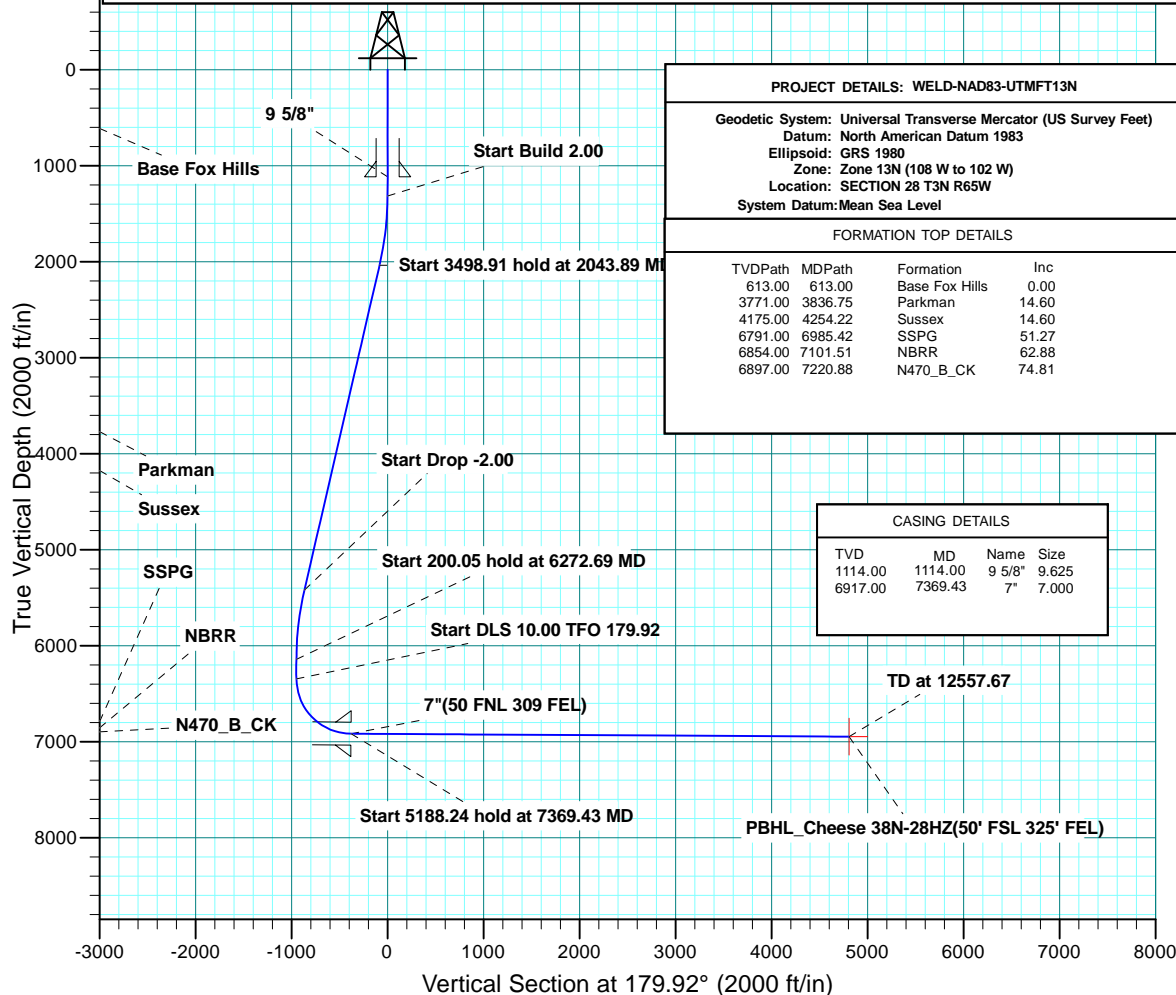


WELL DETAILS: Cheese 38N-28HZ					
GL 4818 & KB 17 @ 4834.00ft (ASSUMED)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14600657.13	1734759.13	40.2025120	-104.6621240

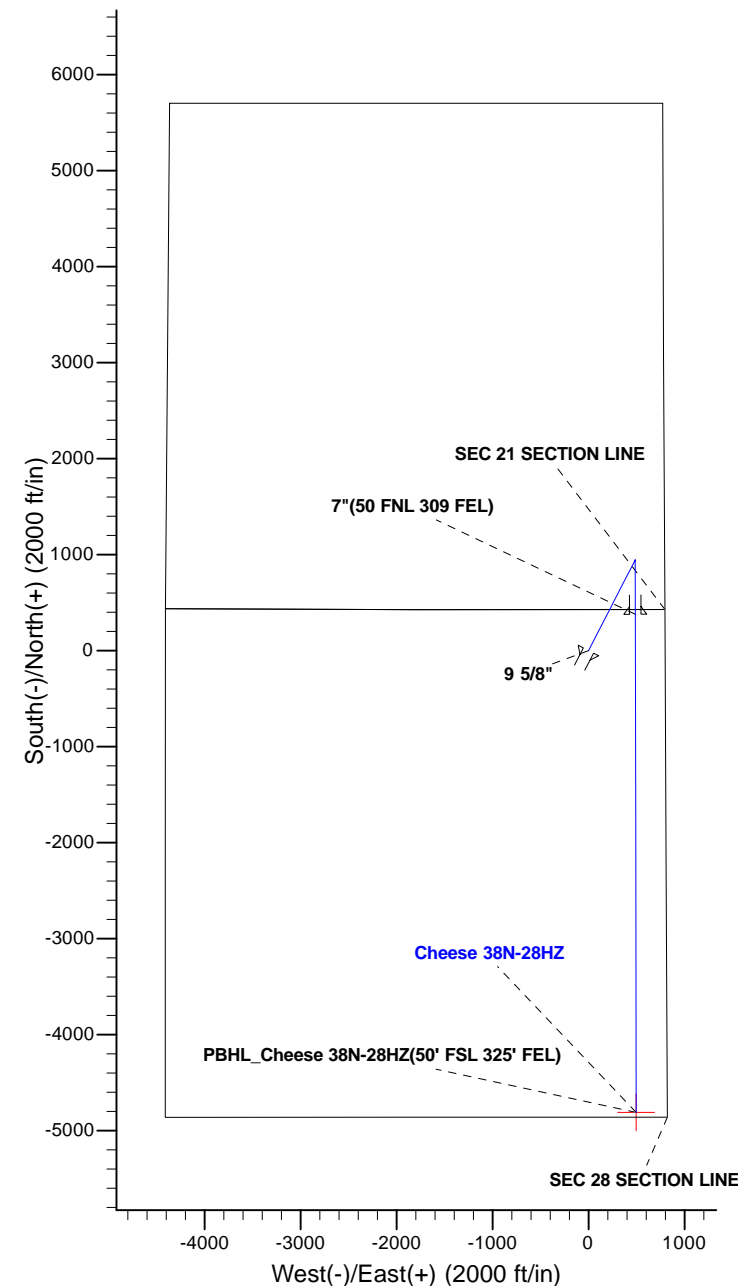
SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1314.00	0.00	0.00	1314.00	0.00	0.00	0.00	0.00	0.00
2043.89	14.60	27.21	2036.02	82.25	42.29	2.00	27.21	-82.19
5542.80	14.60	27.21	5421.98	866.49	445.51	0.00	0.00	-865.87
6272.69	0.00	0.00	6144.00	948.74	487.80	2.00	180.00	-948.06
6472.74	0.00	0.00	6344.05	948.74	487.80	0.00	0.00	-948.06
7369.43	89.67	179.92	6917.00	379.09	488.64	10.00	179.92	-378.41
12557.67	89.67	179.92	6947.00	-4809.06	496.28	0.00	0.00	4809.74

DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL 6947.00		-4809.06	496.28	14595850.01	1735273.71	40.1893060	-104.6603470	Point
- plan hits target center								



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			
FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	Inc
613.00	613.00	Base Fox Hills	0.00
3771.00	3836.75	Parkman	14.60
4175.00	4254.22	Sussex	14.60
6791.00	6985.42	SSPG	51.27
6854.00	7101.51	NBRR	62.88
6897.00	7220.88	N470_B_CK	74.81

CASING DETAILS			
TVD	MD	Name	Size
1114.00	1114.00	9 5/8"	9.625
6917.00	7369.43	7"	7.000





Scientific Drilling

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Cheese 1-28HZ PAD

Cheese 38N-28HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

13 October, 2014

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese 38N-28HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese 38N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

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	Cheese 1-28HZ PAD, SECTION 28 T3N R65W				
Site Position:		Northing:	14,600,657.57 usft	Latitude:	40.2025140
From:	Lat/Long	Easting:	1,734,684.02 usft	Longitude:	-104.6623930
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.22

Well	Cheese 38N-28HZ, 429' FSL 800' FEL					
Well Position	+N/-S	-0.73 ft	Northing:	14,600,657.12 usft	Latitude:	40.2025120
	+E/-W	75.11 ft	Easting:	1,734,759.13 usft	Longitude:	-104.6621240
Position Uncertainty		0.00 ft	Wellhead Elevation:	0.00 ft	Ground Level:	4,817.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	10/9/2014	8.44	66.79	52,582

Design	PLAN #1 PRELIMINARY			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	179.92

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,314.00	0.00	0.00	1,314.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,043.89	14.60	27.21	2,036.02	82.25	42.29	2.00	2.00	0.00	27.21	
5,542.80	14.60	27.21	5,421.98	866.49	445.51	0.00	0.00	0.00	0.00	
6,272.69	0.00	0.00	6,144.00	948.74	487.80	2.00	-2.00	0.00	180.00	
6,472.74	0.00	0.00	6,344.05	948.74	487.80	0.00	0.00	0.00	0.00	
7,369.43	89.67	179.92	6,917.00	379.09	488.64	10.00	10.00	20.06	179.92	
12,557.67	89.67	179.92	6,947.00	-4,809.06	496.28	0.00	0.00	0.00	0.00	PBHL_Cheese 38N-2

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese 38N-28HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese 38N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
613.00	0.00	0.00	613.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Fox Hills									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,114.00	0.00	0.00	1,114.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,314.00	0.00	0.00	1,314.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,400.00	1.72	27.21	1,399.99	1.15	0.59	-1.15	2.00	2.00	0.00
1,500.00	3.72	27.21	1,499.87	5.37	2.76	-5.36	2.00	2.00	0.00
1,600.00	5.72	27.21	1,599.53	12.69	6.52	-12.68	2.00	2.00	0.00
1,700.00	7.72	27.21	1,698.83	23.09	11.87	-23.08	2.00	2.00	0.00
1,800.00	9.72	27.21	1,797.67	36.57	18.80	-36.55	2.00	2.00	0.00
1,900.00	11.72	27.21	1,895.92	53.12	27.31	-53.08	2.00	2.00	0.00
2,000.00	13.72	27.21	1,993.46	72.70	37.38	-72.64	2.00	2.00	0.00
2,043.89	14.60	27.21	2,036.02	82.25	42.29	-82.19	2.00	2.00	0.00
Start 3498.91 hold at 2043.89 MD									
2,100.00	14.60	27.21	2,090.32	94.82	48.75	-94.75	0.00	0.00	0.00
2,200.00	14.60	27.21	2,187.09	117.24	60.28	-117.15	0.00	0.00	0.00
2,300.00	14.60	27.21	2,283.86	139.65	71.80	-139.55	0.00	0.00	0.00
2,400.00	14.60	27.21	2,380.63	162.06	83.33	-161.95	0.00	0.00	0.00
2,500.00	14.60	27.21	2,477.41	184.48	94.85	-184.34	0.00	0.00	0.00
2,600.00	14.60	27.21	2,574.18	206.89	106.37	-206.74	0.00	0.00	0.00
2,700.00	14.60	27.21	2,670.95	229.31	117.90	-229.14	0.00	0.00	0.00
2,800.00	14.60	27.21	2,767.72	251.72	129.42	-251.54	0.00	0.00	0.00
2,900.00	14.60	27.21	2,864.49	274.13	140.95	-273.94	0.00	0.00	0.00
3,000.00	14.60	27.21	2,961.26	296.55	152.47	-296.34	0.00	0.00	0.00
3,100.00	14.60	27.21	3,058.04	318.96	164.00	-318.73	0.00	0.00	0.00
3,200.00	14.60	27.21	3,154.81	341.38	175.52	-341.13	0.00	0.00	0.00
3,300.00	14.60	27.21	3,251.58	363.79	187.05	-363.53	0.00	0.00	0.00
3,400.00	14.60	27.21	3,348.35	386.20	198.57	-385.93	0.00	0.00	0.00
3,500.00	14.60	27.21	3,445.12	408.62	210.09	-408.33	0.00	0.00	0.00
3,600.00	14.60	27.21	3,541.90	431.03	221.62	-430.72	0.00	0.00	0.00
3,700.00	14.60	27.21	3,638.67	453.45	233.14	-453.12	0.00	0.00	0.00
3,800.00	14.60	27.21	3,735.44	475.86	244.67	-475.52	0.00	0.00	0.00
3,836.75	14.60	27.21	3,771.00	484.10	248.90	-483.75	0.00	0.00	0.00
Parkman									
3,900.00	14.60	27.21	3,832.21	498.28	256.19	-497.92	0.00	0.00	0.00
4,000.00	14.60	27.21	3,928.98	520.69	267.72	-520.32	0.00	0.00	0.00
4,100.00	14.60	27.21	4,025.76	543.10	279.24	-542.71	0.00	0.00	0.00
4,200.00	14.60	27.21	4,122.53	565.52	290.76	-565.11	0.00	0.00	0.00

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese 38N-28HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese 38N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,254.22	14.60	27.21	4,175.00	577.67	297.01	-577.26	0.00	0.00	0.00
Sussex									
4,300.00	14.60	27.21	4,219.30	587.93	302.29	-587.51	0.00	0.00	0.00
4,400.00	14.60	27.21	4,316.07	610.35	313.81	-609.91	0.00	0.00	0.00
4,500.00	14.60	27.21	4,412.84	632.76	325.34	-632.31	0.00	0.00	0.00
4,600.00	14.60	27.21	4,509.61	655.17	336.86	-654.70	0.00	0.00	0.00
4,700.00	14.60	27.21	4,606.39	677.59	348.39	-677.10	0.00	0.00	0.00
4,800.00	14.60	27.21	4,703.16	700.00	359.91	-699.50	0.00	0.00	0.00
4,900.00	14.60	27.21	4,799.93	722.42	371.43	-721.90	0.00	0.00	0.00
5,000.00	14.60	27.21	4,896.70	744.83	382.96	-744.30	0.00	0.00	0.00
5,100.00	14.60	27.21	4,993.47	767.25	394.48	-766.69	0.00	0.00	0.00
5,200.00	14.60	27.21	5,090.25	789.66	406.01	-789.09	0.00	0.00	0.00
5,300.00	14.60	27.21	5,187.02	812.07	417.53	-811.49	0.00	0.00	0.00
5,400.00	14.60	27.21	5,283.79	834.49	429.06	-833.89	0.00	0.00	0.00
5,500.00	14.60	27.21	5,380.56	856.90	440.58	-856.29	0.00	0.00	0.00
5,542.80	14.60	27.21	5,421.98	866.49	445.51	-865.87	0.00	0.00	0.00
Start Drop -2.00									
5,600.00	13.45	27.21	5,477.47	878.82	451.85	-878.19	2.00	-2.00	0.00
5,700.00	11.45	27.21	5,575.12	898.00	461.71	-897.36	2.00	-2.00	0.00
5,800.00	9.45	27.21	5,673.45	914.14	470.01	-913.48	2.00	-2.00	0.00
5,900.00	7.45	27.21	5,772.36	927.21	476.73	-926.54	2.00	-2.00	0.00
6,000.00	5.45	27.21	5,871.72	937.21	481.87	-936.53	2.00	-2.00	0.00
6,100.00	3.45	27.21	5,971.41	944.11	485.42	-943.43	2.00	-2.00	0.00
6,200.00	1.45	27.21	6,071.32	947.92	487.38	-947.24	2.00	-2.00	0.00
6,272.69	0.00	0.00	6,144.00	948.74	487.80	-948.06	2.00	-2.00	-37.43
Start 200.05 hold at 6272.69 MD									
6,300.00	0.00	0.00	6,171.31	948.74	487.80	-948.06	0.00	0.00	0.00
6,400.00	0.00	0.00	6,271.31	948.74	487.80	-948.06	0.00	0.00	0.00
6,472.74	0.00	0.00	6,344.05	948.74	487.80	-948.06	0.00	0.00	0.00
Start DLS 10.00 TFO 179.92									
6,500.00	2.73	179.92	6,371.30	948.09	487.80	-947.41	10.00	10.00	0.00
6,600.00	12.73	179.92	6,470.27	934.67	487.82	-933.98	10.00	10.00	0.00
6,700.00	22.73	179.92	6,565.40	904.26	487.87	-903.58	10.00	10.00	0.00
6,800.00	32.73	179.92	6,653.80	857.79	487.93	-857.11	10.00	10.00	0.00
6,900.00	42.73	179.92	6,732.80	796.68	488.02	-796.00	10.00	10.00	0.00
6,985.42	51.27	179.92	6,791.00	734.27	488.12	-733.59	10.00	10.00	0.00
SSPG									
7,000.00	52.73	179.92	6,799.98	722.78	488.13	-722.10	10.00	10.00	0.00
7,100.00	62.73	179.92	6,853.31	638.34	488.26	-637.66	10.00	10.00	0.00
7,101.51	62.88	179.92	6,854.00	637.00	488.26	-636.31	10.00	10.00	0.00
NBRR									
7,200.00	72.73	179.92	6,891.17	545.92	488.39	-545.24	10.00	10.00	0.00
7,220.88	74.81	179.92	6,897.00	525.88	488.42	-525.19	10.00	10.00	0.00
N470_B_CK									
7,300.00	82.73	179.92	6,912.40	448.33	488.54	-447.65	10.00	10.00	0.00
7,369.43	89.67	179.92	6,917.00	379.09	488.64	-378.41	10.00	10.00	0.00
Start 5188.24 hold at 7369.43 MD - 7"(50 FNL 309 FEL)									
7,400.00	89.67	179.92	6,917.18	348.53	488.68	-347.84	0.00	0.00	0.00
7,500.00	89.67	179.92	6,917.75	248.53	488.83	-247.84	0.00	0.00	0.00
7,600.00	89.67	179.92	6,918.33	148.53	488.98	-147.85	0.00	0.00	0.00
7,700.00	89.67	179.92	6,918.91	48.53	489.13	-47.85	0.00	0.00	0.00
7,800.00	89.67	179.92	6,919.49	-51.47	489.27	52.15	0.00	0.00	0.00
7,900.00	89.67	179.92	6,920.07	-151.47	489.42	152.15	0.00	0.00	0.00

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese 38N-28HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese 38N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,000.00	89.67	179.92	6,920.65	-251.46	489.57	252.15	0.00	0.00	0.00
8,100.00	89.67	179.92	6,921.22	-351.46	489.71	352.15	0.00	0.00	0.00
8,200.00	89.67	179.92	6,921.80	-451.46	489.86	452.14	0.00	0.00	0.00
8,300.00	89.67	179.92	6,922.38	-551.46	490.01	552.14	0.00	0.00	0.00
8,400.00	89.67	179.92	6,922.96	-651.46	490.16	652.14	0.00	0.00	0.00
8,500.00	89.67	179.92	6,923.54	-751.46	490.30	752.14	0.00	0.00	0.00
8,600.00	89.67	179.92	6,924.12	-851.45	490.45	852.14	0.00	0.00	0.00
8,700.00	89.67	179.92	6,924.69	-951.45	490.60	952.14	0.00	0.00	0.00
8,800.00	89.67	179.92	6,925.27	-1,051.45	490.74	1,052.13	0.00	0.00	0.00
8,900.00	89.67	179.92	6,925.85	-1,151.45	490.89	1,152.13	0.00	0.00	0.00
9,000.00	89.67	179.92	6,926.43	-1,251.45	491.04	1,252.13	0.00	0.00	0.00
9,100.00	89.67	179.92	6,927.01	-1,351.44	491.19	1,352.13	0.00	0.00	0.00
9,200.00	89.67	179.92	6,927.58	-1,451.44	491.33	1,452.13	0.00	0.00	0.00
9,300.00	89.67	179.92	6,928.16	-1,551.44	491.48	1,552.13	0.00	0.00	0.00
9,400.00	89.67	179.92	6,928.74	-1,651.44	491.63	1,652.12	0.00	0.00	0.00
9,500.00	89.67	179.92	6,929.32	-1,751.44	491.77	1,752.12	0.00	0.00	0.00
9,600.00	89.67	179.92	6,929.90	-1,851.44	491.92	1,852.12	0.00	0.00	0.00
9,700.00	89.67	179.92	6,930.48	-1,951.43	492.07	1,952.12	0.00	0.00	0.00
9,800.00	89.67	179.92	6,931.05	-2,051.43	492.22	2,052.12	0.00	0.00	0.00
9,900.00	89.67	179.92	6,931.63	-2,151.43	492.36	2,152.12	0.00	0.00	0.00
10,000.00	89.67	179.92	6,932.21	-2,251.43	492.51	2,252.11	0.00	0.00	0.00
10,100.00	89.67	179.92	6,932.79	-2,351.43	492.66	2,352.11	0.00	0.00	0.00
10,200.00	89.67	179.92	6,933.37	-2,451.42	492.81	2,452.11	0.00	0.00	0.00
10,300.00	89.67	179.92	6,933.95	-2,551.42	492.95	2,552.11	0.00	0.00	0.00
10,400.00	89.67	179.92	6,934.52	-2,651.42	493.10	2,652.11	0.00	0.00	0.00
10,500.00	89.67	179.92	6,935.10	-2,751.42	493.25	2,752.11	0.00	0.00	0.00
10,600.00	89.67	179.92	6,935.68	-2,851.42	493.39	2,852.10	0.00	0.00	0.00
10,700.00	89.67	179.92	6,936.26	-2,951.42	493.54	2,952.10	0.00	0.00	0.00
10,800.00	89.67	179.92	6,936.84	-3,051.41	493.69	3,052.10	0.00	0.00	0.00
10,900.00	89.67	179.92	6,937.41	-3,151.41	493.84	3,152.10	0.00	0.00	0.00
11,000.00	89.67	179.92	6,937.99	-3,251.41	493.98	3,252.10	0.00	0.00	0.00
11,100.00	89.67	179.92	6,938.57	-3,351.41	494.13	3,352.10	0.00	0.00	0.00
11,200.00	89.67	179.92	6,939.15	-3,451.41	494.28	3,452.09	0.00	0.00	0.00
11,300.00	89.67	179.92	6,939.73	-3,551.41	494.42	3,552.09	0.00	0.00	0.00
11,400.00	89.67	179.92	6,940.31	-3,651.40	494.57	3,652.09	0.00	0.00	0.00
11,500.00	89.67	179.92	6,940.88	-3,751.40	494.72	3,752.09	0.00	0.00	0.00
11,600.00	89.67	179.92	6,941.46	-3,851.40	494.87	3,852.09	0.00	0.00	0.00
11,700.00	89.67	179.92	6,942.04	-3,951.40	495.01	3,952.09	0.00	0.00	0.00
11,800.00	89.67	179.92	6,942.62	-4,051.40	495.16	4,052.08	0.00	0.00	0.00
11,900.00	89.67	179.92	6,943.20	-4,151.39	495.31	4,152.08	0.00	0.00	0.00
12,000.00	89.67	179.92	6,943.78	-4,251.39	495.46	4,252.08	0.00	0.00	0.00
12,100.00	89.67	179.92	6,944.35	-4,351.39	495.60	4,352.08	0.00	0.00	0.00
12,200.00	89.67	179.92	6,944.93	-4,451.39	495.75	4,452.08	0.00	0.00	0.00
12,300.00	89.67	179.92	6,945.51	-4,551.39	495.90	4,552.08	0.00	0.00	0.00
12,400.00	89.67	179.92	6,946.09	-4,651.39	496.04	4,652.07	0.00	0.00	0.00
12,500.00	89.67	179.92	6,946.67	-4,751.38	496.19	4,752.07	0.00	0.00	0.00
12,557.67	89.67	179.92	6,947.00	-4,809.06	496.28	4,809.74	0.00	0.00	0.00
TD at 12557.67									

Database:	Denver Sales	Local Co-ordinate Reference:	Well Cheese 38N-28HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4818 & KB 17 @ 4834.00ft (ASSUMED)
Site:	Cheese 1-28HZ PAD	North Reference:	True
Well:	Cheese 38N-28HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1 PRELIMINARY		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
PBHL_Cheese 38N-28H	0.00	0.00	6,947.00	-4,809.06	496.28	14,595,850.00	1,735,273.71	40.1893060	-104.6603470
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
1,114.00	1,114.00	9 5/8"		9.625	13.500
7,369.43	6,917.00	7"(50 FNL 309 FEL)		7.000	8.750

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
613.00	612.00	Base Fox Hills			
3,836.75	3,770.00	Parkman			
4,254.22	4,174.00	Sussex			
6,985.42	6,790.00	SSPG			
7,101.51	6,853.00	NBRR			
7,220.88	6,896.00	N470_B_CK			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
1,314.00	1,314.00	0.00	0.00	Start Build 2.00	
2,043.89	2,036.02	82.25	42.29	Start 3498.91 hold at 2043.89 MD	
5,542.80	5,421.98	866.49	445.51	Start Drop -2.00	
6,272.69	6,144.00	948.74	487.80	Start 200.05 hold at 6272.69 MD	
6,472.74	6,344.05	948.74	487.80	Start DLS 10.00 TFO 179.92	
7,369.43	6,917.00	379.09	488.64	Start 5188.24 hold at 7369.43 MD	
12,557.67	6,947.00	-4,809.06	496.28	TD at 12557.67	