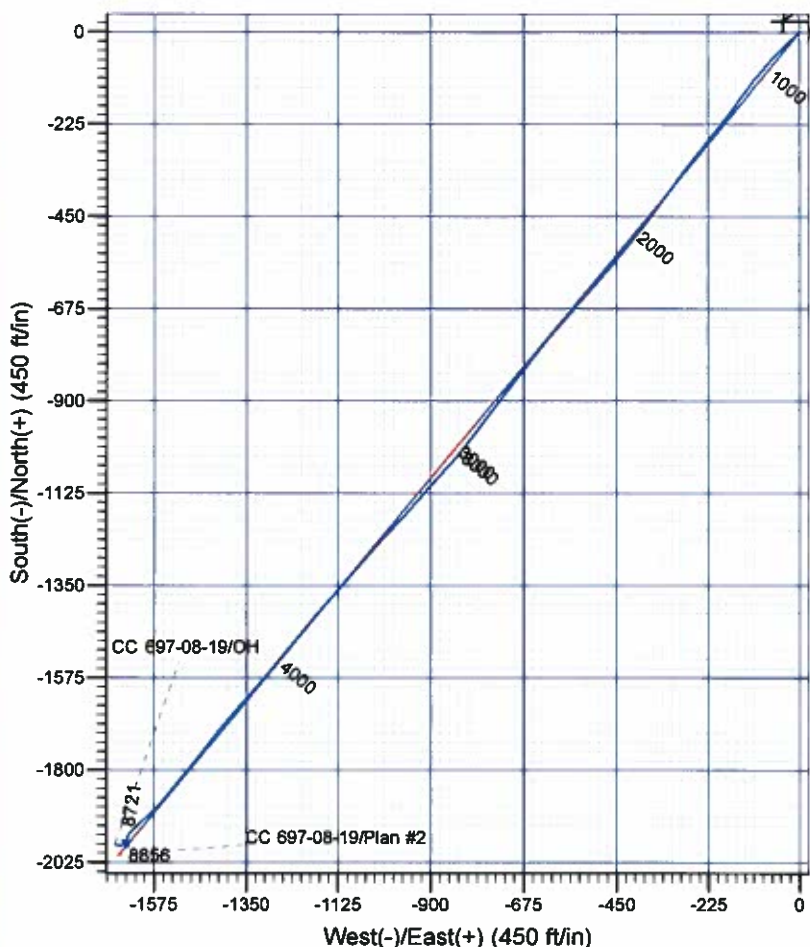
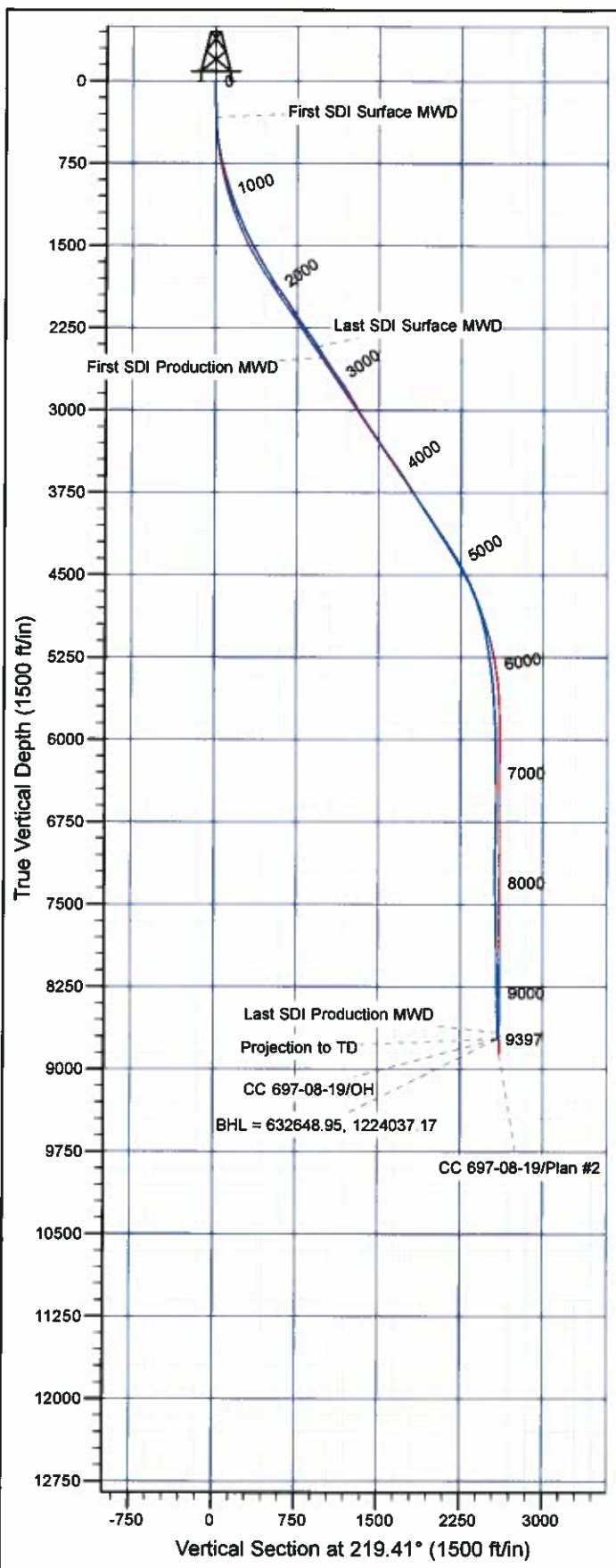




Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-08A Pad
Well: CC 697-08-19
Wellbore: OH
Design: OH



Well Details: CC 697-08-19

TVD Reference: GL 8401' & RKB 30' @ 8431.00ft (H&P Rig) Level: 8401.00
+N/-S +E/-W Northing Easting Latitude Longitude Slot
0.00 0.00 634579.46 1225765.24 39° 32' 37.020 N 108° 14' 44.761 W V

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well CC 697-08-19 - Slot V, True North
Vertical (TVD) Reference: GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Section (VS) Reference: Slot - V(0.00N, 0.00E)
Measured Depth Reference: GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
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

10:29, April 09 2012
Created By: Janie Cooke

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-08A Pad
CC 697-08-19 - Slot V**

OH

Design: OH

Standard Survey Report

09 April, 2012



Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-08-19 - Slot V
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Site:	Cascade Creek 697-08A Pad	MD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Well:	CC 697-08-19	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 697-08A Pad, Sec 8 T6S R97W				
Site Position:		Northing:	635,765.16 usft	Latitude:	39° 32' 48.728 N
From:	Lat/Long	Easting:	1,225,748.33 usft	Longitude:	108° 14' 45.434 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.73 °

Well	CC 697-08-19 - Slot V					
Well Position	+N/-S	0.00 ft	Northing:	634,579.46 usft	Latitude:	39° 32' 37.020 N
	+E/-W	0.00 ft	Easting:	1,225,765.24 usft	Longitude:	108° 14' 44.761 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,401.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	05/24/2011	10.48	65.73	52,229

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	219.41	

Survey Program	Date	04/09/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
327.00	2,656.00	Survey #1 - Surface MWD (OH)	MWD-SDI	MWD - Standard SCWSA	
2,771.00	9,397.00	Survey #2 - Production MWD (OH)	MWD-SDI	MWD - Standard SCWSA	

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	
327.00	1.89	230.90	326.95	-3.04	-3.74	4.73	0.52	0.52	0.00	
First SDI Surface MWD										
419.00	4.34	224.90	418.82	-6.36	-7.25	9.52	2.90	2.88	-6.52	
510.00	6.40	226.30	509.41	-12.31	-13.35	17.98	2.27	2.26	1.54	
600.00	9.41	226.86	598.55	-20.81	-22.35	30.26	3.35	3.34	0.62	
690.00	12.66	227.17	686.87	-32.54	-34.95	47.33	3.61	3.61	0.34	
782.00	15.30	224.71	776.14	-48.03	-50.89	69.41	2.94	2.87	-2.67	
873.00	16.71	220.49	863.61	-66.51	-67.83	94.45	2.01	1.55	-4.64	
967.00	17.15	222.16	953.54	-87.06	-85.91	121.81	0.70	0.47	1.78	

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-08-19 - Slot V
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Site:	Cascade Creek 697-08A Pad	MD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Well:	CC 697-08-19	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)
1,062.00	18.73	219.96	1,043.92	-109.14	-105.11	151.05	1.81	1.66	-2.32
1,156.00	20.31	217.32	1,132.51	-133.68	-124.69	182.45	1.92	1.68	-2.81
1,251.00	22.07	217.06	1,221.09	-161.04	-145.45	216.76	1.86	1.85	-0.27
1,346.00	23.74	216.27	1,308.59	-190.70	-167.52	253.69	1.79	1.76	-0.83
1,440.00	26.38	218.20	1,393.74	-222.37	-191.63	293.47	2.94	2.81	2.05
1,535.00	27.17	218.73	1,478.55	-255.88	-218.25	336.26	0.87	0.83	0.56
1,629.00	29.37	218.82	1,561.34	-290.58	-246.13	380.77	2.34	2.34	0.10
1,724.00	28.84	218.38	1,644.34	-326.70	-274.96	426.98	0.80	-0.56	-0.46
1,818.00	30.69	216.27	1,725.94	-363.81	-303.23	473.60	2.26	1.97	-2.24
1,913.00	33.06	215.92	1,806.61	-404.35	-332.78	523.68	2.50	2.49	-0.37
2,008.00	35.53	216.62	1,885.08	-447.50	-364.45	577.12	2.63	2.60	0.74
2,102.00	33.33	218.11	1,962.61	-489.74	-396.69	630.23	2.51	-2.34	1.59
2,197.00	34.82	219.61	2,041.30	-531.18	-430.09	683.45	1.80	1.57	1.58
2,291.00	32.18	220.57	2,119.68	-570.87	-463.49	735.32	2.86	-2.81	1.02
2,386.00	33.68	220.40	2,199.42	-610.15	-497.01	786.96	1.58	1.58	-0.18
2,480.00	36.32	220.66	2,276.41	-651.13	-532.05	840.86	2.81	2.81	0.28
2,575.00	34.47	220.31	2,353.85	-692.97	-567.78	895.87	1.96	-1.95	-0.37
2,656.00	33.24	221.54	2,421.11	-727.07	-597.33	940.97	1.74	-1.52	1.52
Last SDI Surface MWD									
2,771.00	31.73	218.08	2,518.13	-774.47	-636.89	1,002.71	2.08	-1.31	-3.01
First SDI Production MWD									
2,866.00	34.29	217.41	2,597.78	-815.40	-668.56	1,054.44	2.72	2.69	-0.71
2,960.00	35.79	217.15	2,674.74	-858.34	-701.24	1,108.37	1.60	1.60	-0.28
3,055.00	35.00	218.38	2,752.19	-901.84	-734.94	1,163.37	1.12	-0.83	1.29
3,149.00	31.30	216.09	2,830.88	-942.72	-766.07	1,214.72	4.15	-3.94	-2.44
3,244.00	28.23	216.00	2,913.33	-980.85	-793.82	1,261.80	3.23	-3.23	-0.09
3,338.00	31.74	218.64	2,994.74	-1,018.16	-822.34	1,308.73	3.99	3.73	2.81
3,433.00	33.94	222.42	3,074.57	-1,057.27	-855.84	1,360.21	3.16	2.32	3.98
3,528.00	34.82	221.63	3,152.97	-1,097.12	-891.74	1,413.80	1.04	0.93	-0.83
3,622.00	32.98	220.22	3,230.99	-1,136.72	-926.10	1,466.20	2.13	-1.96	-1.50
3,716.00	32.80	222.60	3,309.92	-1,174.99	-959.85	1,517.20	1.39	-0.19	2.53
3,811.00	36.58	223.04	3,388.02	-1,214.64	-996.60	1,571.17	3.99	3.98	0.46
3,905.00	35.88	221.28	3,463.85	-1,255.81	-1,033.89	1,626.65	1.33	-0.74	-1.87
4,000.00	32.98	220.49	3,542.20	-1,296.41	-1,069.06	1,680.34	3.09	-3.05	-0.83
4,094.00	32.80	221.28	3,621.13	-1,335.00	-1,102.47	1,731.37	0.49	-0.19	0.84
4,188.00	33.33	221.19	3,699.91	-1,373.57	-1,136.27	1,782.63	0.57	0.56	-0.10
4,283.00	33.24	221.10	3,779.33	-1,412.83	-1,170.58	1,834.74	0.11	-0.09	-0.09
4,377.00	32.45	219.70	3,858.30	-1,451.64	-1,203.62	1,885.71	1.17	-0.84	-1.49
4,472.00	32.54	220.05	3,938.43	-1,490.81	-1,236.34	1,936.74	0.22	0.09	0.37
4,566.00	32.89	218.73	4,017.52	-1,530.07	-1,268.58	1,987.55	0.85	0.37	-1.40
4,661.00	33.33	220.57	4,097.09	-1,570.02	-1,301.69	2,039.43	1.15	0.46	1.94
4,755.00	34.21	221.01	4,175.23	-1,609.58	-1,335.83	2,091.67	0.97	0.94	0.47
4,850.00	31.74	221.81	4,254.92	-1,648.36	-1,370.01	2,143.34	2.64	-2.60	0.84

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-08-19 - Slot V
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Site:	Cascade Creek 697-08A Pad	MD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Well:	CC 697-08-19	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)
4,944.00	31.30	220.31	4,335.05	-1,685.41	-1,402.29	2,192.46	0.96	-0.47	-1.60
5,039.00	30.16	217.24	4,416.72	-1,723.23	-1,432.70	2,240.98	2.04	-1.20	-3.23
5,133.00	28.58	217.76	4,498.63	-1,759.81	-1,460.76	2,287.06	1.70	-1.68	0.55
5,228.00	25.68	219.34	4,583.17	-1,793.70	-1,487.73	2,330.36	3.15	-3.05	1.66
5,322.00	22.16	220.05	4,669.09	-1,823.03	-1,512.06	2,368.47	3.76	-3.74	0.76
5,417.00	19.61	218.55	4,757.84	-1,849.22	-1,533.53	2,402.33	2.74	-2.68	-1.58
5,511.00	16.36	218.91	4,847.23	-1,871.86	-1,551.68	2,431.35	3.46	-3.46	0.38
5,606.00	13.63	222.33	4,938.99	-1,890.55	-1,567.62	2,455.91	3.02	-2.87	3.60
5,701.00	11.52	227.34	5,031.71	-1,905.26	-1,582.14	2,476.49	2.50	-2.22	5.27
5,795.00	10.02	229.10	5,124.05	-1,916.98	-1,595.22	2,493.85	1.63	-1.60	1.87
5,890.00	9.06	230.51	5,217.74	-1,927.14	-1,607.24	2,509.34	1.04	-1.01	1.48
5,984.00	7.47	221.63	5,310.76	-1,936.42	-1,617.01	2,522.70	2.16	-1.69	-9.45
6,079.00	6.86	221.54	5,405.02	-1,945.28	-1,624.88	2,534.55	0.64	-0.64	-0.09
6,174.00	5.72	224.97	5,499.45	-1,952.88	-1,631.99	2,544.93	1.26	-1.20	3.61
6,268.00	4.75	207.92	5,593.06	-1,959.63	-1,637.12	2,553.40	1.94	-1.03	-18.14
6,362.00	4.84	175.75	5,686.75	-1,967.03	-1,638.65	2,560.09	2.83	0.10	-34.22
6,457.00	2.46	181.20	5,781.55	-1,973.06	-1,638.39	2,564.59	2.53	-2.51	5.74
6,552.00	2.11	188.06	5,876.47	-1,976.83	-1,638.68	2,567.69	0.47	-0.37	7.22
6,646.00	2.43	163.96	5,970.40	-1,980.46	-1,638.37	2,570.30	1.06	0.34	-25.64
6,741.00	2.20	165.64	6,065.32	-1,984.16	-1,637.37	2,572.52	0.25	-0.24	1.77
6,836.00	0.44	273.40	6,160.30	-1,985.91	-1,637.28	2,573.81	2.50	-1.85	113.43
6,930.00	0.70	282.19	6,254.30	-1,985.77	-1,638.20	2,574.28	0.29	0.28	9.35
7,024.00	1.41	280.16	6,348.28	-1,985.44	-1,639.90	2,575.11	0.76	0.76	-2.16
7,119.00	0.79	304.86	6,443.26	-1,984.86	-1,641.59	2,575.73	0.81	-0.65	26.00
7,214.00	1.06	332.55	6,538.25	-1,983.71	-1,642.53	2,575.44	0.54	0.28	29.15
7,308.00	1.14	10.08	6,632.23	-1,982.01	-1,642.77	2,574.28	0.76	0.09	39.93
7,403.00	1.23	12.54	6,727.21	-1,980.09	-1,642.38	2,572.55	0.11	0.09	2.59
7,497.00	1.32	14.03	6,821.19	-1,978.05	-1,641.90	2,570.67	0.10	0.10	1.59
7,592.00	1.49	343.97	6,916.16	-1,975.80	-1,641.97	2,568.98	0.79	0.18	-31.64
7,686.00	1.76	334.92	7,010.12	-1,973.32	-1,642.92	2,567.67	0.40	0.29	-9.63
7,781.00	0.79	309.52	7,105.10	-1,971.58	-1,644.05	2,567.04	1.16	-1.02	-26.74
7,875.00	0.79	271.99	7,199.09	-1,971.15	-1,645.19	2,567.43	0.54	0.00	-39.93
7,970.00	1.32	272.69	7,294.08	-1,971.07	-1,646.94	2,568.48	0.56	0.56	0.74
8,065.00	1.49	233.58	7,389.05	-1,971.76	-1,649.03	2,570.33	1.00	0.18	-41.17
8,159.00	1.49	161.07	7,483.02	-1,973.64	-1,649.62	2,572.16	1.87	0.00	-77.14
8,254.00	1.32	154.39	7,578.00	-1,975.79	-1,648.74	2,573.27	0.25	-0.18	-7.03
8,348.00	1.23	162.04	7,671.97	-1,977.73	-1,647.96	2,574.27	0.20	-0.10	8.14
8,443.00	1.06	180.41	7,766.95	-1,979.58	-1,647.65	2,575.50	0.42	-0.18	19.34
8,505.15	1.22	211.28	7,829.10	-1,980.72	-1,648.00	2,576.60	1.01	0.25	49.66
CC 697-08-19 Rev Target									
8,538.00	1.41	223.04	7,861.93	-1,981.31	-1,648.46	2,577.35	1.01	0.59	35.81
8,632.00	1.41	236.04	7,955.91	-1,982.80	-1,650.21	2,579.62	0.34	0.00	13.83
8,726.00	1.49	245.71	8,049.88	-1,983.95	-1,652.28	2,581.82	0.27	0.09	10.29
8,821.00	1.49	253.97	8,144.84	-1,984.80	-1,654.59	2,583.94	0.23	0.00	8.69

Scientific Drilling International, Inc.

Survey Report



Company:	OXY USA RMAT	Local Co-ordinate Reference:	Well CC 697-08-19 - Slot V
Project:	Garfield County, CO NAD27	TVD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Site:	Cascade Creek 697-08A Pad	MD Reference:	GL 8401' & RKB 30' @ 8431.00ft (H&P Rig)
Well:	CC 697-08-19	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)
8,915.00	1.23	284.47	8,238.82	-1,984.89	-1,656.74	2,585.38	0.81	-0.28	32.45
9,010.00	1.49	294.05	8,333.79	-1,984.13	-1,658.86	2,586.13	0.36	0.27	10.08
9,104.00	1.41	280.16	8,427.76	-1,983.42	-1,661.11	2,587.02	0.38	-0.09	-14.78
9,199.00	1.32	284.38	8,522.73	-1,982.95	-1,663.32	2,588.05	0.14	-0.09	4.44
9,293.00	1.58	282.63	8,616.70	-1,982.39	-1,665.64	2,589.10	0.28	0.28	-1.86
9,342.00	1.93	278.49	8,665.68	-1,982.13	-1,667.11	2,589.82	0.76	0.71	-8.45
Last SDI Production MWD									
9,397.00	1.93	278.49	8,720.85	-1,981.85	-1,668.95	2,590.78	0.00	0.00	0.00
Projection to TD - BHL = 632648.95, 1224037.17									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
327.00	326.95	-3.04	-3.74	First SDI Surface MWD
2,656.00	2,421.11	-727.07	-597.33	Last SDI Surface MWD
2,771.00	2,518.13	-774.47	-636.89	First SDI Production MWD
9,342.00	8,665.68	-1,982.13	-1,667.11	Last SDI Production MWD
9,397.00	8,720.85	-1,981.85	-1,668.95	Projection to TD
9,397.00	8,720.85	-1,981.85	-1,668.95	BHL = 632648.95, 1224037.17

Checked By: _____ Approved By: _____ Date: _____