

US ROCKIES WATTENBERG PLANNING



Project: WELD-NAD83-UTMFT13N
Site: 2N-65W-16 Cook 15-16HZ Pad
Well: Cook 28N-16HZ
Wellbore: Cook 28N-16HZ
Design: PDD Actual Surveys

West(-)/East(+) (1000 usft/in)

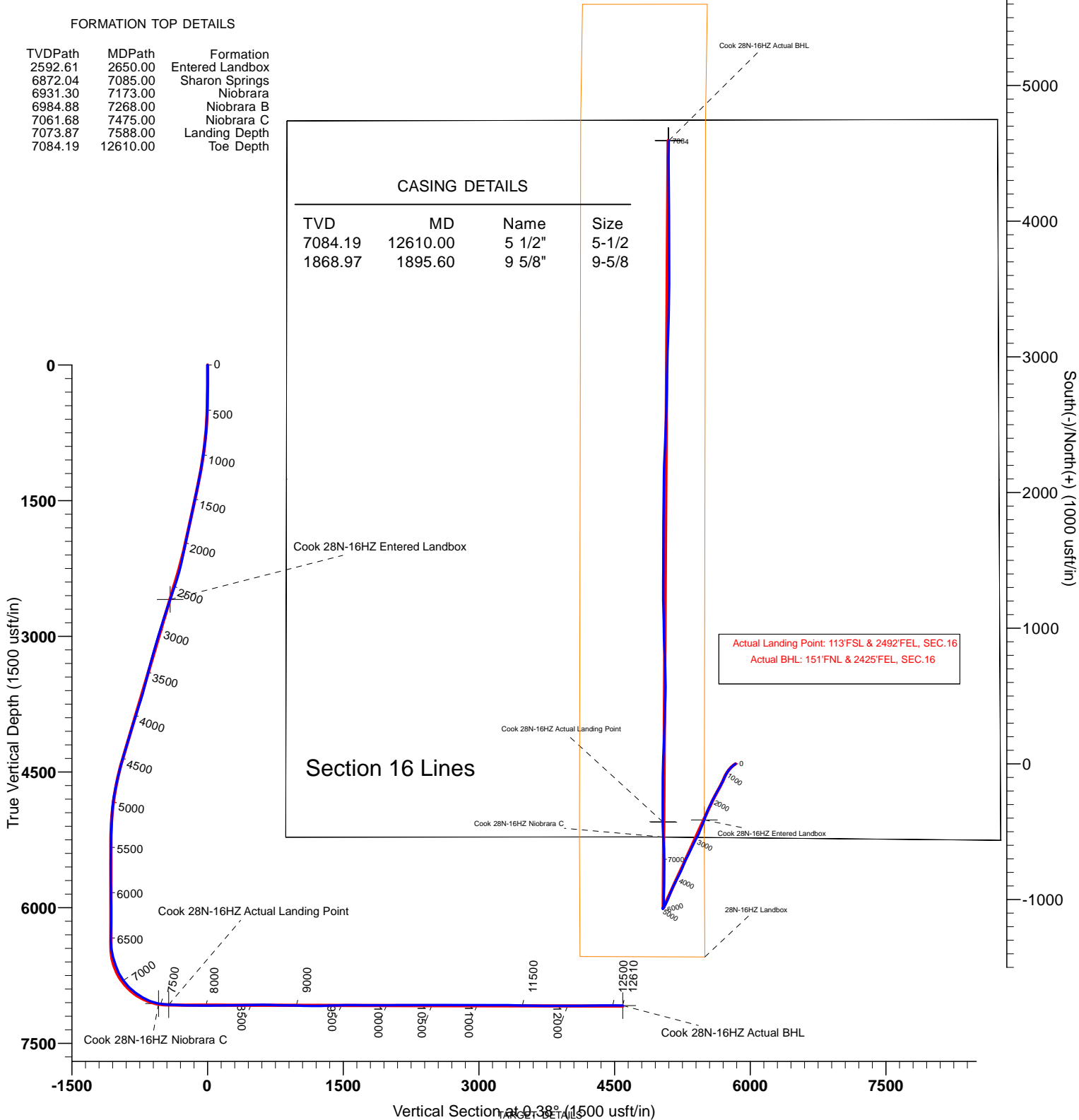
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FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2592.61	2650.00	Entered Landbox
6872.04	7085.00	Sharon Springs
6931.30	7173.00	Niobrara
6984.88	7268.00	Niobrara B
7061.68	7475.00	Niobrara C
7073.87	7588.00	Landing Depth
7084.19	12610.00	Toe Depth

CASING DETAILS

TVD	MD	Name	Size
7084.19	12610.00	5 1/2"	5-1/2
1868.97	1895.60	9 5/8"	9-5/8



Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Cook 28N-16HZ Entered Landbox	2592.61	-412.09	-229.51	14574906.36	1733385.83	40.131813	-104.667398	Point
Cook 28N-16HZ Niobrara C	7061.68	-538.56	-532.27	14574778.76	1733083.55	40.131466	-104.668471	Point
Cook 28N-16HZ Actual Landing Point	7073.87	-426.44	-536.33	14574890.86	1733079.06	40.131773	-104.668485	Point
Cook 28N-16HZ Actual BHL	7084.19	4593.47	-491.69	14579910.90	1733104.87	40.145559	-104.668326	Point



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WELD-NAD83-UTMFT13N

2N-65W-16 Cook 15-16HZ Pad

Cook 28N-16HZ

Cook 28N-16HZ

Design: PDD Actual Surveys

Standard Survey Report

17 November, 2015

PDD
Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Cook 28N-16HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4884'GL +25'KB @ 4909.00usft (H&P 307)
Site:	2N-65W-16 Cook 15-16HZ Pad	MD Reference:	4884'GL +25'KB @ 4909.00usft (H&P 307)
Well:	Cook 28N-16HZ	North Reference:	True
Wellbore:	Cook 28N-16HZ	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-16 Cook 15-16HZ Pad, centered on 2N				
Site Position:		Northing:	14,575,319.30 usft	Latitude:	40.132945
From:	Lat/Long	Easting:	1,733,613.79 usft	Longitude:	-104.666567
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well	Cook 28N-16HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,575,319.30 usft	Latitude:	40.132945
	+E/-W	0.00 usft	Easting:	1,733,613.79 usft	Longitude:	-104.666567
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,884.00 usft

Wellbore	Cook 28N-16HZ				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	2/23/2015	(°) 8.29	(°) 66.72	(nT) 52,612

Design	PDD Actual Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	0.38	

Survey Program	Date	11/17/2015			
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
134.00	1,844.00	SDI MWD Surveys (Cook 28N-16HZ)	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,994.00	12,610.00	PDD MWD+IFR Surveys (Cook 28N-16HZ)	APC_ISCWSA REV 2 MWD+	Fixed:v2:crustal field declination	

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
134.00	0.15	21.49	134.00	0.16	0.06	0.16	0.11	0.11	0.00	
224.00	0.29	121.84	224.00	0.15	0.30	0.15	0.39	0.16	111.50	
313.00	1.02	236.23	312.99	-0.41	-0.17	-0.41	1.31	0.82	128.53	
390.00	1.92	234.49	389.97	-1.54	-1.79	-1.55	1.17	1.17	-2.26	
480.00	3.36	235.17	479.87	-3.92	-5.18	-3.95	1.60	1.60	0.76	
570.00	4.10	238.66	569.68	-7.10	-10.09	-7.17	0.86	0.82	3.88	
660.00	5.61	232.80	659.35	-11.43	-16.34	-11.54	1.76	1.68	-6.51	
753.00	7.40	229.03	751.75	-18.11	-24.49	-18.27	1.98	1.92	-4.05	
840.00	8.53	222.31	837.91	-26.55	-33.06	-26.77	1.68	1.30	-7.72	

PDD
Survey Report

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Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4884'GL +25'KB @ 4909.00usft (H&P 307)
Site:	2N-65W-16 Cook 15-16HZ Pad	MD Reference:	4884'GL +25'KB @ 4909.00usft (H&P 307)
Well:	Cook 28N-16HZ	North Reference:	True
Wellbore:	Cook 28N-16HZ	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)
930.00	10.10	222.49	926.72	-37.31	-42.89	-37.59	1.74	1.74	0.20
1,021.00	10.26	215.27	1,016.30	-49.81	-52.95	-50.16	1.41	0.18	-7.93
1,111.00	11.27	212.97	1,104.71	-63.73	-62.37	-64.14	1.22	1.12	-2.56
1,201.00	12.08	205.52	1,192.85	-79.61	-71.21	-80.08	1.90	0.90	-8.28
1,291.00	11.86	203.92	1,280.90	-96.56	-79.02	-97.09	0.44	-0.24	-1.78
1,381.00	12.67	204.16	1,368.84	-114.02	-86.81	-114.60	0.90	0.90	0.27
1,471.00	13.73	206.45	1,456.46	-132.59	-95.61	-133.22	1.31	1.18	2.54
1,561.00	13.31	206.77	1,543.97	-151.40	-105.03	-152.10	0.47	-0.47	0.36
1,651.00	13.66	208.65	1,631.49	-169.98	-114.79	-170.74	0.62	0.39	2.09
1,741.00	13.82	210.65	1,718.91	-188.55	-125.37	-189.38	0.56	0.18	2.22
1,831.00	14.02	206.78	1,806.27	-207.53	-135.76	-208.43	1.06	0.22	-4.30
1,844.00	14.03	207.24	1,818.88	-210.34	-137.19	-211.25	0.86	0.08	3.54
1,994.00	13.49	209.82	1,964.58	-241.69	-154.21	-242.70	0.54	-0.36	1.72
2,088.00	13.30	207.40	2,056.02	-260.80	-164.64	-261.88	0.63	-0.20	-2.57
2,183.00	13.01	207.40	2,148.53	-279.99	-174.59	-281.15	0.31	-0.31	0.00
2,277.00	15.29	206.31	2,239.67	-300.50	-184.96	-301.72	2.44	2.43	-1.16
2,372.00	17.40	203.40	2,330.83	-324.77	-196.15	-326.06	2.38	2.22	-3.06
2,466.00	20.31	200.72	2,419.78	-352.93	-207.51	-354.30	3.23	3.10	-2.85
2,560.00	20.20	200.72	2,507.96	-383.37	-219.02	-384.81	0.12	-0.12	0.00
2,654.00	19.49	199.32	2,596.38	-413.35	-229.95	-414.86	0.91	-0.76	-1.49
2,749.00	19.60	202.53	2,685.91	-443.02	-241.30	-444.61	1.14	0.12	3.38
2,843.00	19.21	202.44	2,774.57	-471.88	-253.24	-473.55	0.42	-0.41	-0.10
2,938.00	18.81	201.52	2,864.39	-500.57	-264.83	-502.32	0.53	-0.42	-0.97
3,032.00	19.10	207.71	2,953.30	-528.29	-277.54	-530.12	2.16	0.31	6.59
3,127.00	18.50	207.40	3,043.23	-555.43	-291.70	-557.35	0.64	-0.63	-0.33
3,221.00	18.00	206.70	3,132.50	-581.65	-305.09	-583.66	0.58	-0.53	-0.74
3,316.00	17.29	205.73	3,223.03	-607.48	-317.82	-609.57	0.81	-0.75	-1.02
3,410.00	16.39	204.90	3,313.00	-632.09	-329.46	-634.26	0.99	-0.96	-0.88
3,505.00	14.90	204.90	3,404.48	-655.33	-340.25	-657.57	1.57	-1.57	0.00
3,599.00	16.11	209.03	3,495.06	-677.69	-351.67	-680.01	1.74	1.29	4.39
3,694.00	17.01	206.83	3,586.12	-701.62	-364.34	-704.02	1.15	0.95	-2.32
3,788.00	18.11	202.83	3,675.74	-727.36	-376.21	-729.83	1.74	1.17	-4.26
3,882.00	19.21	200.24	3,764.80	-755.33	-387.23	-757.88	1.46	1.17	-2.76
3,977.00	19.21	206.00	3,854.52	-784.04	-399.49	-786.68	1.99	0.00	6.06
4,072.00	17.80	205.91	3,944.61	-811.15	-412.69	-813.87	1.48	-1.48	-0.09
4,166.00	19.80	206.31	4,033.59	-838.35	-426.02	-841.16	2.13	2.13	0.43
4,260.00	19.80	206.44	4,122.03	-866.88	-440.17	-869.78	0.05	0.00	0.14
4,355.00	18.31	204.72	4,211.82	-894.84	-453.57	-897.83	1.68	-1.57	-1.81
4,449.00	16.59	205.03	4,301.49	-920.42	-465.43	-923.48	1.83	-1.83	0.33
4,544.00	16.31	204.02	4,392.60	-944.89	-476.59	-948.03	0.42	-0.29	-1.06
4,638.00	15.29	202.00	4,483.05	-968.44	-486.61	-971.64	1.23	-1.09	-2.15
4,733.00	14.11	202.92	4,574.94	-990.72	-495.81	-993.98	1.27	-1.24	0.97
4,827.00	13.91	201.03	4,666.14	-1,011.82	-504.33	-1,015.14	0.53	-0.21	-2.01

PDD
Survey Report

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Wellbore:	Cook 28N-16HZ	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)	
4,922.00	10.59	204.90	4,758.97	-1,030.40	-512.11	-1,033.77	3.60	-3.49	4.07	
5,016.00	6.79	214.52	4,851.88	-1,042.82	-518.89	-1,046.24	4.31	-4.04	10.23	
5,111.00	4.70	215.40	4,946.40	-1,050.62	-524.33	-1,054.07	2.20	-2.20	0.93	
5,205.00	3.10	213.03	5,040.18	-1,055.89	-527.95	-1,059.37	1.71	-1.70	-2.52	
5,300.00	2.79	211.71	5,135.05	-1,060.01	-530.56	-1,063.51	0.33	-0.33	-1.39	
5,394.00	2.51	211.01	5,228.95	-1,063.72	-532.83	-1,067.23	0.30	-0.30	-0.74	
5,489.00	0.59	192.42	5,323.91	-1,065.98	-534.00	-1,069.50	2.06	-2.02	-19.57	
5,583.00	0.59	205.34	5,417.91	-1,066.89	-534.31	-1,070.41	0.14	0.00	13.74	
5,677.00	0.00	159.10	5,511.90	-1,067.33	-534.52	-1,070.85	0.63	-0.63	0.00	
5,772.00	0.31	288.14	5,606.90	-1,067.25	-534.77	-1,070.77	0.33	0.33	0.00	
5,866.00	0.51	325.72	5,700.90	-1,066.82	-535.24	-1,070.35	0.35	0.21	39.98	
5,961.00	0.79	324.71	5,795.90	-1,065.94	-535.86	-1,069.47	0.29	0.29	-1.06	
6,056.00	1.21	332.53	5,890.88	-1,064.51	-536.70	-1,068.05	0.46	0.44	8.23	
6,150.00	1.10	340.62	5,984.86	-1,062.78	-537.46	-1,066.32	0.21	-0.12	8.61	
6,244.00	0.40	77.71	6,078.86	-1,061.86	-537.44	-1,065.40	1.29	-0.74	103.29	
6,339.00	1.41	150.62	6,173.84	-1,062.81	-536.54	-1,066.35	1.42	1.06	76.75	
6,433.00	1.10	154.00	6,267.82	-1,064.63	-535.58	-1,068.16	0.34	-0.33	3.60	
6,528.00	1.10	127.24	6,362.80	-1,066.00	-534.45	-1,069.52	0.54	0.00	-28.17	
6,622.00	8.31	13.23	6,456.49	-1,059.92	-532.17	-1,063.43	9.38	7.67	-121.29	
6,717.00	14.90	5.54	6,549.50	-1,041.06	-529.42	-1,044.55	7.11	6.94	-8.09	
6,811.00	19.40	359.91	6,639.30	-1,013.40	-528.28	-1,016.89	5.10	4.79	-5.99	
6,905.00	26.90	359.74	6,725.67	-976.48	-528.40	-979.96	7.98	7.98	-0.18	
7,000.00	35.80	2.73	6,806.73	-927.13	-527.17	-930.60	9.51	9.37	3.15	
7,094.00	44.50	1.63	6,878.51	-866.62	-524.92	-870.08	9.29	9.26	-1.17	
7,189.00	53.00	359.74	6,941.09	-795.27	-524.14	-798.73	9.07	8.95	-1.99	
7,283.00	60.89	359.61	6,992.32	-716.55	-524.59	-720.01	8.39	8.39	-0.14	
7,378.00	67.51	357.23	7,033.65	-631.11	-527.00	-634.59	7.32	6.97	-2.51	
7,472.00	78.50	356.31	7,061.08	-541.50	-532.08	-545.01	11.73	11.69	-0.98	
7,567.00	87.20	358.90	7,072.90	-447.42	-535.99	-450.96	9.55	9.16	2.73	
7,661.00	88.49	0.44	7,076.43	-353.49	-536.53	-357.04	2.14	1.37	1.64	
7,756.00	88.30	0.22	7,079.10	-258.53	-535.99	-262.08	0.31	-0.20	-0.23	
7,850.00	88.60	0.22	7,081.64	-164.56	-535.63	-168.11	0.32	0.32	0.00	
7,945.00	88.69	0.44	7,083.88	-69.59	-535.08	-73.14	0.25	0.09	0.23	
8,039.00	90.60	2.42	7,084.47	24.37	-532.73	20.84	2.93	2.03	2.11	
8,134.00	91.00	2.51	7,083.14	119.27	-528.65	115.76	0.43	0.42	0.09	
8,228.00	91.40	2.11	7,081.17	213.17	-524.86	209.69	0.60	0.43	-0.43	
8,323.00	90.41	1.54	7,079.67	308.11	-521.83	304.65	1.20	-1.04	-0.60	
8,417.00	90.89	1.63	7,078.61	402.07	-519.23	398.62	0.52	0.51	0.10	
8,512.00	91.70	2.02	7,076.46	497.00	-516.21	493.56	0.95	0.85	0.41	
8,606.00	89.90	359.43	7,075.15	590.97	-515.02	587.54	3.36	-1.91	-2.76	
8,701.00	88.30	358.11	7,076.64	685.93	-517.06	682.49	2.18	-1.68	-1.39	
8,795.00	88.89	357.54	7,078.94	779.83	-520.63	776.36	0.87	0.63	-0.61	
8,889.00	89.11	357.54	7,080.58	873.73	-524.66	870.23	0.23	0.23	0.00	

PDD
Survey Report

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Well:	Cook 28N-16HZ	North Reference:	True
Wellbore:	Cook 28N-16HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

Survey										
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8,984.00	88.49	359.03	7,082.57	968.67	-527.50	965.15	1.70	-0.65	1.57	
9,078.00	89.11	359.61	7,084.54	1,062.64	-528.62	1,059.11	0.90	0.66	0.62	
9,173.00	89.00	357.54	7,086.11	1,157.59	-530.98	1,154.04	2.18	-0.12	-2.18	
9,267.00	90.80	0.22	7,086.27	1,251.56	-532.82	1,248.00	3.43	1.91	2.85	
9,362.00	91.59	0.44	7,084.29	1,346.54	-532.27	1,342.98	0.86	0.83	0.23	
9,456.00	92.30	0.13	7,081.10	1,440.48	-531.80	1,436.92	0.82	0.76	-0.33	
9,551.00	91.00	0.31	7,078.37	1,535.44	-531.44	1,531.88	1.38	-1.37	0.19	
9,645.00	89.51	0.22	7,077.95	1,629.43	-531.00	1,625.88	1.59	-1.59	-0.10	
9,740.00	89.40	0.84	7,078.85	1,724.43	-530.12	1,720.87	0.66	-0.12	0.65	
9,834.00	90.21	359.91	7,079.17	1,818.42	-529.51	1,814.87	1.31	0.86	-0.99	
9,929.00	89.79	0.62	7,079.17	1,913.42	-529.07	1,909.87	0.87	-0.44	0.75	
10,023.00	90.21	0.31	7,079.17	2,007.42	-528.31	2,003.87	0.56	0.45	-0.33	
10,118.00	91.00	0.22	7,078.17	2,102.41	-527.87	2,098.86	0.84	0.83	-0.09	
10,212.00	89.51	2.33	7,077.75	2,196.38	-525.78	2,192.84	2.75	-1.59	2.24	
10,307.00	89.70	2.11	7,078.40	2,291.30	-522.10	2,287.79	0.31	0.20	-0.23	
10,401.00	90.41	3.82	7,078.31	2,385.17	-517.23	2,381.69	1.97	0.76	1.82	
10,496.00	90.21	1.63	7,077.80	2,480.06	-512.72	2,476.60	2.31	-0.21	-2.31	
10,590.00	91.31	1.23	7,076.55	2,574.02	-510.37	2,570.58	1.25	1.17	-0.43	
10,685.00	89.00	1.54	7,076.30	2,668.98	-508.08	2,665.56	2.45	-2.43	0.33	
10,779.00	89.20	1.10	7,077.77	2,762.95	-505.91	2,759.53	0.51	0.21	-0.47	
10,874.00	89.90	1.10	7,078.52	2,857.93	-504.09	2,854.52	0.74	0.74	0.00	
10,968.00	90.30	0.84	7,078.35	2,951.91	-502.50	2,948.51	0.51	0.43	-0.28	
11,062.00	89.90	1.72	7,078.19	3,045.89	-500.40	3,042.50	1.03	-0.43	0.94	
11,157.00	90.10	2.33	7,078.19	3,140.83	-497.04	3,137.46	0.68	0.21	0.64	
11,251.00	91.20	2.11	7,077.12	3,234.75	-493.40	3,231.41	1.19	1.17	-0.23	
11,346.00	88.69	0.70	7,077.22	3,329.71	-491.07	3,326.38	3.03	-2.64	-1.48	
11,440.00	87.99	0.44	7,079.94	3,423.67	-490.14	3,420.34	0.79	-0.74	-0.28	
11,534.00	88.60	0.53	7,082.74	3,517.62	-489.34	3,514.30	0.66	0.65	0.10	
11,629.00	88.89	0.44	7,084.82	3,612.59	-488.54	3,609.28	0.32	0.31	-0.09	
11,723.00	89.59	0.31	7,086.06	3,706.58	-487.92	3,703.27	0.76	0.74	-0.14	
11,818.00	89.59	359.91	7,086.74	3,801.58	-487.74	3,798.26	0.42	0.00	-0.42	
11,912.00	89.70	359.52	7,087.32	3,895.58	-488.21	3,892.25	0.43	0.12	-0.41	
12,007.00	90.69	359.34	7,087.00	3,990.57	-489.15	3,987.24	1.06	1.04	-0.19	
12,101.00	91.40	358.81	7,085.29	4,084.54	-490.67	4,081.20	0.94	0.76	-0.56	
12,196.00	90.30	359.74	7,083.88	4,179.52	-491.87	4,176.17	1.52	-1.16	0.98	
12,290.00	90.41	0.00	7,083.30	4,273.52	-492.08	4,270.16	0.30	0.12	0.28	
12,385.00	91.11	359.21	7,082.04	4,368.51	-492.74	4,365.14	1.11	0.74	-0.83	
12,479.00	89.31	0.44	7,081.69	4,462.50	-493.02	4,459.13	2.32	-1.91	1.31	
12,533.00	88.80	0.62	7,082.58	4,516.49	-492.53	4,513.13	1.00	-0.94	0.33	
12,610.00	88.80	0.62	7,084.19	4,593.47	-491.69	4,590.11	0.00	0.00	0.00	

PDD
Survey Report

Company:	US ROCKIES WATTENBERG PLANNING	Local Co-ordinate Reference:	Well Cook 28N-16HZ
Project:	WELD-NAD83-UTMFT13N	TVD Reference:	4884'GL +25'KB @ 4909.00usft (H&P 307)
Site:	2N-65W-16 Cook 15-16HZ Pad	MD Reference:	4884'GL +25'KB @ 4909.00usft (H&P 307)
Well:	Cook 28N-16HZ	North Reference:	True
Wellbore:	Cook 28N-16HZ	Survey Calculation Method:	Minimum Curvature
Design:	PDD Actual Surveys	Database:	EDM 5000.1 Single User Db

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
Cook 28N-16HZ Enterec - actual wellpath hits target center - Point	0.00	0.00	2,592.61	-412.09	-229.51	14,574,906.36	1,733,385.83	40.131813	-104.667388
Cook 28N-16HZ Niobarar - actual wellpath misses target center by 0.01usft at 7474.99usft MD (7061.67 TVD, -538.57 N, -532.26 E) - Point	0.00	0.00	7,061.68	-538.56	-532.27	14,574,778.75	1,733,083.55	40.131466	-104.668471
Cook 28N-16HZ Actual I - actual wellpath hits target center - Point	0.00	0.00	7,073.87	-426.44	-536.33	14,574,890.86	1,733,079.06	40.131774	-104.668486
Cook 28N-16HZ Actual I - actual wellpath hits target center - Point	0.00	0.00	7,084.19	4,593.47	-491.69	14,579,910.90	1,733,104.87	40.145559	-104.668326

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,895.60	1,868.97	9 5/8"	9-5/8	13-1/2	
12,610.00	7,084.19	5 1/2"	5-1/2	8-1/2	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,650.00	2,592.61	Entered Landbox		0.00	
7,085.00	6,872.04	Sharon Springs		0.00	
7,173.00	6,931.30	Niobrara		0.00	
7,268.00	6,984.88	Niobrara B		0.00	
7,475.00	7,061.68	Niobrara C		0.00	
7,588.00	7,073.87	Landing Depth		0.00	
12,610.00	7,084.19	Toe Depth		0.00	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
12,610.00	7,084.19	4,593.47	-491.69	Projection to Bit	

Checked By: _____ Approved By: _____ Date: _____