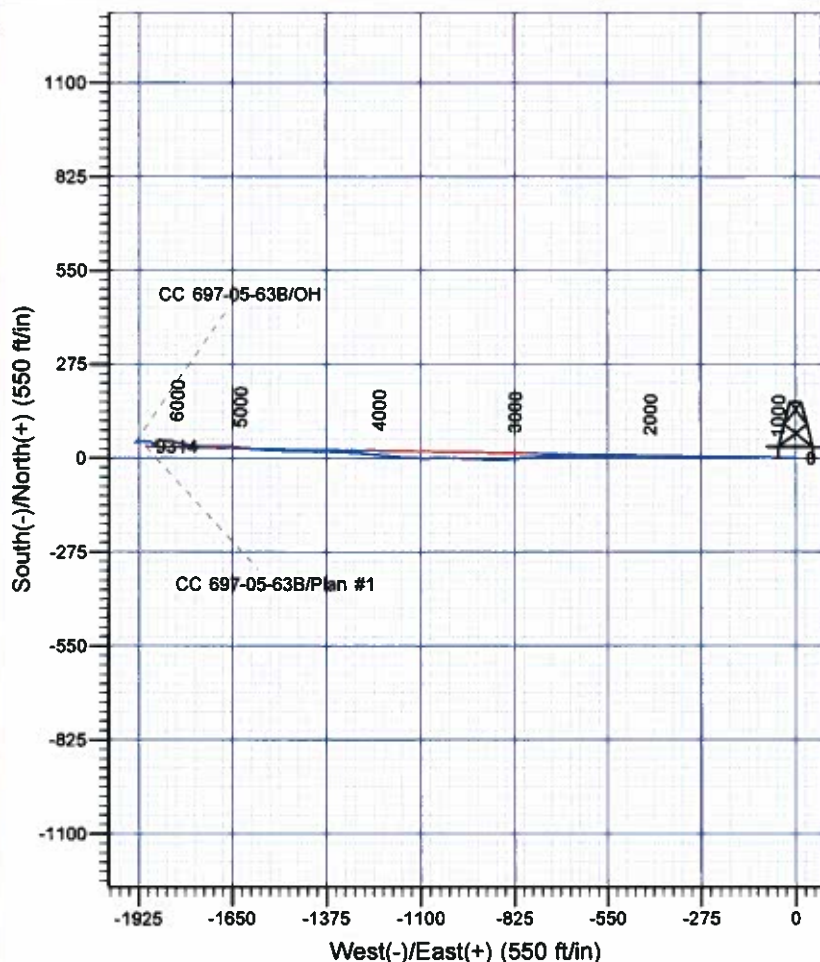
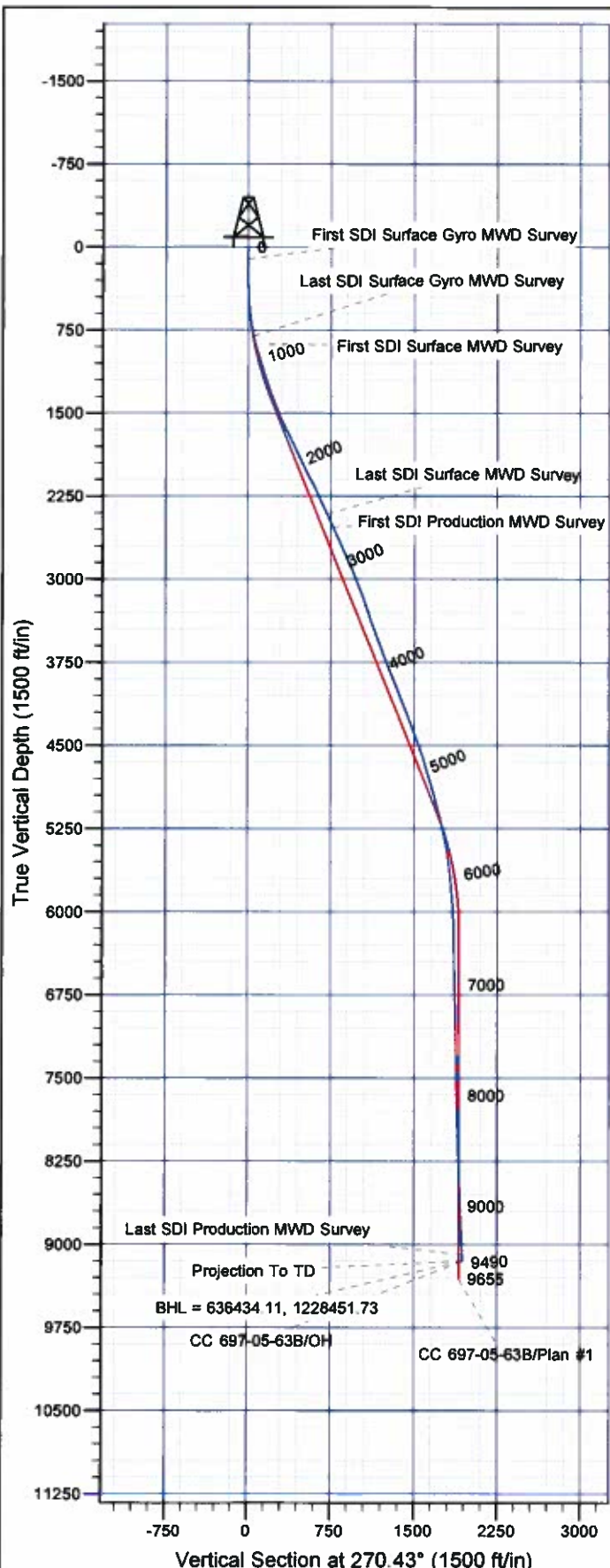




Scientific Drilling

Company: OXY USA RMA
 Project: Garfield County, CO NAD27
 Site: Cascade Creek 697-04D Pad
 Well: CC 697-05-63B
 Wellbore: OH
 Design: OH



Well Details: CC 697-05-63B

TVD Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P)		Datum Level: 8629.00		Slot P	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	636330.35	1230386.03	39° 32' 55.693 N	108° 13' 46.474 W

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-05-63B - Slot P, True North

Vertical (TVD) Reference: GL 8629' & RKB 30' @ 8659.00ft (H&P)

Section (VS) Reference: Slot - P(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

9:41, January 17 2012
 Created By: Rex Hall

OXY USA RMAT

Garfield County, CO NAD27

Cascade Creek 697-04D Pad

CC 697-05-63B - Slot P

OH

Design: OH

Standard Survey Report

17 January, 2012

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-63B - Slot P
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 697-05-63B	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 697-05-63B - Slot P					
Well Position	+N/-S	0.00 ft	Northing:	636,330.35 usft	Latitude:	39° 32' 55.693 N
	+E/-W	0.00 ft	Easting:	1,230,386.03 usft	Longitude:	108° 13' 46.474 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,629.00 ft

Wellbore	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	03/23/11	10.47	65.76	52,283

Design	OH
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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	270.43

Survey Program		Date	01/17/12		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
109.00	808.00	Survey #1 - Surface Gyro MWD (OH)	SDI Gyro MWD 104	SDI Gyro MWD Error Model Ver 1.0.4	
883.00	2,554.00	Survey #2 - Surface MWD (OH)	MWD-SDI	MWD - Standard ISCWSA	
2,681.00	9,490.00	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
109.00	0.18	84.11	109.00	0.02	0.17	-0.17	0.17	0.17	0.00
First SDI Surface Gyro MWD Survey									
171.00	0.09	92.46	171.00	0.03	0.32	-0.32	0.15	-0.15	13.47
263.00	0.09	81.30	263.00	0.03	0.46	-0.46	0.02	0.00	-12.13
355.00	0.97	269.56	355.00	0.04	-0.25	0.25	1.15	0.96	-186.67
446.00	2.38	275.45	445.95	0.21	-2.90	2.90	1.56	1.55	6.47
538.00	4.84	268.51	537.77	0.29	-8.68	8.68	2.71	2.67	-7.54
630.00	7.83	271.58	629.19	0.36	-18.83	18.83	3.27	3.25	3.34

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-63B - Slot P
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 697-05-63B	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)
719.00	10.21	271.23	717.09	0.70	-32.78	32.78	2.67	2.67	-0.39
808.00	12.49	272.55	804.34	1.30	-50.28	50.29	2.58	2.56	1.48
Last SDI Surface Gyro MWD Survey									
883.00	15.04	271.44	877.18	1.90	-68.11	68.12	3.42	3.40	-1.48
First SDI Surface MWD Survey									
973.00	17.85	270.64	963.49	2.35	-93.58	93.60	3.13	3.12	-0.89
1,068.00	16.18	269.06	1,054.33	2.30	-121.38	121.39	1.82	-1.76	-1.66
1,162.00	18.20	269.77	1,144.13	2.02	-149.16	149.17	2.16	2.15	0.76
1,257.00	18.99	271.26	1,234.17	2.30	-179.45	179.46	0.97	0.83	1.57
1,352.00	19.17	270.64	1,323.95	2.82	-210.50	210.51	0.29	0.19	-0.65
1,447.00	21.37	269.85	1,413.06	2.95	-243.41	243.42	2.33	2.32	-0.83
1,541.00	22.86	270.64	1,500.14	3.11	-278.79	278.81	1.62	1.59	0.84
1,636.00	24.89	271.52	1,587.01	3.84	-317.23	317.25	2.17	2.14	0.93
1,731.00	27.79	271.79	1,672.13	5.06	-359.36	359.39	3.06	3.05	0.28
1,825.00	26.38	272.31	1,755.82	6.59	-402.13	402.17	1.52	-1.50	0.55
1,920.00	24.45	270.73	1,841.63	7.69	-442.88	442.93	2.15	-2.03	-1.66
2,015.00	25.06	269.50	1,927.90	7.77	-482.66	482.70	0.84	0.64	-1.29
2,110.00	26.38	270.03	2,013.48	7.60	-523.89	523.93	1.41	1.39	0.56
2,205.00	28.67	270.03	2,097.73	7.63	-567.79	567.83	2.41	2.41	0.00
2,299.00	25.41	268.80	2,181.44	7.21	-610.51	610.55	3.52	-3.47	-1.31
2,394.00	23.65	269.15	2,267.86	6.51	-649.94	649.97	1.86	-1.85	0.37
2,489.00	24.53	269.06	2,354.59	5.90	-688.71	688.74	0.93	0.93	-0.09
2,554.00	25.85	268.53	2,413.40	5.31	-716.37	716.39	2.06	2.03	-0.82
Last SDI Surface MWD Survey									
2,681.00	25.94	265.81	2,527.66	2.57	-771.75	771.75	0.94	0.07	-2.14
First SDI Production MWD Survey									
2,775.00	24.36	263.96	2,612.74	-0.97	-811.54	811.51	1.88	-1.68	-1.97
2,870.00	24.18	266.86	2,699.35	-4.10	-850.45	850.40	1.27	-0.19	3.05
2,965.00	23.48	270.03	2,786.26	-5.15	-888.81	888.74	1.54	-0.74	3.34
3,060.00	22.16	273.98	2,873.82	-3.90	-925.61	925.55	2.13	-1.39	4.16
3,154.00	22.69	273.02	2,960.71	-1.71	-961.40	961.36	0.69	0.56	-1.02
3,249.00	21.90	271.26	3,048.61	-0.36	-997.41	997.38	1.09	-0.83	-1.85
3,344.00	19.35	270.73	3,137.52	0.23	-1,030.87	1,030.84	2.69	-2.68	-0.56
3,438.00	18.73	269.06	3,226.37	0.18	-1,061.53	1,061.50	0.88	-0.66	-1.78
3,533.00	17.67	267.57	3,316.62	-0.68	-1,091.19	1,091.15	1.22	-1.12	-1.57
3,628.00	18.82	273.02	3,406.85	-0.48	-1,120.90	1,120.86	2.16	1.21	5.74
3,722.00	20.14	276.27	3,495.47	2.08	-1,152.12	1,152.11	1.82	1.40	3.46
3,817.00	21.54	276.53	3,584.25	5.85	-1,185.71	1,185.72	1.48	1.47	0.27
3,912.00	21.46	275.30	3,672.64	9.44	-1,220.34	1,220.38	0.48	-0.08	-1.29
4,007.00	20.58	274.86	3,761.32	12.46	-1,254.28	1,254.34	0.94	-0.93	-0.46
4,101.00	21.81	273.72	3,848.96	15.00	-1,288.17	1,288.25	1.38	1.31	-1.21
4,196.00	21.98	272.67	3,937.11	16.97	-1,323.54	1,323.63	0.45	0.18	-1.11
4,291.00	21.54	271.52	4,025.34	18.26	-1,358.73	1,358.83	0.64	-0.46	-1.21
4,385.00	21.37	271.26	4,112.83	19.09	-1,393.10	1,393.21	0.21	-0.18	-0.28

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-63B - Slot P
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 697-05-63B	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	21.19	271.44	4,201.35	19.91	-1,427.57	1,427.68	0.20	-0.19	0.19
4,575.00	21.19	270.56	4,289.92	20.51	-1,461.91	1,462.02	0.33	0.00	-0.93
4,669.00	20.14	271.87	4,377.88	21.20	-1,495.07	1,495.19	1.22	-1.12	1.39
4,764.00	19.96	272.58	4,467.12	22.46	-1,527.61	1,527.74	0.32	-0.19	0.75
4,859.00	19.43	273.46	4,556.56	24.15	-1,559.58	1,559.72	0.64	-0.56	0.93
4,953.00	18.29	276.09	4,645.51	26.65	-1,589.86	1,590.01	1.51	-1.21	2.80
5,048.00	16.44	277.94	4,736.18	30.09	-1,618.00	1,618.18	2.03	-1.95	1.95
5,143.00	15.65	276.27	4,827.48	33.35	-1,644.05	1,644.25	0.96	-0.83	-1.76
5,238.00	15.30	272.40	4,919.04	35.27	-1,669.31	1,669.53	1.15	-0.37	-4.07
5,332.00	14.33	271.79	5,009.91	36.16	-1,693.33	1,693.55	1.05	-1.03	-0.65
5,427.00	14.86	267.22	5,101.85	35.93	-1,717.25	1,717.47	1.33	0.56	-4.81
5,522.00	13.89	271.52	5,193.88	35.65	-1,740.82	1,741.03	1.52	-1.02	4.53
5,616.00	12.05	274.60	5,285.48	36.73	-1,761.88	1,762.10	2.09	-1.96	3.28
5,711.00	10.38	279.26	5,378.66	38.90	-1,780.21	1,780.45	2.00	-1.76	4.91
5,806.00	9.06	282.25	5,472.30	41.87	-1,795.97	1,796.23	1.49	-1.39	3.15
5,900.00	8.09	283.39	5,565.24	44.97	-1,809.64	1,809.92	1.05	-1.03	1.21
5,995.00	6.16	281.89	5,659.51	47.57	-1,821.13	1,821.43	2.04	-2.03	-1.58
6,089.00	5.01	278.64	5,753.06	49.22	-1,830.12	1,830.43	1.27	-1.22	-3.46
6,184.00	5.28	277.50	5,847.68	50.42	-1,838.55	1,838.88	0.30	0.28	-1.20
6,279.00	3.87	272.40	5,942.37	51.12	-1,846.09	1,846.42	1.54	-1.48	-5.37
6,373.00	2.81	272.58	6,036.21	51.36	-1,851.56	1,851.89	1.13	-1.13	0.19
6,467.00	1.93	275.21	6,130.13	51.61	-1,855.44	1,855.77	0.94	-0.94	2.80
6,562.00	0.97	298.86	6,225.10	52.14	-1,857.74	1,858.07	1.17	-1.01	24.89
6,657.00	1.06	316.08	6,320.08	53.16	-1,859.05	1,859.40	0.33	0.09	18.13
6,751.00	0.88	280.49	6,414.07	53.92	-1,860.37	1,860.71	0.66	-0.19	-37.86
6,846.00	1.14	261.15	6,509.06	53.91	-1,862.02	1,862.37	0.45	0.27	-20.36
6,940.00	1.76	256.23	6,603.03	53.42	-1,864.34	1,864.69	0.67	0.66	-5.23
7,035.00	1.49	243.66	6,697.99	52.52	-1,866.87	1,867.21	0.47	-0.28	-13.23
7,129.00	1.49	242.96	6,791.96	51.43	-1,869.05	1,869.38	0.02	0.00	-0.74
7,224.00	2.02	228.02	6,886.91	49.75	-1,871.40	1,871.71	0.73	0.56	-15.73
7,318.00	1.41	228.28	6,980.87	47.87	-1,873.49	1,873.79	0.65	-0.65	0.28
7,413.00	0.79	209.12	7,075.85	46.52	-1,874.68	1,874.97	0.75	-0.65	-20.17
7,507.00	1.14	200.77	7,169.84	45.08	-1,875.33	1,875.61	0.40	0.37	-8.88
7,601.00	1.23	219.23	7,263.82	43.42	-1,876.30	1,876.57	0.42	0.10	19.64
7,696.00	1.67	231.09	7,358.79	41.76	-1,878.02	1,878.28	0.56	0.46	12.48
7,791.00	1.49	259.39	7,453.75	40.66	-1,880.31	1,880.56	0.83	-0.19	29.79
7,885.00	1.14	286.02	7,547.73	40.70	-1,882.41	1,882.66	0.74	-0.37	28.33
7,980.00	1.32	328.21	7,642.71	41.89	-1,883.90	1,884.15	0.95	0.19	44.41
8,075.00	1.32	316.87	7,737.68	43.62	-1,885.22	1,885.49	0.27	0.00	-11.94
8,170.00	1.41	310.46	7,832.66	45.17	-1,886.86	1,887.14	0.19	0.09	-6.75
8,264.00	1.32	297.36	7,926.63	46.42	-1,888.70	1,888.99	0.34	-0.10	-13.94
8,359.00	1.76	288.84	8,021.60	47.40	-1,891.05	1,891.35	0.52	0.46	-8.97
8,454.00	1.93	278.11	8,116.55	48.09	-1,894.02	1,894.32	0.40	0.18	-11.29

Scientific Drilling International

Survey Report

Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-05-63B - Slot P
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 697-05-63B	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	2.29	270.91	8,211.48	48.35	-1,897.50	1,897.80	0.47	0.38	-7.58
8,643.00	2.64	269.85	8,305.39	48.37	-1,901.54	1,901.85	0.38	0.37	-1.13
8,738.00	2.46	275.74	8,400.30	48.57	-1,905.76	1,906.06	0.33	-0.19	6.20
8,833.00	2.37	283.12	8,495.22	49.22	-1,909.70	1,910.01	0.34	-0.09	7.77
8,927.00	1.85	269.41	8,589.15	49.65	-1,913.11	1,913.42	0.77	-0.55	-14.59
9,022.00	2.02	268.97	8,684.10	49.60	-1,916.32	1,916.63	0.18	0.18	-0.46
9,117.00	2.29	267.01	8,779.03	49.47	-1,919.89	1,920.20	0.29	0.28	-2.06
9,211.00	2.40	259.65	8,872.95	49.02	-1,923.70	1,924.01	0.34	0.12	-7.83
9,306.00	2.29	254.64	8,967.87	48.16	-1,927.48	1,927.79	0.24	-0.12	-5.27
9,401.00	2.98	255.35	9,062.77	47.03	-1,931.70	1,932.00	0.73	0.73	0.75
9,433.00	3.31	253.23	9,094.72	46.56	-1,933.39	1,933.68	1.09	1.03	-6.63
Last SDI Production MWD Survey									
9,490.00	3.31	253.23	9,151.63	45.61	-1,936.54	1,936.83	0.00	0.00	0.00
Projection To TD - BHL = 636434.11, 1228451.73									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
109.00	109.00	0.02	0.17	First SDI Surface Gyro MWD Survey
808.00	804.34	1.30	-50.28	Last SDI Surface Gyro MWD Survey
883.00	877.18	1.90	-68.11	First SDI Surface MWD Survey
2,554.00	2,413.40	5.31	-716.37	Last SDI Surface MWD Survey
2,681.00	2,527.66	2.57	-771.75	First SDI Production MWD Survey
9,433.00	9,094.72	46.56	-1,933.39	Last SDI Production MWD Survey
9,490.00	9,151.63	45.61	-1,936.54	Projection To TD
9,490.00	9,151.63	45.61	-1,936.54	BHL = 636434.11, 1228451.73

Checked By: _____	Approved By: _____	Date: _____
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