



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well SHAVETAIL FEDERAL 28-44
Company:	Coachman Energy Operating Company, LLC	TVD Reference:	KB=15' @ 5605.0usft (Original Well Elev)
Project:	RIO BLANCO COUNTY, CO	MD Reference:	KB=15' @ 5605.0usft (Original Well Elev)
Site:	S28-T1N-R103W	North Reference:	True
Well:	SHAVETAIL FEDERAL 28-44	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Project	RIO BLANCO COUNTY, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S28-T1N-R103W			
Site Position:		Northing:	1,270,226.01 usft	Latitude:	40.023470
From:	Lat/Long	Easting:	2,033,109.00 usft	Longitude:	-108.953350
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-2.23 °

Well	SHAVETAIL FEDERAL 28-44					
Well Position	+N/-S	0.0 usft	Northing:	1,270,226.00 usft	Latitude:	40.023470
	+E/-W	0.0 usft	Easting:	2,033,109.00 usft	Longitude:	-108.953350
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	5,590.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/22/2012	10.76	65.97	52,343

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	270.00

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,301.0	6.02	270.00	2,300.5	0.0	-15.8	2.00	2.00	0.00	270.00	
4,713.9	6.02	270.00	4,700.0	0.0	-268.9	0.00	0.00	0.00	0.00	SHAVETAIL FEDERA

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Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	MESAVERDE
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	8 5/8"
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	KOP @ 2000'
2,100.0	2.00	270.00	2,100.0	0.0	-1.7	1.7	2.00	2.00	
2,200.0	4.00	270.00	2,199.8	0.0	-7.0	7.0	2.00	2.00	
2,300.0	6.00	270.00	2,299.5	0.0	-15.7	15.7	2.00	2.00	
2,301.0	6.02	270.00	2,300.5	0.0	-15.8	15.8	2.00	2.00	EOB; INC=6.02°
2,400.0	6.02	270.00	2,398.9	0.0	-26.2	26.2	0.00	0.00	
2,500.0	6.02	270.00	2,498.3	0.0	-36.7	36.7	0.00	0.00	
2,600.0	6.02	270.00	2,597.8	0.0	-47.2	47.2	0.00	0.00	
2,700.0	6.02	270.00	2,697.2	0.0	-57.6	57.6	0.00	0.00	
2,800.0	6.02	270.00	2,796.7	0.0	-68.1	68.1	0.00	0.00	
2,900.0	6.02	270.00	2,896.1	0.0	-78.6	78.6	0.00	0.00	
2,928.0	6.02	270.00	2,924.0	0.0	-81.6	81.6	0.00	0.00	MANCOS SHALE
3,000.0	6.02	270.00	2,995.6	0.0	-89.1	89.1	0.00	0.00	
3,100.0	6.02	270.00	3,095.0	0.0	-99.6	99.6	0.00	0.00	
3,180.4	6.02	270.00	3,175.0	0.0	-108.0	108.0	0.00	0.00	CASTLEGATE
3,200.0	6.02	270.00	3,194.5	0.0	-110.1	110.1	0.00	0.00	
3,300.0	6.02	270.00	3,293.9	0.0	-120.6	120.6	0.00	0.00	
3,400.0	6.02	270.00	3,393.4	0.0	-131.1	131.1	0.00	0.00	
3,500.0	6.02	270.00	3,492.8	0.0	-141.5	141.5	0.00	0.00	
3,600.0	6.02	270.00	3,592.3	0.0	-152.0	152.0	0.00	0.00	
3,700.0	6.02	270.00	3,691.7	0.0	-162.5	162.5	0.00	0.00	
3,800.0	6.02	270.00	3,791.2	0.0	-173.0	173.0	0.00	0.00	
3,900.0	6.02	270.00	3,890.6	0.0	-183.5	183.5	0.00	0.00	
4,000.0	6.02	270.00	3,990.1	0.0	-194.0	194.0	0.00	0.00	
4,100.0	6.02	270.00	4,089.5	0.0	-204.5	204.5	0.00	0.00	
4,200.0	6.02	270.00	4,189.0	0.0	-215.0	215.0	0.00	0.00	
4,300.0	6.02	270.00	4,288.4	0.0	-225.4	225.4	0.00	0.00	
4,400.0	6.02	270.00	4,387.9	0.0	-235.9	235.9	0.00	0.00	
4,465.5	6.02	270.00	4,453.0	0.0	-242.8	242.8	0.00	0.00	MANCOS B
4,500.0	6.02	270.00	4,487.3	0.0	-246.4	246.4	0.00	0.00	
4,578.1	6.02	270.00	4,565.0	0.0	-254.6	254.6	0.00	0.00	BASE MANCOS B
4,600.0	6.02	270.00	4,586.8	0.0	-256.9	256.9	0.00	0.00	

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Well:	SHAVETAIL FEDERAL 28-44	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,700.0	6.02	270.00	4,686.2	0.0	-267.4	267.4	0.00	0.00	
4,713.9	6.02	270.00	4,700.0	0.0	-268.9	268.9	0.00	0.00	TD at 4713.9 - SHAVETAIL FEDERAL 28-44 PE

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHAVETAIL FEDERAL 2	0.00	0.00	4,700.0	0.0	-268.9	1,270,236.48	2,032,840.35	40.023470	-108.954310
- plan hits target center									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
500.0	500.0	8 5/8"	8-5/8	12-1/4	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
300.0	300.0	MESAVERDE		0.00		
2,928.0	2,924.0	MANCOS SHALE		0.00		
3,180.4	3,175.0	CASTLEGATE		0.00		
4,465.5	4,453.0	MANCOS B		0.00		
4,578.1	4,565.0	BASE MANCOS B		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
2,000.0	2,000.0	0.0	0.0	KOP @ 2000'	
2,301.0	2,300.5	0.0	-15.8	EOB; INC=6.02°	
4,713.9	4,700.0	0.0	-268.9	TD at 4713.9	