

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_Saddleback 18-29 pad**

**Saddleback 4-29**

**Saddleback 4-29**

**Plan: Saddleback 4-29 (wp01)**

## **Standard Planning Report**

**27 July, 2011**



Project: COLORADO NORTHERN ZONE - 83  
 Site: WELD\_Saddleback 18-29 pad  
 Well: Saddleback 4-29  
 Wellbore: Saddleback 4-29  
 Section:  
 SHL:  
 Design: Saddleback 4-29 (wp01)  
 Latitude: 40.113137  
 Longitude: -104.919448  
 GL: 5015.00  
 KB: 15' RKB + 5015' GL @ 5030.00ft

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4165.00	4265.80	PK Depth
4570.00	4670.80	SX Depth
7328.00	7428.80	NIO Depth
7615.00	7715.80	CD Depth
7692.00	7792.80	GH Depth
8041.00	8141.80	J Depth



Azimuths to True North  
 Magnetic North: 8.91°

Magnetic Field  
 Strength: 52950.4snT  
 Dip Angle: 66.79°  
 Date: 7/25/2011  
 Model: IGRF2010

#### WELL DETAILS: Saddleback 4-29

+N/-S	+E/-W	Northing	Ground Level: Easting	5015.00 Latitude	Longitude	Slot
0.00	0.00	1284591.44	3162372.75	40.113137	-104.919448	

#### CASING DETAILS

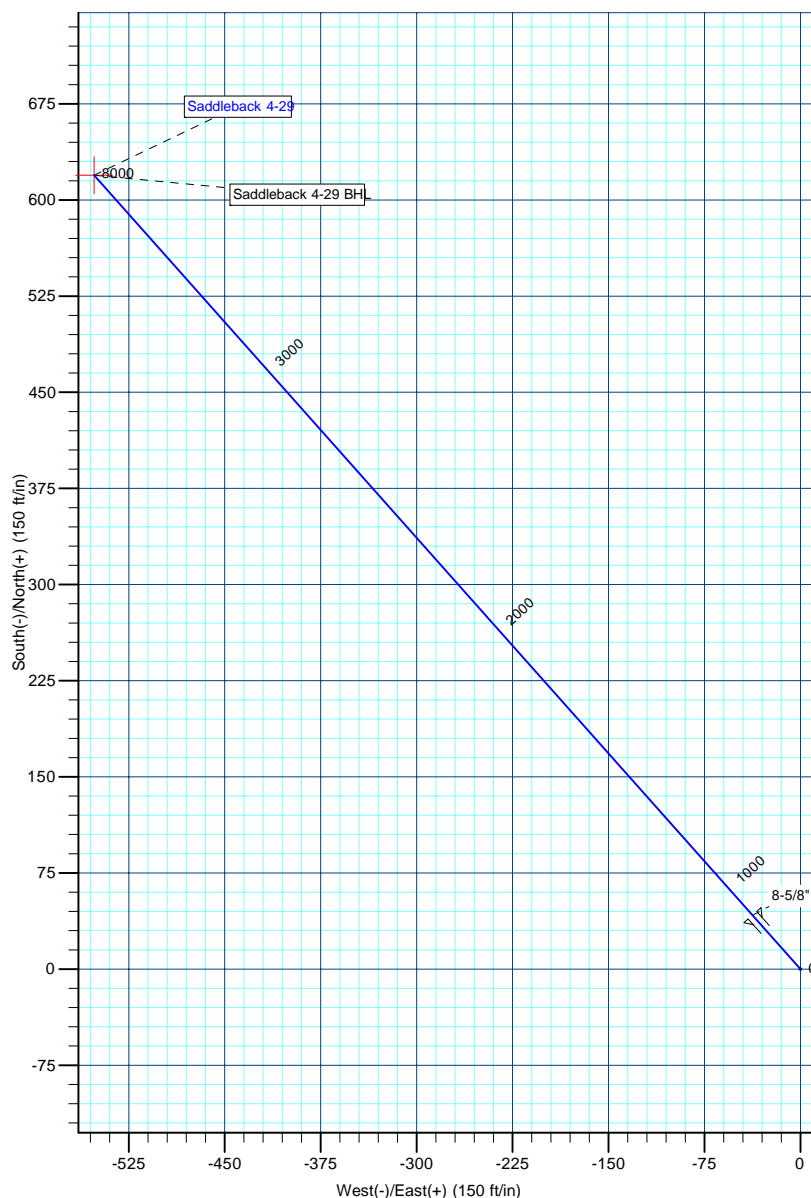
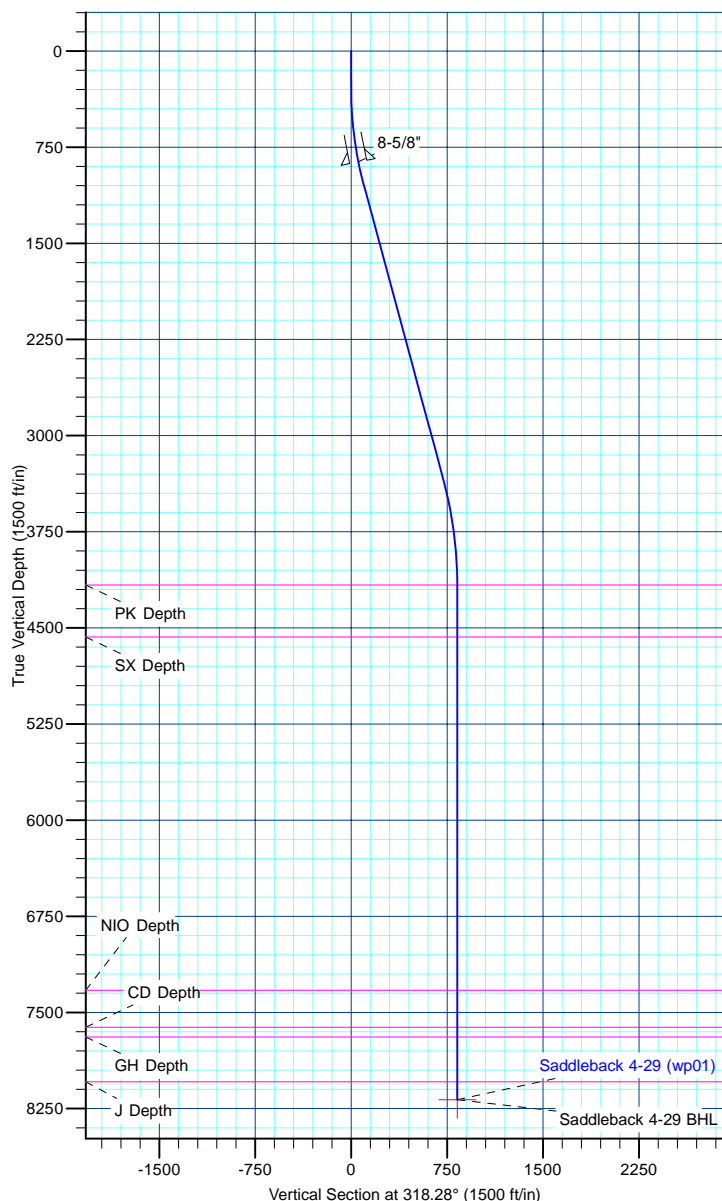
TVD	MD	Name	Size
865.00	868.73	8-5/8"	8-5/8

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
Saddleback 4-29 BHL	8181.00	619.31	-552.09	1285207.12	3161816.61	40.114837	-104.921422	

#### 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	0.38	300.00	0.00	0.00	0.00	0.38	0.00
1057.38	15.15	318.28	1048.59	74.30	-66.23	2.00	318.28	99.53
3416.22	15.15	318.28	3325.47	534.40	-476.40	0.00	0.00	715.91
4281.80	0.00	0.38	4181.00	619.31	-552.09	1.75	180.00	829.67
8281.80	0.00	0.38	8181.00	619.31	-552.09	0.00	0.00	829.67



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Saddleback 4-29
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' RKB + 5015' GL @ 5030.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' RKB + 5015' GL @ 5030.00ft
<b>Site:</b>	WELD_Saddleback 18-29 pad	<b>North Reference:</b>	True
<b>Well:</b>	Saddleback 4-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Saddleback 4-29		
<b>Design:</b>	Saddleback 4-29 (wp01)		

<b>Project</b>	COLORADO NORTHERN ZONE - 83		
<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		

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 4-29					
Well Position	+N-S	-0.03 ft	Northing:	1,284,591.43 ft	Latitude:	40.113137
	+E-W	0.00 ft	Easting:	3,162,372.75 ft	Longitude:	-104.919448
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	5,015.00 ft

<b>Wellbore</b>	Saddleback 4-29				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/25/2011	8.91	66.79	52,950

<b>Design</b>	Saddleback 4-29 (wp01)			
<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	318.28

<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	
300.00	0.00	0.38	300.00	0.00	0.00	0.00	0.00	0.00	0.38	
1,057.38	15.15	318.28	1,048.59	74.30	-66.23	2.00	2.00	0.00	318.28	
3,416.22	15.15	318.28	3,325.47	534.40	-476.40	0.00	0.00	0.00	0.00	
4,281.80	0.00	0.38	4,181.00	619.31	-552.09	1.75	-1.75	0.00	180.00	
8,281.80	0.00	0.38	8,181.00	619.31	-552.09	0.00	0.00	0.00	0.00	Saddleback 4-29 BI

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Saddleback 4-29
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' RKB + 5015' GL @ 5030.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' RKB + 5015' GL @ 5030.00ft
<b>Site:</b>	WELD_Saddleback 18-29 pad	<b>North Reference:</b>	True
<b>Well:</b>	Saddleback 4-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Saddleback 4-29		
<b>Design:</b>	Saddleback 4-29 (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	0.38	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.38	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.38	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	318.28	399.98	1.30	-1.16	1.75	2.00	2.00	0.00
500.00	4.00	318.28	499.84	5.21	-4.64	6.98	2.00	2.00	0.00
600.00	6.00	318.28	599.45	11.71	-10.44	15.69	2.00	2.00	0.00
700.00	8.00	318.28	698.70	20.81	-18.55	27.88	2.00	2.00	0.00
800.00	10.00	318.28	797.47	32.49	-28.96	43.52	2.00	2.00	0.00
868.73	11.37	318.28	865.00	42.00	-37.44	56.27	2.00	2.00	0.00
8-5/8"									
900.00	12.00	318.28	895.62	46.73	-41.66	62.60	2.00	2.00	0.00
1,000.00	14.00	318.28	993.06	63.52	-56.63	85.10	2.00	2.00	0.00
1,057.38	15.15	318.28	1,048.59	74.30	-66.23	99.53	2.00	2.00	0.00
1,100.00	15.15	318.28	1,089.73	82.61	-73.64	110.67	0.00	0.00	0.00
1,200.00	15.15	318.28	1,186.25	102.12	-91.03	136.80	0.00	0.00	0.00
1,300.00	15.15	318.28	1,282.78	121.62	-108.42	162.93	0.00	0.00	0.00
1,400.00	15.15	318.28	1,379.30	141.13	-125.81	189.06	0.00	0.00	0.00
1,500.00	15.15	318.28	1,475.83	160.63	-143.20	215.19	0.00	0.00	0.00
1,600.00	15.15	318.28	1,572.36	180.14	-160.59	241.32	0.00	0.00	0.00
1,700.00	15.15	318.28	1,668.88	199.64	-177.97	267.46	0.00	0.00	0.00
1,800.00	15.15	318.28	1,765.41	219.15	-195.36	293.59	0.00	0.00	0.00
1,900.00	15.15	318.28	1,861.93	238.65	-212.75	319.72	0.00	0.00	0.00
2,000.00	15.15	318.28	1,958.46	258.16	-230.14	345.85	0.00	0.00	0.00
2,100.00	15.15	318.28	2,054.98	277.66	-247.53	371.98	0.00	0.00	0.00
2,200.00	15.15	318.28	2,151.51	297.17	-264.92	398.11	0.00	0.00	0.00
2,300.00	15.15	318.28	2,248.03	316.68	-282.30	424.24	0.00	0.00	0.00
2,400.00	15.15	318.28	2,344.56	336.18	-299.69	450.37	0.00	0.00	0.00
2,500.00	15.15	318.28	2,441.09	355.69	-317.08	476.50	0.00	0.00	0.00
2,600.00	15.15	318.28	2,537.61	375.19	-334.47	502.63	0.00	0.00	0.00
2,700.00	15.15	318.28	2,634.14	394.70	-351.86	528.76	0.00	0.00	0.00
2,800.00	15.15	318.28	2,730.66	414.20	-369.25	554.89	0.00	0.00	0.00
2,900.00	15.15	318.28	2,827.19	433.71	-386.63	581.02	0.00	0.00	0.00
3,000.00	15.15	318.28	2,923.71	453.21	-404.02	607.15	0.00	0.00	0.00
3,100.00	15.15	318.28	3,020.24	472.72	-421.41	633.28	0.00	0.00	0.00
3,200.00	15.15	318.28	3,116.76	492.22	-438.80	659.42	0.00	0.00	0.00
3,300.00	15.15	318.28	3,213.29	511.73	-456.19	685.55	0.00	0.00	0.00
3,400.00	15.15	318.28	3,309.82	531.23	-473.58	711.68	0.00	0.00	0.00
3,416.22	15.15	318.28	3,325.47	534.40	-476.40	715.91	0.00	0.00	0.00
3,500.00	13.68	318.28	3,406.61	549.96	-490.27	736.77	1.75	-1.75	0.00
3,600.00	11.93	318.28	3,504.12	566.51	-505.02	758.93	1.75	-1.75	0.00
3,700.00	10.18	318.28	3,602.26	580.82	-517.78	778.11	1.75	-1.75	0.00
3,800.00	8.43	318.28	3,700.94	592.90	-528.55	794.28	1.75	-1.75	0.00
3,900.00	6.68	318.28	3,800.07	602.71	-537.30	807.43	1.75	-1.75	0.00
4,000.00	4.93	318.28	3,899.55	610.26	-544.03	817.55	1.75	-1.75	0.00
4,100.00	3.18	318.28	3,999.30	615.54	-548.73	824.62	1.75	-1.75	0.00
4,200.00	1.43	318.28	4,099.21	618.55	-551.41	828.65	1.75	-1.75	0.00
4,265.80	0.28	318.28	4,165.00	619.28	-552.07	829.63	1.75	-1.75	0.00
PK Depth									
4,281.80	0.00	0.38	4,181.00	619.31	-552.09	829.67	1.75	-1.75	0.00
4,300.00	0.00	0.38	4,199.20	619.31	-552.09	829.67	0.00	0.00	0.00
4,400.00	0.00	0.38	4,299.20	619.31	-552.09	829.67	0.00	0.00	0.00
4,500.00	0.00	0.38	4,399.20	619.31	-552.09	829.67	0.00	0.00	0.00
4,600.00	0.00	0.38	4,499.20	619.31	-552.09	829.67	0.00	0.00	0.00

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Saddleback 4-29
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' RKB + 5015' GL @ 5030.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' RKB + 5015' GL @ 5030.00ft
<b>Site:</b>	WELD_Saddleback 18-29 pad	<b>North Reference:</b>	True
<b>Well:</b>	Saddleback 4-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Saddleback 4-29		
<b>Design:</b>	Saddleback 4-29 (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)
4,670.80	0.00	0.38	4,570.00	619.31	-552.09	829.67	0.00	0.00	0.00
<b>SX Depth</b>									
4,700.00	0.00	0.38	4,599.20	619.31	-552.09	829.67	0.00	0.00	0.00
4,800.00	0.00	0.38	4,699.20	619.31	-552.09	829.67	0.00	0.00	0.00
4,900.00	0.00	0.38	4,799.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,000.00	0.00	0.38	4,899.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,100.00	0.00	0.38	4,999.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,200.00	0.00	0.38	5,099.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,300.00	0.00	0.38	5,199.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,400.00	0.00	0.38	5,299.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,500.00	0.00	0.38	5,399.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,600.00	0.00	0.38	5,499.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,700.00	0.00	0.38	5,599.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,800.00	0.00	0.38	5,699.20	619.31	-552.09	829.67	0.00	0.00	0.00
5,900.00	0.00	0.38	5,799.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,000.00	0.00	0.38	5,899.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,100.00	0.00	0.38	5,999.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,200.00	0.00	0.38	6,099.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,300.00	0.00	0.38	6,199.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,400.00	0.00	0.38	6,299.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,500.00	0.00	0.38	6,399.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,600.00	0.00	0.38	6,499.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,700.00	0.00	0.38	6,599.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,800.00	0.00	0.38	6,699.20	619.31	-552.09	829.67	0.00	0.00	0.00
6,900.00	0.00	0.38	6,799.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,000.00	0.00	0.38	6,899.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,100.00	0.00	0.38	6,999.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,200.00	0.00	0.38	7,099.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,300.00	0.00	0.38	7,199.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,400.00	0.00	0.38	7,299.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,428.80	0.00	0.38	7,328.00	619.31	-552.09	829.67	0.00	0.00	0.00
<b>NIO Depth</b>									
7,500.00	0.00	0.38	7,399.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,600.00	0.00	0.38	7,499.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,700.00	0.00	0.38	7,599.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,715.80	0.00	0.38	7,615.00	619.31	-552.09	829.67	0.00	0.00	0.00
<b>CD Depth</b>									
7,792.80	0.00	0.38	7,692.00	619.31	-552.09	829.67	0.00	0.00	0.00
<b>GH Depth</b>									
7,800.00	0.00	0.38	7,699.20	619.31	-552.09	829.67	0.00	0.00	0.00
7,900.00	0.00	0.38	7,799.20	619.31	-552.09	829.67	0.00	0.00	0.00
8,000.00	0.00	0.38	7,899.20	619.31	-552.09	829.67	0.00	0.00	0.00
8,100.00	0.00	0.38	7,999.20	619.31	-552.09	829.67	0.00	0.00	0.00
8,141.80	0.00	0.38	8,041.00	619.31	-552.09	829.67	0.00	0.00	0.00
<b>J Depth</b>									
8,200.00	0.00	0.38	8,099.20	619.31	-552.09	829.67	0.00	0.00	0.00
8,281.80	0.00	0.38	8,181.00	619.31	-552.09	829.67	0.00	0.00	0.00
<b>Saddleback 4-29 BHL</b>									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well Saddleback 4-29
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	15' RKB + 5015' GL @ 5030.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	15' RKB + 5015' GL @ 5030.00ft
<b>Site:</b>	WELD_Saddleback 18-29 pad	<b>North Reference:</b>	True
<b>Well:</b>	Saddleback 4-29	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Saddleback 4-29		
<b>Design:</b>	Saddleback 4-29 (wp01)		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Saddleback 4-29 BHL	0.00	0.37	8,181.00	619.31	-552.09	1,285,207.12	3,161,816.61	40.114837	-104.921422
- 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)				(°)	(°)
4,265.80	4,165.00	PK Depth				
4,670.80	4,570.00	SX Depth				
7,428.80	7,328.00	NIO Depth				
7,715.80	7,615.00	CD Depth				
7,792.80	7,692.00	GH Depth				
8,141.80	8,041.00	J Depth			0.00	