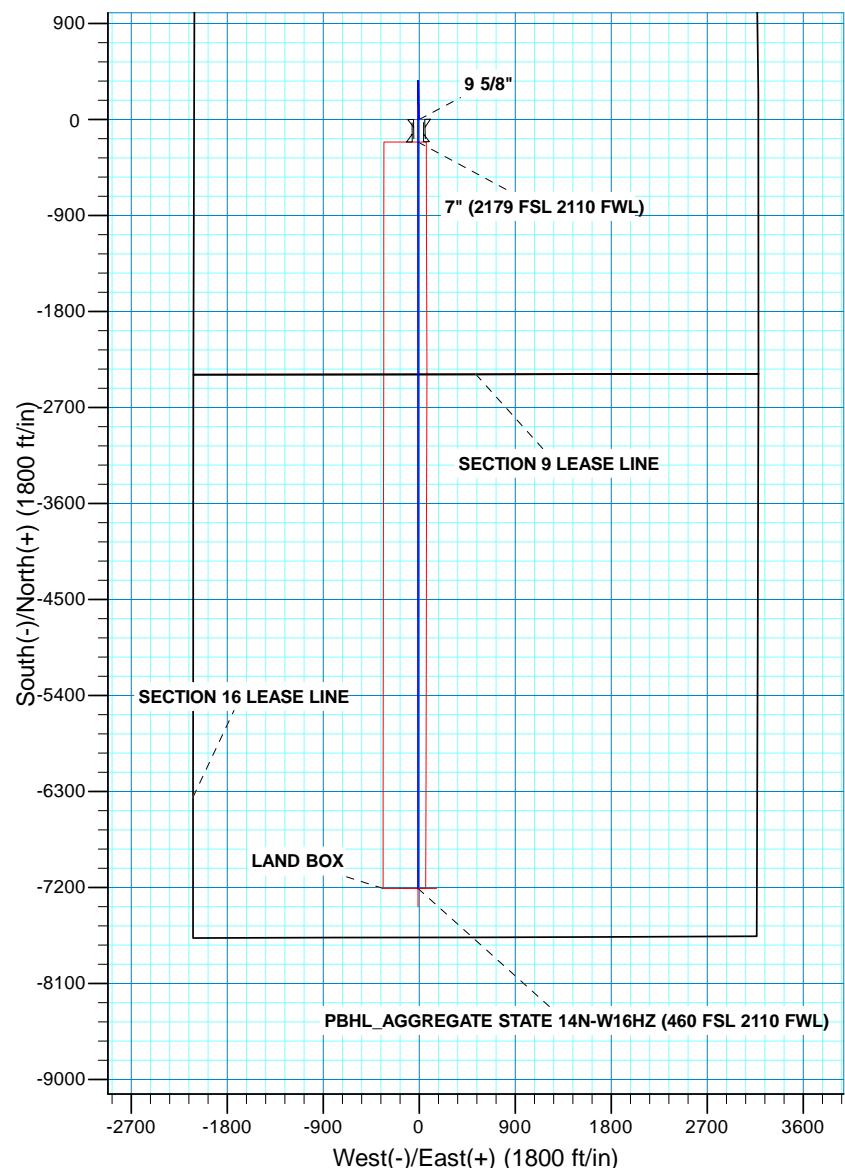
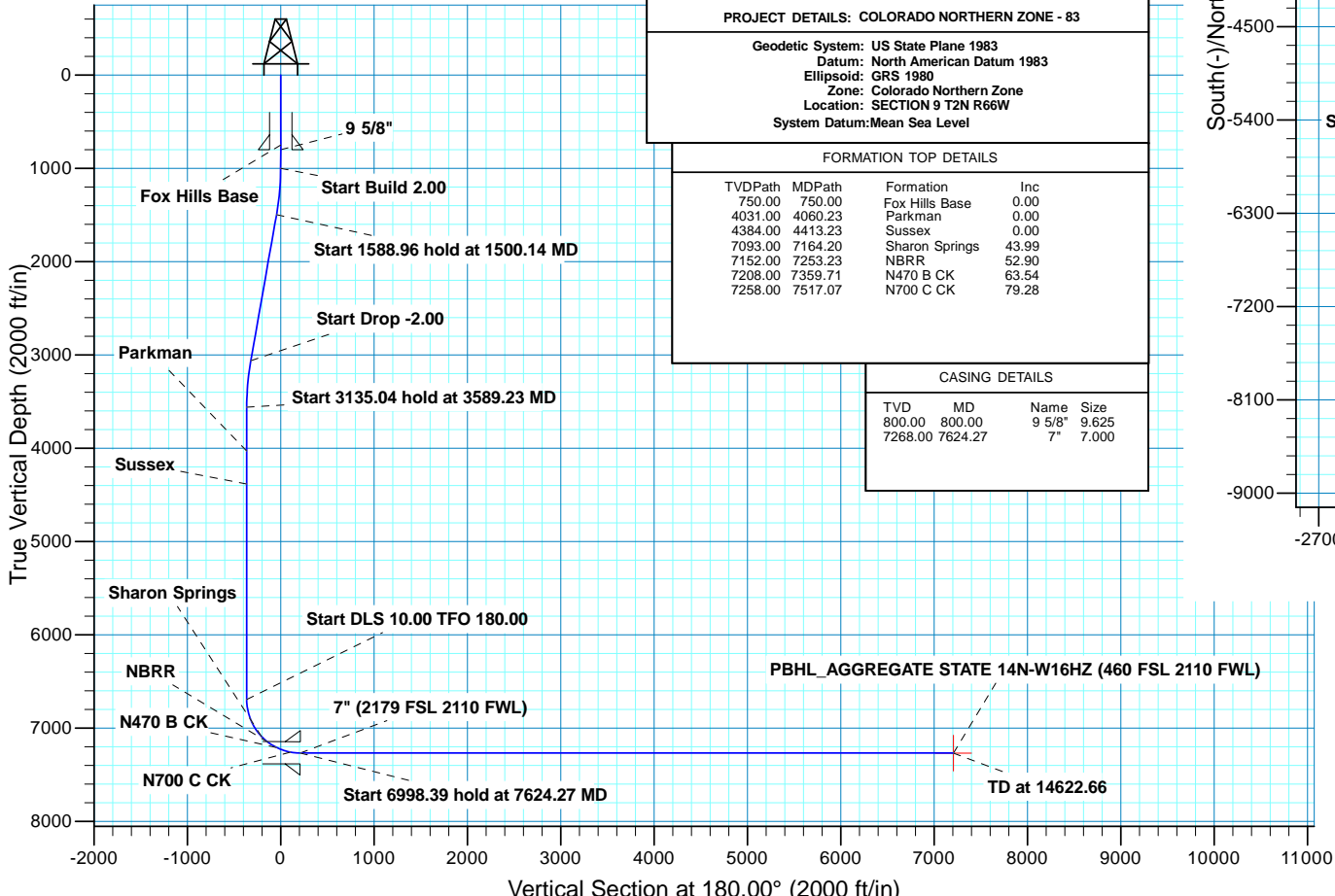


WELL DETAILS: AGGREGATE STATE 14N-W16HZ										
GL 4911 & KB 17 @ 4928.00ft (ASSUMED)										
	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
	0.00	0.00	1298996.58	3200100.69	40.1519230	-104.7841440				
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00		Start Build 2.00
1500.14	10.00	358.50	1497.60	43.53	-1.14	2.00	358.50	-43.53		Start 1588.96 hold at 1500.14 MD
3089.09	10.00	358.50	3062.40	319.43	-8.37	0.00	0.00	-319.43		Start Drop -2.00
3589.23	0.00	0.00	3560.00	362.96	-9.51	2.00	180.00	-362.96		Start 3135.04 hold at 3589.23 MD
6724.27	0.00	0.00	6695.04	362.96	-9.51	0.00	0.00	-362.96		Start DLS 10.00 TFO 180.00
7624.27	90.00	180.00	7268.00	-210.00	-9.51	10.00	180.00	210.00		Start 6998.39 hold at 7624.27 MD
14622.66	90.00	180.00	7268.00	-7208.39	-9.51	0.00	0.00	7208.39	PBHL_AGGREGATE STATE 14N-W16HZ	
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
PBHL	7268.00	-7208.39	-9.51	1291768.36	3200149.37	40.1321350	-104.7841780	Point		

PROJECT DETAILS: COLORADO NORTHERN ZONE - 83									
Geodetic System: US State Plane 1983									
Datum: North American Datum 1983									
Ellipsoid: GRS 1980									
Zone: Colorado Northern Zone									
Location: SECTION 9 T2N R66W									
System Datum: Mean Sea Level									

FORMATION TOP DETAILS			
TVDPATH	MDPATH	Formation	Inc
750.00	750.00	Fox Hills Base	0.00
4031.00	4060.23	Parkman	0.00
4384.00	4413.23	Sussex	0.00
7093.00	7164.20	Sharon Springs	43.99
7152.00	7253.23	NBRR	52.90
7208.00	7359.71	N470 B CK	63.54
7258.00	7517.07	N700 C CK	79.28

CASING DETAILS			
TVD	MD	Name	Size
800.00	800.00	9 5/8"	9.625
7268.00	7624.27	7"	7.000





**Scientific Drilling**

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**AGGREGATE STATE 25-9HZ PAD**

**AGGREGATE STATE 14N-W16HZ**

**OH**

**Plan: PLAN #1 PRELIMINARY**

## **Standard Planning Report**

**09 September, 2013**

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well AGGREGATE STATE 14N-W16HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Site:</b>	AGGREGATE STATE 25-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	AGGREGATE STATE 14N-W16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	AGGREGATE STATE 25-9HZ PAD, SECTION 9 T2N R66W				
<b>Site Position:</b>	<b>Northing:</b>	1,298,996.58 usft	<b>Latitude:</b>	40.1519230	
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,200,100.69 usft	<b>Longitude:</b>	-104.7841440
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	0.46 °

<b>Well</b>	AGGREGATE STATE 14N-W16HZ, 2389' FSL 2110' FWL					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	1,298,996.58 usft	<b>Latitude:</b>	40.1519230
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	3,200,100.69 usft	<b>Longitude:</b>	-104.7841440
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	0.00 ft	<b>Ground Level:</b>	4,911.00 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2013	9/6/2013	8.59	66.76	52,692

<b>Design</b>	PLAN #1 PRELIMINARY			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	180.00

<b>Plan Sections</b>										
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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,500.14	10.00	358.50	1,497.60	43.53	-1.14	2.00	2.00	0.00	358.50	
3,089.09	10.00	358.50	3,062.40	319.43	-8.37	0.00	0.00	0.00	0.00	
3,589.23	0.00	0.00	3,560.00	362.96	-9.51	2.00	-2.00	0.00	180.00	
6,724.27	0.00	0.00	6,695.04	362.96	-9.51	0.00	0.00	0.00	0.00	
7,624.27	90.00	180.00	7,268.00	-210.00	-9.51	10.00	10.00	20.00	180.00	
14,622.66	90.00	180.00	7,268.00	-7,208.39	-9.51	0.00	0.00	0.00	0.00	PBHL_AGGREGATE

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well AGGREGATE STATE 14N-W16HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Site:</b>	AGGREGATE STATE 25-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	AGGREGATE STATE 14N-W16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Fox Hills Base</b>										
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
900.00	0.00	0.00	900.00	0.00	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	0.00
<b>Start Build 2.00</b>										
1,100.00	2.00	358.50	1,099.98	1.74	-0.05	-1.74	2.00	2.00	0.00	0.00
1,200.00	4.00	358.50	1,199.84	6.98	-0.18	-6.98	2.00	2.00	0.00	0.00
1,300.00	6.00	358.50	1,299.45	15.69	-0.41	-15.69	2.00	2.00	0.00	0.00
1,400.00	8.00	358.50	1,398.70	27.87	-0.73	-27.87	2.00	2.00	0.00	0.00
1,500.00	10.00	358.50	1,497.47	43.51	-1.14	-43.51	2.00	2.00	0.00	0.00
1,500.14	10.00	358.50	1,497.60	43.53	-1.14	-43.53	2.00	2.00	0.00	0.00
<b>Start 1588.96 hold at 1500.14 MD</b>										
1,600.00	10.00	358.50	1,595.95	60.87	-1.59	-60.87	0.00	0.00	0.00	0.00
1,700.00	10.00	358.50	1,694.43	78.23	-2.05	-78.23	0.00	0.00	0.00	0.00
1,800.00	10.00	358.50	1,792.91	95.60	-2.50	-95.60	0.00	0.00	0.00	0.00
1,900.00	10.00	358.50	1,891.39	112.96	-2.96	-112.96	0.00	0.00	0.00	0.00
2,000.00	10.00	358.50	1,989.87	130.32	-3.41	-130.32	0.00	0.00	0.00	0.00
2,100.00	10.00	358.50	2,088.35	147.69	-3.87	-147.69	0.00	0.00	0.00	0.00
2,200.00	10.00	358.50	2,186.83	165.05	-4.32	-165.05	0.00	0.00	0.00	0.00
2,300.00	10.00	358.50	2,285.31	182.42	-4.78	-182.42	0.00	0.00	0.00	0.00
2,400.00	10.00	358.50	2,383.79	199.78	-5.23	-199.78	0.00	0.00	0.00	0.00
2,500.00	10.00	358.50	2,482.27	217.14	-5.69	-217.14	0.00	0.00	0.00	0.00
2,600.00	10.00	358.50	2,580.75	234.51	-6.14	-234.51	0.00	0.00	0.00	0.00
2,700.00	10.00	358.50	2,679.22	251.87	-6.60	-251.87	0.00	0.00	0.00	0.00
2,800.00	10.00	358.50	2,777.70	269.23	-7.05	-269.23	0.00	0.00	0.00	0.00
2,900.00	10.00	358.50	2,876.18	286.60	-7.51	-286.60	0.00	0.00	0.00	0.00
3,000.00	10.00	358.50	2,974.66	303.96	-7.96	-303.96	0.00	0.00	0.00	0.00
3,089.09	10.00	358.50	3,062.40	319.43	-8.37	-319.43	0.00	0.00	0.00	0.00
<b>Start Drop -2.00</b>										
3,100.00	9.78	358.50	3,073.15	321.30	-8.42	-321.30	2.00	-2.00	0.00	0.00
3,200.00	7.78	358.50	3,171.97	336.57	-8.82	-336.57	2.00	-2.00	0.00	0.00
3,300.00	5.78	358.50	3,271.27	348.38	-9.13	-348.38	2.00	-2.00	0.00	0.00
3,400.00	3.78	358.50	3,370.91	356.72	-9.35	-356.72	2.00	-2.00	0.00	0.00
3,500.00	1.78	358.50	3,470.79	361.57	-9.47	-361.57	2.00	-2.00	0.00	0.00
3,589.23	0.00	0.00	3,560.00	362.96	-9.51	-362.96	2.00	-2.00	0.00	0.00
<b>Start 3135.04 hold at 3589.23 MD</b>										
3,600.00	0.00	0.00	3,570.77	362.96	-9.51	-362.96	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,670.77	362.96	-9.51	-362.96	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,770.77	362.96	-9.51	-362.96	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,870.77	362.96	-9.51	-362.96	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	3,970.77	362.96	-9.51	-362.96	0.00	0.00	0.00	0.00
4,060.23	0.00	0.00	4,031.00	362.96	-9.51	-362.96	0.00	0.00	0.00	0.00
<b>Parkman</b>										

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well AGGREGATE STATE 14N-W16HZ
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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Site:</b>	AGGREGATE STATE 25-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	AGGREGATE STATE 14N-W16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)
4,100.00	0.00	0.00	4,070.77	362.96	-9.51	-362.96	0.00	0.00	0.00
4,200.00	0.00	0.00	4,170.77	362.96	-9.51	-362.96	0.00	0.00	0.00
4,300.00	0.00	0.00	4,270.77	362.96	-9.51	-362.96	0.00	0.00	0.00
4,400.00	0.00	0.00	4,370.77	362.96	-9.51	-362.96	0.00	0.00	0.00
4,413.23	0.00	0.00	4,384.00	362.96	-9.51	-362.96	0.00	0.00	0.00
<b>Sussex</b>									
4,500.00	0.00	0.00	4,470.77	362.96	-9.51	-362.96	0.00	0.00	0.00
4,600.00	0.00	0.00	4,570.77	362.96	-9.51	-362.96	0.00	0.00	0.00
4,700.00	0.00	0.00	4,670.77	362.96	-9.51	-362.96	0.00	0.00	0.00
4,800.00	0.00	0.00	4,770.77	362.96	-9.51	-362.96	0.00	0.00	0.00
4,900.00	0.00	0.00	4,870.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,000.00	0.00	0.00	4,970.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,100.00	0.00	0.00	5,070.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,200.00	0.00	0.00	5,170.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,300.00	0.00	0.00	5,270.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,400.00	0.00	0.00	5,370.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,500.00	0.00	0.00	5,470.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,600.00	0.00	0.00	5,570.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,700.00	0.00	0.00	5,670.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,800.00	0.00	0.00	5,770.77	362.96	-9.51	-362.96	0.00	0.00	0.00
5,900.00	0.00	0.00	5,870.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,000.00	0.00	0.00	5,970.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,100.00	0.00	0.00	6,070.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,200.00	0.00	0.00	6,170.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,300.00	0.00	0.00	6,270.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,400.00	0.00	0.00	6,370.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,500.00	0.00	0.00	6,470.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,600.00	0.00	0.00	6,570.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,700.00	0.00	0.00	6,670.77	362.96	-9.51	-362.96	0.00	0.00	0.00
6,724.27	0.00	0.00	6,695.04	362.96	-9.51	-362.96	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 180.00</b>									
6,800.00	7.57	180.00	6,770.55	357.96	-9.51	-357.96	10.00	10.00	0.00
6,900.00	17.57	180.00	6,868.03	336.22	-9.51	-336.22	10.00	10.00	0.00
7,000.00	27.57	180.00	6,960.25	297.88	-9.51	-297.88	10.00	10.00	0.00
7,100.00	37.57	180.00	7,044.42	244.11	-9.51	-244.11	10.00	10.00	0.00
7,164.20	43.99	180.00	7,093.00	202.20	-9.51	-202.20	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,200.00	47.57	180.00	7,117.96	176.55	-9.51	-176.55	10.00	10.00	0.00
7,253.23	52.90	180.00	7,152.00	135.64	-9.51	-135.64	10.00	10.00	0.00
<b>NBRR</b>									
7,300.00	57.57	180.00	7,178.66	97.23	-9.51	-97.23	10.00	10.00	0.00
7,359.71	63.54	180.00	7,208.00	45.25	-9.51	-45.25	10.00	10.00	0.00
<b>N470 B CK</b>									
7,400.00	67.57	180.00	7,224.67	8.59	-9.51	-8.59	10.00	10.00	0.00
7,500.00	77.57	180.00	7,254.58	-86.70	-9.51	86.70	10.00	10.00	0.00
7,517.07	79.28	180.00	7,258.00	-103.43	-9.51	103.43	10.00	10.00	0.00
<b>N700 C CK</b>									
7,600.00	87.57	180.00	7,267.49	-185.74	-9.51	185.74	10.00	10.00	0.00
7,624.27	90.00	180.00	7,268.00	-210.00	-9.51	210.00	10.00	10.00	0.00
<b>Start 6998.39 hold at 7624.27 MD - 7" (2179 FSL 2110 FWL)</b>									
7,700.00	90.00	180.00	7,268.00	-285.73	-9.51	285.73	0.00	0.00	0.00
7,800.00	90.00	180.00	7,268.00	-385.73	-9.51	385.73	0.00	0.00	0.00
7,900.00	90.00	180.00	7,268.00	-485.73	-9.51	485.73	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well AGGREGATE STATE 14N-W16HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Site:</b>	AGGREGATE STATE 25-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	AGGREGATE STATE 14N-W16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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	90.00	180.00	7,268.00	-585.73	-9.51	585.73	0.00	0.00	0.00
8,100.00	90.00	180.00	7,268.00	-685.73	-9.51	685.73	0.00	0.00	0.00
8,200.00	90.00	180.00	7,268.00	-785.73	-9.51	785.73	0.00	0.00	0.00
8,300.00	90.00	180.00	7,268.00	-885.73	-9.51	885.73	0.00	0.00	0.00
8,400.00	90.00	180.00	7,268.00	-985.73	-9.51	985.73	0.00	0.00	0.00
8,500.00	90.00	180.00	7,268.00	-1,085.73	-9.51	1,085.73	0.00	0.00	0.00
8,600.00	90.00	180.00	7,268.00	-1,185.73	-9.51	1,185.73	0.00	0.00	0.00
8,700.00	90.00	180.00	7,268.00	-1,285.73	-9.51	1,285.73	0.00	0.00	0.00
8,800.00	90.00	180.00	7,268.00	-1,385.73	-9.51	1,385.73	0.00	0.00	0.00
8,900.00	90.00	180.00	7,268.00	-1,485.73	-9.51	1,485.73	0.00	0.00	0.00
9,000.00	90.00	180.00	7,268.00	-1,585.73	-9.51	1,585.73	0.00	0.00	0.00
9,100.00	90.00	180.00	7,268.00	-1,685.73	-9.51	1,685.73	0.00	0.00	0.00
9,200.00	90.00	180.00	7,268.00	-1,785.73	-9.51	1,785.73	0.00	0.00	0.00
9,300.00	90.00	180.00	7,268.00	-1,885.73	-9.51	1,885.73	0.00	0.00	0.00
9,400.00	90.00	180.00	7,268.00	-1,985.73	-9.51	1,985.73	0.00	0.00	0.00
9,500.00	90.00	180.00	7,268.00	-2,085.73	-9.51	2,085.73	0.00	0.00	0.00
9,600.00	90.00	180.00	7,268.00	-2,185.73	-9.51	2,185.73	0.00	0.00	0.00
9,700.00	90.00	180.00	7,268.00	-2,285.73	-9.51	2,285.73	0.00	0.00	0.00
9,800.00	90.00	180.00	7,268.00	-2,385.73	-9.51	2,385.73	0.00	0.00	0.00
9,900.00	90.00	180.00	7,268.00	-2,485.73	-9.51	2,485.73	0.00	0.00	0.00
10,000.00	90.00	180.00	7,268.00	-2,585.73	-9.51	2,585.73	0.00	0.00	0.00
10,100.00	90.00	180.00	7,268.00	-2,685.73	-9.51	2,685.73	0.00	0.00	0.00
10,200.00	90.00	180.00	7,268.00	-2,785.73	-9.51	2,785.73	0.00	0.00	0.00
10,300.00	90.00	180.00	7,268.00	-2,885.73	-9.51	2,885.73	0.00	0.00	0.00
10,400.00	90.00	180.00	7,268.00	-2,985.73	-9.51	2,985.73	0.00	0.00	0.00
10,500.00	90.00	180.00	7,268.00	-3,085.73	-9.51	3,085.73	0.00	0.00	0.00
10,600.00	90.00	180.00	7,268.00	-3,185.73	-9.51	3,185.73	0.00	0.00	0.00
10,700.00	90.00	180.00	7,268.00	-3,285.73	-9.51	3,285.73	0.00	0.00	0.00
10,800.00	90.00	180.00	7,268.00	-3,385.73	-9.51	3,385.73	0.00	0.00	0.00
10,900.00	90.00	180.00	7,268.00	-3,485.73	-9.51	3,485.73	0.00	0.00	0.00
11,000.00	90.00	180.00	7,268.00	-3,585.73	-9.51	3,585.73	0.00	0.00	0.00
11,100.00	90.00	180.00	7,268.00	-3,685.73	-9.51	3,685.73	0.00	0.00	0.00
11,200.00	90.00	180.00	7,268.00	-3,785.73	-9.51	3,785.73	0.00	0.00	0.00
11,300.00	90.00	180.00	7,268.00	-3,885.73	-9.51	3,885.73	0.00	0.00	0.00
11,400.00	90.00	180.00	7,268.00	-3,985.73	-9.51	3,985.73	0.00	0.00	0.00
11,500.00	90.00	180.00	7,268.00	-4,085.73	-9.51	4,085.73	0.00	0.00	0.00
11,600.00	90.00	180.00	7,268.00	-4,185.73	-9.51	4,185.73	0.00	0.00	0.00
11,700.00	90.00	180.00	7,268.00	-4,285.73	-9.51	4,285.73	0.00	0.00	0.00
11,800.00	90.00	180.00	7,268.00	-4,385.73	-9.51	4,385.73	0.00	0.00	0.00
11,900.00	90.00	180.00	7,268.00	-4,485.73	-9.51	4,485.73	0.00	0.00	0.00
12,000.00	90.00	180.00	7,268.00	-4,585.73	-9.51	4,585.73	0.00	0.00	0.00
12,100.00	90.00	180.00	7,268.00	-4,685.73	-9.51	4,685.73	0.00	0.00	0.00
12,200.00	90.00	180.00	7,268.00	-4,785.73	-9.51	4,785.73	0.00	0.00	0.00
12,300.00	90.00	180.00	7,268.00	-4,885.73	-9.51	4,885.73	0.00	0.00	0.00
12,400.00	90.00	180.00	7,268.00	-4,985.73	-9.51	4,985.73	0.00	0.00	0.00
12,500.00	90.00	180.00	7,268.00	-5,085.73	-9.51	5,085.73	0.00	0.00	0.00
12,600.00	90.00	180.00	7,268.00	-5,185.73	-9.51	5,185.73	0.00	0.00	0.00
12,700.00	90.00	180.00	7,268.00	-5,285.73	-9.51	5,285.73	0.00	0.00	0.00
12,800.00	90.00	180.00	7,268.00	-5,385.73	-9.51	5,385.73	0.00	0.00	0.00
12,900.00	90.00	180.00	7,268.00	-5,485.73	-9.51	5,485.73	0.00	0.00	0.00
13,000.00	90.00	180.00	7,268.00	-5,585.73	-9.51	5,585.73	0.00	0.00	0.00
13,100.00	90.00	180.00	7,268.00	-5,685.73	-9.51	5,685.73	0.00	0.00	0.00
13,200.00	90.00	180.00	7,268.00	-5,785.73	-9.51	5,785.73	0.00	0.00	0.00
13,300.00	90.00	180.00	7,268.00	-5,885.73	-9.51	5,885.73	0.00	0.00	0.00

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well AGGREGATE STATE 14N-W16HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Site:</b>	AGGREGATE STATE 25-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	AGGREGATE STATE 14N-W16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	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)	
13,400.00	90.00	180.00	7,268.00	-5,985.73	-9.51	5,985.73	0.00	0.00	0.00	
13,500.00	90.00	180.00	7,268.00	-6,085.73	-9.51	6,085.73	0.00	0.00	0.00	
13,600.00	90.00	180.00	7,268.00	-6,185.73	-9.51	6,185.73	0.00	0.00	0.00	
13,700.00	90.00	180.00	7,268.00	-6,285.73	-9.51	6,285.73	0.00	0.00	0.00	
13,800.00	90.00	180.00	7,268.00	-6,385.73	-9.51	6,385.73	0.00	0.00	0.00	
13,900.00	90.00	180.00	7,268.00	-6,485.73	-9.51	6,485.73	0.00	0.00	0.00	
14,000.00	90.00	180.00	7,268.00	-6,585.73	-9.51	6,585.73	0.00	0.00	0.00	
14,100.00	90.00	180.00	7,268.00	-6,685.73	-9.51	6,685.73	0.00	0.00	0.00	
14,200.00	90.00	180.00	7,268.00	-6,785.73	-9.51	6,785.73	0.00	0.00	0.00	
14,300.00	90.00	180.00	7,268.00	-6,885.73	-9.51	6,885.73	0.00	0.00	0.00	
14,400.00	90.00	180.00	7,268.00	-6,985.73	-9.51	6,985.73	0.00	0.00	0.00	
14,500.00	90.00	180.00	7,268.00	-7,085.73	-9.51	7,085.73	0.00	0.00	0.00	
14,600.00	90.00	180.00	7,268.00	-7,185.73	-9.51	7,185.73	0.00	0.00	0.00	
14,622.66	90.00	180.00	7,268.00	-7,208.39	-9.51	7,208.39	0.00	0.00	0.00	
TD at 14622.66 - PBHL_AGGREGATE STATE 14N-W16HZ (460 FSL 2110 FWL)										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL_AGGREGATE ST	0.00	0.00	7,268.00	-7,208.39	-9.51	1,291,788.36	3,200,149.38	40.1321350	-104.7841780	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)		
800.00	800.00	9 5/8"	9.625	12.250		
7,624.27	7,268.00	7" (2179 FSL 2110 FWL)	7.000	7.500		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
750.00	-4,178.00	Fox Hills Base				
4,060.23	-897.00	Parkman				
4,413.23	-544.00	Sussex				
7,164.20	2,165.00	Sharon Springs				
7,253.23	2,224.00	NBRR				
7,359.71	2,280.00	N470 B CK				
7,517.07	2,330.00	N700 C CK				

<b>Database:</b>	Denver Sales Office	<b>Local Co-ordinate Reference:</b>	Well AGGREGATE STATE 14N-W16HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4911 & KB 17 @ 4928.00ft (ASSUMED)
<b>Site:</b>	AGGREGATE STATE 25-9HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	AGGREGATE STATE 14N-W16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1 PRELIMINARY		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,500.14	1,497.60	43.53	-1.14	Start 1588.96 hold at 1500.14 MD	
3,089.09	3,062.40	319.43	-8.37	Start Drop -2.00	
3,589.23	3,560.00	362.96	-9.51	Start 3135.04 hold at 3589.23 MD	
6,724.27	6,695.04	362.96	-9.51	Start DLS 10.00 TFO 180.00	
7,624.27	7,268.00	-210.00	-9.51	Start 6998.39 hold at 7624.27 MD	
14,622.66	7,268.00	-7,208.39	-9.51	TD at 14622.66	