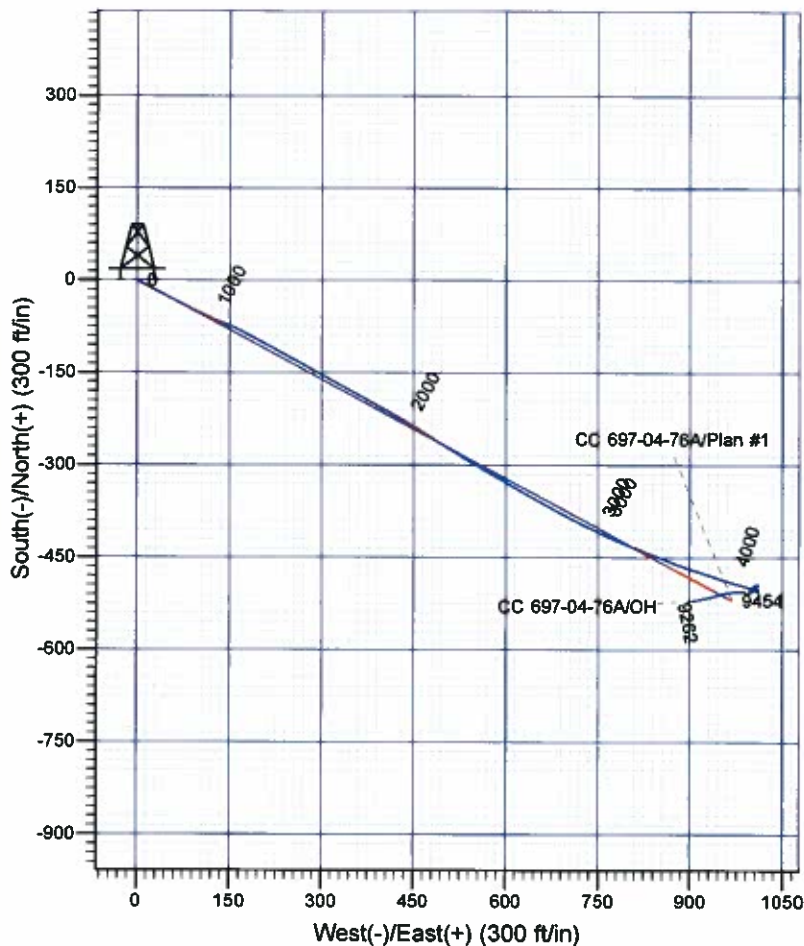
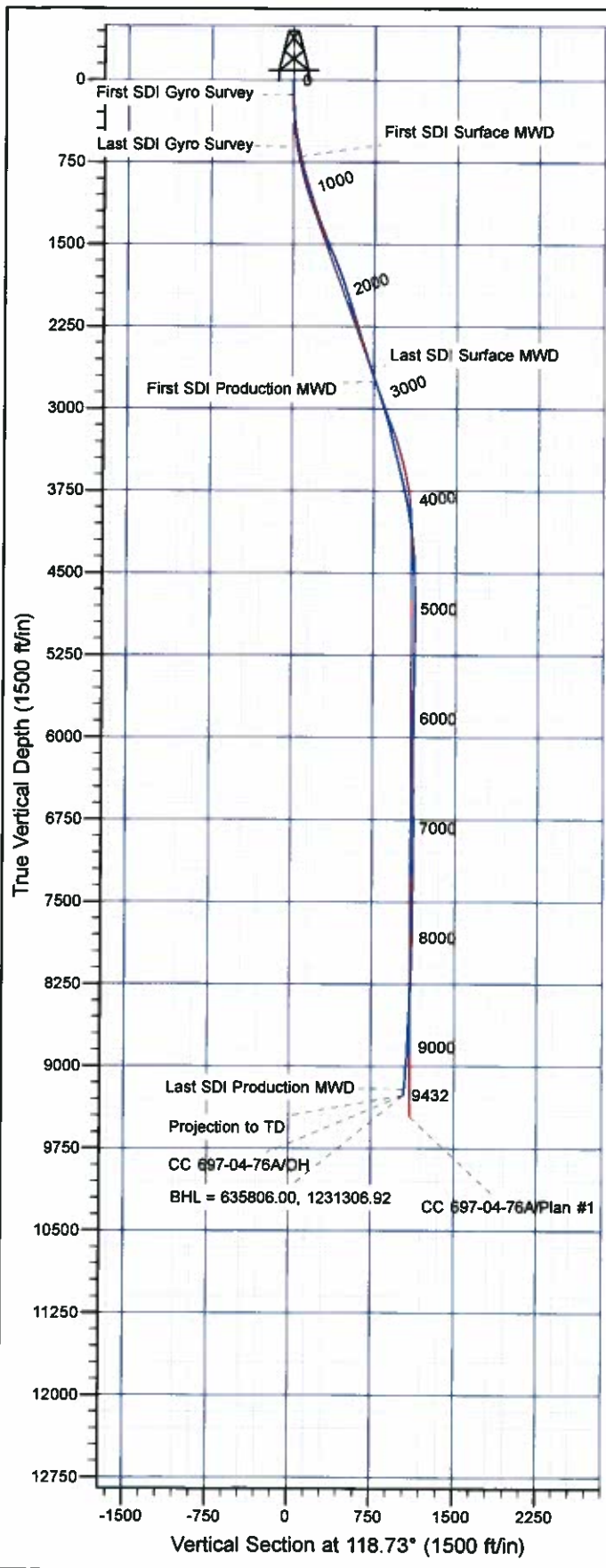




Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-04D Pad
Well: CC 697-04-76A
Wellbore: OH
Design: OH



Well Details: CC 697-04-76A

+N/-S	+E/-W	TVD Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P)	North	East	Latitude	Longitude	Slot
0.00	0.00		636353.14	1230417.30	39° 32' 55.928 N	108° 13' 46.084 W	E

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-04-76A - Slot E, True North
Vertical (TVD) Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P)
Section (VS) Reference: Slot - E(0.00N, 0.00E)
Measured Depth Reference: GL 8629' & RKB 30' @ 8659.00ft (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

10:35, April 16 2012
Created By: Janie Cooke

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-04D Pad
CC 697-04-76A - Slot E**

OH

Design: OH

Standard Survey Report

16 April, 2012



Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-76A - Slot E
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Well:	CC 697-04-76A	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 697-04D Pad			
Site Position:		Northing:	635,530.62 usft	Latitude:	39° 32' 47.760 N
From:	Map	Easting:	1,230,276.10 usft	Longitude:	108° 13' 47.570 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.72 °

Well	CC 697-04-76A - Slot E					
Well Position	+N/-S	0.00 ft	Northing:	636,353.14 usft	Latitude:	39° 32' 55.928 N
	+E/-W	0.00 ft	Easting:	1 230,417.30 usft	Longitude:	108° 13' 46.084 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,629.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	03/24/2011	10.47	65.76	52,282

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	118.73	

Survey Program	Date	04/16/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
133.00	613.00	Survey #1 - Gyro Survey (OH)	SDI Standard Keeper 103	SDI Standard Wireline Keeper ver 1.0.3	
702.00	2,734.00	Survey #2 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,870.00	9,432.00	Survey #3 - 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	
133.00	1.23	127.00	132.99	-0.86	1.14	1.41	0.92	0.92	0.00	
First SDI Gyro Survey										
171.00	1.50	127.62	170.98	-1.41	1.86	2.31	0.71	0.71	1.63	
263.00	2.38	123.40	262.93	-3.19	4.41	5.40	0.97	0.96	-4.59	
355.00	4.57	112.94	354.75	-5.68	9.38	10.95	2.47	2.38	-11.37	
447.00	7.92	119.09	446.19	-10.19	18.30	20.94	3.71	3.64	6.68	
538.00	10.58	119.27	536.00	-17.31	31.05	35.55	2.90	2.90	0.20	
613.00	11.96	118.47	609.56	-24.38	43.88	50.19	1.88	1.87	-1.07	

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-76A - Slot E
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Well:	CC 697-04-76A	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)
Last SDI Gyro Survey									
702.00	11.70	115.49	696.67	-32.66	60.13	68.43	0.75	-0.29	-3.35
First SDI Surface MWD									
792.00	13.01	116.54	784.58	-41.11	77.43	87.66	1.48	1.46	1.17
882.00	16.53	116.98	871.60	-51.45	97.91	110.59	3.91	3.91	0.49
972.00	18.55	113.03	957.41	-62.86	122.50	137.63	2.60	2.24	-4.39
1,067.00	18.38	112.41	1,047.52	-74.48	150.25	167.56	0.27	-0.18	-0.65
1,162.00	17.94	118.12	1,137.79	-87.09	177.00	197.08	1.93	-0.46	6.01
1,257.00	18.29	117.95	1,228.09	-100.97	203.08	226.61	0.37	0.37	-0.18
1,351.00	20.40	118.65	1,316.77	-115.74	230.49	257.75	2.26	2.24	0.74
1,446.00	21.81	118.83	1,405.40	-132.19	260.48	291.95	1.49	1.48	0.19
1,541.00	22.69	119.00	1,493.32	-149.58	291.96	327.92	0.93	0.93	0.18
1,635.00	25.32	118.21	1,579.19	-167.88	325.54	366.16	2.82	2.80	-0.84
1,730.00	20.58	119.09	1,666.64	-185.61	358.05	403.19	5.00	-4.99	0.93
1,825.00	19.35	118.74	1,755.93	-201.30	386.44	435.63	1.30	-1.29	-0.37
1,920.00	20.49	118.83	1,845.25	-216.88	414.81	468.00	1.20	1.20	0.09
2,014.00	17.76	121.02	1,934.05	-232.21	441.51	498.78	3.00	-2.90	2.33
2,109.00	17.41	121.82	2,024.61	-247.17	466.01	527.45	0.45	-0.37	0.84
2,204.00	17.32	121.64	2,115.28	-262.08	490.12	555.76	0.11	-0.09	-0.19
2,299.00	17.32	123.49	2,205.97	-277.30	513.96	583.98	0.58	0.00	1.95
2,393.00	18.20	120.15	2,295.50	-292.39	538.32	612.60	1.43	0.94	-3.55
2,488.00	17.50	120.41	2,385.92	-307.08	563.47	641.71	0.74	-0.74	0.27
2,583.00	18.29	119.62	2,476.33	-321.67	588.75	670.89	0.87	0.83	-0.83
2,677.00	18.03	120.23	2,565.64	-336.29	614.14	700.18	0.34	-0.28	0.65
2,734.00	17.85	119.35	2,619.87	-345.01	629.37	717.73	0.57	-0.32	-1.54
Last SDI Surface MWD									
2,870.00	19.26	119.35	2,748.80	-366.22	667.09	761.01	1.04	1.04	0.00
First SDI Production MWD									
2,965.00	18.64	117.95	2,838.65	-381.02	694.16	791.86	0.81	-0.65	-1.47
3,060.00	18.99	116.37	2,928.58	-395.00	721.42	822.48	0.65	0.37	-1.66
3,155.00	17.23	115.66	3,018.87	-407.96	747.96	851.98	1.87	-1.85	-0.75
3,249.00	14.51	114.26	3,109.27	-418.83	771.24	877.62	2.92	-2.89	-1.49
3,344.00	13.72	110.92	3,201.41	-427.74	792.62	900.65	1.19	-0.83	-3.52
3,438.00	12.22	109.77	3,293.01	-435.09	812.39	921.52	1.62	-1.80	-1.22
3,533.00	14.16	112.76	3,385.50	-442.98	832.57	943.01	2.16	2.04	3.15
3,628.00	15.30	110.65	3,477.37	-451.90	855.02	966.98	1.33	1.20	-2.22
3,723.00	13.81	111.18	3,569.32	-460.42	877.32	990.63	1.57	-1.57	0.56
3,817.00	13.28	108.19	3,660.71	-467.84	898.04	1,012.37	0.93	-0.56	-3.18
3,912.00	11.96	108.37	3,753.41	-474.35	917.75	1,032.78	1.39	-1.39	0.19
4,007.00	11.08	108.72	3,846.50	-480.38	935.73	1,051.45	0.93	-0.93	0.37
4,101.00	9.67	109.42	3,938.96	-485.91	951.74	1,068.14	1.51	-1.50	0.74
4,196.00	8.79	106.26	4,032.73	-490.59	966.23	1,083.10	1.07	-0.93	-3.33
4,291.00	8.00	104.06	4,126.71	-494.23	979.61	1,096.58	0.90	-0.83	-2.32
4,386.00	5.98	106.35	4,221.00	-497.23	990.77	1,107.81	2.15	-2.13	2.41

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-76A - Slot E
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Well:	CC 697-04-76A	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)
4,480.00	4.13	108.81	4,314.63	-499.70	998.68	1,115.93	1.98	-1.97	2.62
4,575.00	2.64	107.14	4,409.46	-501.45	1,004.01	1,121.44	1.57	-1.57	-1.76
4,670.00	1.41	113.29	4,504.40	-502.55	1,007.17	1,124.75	1.31	-1.29	6.47
4,764.00	1.23	115.66	4,598.37	-503.45	1,009.14	1,126.91	0.20	-0.19	2.52
4,859.00	0.70	151.26	4,693.36	-504.40	1,010.34	1,128.42	0.82	-0.56	37.47
4,954.00	0.44	139.57	4,788.36	-505.18	1,010.86	1,129.25	0.30	-0.27	-12.31
5,048.00	0.18	96.77	4,882.36	-505.48	1,011.24	1,129.72	0.35	-0.28	-45.53
5,143.00	0.53	203.29	4,977.35	-505.90	1,011.21	1,129.90	0.64	0.37	112.13
5,238.00	0.35	289.95	5,072.35	-506.20	1,010.78	1,129.86	0.65	-0.19	91.22
5,333.00	1.85	8.52	5,167.33	-504.59	1,010.72	1,128.84	1.91	1.58	82.71
5,427.00	1.32	0.70	5,261.30	-502.00	1,010.96	1,127.81	0.61	-0.56	-8.32
5,522.00	0.88	249.70	5,356.29	-501.16	1,010.29	1,126.81	1.93	-0.46	-116.84
5,617.00	1.14	245.48	5,451.27	-501.81	1,008.74	1,125.77	0.28	0.27	-4.44
5,711.00	0.97	260.59	5,545.26	-502.33	1,007.11	1,124.58	0.35	-0.18	16.07
5,806.00	1.06	257.69	5,640.24	-502.64	1,005.45	1,123.29	0.11	0.09	-3.05
5,900.00	0.88	260.33	5,734.23	-502.95	1,003.89	1,122.07	0.20	-0.19	2.81
5,995.00	0.79	264.20	5,829.22	-503.14	1,002.52	1,120.96	0.11	-0.09	4.07
6,090.00	0.88	258.40	5,924.21	-503.35	1,001.16	1,119.86	0.13	0.09	-6.11
6,184.00	0.97	256.29	6,018.20	-503.69	999.68	1,118.72	0.10	0.10	-2.24
6,279.00	1.06	265.52	6,113.18	-503.95	998.02	1,117.39	0.20	0.09	9.72
6,373.00	1.14	29.97	6,207.17	-503.20	997.62	1,116.89	2.07	0.09	132.39
6,468.00	0.62	47.90	6,302.16	-502.04	998.47	1,116.88	0.61	-0.55	18.87
6,562.00	2.55	39.02	6,396.12	-500.07	1,000.17	1,117.42	2.06	2.05	-9.45
6,657.00	2.81	49.31	6,491.02	-496.91	1,003.26	1,118.61	0.57	0.27	10.83
6,752.00	2.46	58.27	6,585.92	-494.32	1,006.76	1,120.44	0.57	-0.37	9.43
6,846.00	1.41	86.40	6,679.87	-493.19	1,009.63	1,122.41	1.47	-1.12	29.93
6,940.00	1.58	198.90	6,773.85	-494.34	1,010.37	1,123.61	2.65	0.18	119.68
7,035.00	2.20	216.65	6,868.80	-497.05	1,008.85	1,123.58	0.89	0.65	18.68
7,129.00	2.90	219.55	6,962.70	-500.33	1,006.26	1,122.88	0.76	0.74	3.09
7,224.00	2.02	228.78	7,057.61	-503.28	1,003.47	1,121.86	1.01	-0.93	9.72
7,318.00	1.58	247.67	7,151.57	-504.87	1,001.03	1,120.48	0.78	-0.47	20.10
7,413.00	1.85	253.65	7,246.53	-505.80	998.35	1,118.57	0.34	0.28	6.29
7,507.00	1.76	243.37	7,340.48	-506.87	995.60	1,116.68	0.36	-0.10	-10.94
7,602.00	1.23	238.45	7,435.45	-508.06	993.43	1,115.34	0.57	-0.56	-5.18
7,696.00	1.49	231.41	7,529.42	-509.35	991.61	1,114.37	0.33	0.28	-7.49
7,791.00	0.18	340.14	7,624.41	-509.98	990.60	1,113.79	1.64	-1.38	114.45
7,885.00	0.70	26.10	7,718.41	-509.32	990.80	1,113.65	0.63	0.55	48.89
7,980.00	0.53	15.82	7,813.40	-508.38	991.17	1,113.52	0.21	-0.18	-10.82
8,075.00	0.79	320.62	7,908.40	-507.45	990.88	1,112.82	0.69	0.27	-58.11
8,170.00	1.32	294.34	8,003.38	-506.49	989.46	1,111.12	0.74	0.56	-27.66
8,265.00	2.46	286.52	8,098.33	-505.46	986.51	1,108.03	1.23	1.20	-8.23
8,359.00	2.99	266.57	8,192.22	-505.04	982.13	1,103.99	1.15	0.56	-21.22
8,454.00	3.69	265.34	8,287.06	-505.43	976.61	1,099.34	0.74	0.74	-1.29

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-04-76A - Slot E
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Site:	Cascade Creek 697-04D Pad	MD Reference:	GL 8629' & RKB 30' @ 8659.00ft (H&P)
Well:	CC 697-04-76A	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)
8,549.00	3.78	262.62	8,381.86	-506.08	970.46	1,094.26	0.21	0.09	-2.86
8,587.28	3.23	265.66	8,420.07	-506.33	968.13	1,092.33	1.51	-1.43	7.93
CC 697-04-76A Target									
8,643.00	2.46	272.46	8,475.72	-506.39	965.37	1,089.94	1.51	-1.39	12.21
8,738.00	2.73	286.13	8,570.82	-506.46	961.08	1,086.21	0.41	0.28	-6.68
8,833.00	2.99	256.90	8,665.50	-507.17	956.41	1,082.46	0.56	0.27	-9.72
8,928.00	3.78	249.52	8,760.34	-508.83	951.06	1,078.56	0.95	0.83	-7.77
9,022.00	4.40	251.45	8,854.10	-511.06	944.74	1,074.09	0.68	0.66	2.05
9,117.00	4.92	256.55	8,948.78	-513.17	937.32	1,068.60	0.70	0.55	5.37
9,212.00	5.63	257.61	9,043.38	-515.12	928.81	1,062.07	0.75	0.75	1.12
9,306.00	6.24	256.11	9,136.88	-517.33	919.34	1,054.84	0.67	0.65	-1.60
9,376.00	6.42	259.10	9,206.45	-518.99	911.81	1,049.03	0.54	0.26	4.27
Last SDI Production MWD									
9,432.00	6.42	259.10	9,262.10	-520.17	905.66	1,044.20	0.00	0.00	0.00
Projection to TD - BHL = 635806.00, 1231306.92									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
133.00	132.99	-0.86	1.14	First SDI Gyro Survey
613.00	609.56	-24.38	43.88	Last SDI Gyro Survey
702.00	696.67	-32.66	60.13	First SDI Surface MWD
2,734.00	2,619.87	-345.01	629.37	Last SDI Surface MWD
2,870.00	2,748.80	-366.22	667.09	First SDI Production MWD
9,376.00	9,206.45	-518.99	911.81	Last SDI Production MWD
9,432.00	9,262.10	-520.17	905.66	Projection to TD
9,432.00	9,262.10	-520.17	905.66	BHL = 635806.00, 1231306.92

Checked By: _____ Approved By: _____ Date: _____