



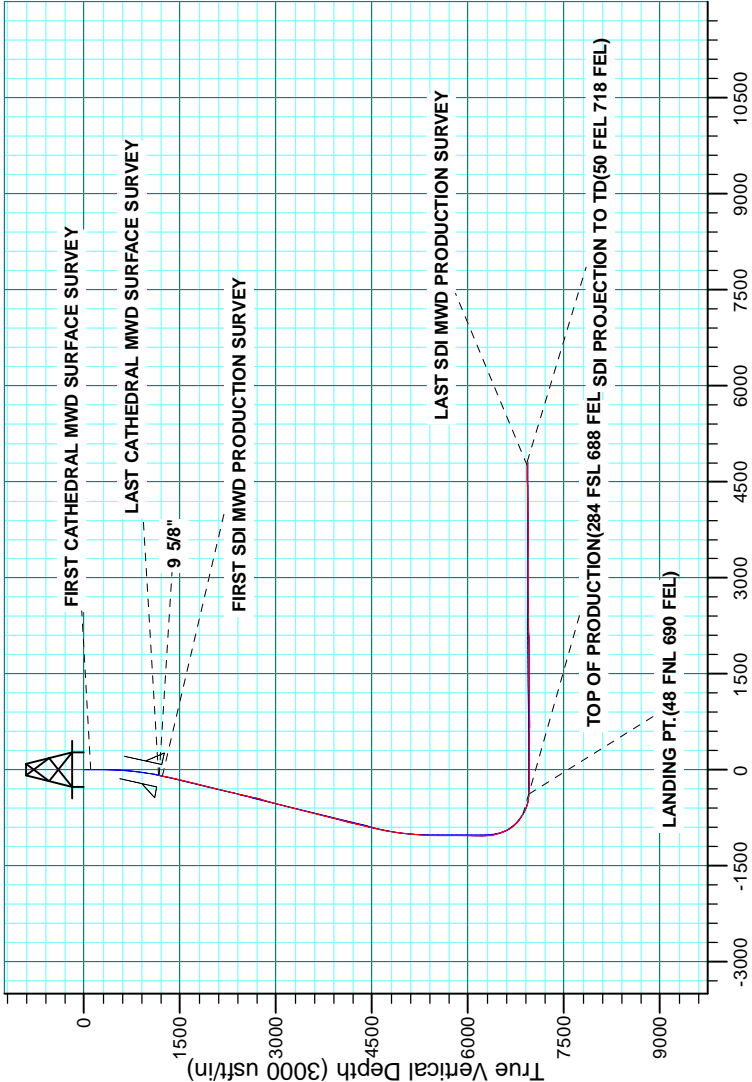
Project: WELD-NAD83-UTMFT13N  
Site: 3N-65W-28 Cheese 1-28HZ Pad  
Well: Cheese 16N-28HZ  
Wellbore: Plan A  
Design: Plan A



WELL DETAILS: Cheese 16N-28HZ				
GL 4817 & KB 25 @ 4941 99usft (HP 307)				
+N/-S 0.00	+E/-W 0.00	Northing 14600657.01	Easting 1734728.98	Latitude 40.202512
Longitude -104.662232				

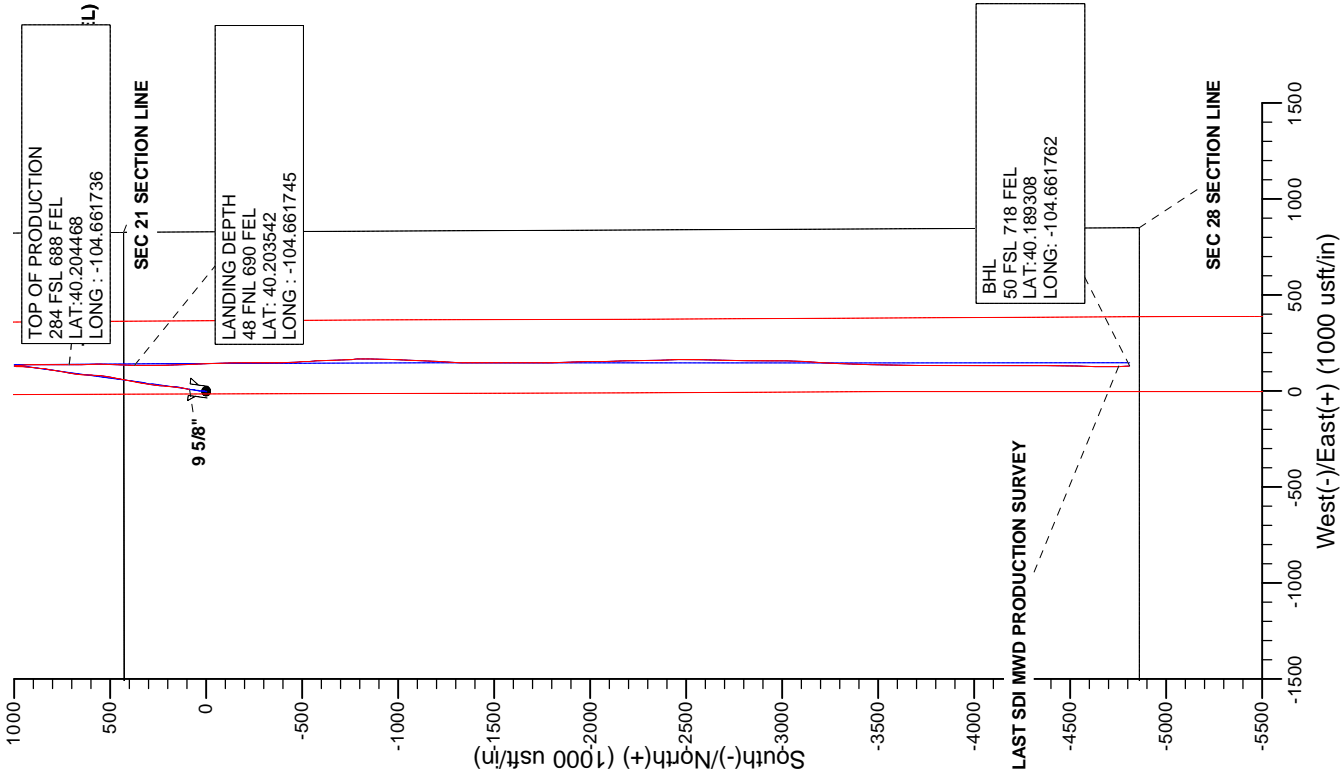
PROJECT DETAILS: WELD-NAD83-UTMFT13N	
Geodetic System: Universal Transverse Mercator (US Survey Feet)	
Datum: North American Datum 1983	
Ellipsoid: GRS 1980	
Zone: Zone 13N (108 W to 102 W)	
Location: SECTION 28 T3N R65W	
System Datum: Mean Sea Level	

CASING DETAILS		
TVD	MD	Name
1177.52	1184.00	9 5/8" 9.625



Vertical Section at 179.93° (3000 usft/in)

Survey: Survey #2 SDI MWD PRODUCTION (Cheese 16N-28HZ/Plan A)	
Created By: R.Scott	Date: 16:18, June 01 2015



Vertical Section at 179.93° (1000 usft/in)

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Cheese 16N-28HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Site:</b>	3N-65W-28 Cheese 1-28HZ Pad	<b>MD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Well:</b>	Cheese 16N-28HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan A	<b>Database:</b>	Denver Sales

<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	3N-65W-28 Cheese 1-28HZ Pad, SECTION 28 T3N R65W				
Site Position:		Northing:	14,600,657.57 usft	Latitude:	40.202514
From:	Lat/Long	Easting:	1,734,684.02 usft	Longitude:	-104.662393
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.22 °

Well		Cheese 16N-28HZ, 428' FNL 830' FEL				
Well Position	+N/-S	0.00 usft	Northing:	14,600,657.01 usft	Latitude:	40.202512
	+E/-W	0.00 usft	Easting:	1,734,728.98 usft	Longitude:	-104.662232
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,816.99 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/9/2014	8.35	66.79	52,689

<b>Design</b>	Plan A				
<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	179.93	

<b>Survey Program</b>	<b>Date</b>	6/1/2015			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
20.00	1,170.00	Survey #1 CATHEDRAL MWD SURFACE	APC_ISCWSA REV 2 MWD	Fixed:v2:standard declination	
1,234.00	12,624.00	Survey #2 SDI MWD PRODUCTION (Plan	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	
20.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	0.00	0.00	
102.00	0.80	207.90	102.00	-0.51	-0.27	0.51	0.98	0.98	0.00	
<b>FIRST CATHEDRAL MWD SURFACE SURVEY</b>										
164.00	1.00	225.70	163.99	-1.27	-0.86	1.27	0.55	0.32	28.71	
224.00	0.50	218.80	223.98	-1.84	-1.40	1.83	0.85	-0.83	-11.50	
281.00	0.30	49.70	280.98	-1.93	-1.44	1.93	1.40	-0.35	-296.67	
342.00	1.30	5.20	341.98	-1.14	-1.25	1.14	1.81	1.64	-72.95	
406.00	2.40	10.10	405.94	0.90	-0.95	-0.90	1.73	1.72	7.66	
470.00	2.20	11.20	469.89	3.43	-0.48	-3.43	0.32	-0.31	1.72	

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Cheese 16N-28HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Site:</b>	3N-65W-28 Cheese 1-28HZ Pad	<b>MD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Well:</b>	Cheese 16N-28HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan A	<b>Database:</b>	Denver Sales

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)	
534.00	2.20	3.10	533.84	5.86	-0.17	-5.86	0.49	0.00	-12.66	
598.00	3.00	7.00	597.78	8.75	0.10	-8.75	1.28	1.25	6.09	
662.00	4.00	8.30	661.66	12.62	0.62	-12.62	1.57	1.56	2.03	
726.00	5.60	3.90	725.43	17.94	1.16	-17.94	2.56	2.50	-6.88	
789.00	6.50	4.70	788.08	24.56	1.66	-24.56	1.43	1.43	1.27	
853.00	7.20	6.40	851.62	32.16	2.40	-32.16	1.14	1.09	2.66	
917.00	8.30	9.00	915.04	40.71	3.57	-40.70	1.80	1.72	4.06	
979.00	9.30	6.00	976.31	50.11	4.80	-50.10	1.77	1.61	-4.84	
1,043.00	10.40	8.30	1,039.36	60.97	6.17	-60.96	1.83	1.72	3.59	
1,108.00	11.80	9.10	1,103.14	73.34	8.07	-73.33	2.17	2.15	1.23	
1,170.00	11.90	8.20	1,163.82	85.92	9.98	-85.91	0.34	0.16	-1.45	
LAST CATHEDRAL MWD SURFACE SURVEY										
1,184.00	11.93	9.09	1,177.52	88.78	10.42	-88.77	1.34	0.23	6.38	
9 5/8"										
1,234.00	12.07	12.24	1,226.43	99.00	12.34	-98.98	1.34	0.28	6.29	
FIRST SDI MWD PRODUCTION SURVEY										
1,297.00	12.39	10.11	1,288.00	112.09	14.93	-112.07	0.88	0.51	-3.38	
1,391.00	11.93	9.35	1,379.89	131.60	18.27	-131.58	0.52	-0.49	-0.81	
1,486.00	13.51	10.28	1,472.56	152.21	21.85	-152.18	1.68	1.66	0.98	
1,580.00	13.48	2.52	1,563.97	173.96	24.29	-173.93	1.93	-0.03	-8.26	
1,675.00	12.96	0.48	1,656.45	195.68	24.87	-195.64	0.74	-0.55	-2.15	
1,769.00	13.09	8.10	1,748.04	216.76	26.46	-216.72	1.83	0.14	8.11	
1,864.00	14.92	7.35	1,840.21	239.54	29.54	-239.50	1.94	1.93	-0.79	
1,958.00	14.58	6.19	1,931.12	263.30	32.36	-263.26	0.48	-0.36	-1.23	
2,052.00	14.15	5.41	2,022.18	286.50	34.72	-286.46	0.50	-0.46	-0.83	
2,146.00	14.35	10.70	2,113.29	309.39	37.97	-309.34	1.40	0.21	5.63	
2,241.00	13.94	10.74	2,205.41	332.20	42.28	-332.15	0.43	-0.43	0.04	
2,335.00	13.53	10.55	2,296.72	354.13	46.41	-354.08	0.44	-0.44	-0.20	
2,430.00	13.49	9.16	2,389.09	376.00	50.21	-375.94	0.34	-0.04	-1.46	
2,524.00	13.39	11.35	2,480.52	397.49	54.09	-397.43	0.55	-0.11	2.33	
2,619.00	13.93	9.01	2,572.83	419.57	58.05	-419.50	0.81	0.57	-2.46	
2,713.00	12.80	9.28	2,664.28	441.02	61.50	-440.95	1.20	-1.20	0.29	
2,808.00	14.35	12.26	2,756.63	462.92	65.70	-462.84	1.79	1.63	3.14	
2,902.00	15.46	11.33	2,847.46	486.58	70.63	-486.50	1.21	1.18	-0.99	
2,997.00	15.85	7.82	2,938.94	511.85	74.88	-511.76	1.08	0.41	-3.69	
3,091.00	15.36	9.12	3,029.48	536.86	78.60	-536.77	0.64	-0.52	1.38	
3,186.00	14.76	4.84	3,121.22	561.34	81.62	-561.24	1.33	-0.63	-4.51	
3,280.00	13.43	4.29	3,212.38	584.16	83.45	-584.06	1.42	-1.41	-0.59	
3,374.00	13.43	359.70	3,303.82	605.96	84.21	-605.86	1.13	0.00	-4.88	
3,469.00	13.73	1.61	3,396.16	628.27	84.47	-628.16	0.57	0.32	2.01	
3,564.00	14.49	4.20	3,488.29	651.39	85.65	-651.28	1.04	0.80	2.73	
3,658.00	14.25	8.00	3,579.36	674.57	88.12	-674.47	1.04	-0.26	4.04	
3,752.00	14.45	8.36	3,670.42	697.64	91.44	-697.52	0.23	0.21	0.38	
3,847.00	13.96	12.73	3,762.52	720.54	95.69	-720.42	1.24	-0.52	4.60	

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Cheese 16N-28HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Site:</b>	3N-65W-28 Cheese 1-28HZ Pad	<b>MD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Well:</b>	Cheese 16N-28HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan A	<b>Database:</b>	Denver Sales

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)
3,941.00	14.93	10.46	3,853.55	743.51	100.39	-743.39	1.19	1.03	-2.41
4,036.00	16.24	9.63	3,945.05	768.64	104.83	-768.51	1.40	1.38	-0.87
4,130.00	15.60	8.59	4,035.45	794.10	108.92	-793.96	0.75	-0.68	-1.11
4,225.00	14.27	8.71	4,127.24	818.30	112.60	-818.16	1.40	-1.40	0.13
4,319.00	13.96	8.38	4,218.40	840.97	116.00	-840.83	0.34	-0.33	-0.35
4,413.00	13.60	7.77	4,309.69	863.14	119.15	-862.99	0.41	-0.38	-0.65
4,508.00	13.16	6.33	4,402.11	884.95	121.85	-884.80	0.58	-0.46	-1.52
4,602.00	13.35	6.91	4,493.61	906.36	124.34	-906.21	0.25	0.20	0.62
4,697.00	12.79	5.21	4,586.15	927.72	126.61	-927.57	0.71	-0.59	-1.79
4,791.00	10.75	0.71	4,678.17	946.85	127.67	-946.70	2.38	-2.17	-4.79
4,886.00	9.19	2.95	4,771.73	963.29	128.17	-963.13	1.69	-1.64	2.36
4,980.00	8.56	8.85	4,864.61	977.70	129.63	-977.54	1.18	-0.67	6.28
5,075.00	6.24	2.91	4,958.81	989.84	130.98	-989.68	2.57	-2.44	-6.25
5,169.00	6.11	6.72	5,052.27	999.91	131.82	-999.75	0.46	-0.14	4.05
5,264.00	4.20	8.52	5,146.88	1,008.38	132.93	-1,008.21	2.02	-2.01	1.89
5,358.00	4.13	2.54	5,240.63	1,015.16	133.59	-1,015.00	0.47	-0.07	-6.36
5,453.00	1.74	16.09	5,335.50	1,019.97	134.14	-1,019.80	2.60	-2.52	14.26
5,547.00	1.82	9.41	5,429.46	1,022.81	134.78	-1,022.64	0.24	0.09	-7.11
5,642.00	1.17	67.25	5,524.43	1,024.67	135.92	-1,024.51	1.64	-0.68	60.88
5,737.00	0.95	43.73	5,619.41	1,025.62	137.36	-1,025.45	0.51	-0.23	-24.76
5,831.00	0.88	66.78	5,713.40	1,026.47	138.56	-1,026.30	0.40	-0.07	24.52
5,926.00	1.15	38.63	5,808.39	1,027.50	139.83	-1,027.33	0.59	0.28	-29.63
6,020.00	1.12	18.84	5,902.37	1,029.10	140.72	-1,028.93	0.42	-0.03	-21.05
6,115.00	1.11	346.10	5,997.35	1,030.88	140.79	-1,030.70	0.66	-0.01	-34.46
6,209.00	1.31	331.75	6,091.33	1,032.71	140.07	-1,032.53	0.38	0.21	-15.27
6,304.00	1.74	268.97	6,186.30	1,033.64	138.11	-1,033.47	1.72	0.45	-66.08
6,398.00	1.14	274.15	6,280.27	1,033.68	135.75	-1,033.51	0.65	-0.64	5.51
6,493.00	12.26	186.29	6,374.54	1,023.68	133.70	-1,023.52	12.92	11.71	-92.48
6,587.00	16.21	182.77	6,465.64	1,000.65	131.97	-1,000.49	4.30	4.20	-3.74
6,682.00	21.53	171.95	6,555.53	970.11	133.77	-969.95	6.68	5.60	-11.39
6,776.00	29.61	179.34	6,640.27	929.74	136.46	-929.57	9.23	8.60	7.86
6,871.00	41.06	179.49	6,717.64	874.89	137.01	-874.72	12.05	12.05	0.16
6,965.00	49.03	178.75	6,784.00	808.43	138.06	-808.26	8.50	8.48	-0.79
7,060.00	58.31	180.33	6,840.23	731.98	138.61	-731.81	9.86	9.77	1.66
7,083.00	59.87	179.79	6,852.04	712.25	138.59	-712.08	7.06	6.76	-2.36
TOP OF PRODUCTION(284 FSL 688 FEL)									
7,154.00	64.68	178.21	6,885.07	649.44	139.71	-649.27	7.06	6.78	-2.22
7,249.00	73.17	179.63	6,919.20	560.89	141.34	-560.72	9.04	8.94	1.49
7,343.00	80.73	182.20	6,940.41	469.40	139.85	-469.23	8.47	8.04	2.73
7,438.00	88.19	182.54	6,949.58	375.00	135.94	-374.83	7.86	7.85	0.36
LANDING PT.(48 FNL 690 FEL)									
7,532.00	87.68	179.27	6,952.96	281.08	134.46	-280.92	3.52	-0.54	-3.48
7,627.00	88.29	178.16	6,956.30	186.17	136.59	-186.00	1.33	0.64	-1.17

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Cheese 16N-28HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Site:</b>	3N-65W-28 Cheese 1-28HZ Pad	<b>MD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Well:</b>	Cheese 16N-28HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan A	<b>Database:</b>	Denver Sales

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)
7,721.00	89.43	177.85	6,958.18	92.24	139.86	-92.07	1.26	1.21	-0.33
7,816.00	90.44	177.89	6,958.28	-2.69	143.39	2.86	1.06	1.06	0.04
7,911.00	89.19	178.70	6,958.59	-97.64	146.22	97.82	1.57	-1.32	0.85
8,005.00	90.30	178.95	6,959.01	-191.62	148.15	191.80	1.21	1.18	0.27
8,099.00	89.87	179.79	6,958.87	-285.61	149.18	285.80	1.00	-0.46	0.89
8,194.00	91.11	178.99	6,958.06	-380.60	150.19	380.79	1.55	1.31	-0.84
8,288.00	88.72	178.61	6,958.20	-474.58	152.16	474.76	2.57	-2.54	-0.40
8,383.00	88.49	176.45	6,960.51	-569.45	156.25	569.64	2.29	-0.24	-2.27
8,477.00	87.58	176.85	6,963.73	-663.24	161.74	663.43	1.06	-0.97	0.43
8,572.00	89.90	177.71	6,965.82	-758.10	166.25	758.30	2.60	2.44	0.91
8,666.00	91.14	180.83	6,964.97	-852.07	167.44	852.28	3.57	1.32	3.32
8,761.00	92.02	181.42	6,962.35	-947.02	165.58	947.22	1.12	0.93	0.62
8,855.00	90.97	182.19	6,959.90	-1,040.94	162.62	1,041.14	1.39	-1.12	0.82
8,950.00	91.65	182.15	6,957.72	-1,135.84	159.02	1,136.04	0.72	0.72	-0.04
9,044.00	90.84	182.60	6,955.68	-1,229.74	155.13	1,229.93	0.99	-0.86	0.48
9,139.00	91.38	182.58	6,953.84	-1,324.63	150.84	1,324.81	0.57	0.57	-0.02
9,233.00	89.80	180.43	6,952.87	-1,418.58	148.37	1,418.76	2.84	-1.68	-2.29
9,328.00	88.15	180.33	6,954.57	-1,513.56	147.74	1,513.74	1.74	-1.74	-0.11
9,422.00	90.07	180.10	6,956.03	-1,607.54	147.39	1,607.72	2.06	2.04	-0.24
9,517.00	90.91	179.22	6,955.22	-1,702.54	147.95	1,702.71	1.28	0.88	-0.93
9,612.00	91.95	178.94	6,952.85	-1,797.49	149.48	1,797.67	1.13	1.09	-0.29
9,706.00	89.50	178.13	6,951.66	-1,891.45	151.88	1,891.63	2.75	-2.61	-0.86
9,800.00	90.27	179.08	6,951.85	-1,985.42	154.17	1,985.60	1.30	0.82	1.01
9,895.00	92.38	179.66	6,949.65	-2,080.38	155.21	2,080.57	2.30	2.22	0.61
9,989.00	91.31	178.82	6,946.63	-2,174.32	156.46	2,174.51	1.45	-1.14	-0.89
10,084.00	91.81	177.95	6,944.04	-2,269.25	159.13	2,269.44	1.06	0.53	-0.92
10,178.00	90.77	178.91	6,941.92	-2,363.18	161.71	2,363.38	1.51	-1.11	1.02
10,273.00	92.02	178.81	6,939.61	-2,458.14	163.60	2,458.33	1.32	1.32	-0.11
10,368.00	90.50	181.14	6,937.52	-2,553.10	163.64	2,553.30	2.93	-1.60	2.45
10,462.00	91.38	180.62	6,935.98	-2,647.08	162.20	2,647.27	1.09	0.94	-0.55
10,556.00	90.81	181.65	6,934.18	-2,741.04	160.33	2,741.23	1.25	-0.61	1.10
10,651.00	88.79	180.69	6,934.51	-2,836.01	158.39	2,836.21	2.35	-2.13	-1.01
10,745.00	89.90	180.49	6,935.59	-2,930.00	157.43	2,930.19	1.20	1.18	-0.21
10,840.00	91.01	180.81	6,934.83	-3,024.99	156.35	3,025.18	1.22	1.17	0.34
10,934.00	91.51	181.99	6,932.77	-3,118.94	154.05	3,119.12	1.36	0.53	1.26
11,029.00	90.44	182.25	6,931.15	-3,213.86	150.54	3,214.04	1.16	-1.13	0.27
11,123.00	88.59	182.75	6,931.95	-3,307.76	146.44	3,307.94	2.04	-1.97	0.53
11,218.00	89.76	182.43	6,933.31	-3,402.65	142.15	3,402.82	1.28	1.23	-0.34
11,312.00	87.61	181.23	6,935.47	-3,496.57	139.15	3,496.74	2.62	-2.29	-1.28
11,407.00	88.96	181.28	6,938.31	-3,591.50	137.07	3,591.67	1.42	1.42	0.05
11,501.00	90.91	181.53	6,938.42	-3,685.47	134.76	3,685.63	2.09	2.07	0.27
11,596.00	90.77	180.08	6,937.03	-3,780.45	133.43	3,780.61	1.53	-0.15	-1.53
11,690.00	89.83	179.14	6,936.54	-3,874.44	134.07	3,874.61	1.41	-1.00	-1.00
11,785.00	91.34	179.26	6,935.57	-3,969.43	135.39	3,969.59	1.59	1.59	0.13

<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>Local Co-ordinate Reference:</b>	Well Cheese 16N-28HZ
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>TVD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Site:</b>	3N-65W-28 Cheese 1-28HZ Pad	<b>MD Reference:</b>	GL 4817 & KB 25 @ 4841.99usft (HP 307)
<b>Well:</b>	Cheese 16N-28HZ	<b>North Reference:</b>	True
<b>Wellbore:</b>	Plan A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan A	<b>Database:</b>	Denver Sales

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)
11,879.00	90.94	180.53	6,933.70	-4,063.41	135.56	4,063.57	1.42	-0.43	1.35
11,974.00	88.59	180.28	6,934.09	-4,158.40	134.89	4,158.56	2.49	-2.47	-0.26
12,068.00	89.97	180.23	6,935.27	-4,252.39	134.47	4,252.55	1.47	1.47	-0.05
12,163.00	91.75	180.08	6,933.84	-4,347.37	134.22	4,347.53	1.88	1.87	-0.16
12,257.00	90.23	181.13	6,932.22	-4,441.35	133.23	4,441.51	1.97	-1.62	1.12
12,352.00	91.71	180.96	6,930.61	-4,536.32	131.49	4,536.47	1.57	1.56	-0.18
12,446.00	88.89	180.05	6,930.12	-4,630.30	130.66	4,630.46	3.15	-3.00	-0.97
12,567.00	90.57	179.67	6,930.69	-4,751.29	130.96	4,751.45	1.42	1.39	-0.31
<b>LAST SDI MWD PRODUCTION SURVEY</b>									
12,624.00	90.57	179.67	6,930.12	-4,808.29	131.29	4,808.45	0.00	0.00	0.00
<b>SDI PROJECTION TO TD(50 FEL 718 FEL)</b>									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,184.00	1,177.52	9 5/8"	9.625	13.500

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
102.00	102.00	-0.51	-0.27	FIRST CATHEDRAL MWD SURFACE SURVEY
1,170.00	1,163.82	85.92	9.98	LAST CATHEDRAL MWD SURFACE SURVEY
1,234.00	1,226.43	99.00	12.34	FIRST SDI MWD PRODUCTION SURVEY
7,083.00	6,852.04	712.25	138.59	TOP OF PRODUCTION(284 FSL 688 FEL)
7,438.00	6,949.58	375.00	135.94	LANDING PT.(48 FNL 690 FEL)
12,567.00	6,930.69	-4,751.29	130.96	LAST SDI MWD PRODUCTION SURVEY
12,624.00	6,930.12	-4,808.29	131.29	SDI PROJECTION TO TD(50 FEL 718 FEL)

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