



Directional Survey Certification

2948 I-70 Business Loop
Grand Junction, CO 81504
(970)-245-9447 Fax (970)-245-9454

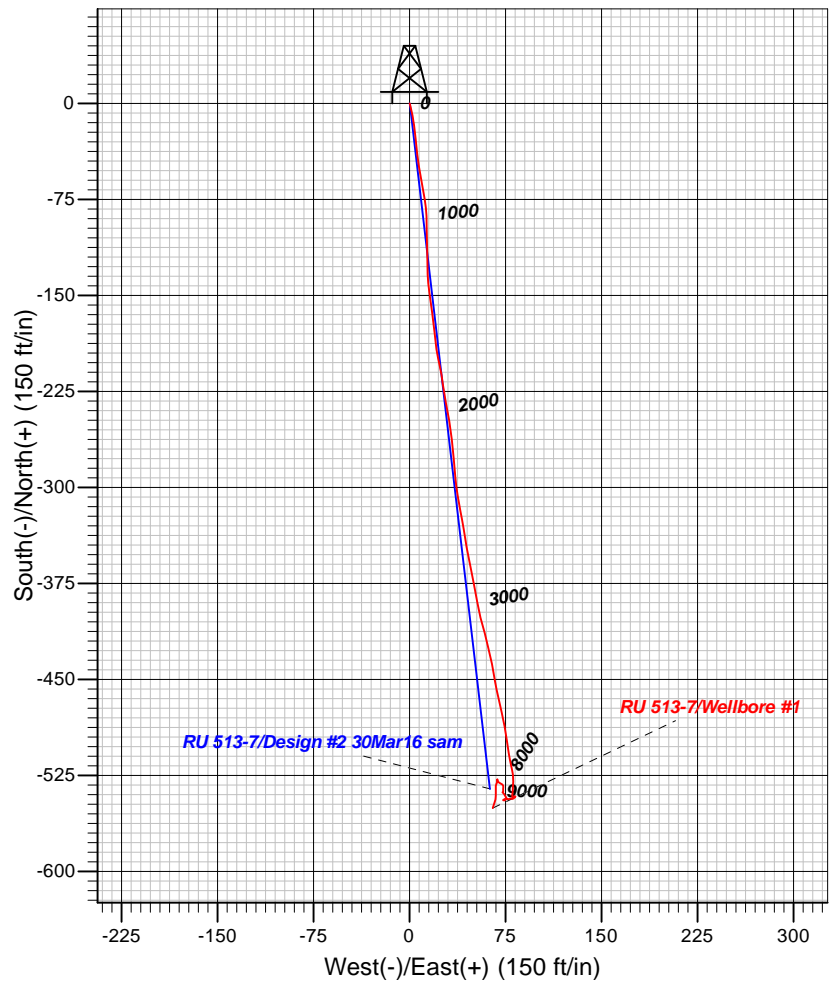
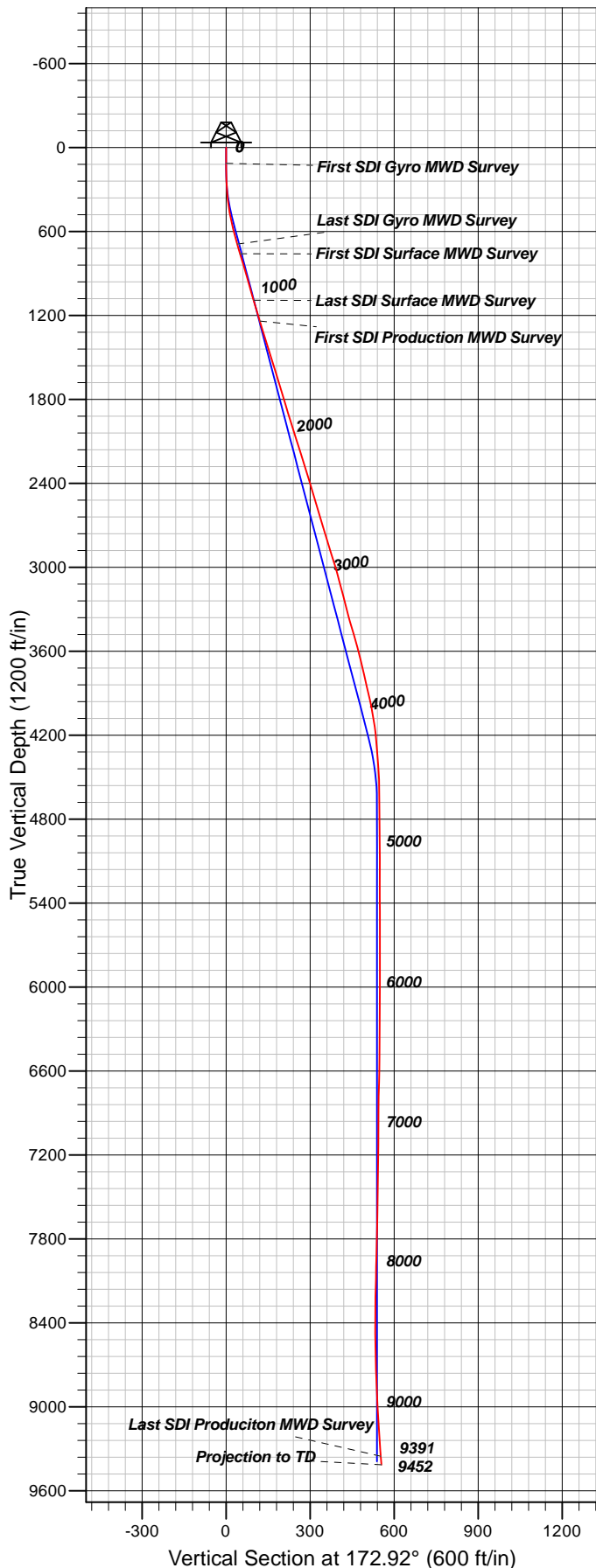
Operator	TEP Rocky Mountain, LLC.
Well Name & No.	RU 513-7
County & State	Garfield, CO
SDI Job No.	421216DEFK403196
Rig	H&P 318

I, Mel Mireles Jr., having personal knowledge of all the facts, hereby certify that the attached directional survey run from a measured depth of 113 feet to a measured depth of 9,452 feet is true and correct as determined from all available records.


Signature

28-Dec-16
Date

Mel Mireles Jr.
Grand Junction Assistant Well Planner
Scientific Drilling - Colorado District



Well Details: RU 513-7

TVD Reference: GL 7357' & RKB 24' @ 7381.01ft (H&P 318) and Level: 7357.01
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.00 0.00 1597976.99 2343310.20 39.4521369 -107.8258378 RU 513-7 (B4)

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well RU 513-7 - Slot RU 513-7 (B4), True North
 Vertical (TVD) Reference: GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
 Section (VS) Reference: Slot - RU 513-7 (B4)(0.00N, 0.00E)
 Measured Depth Reference: GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
 Calculation Method: Minimum Curvature

PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Central Zone

System Datum: Mean Sea Level

Plan: Wellbore #1

13:54, December 28 2016
 Created By: Janie Collins

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well RU 513-7 - Slot RU 513-7 (B4)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
Site:	SR 43-12 Pad	MD Reference:	GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
Well:	RU 513-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		SR 43-12 Pad					
Site Position:		Northing:	1,598,022.09	usft	Latitude:	39.4522607	
From:	Map	Easting:	2,343,309.20	usft	Longitude:	-107.8258454	
Position Uncertainty:	0.00	ft	Slot Radius:	0.000	in	Grid Convergence:	-1.47 °

Well	RU 513-7 - Slot RU 513-7 (B4)					
Well Position	+N/-S	0.00 ft	Northing:	1,597,976.99 usft	Latitude:	39.4521370
	+E/-W	0.00 ft	Easting:	2,343,310.20 usft	Longitude:	-107.8258378
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	7,357.01 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/5/2016	9.32	65.67	51,756

Design	Wellbore #1				
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	172.92	

Survey Program	Date	12/28/2016			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
113.00	692.00	Survey #1 - Gyro MWD Survey (Wellbore)	SDI Gyro MWD 104	SDI Gyro MWD Error Model Ver 1.0.4	
761.00	1,097.00	Survey #2 - Surface MWD Survey (Wellbo)	SDI MWD	SDI MWD - Standard ver 1.0.1	
1,248.00	9,452.00	Survey #3 - Production MWD Survey (Wel)	SDI MWD	SDI MWD - Standard ver 1.0.1	

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
113.00	0.18	164.09	113.00	-0.17	0.05	0.18	0.16	0.16	0.00
First SDI Gyro MWD Survey									
147.00	0.35	151.52	147.00	-0.31	0.11	0.32	0.53	0.50	-36.97
238.00	1.14	167.78	237.99	-1.44	0.44	1.49	0.89	0.87	17.87
329.00	2.46	167.43	328.94	-4.23	1.05	4.33	1.45	1.45	-0.38
420.00	3.87	167.96	419.80	-9.14	2.12	9.33	1.55	1.55	0.58
511.00	5.98	173.06	510.46	-16.85	3.33	17.14	2.37	2.32	5.60
602.00	7.57	173.67	600.83	-27.52	4.57	27.87	1.75	1.75	0.67

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well RU 513-7 - Slot RU 513-7 (B4)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
Site:	SR 43-12 Pad	MD Reference:	GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
Well:	RU 513-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

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)	
692.00	8.27	174.20	689.97	-39.85	5.87	40.27	0.78	0.78	0.59	
Last SDI Gyro MWD Survey										
761.00	8.27	169.90	758.25	-49.67	7.25	50.19	0.90	0.00	-6.23	
First SDI Surface MWD Survey										
851.00	8.26	169.56	847.32	-62.40	9.55	63.10	0.06	-0.01	-0.38	
942.00	8.07	170.65	937.39	-75.13	11.77	76.01	0.27	-0.21	1.20	
1,033.00	8.42	177.65	1,027.45	-88.09	13.09	89.03	1.17	0.38	7.69	
1,097.00	8.44	179.56	1,090.76	-97.47	13.31	98.37	0.44	0.03	2.98	
Last SDI Surface MWD Survey										
1,248.00	8.56	178.54	1,240.11	-119.79	13.69	120.56	0.13	0.08	-0.68	
First SDI Production MWD Survey										
1,343.00	8.16	178.12	1,334.09	-133.59	14.09	134.31	0.43	-0.42	-0.44	
1,437.00	9.48	171.86	1,426.98	-147.92	15.40	148.69	1.73	1.40	-6.66	
1,532.00	9.11	172.32	1,520.73	-163.12	17.51	164.04	0.40	-0.39	0.48	
1,626.00	8.77	174.18	1,613.59	-177.63	19.24	178.64	0.47	-0.36	1.98	
1,721.00	8.71	172.02	1,707.49	-191.95	20.97	193.07	0.35	-0.06	-2.27	
1,815.00	8.00	166.80	1,800.49	-205.37	23.45	206.70	1.10	-0.76	-5.55	
1,910.00	9.19	172.42	1,894.43	-219.33	25.96	220.86	1.53	1.25	5.92	
2,004.00	8.86	169.77	1,987.26	-233.89	28.24	235.59	0.56	-0.35	-2.82	
2,098.00	8.69	169.51	2,080.16	-248.00	30.82	249.91	0.19	-0.18	-0.28	
2,192.00	9.23	173.82	2,173.02	-262.48	32.92	264.53	0.92	0.57	4.59	
2,287.00	8.95	175.14	2,266.82	-277.41	34.37	279.53	0.37	-0.29	1.39	
2,381.00	8.88	175.32	2,359.69	-291.93	35.58	294.09	0.08	-0.07	0.19	
2,475.00	8.23	169.74	2,452.64	-305.78	37.37	308.06	1.12	-0.69	-5.94	
2,569.00	7.68	169.14	2,545.74	-318.57	39.75	321.04	0.59	-0.59	-0.64	
2,664.00	9.09	171.17	2,639.72	-332.22	42.10	334.88	1.52	1.48	2.14	
2,758.00	9.12	170.35	2,732.54	-346.90	44.49	349.74	0.14	0.03	-0.87	
2,853.00	8.88	167.28	2,826.37	-361.48	47.36	364.56	0.57	-0.25	-3.23	
2,947.00	8.62	170.08	2,919.27	-375.49	50.17	378.82	0.53	-0.28	2.98	
3,041.00	7.94	169.82	3,012.29	-388.82	52.53	392.33	0.72	-0.72	-0.28	
3,136.00	7.77	165.09	3,106.40	-401.49	55.35	405.25	0.70	-0.18	-4.98	
3,230.00	7.76	165.90	3,199.54	-413.78	58.53	417.84	0.12	-0.01	0.86	
3,324.00	6.83	166.49	3,292.78	-425.37	61.38	429.70	0.99	-0.99	0.63	
3,420.00	8.44	167.43	3,387.92	-437.80	64.25	442.38	1.68	1.68	0.98	
3,514.00	8.38	171.65	3,480.91	-451.31	66.74	456.10	0.66	-0.06	4.49	
3,608.00	7.63	166.06	3,574.00	-464.14	69.24	469.14	1.15	-0.80	-5.95	
3,703.00	6.89	167.98	3,668.24	-475.84	71.95	481.08	0.82	-0.78	2.02	
3,798.00	6.59	169.63	3,762.58	-486.78	74.11	492.20	0.38	-0.32	1.74	
3,892.00	6.64	172.00	3,855.95	-497.46	75.84	503.02	0.30	0.05	2.52	
3,986.00	6.12	171.20	3,949.37	-507.80	77.37	513.46	0.56	-0.55	-0.85	
4,081.00	5.10	165.60	4,043.92	-516.89	79.19	522.71	1.22	-1.07	-5.89	
4,175.00	4.22	172.55	4,137.61	-524.37	80.68	530.31	1.11	-0.94	7.39	
4,269.00	2.50	184.59	4,231.44	-529.84	80.96	535.78	1.97	-1.83	12.81	
4,364.00	2.25	185.85	4,326.36	-533.76	80.61	539.63	0.27	-0.26	1.33	

Company:	TEP Rocky Mountain LLC	Local Co-ordinate Reference:	Well RU 513-7 - Slot RU 513-7 (B4)
Project:	Garfield County, CO NAD83	TVD Reference:	GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
Site:	SR 43-12 Pad	MD Reference:	GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
Well:	RU 513-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

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)
4,458.00	1.83	179.22	4,420.30	-537.10	80.44	542.92	0.51	-0.45	-7.05
4,553.00	1.95	188.09	4,515.25	-540.21	80.23	545.98	0.33	0.13	9.34
4,647.00	0.28	71.43	4,609.23	-541.72	80.22	547.48	2.22	-1.78	-124.11
4,742.00	0.85	82.41	4,704.23	-541.56	81.14	547.43	0.61	0.60	11.56
4,836.00	0.88	73.39	4,798.22	-541.26	82.53	547.30	0.15	0.03	-9.60
4,930.00	1.30	232.00	4,892.21	-541.71	82.38	547.73	2.28	0.45	168.73
5,025.00	0.95	220.50	4,987.19	-542.97	81.02	548.82	0.44	-0.37	-12.11
5,119.00	0.54	310.36	5,081.18	-543.28	80.17	549.02	1.16	-0.44	95.60
5,213.00	0.77	262.91	5,175.18	-543.07	79.21	548.69	0.60	0.24	-50.48
5,308.00	0.70	262.01	5,270.17	-543.23	78.00	548.70	0.07	-0.07	-0.95
5,402.00	0.11	224.46	5,364.17	-543.37	77.37	548.77	0.66	-0.63	-39.95
5,496.00	0.64	265.02	5,458.17	-543.48	76.78	548.80	0.60	0.56	43.15
5,591.00	0.34	358.01	5,553.16	-543.25	76.24	548.50	0.78	-0.32	97.88
5,685.00	0.57	253.45	5,647.16	-543.10	75.79	548.30	0.78	0.24	-111.23
5,779.00	0.44	220.44	5,741.16	-543.51	75.10	548.62	0.33	-0.14	-35.12
5,873.00	0.60	222.85	5,835.15	-544.14	74.53	549.18	0.17	0.17	2.56
5,968.00	0.33	272.29	5,930.15	-544.50	73.92	549.46	0.48	-0.28	52.04
6,062.00	0.75	278.55	6,024.15	-544.40	73.04	549.25	0.45	0.45	6.66
6,156.00	0.76	68.81	6,118.14	-544.08	73.02	548.93	1.55	0.01	159.85
6,251.00	0.61	56.31	6,213.14	-543.57	74.03	548.55	0.22	-0.16	-13.16
6,345.00	0.64	68.54	6,307.13	-543.10	74.93	548.20	0.15	0.03	13.01
6,440.00	0.17	41.33	6,402.13	-542.80	75.52	547.97	0.52	-0.49	-28.64
6,534.00	0.20	306.08	6,496.13	-542.60	75.48	547.77	0.29	0.03	-101.33
6,628.00	0.78	343.89	6,590.13	-541.89	75.17	547.02	0.67	0.62	40.22
6,723.00	0.55	312.25	6,685.12	-540.96	74.65	546.04	0.45	-0.24	-33.31
6,817.00	0.88	339.70	6,779.11	-539.98	74.07	544.99	0.50	0.35	29.20
6,911.00	0.36	293.44	6,873.11	-539.19	73.54	544.14	0.73	-0.55	-49.21
7,006.00	0.44	337.24	6,968.10	-538.73	73.13	543.64	0.32	0.08	46.11
7,100.00	0.15	263.19	7,062.10	-538.41	72.87	543.29	0.45	-0.31	-78.78
7,183.00	0.21	289.28	7,145.10	-538.38	72.62	543.22	0.12	0.07	31.43
7,277.00	0.27	39.91	7,239.10	-538.15	72.60	542.99	0.42	0.06	117.69
7,372.00	0.26	38.32	7,334.10	-537.81	72.87	542.69	0.01	-0.01	-1.67
7,466.00	0.37	15.72	7,428.10	-537.35	73.09	542.26	0.17	0.12	-24.04
7,560.00	0.69	341.14	7,522.10	-536.52	72.99	541.43	0.47	0.34	-36.79
7,655.00	0.83	14.32	7,617.09	-535.31	72.97	540.23	0.48	0.15	34.93
7,749.00	0.73	4.71	7,711.08	-534.06	73.19	539.01	0.17	-0.11	-10.22
7,843.00	0.75	340.80	7,805.07	-532.88	73.04	537.82	0.33	0.02	-25.44
7,938.00	0.66	301.34	7,900.07	-532.01	72.36	536.87	0.51	-0.09	-41.54
8,032.00	0.98	299.81	7,994.06	-531.33	71.20	536.05	0.34	0.34	-1.63
8,127.00	0.92	298.10	8,089.04	-530.56	69.83	535.12	0.07	-0.06	-1.80
8,221.00	1.11	327.70	8,183.03	-529.44	68.67	533.86	0.59	0.20	31.49
8,315.00	0.37	26.71	8,277.02	-528.40	68.32	532.79	1.03	-0.79	62.78
8,410.00	0.18	351.65	8,372.02	-527.97	68.44	532.38	0.26	-0.20	-36.91

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Site:	SR 43-12 Pad	MD Reference:	GL 7357' & RKB 24' @ 7381.01ft (H&P 318)
Well:	RU 513-7	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Grand Junction District

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)	
8,504.00	0.44	171.74	8,466.02	-528.19	68.47	532.60	0.66	0.28	-191.39	
8,598.00	0.62	180.79	8,560.02	-529.05	68.52	533.46	0.21	0.19	9.63	
8,693.00	0.68	200.18	8,655.01	-530.09	68.31	534.47	0.24	0.06	20.41	
8,787.00	1.12	201.89	8,749.00	-531.47	67.78	535.77	0.47	0.47	1.82	
8,881.00	0.96	185.50	8,842.98	-533.11	67.36	537.34	0.36	-0.17	-17.44	
8,975.00	1.29	181.09	8,936.96	-534.95	67.27	539.16	0.36	0.35	-4.69	
9,070.00	1.76	180.19	9,031.93	-537.48	67.24	541.67	0.50	0.49	-0.95	
9,164.00	2.08	177.29	9,125.88	-540.62	67.32	544.80	0.36	0.34	-3.09	
9,259.00	1.70	196.80	9,220.83	-543.70	66.99	547.81	0.78	-0.40	20.54	
9,353.00	2.09	198.56	9,314.77	-546.65	66.04	550.63	0.42	0.41	1.87	
9,391.00	2.37	197.49	9,352.75	-548.06	65.59	551.97	0.74	0.74	-2.82	
Last SDI Production MWD Survey										
9,452.00	2.37	197.49	9,413.69	-550.47	64.83	554.26	0.00	0.00	0.00	
Projection to TD										

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
113.00	113.00	-0.17	0.05	First SDI Gyro MWD Survey	
692.00	689.97	-39.85	5.87	Last SDI Gyro MWD Survey	
761.00	758.25	-49.67	7.25	First SDI Surface MWD Survey	
1,097.00	1,090.76	-97.47	13.31	Last SDI Surface MWD Survey	
1,248.00	1,240.11	-119.79	13.69	First SDI Production MWD Survey	
9,391.00	9,352.75	-548.06	65.59	Last SDI Production MWD Survey	
9,452.00	9,413.69	-550.47	64.83	Projection to TD	

Checked By: _____ Approved By: _____ Date: _____