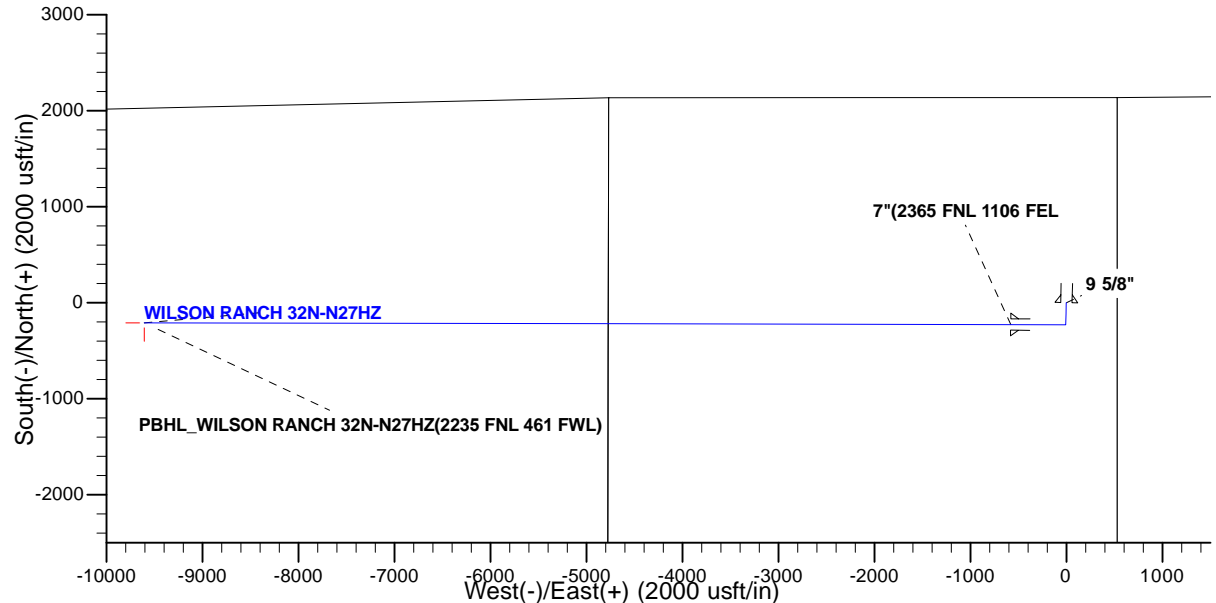
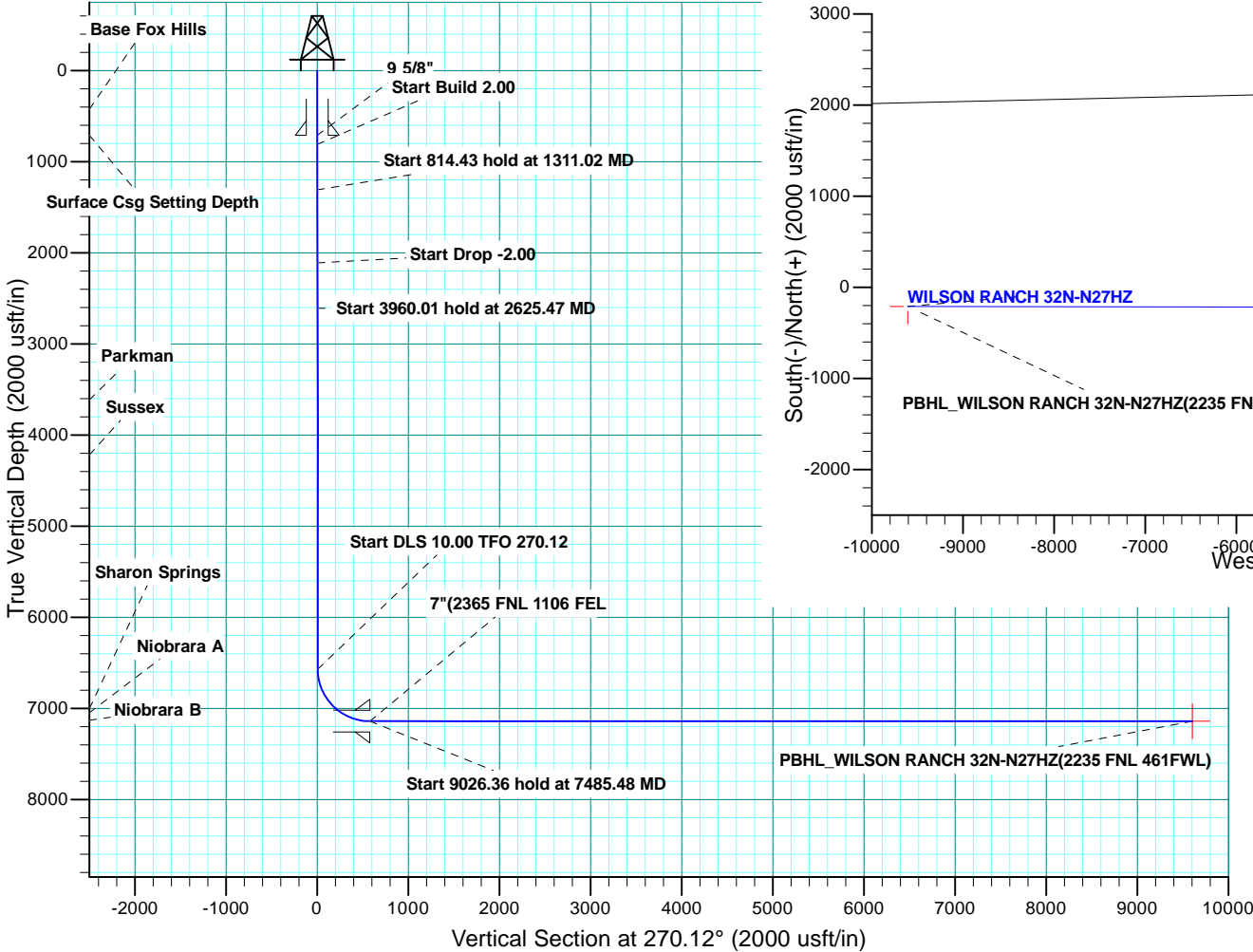


SHL: WILSON RANCH 32N-N27HZ								
GL 4997 KB 17 @ 5014.00usft								
		+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
		0.00	0.00	14630895.88	1650842.28	40.286037	-104.962616	
DESIGN TARGET DETAILS								
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	7141.00	-208.18	-9605.87	14630683.65	1641236.50	40.285460	-104.997060	Point
- plan hits target center								
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
811.00	0.00	0.00	811.00	0.00	0.00	0.00	0.00	0.00
1311.02	10.00	181.65	1308.49	-43.51	-1.25	2.00	181.65	1.16
2125.45	10.00	181.65	2110.54	-184.88	-5.32	0.00	0.00	4.93
2625.47	0.00	0.00	2608.03	-228.39	-6.57	2.00	180.00	6.09
6585.48	0.00	0.00	6568.04	-228.39	-6.57	0.00	0.00	6.09
7485.48	90.00	270.12	7141.00	-227.18	-579.53	10.00	270.12	579.05
16511.84	90.00	270.12	7141.00	-208.18	-9605.87	0.00	0.00	9605.41
PBHL_WILSON RANCH 32N-N27HZ(2235 FNL 461 FWL)								



FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	Inc
426.00	426.00	Base Fox Hills	0.00
711.00	711.00	Surface Csg Setting Depth	0.00
3615.00	3632.44	Parkman	0.00
4217.00	4234.44	Sussex	0.00
7002.00	7077.84	Sharon Springs	49.24
7047.00	7152.63	Niobrara A	56.71
7131.00	7378.29	Niobrara B	79.28

CASING DETAILS			
TVD	MD	Name	Size
711.00	711.00	9 5/8"	9.625
7141.00	7485.48	7"	7.000



Scientific Drilling

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

WILSON RANCH 8 -26HZ

WILSON RANCH 32N-N27HZ

PLAN A

Plan: Permit Rev-1

Standard Planning Report

30 December, 2014

Database:	Denver Sales	Local Co-ordinate Reference:	Well WILSON RANCH 32N-N27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4997 KB 17 @ 5014.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4997 KB 17 @ 5014.00usft
Site:	WILSON RANCH 8 -26HZ	North Reference:	True
Well:	WILSON RANCH 32N-N27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	Permit Rev-1		

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	WILSON RANCH 8 -26HZ				
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:	13.200 in	Grid Convergence:	0.02

Well	WILSON RANCH 32N-N27HZ, 2138FNL 529FEL					
Well Position	+N/-S	-67.73 usft	Northing:	14,630,895.88 usft	Latitude:	40.286037
	+E/-W	80.04 usft	Easting:	1,650,842.27 usft	Longitude:	-104.962616
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,997.00 usft

Wellbore	PLAN A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	11/7/2014	8.45	66.82	52,722

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	270.12

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
811.00	0.00	0.00	811.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,311.02	10.00	181.65	1,308.49	-43.51	-1.25	2.00	2.00	0.00	181.65	
2,125.45	10.00	181.65	2,110.54	-184.88	-5.32	0.00	0.00	0.00	0.00	
2,625.47	0.00	0.00	2,608.03	-228.39	-6.57	2.00	-2.00	0.00	180.00	
6,585.48	0.00	0.00	6,568.04	-228.39	-6.57	0.00	0.00	0.00	0.00	
7,485.48	90.00	270.12	7,141.00	-227.18	-579.53	10.00	10.00	-9.99	270.12	
16,511.84	90.00	270.12	7,141.00	-208.18	-9,605.87	0.00	0.00	0.00	0.00	PBHL_WILSON RAN

Database:	Denver Sales	Local Co-ordinate Reference:	Well WILSON RANCH 32N-N27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4997 KB 17 @ 5014.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4997 KB 17 @ 5014.00usft
Site:	WILSON RANCH 8 -26HZ	North Reference:	True
Well:	WILSON RANCH 32N-N27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	Permit Rev-1		

Planned 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
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
426.00	0.00	0.00	426.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Fox Hills									
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
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
711.00	0.00	0.00	711.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface Csg Setting Depth - 9 5/8"									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
811.00	0.00	0.00	811.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	1.78	181.65	899.99	-1.38	-0.04	0.04	2.00	2.00	0.00
1,000.00	3.78	181.65	999.86	-6.23	-0.18	0.17	2.00	2.00	0.00
1,100.00	5.78	181.65	1,099.51	-14.56	-0.42	0.39	2.00	2.00	0.00
1,200.00	7.78	181.65	1,198.81	-26.36	-0.76	0.70	2.00	2.00	0.00
1,300.00	9.78	181.65	1,297.63	-41.62	-1.20	1.11	2.00	2.00	0.00
1,311.02	10.00	181.65	1,308.49	-43.51	-1.25	1.16	2.00	2.00	0.00
Start 814.43 hold at 1311.02 MD									
1,400.00	10.00	181.65	1,396.11	-58.95	-1.70	1.57	0.00	0.00	0.00
1,500.00	10.00	181.65	1,494.59	-76.31	-2.20	2.04	0.00	0.00	0.00
1,600.00	10.00	181.65	1,593.07	-93.67	-2.69	2.50	0.00	0.00	0.00
1,700.00	10.00	181.65	1,691.56	-111.03	-3.19	2.96	0.00	0.00	0.00
1,800.00	10.00	181.65	1,790.04	-128.39	-3.69	3.42	0.00	0.00	0.00
1,900.00	10.00	181.65	1,888.52	-145.75	-4.19	3.89	0.00	0.00	0.00
2,000.00	10.00	181.65	1,987.00	-163.10	-4.69	4.35	0.00	0.00	0.00
2,100.00	10.00	181.65	2,085.48	-180.46	-5.19	4.81	0.00	0.00	0.00
2,125.45	10.00	181.65	2,110.54	-184.88	-5.32	4.93	0.00	0.00	0.00
Start Drop -2.00									
2,200.00	8.51	181.65	2,184.12	-196.87	-5.66	5.25	2.00	-2.00	0.00
2,300.00	6.51	181.65	2,283.26	-209.93	-6.04	5.60	2.00	-2.00	0.00
2,400.00	4.51	181.65	2,382.79	-219.53	-6.31	5.86	2.00	-2.00	0.00
2,500.00	2.51	181.65	2,482.60	-225.64	-6.49	6.02	2.00	-2.00	0.00
2,600.00	0.51	181.65	2,582.56	-228.28	-6.57	6.09	2.00	-2.00	0.00
2,625.47	0.00	0.00	2,608.03	-228.39	-6.57	6.09	2.00	-2.00	0.00
Start 3960.01 hold at 2625.47 MD									
2,700.00	0.00	0.00	2,682.56	-228.39	-6.57	6.09	0.00	0.00	0.00
2,800.00	0.00	0.00	2,782.56	-228.39	-6.57	6.09	0.00	0.00	0.00
2,900.00	0.00	0.00	2,882.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,000.00	0.00	0.00	2,982.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,100.00	0.00	0.00	3,082.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,200.00	0.00	0.00	3,182.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,300.00	0.00	0.00	3,282.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,400.00	0.00	0.00	3,382.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,500.00	0.00	0.00	3,482.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,600.00	0.00	0.00	3,582.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,632.44	0.00	0.00	3,615.00	-228.39	-6.57	6.09	0.00	0.00	0.00
Parkman									
3,700.00	0.00	0.00	3,682.56	-228.39	-6.57	6.09	0.00	0.00	0.00
3,800.00	0.00	0.00	3,782.56	-228.39	-6.57	6.09	0.00	0.00	0.00

Database:	Denver Sales	Local Co-ordinate Reference:	Well WILSON RANCH 32N-N27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4997 KB 17 @ 5014.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4997 KB 17 @ 5014.00usft
Site:	WILSON RANCH 8 -26HZ	North Reference:	True
Well:	WILSON RANCH 32N-N27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	Permit Rev-1		

Planned 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)
3,900.00	0.00	0.00	3,882.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,000.00	0.00	0.00	3,982.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,100.00	0.00	0.00	4,082.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,200.00	0.00	0.00	4,182.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,234.44	0.00	0.00	4,217.00	-228.39	-6.57	6.09	0.00	0.00	0.00
Sussex									
4,300.00	0.00	0.00	4,282.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,400.00	0.00	0.00	4,382.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,500.00	0.00	0.00	4,482.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,600.00	0.00	0.00	4,582.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,700.00	0.00	0.00	4,682.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,800.00	0.00	0.00	4,782.56	-228.39	-6.57	6.09	0.00	0.00	0.00
4,900.00	0.00	0.00	4,882.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,000.00	0.00	0.00	4,982.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,100.00	0.00	0.00	5,082.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,200.00	0.00	0.00	5,182.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,300.00	0.00	0.00	5,282.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,400.00	0.00	0.00	5,382.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,500.00	0.00	0.00	5,482.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,600.00	0.00	0.00	5,582.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,700.00	0.00	0.00	5,682.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,800.00	0.00	0.00	5,782.56	-228.39	-6.57	6.09	0.00	0.00	0.00
5,900.00	0.00	0.00	5,882.56	-228.39	-6.57	6.09	0.00	0.00	0.00
6,000.00	0.00	0.00	5,982.56	-228.39	-6.57	6.09	0.00	0.00	0.00
6,100.00	0.00	0.00	6,082.56	-228.39	-6.57	6.09	0.00	0.00	0.00
6,200.00	0.00	0.00	6,182.56	-228.39	-6.57	6.09	0.00	0.00	0.00
6,300.00	0.00	0.00	6,282.56	-228.39	-6.57	6.09	0.00	0.00	0.00
6,400.00	0.00	0.00	6,382.56	-228.39	-6.57	6.09	0.00	0.00	0.00
6,500.00	0.00	0.00	6,482.56	-228.39	-6.57	6.09	0.00	0.00	0.00
6,585.48	0.00	0.00	6,568.04	-228.39	-6.57	6.09	0.00	0.00	0.00
Start DLS 10.00 TFO 270.12									
6,600.00	1.45	270.12	6,582.55	-228.39	-6.75	6.28	10.00	10.00	0.00
6,700.00	11.45	270.12	6,681.79	-228.37	-17.98	17.50	10.00	10.00	0.00
6,800.00	21.45	270.12	6,777.58	-228.31	-46.26	45.78	10.00	10.00	0.00
6,900.00	31.45	270.12	6,867.00	-228.21	-90.75	90.27	10.00	10.00	0.00
7,000.00	41.45	270.12	6,947.33	-228.09	-150.09	149.61	10.00	10.00	0.00
7,077.84	49.24	270.12	7,002.00	-227.97	-205.42	204.94	10.00	10.00	0.00
Sharon Springs									
7,100.00	51.45	270.12	7,016.14	-227.94	-222.47	222.00	10.00	10.00	0.00
7,152.63	56.71	270.12	7,047.00	-227.85	-265.08	264.60	10.00	10.00	0.00
Niobrara A									
7,200.00	61.45	270.12	7,071.33	-227.76	-305.71	305.23	10.00	10.00	0.00
7,300.00	71.45	270.12	7,111.24	-227.57	-397.27	396.79	10.00	10.00	0.00
7,378.29	79.28	270.12	7,131.00	-227.41	-472.96	472.48	10.00	10.00	0.00
Niobrara B									
7,400.00	81.45	270.12	7,134.63	-227.36	-494.36	493.88	10.00	10.00	0.00
7,485.48	90.00	270.12	7,141.00	-227.18	-579.52	579.05	10.00	10.00	0.00
Start 9026.36 hold at 7485.48 MD - 7"(2365 FNL 1106 FEL									
7,500.00	90.00	270.12	7,141.00	-227.15	-594.04	593.57	0.00	0.00	0.00
7,600.00	90.00	270.12	7,141.00	-226.94	-694.04	693.57	0.00	0.00	0.00
7,700.00	90.00	270.12	7,141.00	-226.73	-794.04	793.57	0.00	0.00	0.00
7,800.00	90.00	270.12	7,141.00	-226.52	-894.04	893.57	0.00	0.00	0.00
7,900.00	90.00	270.12	7,141.00	-226.31	-994.04	993.57	0.00	0.00	0.00

Database:	Denver Sales	Local Co-ordinate Reference:	Well WILSON RANCH 32N-N27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4997 KB 17 @ 5014.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4997 KB 17 @ 5014.00usft
Site:	WILSON RANCH 8 -26HZ	North Reference:	True
Well:	WILSON RANCH 32N-N27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	Permit Rev-1		

Planned 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)	
8,000.00	90.00	270.12	7,141.00	-226.10	-1,094.04	1,093.57	0.00	0.00	0.00	
8,100.00	90.00	270.12	7,141.00	-225.89	-1,194.04	1,193.57	0.00	0.00	0.00	
8,200.00	90.00	270.12	7,141.00	-225.68	-1,294.04	1,293.57	0.00	0.00	0.00	
8,300.00	90.00	270.12	7,141.00	-225.47	-1,394.04	1,393.57	0.00	0.00	0.00	
8,400.00	90.00	270.12	7,141.00	-225.26	-1,494.04	1,493.57	0.00	0.00	0.00	
8,500.00	90.00	270.12	7,141.00	-225.05	-1,594.04	1,593.57	0.00	0.00	0.00	
8,600.00	90.00	270.12	7,141.00	-224.84	-1,694.04	1,693.57	0.00	0.00	0.00	
8,700.00	90.00	270.12	7,141.00	-224.63	-1,794.04	1,793.57	0.00	0.00	0.00	
8,800.00	90.00	270.12	7,141.00	-224.42	-1,894.04	1,893.57	0.00	0.00	0.00	
8,900.00	90.00	270.12	7,141.00	-224.21	-1,994.04	1,993.57	0.00	0.00	0.00	
9,000.00	90.00	270.12	7,141.00	-224.00	-2,094.04	2,093.57	0.00	0.00	0.00	
9,100.00	90.00	270.12	7,141.00	-223.78	-2,194.04	2,193.57	0.00	0.00	0.00	
9,200.00	90.00	270.12	7,141.00	-223.57	-2,294.04	2,293.57	0.00	0.00	0.00	
9,300.00	90.00	270.12	7,141.00	-223.36	-2,394.04	2,393.57	0.00	0.00	0.00	
9,400.00	90.00	270.12	7,141.00	-223.15	-2,494.04	2,493.57	0.00	0.00	0.00	
9,500.00	90.00	270.12	7,141.00	-222.94	-2,594.04	2,593.57	0.00	0.00	0.00	
9,600.00	90.00	270.12	7,141.00	-222.73	-2,694.04	2,693.57	0.00	0.00	0.00	
9,700.00	90.00	270.12	7,141.00	-222.52	-2,794.04	2,793.57	0.00	0.00	0.00	
9,800.00	90.00	270.12	7,141.00	-222.31	-2,894.04	2,893.57	0.00	0.00	0.00	
9,900.00	90.00	270.12	7,141.00	-222.10	-2,994.04	2,993.57	0.00	0.00	0.00	
10,000.00	90.00	270.12	7,141.00	-221.89	-3,094.04	3,093.57	0.00	0.00	0.00	
10,100.00	90.00	270.12	7,141.00	-221.68	-3,194.04	3,193.57	0.00	0.00	0.00	
10,200.00	90.00	270.12	7,141.00	-221.47	-3,294.04	3,293.57	0.00	0.00	0.00	
10,300.00	90.00	270.12	7,141.00	-221.26	-3,394.04	3,393.57	0.00	0.00	0.00	
10,400.00	90.00	270.12	7,141.00	-221.05	-3,494.04	3,493.57	0.00	0.00	0.00	
10,500.00	90.00	270.12	7,141.00	-220.84	-3,594.04	3,593.57	0.00	0.00	0.00	
10,600.00	90.00	270.12	7,141.00	-220.63	-3,694.04	3,693.57	0.00	0.00	0.00	
10,700.00	90.00	270.12	7,141.00	-220.42	-3,794.04	3,793.57	0.00	0.00	0.00	
10,800.00	90.00	270.12	7,141.00	-220.21	-3,894.03	3,893.57	0.00	0.00	0.00	
10,900.00	90.00	270.12	7,141.00	-219.99	-3,994.03	3,993.57	0.00	0.00	0.00	
11,000.00	90.00	270.12	7,141.00	-219.78	-4,094.03	4,093.57	0.00	0.00	0.00	
11,100.00	90.00	270.12	7,141.00	-219.57	-4,194.03	4,193.57	0.00	0.00	0.00	
11,200.00	90.00	270.12	7,141.00	-219.36	-4,294.03	4,293.57	0.00	0.00	0.00	
11,300.00	90.00	270.12	7,141.00	-219.15	-4,394.03	4,393.57	0.00	0.00	0.00	
11,400.00	90.00	270.12	7,141.00	-218.94	-4,494.03	4,493.57	0.00	0.00	0.00	
11,500.00	90.00	270.12	7,141.00	-218.73	-4,594.03	4,593.57	0.00	0.00	0.00	
11,600.00	90.00	270.12	7,141.00	-218.52	-4,694.03	4,693.57	0.00	0.00	0.00	
11,700.00	90.00	270.12	7,141.00	-218.31	-4,794.03	4,793.57	0.00	0.00	0.00	
11,800.00	90.00	270.12	7,141.00	-218.10	-4,894.03	4,893.57	0.00	0.00	0.00	
11,900.00	90.00	270.12	7,141.00	-217.89	-4,994.03	4,993.57	0.00	0.00	0.00	
12,000.00	90.00	270.12	7,141.00	-217.68	-5,094.03	5,093.57	0.00	0.00	0.00	
12,100.00	90.00	270.12	7,141.00	-217.47	-5,194.03	5,193.57	0.00	0.00	0.00	
12,200.00	90.00	270.12	7,141.00	-217.26	-5,294.03	5,293.57	0.00	0.00	0.00	
12,300.00	90.00	270.12	7,141.00	-217.05	-5,394.03	5,393.57	0.00	0.00	0.00	
12,400.00	90.00	270.12	7,141.00	-216.84	-5,494.03	5,493.57	0.00	0.00	0.00	
12,500.00	90.00	270.12	7,141.00	-216.63	-5,594.03	5,593.57	0.00	0.00	0.00	
12,600.00	90.00	270.12	7,141.00	-216.42	-5,694.03	5,693.57	0.00	0.00	0.00	
12,700.00	90.00	270.12	7,141.00	-216.21	-5,794.03	5,793.57	0.00	0.00	0.00	
12,800.00	90.00	270.12	7,141.00	-215.99	-5,894.03	5,893.57	0.00	0.00	0.00	
12,900.00	90.00	270.12	7,141.00	-215.78	-5,994.03	5,993.57	0.00	0.00	0.00	
13,000.00	90.00	270.12	7,141.00	-215.57	-6,094.03	6,093.57	0.00	0.00	0.00	
13,100.00	90.00	270.12	7,141.00	-215.36	-6,194.03	6,193.57	0.00	0.00	0.00	
13,200.00	90.00	270.12	7,141.00	-215.15	-6,294.03	6,293.57	0.00	0.00	0.00	
13,300.00	90.00	270.12	7,141.00	-214.94	-6,394.03	6,393.57	0.00	0.00	0.00	

Database:	Denver Sales	Local Co-ordinate Reference:	Well WILSON RANCH 32N-N27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4997 KB 17 @ 5014.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4997 KB 17 @ 5014.00usft
Site:	WILSON RANCH 8 -26HZ	North Reference:	True
Well:	WILSON RANCH 32N-N27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	Permit Rev-1		

Planned 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)
13,400.00	90.00	270.12	7,141.00	-214.73	-6,494.03	6,493.57	0.00	0.00	0.00
13,500.00	90.00	270.12	7,141.00	-214.52	-6,594.03	6,593.57	0.00	0.00	0.00
13,600.00	90.00	270.12	7,141.00	-214.31	-6,694.03	6,693.57	0.00	0.00	0.00
13,700.00	90.00	270.12	7,141.00	-214.10	-6,794.03	6,793.57	0.00	0.00	0.00
13,800.00	90.00	270.12	7,141.00	-213.89	-6,894.03	6,893.57	0.00	0.00	0.00
13,900.00	90.00	270.12	7,141.00	-213.68	-6,994.03	6,993.57	0.00	0.00	0.00
14,000.00	90.00	270.12	7,141.00	-213.47	-7,094.03	7,093.57	0.00	0.00	0.00
14,100.00	90.00	270.12	7,141.00	-213.26	-7,194.03	7,193.57	0.00	0.00	0.00
14,200.00	90.00	270.12	7,141.00	-213.05	-7,294.03	7,293.57	0.00	0.00	0.00
14,300.00	90.00	270.12	7,141.00	-212.84	-7,394.03	7,393.57	0.00	0.00	0.00
14,400.00	90.00	270.12	7,141.00	-212.63	-7,494.03	7,493.57	0.00	0.00	0.00
14,500.00	90.00	270.12	7,141.00	-212.42	-7,594.03	7,593.57	0.00	0.00	0.00
14,600.00	90.00	270.12	7,141.00	-212.21	-7,694.03	7,693.57	0.00	0.00	0.00
14,700.00	90.00	270.12	7,141.00	-211.99	-7,794.03	7,793.57	0.00	0.00	0.00
14,800.00	90.00	270.12	7,141.00	-211.78	-7,894.03	7,893.57	0.00	0.00	0.00
14,900.00	90.00	270.12	7,141.00	-211.57	-7,994.03	7,993.57	0.00	0.00	0.00
15,000.00	90.00	270.12	7,141.00	-211.36	-8,094.03	8,093.57	0.00	0.00	0.00
15,100.00	90.00	270.12	7,141.00	-211.15	-8,194.03	8,193.57	0.00	0.00	0.00
15,200.00	90.00	270.12	7,141.00	-210.94	-8,294.03	8,293.57	0.00	0.00	0.00
15,300.00	90.00	270.12	7,141.00	-210.73	-8,394.03	8,393.57	0.00	0.00	0.00
15,400.00	90.00	270.12	7,141.00	-210.52	-8,494.02	8,493.57	0.00	0.00	0.00
15,500.00	90.00	270.12	7,141.00	-210.31	-8,594.02	8,593.57	0.00	0.00	0.00
15,600.00	90.00	270.12	7,141.00	-210.10	-8,694.02	8,693.57	0.00	0.00	0.00
15,700.00	90.00	270.12	7,141.00	-209.89	-8,794.02	8,793.57	0.00	0.00	0.00
15,800.00	90.00	270.12	7,141.00	-209.68	-8,894.02	8,893.57	0.00	0.00	0.00
15,900.00	90.00	270.12	7,141.00	-209.47	-8,994.02	8,993.57	0.00	0.00	0.00
16,000.00	90.00	270.12	7,141.00	-209.26	-9,094.02	9,093.57	0.00	0.00	0.00
16,100.00	90.00	270.12	7,141.00	-209.05	-9,194.02	9,193.57	0.00	0.00	0.00
16,200.00	90.00	270.12	7,141.00	-208.84	-9,294.02	9,293.57	0.00	0.00	0.00
16,300.00	90.00	270.12	7,141.00	-208.63	-9,394.02	9,393.57	0.00	0.00	0.00
16,400.00	90.00	270.12	7,141.00	-208.42	-9,494.02	9,493.57	0.00	0.00	0.00
16,500.00	90.00	270.12	7,141.00	-208.20	-9,594.02	9,593.57	0.00	0.00	0.00
16,511.84	90.00	270.12	7,141.00	-208.18	-9,605.87	9,605.41	0.00	0.00	0.00
TD at 16511.84 - PBHL_WILSON RANCH 32N-N27HZ(2235 FNL 461 FWL)									

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									
PBHL_WILSON RANCH	0.00	0.00	7,141.00	-208.18	-9,605.87	14,630,683.65	1,641,236.50	40.285460	-104.997061
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
711.00	711.00	9 5/8"	9.625	13.500	
7,485.48	7,141.00	7"(2365 FNL 1106 FEL	7.000	8.750	

Database:	Denver Sales	Local Co-ordinate Reference:	Well WILSON RANCH 32N-N27HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	GL 4997 KB 17 @ 5014.00usft
Project:	WELD-NAD83-UTMFT13N	MD Reference:	GL 4997 KB 17 @ 5014.00usft
Site:	WILSON RANCH 8 -26HZ	North Reference:	True
Well:	WILSON RANCH 32N-N27HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLAN A		
Design:	Permit Rev-1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
426.00	426.00	Base Fox Hills				
711.00	711.00	Surface Csg Setting Depth				
3,632.44	3,615.00	Parkman				
4,234.44	4,217.00	Sussex				
7,077.84	7,002.00	Sharon Springs				
7,152.63	7,047.00	Niobrara A				
7,378.29	7,131.00	Niobrara B				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
811.00	811.00	0.00	0.00	Start Build 2.00	
1,311.02	1,308.49	-43.51	-1.25	Start 814.43 hold at 1311.02 MD	
2,125.45	2,110.54	-184.88	-5.32	Start Drop -2.00	
2,625.47	2,608.03	-228.39	-6.57	Start 3960.01 hold at 2625.47 MD	
6,585.48	6,568.04	-228.39	-6.57	Start DLS 10.00 TFO 270.12	
7,485.48	7,141.00	-227.18	-579.53	Start 9026.36 hold at 7485.48 MD	
16,511.84	7,141.00	-208.18	-9,605.87	TD at 16511.84	