



# **US ROCKIES REGION PLANNING**

COLORADO NORTHERN ZONE - 83

WELD\_WINTER 16-19 PAD

P\_WINTER 20-19

P\_WINTER 20-19

Plan: PLAN #1 4-22-10 RHS

## **Standard Planning Report**

22 April, 2010





Project: COLORADO NORTHERN ZONE - 83  
 Site: WELD\_WINTER 16-19 PAD  
 Well: P\_WINTER 20-19  
 Wellbore: P\_WINTER 20-19  
 Section: SECTION 19 T6 R64W  
 SHL: 741 FSL 930 FEL  
 Design: PLAN #1 4-22-10 RHS  
 Latitude: 40° 27' 58.446 N  
 Longitude: 104° 35' 13.362 W  
 GL: 4705.00  
 KB: WELL @ 4720.00ft (Original Well Elev)



**Weatherford®**



Azimuths to True North  
 Magnetic North: 8.93°  
 Magnetic Field  
 Strength: 53307.7snT  
 Dip Angle: 67.17°  
 Date: 4/22/2010  
 Model: IGRF2010

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3566.00	3628.06	PARKMAN
4334.00	4404.84	SUSSEX
4704.00	4774.84	SHANNON
6641.00	6711.84	NIO
6941.00	7011.84	CODELL
7012.00	7082.84	GREEN HORN

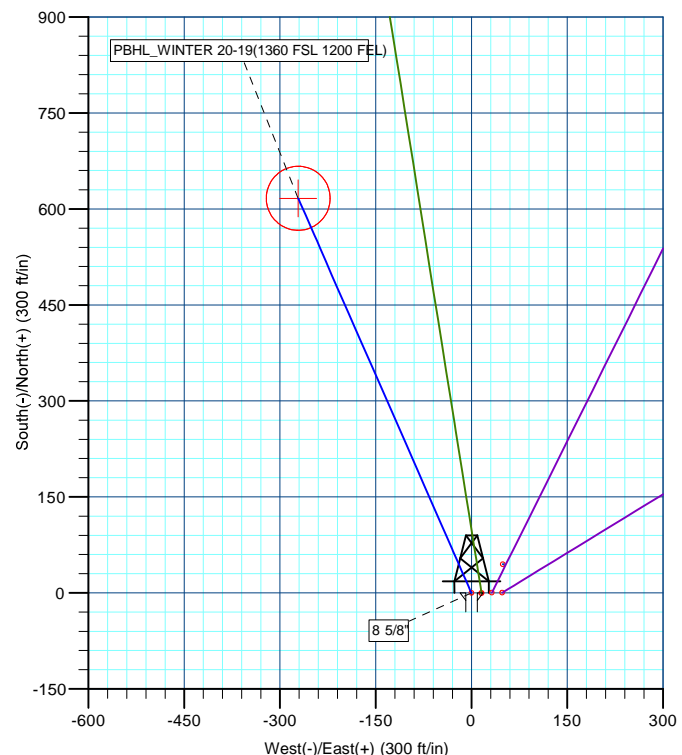
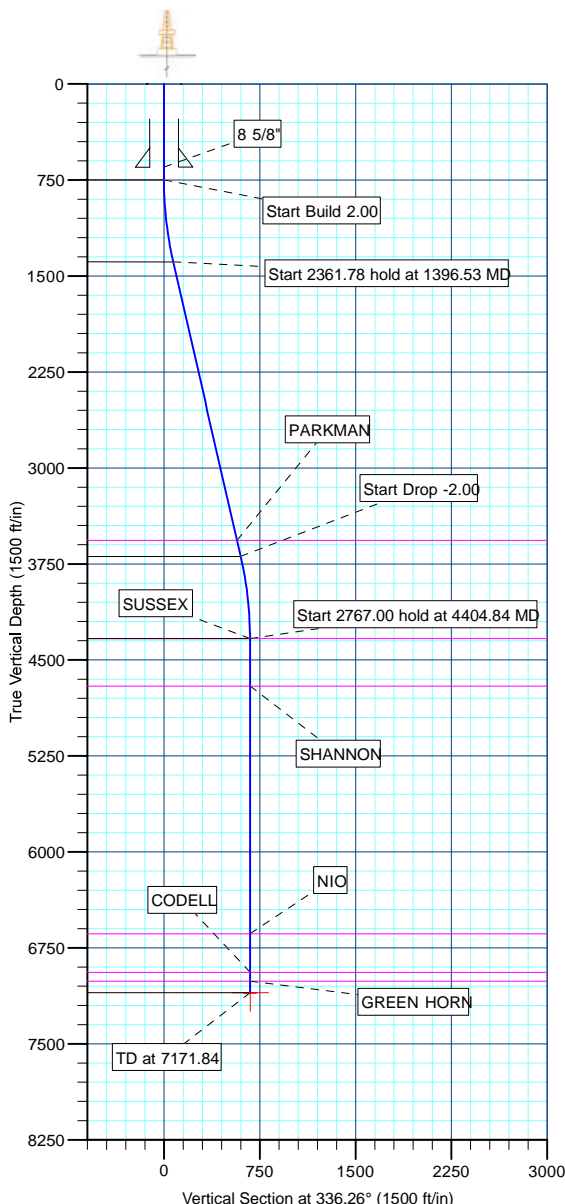
CASING DETAILS			
TVD	MD	Name	Size
650.00	650.00	8 5/8"	8.62

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	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	Start Build 2.00
1396.53	12.93	336.26	1391.06	66.50	-29.25	2.00	336.26	72.65	Start 2361.78 hold at 1396.53 MD
3758.31	12.93	336.26	3692.94	550.27	-242.03	0.00	0.00	601.14	Start Drop -2.00
4404.84	0.00	0.00	4334.00	616.77	-271.28	2.00	180.00	673.79	Start 2767.00 hold at 4404.84 MD
7171.84	0.00	0.00	7101.00	616.77	-271.28	0.00	0.00	673.79	TD at 7171.84

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	7101.00	616.77	-271.28	40° 28' 4.541 N	104° 35' 16.872 W	Circle (Radius: 50.00)

WELL DETAILS: P_WINTER 20-19						
+N/-S	+E/-W	Northing	Ground Level: Easting	4705.00 Latitude	Longitude	Slot
0.00	0.00	1413997.40	3254014.51	40° 27' 58.446 N	104° 35' 13.362 W	

LEGEND	
—	LINDA RAE #1 EXISTING, LINDA RAE #1 EXISTING, LINDA RAE #1 EXISTING V0
—	P_WINTER 24-19, P_WINTER 24-19, PLAN #1 4-22-10 RHS V0
—	P_WINTER 39-19, P_WINTER 39-19, PLAN #1 4-22-10 RHS V0
—	P_WINTER 40-19, P_WINTER 40-19, PLAN #1 4-22-10 RHS V0
—	WINTER #9-19 EXISTING, WINTER #9-19 EXISTING, WINTER #9-19 EXISTING V0
—	PLAN #1 4-22-10 RHS



Plan: PLAN #1 4-22-10 RHS (P_WINTER 20-19/P_WINTER 20-19)	
Created By: Robert H. Scott	Date: 14:15, April 22 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_WINTER 20-19
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4720.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4720.00ft (Original Well Elev)
Site:	WELD_WINTER 16-19 PAD	North Reference:	True
Well:	P_WINTER 20-19	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_WINTER 20-19		
Design:	PLAN #1 4-22-10 RHS		

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

Site						WELD_WINTER 16-19 PAD, SECTION 19 T6 R64W					
Site Position:				Northing:		1,413,997.40ft		Latitude:		40° 27' 58.446 N	
From:		Lat/Long		Easting:		3,254,014.51ft		Longitude:		104° 35' 13.362 W	
Position Uncertainty:		0.00 ft		Slot Radius:		in		Grid Convergence:		0.59 °	

Well	P_WINTER 20-19					
Well Position	+N/-S	0.00 ft	Northing:	1,413,997.40 ft	Latitude:	40° 27' 58.446 N
	+E/-W	0.00 ft	Easting:	3,254,014.51 ft	Longitude:	104° 35' 13.362 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,705.00 ft

Wellbore	P_WINTER 20-19				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/22/2010	8.93	67.17	53,308

Design	PLAN #1 4-22-10 RHS			
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	336.26

Plan Sections										
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	
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,396.53	12.93	336.26	1,391.06	66.50	-29.25	2.00	2.00	0.00	336.26	
3,758.31	12.93	336.26	3,692.94	550.27	-242.03	0.00	0.00	0.00	0.00	
4,404.84	0.00	0.00	4,334.00	616.77	-271.28	2.00	-2.00	0.00	180.00	
7,171.84	0.00	0.00	7,101.00	616.77	-271.28	0.00	0.00	0.00	0.00	PBHL_WINTER 20-

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_WINTER 20-19
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4720.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4720.00ft (Original Well Elev)
Site:	WELD_WINTER 16-19 PAD	North Reference:	True
Well:	P_WINTER 20-19	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_WINTER 20-19		
Design:	PLAN #1 4-22-10 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)
Start Build 2.00									
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	1.00	336.26	800.00	0.40	-0.18	0.44	2.00	2.00	0.00
900.00	3.00	336.26	899.93	3.59	-1.58	3.93	2.00	2.00	0.00
1,000.00	5.00	336.26	999.68	9.98	-4.39	10.90	2.00	2.00	0.00
1,100.00	7.00	336.26	1,099.13	19.55	-8.60	21.35	2.00	2.00	0.00
1,200.00	9.00	336.26	1,198.15	32.29	-14.20	35.27	2.00	2.00	0.00
1,300.00	11.00	336.26	1,296.63	48.18	-21.19	52.63	2.00	2.00	0.00
Start 2361.78 hold at 1396.53 MD									
1,396.53	12.93	336.26	1,391.06	66.50	-29.25	72.65	2.00	2.00	0.00
1,400.00	12.93	336.26	1,394.44	67.21	-29.56	73.42	0.00	0.00	0.00
1,500.00	12.93	336.26	1,491.90	87.69	-38.57	95.80	0.00	0.00	0.00
1,600.00	12.93	336.26	1,589.37	108.18	-47.58	118.18	0.00	0.00	0.00
1,700.00	12.93	336.26	1,686.83	128.66	-56.59	140.55	0.00	0.00	0.00
1,800.00	12.93	336.26	1,784.29	149.14	-65.60	162.93	0.00	0.00	0.00
1,900.00	12.93	336.26	1,881.76	169.63	-74.61	185.31	0.00	0.00	0.00
2,000.00	12.93	336.26	1,979.22	190.11	-83.62	207.68	0.00	0.00	0.00
2,100.00	12.93	336.26	2,076.69	210.59	-92.63	230.06	0.00	0.00	0.00
2,200.00	12.93	336.26	2,174.15	231.08	-101.64	252.44	0.00	0.00	0.00
2,300.00	12.93	336.26	2,271.62	251.56	-110.64	274.82	0.00	0.00	0.00
2,400.00	12.93	336.26	2,369.08	272.04	-119.65	297.19	0.00	0.00	0.00
2,500.00	12.93	336.26	2,466.54	292.53	-128.66	319.57	0.00	0.00	0.00
2,600.00	12.93	336.26	2,564.01	313.01	-137.67	341.95	0.00	0.00	0.00
2,700.00	12.93	336.26	2,661.47	333.49	-146.68	364.32	0.00	0.00	0.00
2,800.00	12.93	336.26	2,758.94	353.98	-155.69	386.70	0.00	0.00	0.00
2,900.00	12.93	336.26	2,856.40	374.46	-164.70	409.08	0.00	0.00	0.00
3,000.00	12.93	336.26	2,953.86	394.94	-173.71	431.46	0.00	0.00	0.00
3,100.00	12.93	336.26	3,051.33	415.43	-182.72	453.83	0.00	0.00	0.00
3,200.00	12.93	336.26	3,148.79	435.91	-191.73	476.21	0.00	0.00	0.00
3,300.00	12.93	336.26	3,246.26	456.39	-200.74	498.59	0.00	0.00	0.00
3,400.00	12.93	336.26	3,343.72	476.88	-209.75	520.96	0.00	0.00	0.00
3,500.00	12.93	336.26	3,441.19	497.36	-218.76	543.34	0.00	0.00	0.00
3,600.00	12.93	336.26	3,538.65	517.84	-227.77	565.72	0.00	0.00	0.00
PARKMAN									
3,628.06	12.93	336.26	3,566.00	523.59	-230.29	572.00	0.00	0.00	0.00
3,700.00	12.93	336.26	3,636.11	538.33	-236.77	588.10	0.00	0.00	0.00
Start Drop -2.00									
3,758.31	12.93	336.26	3,692.94	550.27	-242.03	601.14	0.00	0.00	0.00
3,800.00	12.10	336.26	3,733.64	558.54	-245.66	610.18	2.00	-2.00	0.00
3,900.00	10.10	336.26	3,831.77	576.15	-253.41	629.42	2.00	-2.00	0.00
4,000.00	8.10	336.26	3,930.51	590.63	-259.78	645.23	2.00	-2.00	0.00
4,100.00	6.10	336.26	4,029.74	601.93	-264.75	657.59	2.00	-2.00	0.00
4,200.00	4.10	336.26	4,129.34	610.07	-268.33	666.47	2.00	-2.00	0.00
4,300.00	2.10	336.26	4,229.18	615.01	-270.50	671.87	2.00	-2.00	0.00
4,400.00	0.10	336.26	4,329.16	616.76	-271.27	673.79	2.00	-2.00	0.00
Start 2767.00 hold at 4404.84 MD - SUSSEX									
4,404.84	0.00	0.00	4,334.00	616.77	-271.28	673.79	2.00	-2.00	490.62
4,500.00	0.00	0.00	4,429.16	616.77	-271.28	673.79	0.00	0.00	0.00
4,600.00	0.00	0.00	4,529.16	616.77	-271.28	673.79	0.00	0.00	0.00
4,700.00	0.00	0.00	4,629.16	616.77	-271.28	673.79	0.00	0.00	0.00
SHANNON									
4,774.84	0.00	0.00	4,704.00	616.77	-271.28	673.79	0.00	0.00	0.00
4,800.00	0.00	0.00	4,729.16	616.77	-271.28	673.79	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_WINTER 20-19
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4720.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4720.00ft (Original Well Elev)
Site:	WELD_WINTER 16-19 PAD	North Reference:	True
Well:	P_WINTER 20-19	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_WINTER 20-19		
Design:	PLAN #1 4-22-10 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)
4,900.00	0.00	0.00	4,829.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,000.00	0.00	0.00	4,929.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,100.00	0.00	0.00	5,029.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,200.00	0.00	0.00	5,129.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,300.00	0.00	0.00	5,229.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,400.00	0.00	0.00	5,329.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,500.00	0.00	0.00	5,429.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,600.00	0.00	0.00	5,529.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,700.00	0.00	0.00	5,629.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,800.00	0.00	0.00	5,729.16	616.77	-271.28	673.79	0.00	0.00	0.00
5,900.00	0.00	0.00	5,829.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,000.00	0.00	0.00	5,929.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,100.00	0.00	0.00	6,029.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,200.00	0.00	0.00	6,129.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,300.00	0.00	0.00	6,229.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,400.00	0.00	0.00	6,329.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,500.00	0.00	0.00	6,429.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,600.00	0.00	0.00	6,529.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,700.00	0.00	0.00	6,629.16	616.77	-271.28	673.79	0.00	0.00	0.00
NIO									
6,711.84	0.00	0.00	6,641.00	616.77	-271.28	673.79	0.00	0.00	0.00
6,800.00	0.00	0.00	6,729.16	616.77	-271.28	673.79	0.00	0.00	0.00
6,900.00	0.00	0.00	6,829.16	616.77	-271.28	673.79	0.00	0.00	0.00
7,000.00	0.00	0.00	6,929.16	616.77	-271.28	673.79	0.00	0.00	0.00
CODELL									
7,011.84	0.00	0.00	6,941.00	616.77	-271.28	673.79	0.00	0.00	0.00
GREEN HORN									
7,082.84	0.00	0.00	7,012.00	616.77	-271.28	673.79	0.00	0.00	0.00
7,100.00	0.00	0.00	7,029.16	616.77	-271.28	673.79	0.00	0.00	0.00
PBHL_WINTER 20-19(1360 FSL 1200 FEL)									
7,171.84	0.00	0.00	7,101.00	616.77	-271.28	673.79	0.00	0.00	0.00

#### Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_WINTER 20-19	0.00	0.00	7,101.00	616.77	-271.28	1,414,611.34	3,253,736.90	40° 28' 4.541 N	104° 35' 16.872 W
- plan hits target center									
- Circle (radius 50.00)									

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
650.00	650.00	8 5/8"	8.62	11.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_WINTER 20-19
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4720.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4720.00ft (Original Well Elev)
Site:	WELD_WINTER 16-19 PAD	North Reference:	True
Well:	P_WINTER 20-19	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_WINTER 20-19		
Design:	PLAN #1 4-22-10 RHS		

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,628.06	3,566.00	PARKMAN			
4,404.84	4,334.00	SUSSEX			
4,774.84	4,704.00	SHANNON			
6,711.84	6,641.00	NIO			
7,011.84	6,941.00	CODELL			
7,082.84	7,012.00	GREEN HORN			

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
750.00	750.00	0.00	0.00	Start Build 2.00
1,396.53	1,391.06	66.50	-29.25	Start 2361.78 hold at 1396.53 MD
3,758.31	3,692.94	550.27	-242.03	Start Drop -2.00
4,404.84	4,334.00	616.77	-271.28	Start 2767.00 hold at 4404.84 MD
7,171.84	7,101.00	616.77	-271.28	TD at 7171.84