

US ROCKIES WATTENBERG PLANNING



Project: WELD-NAD83-UTMFT13N

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

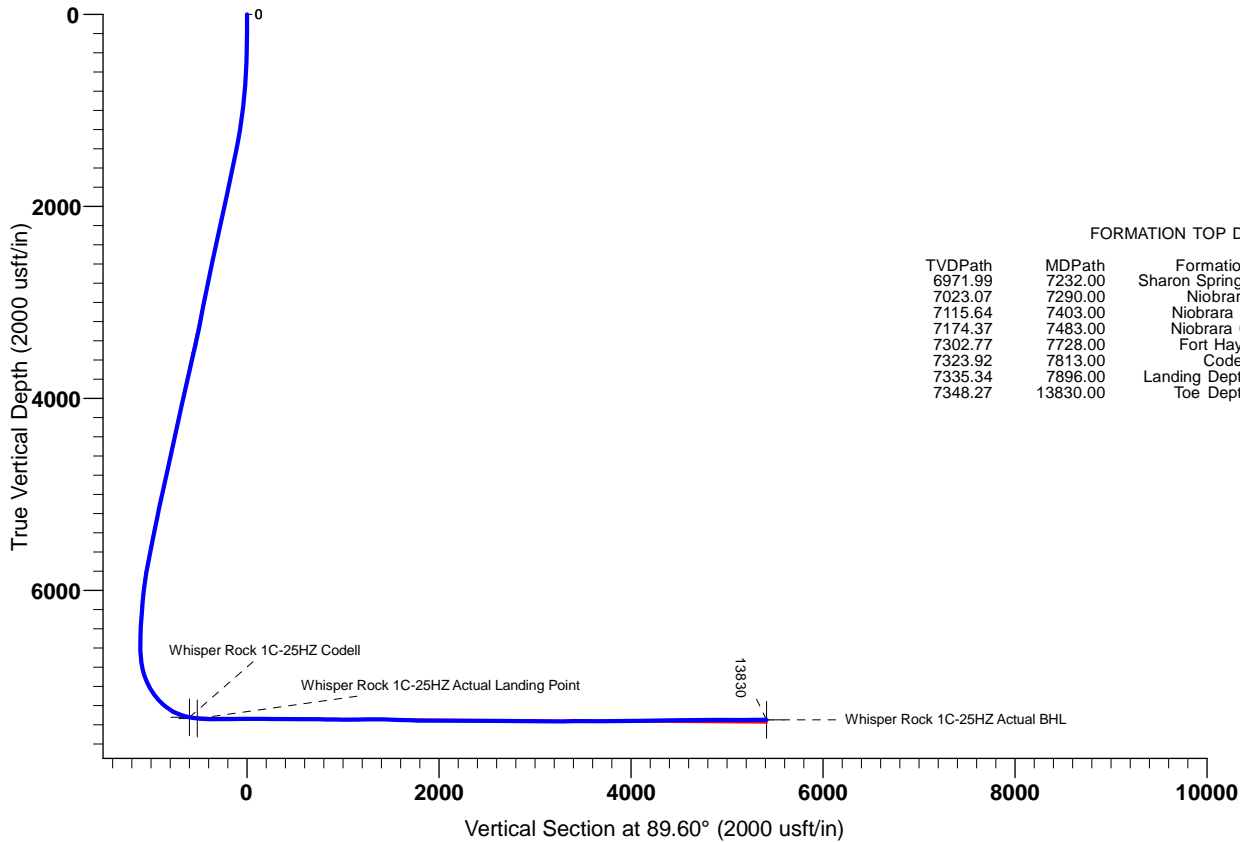
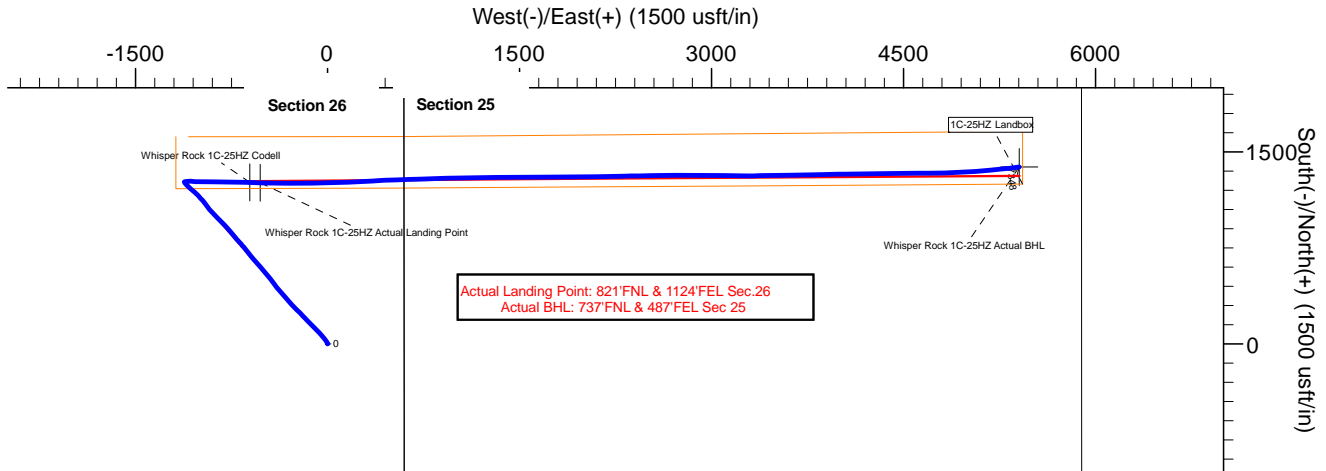
Well: Whisper Rock 1C-25HZ

Wellbore: Whisper Rock 1C-25HZ

Design: Actual Surveys

CASING DETAILS

TVD	MD	Name	Size
7348.58	13786.00	5 1/2"	5-1/2
1847.45	1883.00	9 5/8"	9-5/8



FORMATION TOP DETAILS

TVDPath	MDPath	Formation	DipAngle	DipDir
6971.99	7232.00	Sharon Springs	0.00	
7023.07	7290.00	Niobrara	0.00	
7115.64	7403.00	Niobrara B	0.00	
7174.37	7483.00	Niobrara C	0.00	
7302.77	7728.00	Fort Hays	0.00	
7323.92	7813.00	Codell	0.00	
7335.34	7896.00	Landing Depth	0.00	
7348.27	13830.00	Toe Depth		

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Whisper Rock 1C-25HZ Codell	7323.92	1260.82	-608.50	14632214.69	1650164.62	40.289659	-104.965044	Point
Whisper Rock 1C-25HZ Actual Landing Point	7335.34	1257.51	-526.39	14632211.41	1650246.74	40.289650	-104.964750	Point
Whisper Rock 1C-25HZ Actual BHL	7348.27	1381.23	5403.56	14632337.62	1656176.63	40.289988	-104.943485	Point

Design: Actual Surveys (Whisper Rock 1C-25HZ/Whisper Rock 1C-25HZ)

Created By: Ashley Wischniewsky
Date: 13:56, January 05 2016

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



US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

Whisper Rock 1C-25HZ

Whisper Rock 1C-25HZ

Design: Actual Surveys

Standard Survey Report

05 January, 2016

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Whisper Rock 1C-25HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Site:	4N-68W-26 Wilson Ranch 8-26HZ	MD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Well:	Whisper Rock 1C-25HZ	North Reference:	True
Wellbore:	Whisper Rock 1C-25HZ	Survey Calculation Method:	Minimum Curvature
Design:	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	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 1C-25HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,630,954.12 usft	Latitude:	40.286197
	+E/-W	0.00 usft	Easting:	1,650,773.64 usft	Longitude:	-104.962862
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,992.00 usft

Wellbore	Whisper Rock 1C-25HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/9/2015	8.37	66.77	52,586

Design	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	89.60	

Survey Program	Date	1/5/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
99.00	1,827.00	SDI MWD Surveys (Whisper Rock 1C-25H	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,958.00	13,830.00	PDD MWD+IFR Surveys (Whisper Rock 1	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

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	
99.00	0.62	71.94	99.00	0.17	0.51	0.51	0.63	0.63	0.00	
190.00	0.76	324.55	189.99	0.81	0.63	0.63	1.23	0.15	-118.01	
280.00	1.79	324.49	279.97	2.44	-0.54	-0.52	1.14	1.14	-0.07	
386.00	2.43	331.70	385.90	5.77	-2.56	-2.52	0.65	0.60	6.80	
476.00	3.80	329.91	475.76	10.03	-4.96	-4.89	1.53	1.52	-1.99	
566.00	4.77	328.51	565.51	15.80	-8.41	-8.30	1.08	1.08	-1.56	
656.00	6.37	328.58	655.08	23.25	-12.97	-12.81	1.78	1.78	0.08	
747.00	7.18	325.64	745.45	32.25	-18.81	-18.59	0.97	0.89	-3.23	
837.00	8.37	320.26	834.62	41.93	-26.17	-25.88	1.55	1.32	-5.98	

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Whisper Rock 1C-25HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Site:	4N-68W-26 Wilson Ranch 8-26HZ	MD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Well:	Whisper Rock 1C-25HZ	North Reference:	True
Wellbore:	Whisper Rock 1C-25HZ	Survey Calculation Method:	Minimum Curvature
Design:	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)
927.00	9.94	319.35	923.47	52.87	-35.42	-35.05	1.75	1.74	-1.01
1,017.00	11.38	319.93	1,011.91	65.55	-46.20	-45.74	1.60	1.60	0.64
1,107.00	12.11	319.18	1,100.03	79.49	-58.09	-57.53	0.83	0.81	-0.83
1,197.00	13.39	317.87	1,187.81	94.37	-71.25	-70.59	1.46	1.42	-1.46
1,287.00	13.96	315.86	1,275.26	109.89	-85.80	-85.03	0.82	0.63	-2.23
1,377.00	15.27	313.46	1,362.34	125.83	-101.96	-101.08	1.60	1.46	-2.67
1,467.00	16.56	312.64	1,448.89	142.67	-120.00	-119.00	1.45	1.43	-0.91
1,557.00	16.06	314.59	1,535.27	160.10	-138.30	-137.18	0.82	-0.56	2.17
1,647.00	15.74	315.96	1,621.83	177.61	-155.65	-154.41	0.55	-0.36	1.52
1,737.00	17.11	317.62	1,708.15	196.17	-173.06	-171.69	1.61	1.52	1.84
1,827.00	17.67	316.64	1,794.04	215.88	-191.37	-189.85	0.70	0.62	-1.09
1,958.00	16.80	315.27	1,919.16	243.79	-218.34	-216.63	0.73	-0.66	-1.05
2,147.00	17.60	315.22	2,099.70	283.47	-257.69	-255.71	0.42	0.42	-0.03
2,337.00	18.60	317.82	2,280.30	326.32	-298.27	-295.99	0.68	0.53	1.37
2,526.00	18.80	320.22	2,459.33	372.06	-338.00	-335.39	0.42	0.11	1.27
2,716.00	17.90	318.12	2,639.67	417.33	-377.08	-374.16	0.59	-0.47	-1.11
2,903.00	17.80	323.42	2,817.68	461.68	-413.30	-410.07	0.87	-0.05	2.83
3,092.00	18.50	323.83	2,997.27	509.09	-448.21	-444.65	0.38	0.37	0.22
3,283.00	16.90	318.32	3,179.24	554.29	-484.56	-480.68	1.21	-0.84	-2.88
3,473.00	18.00	318.02	3,360.49	596.74	-522.56	-518.39	0.58	0.58	-0.16
3,661.00	19.80	319.82	3,538.35	642.66	-562.54	-558.04	1.01	0.96	0.96
3,851.00	20.70	321.12	3,716.60	693.39	-604.38	-599.53	0.53	0.47	0.68
4,041.00	20.60	321.22	3,894.40	745.59	-646.40	-641.17	0.06	-0.05	0.05
4,232.00	16.70	315.52	4,075.35	791.39	-686.69	-681.15	2.25	-2.04	-2.98
4,419.00	18.10	321.22	4,253.80	833.21	-723.71	-717.88	1.18	0.75	3.05
4,607.00	19.30	319.62	4,431.87	879.64	-762.13	-755.97	0.69	0.64	-0.85
4,795.00	18.90	317.12	4,609.53	925.62	-802.98	-796.50	0.48	-0.21	-1.33
4,981.00	17.70	314.82	4,786.12	967.63	-843.54	-836.76	0.75	-0.65	-1.24
5,168.00	17.19	314.52	4,964.52	1,007.04	-883.40	-876.35	0.28	-0.27	-0.16
5,357.00	18.70	321.62	5,144.34	1,050.38	-922.14	-914.78	1.41	0.80	3.76
5,545.00	17.19	322.32	5,323.19	1,096.00	-957.83	-950.16	0.81	-0.80	0.37
5,733.00	18.30	318.82	5,502.25	1,140.20	-994.25	-986.26	0.82	0.59	-1.86
5,924.00	15.60	311.82	5,684.95	1,179.91	-1,033.14	-1,024.88	1.77	-1.41	-3.66
6,114.00	9.90	309.72	5,870.19	1,207.40	-1,064.77	-1,056.31	3.01	-3.00	-1.11
6,305.00	8.41	312.42	6,058.75	1,227.32	-1,087.71	-1,079.12	0.81	-0.78	1.41
6,494.00	6.60	322.12	6,246.13	1,245.22	-1,104.59	-1,095.87	1.17	-0.96	5.13
6,684.00	4.50	312.62	6,435.24	1,258.88	-1,116.78	-1,107.96	1.20	-1.11	-5.00
6,874.00	1.90	68.52	6,625.04	1,265.09	-1,119.33	-1,110.47	2.95	-1.37	61.00
6,969.00	6.41	78.02	6,719.77	1,266.77	-1,112.68	-1,103.81	4.79	4.75	10.00
7,064.00	12.40	81.32	6,813.45	1,269.41	-1,097.39	-1,088.50	6.33	6.31	3.47
7,157.00	19.50	93.72	6,902.84	1,269.91	-1,071.99	-1,063.10	8.43	7.63	13.33
7,252.00	27.60	94.02	6,989.85	1,267.33	-1,034.15	-1,025.28	8.53	8.53	0.32
7,347.00	34.89	90.31	7,071.03	1,265.64	-984.96	-976.10	7.93	7.67	-3.91

PDD

Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Whisper Rock 1C-25HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Site:	4N-68W-26 Wilson Ranch 8-26HZ	MD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Well:	Whisper Rock 1C-25HZ	North Reference:	True
Wellbore:	Whisper Rock 1C-25HZ	Survey Calculation Method:	Minimum Curvature
Design:	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)
7,443.00	42.70	90.02	7,145.79	1,265.48	-924.86	-916.00	8.14	8.14	-0.30
7,538.00	50.70	89.82	7,210.89	1,265.59	-855.78	-846.92	8.42	8.42	-0.21
7,633.00	60.51	91.42	7,264.49	1,264.67	-777.49	-768.64	10.42	10.33	1.68
7,729.00	72.00	90.72	7,303.08	1,263.06	-689.78	-680.95	11.99	11.97	-0.73
7,824.00	80.21	92.62	7,325.88	1,260.35	-597.69	-588.87	8.86	8.64	2.00
7,919.00	86.11	91.72	7,337.19	1,256.78	-503.47	-494.69	6.28	6.21	-0.95
8,014.00	89.20	90.72	7,341.08	1,254.76	-408.59	-399.82	3.42	3.25	-1.05
8,109.00	89.20	89.82	7,342.40	1,254.31	-313.60	-304.83	0.95	0.00	-0.95
8,204.00	91.01	89.92	7,342.23	1,254.53	-218.60	-209.84	1.91	1.91	0.11
8,299.00	91.30	89.02	7,340.31	1,255.41	-123.63	-114.86	1.00	0.31	-0.95
8,394.00	90.10	88.52	7,339.15	1,257.45	-28.66	-19.88	1.37	-1.26	-0.53
8,489.00	90.10	88.42	7,338.99	1,259.98	66.31	75.10	0.11	0.00	-0.11
8,583.00	89.50	87.82	7,339.31	1,263.07	160.26	169.07	0.90	-0.64	-0.64
8,676.00	89.50	87.32	7,340.13	1,267.01	253.17	262.01	0.54	0.00	-0.54
8,772.00	89.80	86.62	7,340.71	1,272.09	349.03	357.91	0.79	0.31	-0.73
8,867.00	88.90	87.43	7,341.79	1,277.02	443.90	452.80	1.27	-0.95	0.85
8,961.00	89.90	88.02	7,342.77	1,280.75	537.82	546.74	1.24	1.06	0.63
9,056.00	90.70	88.12	7,342.28	1,283.95	632.76	641.71	0.85	0.84	0.11
9,151.00	88.90	88.32	7,342.61	1,286.90	727.71	736.68	1.91	-1.89	0.21
9,247.00	89.10	87.43	7,344.28	1,290.46	823.63	832.62	0.95	0.21	-0.93
9,342.00	89.30	89.02	7,345.61	1,293.40	918.57	927.58	1.69	0.21	1.67
9,438.00	89.70	88.62	7,346.45	1,295.37	1,014.55	1,023.56	0.59	0.42	-0.42
9,532.00	90.40	89.31	7,346.37	1,297.07	1,108.53	1,117.56	1.05	0.74	0.73
9,627.00	91.50	88.82	7,344.79	1,298.62	1,203.50	1,212.54	1.27	1.16	-0.52
9,723.00	90.10	90.12	7,343.45	1,299.51	1,299.48	1,308.52	1.99	-1.46	1.35
9,818.00	88.40	89.92	7,344.69	1,299.48	1,394.47	1,403.51	1.80	-1.79	-0.21
9,912.00	88.10	89.12	7,347.57	1,300.26	1,488.42	1,497.47	0.91	-0.32	-0.85
10,008.00	87.99	88.72	7,350.84	1,302.07	1,584.35	1,593.40	0.43	-0.11	-0.42
10,102.00	88.70	90.22	7,353.56	1,302.94	1,678.30	1,687.36	1.76	0.76	1.60
10,197.00	88.20	89.82	7,356.13	1,302.91	1,773.27	1,782.32	0.67	-0.53	-0.42
10,292.00	89.80	89.72	7,357.78	1,303.29	1,868.25	1,877.30	1.69	1.68	-0.11
10,387.00	89.10	89.12	7,358.69	1,304.25	1,963.24	1,972.30	0.97	-0.74	-0.63
10,480.00	90.80	89.52	7,358.78	1,305.35	2,056.23	2,065.29	1.88	1.83	0.43
10,574.00	90.20	89.42	7,357.96	1,306.22	2,150.22	2,159.29	0.65	-0.64	-0.11
10,669.00	89.50	88.92	7,358.20	1,307.60	2,245.21	2,254.29	0.91	-0.74	-0.53
10,764.00	88.50	87.62	7,359.86	1,310.47	2,340.15	2,349.24	1.73	-1.05	-1.37
10,859.00	90.50	89.42	7,360.69	1,312.92	2,435.11	2,444.21	2.83	2.11	1.89
10,953.00	90.10	89.52	7,360.20	1,313.79	2,529.10	2,538.21	0.44	-0.43	0.11
11,048.00	90.20	89.22	7,359.95	1,314.83	2,624.09	2,633.21	0.33	0.11	-0.32
11,143.00	89.40	88.32	7,360.28	1,316.87	2,719.07	2,728.20	1.27	-0.84	-0.95
11,238.00	89.50	91.12	7,361.19	1,317.34	2,814.06	2,823.18	2.95	0.11	2.95
11,333.00	89.30	90.62	7,362.19	1,315.90	2,909.04	2,918.15	0.57	-0.21	-0.53
11,426.00	89.20	90.52	7,363.41	1,314.97	3,002.03	3,011.13	0.15	-0.11	-0.11

PDD
Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Whisper Rock 1C-25HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Site:	4N-68W-26 Wilson Ranch 8-26HZ	MD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Well:	Whisper Rock 1C-25HZ	North Reference:	True
Wellbore:	Whisper Rock 1C-25HZ	Survey Calculation Method:	Minimum Curvature
Design:	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)	
11,518.00	88.99	90.31	7,364.86	1,314.30	3,094.01	3,103.11	0.32	-0.23	-0.23	
11,613.00	90.70	91.02	7,365.12	1,313.20	3,189.00	3,198.09	1.95	1.80	0.75	
11,707.00	90.60	90.22	7,364.05	1,312.18	3,282.99	3,292.07	0.86	-0.11	-0.85	
11,801.00	89.90	88.72	7,363.64	1,313.05	3,376.98	3,386.07	1.76	-0.74	-1.60	
11,895.00	90.20	89.12	7,363.56	1,314.83	3,470.96	3,480.06	0.53	0.32	0.43	
11,991.00	89.60	88.12	7,363.73	1,317.14	3,566.93	3,576.04	1.21	-0.63	-1.04	
12,086.00	90.70	89.82	7,363.48	1,318.85	3,661.91	3,671.03	2.13	1.16	1.79	
12,180.00	90.80	89.22	7,362.25	1,319.63	3,755.90	3,765.02	0.65	0.11	-0.64	
12,276.00	90.50	89.12	7,361.16	1,321.02	3,851.89	3,861.01	0.33	-0.31	-0.10	
12,371.00	90.50	87.82	7,360.33	1,323.56	3,946.85	3,955.99	1.37	0.00	-1.37	
12,466.00	90.30	89.22	7,359.67	1,326.01	4,041.81	4,050.97	1.49	-0.21	1.47	
12,561.00	90.20	89.62	7,359.25	1,326.98	4,136.80	4,145.97	0.43	-0.11	0.42	
12,656.00	90.70	89.52	7,358.50	1,327.69	4,231.80	4,240.96	0.54	0.53	-0.11	
12,752.00	91.01	88.32	7,357.07	1,329.50	4,327.77	4,336.94	1.29	0.32	-1.25	
12,846.00	91.10	89.72	7,355.34	1,331.10	4,421.74	4,430.92	1.49	0.10	1.49	
12,942.00	91.01	89.62	7,353.57	1,331.66	4,517.72	4,526.91	0.14	-0.09	-0.10	
13,037.00	91.10	88.92	7,351.82	1,332.87	4,612.69	4,621.89	0.74	0.09	-0.74	
13,131.00	91.01	90.22	7,350.09	1,333.57	4,706.67	4,715.87	1.39	-0.10	1.38	
13,226.00	90.50	88.82	7,348.84	1,334.37	4,801.66	4,810.86	1.57	-0.54	-1.47	
13,320.00	89.40	87.52	7,348.92	1,337.37	4,895.61	4,904.82	1.81	-1.17	-1.38	
13,415.00	89.40	86.43	7,349.92	1,342.38	4,990.47	4,999.72	1.15	0.00	-1.15	
13,511.00	90.01	85.52	7,350.41	1,349.12	5,086.23	5,095.52	1.14	0.64	-0.95	
13,605.00	90.30	85.12	7,350.16	1,356.79	5,179.92	5,189.26	0.53	0.31	-0.43	
13,699.00	90.70	83.92	7,349.34	1,365.77	5,273.48	5,282.89	1.35	0.43	-1.28	
13,757.00	90.40	83.02	7,348.78	1,372.36	5,331.10	5,340.55	1.64	-0.52	-1.55	
13,830.00	90.40	83.02	7,348.27	1,381.23	5,403.56	5,413.07	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	
- hit/miss target										
- Shape										
Whisper Rock 1C-25HZ	0.00	0.00	7,323.92	1,260.82	-608.50	14,632,214.68	1,650,164.62	40.289659	-104.965044	
- actual wellpath misses target center by 0.01usft at 7813.01usft MD (7323.92 TVD, 1260.82 N, -608.49 E)										
- Point										
Whisper Rock 1C-25HZ	0.00	0.00	7,335.34	1,257.51	-526.39	14,632,211.41	1,650,246.73	40.289650	-104.964750	
- actual wellpath misses target center by 0.01usft at 7896.01usft MD (7335.34 TVD, 1257.51 N, -526.38 E)										
- Point										
Whisper Rock 1C-25HZ	0.00	0.00	7,348.27	1,381.23	5,403.56	14,632,337.62	1,656,176.62	40.289988	-104.943485	
- actual wellpath hits target center										
- Point										

PDD
Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Whisper Rock 1C-25HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Site:	4N-68W-26 Wilson Ranch 8-26HZ	MD Reference:	4992' GL + 20' KB @ 5012.00usft (P462)
Well:	Whisper Rock 1C-25HZ	North Reference:	True
Wellbore:	Whisper Rock 1C-25HZ	Survey Calculation Method:	Minimum Curvature
Design:	Actual Surveys	Database:	EDM 5000.1 Single User Db

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,883.00	1,847.45	9 5/8"	9-5/8	13-1/2	
13,786.00	7,348.58	5 1/2"	5-1/2	8-1/2	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,232.00	6,971.99	Sharon Springs		0.00	
7,290.00	7,023.07	Niobrara		0.00	
7,403.00	7,115.64	Niobrara B		0.00	
7,483.00	7,174.37	Niobrara C		0.00	
7,728.00	7,302.77	Fort Hays		0.00	
7,813.00	7,323.92	Codell		0.00	
7,896.00	7,335.34	Landing Depth		0.00	
13,830.00	7,348.27	Toe Depth			

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
13,830.00	7,348.27	1,381.23	5,403.56	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____