

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Saddleback 18-29 pad

Saddleback 36-20

Saddleback 36-20

Plan: Saddleback 36-20 (wp01)

Standard Planning Report

27 July, 2011



Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_Saddleback 18-29 pad
 Well: Saddleback 36-20
 Wellbore: Saddleback 36-20
 Section:
 SHL:
 Design: Saddleback 36-20 (wp01)
 Latitude: 40.113164
 Longitude: -104.919448
 GL: 5015.00
 KB: 15' RKB + 5015' GL @ 5030.00ft

TVDPPath	MDPath	Formation
4164.00	4357.53	PK Depth
4569.00	4786.87	SX Depth
7327.00	7627.47	NIO Depth
7614.00	7914.47	CD Depth
7691.00	7991.47	GH Depth
8040.00	8340.47	J Depth



Azimuths to True North
 Magnetic North: 8.91°

Magnetic Field
 Strength: 52950.1snT
 Dip Angle: 66.79°
 Date: 7/26/2011
 Model: IGRF2010

WELL DETAILS: Saddleback 36-20

+N/-S	+E/-W	Northing	Ground Level: Easting	5015.00 Latitude	Longitude	Slot
0.00	0.00	1284601.29	3162372.68	40.113164	-104.919448	

CASING DETAILS

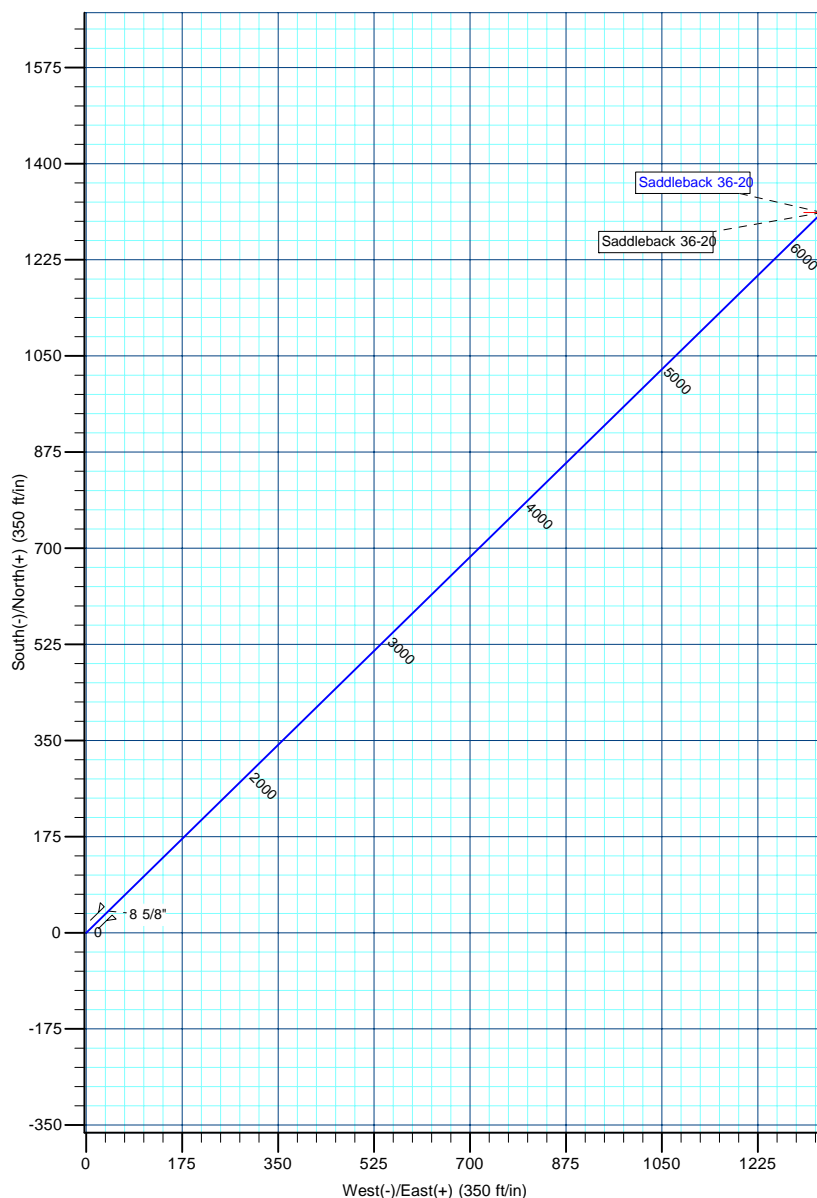
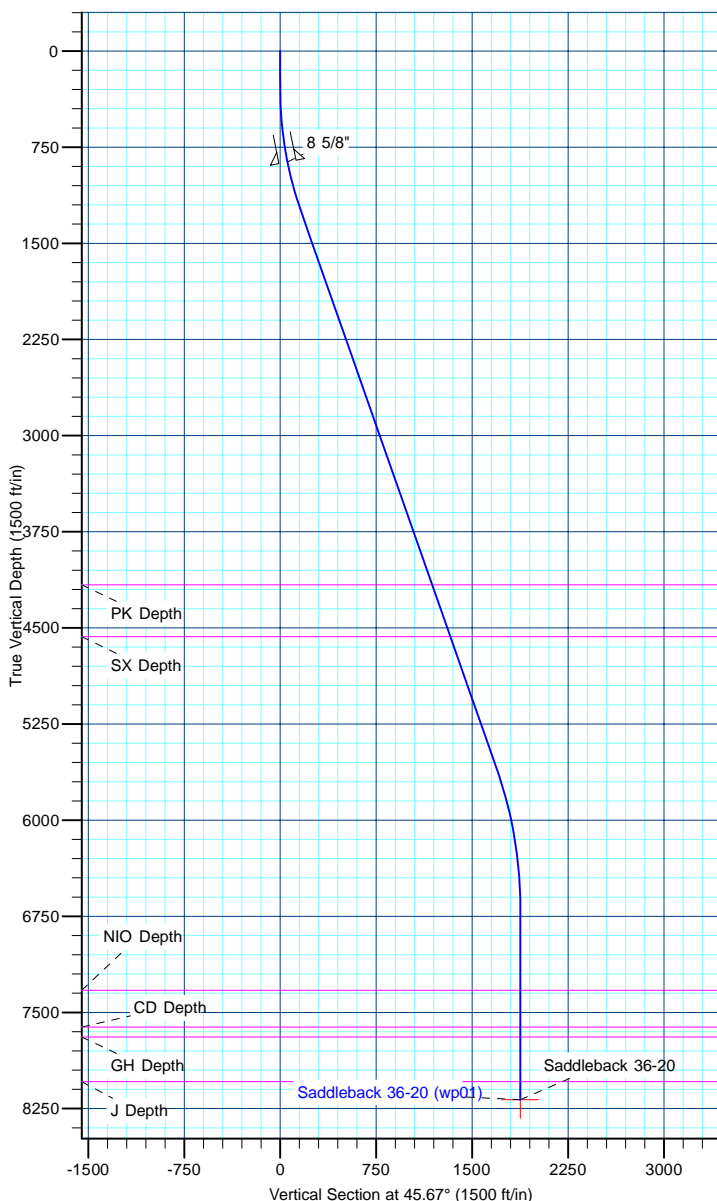
TVD	MD	Name	Size
865.00	868.73	8 5/8"	8-5/8

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Saddleback 36-20	8180.00	1311.09	1342.16	1285921.13	3163706.23	40.116763	-104.914649	

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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00
1269.43	19.39	45.67	1251.03	113.53	116.22	2.00	45.67	162.47
5872.55	19.39	45.67	5593.10	1181.34	1209.33	0.00	0.00	1690.58
6980.47	0.00	0.00	6680.00	1311.09	1342.16	1.75	180.00	1876.25
8480.47	0.00	0.00	8180.00	1311.09	1342.16	0.00	0.00	1876.25



Database:	edm5000p	Local Co-ordinate Reference:	Well Saddleback 36-20
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' RKB + 5015' GL @ 5030.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' RKB + 5015' GL @ 5030.00ft
Site:	WELD_Saddleback 18-29 pad	North Reference:	True
Well:	Saddleback 36-20	Survey Calculation Method:	Minimum Curvature
Wellbore:	Saddleback 36-20		
Design:	Saddleback 36-20 (wp01)		

Project	COLORADO NORTHERN ZONE - 83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		WELD_Saddleback 18-29 pad			
Site Position:		Northing:	1,284,591.46 ft	Latitude:	40.113137
From:	Lat/Long	Easting:	3,162,372.75 ft	Longitude:	-104.919448
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.38 °

Well		Saddleback 36-20				
Well Position	+N/-S	9.82 ft	Northing:	1,284,601.29 ft	Latitude:	40.113164
	+E/-W	0.00 ft	Easting:	3,162,372.68 ft	Longitude:	-104.919448
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,015.00 ft

Wellbore	Saddleback 36-20				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/26/2011	8.91	66.79	52,950

Design	Saddleback 36-20 (wp01)			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	45.67

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	
1,269.43	19.39	45.67	1,251.03	113.53	116.22	2.00	2.00	0.00	45.67	
5,872.55	19.39	45.67	5,593.10	1,181.34	1,209.33	0.00	0.00	0.00	0.00	
6,980.47	0.00	0.00	6,680.00	1,311.09	1,342.16	1.75	-1.75	0.00	180.00	
8,480.47	0.00	0.00	8,180.00	1,311.09	1,342.16	0.00	0.00	0.00	0.00	Saddleback 36-20

Database:	edm5000p	Local Co-ordinate Reference:	Well Saddleback 36-20
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' RKB + 5015' GL @ 5030.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' RKB + 5015' GL @ 5030.00ft
Site:	WELD_Saddleback 18-29 pad	North Reference:	True
Well:	Saddleback 36-20	Survey Calculation Method:	Minimum Curvature
Wellbore:	Saddleback 36-20		
Design:	Saddleback 36-20 (wp01)		

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	2.00	45.67	399.98	1.22	1.25	1.75	2.00	2.00	0.00
500.00	4.00	45.67	499.84	4.88	4.99	6.98	2.00	2.00	0.00
600.00	6.00	45.67	599.45	10.97	11.23	15.69	2.00	2.00	0.00
700.00	8.00	45.67	698.70	19.48	19.94	27.88	2.00	2.00	0.00
800.00	10.00	45.67	797.47	30.41	31.13	43.52	2.00	2.00	0.00
868.73	11.37	45.67	865.00	39.32	40.25	56.27	2.00	2.00	0.00
8 5/8"									
900.00	12.00	45.67	895.62	43.75	44.78	62.60	2.00	2.00	0.00
1,000.00	14.00	45.67	993.06	59.46	60.87	85.10	2.00	2.00	0.00
1,100.00	16.00	45.67	1,089.64	77.55	79.39	110.98	2.00	2.00	0.00
1,200.00	18.00	45.67	1,185.27	97.98	100.30	140.21	2.00	2.00	0.00
1,269.43	19.39	45.67	1,251.03	113.53	116.22	162.47	2.00	2.00	0.00
1,300.00	19.39	45.67	1,279.87	120.62	123.48	172.61	0.00	0.00	0.00
1,400.00	19.39	45.67	1,374.20	143.82	147.22	205.81	0.00	0.00	0.00
1,500.00	19.39	45.67	1,468.53	167.01	170.97	239.01	0.00	0.00	0.00
1,600.00	19.39	45.67	1,562.86	190.21	194.72	272.21	0.00	0.00	0.00
1,700.00	19.39	45.67	1,657.19	213.41	218.47	305.40	0.00	0.00	0.00
1,800.00	19.39	45.67	1,751.51	236.61	242.21	338.60	0.00	0.00	0.00
1,900.00	19.39	45.67	1,845.84	259.80	265.96	371.80	0.00	0.00	0.00
2,000.00	19.39	45.67	1,940.17	283.00	289.71	405.00	0.00	0.00	0.00
2,100.00	19.39	45.67	2,034.50	306.20	313.46	438.19	0.00	0.00	0.00
2,200.00	19.39	45.67	2,128.83	329.40	337.20	471.39	0.00	0.00	0.00
2,300.00	19.39	45.67	2,223.16	352.60	360.95	504.59	0.00	0.00	0.00
2,400.00	19.39	45.67	2,317.49	375.79	384.70	537.79	0.00	0.00	0.00
2,500.00	19.39	45.67	2,411.82	398.99	408.45	570.98	0.00	0.00	0.00
2,600.00	19.39	45.67	2,506.15	422.19	432.19	604.18	0.00	0.00	0.00
2,700.00	19.39	45.67	2,600.47	445.39	455.94	637.38	0.00	0.00	0.00
2,800.00	19.39	45.67	2,694.80	468.58	479.69	670.57	0.00	0.00	0.00
2,900.00	19.39	45.67	2,789.13	491.78	503.43	703.77	0.00	0.00	0.00
3,000.00	19.39	45.67	2,883.46	514.98	527.18	736.97	0.00	0.00	0.00
3,100.00	19.39	45.67	2,977.79	538.18	550.93	770.17	0.00	0.00	0.00
3,200.00	19.39	45.67	3,072.12	561.37	574.68	803.36	0.00	0.00	0.00
3,300.00	19.39	45.67	3,166.45	584.57	598.42	836.56	0.00	0.00	0.00
3,400.00	19.39	45.67	3,260.78	607.77	622.17	869.76	0.00	0.00	0.00
3,500.00	19.39	45.67	3,355.11	630.97	645.92	902.96	0.00	0.00	0.00
3,600.00	19.39	45.67	3,449.43	654.16	669.67	936.15	0.00	0.00	0.00
3,700.00	19.39	45.67	3,543.76	677.36	693.41	969.35	0.00	0.00	0.00
3,800.00	19.39	45.67	3,638.09	700.56	717.16	1,002.55	0.00	0.00	0.00
3,900.00	19.39	45.67	3,732.42	723.76	740.91	1,035.75	0.00	0.00	0.00
4,000.00	19.39	45.67	3,826.75	746.96	764.65	1,068.94	0.00	0.00	0.00
4,100.00	19.39	45.67	3,921.08	770.15	788.40	1,102.14	0.00	0.00	0.00
4,200.00	19.39	45.67	4,015.41	793.35	812.15	1,135.34	0.00	0.00	0.00
4,300.00	19.39	45.67	4,109.74	816.55	835.90	1,168.53	0.00	0.00	0.00
4,357.53	19.39	45.67	4,164.00	829.89	849.56	1,187.63	0.00	0.00	0.00
PK Depth									
4,400.00	19.39	45.67	4,204.07	839.75	859.64	1,201.73	0.00	0.00	0.00
4,500.00	19.39	45.67	4,298.39	862.94	883.39	1,234.93	0.00	0.00	0.00
4,600.00	19.39	45.67	4,392.72	886.14	907.14	1,268.13	0.00	0.00	0.00
4,700.00	19.39	45.67	4,487.05	909.34	930.89	1,301.32	0.00	0.00	0.00
4,786.88	19.39	45.67	4,569.00	929.49	951.52	1,330.16	0.00	0.00	0.00

Database:	edm5000p	Local Co-ordinate Reference:	Well Saddleback 36-20
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' RKB + 5015' GL @ 5030.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' RKB + 5015' GL @ 5030.00ft
Site:	WELD_Saddleback 18-29 pad	North Reference:	True
Well:	Saddleback 36-20	Survey Calculation Method:	Minimum Curvature
Wellbore:	Saddleback 36-20		
Design:	Saddleback 36-20 (wp01)		

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)
SX Depth									
4,800.00	19.39	45.67	4,581.38	932.54	954.63	1,334.52	0.00	0.00	0.00
4,900.00	19.39	45.67	4,675.71	955.73	978.38	1,367.72	0.00	0.00	0.00
5,000.00	19.39	45.67	4,770.04	978.93	1,002.13	1,400.92	0.00	0.00	0.00
5,100.00	19.39	45.67	4,864.37	1,002.13	1,025.88	1,434.11	0.00	0.00	0.00
5,200.00	19.39	45.67	4,958.70	1,025.33	1,049.62	1,467.31	0.00	0.00	0.00
5,300.00	19.39	45.67	5,053.03	1,048.52	1,073.37	1,500.51	0.00	0.00	0.00
5,400.00	19.39	45.67	5,147.35	1,071.72	1,097.12	1,533.71	0.00	0.00	0.00
5,500.00	19.39	45.67	5,241.68	1,094.92	1,120.86	1,566.90	0.00	0.00	0.00
5,600.00	19.39	45.67	5,336.01	1,118.12	1,144.61	1,600.10	0.00	0.00	0.00
5,700.00	19.39	45.67	5,430.34	1,141.31	1,168.36	1,633.30	0.00	0.00	0.00
5,800.00	19.39	45.67	5,524.67	1,164.51	1,192.11	1,666.50	0.00	0.00	0.00
5,872.55	19.39	45.67	5,593.10	1,181.34	1,209.33	1,690.58	0.00	0.00	0.00
5,900.00	18.91	45.67	5,619.04	1,187.63	1,215.78	1,699.58	1.75	-1.75	0.00
6,000.00	17.16	45.67	5,714.12	1,209.27	1,237.92	1,730.54	1.75	-1.75	0.00
6,100.00	15.41	45.67	5,810.11	1,228.86	1,257.98	1,758.58	1.75	-1.75	0.00
6,200.00	13.66	45.67	5,906.90	1,246.39	1,275.93	1,783.67	1.75	-1.75	0.00
6,300.00	11.91	45.67	6,004.42	1,261.85	1,291.75	1,805.80	1.75	-1.75	0.00
6,400.00	10.16	45.67	6,102.57	1,275.22	1,305.44	1,824.93	1.75	-1.75	0.00
6,500.00	8.41	45.67	6,201.25	1,286.50	1,316.98	1,841.06	1.75	-1.75	0.00
6,600.00	6.66	45.67	6,300.39	1,295.66	1,326.36	1,854.17	1.75	-1.75	0.00
6,700.00	4.91	45.67	6,399.87	1,302.70	1,333.57	1,864.25	1.75	-1.75	0.00
6,800.00	3.16	45.67	6,499.62	1,307.61	1,338.60	1,871.28	1.75	-1.75	0.00
6,900.00	1.41	45.67	6,599.54	1,310.40	1,341.45	1,875.27	1.75	-1.75	0.00
6,980.47	0.00	0.00	6,680.00	1,311.09	1,342.16	1,876.25	1.75	-1.75	0.00
7,000.00	0.00	0.00	6,699.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,100.00	0.00	0.00	6,799.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,200.00	0.00	0.00	6,899.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,300.00	0.00	0.00	6,999.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,400.00	0.00	0.00	7,099.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,500.00	0.00	0.00	7,199.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,600.00	0.00	0.00	7,299.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,627.47	0.00	0.00	7,327.00	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
NIO Depth									
7,700.00	0.00	0.00	7,399.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,800.00	0.00	0.00	7,499.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,900.00	0.00	0.00	7,599.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
7,914.47	0.00	0.00	7,614.00	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
CD Depth									
7,991.47	0.00	0.00	7,691.00	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
GH Depth									
8,000.00	0.00	0.00	7,699.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
8,100.00	0.00	0.00	7,799.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
8,200.00	0.00	0.00	7,899.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
8,300.00	0.00	0.00	7,999.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
8,340.47	0.00	0.00	8,040.00	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
J Depth									
8,400.00	0.00	0.00	8,099.53	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
8,480.47	0.00	0.00	8,180.00	1,311.09	1,342.16	1,876.25	0.00	0.00	0.00
Saddleback 36-20									

Database:	edm5000p	Local Co-ordinate Reference:	Well Saddleback 36-20
Company:	US ROCKIES REGION PLANNING	TVD Reference:	15' RKB + 5015' GL @ 5030.00ft
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	15' RKB + 5015' GL @ 5030.00ft
Site:	WELD_Saddleback 18-29 pad	North Reference:	True
Well:	Saddleback 36-20	Survey Calculation Method:	Minimum Curvature
Wellbore:	Saddleback 36-20		
Design:	Saddleback 36-20 (wp01)		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Saddleback 36-20	0.00	0.00	8,180.00	1,311.09	1,342.16	1,285,921.13	3,163,706.23	40.116763	-104.914649
- plan hits target center									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
868.73	865.00	8 5/8"		8-5/8	11

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
4,357.53	4,164.00	PK Depth				
4,786.88	4,569.00	SX Depth				
7,627.47	7,327.00	NIO Depth				
7,914.47	7,614.00	CD Depth				
7,991.47	7,691.00	GH Depth				
8,340.47	8,040.00	J Depth				