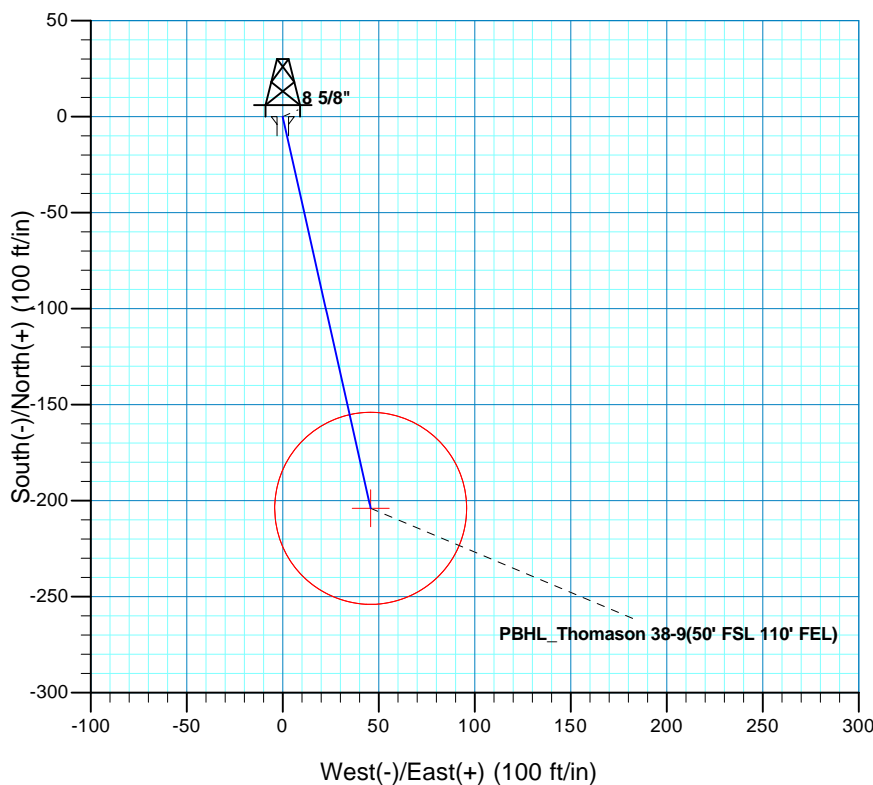
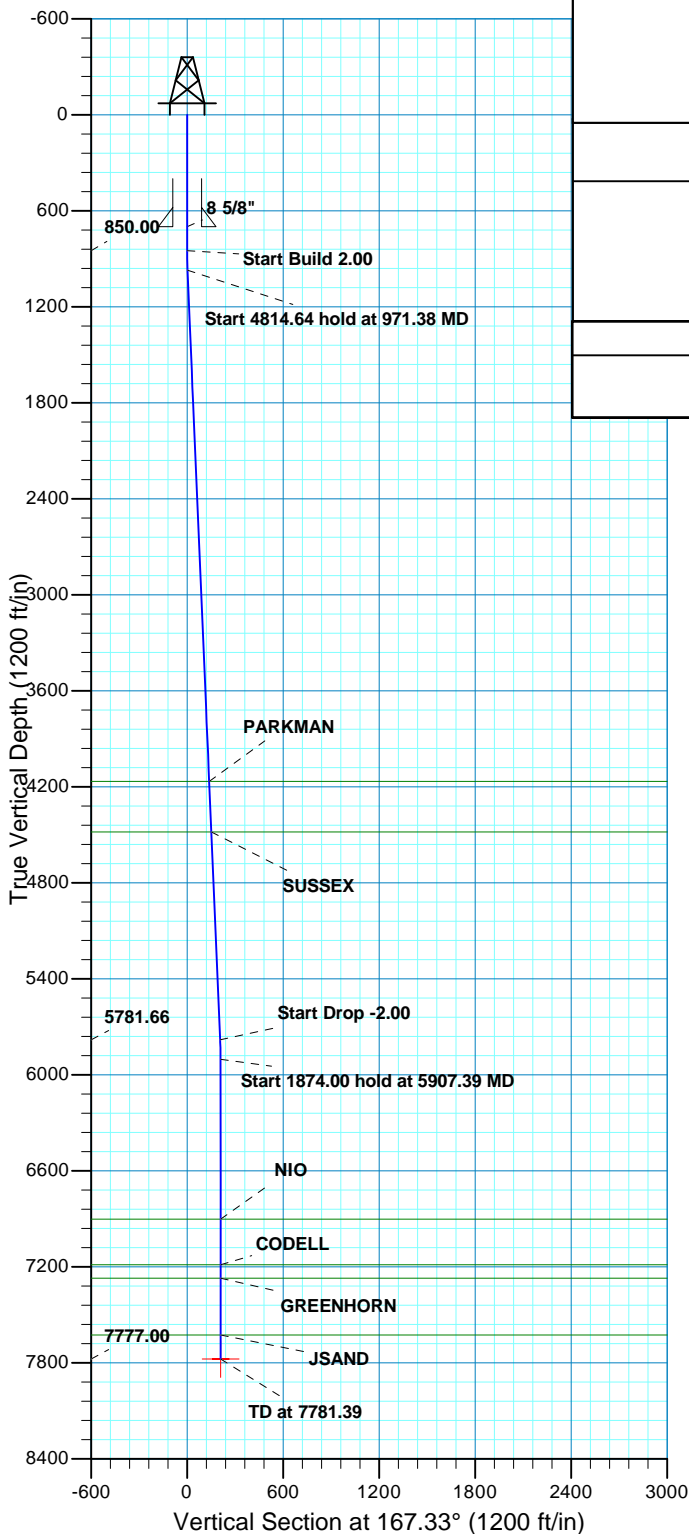


WELL DETAILS: P_Thomason 38-9					
GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1297390.97	3234761.48	40° 8' 48.051 N	104° 39' 36.745 W

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL	7777.00	-203.98	45.85	1297187.43	3234809.26	40° 8' 46.036 N	104° 39' 36.155 W
- plan hits target center							
Shape							
Circle (Radius: 50.00)							

SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00		
971.38	2.43	167.33	971.34	-2.51	0.56	2.00	167.33	2.57		
5786.02	2.43	167.33	5781.66	-201.47	45.28	0.00	0.00	206.50		
5907.39	0.00	0.00	5903.00	-203.98	45.85	2.00	180.00	209.07		
7781.39	0.00	0.00	7777.00	-203.98	45.85	0.00	0.00	209.07	PBHL_Thomason 38-9(50' FSL 110' FEL)	
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 T2NR65W System Datum: Mean Sea Level						FORMATION TOP DETAILS				
						TVDPath	MDPath	Formation		
						4167.00	4169.91	PARKMAN		
						4483.00	4486.19	SUSSEX		
						6903.00	6907.39	NIO		
						7187.00	7191.39	CODELL		
						7271.00	7275.39	GREENHORN		
						7627.00	7631.39	JSAND		
CASING DETAILS										
TVD			MD		Name		Size			
700.00			700.00		8 5/8"		8.620			



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_Thomason 16-9 Pad**

**P\_Thomason 38-9**

**P\_Thomason 38-9**

**Plan: PLAN #1 9-13-10 RHS**

## **Standard Planning Report**

**13 September, 2010**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Thomason 38-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Site:</b>	WELD_Thomason 16-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_Thomason 38-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Thomason 38-9		
<b>Design:</b>	PLAN #1 9-13-10 RHS		

<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>	WELD_Thomason 16-9 Pad, SECTION 9 T2NR65W		
<b>Site Position:</b>		<b>Northing:</b>	1,297,390.68 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,234,729.34 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in
		<b>Latitude:</b>	40° 8' 48.052 N
		<b>Longitude:</b>	104° 39' 37.159 W
		<b>Grid Convergence:</b>	0.54 °

<b>Well</b>	P_Thomason 38-9, 254' FSL, 160' FEL		
<b>Well Position</b>	<b>+N/-S</b>	-0.02 ft	<b>Northing:</b>
	<b>+E/-W</b>	32.15 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	
		<b>Latitude:</b>	40° 8' 48.051 N
		<b>Longitude:</b>	104° 39' 36.745 W
		<b>Ground Level:</b>	4,867.00 ft

<b>Wellbore</b>	P_Thomason 38-9				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	07/01/2010	8.91	66.90	53,110

<b>Design</b>	PLAN #1 9-13-10 RHS			
<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	167.33

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00	
971.38	2.43	167.33	971.34	-2.51	0.56	2.00	2.00	0.00	167.33	
5,786.02	2.43	167.33	5,781.66	-201.47	45.28	0.00	0.00	0.00	0.00	
5,907.39	0.00	0.00	5,903.00	-203.98	45.85	2.00	-2.00	0.00	180.00	
7,781.39	0.00	0.00	7,777.00	-203.98	45.85	0.00	0.00	0.00	0.00	PBHL_Thomason 38-

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Thomason 38-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Site:</b>	WELD_Thomason 16-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_Thomason 38-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Thomason 38-9		
<b>Design:</b>	PLAN #1 9-13-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8"									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	1.00	167.33	900.00	-0.43	0.10	0.44	2.00	2.00	0.00
971.38	2.43	167.33	971.34	-2.51	0.56	2.57	2.00	2.00	0.00
Start 4814.64 hold at 971.38 MD									
1,000.00	2.43	167.33	999.94	-3.69	0.83	3.78	0.00	0.00	0.00
1,100.00	2.43	167.33	1,099.85	-7.82	1.76	8.02	0.00	0.00	0.00
1,200.00	2.43	167.33	1,199.76	-11.96	2.69	12.25	0.00	0.00	0.00
1,300.00	2.43	167.33	1,299.67	-16.09	3.62	16.49	0.00	0.00	0.00
1,400.00	2.43	167.33	1,399.58	-20.22	4.54	20.73	0.00	0.00	0.00
1,500.00	2.43	167.33	1,499.49	-24.35	5.47	24.96	0.00	0.00	0.00
1,600.00	2.43	167.33	1,599.40	-28.49	6.40	29.20	0.00	0.00	0.00
1,700.00	2.43	167.33	1,699.31	-32.62	7.33	33.43	0.00	0.00	0.00
1,800.00	2.43	167.33	1,799.22	-36.75	8.26	37.67	0.00	0.00	0.00
1,900.00	2.43	167.33	1,899.13	-40.88	9.19	41.90	0.00	0.00	0.00
2,000.00	2.43	167.33	1,999.04	-45.02	10.12	46.14	0.00	0.00	0.00
2,100.00	2.43	167.33	2,098.95	-49.15	11.05	50.37	0.00	0.00	0.00
2,200.00	2.43	167.33	2,198.86	-53.28	11.98	54.61	0.00	0.00	0.00
2,300.00	2.43	167.33	2,298.77	-57.41	12.90	58.85	0.00	0.00	0.00
2,400.00	2.43	167.33	2,398.68	-61.55	13.83	63.08	0.00	0.00	0.00
2,500.00	2.43	167.33	2,498.59	-65.68	14.76	67.32	0.00	0.00	0.00
2,600.00	2.43	167.33	2,598.50	-69.81	15.69	71.55	0.00	0.00	0.00
2,700.00	2.43	167.33	2,698.41	-73.94	16.62	75.79	0.00	0.00	0.00
2,800.00	2.43	167.33	2,798.32	-78.08	17.55	80.02	0.00	0.00	0.00
2,900.00	2.43	167.33	2,898.23	-82.21	18.48	84.26	0.00	0.00	0.00
3,000.00	2.43	167.33	2,998.14	-86.34	19.41	88.49	0.00	0.00	0.00
3,100.00	2.43	167.33	3,098.05	-90.47	20.33	92.73	0.00	0.00	0.00
3,200.00	2.43	167.33	3,197.96	-94.61	21.26	96.97	0.00	0.00	0.00
3,300.00	2.43	167.33	3,297.87	-98.74	22.19	101.20	0.00	0.00	0.00
3,400.00	2.43	167.33	3,397.78	-102.87	23.12	105.44	0.00	0.00	0.00
3,500.00	2.43	167.33	3,497.69	-107.00	24.05	109.67	0.00	0.00	0.00
3,600.00	2.43	167.33	3,597.60	-111.14	24.98	113.91	0.00	0.00	0.00
3,700.00	2.43	167.33	3,697.52	-115.27	25.91	118.14	0.00	0.00	0.00
3,800.00	2.43	167.33	3,797.43	-119.40	26.84	122.38	0.00	0.00	0.00
3,900.00	2.43	167.33	3,897.34	-123.53	27.77	126.61	0.00	0.00	0.00
4,000.00	2.43	167.33	3,997.25	-127.67	28.69	130.85	0.00	0.00	0.00
4,100.00	2.43	167.33	4,097.16	-131.80	29.62	135.09	0.00	0.00	0.00
4,169.91	2.43	167.33	4,167.00	-134.69	30.27	138.05	0.00	0.00	0.00
PARKMAN									
4,200.00	2.43	167.33	4,197.07	-135.93	30.55	139.32	0.00	0.00	0.00
4,300.00	2.43	167.33	4,296.98	-140.06	31.48	143.56	0.00	0.00	0.00
4,400.00	2.43	167.33	4,396.89	-144.20	32.41	147.79	0.00	0.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Thomason 38-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Site:</b>	WELD_Thomason 16-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_Thomason 38-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Thomason 38-9		
<b>Design:</b>	PLAN #1 9-13-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,486.19	2.43	167.33	4,483.00	-147.76	33.21	151.44	0.00	0.00	0.00
<b>SUSSEX</b>									
4,500.00	2.43	167.33	4,496.80	-148.33	33.34	152.03	0.00	0.00	0.00
4,600.00	2.43	167.33	4,596.71	-152.46	34.27	156.26	0.00	0.00	0.00
4,700.00	2.43	167.33	4,696.62	-156.59	35.20	160.50	0.00	0.00	0.00
4,800.00	2.43	167.33	4,796.53	-160.73	36.12	164.74	0.00	0.00	0.00
4,900.00	2.43	167.33	4,896.44	-164.86	37.05	168.97	0.00	0.00	0.00
5,000.00	2.43	167.33	4,996.35	-168.99	37.98	173.21	0.00	0.00	0.00
5,100.00	2.43	167.33	5,096.26	-173.12	38.91	177.44	0.00	0.00	0.00
5,200.00	2.43	167.33	5,196.17	-177.26	39.84	181.68	0.00	0.00	0.00
5,300.00	2.43	167.33	5,296.08	-181.39	40.77	185.91	0.00	0.00	0.00
5,400.00	2.43	167.33	5,395.99	-185.52	41.70	190.15	0.00	0.00	0.00
5,500.00	2.43	167.33	5,495.90	-189.65	42.63	194.38	0.00	0.00	0.00
5,600.00	2.43	167.33	5,595.81	-193.79	43.56	198.62	0.00	0.00	0.00
5,700.00	2.43	167.33	5,695.72	-197.92	44.48	202.86	0.00	0.00	0.00
5,786.02	2.43	167.33	5,781.66	-201.47	45.28	206.50	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,800.00	2.15	167.33	5,795.63	-202.02	45.41	207.06	2.00	-2.00	0.00
5,900.00	0.15	167.33	5,895.61	-203.97	45.84	209.06	2.00	-2.00	0.00
5,907.39	0.00	0.00	5,903.00	-203.98	45.85	209.07	2.00	-2.00	-2,263.30
<b>Start 1874.00 hold at 5907.39 MD</b>									
6,000.00	0.00	0.00	5,995.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,100.00	0.00	0.00	6,095.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,200.00	0.00	0.00	6,195.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,300.00	0.00	0.00	6,295.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,400.00	0.00	0.00	6,395.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,500.00	0.00	0.00	6,495.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,600.00	0.00	0.00	6,595.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,700.00	0.00	0.00	6,695.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,800.00	0.00	0.00	6,795.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,900.00	0.00	0.00	6,895.61	-203.98	45.85	209.07	0.00	0.00	0.00
6,907.39	0.00	0.00	6,903.00	-203.98	45.85	209.07	0.00	0.00	0.00
<b>NIO</b>									
7,000.00	0.00	0.00	6,995.61	-203.98	45.85	209.07	0.00	0.00	0.00
7,100.00	0.00	0.00	7,095.61	-203.98	45.85	209.07	0.00	0.00	0.00
7,191.39	0.00	0.00	7,187.00	-203.98	45.85	209.07	0.00	0.00	0.00
<b>CODELL</b>									
7,200.00	0.00	0.00	7,195.61	-203.98	45.85	209.07	0.00	0.00	0.00
7,275.39	0.00	0.00	7,271.00	-203.98	45.85	209.07	0.00	0.00	0.00
<b>GREENHORN</b>									
7,300.00	0.00	0.00	7,295.61	-203.98	45.85	209.07	0.00	0.00	0.00
7,400.00	0.00	0.00	7,395.61	-203.98	45.85	209.07	0.00	0.00	0.00
7,500.00	0.00	0.00	7,495.61	-203.98	45.85	209.07	0.00	0.00	0.00
7,600.00	0.00	0.00	7,595.61	-203.98	45.85	209.07	0.00	0.00	0.00
7,631.39	0.00	0.00	7,627.00	-203.98	45.85	209.07	0.00	0.00	0.00
<b>JSAND</b>									
7,700.00	0.00	0.00	7,695.61	-203.98	45.85	209.07	0.00	0.00	0.00
7,781.39	0.00	0.00	7,777.00	-203.98	45.85	209.07	0.00	0.00	0.00
<b>PBHL_Thomason 38-9(50' FSL 110' FEL)</b>									

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Thomason 38-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Site:</b>	WELD_Thomason 16-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_Thomason 38-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Thomason 38-9		
<b>Design:</b>	PLAN #1 9-13-10 RHS		

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_Thomason 38-9(	0.00	0.00	7,777.00	-203.98	45.85	1,297,187.43	3,234,809.26	40° 8' 46.036 N	104° 39' 36.155 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
700.00	700.00	8 5/8"		8.620	11.000

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
4,169.91	4,167.00	PARKMAN				
4,486.19	4,483.00	SUSSEX				
6,907.39	6,903.00	NIO				
7,191.39	7,187.00	CODELL				
7,275.39	7,271.00	GREENHORN				
7,631.39	7,627.00	JSAND				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
850.00	850.00	0.00	0.00	Start Build 2.00	
971.38	971.34	-2.51	0.56	Start 4814.64 hold at 971.38 MD	
5,786.02	5,781.66	-201.47	45.28	Start Drop -2.00	
5,907.39	5,903.00	-203.98	45.85	Start 1874.00 hold at 5907.39 MD	
7,781.39	7,777.00	-203.98	45.85	TD at 7781.39	