

Whiting Oil and Gas Corporation

Weld County, CO

Sec. 33-T10N-R58W (Razor #33N Pad)

Razor #33N-2805

Plan D

Plan: Rev D0_ST-1

Sperry Drilling Services

Proposal Report

17 December, 2014

Well Coordinates: 1,534,411.26 N, 3,450,624.67 E (40° 47' 20.37" N, 103° 52' 21.32" W)

Ground Level: 4,723.00 usft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Geodetic Scale Factor Applied

Version: 5000.1 Build: 70

Centered on Well Razor #33N-2805

KB 17 ft @ 4740.00usft (Xtreme 18)

N

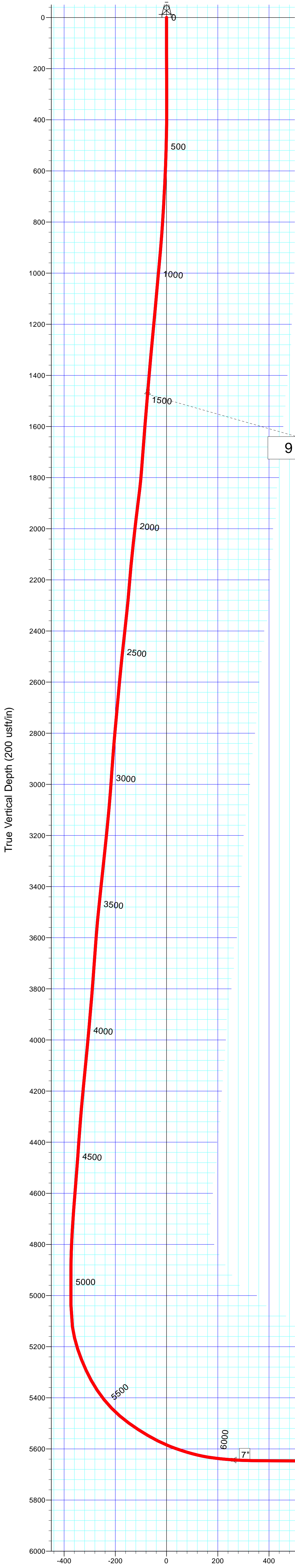
True

API - US Survey Feet - Custom

HALLIBURTON

Project: Weld County, CO
Site: Sec. 33-T10N-R58W (Razor #33N Pad)
Well: Razor #33N-2805
Wellbore: Plan D
Plan: Rev D0_ST-1

Whiting Oil and Gas Corporation



SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	
1	9985.00	89.11	0.73	5643.18	4141.36	-527.59	0.00	0.00	4168.75		
2	10029.66	86.75	2.00	5644.79	4185.97	-526.53	6.00	151.75	4213.17		
3	10129.86	87.00	359.00	5650.25	4286.01	-525.65	3.00	-85.31	4312.87		
4	10160.81	87.49	359.38	5651.74	4316.92	-526.09	2.00	38.17	4343.74		
5	10919.26	87.49	359.38	5685.00	5074.60	-534.25	0.00	0.00	5100.00		
6	10975.26	88.40	0.03	5687.01	5130.56	-534.54	2.00	35.00	5155.84		
7	11621.40	88.40	0.03	5705.00	5776.45	-534.25	0.00	0.00	5800.00		
8	11703.35	90.04	360.00	5706.11	5858.39	-534.23	2.00	-0.92	5881.72		
	13179.06	90.04	360.00	5705.00	7334.10	-534.25	0.00	0.00	7353.53	Razor #33N-2805_Rev D0_BHL Tgt	

Plan: Rev D0_ST-1 (Razor #33N-2805/Plan D)

Created By: Kansa B. Becker

Date: 18:00, December 17 2014

Checked: _____

Date: _____

Reviewed: _____

Date: _____

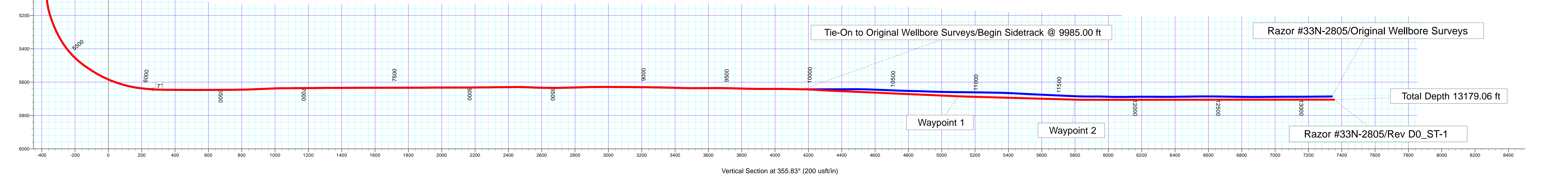
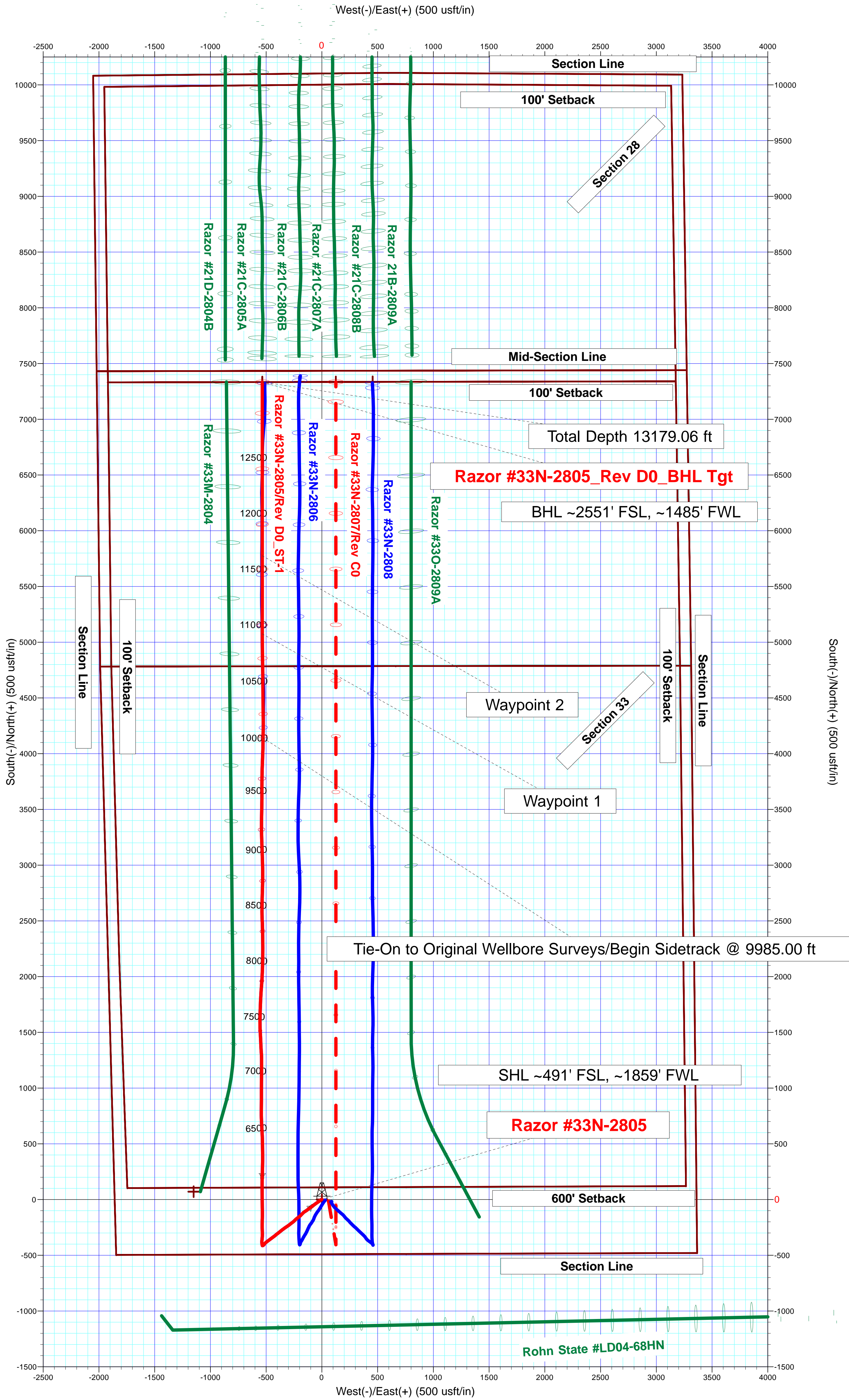
Approved: _____

Date: _____

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M

Azimuths to True North
Magnetic Field
Magnetic North: 8.03°
Strength: 52945.6snT
Dip Angle: 67.37°
Date: 12/4/2014
Model: BGGM2014



Plan Report for Razor #33N-2805 - Rev D0_ST-1

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	Toolface Azimuth (°)
9,985.00	89.11	0.73	5,643.18	4,141.36	-527.59	4,168.75	0.00	0.00	0.00	0.00
Tie-On to Original Wellbore Surveys/Begin Sidetrack @ 9985.00 ft										
10,000.00	88.32	1.16	5,643.51	4,156.35	-527.34	4,183.68	6.00	-5.29	2.84	151.75
10,029.66	86.75	2.00	5,644.79	4,185.97	-526.53	4,213.17	6.00	-5.28	2.85	151.74
10,100.00	86.92	359.89	5,648.67	4,256.19	-525.37	4,283.12	3.00	0.25	-2.99	-85.31
10,129.86	87.00	359.00	5,650.25	4,286.01	-525.65	4,312.87	3.00	0.25	-2.99	-85.20
10,160.81	87.49	359.38	5,651.74	4,316.92	-526.09	4,343.74	2.00	1.57	1.24	38.17
10,200.00	87.49	359.38	5,653.46	4,356.07	-526.51	4,382.81	0.00	0.00	0.00	180.00
10,300.00	87.49	359.38	5,657.85	4,455.97	-527.59	4,482.52	0.00	0.00	0.00	0.00
10,400.00	87.49	359.38	5,662.23	4,555.87	-528.66	4,582.24	0.00	0.00	0.00	0.00
10,500.00	87.49	359.38	5,666.62	4,655.77	-529.74	4,681.95	0.00	0.00	0.00	0.00
10,600.00	87.49	359.38	5,671.00	4,755.66	-530.82	4,781.66	0.00	0.00	0.00	0.00
10,700.00	87.49	359.38	5,675.39	4,855.56	-531.89	4,881.37	0.00	0.00	0.00	0.00
10,800.00	87.49	359.38	5,679.77	4,955.46	-532.97	4,981.09	0.00	0.00	0.00	0.00
10,900.00	87.49	359.38	5,684.16	5,055.36	-534.04	5,080.80	0.00	0.00	0.00	0.00
10,919.26	87.49	359.38	5,685.00	5,074.60	-534.25	5,100.00	0.00	0.00	0.00	0.00
Waypoint 1										
10,975.26	88.40	0.03	5,687.01	5,130.56	-534.54	5,155.84	2.00	1.64	1.15	35.00
11,000.00	88.40	0.03	5,687.70	5,155.29	-534.53	5,180.50	0.00	0.00	0.00	0.00
11,100.00	88.40	0.03	5,690.48	5,255.25	-534.48	5,280.20	0.00	0.00	0.00	0.00
11,200.00	88.40	0.03	5,693.27	5,355.21	-534.44	5,379.89	0.00	0.00	0.00	0.00
11,300.00	88.40	0.03	5,696.05	5,455.17	-534.39	5,479.58	0.00	0.00	0.00	0.00
11,400.00	88.40	0.03	5,698.83	5,555.14	-534.35	5,579.28	0.00	0.00	0.00	0.00
11,500.00	88.40	0.03	5,701.62	5,655.10	-534.30	5,678.97	0.00	0.00	0.00	0.00
11,600.00	88.40	0.03	5,704.40	5,755.06	-534.26	5,778.66	0.00	0.00	0.00	0.00
11,621.40	88.40	0.03	5,705.00	5,776.45	-534.25	5,800.00	0.00	0.00	0.00	0.00
Waypoint 2										
11,700.00	89.98	0.00	5,706.11	5,855.04	-534.23	5,878.38	2.00	2.00	-0.03	-0.92
11,703.35	90.04	360.00	5,706.11	5,858.39	-534.23	5,881.72	2.00	2.00	-0.03	-0.92
11,800.00	90.04	360.00	5,706.04	5,955.04	-534.23	5,978.12	0.00	0.00	0.00	0.00
11,900.00	90.04	360.00	5,705.96	6,055.04	-534.23	6,077.85	0.00	0.00	0.00	0.00
12,000.00	90.04	360.00	5,705.89	6,155.04	-534.24	6,177.59	0.00	0.00	0.00	0.00
12,100.00	90.04	360.00	5,705.81	6,255.04	-534.24	6,277.32	0.00	0.00	0.00	0.00
12,200.00	90.04	360.00	5,705.74	6,355.04	-534.24	6,377.06	0.00	0.00	0.00	0.00
12,300.00	90.04	360.00	5,705.66	6,455.04	-534.24	6,476.79	0.00	0.00	0.00	0.00
12,400.00	90.04	360.00	5,705.59	6,555.04	-534.24	6,576.53	0.00	0.00	0.00	0.00
12,500.00	90.04	360.00	5,705.51	6,655.04	-534.24	6,676.27	0.00	0.00	0.00	0.00
12,600.00	90.04	360.00	5,705.44	6,755.04	-534.24	6,776.00	0.00	0.00	0.00	0.00
12,700.00	90.04	360.00	5,705.36	6,855.04	-534.24	6,875.74	0.00	0.00	0.00	0.00
12,800.00	90.04	360.00	5,705.29	6,955.04	-534.25	6,975.47	0.00	0.00	0.00	0.00
12,900.00	90.04	360.00	5,705.21	7,055.04	-534.25	7,075.21	0.00	0.00	0.00	0.00
13,000.00	90.04	360.00	5,705.13	7,155.04	-534.25	7,174.94	0.00	0.00	0.00	0.00
13,100.00	90.04	360.00	5,705.06	7,255.04	-534.25	7,274.68	0.00	0.00	0.00	0.00
13,179.06	90.04	360.00	5,705.00	7,334.10	-534.25	7,353.53	0.00	0.00	0.00	0.00
Total Depth 13179.06 ft										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,985.00	5,643.18	4,141.36	-527.59	Tie-On to Original Wellbore Surveys/Begin Sidetrack @ 9985.00 ft
10,919.26	5,685.00	4,185.97	-526.53	Waypoint 1
11,621.40	5,705.00	4,286.01	-525.65	Waypoint 2
13,179.06	5,705.00	4,316.92	-526.09	Total Depth 13179.06 ft

Plan Report for Razor #33N-2805 - Rev D0_ST-1**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	Origin +E/-W (usft)	Start TVD (usft)
Target	Razor #33N-2805_Rev D0_BHL Tgt	355.83	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
140.00	1,484.00	Surface_MWD+IFR1+MS+sag	MWD+IFR1+MS+sag
1,611.00	6,032.00	Vertical & Build_MWD+IFR1+MS+sag	MWD+IFR1+MS+sag
6,105.00	9,985.00	Lateral_MWD+IFR1+MS+sag	MWD+IFR1+MS+sag
9,985.00	13,179.03	Rev D0_ST-1	MWD+IFR1+MS+sag

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,484.00	1,473.69	9 5/8"	9-5/8	13-1/2
6,075.00	5,643.62	7"	7	8-3/4

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Razor #33M (Pad)_SB	10.00	70.69	-1,150.01	Polygon
Razor #33M (Pad)_SL	10.00	70.69	-1,150.01	Polygon
Razor #33N-2805_Rev D0_BHL Tgt	5,705.00	7,334.10	-534.25	Point

Directional Difficulty Index

Average Dogleg over Survey:	0.28 °/100usft	Maximum Dogleg over Survey:	6.00 °/100usft at 10,029.66 usft
Net Tortousity applicable to Plans:	0.28 °/100usft	Directional Difficulty Index:	6.658

Audit Info

North Reference Sheet for Sec. 33-T10N-R58W (Razor #33N Pad) - Razor #33N-2805 - Plan D

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to KB 17 ft @ 4740.00usft (Xtreme 18). Northing and Easting are relative to Razor #33N-2805

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -105.50°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 1.00000092

Grid Coordinates of Well: 1,534,411.26 usft N, 3,450,624.67 usft E

Geographical Coordinates of Well: 40° 47' 20.37" N, 103° 52' 21.32" W

Grid Convergence at Surface is: 1.05°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,179.06usft the Bottom Hole Displacement is 7,353.53usft in the Direction of 355.83° (True).

Magnetic Convergence at surface is: -6.98° (4 December 2014, , BGGM2014)

