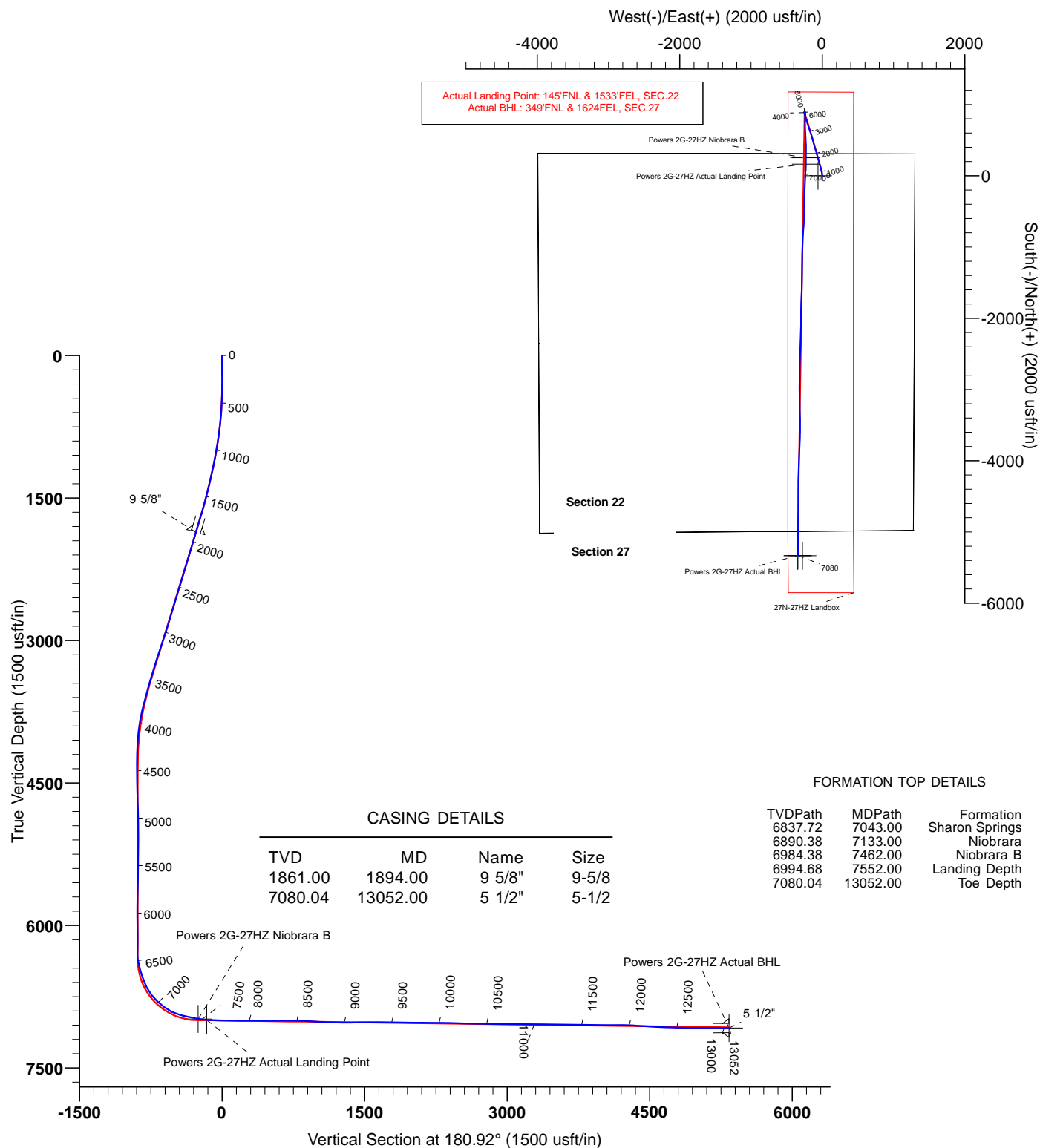


US ROCKIES WATTENBERG PLANNING



Project: WELD-NAD83-UTMFT13N
 Site: 2N-65W-22 Powers 2-22 Pad
 Well: POWERS 2G-27HZ
 Wellbore: POWERS 2G-27HZ
 Design: PDD Actual Surveys



TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Powers 2G-27HZ Niobrara B	6984.38	254.27	-230.15	14574716.42	1739331.69	40.131228	-104.646118
Powers 2G-27HZ Actual Landing Point	6994.68	164.99	-231.78	14574627.13	1739330.41	40.130983	-104.646124
Powers 2G-27HZ Actual BHL	7080.04	-5331.09	-340.82	14569130.66	1739243.30	40.115890	-104.646514
Shape							
Point							
Point							
Point							

PREMIER DIRECTIONAL DRILLING
 12941 North Freeway Suite 400, Houston, TX, 77060
 Phone: 281-673-4000



US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-22 Powers 2-22 Pad
POWERS 2G-27HZ**

POWERS 2G-27HZ

Design: PDD Actual Surveys

Standard Survey Report

28 October, 2015

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2G-27HZ	North Reference:	True
Wellbore:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site	2N-65W-22 Powers 2-22 Pad, centered on 2N-27HZ				
Site Position:		Northing:	14,574,462.82 usft	Latitude:	40.130530
From:	Lat/Long	Easting:	1,739,503.03 usft	Longitude:	-104.645509
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.23 °

Well		POWERS 2G-27HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,574,463.06 usft	Latitude:	40.130530
	+E/-W	0.00 usft	Easting:	1,739,562.84 usft	Longitude:	-104.645295
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,894.00 usft

Wellbore	POWERS 2G-27HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/12/2015	8.30	66.73	52,625

Design	PDD Actual Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	180.92	

Survey Program	Date	10/28/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
164.00	1,844.00	SDI MWD Surveys (POWERS 2G-27HZ)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,975.00	12,979.00	PDD Actual Surveys (POWERS 2G-27HZ)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
164.00	0.80	162.88	163.99	-1.09	0.34	1.09	0.49	0.49	0.00	
252.00	0.24	295.40	251.99	-1.60	0.35	1.60	1.11	-0.64	150.59	
345.00	1.18	340.69	344.98	-0.61	-0.14	0.62	1.10	1.01	48.70	
480.00	2.38	358.58	479.92	3.50	-0.67	-3.49	0.97	0.89	13.25	
570.00	3.31	357.52	569.81	7.96	-0.83	-7.95	1.03	1.03	-1.18	
660.00	5.02	355.22	659.56	14.48	-1.27	-14.46	1.91	1.90	-2.56	
750.00	6.35	357.88	749.12	23.38	-1.78	-23.35	1.51	1.48	2.96	
840.00	7.76	355.51	838.44	34.41	-2.44	-34.37	1.60	1.57	-2.63	
984.00	9.95	343.47	980.72	56.04	-6.74	-55.92	1.98	1.52	-8.36	

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2G-27HZ	North Reference:	True
Wellbore:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,066.00	10.79	344.84	1,061.38	70.24	-10.77	-70.05	1.07	1.02	1.67
1,156.00	12.51	345.52	1,149.53	87.81	-15.41	-87.55	1.92	1.91	0.76
1,291.00	14.35	345.65	1,280.83	118.17	-23.21	-117.79	1.36	1.36	0.10
1,381.00	14.14	345.80	1,368.06	139.64	-28.67	-139.16	0.24	-0.23	0.17
1,471.00	13.76	343.53	1,455.41	160.56	-34.40	-159.98	0.74	-0.42	-2.52
1,606.00	16.22	344.25	1,585.80	194.11	-44.07	-193.37	1.83	1.82	0.53
1,696.00	17.11	344.86	1,672.02	218.98	-50.94	-218.14	1.01	0.99	0.68
1,786.00	17.32	345.11	1,757.99	244.71	-57.84	-243.75	0.25	0.23	0.28
1,844.00	17.66	344.97	1,813.31	261.55	-62.34	-260.52	0.59	0.59	-0.24
1,975.00	16.80	343.00	1,938.43	298.85	-73.03	-297.64	0.79	-0.66	-1.50
2,070.00	17.70	343.80	2,029.16	325.85	-81.08	-324.50	0.98	0.95	0.84
2,164.00	17.30	342.10	2,118.81	352.87	-89.36	-351.39	0.69	-0.43	-1.81
2,259.00	17.70	343.00	2,209.41	380.12	-97.92	-378.50	0.51	0.42	0.95
2,353.00	17.10	342.60	2,299.11	406.97	-106.23	-405.22	0.65	-0.64	-0.43
2,448.00	17.60	342.70	2,389.79	434.01	-114.68	-432.12	0.53	0.53	0.11
2,542.00	18.60	346.80	2,479.14	462.18	-122.33	-460.16	1.72	1.06	4.36
2,637.00	17.60	347.00	2,569.43	490.92	-129.02	-488.79	1.05	-1.05	0.21
2,731.00	16.50	347.00	2,659.30	517.78	-135.22	-515.54	1.17	-1.17	0.00
2,826.00	17.10	341.30	2,750.25	544.16	-142.73	-541.79	1.84	0.63	-6.00
2,920.00	19.20	340.30	2,839.57	571.80	-152.38	-569.28	2.26	2.23	-1.06
3,015.00	19.00	339.90	2,929.34	601.03	-162.96	-598.34	0.25	-0.21	-0.42
3,109.00	19.40	341.80	3,018.11	630.23	-173.09	-627.37	0.79	0.43	2.02
3,204.00	18.80	340.10	3,107.88	659.61	-183.23	-656.59	0.86	-0.63	-1.79
3,298.00	19.10	344.80	3,196.79	688.70	-192.42	-685.52	1.65	0.32	5.00
3,393.00	18.30	343.20	3,286.78	717.98	-200.80	-714.66	1.00	-0.84	-1.68
3,487.00	17.20	341.10	3,376.30	745.26	-209.57	-741.79	1.35	-1.17	-2.23
3,582.00	17.10	341.40	3,467.08	771.78	-218.58	-768.17	0.14	-0.11	0.32
3,677.00	16.20	345.70	3,558.10	797.86	-226.31	-794.13	1.61	-0.95	4.53
3,771.00	15.20	342.90	3,648.59	822.35	-233.17	-818.50	1.33	-1.06	-2.98
3,866.00	13.30	347.50	3,740.67	844.92	-239.20	-840.97	2.33	-2.00	4.84
3,960.00	10.00	344.90	3,832.72	863.36	-243.66	-859.34	3.55	-3.51	-2.77
4,055.00	8.00	357.70	3,926.55	877.93	-246.08	-873.87	2.97	-2.11	13.47
4,149.00	5.70	348.30	4,019.88	889.04	-247.29	-884.96	2.71	-2.45	-10.00
4,244.00	2.90	334.00	4,114.61	895.82	-249.30	-891.71	3.13	-2.95	-15.05
4,338.00	1.10	26.20	4,208.55	898.77	-249.94	-894.64	2.54	-1.91	55.53
4,433.00	1.40	122.70	4,303.54	898.96	-248.56	-894.86	1.97	0.32	101.58
4,527.00	1.20	107.90	4,397.51	898.04	-246.66	-893.96	0.41	-0.21	-15.74
4,622.00	1.50	105.40	4,492.49	897.40	-244.51	-893.36	0.32	0.32	-2.63
4,717.00	2.10	153.70	4,587.44	895.51	-242.54	-891.50	1.65	0.63	50.84
4,811.00	2.30	157.80	4,681.37	892.22	-241.07	-888.24	0.27	0.21	4.36
4,905.00	1.90	155.80	4,775.31	889.06	-239.72	-885.09	0.43	-0.43	-2.13
5,000.00	1.30	209.90	4,870.28	886.68	-239.61	-882.72	1.63	-0.63	56.95
5,094.00	1.50	240.00	4,964.25	885.14	-241.21	-881.16	0.80	0.21	32.02

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2G-27HZ	North Reference:	True
Wellbore:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,189.00	1.90	277.40	5,059.21	884.73	-243.84	-880.70	1.21	0.42	39.37
5,284.00	1.80	284.50	5,154.16	885.30	-246.85	-881.22	0.26	-0.11	7.47
5,378.00	1.60	293.30	5,248.12	886.19	-249.48	-882.07	0.35	-0.21	9.36
5,473.00	1.60	296.30	5,343.08	887.30	-251.89	-883.14	0.09	0.00	3.16
5,567.00	1.20	321.50	5,437.06	888.66	-253.68	-884.47	0.77	-0.43	26.81
5,662.00	1.30	2.00	5,532.04	890.51	-254.26	-886.31	0.92	0.11	42.63
5,756.00	1.80	49.50	5,626.01	892.54	-253.10	-888.36	1.41	0.53	50.53
5,851.00	2.60	58.50	5,720.94	894.63	-250.13	-890.50	0.91	0.84	9.47
5,945.00	2.50	88.40	5,814.85	895.80	-246.26	-891.73	1.40	-0.11	31.81
6,040.00	1.30	131.40	5,909.80	895.15	-243.38	-891.12	1.88	-1.26	45.26
6,135.00	0.60	180.40	6,004.78	893.94	-242.58	-889.93	1.07	-0.74	51.58
6,229.00	0.20	201.40	6,098.78	893.29	-242.64	-889.28	0.45	-0.43	22.34
6,324.00	0.30	344.50	6,193.78	893.38	-242.77	-889.36	0.50	0.11	150.63
6,418.00	0.50	346.30	6,287.78	894.01	-242.93	-890.00	0.21	0.21	1.91
6,481.00	6.50	183.00	6,350.65	890.71	-243.18	-886.69	11.08	9.52	-259.21
6,513.00	10.60	179.70	6,382.29	885.96	-243.26	-881.94	12.90	12.81	-10.31
6,607.00	16.20	174.40	6,473.70	864.25	-241.94	-860.25	6.09	5.96	-5.64
6,702.00	20.60	177.30	6,563.82	834.35	-239.86	-830.39	4.73	4.63	3.05
6,796.00	25.40	179.40	6,650.33	797.65	-238.87	-793.71	5.18	5.11	2.23
6,891.00	37.90	183.00	6,731.04	747.94	-240.18	-743.98	13.30	13.16	3.79
6,985.00	47.80	180.20	6,799.88	684.12	-241.82	-680.15	10.72	10.53	-2.98
7,079.00	52.60	175.70	6,860.05	612.01	-239.14	-608.09	6.29	5.11	-4.79
7,174.00	63.90	176.80	6,909.96	531.53	-233.91	-527.70	11.94	11.89	1.16
7,268.00	75.60	177.10	6,942.44	443.61	-229.24	-439.88	12.45	12.45	0.32
7,363.00	78.20	181.40	6,963.98	351.13	-228.05	-347.42	5.19	2.74	4.53
7,457.00	78.00	181.10	6,983.36	259.17	-230.05	-255.44	0.38	-0.21	-0.32
7,552.00	88.30	181.00	6,994.68	164.99	-231.78	-161.25	10.84	10.84	-0.11
7,646.00	87.50	182.50	6,998.12	71.10	-234.65	-67.32	1.81	-0.85	1.60
7,741.00	88.90	182.70	7,001.10	-23.75	-238.95	27.59	1.49	1.47	0.21
7,835.00	89.70	182.40	7,002.25	-117.65	-243.14	121.54	0.91	0.85	-0.32
7,930.00	90.00	181.90	7,002.50	-212.58	-246.70	216.52	0.61	0.32	-0.53
8,024.00	89.90	181.70	7,002.58	-306.54	-249.65	310.51	0.24	-0.11	-0.21
8,119.00	90.20	181.70	7,002.50	-401.50	-252.47	405.50	0.32	0.32	0.00
8,213.00	90.30	181.40	7,002.09	-495.46	-255.01	499.49	0.34	0.11	-0.32
8,308.00	90.40	180.80	7,001.51	-590.44	-256.84	594.49	0.64	0.11	-0.63
8,402.00	90.00	182.40	7,001.18	-684.40	-259.46	688.48	1.75	-0.43	1.70
8,497.00	89.00	184.70	7,002.01	-779.21	-265.34	783.37	2.64	-1.05	2.42
8,591.00	86.40	184.40	7,005.78	-872.83	-272.79	877.09	2.78	-2.77	-0.32
8,686.00	86.30	182.30	7,011.83	-967.47	-278.33	971.81	2.21	-0.11	-2.21
8,780.00	87.30	180.58	7,017.08	-1,061.29	-280.69	1,065.66	2.11	1.06	-1.83
8,875.00	89.10	180.20	7,020.06	-1,156.23	-281.34	1,160.60	1.94	1.89	-0.40
8,969.00	88.52	179.92	7,022.02	-1,250.21	-281.43	1,254.57	0.69	-0.62	-0.30
9,064.00	91.30	181.00	7,022.17	-1,345.20	-282.20	1,349.56	3.14	2.93	1.14

PDD Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2G-27HZ	North Reference:	True
Wellbore:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,158.00	90.80	181.70	7,020.44	-1,439.16	-284.41	1,443.54	0.92	-0.53	0.74
9,252.00	90.30	182.00	7,019.54	-1,533.10	-287.45	1,537.52	0.62	-0.53	0.32
9,347.00	90.40	181.50	7,018.96	-1,628.06	-290.35	1,632.51	0.54	0.11	-0.53
9,441.00	89.30	181.52	7,019.21	-1,722.02	-292.82	1,726.50	1.17	-1.17	0.02
9,536.00	89.10	181.00	7,020.53	-1,816.99	-294.91	1,821.49	0.59	-0.21	-0.55
9,630.00	88.90	180.60	7,022.17	-1,910.96	-296.23	1,915.47	0.48	-0.21	-0.43
9,725.00	89.30	180.20	7,023.67	-2,005.95	-296.89	2,010.46	0.60	0.42	-0.42
9,819.00	89.80	180.40	7,024.40	-2,099.95	-297.38	2,104.45	0.57	0.53	0.21
9,914.00	90.00	182.00	7,024.57	-2,194.92	-299.37	2,199.45	1.70	0.21	1.68
10,008.00	88.80	182.60	7,025.55	-2,288.84	-303.14	2,293.41	1.43	-1.28	0.64
10,103.00	89.00	182.10	7,027.38	-2,383.74	-307.04	2,388.36	0.57	0.21	-0.53
10,197.00	89.00	181.80	7,029.02	-2,477.67	-310.23	2,482.33	0.32	0.00	-0.32
10,292.00	88.60	181.80	7,031.01	-2,572.60	-313.22	2,577.30	0.42	-0.42	0.00
10,386.00	89.00	181.40	7,032.98	-2,666.55	-315.84	2,671.27	0.60	0.43	-0.43
10,481.00	88.70	179.70	7,034.88	-2,761.52	-316.75	2,766.25	1.82	-0.32	-1.79
10,575.00	89.10	181.10	7,036.69	-2,855.50	-317.41	2,860.23	1.55	0.43	1.49
10,670.00	88.90	180.40	7,038.35	-2,950.47	-318.65	2,955.21	0.77	-0.21	-0.74
10,764.00	89.60	180.20	7,039.58	-3,044.46	-319.15	3,049.20	0.77	0.74	-0.21
10,859.00	88.90	179.20	7,040.82	-3,139.45	-318.65	3,144.16	1.28	-0.74	-1.05
10,953.00	90.20	177.90	7,041.56	-3,233.42	-316.27	3,238.08	1.96	1.38	-1.38
11,048.00	91.00	178.10	7,040.56	-3,328.35	-312.95	3,332.95	0.87	0.84	0.21
11,142.00	89.00	180.20	7,040.56	-3,422.33	-311.56	3,426.89	3.09	-2.13	2.23
11,237.00	89.70	179.70	7,041.64	-3,517.32	-311.48	3,521.87	0.91	0.74	-0.53
11,331.00	89.10	180.50	7,042.62	-3,611.32	-311.64	3,615.86	1.06	-0.64	0.85
11,426.00	89.00	182.50	7,044.20	-3,706.27	-314.13	3,710.83	2.11	-0.11	2.11
11,520.00	89.10	181.90	7,045.76	-3,800.19	-317.74	3,804.80	0.65	0.11	-0.64
11,615.00	88.80	182.90	7,047.50	-3,895.08	-321.71	3,899.75	1.10	-0.32	1.05
11,709.00	89.80	182.50	7,048.65	-3,988.97	-326.14	3,993.69	1.15	1.06	-0.43
11,804.00	90.10	181.90	7,048.73	-4,083.90	-329.79	4,088.67	0.71	0.32	-0.63
11,898.00	89.80	181.20	7,048.81	-4,177.87	-332.33	4,182.66	0.81	-0.32	-0.74
11,993.00	87.20	181.20	7,051.30	-4,272.80	-334.32	4,277.62	2.74	-2.74	0.00
12,087.00	86.80	180.40	7,056.22	-4,366.67	-335.63	4,371.49	0.95	-0.43	-0.85
12,182.00	86.70	179.90	7,061.60	-4,461.51	-335.88	4,466.33	0.54	-0.11	-0.53
12,276.00	87.20	179.70	7,066.61	-4,555.38	-335.55	4,560.18	0.57	0.53	-0.21
12,371.00	87.40	179.20	7,071.08	-4,650.27	-334.64	4,655.04	0.57	0.21	-0.53
12,466.00	87.80	180.10	7,075.06	-4,745.18	-334.06	4,749.93	1.04	0.42	0.95
12,560.00	89.30	181.40	7,077.44	-4,839.14	-335.29	4,843.90	2.11	1.60	1.38
12,655.00	89.30	180.70	7,078.60	-4,934.12	-337.03	4,938.89	0.74	0.00	-0.74
12,749.00	89.30	180.60	7,079.75	-5,028.10	-338.10	5,032.88	0.11	0.00	-0.11
12,843.00	89.80	180.50	7,080.49	-5,122.09	-339.00	5,126.88	0.54	0.53	-0.11
12,938.00	90.10	180.50	7,080.57	-5,217.09	-339.83	5,221.87	0.32	0.32	0.00
12,979.00	90.30	180.50	7,080.43	-5,258.09	-340.19	5,262.87	0.49	0.49	0.00
13,052.00	90.30	180.50	7,080.04	-5,331.09	-340.82	5,335.87	0.00	0.00	0.00

PDD Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well POWERS 2G-27HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Site:	2N-65W-22 Powers 2-22 Pad	MD Reference:	4894'+25' @ 4919.00usft (H&P 307)
Well:	POWERS 2G-27HZ	North Reference:	True
Wellbore:	POWERS 2G-27HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Powers 2G-27HZ Niobrara	0.00	0.00	6,984.38	254.27	-230.15	14,574,716.41	1,739,331.68	40.131228	-104.646119
- actual wellpath misses target center by 0.01usft at 7461.99usft MD (6984.37 TVD, 254.28 N, -230.15 E)									
- Point									
Powers 2G-27HZ Actual	0.00	0.00	6,994.68	164.99	-231.78	14,574,627.12	1,739,330.41	40.130983	-104.646124
- actual wellpath hits target center									
- Point									
Powers 2G-27HZ Actual	0.00	0.00	7,080.04	-5,331.09	-340.82	14,569,130.66	1,739,243.30	40.115890	-104.646514
- actual wellpath hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(usft)	(usft)			(")	(")
1,894.00	1,861.00	9 5/8"		9-5/8	13-1/2
13,052.00	7,080.04	5 1/2"		5-1/2	8-1/2

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(usft)	(usft)				(°)	(°)
7,043.00	6,837.72	Sharon Springs			0.00	
7,133.00	6,890.38	Niobrara			0.00	
7,462.00	6,984.38	Niobrara B			0.00	
7,552.00	6,994.68	Landing Depth			0.00	
13,052.00	7,080.04	Toe Depth			0.00	

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)		
13,052.00	7,080.04	-5,331.09	-340.82	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____