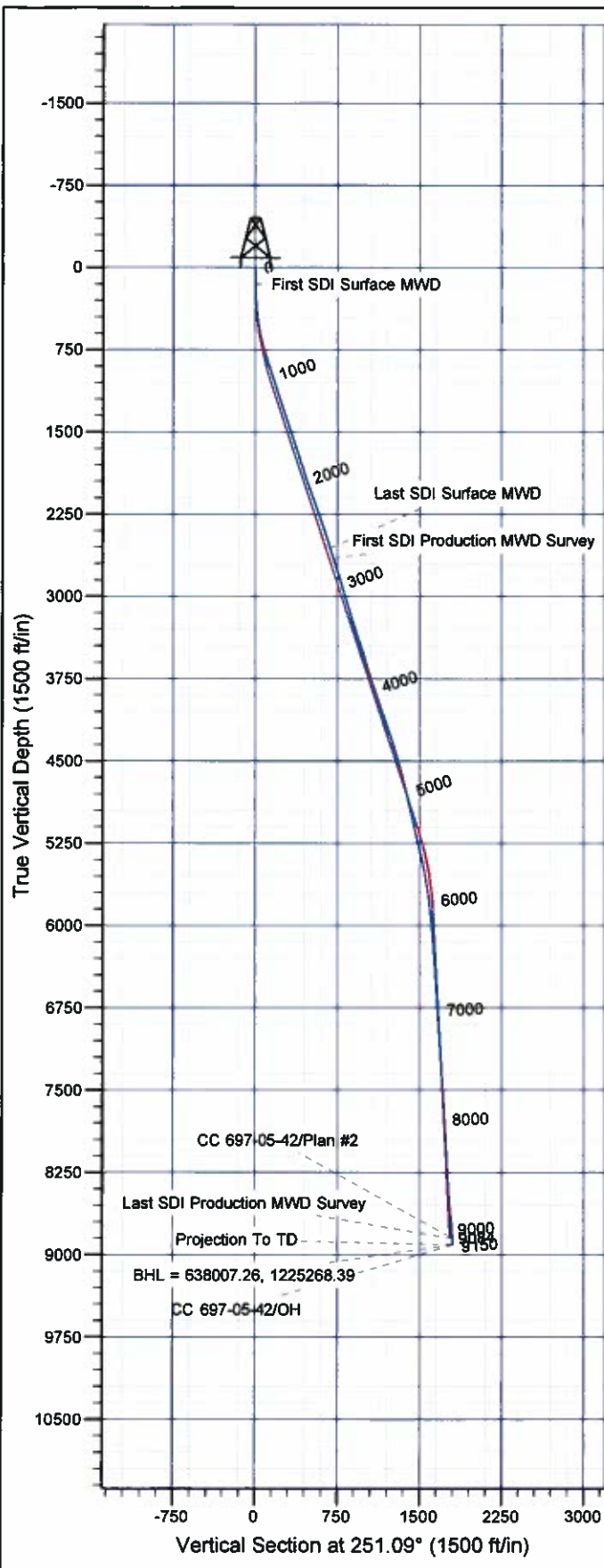




Scientific Drilling

Company: OXY USA RMAT
 Project: Garfield County, CO NAD27
 Site: Cascade Creek 697-05C Pad
 Well: CC 697-05-42
 Wellbore: OH
 Design: OH



Well Details: CC 697-05-42

+N/-S	+E/-W	North	East	Latitude	Longitude	Slot
0.00	0.00	638499.93	1227003.01	39° 33' 16.120 N	108° 14' 30.478 W	A

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-05-42 - Slot A, True North
 Vertical (TVD) Reference: GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
 Section (VS) Reference: Slot - A(0.00N, 0.00E)
 Measured Depth Reference: GL 8423' & RKB 30' @ 8453.00ft (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

13:08, February 17 2012
 Created By: Rex Hall

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-05C Pad
CC 697-05-42 - Slot A**

OH

Design: OH

Standard Survey Report

17 February, 2012

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-42 - Slot A
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Site:	Cascade Creek 697-05C Pad	MD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Well:	CC 697-05-42	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 697-05C Pad, Sec. 5 T6S R97W		
Site Position:		Northing:	637,463.43 usft
From:	Map	Easting:	1,226,150.07 usft
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in
		Latitude:	39° 33' 5.626 N
		Longitude:	108° 14' 40.963 W
		Grid Convergence:	-1.73 °

Well	CC 697-05-42 - Slot A		
Well Position	+N/-S	0.00 ft	Northing: 638,499.93 usft
	+E/-W	0.00 ft	Easting: 1,227,003.01 usft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	39° 33' 16.120 N
		Longitude:	108° 14' 30.478 W
		Ground Level:	8,423.00 ft

Wellbore	OH		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2005-10	12/16/10	10.51
			Dip Angle (°)
			65.77
			Field Strength (nT)
			52,312

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)
	0.00	0.00	0.00
			Direction (°)
			251.09

Survey Program	Date	02/17/12		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
154.00	2,664.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA
2,763.00	9,150.00	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
154.00	0.64	261.29	154.00	-0.13	-0.85	0.85	0.42	0.42	0.00
First SDI Surface MWD									
245.00	1.98	247.40	244.97	-0.81	-2.80	2.92	1.50	1.47	-15.26
335.00	3.52	253.86	334.86	-2.18	-6.89	7.23	1.74	1.71	7.18
425.00	6.24	253.33	424.53	-4.35	-14.23	14.88	3.02	3.02	-0.59
515.00	8.79	254.91	513.75	-7.54	-25.56	26.63	2.84	2.83	1.76
604.00	12.05	253.94	601.27	-11.88	-41.06	42.69	3.67	3.66	-1.09
695.00	14.77	251.83	689.78	-18.13	-61.21	63.78	3.04	2.99	-2.32
785.00	18.38	250.60	776.03	-26.42	-85.50	89.45	4.03	4.01	-1.37

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-42 - Slot A
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Site:	Cascade Creek 697-05C Pad	MD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Well:	CC 697-05-42	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)
875.00	17.41	248.85	881.67	-36.00	-111.45	117.10	1.23	-1.08	-1.94
986.00	18.82	248.49	948.16	-46.29	-137.80	145.36	1.55	1.55	-0.40
1,060.00	17.06	246.12	1,037.59	-57.43	-164.52	174.25	2.03	-1.87	-2.52
1,155.00	17.06	250.69	1,128.41	-67.68	-190.41	202.07	1.41	0.00	4.81
1,250.00	18.29	248.41	1,218.93	-77.78	-217.43	230.90	1.49	1.29	-2.40
1,344.00	20.05	250.25	1,307.71	-88.65	-246.31	261.74	1.98	1.87	1.96
1,438.00	18.11	251.92	1,396.54	-98.63	-275.37	292.47	2.14	-2.06	1.78
1,533.00	18.11	251.83	1,486.84	-107.82	-303.43	321.99	0.03	0.00	-0.09
1,627.00	18.20	250.78	1,576.16	-117.20	-331.17	351.28	0.36	0.10	-1.12
1,722.00	17.50	251.04	1,666.59	-126.73	-358.69	380.40	0.74	-0.74	0.27
1,817.00	18.20	252.45	1,757.01	-135.84	-386.34	409.52	0.87	0.74	1.48
1,911.00	18.29	251.57	1,846.29	-144.93	-414.33	438.94	0.31	0.10	-0.94
2,006.00	18.03	251.92	1,936.55	-154.21	-442.45	468.55	0.30	-0.27	0.37
2,100.00	19.79	252.45	2,025.48	-163.52	-471.46	499.01	1.88	1.87	0.56
2,195.00	19.70	251.04	2,114.89	-173.57	-501.93	531.10	0.51	-0.09	-1.48
2,289.00	18.91	250.25	2,203.61	-183.87	-531.25	562.17	0.89	-0.84	-0.84
2,384.00	19.26	250.34	2,293.38	-194.34	-560.50	593.23	0.37	0.37	0.09
2,478.00	19.52	251.48	2,382.05	-204.55	-589.99	624.44	0.49	0.28	1.21
2,572.00	17.94	253.50	2,471.07	-213.65	-618.76	654.61	1.82	-1.68	2.15
2,664.00	17.15	255.26	2,558.79	-221.12	-645.47	682.29	1.03	-0.86	1.91
Last SDI Surface MWD									
2,763.00	16.83	255.94	2,653.47	-228.32	-673.48	711.13	0.38	-0.32	0.69
First SDI Production MWD Survey									
2,857.00	18.78	252.81	2,742.97	-236.10	-701.14	739.82	2.31	2.07	-3.33
2,952.00	17.15	247.53	2,833.34	-245.97	-728.70	769.09	2.42	-1.72	-5.56
3,046.00	16.09	245.88	2,923.41	-256.83	-753.38	795.89	1.26	-1.13	-1.97
3,141.00	16.80	245.42	3,014.52	-267.76	-777.86	822.65	0.75	0.75	-0.27
3,235.00	16.44	251.04	3,104.60	-277.74	-802.79	849.48	1.75	-0.38	5.98
3,330.00	18.55	255.26	3,195.21	-285.95	-830.13	877.99	2.59	2.22	4.44
3,425.00	16.62	254.38	3,285.76	-293.46	-857.83	906.63	2.05	-2.03	-0.93
3,519.00	18.55	253.24	3,375.37	-301.39	-885.09	935.00	2.09	2.05	-1.21
3,614.00	19.52	253.50	3,465.17	-310.25	-914.78	965.96	1.02	1.02	0.27
3,708.00	16.44	251.22	3,554.57	-319.00	-942.44	994.96	3.36	-3.28	-2.43
3,803.00	16.18	256.67	3,645.75	-326.38	-968.05	1,021.57	1.63	-0.27	5.74
3,897.00	18.03	253.86	3,735.59	-333.44	-994.77	1,049.14	2.16	1.97	-2.99
3,992.00	19.08	251.40	3,825.66	-342.48	-1,023.61	1,079.35	1.38	1.11	-2.59
4,086.00	19.43	253.50	3,914.40	-351.82	-1,053.16	1,110.34	0.83	0.37	2.23
4,181.00	17.76	253.33	4,004.44	-360.47	-1,082.19	1,140.61	1.76	-1.76	-0.18
4,275.00	19.61	251.57	4,093.48	-369.57	-1,110.89	1,170.71	2.06	1.97	-1.87
4,369.00	19.08	252.80	4,182.17	-379.10	-1,140.54	1,201.84	0.71	-0.56	1.31
4,464.00	17.76	252.45	4,272.30	-388.06	-1,169.18	1,231.85	1.39	-1.39	-0.37
4,559.00	18.29	248.06	4,362.64	-398.00	-1,196.83	1,261.22	1.53	0.56	-4.62
4,653.00	16.97	249.02	4,452.23	-408.42	-1,223.32	1,289.66	1.44	-1.40	1.02

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-42 - Slot A
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Site:	Cascade Creek 697-05C Pad	MD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Well:	CC 697-05-42	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)
4,748.00	14.95	248.76	4,543.56	-417.83	-1,247.69	1,315.76	2.13	-2.13	-0.27
4,843.00	13.89	248.67	4,635.57	-426.41	-1,289.73	1,339.40	1.12	-1.12	-0.09
4,937.00	12.93	253.24	4,727.00	-433.55	-1,290.31	1,381.18	1.52	-1.02	4.86
5,032.00	14.16	250.52	4,819.36	-440.49	-1,311.45	1,383.42	1.46	1.29	-2.86
5,126.00	12.22	248.85	4,910.88	-447.91	-1,331.57	1,404.86	2.10	-2.06	-1.78
5,222.00	12.13	249.99	5,004.72	-455.03	-1,350.52	1,425.10	0.27	-0.09	1.19
5,315.00	14.25	247.35	5,095.26	-462.78	-1,370.27	1,446.29	2.37	2.28	-2.84
5,410.00	13.63	247.00	5,187.46	-471.66	-1,391.36	1,469.12	0.66	-0.65	-0.37
5,504.00	13.54	246.65	5,278.83	-480.35	-1,411.66	1,491.14	0.13	-0.10	-0.37
5,599.00	13.45	254.82	5,371.22	-487.65	-1,432.53	1,513.26	2.01	-0.09	8.60
5,693.00	11.61	257.90	5,462.98	-492.50	-1,452.33	1,533.56	2.08	-1.96	3.28
5,788.00	9.67	256.84	5,556.34	-496.32	-1,469.45	1,550.99	2.05	-2.04	-1.12
5,882.00	9.23	256.58	5,649.06	-499.86	-1,484.47	1,566.35	0.47	-0.47	-0.28
5,977.00	7.39	252.27	5,743.06	-503.49	-1,497.70	1,580.04	2.04	-1.94	-4.54
6,071.00	5.98	246.12	5,836.42	-507.32	-1,507.94	1,590.97	1.68	-1.50	-6.54
6,166.00	5.80	250.78	5,930.92	-510.90	-1,517.00	1,600.70	0.54	-0.19	4.91
6,260.00	5.80	250.16	6,024.44	-514.08	-1,525.95	1,610.20	0.07	0.00	-0.66
6,355.00	5.36	252.36	6,118.99	-517.05	-1,534.69	1,619.43	0.51	-0.46	2.32
6,449.00	3.78	260.80	6,212.69	-518.88	-1,541.94	1,626.87	1.82	-1.68	8.98
6,544.00	3.17	259.66	6,307.51	-519.85	-1,547.61	1,632.56	0.65	-0.64	-1.20
6,638.00	3.34	255.79	6,401.36	-520.99	-1,552.82	1,637.86	0.30	0.18	-4.12
6,732.00	3.87	253.33	6,495.18	-522.57	-1,558.52	1,643.76	0.59	0.56	-2.62
6,827.00	4.22	251.83	6,589.94	-524.58	-1,564.91	1,650.46	0.38	0.37	-1.58
6,922.00	3.67	258.69	6,684.70	-526.30	-1,571.37	1,657.13	0.63	-0.37	7.22
7,016.00	3.25	261.77	6,778.52	-527.30	-1,577.12	1,662.89	0.69	-0.66	3.28
7,111.00	3.17	257.72	6,873.37	-528.24	-1,582.35	1,668.15	0.25	-0.08	-4.28
7,205.00	3.61	257.90	6,967.21	-529.42	-1,587.79	1,673.67	0.47	0.47	0.19
7,300.00	3.78	264.67	7,062.01	-530.34	-1,593.83	1,679.68	0.49	0.18	7.13
7,394.00	3.43	258.51	7,155.82	-531.18	-1,599.67	1,685.48	0.55	-0.37	-6.55
7,489.00	3.61	241.29	7,250.65	-533.19	-1,605.08	1,691.25	1.12	0.19	-18.13
7,583.00	4.13	239.09	7,344.43	-536.35	-1,610.58	1,697.47	0.58	0.55	-2.34
7,678.00	4.66	239.09	7,439.15	-540.09	-1,616.82	1,704.59	0.56	0.56	0.00
7,772.00	4.48	252.89	7,532.86	-543.13	-1,623.61	1,712.00	1.18	-0.19	14.68
7,867.00	3.34	260.71	7,627.64	-544.67	-1,629.89	1,718.44	1.32	-1.20	8.23
7,961.00	2.73	263.52	7,721.50	-545.36	-1,634.81	1,723.32	0.67	-0.65	2.99
8,056.00	3.17	267.39	7,816.38	-545.74	-1,639.68	1,728.05	0.51	0.46	4.07
8,150.00	3.52	268.80	7,910.22	-545.91	-1,645.17	1,733.30	0.38	0.37	1.50
8,245.00	2.99	274.69	8,005.06	-545.77	-1,650.55	1,738.34	0.66	-0.56	6.20
8,339.00	2.99	277.06	8,098.94	-545.27	-1,655.43	1,742.79	0.13	0.00	2.52
8,434.00	2.81	262.03	8,193.82	-545.29	-1,660.19	1,747.31	0.82	-0.19	-15.82
8,528.00	3.78	270.29	8,287.66	-545.59	-1,665.57	1,752.50	1.15	1.03	8.79
8,623.00	4.22	277.32	8,382.43	-545.13	-1,672.17	1,758.59	0.69	0.46	7.40
8,717.00	5.01	269.85	8,476.12	-544.70	-1,679.71	1,765.58	1.05	0.84	-7.95
8,812.00	5.19	268.18	8,570.75	-544.85	-1,688.15	1,773.61	0.25	0.19	-1.76

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-42 - Slot A
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Site:	Cascade Creek 697-05C Pad	MD Reference:	GL 8423' & RKB 30' @ 8453.00ft (H&P 353)
Well:	CC 697-05-42	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)
8,906.00	5.28	271.87	8,664.36	-544.84	-1,696.72	1,781.72	0.37	0.10	3.93
9,001.00	5.36	271.79	8,758.95	-544.56	-1,705.53	1,789.96	0.08	0.08	-0.08
9,094.00	5.10	267.74	8,851.56	-544.59	-1,714.00	1,797.98	0.49	-0.28	-4.35
Last SDI Production MWD Survey									
9,150.00	5.10	267.74	8,907.34	-544.79	-1,718.97	1,802.75	0.00	0.00	0.00
Projection To TD - BHL = 638007.26, 1225268.39									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
154.00	154.00	-0.13	-0.85	First SDI Surface MWD
2,664.00	2,558.79	-221.12	-645.47	Last SDI Surface MWD
2,763.00	2,653.47	-228.32	-673.48	First SDI Production MWD Survey
9,094.00	8,851.56	-544.59	-1,714.00	Last SDI Production MWD Survey
9,150.00	8,907.34	-544.79	-1,718.97	Projection To TD
9,150.00	8,907.34	-544.79	-1,718.97	BHL = 638007.26, 1225268.39

Checked By: _____ Approved By: _____ Date: _____