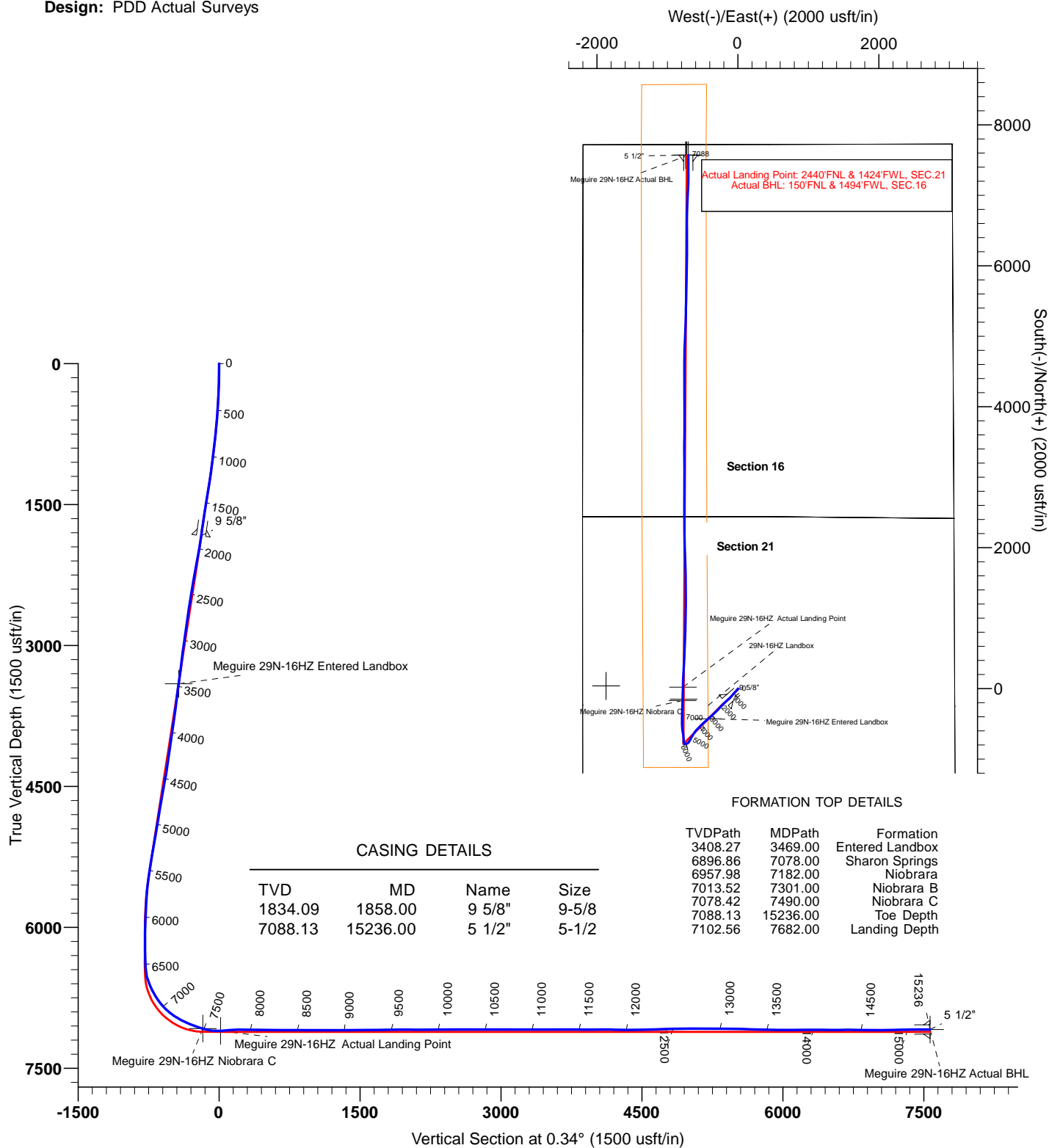


# US ROCKIES WATTENBERG PLANNING



Project: WELD-NAD83-UTMFT13N  
 Site: 2N-65W-21 Meguire 6-21HZ Pad  
 Well: MEGUIRE 29N-16HZ  
 Wellbore: MEGUIRE 29N-16HZ  
 Design: PDD Actual Surveys



TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Meguire 29N-16HZ Entered Landbox	3408.27	-427.57	-422.92	14571906.36	1732093.98	40.123588	-104.672049
Meguire 29N-16HZ Niobrara C	7078.42	-168.17	-785.24	14572164.42	1731730.71	40.124300	-104.673345
Meguire 29N-16HZ Actual BHL	7088.13	7571.53	-702.89	14579904.38	1731784.37	40.145554	-104.673051
Meguire 29N-16HZ Actual Landing Point	7102.56	21.01	-779.64	14572353.62	1731735.61	40.124820	-104.673325

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



# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**2N-65W-21 Meguire 6-21HZ Pad**

**MEGUIRE 29N-16HZ**

**MEGUIRE 29N-16HZ**

**Design: PDD Actual Surveys**

## **Standard Survey Report**

**14 October, 2015**

# PDD Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well MEGUIRE 29N-16HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Site:</b>	2N-65W-21 Meguire 6-21HZ Pad	<b>MD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Well:</b>	MEGUIRE 29N-16HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	MEGUIRE 29N-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

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

Site		2N-65W-21 Meguire 6-21HZ Pad, Centered on 29N-16HZ			
Site Position:		Northing:	14,572,335.50 usft	Latitude:	40.124762
From:	Lat/Long	Easting:	1,732,515.32 usft	Longitude:	-104.670536
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well		MEGUIRE 29N-16HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,572,335.50 usft	Latitude:	40.124762
	+E/-W	0.00 usft	Easting:	1,732,515.32 usft	Longitude:	-104.670536
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,888.00 usft

<b>Wellbore</b>	MEGUIRE 29N-16HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/10/2015	8.22	66.70	52,550

<b>Design</b>	PDD Actual Surveys				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	0.34	

<b>Survey Program</b>	<b>Date</b>	10/14/2015			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
128.00	1,781.00	Scientific Drilling MWD Surveys (MEGUIRE)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,888.00	15,167.00	PDD MWD+IFR+MSA Surveys (MEGUIRE)	APC_ISCWSA REV 2 MWD+	Fixed:v2:Rockies, crustal dec + 3-axis correction	

<b>Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
128.00	0.93	152.36	127.99	-0.92	0.48	-0.92	0.73	0.73	0.00	
217.00	1.55	179.87	216.97	-2.76	0.82	-2.76	0.95	0.70	30.91	
308.00	2.78	195.85	307.91	-6.12	0.22	-6.12	1.49	1.35	17.56	
385.00	3.00	211.20	384.81	-9.64	-1.33	-9.65	1.04	0.29	19.94	
475.00	4.39	224.31	474.62	-14.12	-4.96	-14.15	1.80	1.54	14.57	
565.00	6.08	224.39	564.24	-19.99	-10.70	-20.05	1.88	1.88	0.09	
655.00	7.28	227.10	653.63	-27.28	-18.21	-27.38	1.38	1.33	3.01	
745.00	9.00	224.08	742.72	-36.22	-27.29	-36.38	1.97	1.91	-3.36	
835.00	9.51	224.64	831.55	-46.56	-37.41	-46.78	0.58	0.57	0.62	

# PDD

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well MEGUIRE 29N-16HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Site:</b>	2N-65W-21 Meguire 6-21HZ Pad	<b>MD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Well:</b>	MEGUIRE 29N-16HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	MEGUIRE 29N-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	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)
926.00	9.19	224.52	921.34	-57.09	-47.79	-57.38	0.35	-0.35	-0.13
1,016.00	8.59	224.31	1,010.26	-67.03	-57.52	-67.37	0.67	-0.67	-0.23
1,106.00	9.34	216.94	1,099.16	-77.67	-66.61	-78.07	1.52	0.83	-8.19
1,241.00	11.55	219.28	1,231.92	-96.89	-81.75	-97.38	1.67	1.64	1.73
1,331.00	12.47	223.05	1,319.95	-110.97	-94.09	-111.53	1.34	1.02	4.19
1,421.00	12.48	226.34	1,407.83	-124.78	-107.75	-125.42	0.79	0.01	3.66
1,511.00	12.85	225.41	1,495.64	-138.52	-121.92	-139.24	0.47	0.41	-1.03
1,601.00	13.01	226.50	1,583.35	-152.52	-136.39	-153.33	0.32	0.18	1.21
1,691.00	13.28	229.00	1,671.00	-166.28	-151.54	-167.17	0.70	0.30	2.78
1,781.00	12.21	230.60	1,758.78	-179.10	-166.70	-180.09	1.25	-1.19	1.78
1,888.00	11.72	228.48	1,863.45	-193.49	-183.58	-194.57	0.62	-0.46	-1.98
2,078.00	13.84	222.14	2,048.74	-223.13	-213.28	-224.40	1.34	1.12	-3.34
2,268.00	13.75	221.14	2,233.26	-256.99	-243.38	-258.43	0.13	-0.05	-0.53
2,458.00	12.49	225.94	2,418.31	-288.29	-273.00	-289.90	0.88	-0.66	2.53
2,647.00	12.58	221.89	2,602.80	-317.82	-301.43	-319.60	0.47	0.05	-2.14
2,837.00	12.10	231.01	2,788.43	-345.76	-330.73	-347.71	1.06	-0.25	4.80
3,028.00	11.55	228.42	2,975.38	-371.04	-360.59	-373.17	0.40	-0.29	-1.36
3,218.00	10.47	227.69	3,161.88	-395.29	-387.59	-397.58	0.57	-0.57	-0.38
3,407.00	11.45	227.67	3,347.43	-419.48	-414.16	-421.93	0.52	0.52	-0.01
3,598.00	9.27	224.80	3,535.31	-443.16	-439.02	-445.76	1.17	-1.14	-1.50
3,788.00	11.98	226.66	3,722.03	-467.56	-464.15	-470.31	1.44	1.43	0.98
3,977.00	12.72	230.35	3,906.66	-494.30	-494.43	-497.23	0.57	0.39	1.95
4,167.00	11.58	228.25	4,092.40	-520.35	-524.77	-523.45	0.64	-0.60	-1.11
4,357.00	12.13	224.38	4,278.35	-547.32	-552.96	-550.59	0.51	0.29	-2.04
4,547.00	13.22	220.99	4,463.72	-577.98	-581.17	-581.42	0.69	0.57	-1.78
4,737.00	12.28	217.14	4,649.04	-610.49	-607.62	-614.09	0.67	-0.49	-2.03
4,928.00	11.16	213.84	4,836.05	-642.04	-630.18	-645.77	0.68	-0.59	-1.73
5,118.00	10.58	208.27	5,022.65	-672.67	-648.68	-676.51	0.63	-0.31	-2.93
5,306.00	11.29	207.31	5,207.24	-704.23	-665.30	-708.16	0.39	0.38	-0.51
5,401.00	9.99	208.23	5,300.60	-719.75	-673.46	-723.73	1.38	-1.37	0.97
5,589.00	9.79	212.82	5,485.81	-747.55	-689.84	-751.63	0.43	-0.11	2.44
5,780.00	5.70	229.31	5,675.05	-767.39	-705.84	-771.56	2.42	-2.14	8.63
5,970.00	5.37	246.85	5,864.18	-777.04	-721.17	-781.30	0.90	-0.17	9.23
6,160.00	4.20	246.41	6,053.51	-783.32	-735.72	-787.67	0.62	-0.62	-0.23
6,350.00	4.91	287.64	6,242.96	-783.64	-749.85	-788.07	1.72	0.37	21.70
6,446.00	4.28	288.56	6,338.65	-781.25	-757.16	-785.73	0.66	-0.66	0.96
6,541.00	4.42	303.70	6,433.38	-778.09	-763.57	-782.61	1.21	0.15	15.94
6,636.00	14.90	352.40	6,527.01	-763.90	-768.25	-768.45	13.08	11.03	51.26
6,730.00	23.68	0.44	6,615.66	-732.98	-769.71	-737.53	9.74	9.34	8.55
6,825.00	29.24	354.50	6,700.69	-690.77	-771.79	-695.33	6.48	5.85	-6.25
6,920.00	35.51	352.37	6,780.88	-640.27	-777.68	-644.88	6.71	6.60	-2.24
7,015.00	44.08	351.34	6,853.81	-580.15	-786.33	-584.80	9.05	9.02	-1.08
7,111.00	52.67	357.19	6,917.55	-508.85	-793.25	-513.54	10.03	8.95	6.09

# PDD

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well MEGUIRE 29N-16HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Site:</b>	2N-65W-21 Meguire 6-21HZ Pad	<b>MD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Well:</b>	MEGUIRE 29N-16HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	MEGUIRE 29N-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	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)	
7,205.00	59.61	1.77	6,969.91	-430.87	-793.83	-435.57	8.42	7.38	4.87	
7,300.00	66.25	2.17	7,013.12	-346.38	-790.92	-351.06	7.00	6.99	0.42	
7,396.00	70.06	1.94	7,048.83	-257.34	-787.72	-262.01	3.97	3.97	-0.24	
7,491.00	73.28	1.25	7,078.71	-167.21	-785.22	-171.87	3.46	3.39	-0.73	
7,586.00	81.25	1.84	7,099.63	-74.66	-782.71	-79.30	8.41	8.39	0.62	
7,682.00	95.24	1.84	7,102.56	21.01	-779.64	16.38	14.57	14.57	0.00	
7,777.00	94.19	2.22	7,094.76	115.63	-776.29	111.02	1.17	-1.11	0.40	
7,872.00	91.48	2.35	7,090.06	210.43	-772.50	205.84	2.86	-2.85	0.14	
7,968.00	88.51	2.63	7,090.07	306.33	-768.33	301.76	3.11	-3.09	0.29	
8,063.00	89.52	2.87	7,091.70	401.20	-763.78	396.66	1.09	1.06	0.25	
8,158.00	89.74	2.50	7,092.31	496.09	-759.33	491.58	0.45	0.23	-0.39	
8,253.00	89.35	2.53	7,093.07	591.00	-755.16	586.51	0.41	-0.41	0.03	
8,348.00	89.43	2.59	7,094.08	685.90	-750.92	681.43	0.11	0.08	0.06	
8,444.00	89.81	2.39	7,094.71	781.81	-746.74	777.36	0.45	0.40	-0.21	
8,539.00	89.43	1.61	7,095.34	876.75	-743.43	872.32	0.91	-0.40	-0.82	
8,634.00	89.28	0.96	7,096.41	971.72	-741.30	967.30	0.70	-0.16	-0.68	
8,729.00	89.76	0.76	7,097.21	1,066.70	-739.87	1,062.29	0.55	0.51	-0.21	
8,824.00	90.89	0.63	7,096.67	1,161.69	-738.72	1,157.29	1.20	1.19	-0.14	
8,920.00	90.44	359.52	7,095.56	1,257.68	-738.60	1,253.28	1.25	-0.47	-1.16	
9,015.00	89.95	359.21	7,095.23	1,352.68	-739.65	1,348.26	0.61	-0.52	-0.33	
9,111.00	91.19	359.55	7,094.28	1,448.66	-740.69	1,444.24	1.34	1.29	0.35	
9,206.00	90.08	359.16	7,093.23	1,543.65	-741.76	1,539.22	1.24	-1.17	-0.41	
9,301.00	90.79	359.15	7,092.50	1,638.64	-743.16	1,634.20	0.75	0.75	-0.01	
9,396.00	91.58	358.63	7,090.54	1,733.60	-745.00	1,729.15	1.00	0.83	-0.55	
9,490.00	89.97	358.46	7,089.27	1,827.55	-747.38	1,823.09	1.72	-1.71	-0.18	
9,585.00	89.59	357.95	7,089.63	1,922.51	-750.36	1,918.02	0.67	-0.40	-0.54	
9,680.00	89.43	356.98	7,090.45	2,017.41	-754.56	2,012.90	1.03	-0.17	-1.02	
9,775.00	90.48	359.55	7,090.52	2,112.36	-757.44	2,107.82	2.92	1.11	2.71	
9,871.00	91.19	359.97	7,089.12	2,208.34	-757.84	2,203.81	0.86	0.74	0.44	
9,965.00	89.47	359.55	7,088.58	2,302.34	-758.23	2,297.80	1.88	-1.83	-0.45	
10,061.00	89.45	358.83	7,089.48	2,398.32	-759.59	2,393.77	0.75	-0.02	-0.75	
10,156.00	90.00	358.53	7,089.94	2,493.30	-761.78	2,488.73	0.66	0.58	-0.32	
10,251.00	90.89	1.51	7,089.20	2,588.28	-761.75	2,583.72	3.27	0.94	3.14	
10,346.00	91.75	1.17	7,087.01	2,683.23	-759.52	2,678.68	0.97	0.91	-0.36	
10,441.00	89.08	0.44	7,086.33	2,778.21	-758.19	2,773.66	2.91	-2.81	-0.77	
10,536.00	89.89	0.43	7,087.18	2,873.20	-757.47	2,868.66	0.85	0.85	-0.01	
10,631.00	88.90	0.01	7,088.18	2,968.19	-757.10	2,963.65	1.13	-1.04	-0.44	
10,726.00	89.34	359.62	7,089.64	3,063.18	-757.41	3,058.63	0.62	0.46	-0.41	
10,821.00	90.02	358.77	7,090.17	3,158.17	-758.75	3,153.61	1.15	0.72	-0.89	
10,916.00	90.84	358.38	7,089.46	3,253.14	-761.11	3,248.56	0.96	0.86	-0.41	
11,009.00	89.38	0.75	7,089.28	3,346.13	-761.81	3,341.55	2.99	-1.57	2.55	
11,104.00	90.96	0.36	7,089.00	3,441.12	-760.89	3,436.54	1.71	1.66	-0.41	
11,199.00	90.40	1.27	7,087.87	3,536.10	-759.54	3,531.53	1.12	-0.59	0.96	

# PDD Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well MEGUIRE 29N-16HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Site:</b>	2N-65W-21 Meguire 6-21HZ Pad	<b>MD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Well:</b>	MEGUIRE 29N-16HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	MEGUIRE 29N-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	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)
11,294.00	90.52	0.68	7,087.11	3,631.08	-757.93	3,626.52	0.63	0.13	-0.62
11,388.00	89.80	359.99	7,086.85	3,725.08	-757.38	3,720.52	1.06	-0.77	-0.73
11,480.00	88.35	0.23	7,088.33	3,817.06	-757.20	3,812.50	1.60	-1.58	0.26
11,573.00	89.42	359.94	7,090.14	3,910.05	-757.06	3,905.48	1.19	1.15	-0.31
11,665.00	90.50	359.77	7,090.21	4,002.04	-757.29	3,997.48	1.19	1.17	-0.18
11,758.00	91.57	359.70	7,088.53	4,095.03	-757.72	4,090.46	1.15	1.15	-0.08
11,851.00	88.02	359.80	7,088.86	4,188.01	-758.13	4,183.44	3.82	-3.82	0.11
11,945.00	88.72	359.53	7,091.53	4,281.97	-758.68	4,277.39	0.80	0.74	-0.29
12,038.00	89.94	359.66	7,092.62	4,374.96	-759.34	4,370.38	1.32	1.31	0.14
12,133.00	91.27	359.96	7,091.62	4,469.95	-759.65	4,465.36	1.44	1.40	0.32
12,227.00	91.31	0.34	7,089.50	4,563.93	-759.41	4,559.34	0.41	0.04	0.40
12,320.00	91.99	359.87	7,086.82	4,656.89	-759.24	4,652.30	0.89	0.73	-0.51
12,416.00	91.90	1.47	7,083.56	4,752.82	-758.11	4,748.24	1.67	-0.09	1.67
12,510.00	91.53	2.30	7,080.75	4,846.73	-755.02	4,842.16	0.97	-0.39	0.88
12,603.00	89.76	2.43	7,079.70	4,939.64	-751.19	4,935.09	1.91	-1.90	0.14
12,696.00	90.78	1.87	7,079.27	5,032.57	-747.70	5,028.05	1.25	1.10	-0.60
12,788.00	90.82	1.95	7,077.98	5,124.51	-744.63	5,120.00	0.10	0.04	0.09
12,881.00	89.64	2.76	7,077.61	5,217.43	-740.81	5,212.94	1.54	-1.27	0.87
12,973.00	88.68	1.16	7,078.96	5,309.36	-737.66	5,304.89	2.03	-1.04	-1.74
13,066.00	88.87	0.86	7,080.94	5,402.33	-736.02	5,397.86	0.38	0.20	-0.32
13,158.00	89.63	0.90	7,082.15	5,494.31	-734.61	5,489.85	0.83	0.83	0.04
13,251.00	88.30	1.48	7,083.83	5,587.27	-732.68	5,582.82	1.56	-1.43	0.62
13,344.00	87.94	1.31	7,086.88	5,680.19	-730.42	5,675.76	0.43	-0.39	-0.18
13,436.00	88.48	1.31	7,089.75	5,772.12	-728.32	5,767.70	0.59	0.59	0.00
13,529.00	88.93	0.87	7,091.86	5,865.08	-726.55	5,860.67	0.68	0.48	-0.47
13,621.00	89.41	0.75	7,093.19	5,957.06	-725.25	5,952.65	0.54	0.52	-0.13
13,714.00	90.31	0.59	7,093.42	6,050.05	-724.16	6,045.65	0.98	0.97	-0.17
13,806.00	91.25	0.15	7,092.16	6,142.04	-723.56	6,137.64	1.13	1.02	-0.48
13,899.00	89.47	0.20	7,091.58	6,235.04	-723.28	6,230.63	1.91	-1.91	0.05
13,991.00	90.25	359.82	7,091.80	6,327.03	-723.26	6,322.63	0.94	0.85	-0.41
14,084.00	89.50	359.92	7,092.01	6,420.03	-723.48	6,415.63	0.81	-0.81	0.11
14,176.00	89.87	0.00	7,092.51	6,512.03	-723.54	6,507.62	0.41	0.40	0.09
14,269.00	90.60	359.41	7,092.13	6,605.03	-724.02	6,600.62	1.01	0.78	-0.63
14,362.00	90.24	0.87	7,091.45	6,698.02	-723.79	6,693.61	1.62	-0.39	1.57
14,454.00	88.54	3.06	7,092.43	6,789.96	-720.64	6,785.56	3.01	-1.85	2.38
14,547.00	89.12	2.37	7,094.33	6,882.83	-716.23	6,878.46	0.97	0.62	-0.74
14,639.00	89.95	2.52	7,095.07	6,974.74	-712.31	6,970.39	0.92	0.90	0.16
14,732.00	90.77	2.14	7,094.49	7,067.66	-708.53	7,063.33	0.97	0.88	-0.41
14,824.00	90.93	1.36	7,093.12	7,159.61	-705.72	7,155.30	0.87	0.17	-0.85
14,917.00	91.58	0.90	7,091.09	7,252.57	-703.88	7,248.26	0.86	0.70	-0.49
15,009.00	90.85	0.50	7,089.14	7,344.54	-702.76	7,340.24	0.90	-0.79	-0.43
15,102.00	89.87	359.88	7,088.55	7,437.54	-702.45	7,433.24	1.25	-1.05	-0.67
15,167.00	90.28	359.79	7,088.47	7,502.54	-702.64	7,498.23	0.65	0.63	-0.14
15,236.00	90.28	359.79	7,088.13	7,571.53	-702.89	7,567.23	0.00	0.00	0.00

# PDD Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well MEGUIRE 29N-16HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Site:</b>	2N-65W-21 Meguire 6-21HZ Pad	<b>MD Reference:</b>	4888'+20'=4908' @ 4908.00usft (p462)
<b>Well:</b>	MEGUIRE 29N-16HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	MEGUIRE 29N-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	PDD Actual Surveys	<b>Database:</b>	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)

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Meguire 29N-16HZ Ente - actual wellpath hits target center - Point	0.00	0.00	3,408.27	-427.57	-422.92	14,571,906.36	1,732,093.98	40.123588	-104.672049
Meguire 29N-16HZ Niob - actual wellpath hits target center - Point	0.00	0.00	7,078.42	-168.17	-785.24	14,572,164.42	1,731,730.71	40.124300	-104.673345
Meguire 29N-16HZ Actu - actual wellpath hits target center - Point	0.00	0.00	7,088.13	7,571.53	-702.89	14,579,904.37	1,731,784.37	40.145554	-104.673051
Meguire 29N-16HZ Acti - actual wellpath hits target center - Point	0.00	0.00	7,102.56	21.01	-779.64	14,572,353.62	1,731,735.60	40.124820	-104.673325

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,858.00	1,834.09	9 5/8"	9-5/8	13-1/2	
15,236.00	7,088.13	5 1/2"	5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,469.00	3,408.27	Entered Landbox		0.00		
7,078.00	6,896.86	Sharon Springs		0.00		
7,182.00	6,957.98	Niobrara		0.00		
7,301.00	7,013.52	Niobrara B		0.00		
7,490.00	7,078.42	Niobrara C		0.00		
15,236.00	7,088.13	Toe Depth		0.00		
7,682.00	7,102.56	Landing Depth		0.00		

Checked By: _____	Approved By: _____	Date: _____
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