

WELL DETAILS: P_Sweetgrass 16-14
GL 5136' & RKB 15'
@ 5151.00ft (ASSUMED)

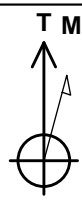
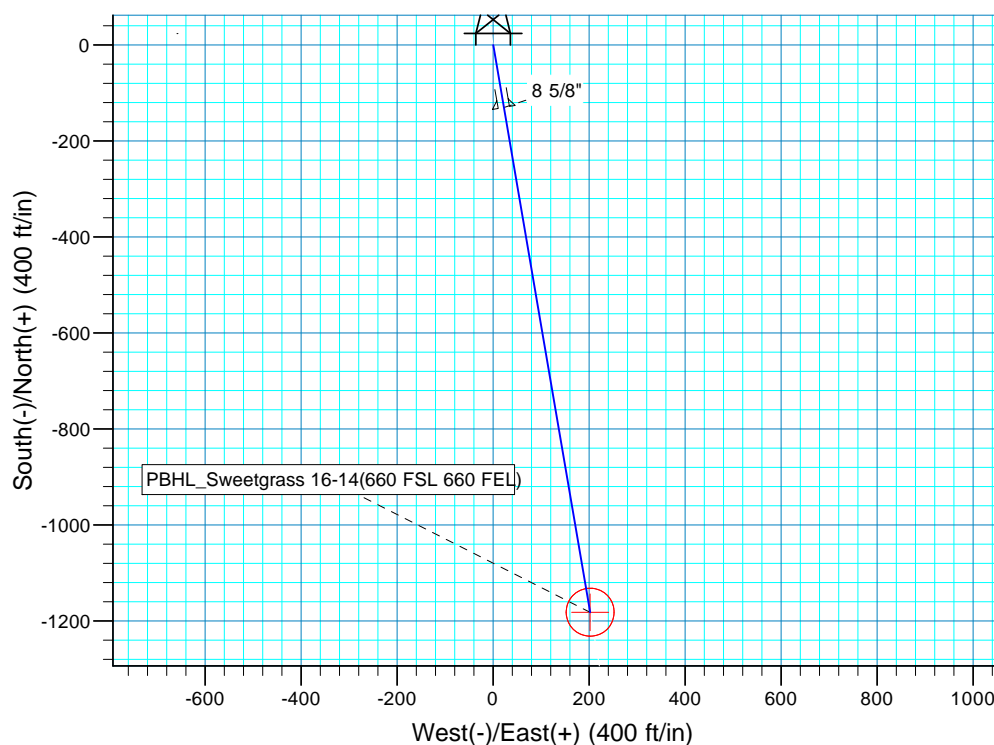
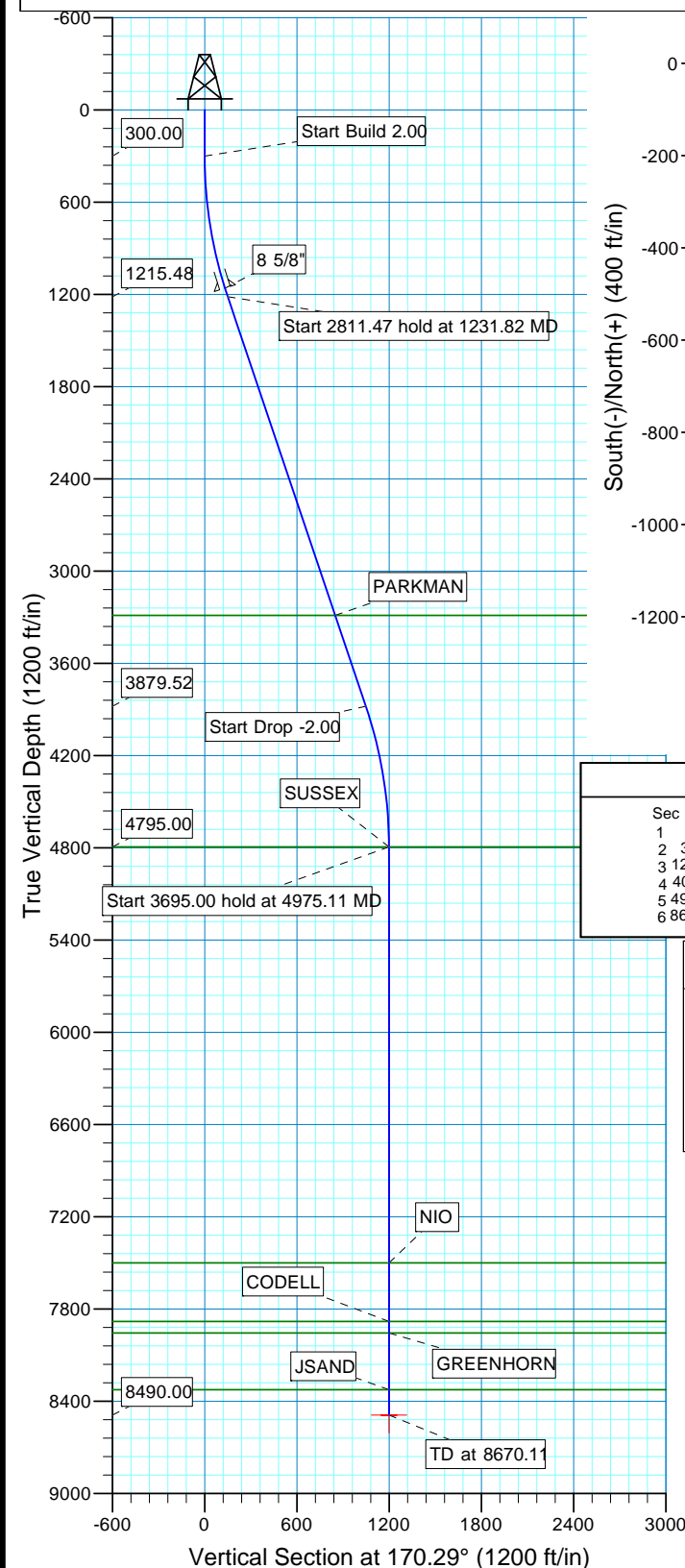
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1261241.88	3149980.73	40° 2' 57.314 N	104° 57' 51.329 W

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	8490.00	-1181.70	202.13	1260061.42	3150190.00	40° 2' 45.636 N	104° 57' 48.730 W	Circle (Radius: 50.00)

T M Azimuths to True North
Magnetic North: 9.05°

Magnetic Field
Strength: 53013.4snT
Dip Angle: 66.76°
Date: 08/02/2010
Model: IGRF2010

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	1231.82	18.64	170.29	1215.48	-148.06	25.33	2.00	170.29	150.21	
4	4043.29	18.64	170.29	3879.52-1033.64	176.81	0.00	0.00	0.001048.65		
5	4975.11	0.00	0.00	4795.00-1181.70	202.13	2.00	180.00	1198.86		
6	8670.11	0.00	0.00	8490.00-1181.70	202.13	0.00	0.00	1198.86		PBHL_Sweetgrass 16-14(660 FSL 660 FEL)

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3289.00	3420.08	PARKMAN
4795.00	4975.11	SUSSEX
7501.00	7681.11	NIO
7881.00	8061.11	CODELL
7957.00	8137.11	GREENHORN
8325.00	8505.11	JSAND

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 14 T1N R68W
System Datum: Mean Sea Level
Local North: True

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_SWEETGRASS 9-14 Pad

P_Sweetgrass 16-14

P_Sweetgrass 16-14

Plan: PLAN #1 8-2-10 RHS

Standard Planning Report

02 August, 2010

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well P_Sweetgrass 16-14
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5136' & RKB 15' @ 5151.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5136' & RKB 15' @ 5151.00ft (ASSUMED)
Site:	WELD_SWEETGRASS 9-14 Pad	North Reference:	True
Well:	P_Sweetgrass 16-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Sweetgrass 16-14		
Design:	PLAN #1 8-2-10 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_SWEETGRASS 9-14 Pad, SECTION 14 T1N R68W			
Site Position:		Northing:	1,261,248.13 usft	Latitude:	40° 2' 57.376 N
From:	Lat/Long	Easting:	3,149,988.54 usft	Longitude:	104° 57' 51.228 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.35 °

Well	P_Sweetgrass 16-14, 1846' FSL 856' FEL					
Well Position	+N/-S	-6.21 ft	Northing:	1,261,241.87 usft	Latitude:	40° 2' 57.314 N
	+E/-W	-7.84 ft	Easting:	3,149,980.73 usft	Longitude:	104° 57' 51.329 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,136.00 ft

Wellbore	P_Sweetgrass 16-14				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	08/02/2010	9.05	66.76	53,013

Design	PLAN #1 8-2-10 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	170.29	

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,231.82	18.64	170.29	1,215.48	-148.06	25.33	2.00	2.00	0.00	170.29	
4,043.29	18.64	170.29	3,879.52	-1,033.64	176.81	0.00	0.00	0.00	0.00	
4,975.11	0.00	0.00	4,795.00	-1,181.70	202.13	2.00	-2.00	0.00	180.00	
8,670.11	0.00	0.00	8,490.00	-1,181.70	202.13	0.00	0.00	0.00	0.00	PBHL_Sweetgrass 16

Database:	EDM5000-RobertS-Local	Local Co-ordinate Reference:	Well P_Sweetgrass 16-14
Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5136' & RKB 15' @ 5151.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5136' & RKB 15' @ 5151.00ft (ASSUMED)
Site:	WELD_SWEETGRASS 9-14 Pad	North Reference:	True
Well:	P_Sweetgrass 16-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Sweetgrass 16-14		
Design:	PLAN #1 8-2-10 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	
Start Build 2.00										
400.00	2.00	170.29	399.98	-1.72	0.29	1.75	2.00	2.00	0.00	
500.00	4.00	170.29	499.84	-6.88	1.18	6.98	2.00	2.00	0.00	
600.00	6.00	170.29	599.45	-15.47	2.65	15.69	2.00	2.00	0.00	
700.00	8.00	170.29	698.70	-27.48	4.70	27.88	2.00	2.00	0.00	
800.00	10.00	170.29	797.47	-42.90	7.34	43.52	2.00	2.00	0.00	
900.00	12.00	170.29	895.62	-61.71	10.56	62.60	2.00	2.00	0.00	
1,000.00	14.00	170.29	993.06	-83.88	14.35	85.10	2.00	2.00	0.00	
1,100.00	16.00	170.29	1,089.64	-109.39	18.71	110.98	2.00	2.00	0.00	
1,173.47	17.47	170.29	1,160.00	-130.24	22.28	132.13	2.00	2.00	0.00	
8 5/8"										
1,200.00	18.00	170.29	1,185.27	-138.21	23.64	140.21	2.00	2.00	0.00	
1,231.82	18.64	170.29	1,215.48	-148.06	25.33	150.21	2.00	2.00	0.00	
Start 2811.47 hold at 1231.82 MD										
1,300.00	18.64	170.29	1,280.08	-169.54	29.00	172.00	0.00	0.00	0.00	
1,400.00	18.64	170.29	1,374.84	-201.04	34.39	203.96	0.00	0.00	0.00	
1,500.00	18.64	170.29	1,469.59	-232.54	39.78	235.91	0.00	0.00	0.00	
1,600.00	18.64	170.29	1,564.35	-264.03	45.16	267.87	0.00	0.00	0.00	
1,700.00	18.64	170.29	1,659.11	-295.53	50.55	299.83	0.00	0.00	0.00	
1,800.00	18.64	170.29	1,753.86	-327.03	55.94	331.78	0.00	0.00	0.00	
1,900.00	18.64	170.29	1,848.62	-358.53	61.33	363.74	0.00	0.00	0.00	
2,000.00	18.64	170.29	1,943.38	-390.03	66.72	395.69	0.00	0.00	0.00	
2,100.00	18.64	170.29	2,038.13	-421.53	72.10	427.65	0.00	0.00	0.00	
2,200.00	18.64	170.29	2,132.89	-453.03	77.49	459.61	0.00	0.00	0.00	
2,300.00	18.64	170.29	2,227.65	-484.53	82.88	491.56	0.00	0.00	0.00	
2,400.00	18.64	170.29	2,322.40	-516.02	88.27	523.52	0.00	0.00	0.00	
2,500.00	18.64	170.29	2,417.16	-547.52	93.66	555.47	0.00	0.00	0.00	
2,600.00	18.64	170.29	2,511.92	-579.02	99.04	587.43	0.00	0.00	0.00	
2,700.00	18.64	170.29	2,606.67	-610.52	104.43	619.39	0.00	0.00	0.00	
2,800.00	18.64	170.29	2,701.43	-642.02	109.82	651.34	0.00	0.00	0.00	
2,900.00	18.64	170.29	2,796.19	-673.52	115.21	683.30	0.00	0.00	0.00	
3,000.00	18.64	170.29	2,890.94	-705.02	120.60	715.26	0.00	0.00	0.00	
3,100.00	18.64	170.29	2,985.70	-736.51	125.98	747.21	0.00	0.00	0.00	
3,200.00	18.64	170.29	3,080.46	-768.01	131.37	779.17	0.00	0.00	0.00	
3,300.00	18.64	170.29	3,175.21	-799.51	136.76	811.12	0.00	0.00	0.00	
3,400.00	18.64	170.29	3,269.97	-831.01	142.15	843.08	0.00	0.00	0.00	
3,420.08	18.64	170.29	3,289.00	-837.34	143.23	849.50	0.00	0.00	0.00	
PARKMAN										
3,500.00	18.64	170.29	3,364.73	-862.51	147.54	875.04	0.00	0.00	0.00	
3,600.00	18.64	170.29	3,459.48	-894.01	152.92	906.99	0.00	0.00	0.00	
3,700.00	18.64	170.29	3,554.24	-925.51	158.31	938.95	0.00	0.00	0.00	
3,800.00	18.64	170.29	3,649.00	-957.00	163.70	970.90	0.00	0.00	0.00	
3,900.00	18.64	170.29	3,743.75	-988.50	169.09	1,002.86	0.00	0.00	0.00	
4,000.00	18.64	170.29	3,838.51	-1,020.00	174.48	1,034.82	0.00	0.00	0.00	
4,043.29	18.64	170.29	3,879.52	-1,033.64	176.81	1,048.65	0.00	0.00	0.00	
Start Drop -2.00										
4,100.00	17.50	170.29	3,933.44	-1,050.97	179.77	1,066.24	2.00	-2.00	0.00	

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Company:	US ROCKIES REGION PLANNING	TVD Reference:	GL 5136' & RKB 15' @ 5151.00ft (ASSUMED)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5136' & RKB 15' @ 5151.00ft (ASSUMED)
Site:	WELD_SWEETGRASS 9-14 Pad	North Reference:	True
Well:	P_Sweetgrass 16-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Sweetgrass 16-14		
Design:	PLAN #1 8-2-10 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)
4,200.00	15.50	170.29	4,029.32	-1,078.97	184.56	1,094.64	2.00	-2.00	0.00
4,300.00	13.50	170.29	4,126.13	-1,103.65	188.78	1,119.68	2.00	-2.00	0.00
4,400.00	11.50	170.29	4,223.75	-1,124.99	192.43	1,141.33	2.00	-2.00	0.00
4,500.00	9.50	170.29	4,322.07	-1,142.96	195.51	1,159.56	2.00	-2.00	0.00
4,600.00	7.50	170.29	4,420.97	-1,157.53	198.00	1,174.34	2.00	-2.00	0.00
4,700.00	5.50	170.29	4,520.32	-1,168.69	199.91	1,185.66	2.00	-2.00	0.00
4,800.00	3.50	170.29	4,620.00	-1,176.43	201.23	1,193.51	2.00	-2.00	0.00
4,900.00	1.50	170.29	4,719.90	-1,180.73	201.97	1,197.88	2.00	-2.00	0.00
4,975.11	0.00	0.00	4,795.00	-1,181.70	202.13	1,198.86	2.00	-2.00	-226.74
Start 3695.00 hold at 4975.11 MD - SUSSEX									
5,000.00	0.00	0.00	4,819.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,100.00	0.00	0.00	4,919.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,200.00	0.00	0.00	5,019.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,300.00	0.00	0.00	5,119.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,400.00	0.00	0.00	5,219.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,500.00	0.00	0.00	5,319.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,600.00	0.00	0.00	5,419.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,700.00	0.00	0.00	5,519.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,800.00	0.00	0.00	5,619.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
5,900.00	0.00	0.00	5,719.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,000.00	0.00	0.00	5,819.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,100.00	0.00	0.00	5,919.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,200.00	0.00	0.00	6,019.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,300.00	0.00	0.00	6,119.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,400.00	0.00	0.00	6,219.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,500.00	0.00	0.00	6,319.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,600.00	0.00	0.00	6,419.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,700.00	0.00	0.00	6,519.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,800.00	0.00	0.00	6,619.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
6,900.00	0.00	0.00	6,719.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,000.00	0.00	0.00	6,819.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,100.00	0.00	0.00	6,919.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,200.00	0.00	0.00	7,019.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,300.00	0.00	0.00	7,119.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,400.00	0.00	0.00	7,219.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,500.00	0.00	0.00	7,319.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,600.00	0.00	0.00	7,419.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,681.11	0.00	0.00	7,501.00	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
NIO									
7,700.00	0.00	0.00	7,519.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,800.00	0.00	0.00	7,619.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
7,900.00	0.00	0.00	7,719.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
8,000.00	0.00	0.00	7,819.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
8,061.11	0.00	0.00	7,881.00	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
CODELL									
8,100.00	0.00	0.00	7,919.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
8,137.11	0.00	0.00	7,957.00	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
GREENHORN									
8,200.00	0.00	0.00	8,019.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
8,300.00	0.00	0.00	8,119.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
8,400.00	0.00	0.00	8,219.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
8,500.00	0.00	0.00	8,319.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00

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Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	GL 5136' & RKB 15' @ 5151.00ft (ASSUMED)
Site:	WELD_SWEETGRASS 9-14 Pad	North Reference:	True
Well:	P_Sweetgrass 16-14	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Sweetgrass 16-14		
Design:	PLAN #1 8-2-10 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)
8,505.11	0.00	0.00	8,325.00	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
JSAND									
8,600.00	0.00	0.00	8,419.89	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
8,670.11	0.00	0.00	8,490.00	-1,181.70	202.13	1,198.86	0.00	0.00	0.00
PBHL_Sweetgrass 16-14(660 FSL 660 FEL)									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_Sweetgrass 16-1-	0.00	0.00	8,490.00	-1,181.70	202.13	1,260,061.42	3,150,190.00	40° 2' 45.636 N	104° 57' 48.730 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,173.47	1,160.00	8 5/8"	8.625	11.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,420.08	3,289.00	PARKMAN				
4,975.11	4,795.00	SUSSEX				
7,681.11	7,501.00	NIO				
8,061.11	7,881.00	CODELL				
8,137.11	7,957.00	GREENHORN				
8,505.11	8,325.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
300.00	300.00	0.00	0.00	Start Build 2.00	
1,231.82	1,215.48	-148.06	25.33	Start 2811.47 hold at 1231.82 MD	
4,043.29	3,879.52	-1,033.64	176.81	Start Drop -2.00	
4,975.11	4,795.00	-1,181.70	202.13	Start 3695.00 hold at 4975.11 MD	
8,670.11	8,490.00	-1,181.70	202.13	TD at 8670.11	