

# US ROCKIES WATTENBERG PLANNING

Project: WELD-NAD83-UTMFT13N



Site: 4N-68W-26 Wilson Ranch 8-26HZ

Well: Whisper Rock 4N-25HZ

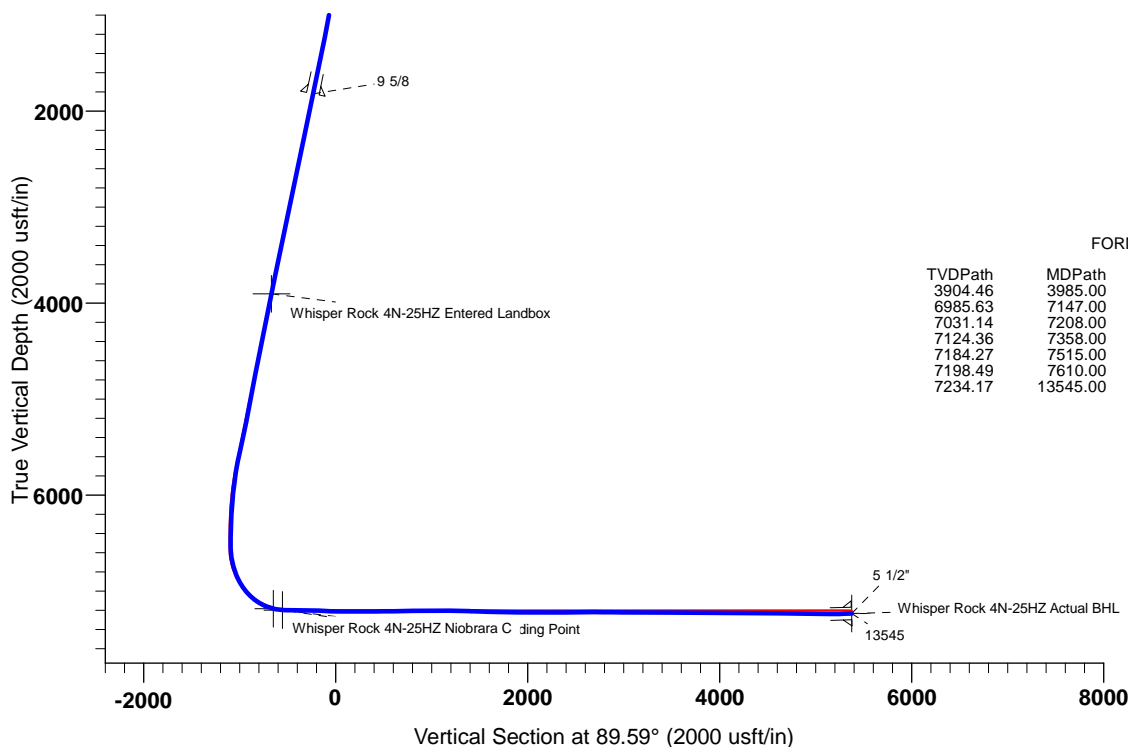
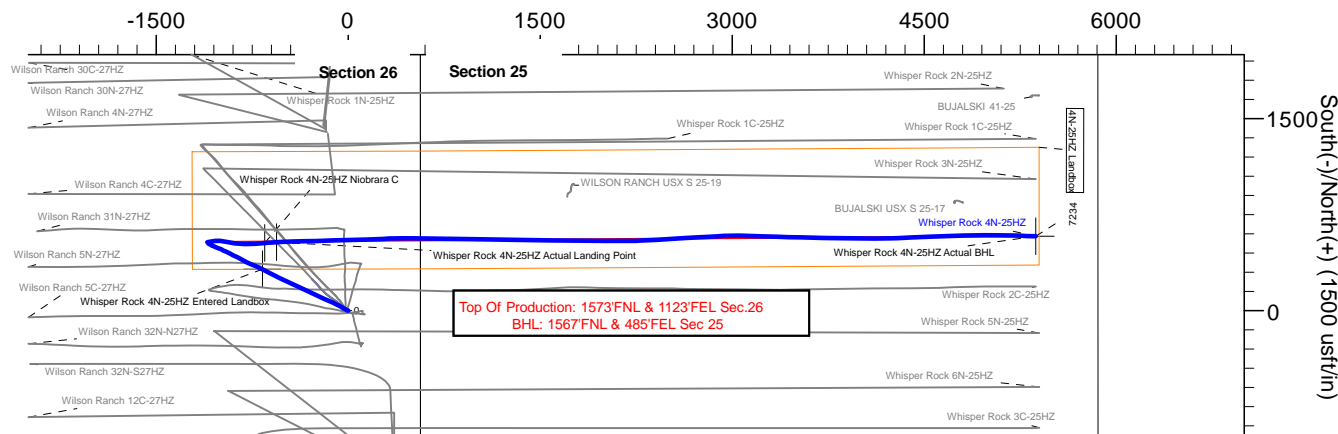
Wellbore: Whisper Rock 4N-25HZ

Design: Actual Surveys

## CASING DETAILS

TVD	MD	Name	Size
7234.17	13545.00	5 1/2"	5-1/2
1820.96	1846.51	9 5/8	9-5/8

West(-)/East(+) (1500 usft/in)



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
3904.46	3985.00	Entered Landbox	0.00	
6985.63	7147.00	Sharon Springs	0.00	
7031.14	7208.00	Niobrara	0.00	
7124.36	7358.00	Niobrara B	0.00	
7184.27	7515.00	Niobrara C	0.00	
7198.49	7610.00	Landing Depth	0.00	
7234.17	13545.00	Toe Depth		

## TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Whisper Rock 4N-25HZ Entered Landbox	3904.46	323.14	-670.94	14631247.86	1650136.88	40.287004	-104.965145	Point
Whisper Rock 4N-25HZ Niobrara C	7184.27	529.13	-653.01	14631453.86	1650154.73	40.287570	-104.965081	Point
Whisper Rock 4N-25HZ Actual Landing Point	7198.49	535.61	-559.42	14631460.38	1650248.32	40.287588	-104.964745	Point
Whisper Rock 4N-25HZ Actual BHL	7234.17	581.27	5371.73	14631508.53	1656179.45	40.287712	-104.943477	Point



# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**4N-68W-26 Wilson Ranch 8-26HZ**

**Whisper Rock 4N-25HZ**

**Whisper Rock 4N-25HZ**

**Design: Actual Surveys**

## **Standard Survey Report**

**28 December, 2015**

# PDD

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Whisper Rock 4N-25HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Site:</b>	4N-68W-26 Wilson Ranch 8-26HZ	<b>MD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Well:</b>	Whisper Rock 4N-25HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Whisper Rock 4N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	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	4N-68W-26 Wilson Ranch 8-26HZ, centered on 3N-25HZ				
Site Position:		Northing:	14,630,963.58 usft	Latitude:	40.286223
From:	Lat/Long	Easting:	1,650,762.21 usft	Longitude:	-104.962903
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.02 °

Well	Whisper Rock 4N-25HZ, 2109'FNL 563'FEL					
Well Position	+N/-S	0.00 usft	Northing:	14,630,925.00 usft	Latitude:	40.286117
	+E/-W	0.00 usft	Easting:	1,650,807.96 usft	Longitude:	-104.962739
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,992.00 usft

<b>Wellbore</b>	Whisper Rock 4N-25HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/1/2015	8.36	66.77	52,580

<b>Design</b>	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	89.59	

<b>Survey Program</b>	<b>Date</b>	12/28/2015			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
99.00	1,782.00	SDI MWD Surveys (Whisper Rock 4N-25H	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,958.00	13,545.00	PDD MWD+IFR Surveys (Whisper Rock 4	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

<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	
99.00	0.39	151.45	99.00	-0.30	0.16	0.16	0.39	0.39	0.00	
189.00	0.63	306.60	189.00	-0.27	-0.09	-0.09	1.11	0.27	172.39	
280.00	1.88	291.30	279.97	0.57	-1.88	-1.88	1.41	1.37	-16.81	
386.00	2.33	287.66	385.90	1.86	-5.56	-5.54	0.44	0.42	-3.43	
476.00	3.76	296.08	475.77	3.71	-9.95	-9.92	1.66	1.59	9.36	
566.00	5.11	300.68	565.50	7.05	-16.05	-16.00	1.55	1.50	5.11	
656.00	6.15	299.85	655.07	11.50	-23.68	-23.59	1.16	1.16	-0.92	
791.00	8.43	297.79	788.97	19.71	-38.70	-38.56	1.70	1.69	-1.53	
881.00	9.39	301.99	877.88	26.68	-50.77	-50.58	1.29	1.07	4.67	

# PDD

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Whisper Rock 4N-25HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Site:</b>	4N-68W-26 Wilson Ranch 8-26HZ	<b>MD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Well:</b>	Whisper Rock 4N-25HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Whisper Rock 4N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	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)
971.00	10.86	299.37	966.48	34.72	-64.38	-64.13	1.71	1.63	-2.91
1,061.00	11.71	296.06	1,054.74	42.89	-79.98	-79.67	1.19	0.94	-3.68
1,151.00	12.33	295.81	1,142.76	51.09	-96.83	-96.47	0.69	0.69	-0.28
1,241.00	12.67	295.15	1,230.63	59.47	-114.42	-113.99	0.41	0.38	-0.73
1,332.00	11.96	295.79	1,319.54	67.81	-131.94	-131.45	0.79	-0.78	0.70
1,422.00	12.10	294.08	1,407.56	75.72	-148.95	-148.41	0.43	0.16	-1.90
1,512.00	13.02	292.05	1,495.41	83.37	-166.96	-166.36	1.13	1.02	-2.26
1,602.00	13.01	292.41	1,583.09	91.04	-185.72	-185.07	0.09	-0.01	0.40
1,692.00	13.36	294.68	1,670.72	99.25	-204.54	-203.82	0.69	0.39	2.52
1,782.00	13.74	295.51	1,758.22	108.19	-223.63	-222.85	0.47	0.42	0.92
1,958.00	12.10	294.63	1,929.75	124.88	-259.26	-258.36	0.94	-0.93	-0.50
2,147.00	12.90	294.63	2,114.27	141.93	-296.45	-295.43	0.42	0.42	0.00
2,337.00	13.70	297.34	2,299.18	161.10	-335.72	-334.55	0.53	0.42	1.43
2,526.00	13.31	295.43	2,482.95	180.72	-375.25	-373.94	0.31	-0.21	-1.01
2,716.00	12.31	293.03	2,668.22	198.04	-413.64	-412.21	0.60	-0.53	-1.26
2,903.00	14.10	294.93	2,850.27	215.44	-452.64	-451.09	0.98	0.96	1.02
3,092.00	12.31	293.83	3,034.27	233.29	-491.95	-490.27	0.96	-0.95	-0.58
3,283.00	12.10	296.73	3,220.95	250.52	-528.46	-526.65	0.34	-0.11	1.52
3,473.00	14.00	296.93	3,406.04	269.88	-566.74	-564.79	1.00	1.00	0.11
3,662.00	13.40	297.34	3,589.66	290.30	-606.57	-604.48	0.32	-0.32	0.22
3,851.00	12.90	296.43	3,773.70	309.74	-644.92	-642.69	0.29	-0.26	-0.48
4,042.00	12.10	298.83	3,960.17	328.89	-681.55	-679.18	0.50	-0.42	1.26
4,232.00	12.90	290.73	4,145.68	346.00	-718.83	-716.34	1.01	0.42	-4.26
4,419.00	12.80	292.53	4,328.00	361.32	-757.49	-754.89	0.22	-0.05	0.96
4,607.00	13.10	297.93	4,511.23	379.28	-795.55	-792.82	0.66	0.16	2.87
4,795.00	11.90	297.43	4,694.77	398.19	-831.58	-828.71	0.64	-0.64	-0.27
4,981.00	12.20	297.73	4,876.67	416.17	-866.00	-863.00	0.16	0.16	0.16
5,168.00	11.60	296.03	5,059.65	433.62	-900.38	-897.26	0.37	-0.32	-0.91
5,358.00	13.31	297.53	5,245.17	452.11	-936.94	-933.68	0.92	0.90	0.79
5,545.00	12.70	292.53	5,427.38	469.94	-975.02	-971.63	0.68	-0.33	-2.67
5,733.00	13.50	294.63	5,610.49	487.00	-1,014.06	-1,010.55	0.50	0.43	1.12
5,924.00	9.50	290.83	5,797.62	501.90	-1,049.07	-1,045.45	2.13	-2.09	-1.99
6,114.00	6.00	299.53	5,985.86	512.38	-1,072.37	-1,068.68	1.94	-1.84	4.58
6,305.00	4.39	303.73	6,176.07	521.36	-1,087.14	-1,083.38	0.87	-0.84	2.20
6,494.00	3.20	313.93	6,364.65	529.03	-1,096.95	-1,093.14	0.72	-0.63	5.40
6,684.00	2.10	30.23	6,554.49	535.72	-1,099.02	-1,095.16	1.78	-0.58	40.16
6,779.00	9.00	90.03	6,649.04	537.22	-1,090.70	-1,086.83	8.58	7.26	62.95
6,874.00	15.70	76.53	6,741.80	540.22	-1,070.74	-1,066.85	7.63	7.05	-14.21
6,969.00	22.30	82.03	6,831.59	545.72	-1,040.36	-1,036.43	7.19	6.95	5.79
7,064.00	29.60	95.33	6,917.02	546.04	-999.06	-995.12	9.79	7.68	14.00
7,157.00	39.90	102.83	6,993.37	537.25	-946.94	-943.07	11.97	11.08	8.06
7,252.00	48.50	99.23	7,061.42	524.76	-881.98	-878.21	9.43	9.05	-3.79
7,347.00	57.60	89.13	7,118.56	519.64	-806.49	-802.75	12.79	9.58	-10.63

# PDD

## Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Whisper Rock 4N-25HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Site:</b>	4N-68W-26 Wilson Ranch 8-26HZ	<b>MD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Well:</b>	Whisper Rock 4N-25HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Whisper Rock 4N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	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)
7,443.00	68.10	85.53	7,162.32	523.74	-721.30	-717.53	11.43	10.94	-3.75
7,538.00	79.00	85.42	7,189.18	530.92	-630.61	-626.80	11.47	11.47	-0.12
7,633.00	88.40	87.53	7,199.59	536.70	-536.47	-532.62	10.14	9.89	2.22
7,729.00	90.60	88.43	7,200.43	540.09	-440.54	-436.67	2.48	2.29	0.94
7,824.00	89.70	88.93	7,200.18	542.27	-345.57	-341.68	1.08	-0.95	0.53
7,919.00	87.30	88.33	7,202.67	544.54	-250.64	-246.73	2.60	-2.53	-0.63
8,014.00	87.60	88.23	7,206.90	547.39	-155.77	-151.85	0.33	0.32	-0.11
8,109.00	87.70	87.73	7,210.79	550.74	-60.91	-56.97	0.54	0.11	-0.53
8,204.00	89.50	89.23	7,213.11	553.26	34.02	37.98	2.47	1.89	1.58
8,299.00	89.90	88.43	7,213.61	555.20	129.00	132.97	0.94	0.42	-0.84
8,394.00	89.80	86.83	7,213.86	559.13	223.91	227.91	1.69	-0.11	-1.68
8,489.00	90.50	88.33	7,213.61	563.14	318.82	322.84	1.74	0.74	1.58
8,583.00	91.40	88.73	7,212.05	565.55	412.78	416.81	1.05	0.96	0.43
8,676.00	89.50	90.83	7,211.32	565.90	505.76	509.80	3.04	-2.04	2.26
8,772.00	90.10	90.32	7,211.66	564.94	601.76	605.79	0.82	0.63	-0.53
8,867.00	90.80	90.73	7,210.91	564.07	696.75	700.77	0.85	0.74	0.43
8,961.00	92.20	90.73	7,208.45	562.87	790.71	794.72	1.49	1.49	0.00
9,056.00	92.30	92.13	7,204.72	560.50	885.60	889.59	1.48	0.11	1.47
9,151.00	88.80	91.03	7,203.81	557.89	980.55	984.51	3.86	-3.68	-1.16
9,247.00	90.20	91.13	7,204.65	556.08	1,076.52	1,080.48	1.46	1.46	0.10
9,342.00	87.99	90.83	7,206.15	554.45	1,171.49	1,175.43	2.35	-2.33	-0.32
9,438.00	88.80	91.23	7,208.83	552.73	1,267.44	1,271.36	0.94	0.84	0.42
9,532.00	90.10	92.13	7,209.74	549.97	1,361.39	1,365.29	1.68	1.38	0.96
9,628.00	87.30	90.03	7,211.91	548.16	1,457.33	1,461.22	3.65	-2.92	-2.19
9,723.00	87.99	89.93	7,215.82	548.19	1,552.25	1,556.14	0.73	0.73	-0.11
9,818.00	88.40	89.83	7,218.81	548.39	1,647.21	1,651.09	0.44	0.43	-0.11
9,913.00	88.80	90.32	7,221.13	548.27	1,742.18	1,746.05	0.67	0.42	0.52
10,008.00	91.10	91.53	7,221.21	546.74	1,837.16	1,841.02	2.74	2.42	1.27
10,103.00	88.80	89.93	7,221.30	545.53	1,932.14	1,935.99	2.95	-2.42	-1.68
10,198.00	88.99	89.93	7,223.13	545.64	2,027.12	2,030.97	0.20	0.20	0.00
10,293.00	89.40	90.13	7,224.46	545.59	2,122.11	2,125.96	0.48	0.43	0.21
10,387.00	90.40	89.53	7,224.63	545.87	2,216.11	2,219.96	1.24	1.06	-0.64
10,480.00	90.30	87.13	7,224.06	548.58	2,309.06	2,312.93	2.58	-0.11	-2.58
10,574.00	90.80	86.83	7,223.16	553.53	2,402.93	2,406.82	0.62	0.53	-0.32
10,669.00	91.80	86.23	7,221.00	559.28	2,497.73	2,501.66	1.23	1.05	-0.63
10,764.00	89.80	87.23	7,219.68	564.70	2,592.56	2,596.53	2.35	-2.11	1.05
10,859.00	89.90	85.53	7,219.93	570.70	2,687.36	2,691.38	1.79	0.11	-1.79
10,953.00	89.20	87.44	7,220.66	576.46	2,781.18	2,785.23	2.16	-0.74	2.03
11,048.00	89.80	87.73	7,221.49	580.46	2,876.09	2,880.17	0.70	0.63	0.31
11,144.00	89.40	86.73	7,222.16	585.10	2,971.97	2,976.08	1.12	-0.42	-1.04
11,239.00	88.80	91.93	7,223.66	586.21	3,066.92	3,071.04	5.51	-0.63	5.47
11,333.00	89.50	91.63	7,225.05	583.29	3,160.87	3,164.96	0.81	0.74	-0.32
11,426.00	90.80	92.63	7,224.81	579.84	3,253.80	3,257.86	1.76	1.40	1.08

# PDD Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Whisper Rock 4N-25HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Site:</b>	4N-68W-26 Wilson Ranch 8-26HZ	<b>MD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Well:</b>	Whisper Rock 4N-25HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Whisper Rock 4N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	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)	
11,519.00	89.60	91.23	7,224.48	576.70	3,346.74	3,350.78	1.98	-1.29	-1.51	
11,613.00	89.10	91.13	7,225.55	574.77	3,440.71	3,444.74	0.54	-0.53	-0.11	
11,707.00	91.10	91.73	7,225.38	572.42	3,534.68	3,538.68	2.22	2.13	0.64	
11,801.00	88.50	90.73	7,225.71	570.41	3,628.65	3,632.64	2.96	-2.77	-1.06	
11,895.00	89.70	91.13	7,227.19	568.88	3,722.62	3,726.60	1.35	1.28	0.43	
11,991.00	91.40	91.73	7,226.27	566.48	3,818.58	3,822.54	1.88	1.77	0.63	
12,086.00	88.40	90.53	7,226.43	564.61	3,913.55	3,917.49	3.40	-3.16	-1.26	
12,181.00	89.30	90.63	7,228.34	563.65	4,008.53	4,012.46	0.95	0.95	0.11	
12,276.00	89.90	90.03	7,229.00	563.10	4,103.52	4,107.45	0.89	0.63	-0.63	
12,371.00	90.30	88.83	7,228.84	564.05	4,198.52	4,202.44	1.33	0.42	-1.26	
12,466.00	89.60	87.03	7,228.92	567.48	4,293.45	4,297.40	2.03	-0.74	-1.89	
12,561.00	90.10	87.73	7,229.17	571.82	4,388.35	4,392.33	0.91	0.53	0.74	
12,656.00	87.80	87.63	7,230.91	575.67	4,483.25	4,487.25	2.42	-2.42	-0.11	
12,752.00	88.99	87.83	7,233.60	579.47	4,579.13	4,583.16	1.26	1.24	0.21	
12,846.00	90.20	87.93	7,234.26	582.94	4,673.07	4,677.12	1.29	1.29	0.11	
12,942.00	89.20	88.33	7,234.77	586.08	4,769.01	4,773.08	1.12	-1.04	0.42	
13,037.00	90.30	89.13	7,235.18	588.18	4,863.99	4,868.07	1.43	1.16	0.84	
13,132.00	87.99	89.93	7,236.60	588.96	4,958.96	4,963.05	2.57	-2.43	0.84	
13,226.00	88.70	90.32	7,239.31	588.76	5,052.92	5,057.01	0.86	0.76	0.41	
13,320.00	90.60	90.73	7,239.89	587.90	5,146.91	5,150.99	2.07	2.02	0.44	
13,415.00	91.40	91.83	7,238.23	585.77	5,241.87	5,245.93	1.43	0.84	1.16	
13,473.00	91.90	92.03	7,236.56	583.82	5,299.82	5,303.86	0.93	0.86	0.34	
13,545.00	91.90	92.03	7,234.17	581.27	5,371.73	5,375.75	0.00	0.00	0.00	

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Whisper Rock 4N-25HZ - hit/miss target - Shape - Point	0.00	0.00	3,904.46	323.14	-670.94	14,631,247.86	1,650,136.88	40.287004	-104.965145	
Whisper Rock 4N-25HZ - actual wellpath misses target center by 0.03usft at 7515.03usft MD (7184.28 TVD, 529.13 N, -652.98 E) - Point	0.00	0.00	7,184.27	529.13	-653.01	14,631,453.85	1,650,154.73	40.287570	-104.965081	
Whisper Rock 4N-25HZ - actual wellpath misses target center by 0.02usft at 7610.02usft MD (7198.50 TVD, 535.61 N, -559.40 E) - Point	0.00	0.00	7,198.49	535.61	-559.42	14,631,460.38	1,650,248.31	40.287588	-104.964745	
Whisper Rock 4N-25HZ - actual wellpath hits target center - Point	0.00	0.00	7,234.17	581.27	5,371.73	14,631,508.53	1,656,179.45	40.287712	-104.943477	

**PDD**  
Survey Report

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Whisper Rock 4N-25HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Site:</b>	4N-68W-26 Wilson Ranch 8-26HZ	<b>MD Reference:</b>	4992'GL + 20' KB @ 5012.00usft (P462)
<b>Well:</b>	Whisper Rock 4N-25HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Whisper Rock 4N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Actual Surveys	<b>Database:</b>	EDM 5000.1 Single User Db

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")
1,846.51	1,820.96	9 5/8		9-5/8	13-1/2
13,545.00	7,234.17	5 1/2"		5-1/2	8-1/2

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,985.00	3,904.46	Entered Landbox		0.00	
7,147.00	6,985.63	Sharon Springs		0.00	
7,208.00	7,031.14	Niobrara		0.00	
7,358.00	7,124.36	Niobrara B		0.00	
7,515.00	7,184.27	Niobrara C		0.00	
7,610.00	7,198.49	Landing Depth		0.00	
13,545.00	7,234.17	Toe Depth			

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
13,545.00	7,234.17	581.27	5,371.73	Projection to Bit	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_