ENSIGN Directional

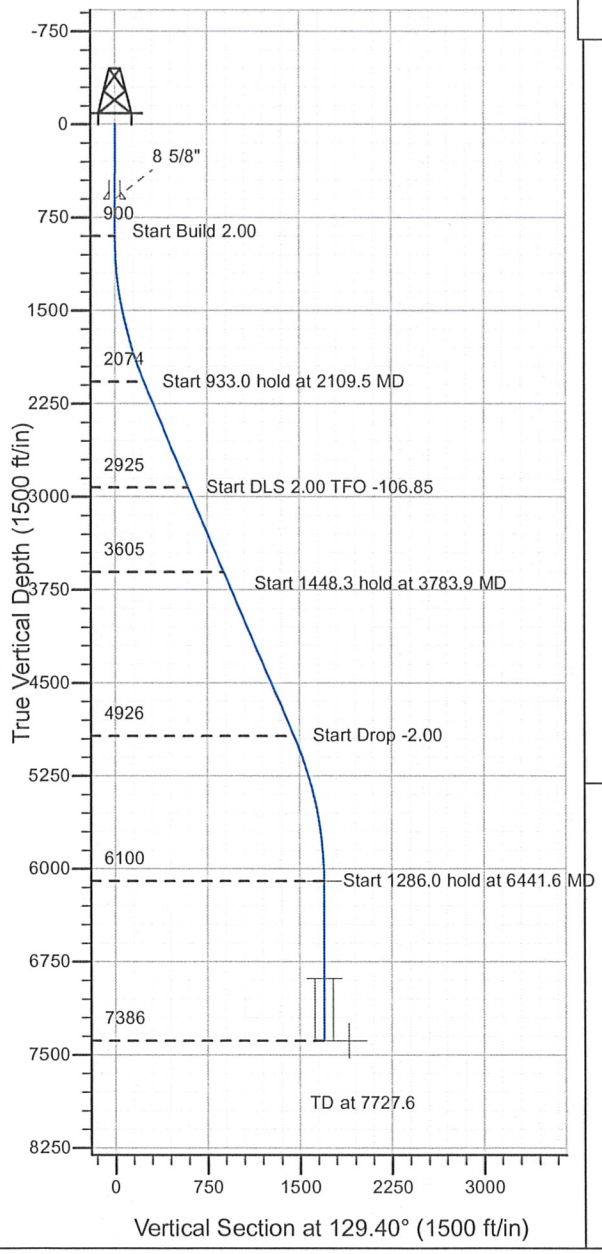
Well Name: Five Rivers K16-30D

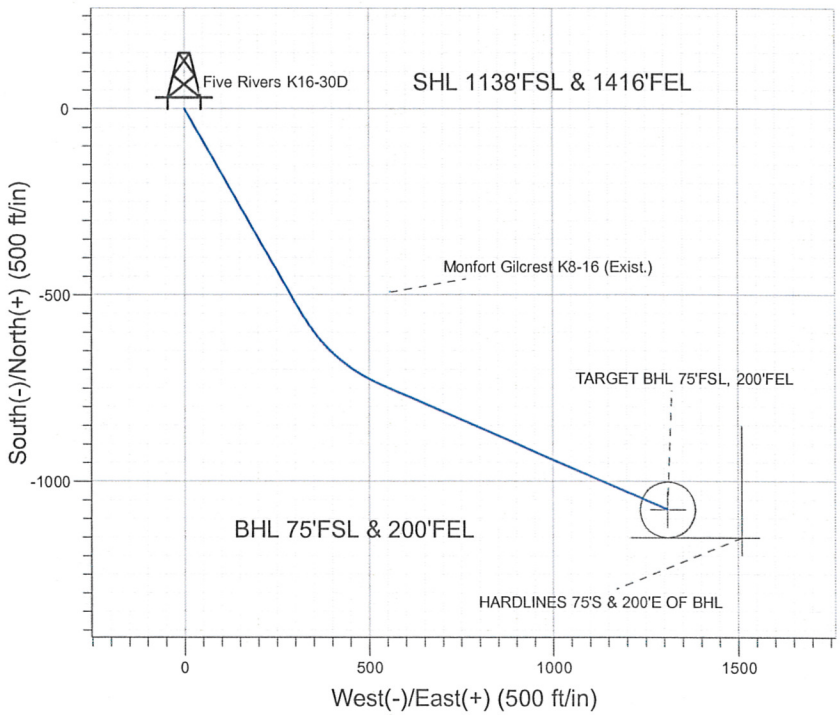
Surface Location: Five Rivers K08-24D Pad Sec.8-T4N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4703.0

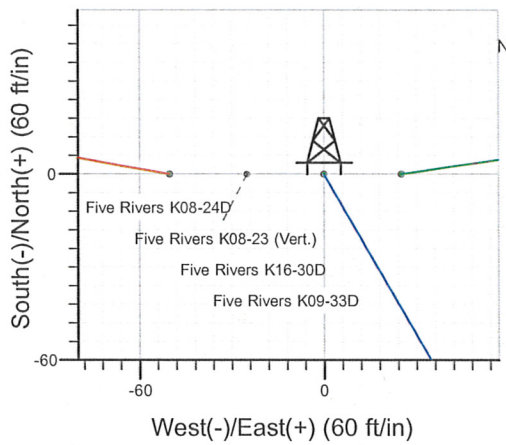
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1360961.71	3195912.51	40° 19' 19.596 N	104° 47' 50.532 W	

Original Well Elev WELL @ 4716.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO







Five Rivers K08-24D Pad Sec.8-T4N-R66W
Five Rivers K16-30D
Noble Five Rivers K16-30D Plan #1 (05-13-10)
11:48, May 15 2010

Azimuths to True North
Magnetic North: 9.02°

Magnetic Field
Strength: 53203.0snT
Dip Angle: 67.02°
Date: 5/13/2010
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FSL, 200'FEL	6100.0	-1075.7	1309.6	40° 19' 8.966 N	104° 47' 33.625 W	Point
TARGET CIRCLE 75'FSL, 200'FEL	6886.0	-1075.7	1309.6	40° 19' 8.966 N	104° 47' 33.625 W	Circle (Radius: 75.0)
HARDLINES 75'S & 200'E OF BHL	7386.0	-1150.7	1509.6	40° 19' 8.224 N	104° 47' 31.043 W	Polygon

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	2109.5	24.19	150.00	2073.9	-217.9	125.8	2.00	150.00	235.5	
4	3042.5	24.19	150.00	2925.0	-549.0	316.9	0.00	0.00	593.3	
5	3783.9	24.19	113.29	3605.1	-741.6	533.6	2.00	-106.85	883.0	
6	5232.2	24.19	113.29	4926.2	-976.2	1078.6	0.00	0.00	1453.2	
7	6441.6	0.00	0.00	6100.0	-1075.7	1309.6	2.00	180.00	1694.8	TARGET BHL 75'FSL, 200'FEL
8	7727.6	0.00	0.00	7386.0	-1075.7	1309.6	0.00	0.00	1694.8	

ENSIGN
Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.8-T4N-R66W
Five Rivers K08-24D Pad Sec.8-T4N-R66W
Five Rivers K16-30D

Wellbore #1

Plan: Noble Five Rivers K16-30D Plan #1 (05-13-10)

Standard Planning Report

15 May, 2010

noble energy

Database:	EDM den0-adp01 Server Data	**Local Co-ordinate Reference:**	Well Five Rivers K16-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.8-T4N-R66W	**MD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Site:	Five Rivers K08-24D Pad Sec.8-T4N-R66W	**North Reference:**	True
Well:	Five Rivers K16-30D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Five Rivers K16-30D Plan #1 (05-13-10)		

Project SEC.8-T4N-R66W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Five Rivers K08-24D Pad Sec.8-T4N-R66W

Site Position:		**Northing:**	1,360,961.32 ft	**Latitude:**	40° 19' 19.596 N
From:	Lat/Long	**Easting:**	3,195,862.33 ft	**Longitude:**	104° 47' 51.180 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.45 °

Well Five Rivers K16-30D

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,360,961.71 ft	**Latitude:**	40° 19' 19.596 N
	+E/-W	50.2 ft	**Easting:**	3,195,912.51 ft	**Longitude:**	104° 47' 50.532 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,703.0 ft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	5/13/2010	9.02	67.02	53,203

Design Noble Five Rivers K16-30D Plan #1 (05-13-10)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**	
	0.0	0.0	0.0	129.40	

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,109.5	24.19	150.00	2,073.9	-217.9	125.8	2.00	2.00	0.00	150.00	
3,042.5	24.19	150.00	2,925.0	-549.0	316.9	0.00	0.00	0.00	0.00	
3,783.9	24.19	113.29	3,605.1	-741.6	533.6	2.00	0.00	-4.95	-106.85	
5,232.2	24.19	113.29	4,926.2	-976.2	1,078.6	0.00	0.00	0.00	0.00	
6,441.6	0.00	0.00	6,100.0	-1,075.7	1,309.6	2.00	-2.00	0.00	180.00	TARGET BHL 75'F
7,727.6	0.00	0.00	7,386.0	-1,075.7	1,309.6	0.00	0.00	0.00	0.00	

Database:	EDM den0-adp01 Server Data	**Local Co-ordinate Reference:**	Well Five Rivers K16-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.8-T4N-R66W	**MD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Site:	Five Rivers K08-24D Pad Sec.8-T4N-R66W	**North Reference:**	True
Well:	Five Rivers K16-30D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Five Rivers K16-30D Plan #1 (05-13-10)		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.40	150.00	920.0	-0.1	0.0	0.1	2.00	2.00	0.00
960.0	1.20	150.00	960.0	-0.5	0.3	0.6	2.00	2.00	0.00
1,000.0	2.00	150.00	1,000.0	-1.5	0.9	1.6	2.00	2.00	0.00
1,040.0	2.80	150.00	1,039.9	-3.0	1.7	3.2	2.00	2.00	0.00
1,080.0	3.60	150.00	1,079.9	-4.9	2.8	5.3	2.00	2.00	0.00
1,120.0	4.40	150.00	1,119.8	-7.3	4.2	7.9	2.00	2.00	0.00
1,160.0	5.20	150.00	1,159.6	-10.2	5.9	11.0	2.00	2.00	0.00
1,200.0	6.00	150.00	1,199.5	-13.6	7.8	14.7	2.00	2.00	0.00
1,240.0	6.80	150.00	1,239.2	-17.5	10.1	18.9	2.00	2.00	0.00
1,280.0	7.60	150.00	1,278.9	-21.8	12.6	23.6	2.00	2.00	0.00
1,320.0	8.40	150.00	1,318.5	-26.6	15.4	28.8	2.00	2.00	0.00
1,360.0	9.20	150.00	1,358.0	-31.9	18.4	34.5	2.00	2.00	0.00
1,400.0	10.00	150.00	1,397.5	-37.7	21.8	40.7	2.00	2.00	0.00
1,440.0	10.80	150.00	1,436.8	-43.9	25.4	47.5	2.00	2.00	0.00
1,480.0	11.60	150.00	1,476.0	-50.7	29.3	54.8	2.00	2.00	0.00
1,520.0	12.40	150.00	1,515.2	-57.9	33.4	62.6	2.00	2.00	0.00
1,560.0	13.20	150.00	1,554.2	-65.6	37.8	70.9	2.00	2.00	0.00
1,600.0	14.00	150.00	1,593.1	-73.7	42.5	79.7	2.00	2.00	0.00
1,640.0	14.80	150.00	1,631.8	-82.3	47.5	89.0	2.00	2.00	0.00
1,680.0	15.60	150.00	1,670.4	-91.4	52.8	98.8	2.00	2.00	0.00
1,720.0	16.40	150.00	1,708.8	-100.9	58.3	109.1	2.00	2.00	0.00
1,760.0	17.20	150.00	1,747.1	-111.0	64.1	119.9	2.00	2.00	0.00
1,800.0	18.00	150.00	1,785.3	-121.4	70.1	131.2	2.00	2.00	0.00
1,840.0	18.80	150.00	1,823.2	-132.4	76.4	143.1	2.00	2.00	0.00
1,880.0	19.60	150.00	1,861.0	-143.8	83.0	155.4	2.00	2.00	0.00
1,920.0	20.40	150.00	1,898.6	-155.6	89.8	168.2	2.00	2.00	0.00
1,960.0	21.20	150.00	1,936.0	-167.9	96.9	181.5	2.00	2.00	0.00
2,000.0	22.00	150.00	1,973.2	-180.7	104.3	195.3	2.00	2.00	0.00
2,040.0	22.80	150.00	2,010.2	-193.9	111.9	209.5	2.00	2.00	0.00

Database:	EDM den0-adp01 Server Data	**Local Co-ordinate Reference:**	Well Five Rivers K16-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.8-T4N-R66W	**MD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Site:	Five Rivers K08-24D Pad Sec.8-T4N-R66W	**North Reference:**	True
Well:	Five Rivers K16-30D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Five Rivers K16-30D Plan #1 (05-13-10)		

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)
2,080.0	23.60	150.00	2,046.9	-207.5	119.8	224.3	2.00	2.00	0.00
2,109.5	24.19	150.00	2,073.9	-217.9	125.8	235.5	2.00	2.00	0.00
2,120.0	24.19	150.00	2,083.5	-221.6	127.9	239.5	0.00	0.00	0.00
2,160.0	24.19	150.00	2,120.0	-235.8	136.1	254.8	0.00	0.00	0.00
2,200.0	24.19	150.00	2,156.4	-250.0	144.3	270.2	0.00	0.00	0.00
2,240.0	24.19	150.00	2,192.9	-264.2	152.5	285.5	0.00	0.00	0.00
2,280.0	24.19	150.00	2,229.4	-278.4	160.7	300.9	0.00	0.00	0.00
2,320.0	24.19	150.00	2,265.9	-292.5	168.9	316.2	0.00	0.00	0.00
2,360.0	24.19	150.00	2,302.4	-306.7	177.1	331.5	0.00	0.00	0.00
2,400.0	24.19	150.00	2,338.9	-320.9	185.3	346.9	0.00	0.00	0.00
2,440.0	24.19	150.00	2,375.4	-335.1	193.5	362.2	0.00	0.00	0.00
2,480.0	24.19	150.00	2,411.9	-349.3	201.7	377.6	0.00	0.00	0.00
2,520.0	24.19	150.00	2,448.3	-363.5	209.9	392.9	0.00	0.00	0.00
2,560.0	24.19	150.00	2,484.8	-377.7	218.1	408.3	0.00	0.00	0.00
2,600.0	24.19	150.00	2,521.3	-391.9	226.3	423.6	0.00	0.00	0.00
2,640.0	24.19	150.00	2,557.8	-406.1	234.5	438.9	0.00	0.00	0.00
2,680.0	24.19	150.00	2,594.3	-420.3	242.7	454.3	0.00	0.00	0.00
2,720.0	24.19	150.00	2,630.8	-434.5	250.9	469.6	0.00	0.00	0.00
2,760.0	24.19	150.00	2,667.3	-448.7	259.1	485.0	0.00	0.00	0.00
2,800.0	24.19	150.00	2,703.8	-462.9	267.2	500.3	0.00	0.00	0.00
2,840.0	24.19	150.00	2,740.2	-477.1	275.4	515.7	0.00	0.00	0.00
2,880.0	24.19	150.00	2,776.7	-491.3	283.6	531.0	0.00	0.00	0.00
2,920.0	24.19	150.00	2,813.2	-505.5	291.8	546.3	0.00	0.00	0.00
2,960.0	24.19	150.00	2,849.7	-519.7	300.0	561.7	0.00	0.00	0.00
3,000.0	24.19	150.00	2,886.2	-533.9	308.2	577.0	0.00	0.00	0.00
3,040.0	24.19	150.00	2,922.7	-548.1	316.4	592.4	0.00	0.00	0.00
3,042.5	24.19	150.00	2,925.0	-549.0	316.9	593.3	0.00	0.00	0.00
3,080.0	23.98	148.24	2,959.2	-562.1	324.8	607.7	2.00	-0.55	-4.71
3,120.0	23.78	146.32	2,995.8	-575.7	333.5	623.1	2.00	-0.50	-4.79
3,160.0	23.61	144.38	3,032.4	-588.9	342.7	638.6	2.00	-0.44	-4.86
3,200.0	23.46	142.41	3,069.1	-601.7	352.2	654.1	2.00	-0.38	-4.92
3,240.0	23.33	140.42	3,105.8	-614.2	362.1	669.6	2.00	-0.31	-4.97
3,280.0	23.24	138.41	3,142.5	-626.2	372.4	685.2	2.00	-0.25	-5.02
3,320.0	23.16	136.39	3,179.3	-637.8	383.0	700.8	2.00	-0.18	-5.06
3,360.0	23.11	134.36	3,216.1	-648.9	394.1	716.4	2.00	-0.12	-5.08
3,400.0	23.09	132.32	3,252.9	-659.7	405.5	732.1	2.00	-0.05	-5.10
3,440.0	23.10	130.28	3,289.7	-670.1	417.3	747.8	2.00	0.01	-5.10
3,480.0	23.13	128.24	3,326.5	-680.0	429.4	763.5	2.00	0.08	-5.09
3,520.0	23.18	126.21	3,363.2	-689.5	442.0	779.2	2.00	0.14	-5.07
3,560.0	23.26	124.20	3,400.0	-698.6	454.8	794.9	2.00	0.21	-5.05
3,600.0	23.37	122.19	3,436.7	-707.3	468.1	810.6	2.00	0.27	-5.01
3,640.0	23.51	120.21	3,473.4	-715.5	481.7	826.4	2.00	0.33	-4.96
3,680.0	23.66	118.25	3,510.1	-723.3	495.7	842.1	2.00	0.40	-4.90
3,720.0	23.85	116.32	3,546.7	-730.7	510.0	857.9	2.00	0.46	-4.83
3,760.0	24.05	114.41	3,583.3	-737.7	524.7	873.6	2.00	0.52	-4.76
3,783.9	24.19	113.29	3,605.1	-741.6	533.6	883.0	2.00	0.56	-4.70
3,800.0	24.19	113.29	3,619.8	-744.2	539.7	889.4	0.00	0.00	0.00
3,840.0	24.19	113.29	3,656.2	-750.7	554.7	905.1	0.00	0.00	0.00
3,880.0	24.19	113.29	3,692.7	-757.2	569.8	920.9	0.00	0.00	0.00
3,920.0	24.19	113.29	3,729.2	-763.7	584.8	936.6	0.00	0.00	0.00
3,960.0	24.19	113.29	3,765.7	-770.1	599.9	952.4	0.00	0.00	0.00
4,000.0	24.19	113.29	3,802.2	-776.6	614.9	968.1	0.00	0.00	0.00
4,040.0	24.19	113.29	3,838.7	-783.1	630.0	983.9	0.00	0.00	0.00
4,080.0	24.19	113.29	3,875.2	-789.6	645.0	999.6	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	**Local Co-ordinate Reference:**	Well Five Rivers K16-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.8-T4N-R66W	**MD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Site:	Five Rivers K08-24D Pad Sec.8-T4N-R66W	**North Reference:**	True
Well:	Five Rivers K16-30D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Five Rivers K16-30D Plan #1 (05-13-10)		

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)
4,120.0	24.19	113.29	3,911.7	-796.1	660.1	1,015.3	0.00	0.00	0.00
4,160.0	24.19	113.29	3,948.2	-802.5	675.1	1,031.1	0.00	0.00	0.00
4,200.0	24.19	113.29	3,984.6	-809.0	690.2	1,046.8	0.00	0.00	0.00
4,240.0	24.19	113.29	4,021.1	-815.5	705.2	1,062.6	0.00	0.00	0.00
4,280.0	24.19	113.29	4,057.6	-822.0	720.3	1,078.3	0.00	0.00	0.00
4,320.0	24.19	113.29	4,094.1	-828.5	735.3	1,094.1	0.00	0.00	0.00
4,360.0	24.19	113.29	4,130.6	-834.9	750.4	1,109.8	0.00	0.00	0.00
4,400.0	24.19	113.29	4,167.1	-841.4	765.5	1,125.6	0.00	0.00	0.00
4,440.0	24.19	113.29	4,203.6	-847.9	780.5	1,141.3	0.00	0.00	0.00
4,480.0	24.19	113.29	4,240.1	-854.4	795.6	1,157.1	0.00	0.00	0.00
4,520.0	24.19	113.29	4,276.5	-860.9	810.6	1,172.8	0.00	0.00	0.00
4,560.0	24.19	113.29	4,313.0	-867.3	825.7	1,188.5	0.00	0.00	0.00
4,600.0	24.19	113.29	4,349.5	-873.8	840.7	1,204.3	0.00	0.00	0.00
4,640.0	24.19	113.29	4,386.0	-880.3	855.8	1,220.0	0.00	0.00	0.00
4,680.0	24.19	113.29	4,422.5	-886.8	870.8	1,235.8	0.00	0.00	0.00
4,720.0	24.19	113.29	4,459.0	-893.3	885.9	1,251.5	0.00	0.00	0.00
4,760.0	24.19	113.29	4,495.5	-899.7	900.9	1,267.3	0.00	0.00	0.00
4,800.0	24.19	113.29	4,532.0	-906.2	916.0	1,283.0	0.00	0.00	0.00
4,840.0	24.19	113.29	4,568.5	-912.7	931.0	1,298.8	0.00	0.00	0.00
4,880.0	24.19	113.29	4,604.9	-919.2	946.1	1,314.5	0.00	0.00	0.00
4,920.0	24.19	113.29	4,641.4	-925.7	961.1	1,330.3	0.00	0.00	0.00
4,960.0	24.19	113.29	4,677.9	-932.1	976.2	1,346.0	0.00	0.00	0.00
5,000.0	24.19	113.29	4,714.4	-938.6	991.3	1,361.7	0.00	0.00	0.00
5,040.0	24.19	113.29	4,750.9	-945.1	1,006.3	1,377.5	0.00	0.00	0.00
5,080.0	24.19	113.29	4,787.4	-951.6	1,021.4	1,393.2	0.00	0.00	0.00
5,120.0	24.19	113.29	4,823.9	-958.1	1,036.4	1,409.0	0.00	0.00	0.00
5,160.0	24.19	113.29	4,860.4	-964.5	1,051.5	1,424.7	0.00	0.00	0.00
5,200.0	24.19	113.29	4,896.9	-971.0	1,066.5	1,440.5	0.00	0.00	0.00
5,232.2	24.19	113.29	4,926.2	-976.2	1,078.6	1,453.2	0.00	0.00	0.00
5,240.0	24.03	113.29	4,933.3	-977.5	1,081.6	1,456.2	2.00	-2.00	0.00
5,280.0	23.23	113.29	4,970.0	-983.8	1,096.3	1,471.6	2.00	-2.00	0.00
5,320.0	22.43	113.29	5,006.9	-990.0	1,110.5	1,486.5	2.00	-2.00	0.00
5,360.0	21.63	113.29	5,043.9	-995.9	1,124.3	1,500.9	2.00	-2.00	0.00
5,400.0	20.83	113.29	5,081.2	-1,001.6	1,137.6	1,514.9	2.00	-2.00	0.00
5,440.0	20.03	113.29	5,118.7	-1,007.2	1,150.5	1,528.3	2.00	-2.00	0.00
5,480.0	19.23	113.29	5,156.4	-1,012.5	1,162.8	1,541.2	2.00	-2.00	0.00
5,520.0	18.43	113.29	5,194.2	-1,017.6	1,174.7	1,553.6	2.00	-2.00	0.00
5,560.0	17.63	113.29	5,232.3	-1,022.5	1,186.0	1,565.5	2.00	-2.00	0.00
5,600.0	16.83	113.29	5,270.5	-1,027.2	1,196.9	1,576.9	2.00	-2.00	0.00
5,640.0	16.03	113.29	5,308.8	-1,031.6	1,207.3	1,587.7	2.00	-2.00	0.00
5,680.0	15.23	113.29	5,347.4	-1,035.9	1,217.2	1,598.1	2.00	-2.00	0.00
5,720.0	14.43	113.29	5,386.0	-1,039.9	1,226.6	1,607.9	2.00	-2.00	0.00
5,760.0	13.63	113.29	5,424.8	-1,043.8	1,235.5	1,617.2	2.00	-2.00	0.00
5,800.0	12.83	113.29	5,463.8	-1,047.4	1,243.9	1,626.0	2.00	-2.00	0.00
5,840.0	12.03	113.29	5,502.8	-1,050.8	1,251.8	1,634.3	2.00	-2.00	0.00
5,880.0	11.23	113.29	5,542.0	-1,054.0	1,259.2	1,642.1	2.00	-2.00	0.00
5,920.0	10.43	113.29	5,581.3	-1,057.0	1,266.2	1,649.3	2.00	-2.00	0.00
5,960.0	9.63	113.29	5,620.7	-1,059.7	1,272.6	1,656.0	2.00	-2.00	0.00
6,000.0	8.83	113.29	5,660.2	-1,062.2	1,278.4	1,662.1	2.00	-2.00	0.00
6,040.0	8.03	113.29	5,699.7	-1,064.6	1,283.8	1,667.8	2.00	-2.00	0.00
6,080.0	7.23	113.29	5,739.4	-1,066.7	1,288.7	1,672.9	2.00	-2.00	0.00
6,120.0	6.43	113.29	5,779.1	-1,068.5	1,293.1	1,677.4	2.00	-2.00	0.00
6,160.0	5.63	113.29	5,818.9	-1,070.2	1,296.9	1,681.5	2.00	-2.00	0.00
6,200.0	4.83	113.29	5,858.7	-1,071.7	1,300.3	1,685.0	2.00	-2.00	0.00

Database:	EDM den0-adp01 Server Data	**Local Co-ordinate Reference:**	Well Five Rivers K16-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.8-T4N-R66W	**MD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Site:	Five Rivers K08-24D Pad Sec.8-T4N-R66W	**North Reference:**	True
Well:	Five Rivers K16-30D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Five Rivers K16-30D Plan #1 (05-13-10)		

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)
6,240.0	4.03	113.29	5,898.6	-1,072.9	1,303.1	1,688.0	2.00	-2.00	0.00
6,280.0	3.23	113.29	5,938.5	-1,073.9	1,305.5	1,690.4	2.00	-2.00	0.00
6,320.0	2.43	113.29	5,978.5	-1,074.7	1,307.3	1,692.3	2.00	-2.00	0.00
6,360.0	1.63	113.29	6,018.4	-1,075.2	1,308.6	1,693.7	2.00	-2.00	0.00
6,400.0	0.83	113.29	6,058.4	-1,075.6	1,309.4	1,694.5	2.00	-2.00	0.00
6,440.0	0.03	113.29	6,098.4	-1,075.7	1,309.6	1,694.8	2.00	-2.00	0.00
6,441.6	0.00	0.00	6,100.0	-1,075.7	1,309.6	1,694.8	2.00	-2.00	0.00
TARGET BHL 75'FSL, 200'FEL									
6,480.0	0.00	0.00	6,138.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,520.0	0.00	0.00	6,178.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,560.0	0.00	0.00	6,218.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,600.0	0.00	0.00	6,258.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,640.0	0.00	0.00	6,298.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,680.0	0.00	0.00	6,338.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,720.0	0.00	0.00	6,378.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,760.0	0.00	0.00	6,418.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,800.0	0.00	0.00	6,458.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,840.0	0.00	0.00	6,498.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,880.0	0.00	0.00	6,538.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,920.0	0.00	0.00	6,578.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
6,960.0	0.00	0.00	6,618.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,000.0	0.00	0.00	6,658.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,040.0	0.00	0.00	6,698.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,080.0	0.00	0.00	6,738.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,120.0	0.00	0.00	6,778.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,160.0	0.00	0.00	6,818.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,200.0	0.00	0.00	6,858.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,227.6	0.00	0.00	6,886.0	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 75'FSL, 200'FEL									
7,240.0	0.00	0.00	6,898.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,280.0	0.00	0.00	6,938.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,320.0	0.00	0.00	6,978.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,360.0	0.00	0.00	7,018.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,400.0	0.00	0.00	7,058.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,440.0	0.00	0.00	7,098.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,480.0	0.00	0.00	7,138.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,520.0	0.00	0.00	7,178.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,560.0	0.00	0.00	7,218.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,577.6	0.00	0.00	7,236.0	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
CODELL									
7,600.0	0.00	0.00	7,258.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,640.0	0.00	0.00	7,298.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,680.0	0.00	0.00	7,338.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,720.0	0.00	0.00	7,378.4	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
7,727.6	0.00	0.00	7,386.0	-1,075.7	1,309.6	1,694.8	0.00	0.00	0.00
HARDLINES 75'S & 200'E OF BHL									

Database:	EDM den0-adp01 Server Data	**Local Co-ordinate Reference:**	Well Five Rivers K16-30D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Project:	SEC.8-T4N-R66W	**MD Reference:**	WELL @ 4716.0ft (Original Well Elev)
Site:	Five Rivers K08-24D Pad Sec.8-T4N-R66W	**North Reference:**	True
Well:	Five Rivers K16-30D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Five Rivers K16-30D Plan #1 (05-13-10)		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET BHL 75'FSL - plan hits target center - Point	0.00	0.00	6,100.0	-1,075.7	1,309.6	1,359,896.49	3,197,230.58	40° 19' 8.966 N	104° 47' 33.625 W
HARDLINES 75'S & 2 - plan misses target center by 213.6ft at 7727.6ft MD (7386.0 TVD, -1075.7 N, 1309.6 E) - Polygon	0.00	0.00	7,386.0	-1,150.7	1,509.6	1,359,823.06	3,197,431.12	40° 19' 8.224 N	104° 47' 31.043 W
Point 1			7,386.0	0.0	0.0	1,359,823.06	3,197,431.12		
Point 2			7,386.0	0.0	-300.0	1,359,820.68	3,197,131.14		
Point 3			7,386.0	0.0	0.0	1,359,823.06	3,197,431.12		
Point 4			7,386.0	300.0	0.0	1,360,123.03	3,197,428.74		
TARGET CIRCLE 75' - plan hits target center - Circle (radius 75.0)	0.00	0.00	6,886.0	-1,075.7	1,309.6	1,359,896.47	3,197,230.54	40° 19' 8.966 N	104° 47' 33.625 W

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
600.0	600.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,227.6	6,886.0	NIOBRARA		0.00	
7,577.6	7,236.0	CODELL		0.00	