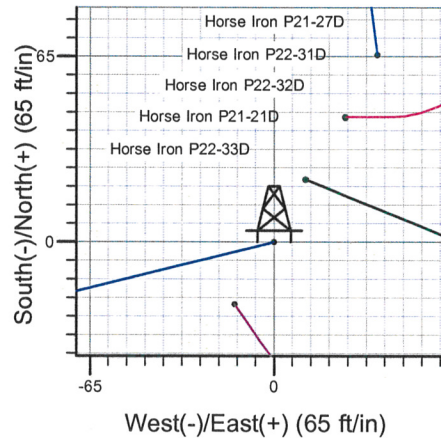
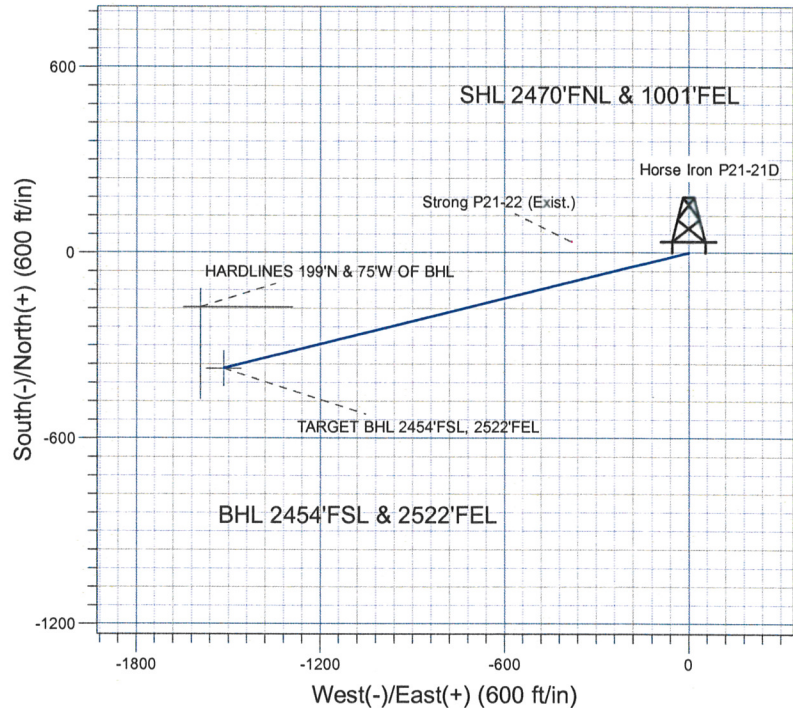
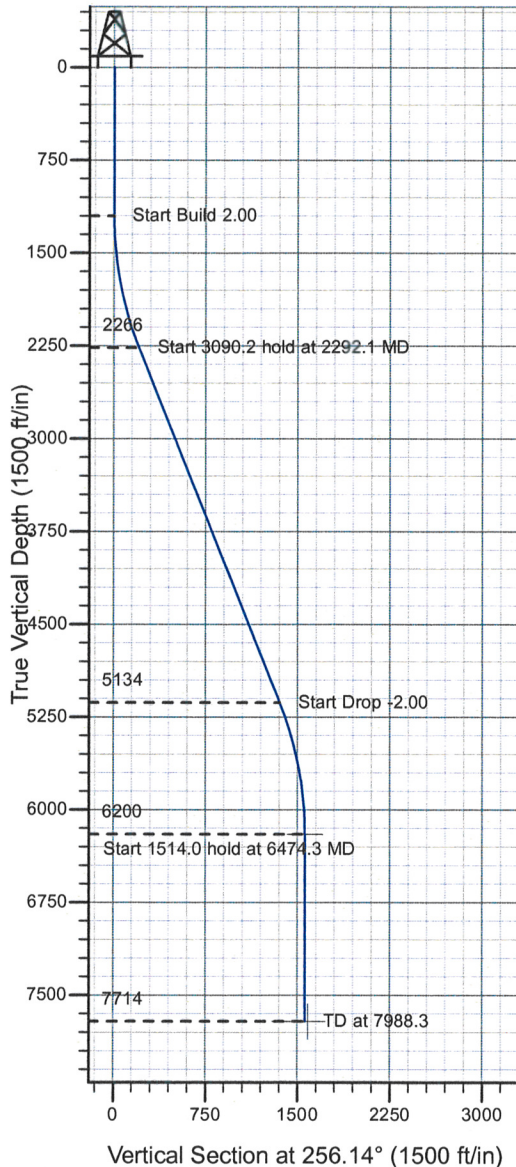


### Well Name: Horse Iron P21-21D

Surface Location: Horse Iron Pad Sec.21-T3N-R67W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4789.0  
 +N/-S+E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1320562.25 3170476.28 40° 12' 42.228 N 104° 53' 22.524 W  
 Original Well Elev WELL @ 4802.0ft (Original Well Elev)

### NOBLE ENERGY INC WELD COUNTY CO



Horse Iron Pad Sec.21-T3N-R67W  
 Horse Iron P21-21D  
 Plan #2 (07-22-09)  
 15:17, July 22 2009



Azimuths to True North  
 Magnetic North: 9.14°

Magnetic Field  
 Strength: 53245.1snT  
 Dip Angle: 66.95°  
 Date: 6/26/2009  
 Model: IGRF200510

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2454'FSL, 2522'FEL	6200.0	-373.9	-1515.5	40° 12' 38.532 N	104° 53' 42.058 W	Point
HARDLINES 199°N & 75°W OF BHL	7714.0	-174.9	-1590.5	40° 12' 40.499 N	104° 53' 43.025 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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	2292.1	21.84	256.14	2265.8	-49.3	-199.7	2.00	256.14	205.6	
4	5382.3	21.84	256.14	5134.2	-324.7	-1315.9	0.00	0.00	1355.3	
5	6474.3	0.00	0.00	6200.0	-373.9	-1515.5	2.00	180.00	1561.0	TARGET BHL 2454'FSL, 2522'FEL
6	7988.3	0.00	0.00	7714.0	-373.9	-1515.5	0.00	0.00	1561.0	



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P21-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P21-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

Project	SEC.21-T3N-R67W, 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		Horse Iron Pad Sec.21-T3N-R67W			
Site Position:		Northing:	1,320,540.31 ft	Latitude:	40° 12' 42.012 N
From:	Lat/Long	Easting:	3,170,462.46 ft	Longitude:	104° 53' 22.704 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.39 °

Well	Horse Iron P21-21D					
Well Position	+N/-S	21.8 ft	Northing:	1,320,562.25 ft	Latitude:	40° 12' 42.228 N
	+E/-W	14.0 ft	Easting:	3,170,476.28 ft	Longitude:	104° 53' 22.524 W
Position Uncertainty	0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,789.0 ft	

Wellbore	Wellbore #1			
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/26/2009	9.14	66.95	53,245

Design	Plan #2 (07-22-09)			
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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	256.14

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,292.1	21.84	256.14	2,265.8	-49.3	-199.7	2.00	2.00	0.00	256.14	
5,382.3	21.84	256.14	5,134.2	-324.7	-1,315.9	0.00	0.00	0.00	0.00	
6,474.3	0.00	0.00	6,200.0	-373.9	-1,515.5	2.00	-2.00	0.00	180.00	TARGET BHL 2454
7,988.3	0.00	0.00	7,714.0	-373.9	-1,515.5	0.00	0.00	0.00	0.00	



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P21-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P21-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

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
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
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.80	256.14	1,240.0	-0.1	-0.3	0.3	2.00	2.00	0.00
1,280.0	1.60	256.14	1,280.0	-0.3	-1.1	1.1	2.00	2.00	0.00
1,320.0	2.40	256.14	1,320.0	-0.6	-2.4	2.5	2.00	2.00	0.00
1,360.0	3.20	256.14	1,359.9	-1.1	-4.3	4.5	2.00	2.00	0.00
1,400.0	4.00	256.14	1,399.8	-1.7	-6.8	7.0	2.00	2.00	0.00
1,440.0	4.80	256.14	1,439.7	-2.4	-9.8	10.0	2.00	2.00	0.00
1,480.0	5.60	256.14	1,479.6	-3.3	-13.3	13.7	2.00	2.00	0.00
1,520.0	6.40	256.14	1,519.3	-4.3	-17.3	17.9	2.00	2.00	0.00
1,560.0	7.20	256.14	1,559.1	-5.4	-21.9	22.6	2.00	2.00	0.00
1,600.0	8.00	256.14	1,598.7	-6.7	-27.1	27.9	2.00	2.00	0.00
1,640.0	8.80	256.14	1,638.3	-8.1	-32.7	33.7	2.00	2.00	0.00
1,680.0	9.60	256.14	1,677.8	-9.6	-39.0	40.1	2.00	2.00	0.00
1,720.0	10.40	256.14	1,717.1	-11.3	-45.7	47.1	2.00	2.00	0.00
1,760.0	11.20	256.14	1,756.4	-13.1	-53.0	54.6	2.00	2.00	0.00
1,800.0	12.00	256.14	1,795.6	-15.0	-60.8	62.6	2.00	2.00	0.00
1,840.0	12.80	256.14	1,834.7	-17.1	-69.1	71.2	2.00	2.00	0.00
1,880.0	13.60	256.14	1,873.6	-19.2	-78.0	80.3	2.00	2.00	0.00
1,920.0	14.40	256.14	1,912.4	-21.6	-87.4	90.0	2.00	2.00	0.00
1,960.0	15.20	256.14	1,951.1	-24.0	-97.3	100.2	2.00	2.00	0.00
2,000.0	16.00	256.14	1,989.6	-26.6	-107.7	111.0	2.00	2.00	0.00
2,040.0	16.80	256.14	2,028.0	-29.3	-118.7	122.3	2.00	2.00	0.00
2,080.0	17.60	256.14	2,066.2	-32.1	-130.2	134.1	2.00	2.00	0.00
2,120.0	18.40	256.14	2,104.3	-35.1	-142.2	146.5	2.00	2.00	0.00



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Horse Iron P21-21D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4802.0ft (Original Well Elev)
<b>Project:</b>	SEC.21-T3N-R67W	<b>MD Reference:</b>	WELL @ 4802.0ft (Original Well Elev)
<b>Site:</b>	Horse Iron Pad Sec.21-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Horse Iron P21-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (07-22-09)		

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)
2,160.0	19.20	256.14	2,142.1	-38.2	-154.7	159.3	2.00	2.00	0.00
2,200.0	20.00	256.14	2,179.8	-41.4	-167.7	172.8	2.00	2.00	0.00
2,240.0	20.80	256.14	2,217.3	-44.7	-181.3	186.7	2.00	2.00	0.00
2,280.0	21.60	256.14	2,254.6	-48.2	-195.3	201.2	2.00	2.00	0.00
2,292.1	21.84	256.14	2,265.8	-49.3	-199.7	205.6	2.00	2.00	0.00
2,320.0	21.84	256.14	2,291.7	-51.8	-209.7	216.0	0.00	0.00	0.00
2,360.0	21.84	256.14	2,328.9	-55.3	-224.2	230.9	0.00	0.00	0.00
2,400.0	21.84	256.14	2,366.0	-58.9	-238.6	245.8	0.00	0.00	0.00
2,440.0	21.84	256.14	2,403.1	-62.4	-253.1	260.7	0.00	0.00	0.00
2,480.0	21.84	256.14	2,440.3	-66.0	-267.5	275.6	0.00	0.00	0.00
2,520.0	21.84	256.14	2,477.4	-69.6	-282.0	290.4	0.00	0.00	0.00
2,560.0	21.84	256.14	2,514.5	-73.1	-296.4	305.3	0.00	0.00	0.00
2,600.0	21.84	256.14	2,551.6	-76.7	-310.9	320.2	0.00	0.00	0.00
2,640.0	21.84	256.14	2,588.8	-80.3	-325.3	335.1	0.00	0.00	0.00
2,680.0	21.84	256.14	2,625.9	-83.8	-339.8	350.0	0.00	0.00	0.00
2,720.0	21.84	256.14	2,663.0	-87.4	-354.2	364.9	0.00	0.00	0.00
2,760.0	21.84	256.14	2,700.2	-91.0	-368.7	379.7	0.00	0.00	0.00
2,800.0	21.84	256.14	2,737.3	-94.5	-383.1	394.6	0.00	0.00	0.00
2,840.0	21.84	256.14	2,774.4	-98.1	-397.6	409.5	0.00	0.00	0.00
2,880.0	21.84	256.14	2,811.5	-101.7	-412.0	424.4	0.00	0.00	0.00
2,920.0	21.84	256.14	2,848.7	-105.2	-426.5	439.3	0.00	0.00	0.00
2,960.0	21.84	256.14	2,885.8	-108.8	-440.9	454.1	0.00	0.00	0.00
3,000.0	21.84	256.14	2,922.9	-112.4	-455.4	469.0	0.00	0.00	0.00
3,040.0	21.84	256.14	2,960.1	-115.9	-469.8	483.9	0.00	0.00	0.00
3,080.0	21.84	256.14	2,997.2	-119.5	-484.3	498.8	0.00	0.00	0.00
3,120.0	21.84	256.14	3,034.3	-123.0	-498.7	513.7	0.00	0.00	0.00
3,160.0	21.84	256.14	3,071.4	-126.6	-513.2	528.5	0.00	0.00	0.00
3,200.0	21.84	256.14	3,108.6	-130.2	-527.6	543.4	0.00	0.00	0.00
3,240.0	21.84	256.14	3,145.7	-133.7	-542.1	558.3	0.00	0.00	0.00
3,280.0	21.84	256.14	3,182.8	-137.3	-556.5	573.2	0.00	0.00	0.00
3,320.0	21.84	256.14	3,220.0	-140.9	-571.0	588.1	0.00	0.00	0.00
3,360.0	21.84	256.14	3,257.1	-144.4	-585.4	603.0	0.00	0.00	0.00
3,400.0	21.84	256.14	3,294.2	-148.0	-599.8	617.8	0.00	0.00	0.00
3,440.0	21.84	256.14	3,331.3	-151.6	-614.3	632.7	0.00	0.00	0.00
3,480.0	21.84	256.14	3,368.5	-155.1	-628.7	647.6	0.00	0.00	0.00
3,520.0	21.84	256.14	3,405.6	-158.7	-643.2	662.5	0.00	0.00	0.00
3,560.0	21.84	256.14	3,442.7	-162.3	-657.6	677.4	0.00	0.00	0.00
3,600.0	21.84	256.14	3,479.9	-165.8	-672.1	692.2	0.00	0.00	0.00
3,640.0	21.84	256.14	3,517.0	-169.4	-686.5	707.1	0.00	0.00	0.00
3,680.0	21.84	256.14	3,554.1	-173.0	-701.0	722.0	0.00	0.00	0.00
3,720.0	21.84	256.14	3,591.2	-176.5	-715.4	736.9	0.00	0.00	0.00
3,760.0	21.84	256.14	3,628.4	-180.1	-729.9	751.8	0.00	0.00	0.00
3,800.0	21.84	256.14	3,665.5	-183.7	-744.3	766.7	0.00	0.00	0.00
3,840.0	21.84	256.14	3,702.6	-187.2	-758.8	781.5	0.00	0.00	0.00
3,880.0	21.84	256.14	3,739.8	-190.8	-773.2	796.4	0.00	0.00	0.00
3,920.0	21.84	256.14	3,776.9	-194.3	-787.7	811.3	0.00	0.00	0.00
3,960.0	21.84	256.14	3,814.0	-197.9	-802.1	826.2	0.00	0.00	0.00
4,000.0	21.84	256.14	3,851.1	-201.5	-816.6	841.1	0.00	0.00	0.00
4,040.0	21.84	256.14	3,888.3	-205.0	-831.0	855.9	0.00	0.00	0.00
4,080.0	21.84	256.14	3,925.4	-208.6	-845.5	870.8	0.00	0.00	0.00
4,120.0	21.84	256.14	3,962.5	-212.2	-859.9	885.7	0.00	0.00	0.00
4,160.0	21.84	256.14	3,999.7	-215.7	-874.4	900.6	0.00	0.00	0.00
4,200.0	21.84	256.14	4,036.8	-219.3	-888.8	915.5	0.00	0.00	0.00
4,240.0	21.84	256.14	4,073.9	-222.9	-903.3	930.4	0.00	0.00	0.00



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Horse Iron P21-21D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4802.0ft (Original Well Elev)
<b>Project:</b>	SEC.21-T3N-R67W	<b>MD Reference:</b>	WELL @ 4802.0ft (Original Well Elev)
<b>Site:</b>	Horse Iron Pad Sec.21-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Horse Iron P21-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (07-22-09)		

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)
4,280.0	21.84	256.14	4,111.0	-226.4	-917.7	945.2	0.00	0.00	0.00
4,320.0	21.84	256.14	4,148.2	-230.0	-932.2	960.1	0.00	0.00	0.00
4,360.0	21.84	256.14	4,185.3	-233.6	-946.6	975.0	0.00	0.00	0.00
4,400.0	21.84	256.14	4,222.4	-237.1	-961.1	989.9	0.00	0.00	0.00
4,440.0	21.84	256.14	4,259.6	-240.7	-975.5	1,004.8	0.00	0.00	0.00
4,480.0	21.84	256.14	4,296.7	-244.3	-990.0	1,019.6	0.00	0.00	0.00
4,520.0	21.84	256.14	4,333.8	-247.8	-1,004.4	1,034.5	0.00	0.00	0.00
4,560.0	21.84	256.14	4,370.9	-251.4	-1,018.9	1,049.4	0.00	0.00	0.00
4,600.0	21.84	256.14	4,408.1	-255.0	-1,033.3	1,064.3	0.00	0.00	0.00
4,640.0	21.84	256.14	4,445.2	-258.5	-1,047.7	1,079.2	0.00	0.00	0.00
4,680.0	21.84	256.14	4,482.3	-262.1	-1,062.2	1,094.1	0.00	0.00	0.00
4,720.0	21.84	256.14	4,519.5	-265.6	-1,076.6	1,108.9	0.00	0.00	0.00
4,760.0	21.84	256.14	4,556.6	-269.2	-1,091.1	1,123.8	0.00	0.00	0.00
4,800.0	21.84	256.14	4,593.7	-272.8	-1,105.5	1,138.7	0.00	0.00	0.00
4,840.0	21.84	256.14	4,630.8	-276.3	-1,120.0	1,153.6	0.00	0.00	0.00
4,880.0	21.84	256.14	4,668.0	-279.9	-1,134.4	1,168.5	0.00	0.00	0.00
4,920.0	21.84	256.14	4,705.1	-283.5	-1,148.9	1,183.3	0.00	0.00	0.00
4,960.0	21.84	256.14	4,742.2	-287.0	-1,163.3	1,198.2	0.00	0.00	0.00
5,000.0	21.84	256.14	4,779.4	-290.6	-1,177.8	1,213.1	0.00	0.00	0.00
5,040.0	21.84	256.14	4,816.5	-294.2	-1,192.2	1,228.0	0.00	0.00	0.00
5,080.0	21.84	256.14	4,853.6	-297.7	-1,206.7	1,242.9	0.00	0.00	0.00
5,120.0	21.84	256.14	4,890.7	-301.3	-1,221.1	1,257.8	0.00	0.00	0.00
5,160.0	21.84	256.14	4,927.9	-304.9	-1,235.6	1,272.6	0.00	0.00	0.00
5,200.0	21.84	256.14	4,965.0	-308.4	-1,250.0	1,287.5	0.00	0.00	0.00
5,240.0	21.84	256.14	5,002.1	-312.0	-1,264.5	1,302.4	0.00	0.00	0.00
5,280.0	21.84	256.14	5,039.3	-315.6	-1,278.9	1,317.3	0.00	0.00	0.00
5,320.0	21.84	256.14	5,076.4	-319.1	-1,293.4	1,332.2	0.00	0.00	0.00
5,360.0	21.84	256.14	5,113.5	-322.7	-1,307.8	1,347.0	0.00	0.00	0.00
5,382.3	21.84	256.14	5,134.2	-324.7	-1,315.9	1,355.3	0.00	0.00	0.00
5,400.0	21.49	256.14	5,150.7	-326.2	-1,322.2	1,361.9	2.00	-2.00	0.00
5,440.0	20.69	256.14	5,188.0	-329.7	-1,336.2	1,376.3	2.00	-2.00	0.00
5,480.0	19.89	256.14	5,225.5	-333.0	-1,349.7	1,390.1	2.00	-2.00	0.00
5,520.0	19.09	256.14	5,263.2	-336.2	-1,362.6	1,403.5	2.00	-2.00	0.00
5,560.0	18.29	256.14	5,301.1	-339.3	-1,375.1	1,416.3	2.00	-2.00	0.00
5,600.0	17.49	256.14	5,339.2	-342.2	-1,387.0	1,428.6	2.00	-2.00	0.00
5,640.0	16.69	256.14	5,377.4	-345.0	-1,398.4	1,440.3	2.00	-2.00	0.00
5,680.0	15.89	256.14	5,415.8	-347.7	-1,409.3	1,451.5	2.00	-2.00	0.00
5,720.0	15.09	256.14	5,454.3	-350.3	-1,419.7	1,462.2	2.00	-2.00	0.00
5,760.0	14.29	256.14	5,493.0	-352.7	-1,429.5	1,472.4	2.00	-2.00	0.00
5,800.0	13.49	256.14	5,531.9	-355.0	-1,438.8	1,482.0	2.00	-2.00	0.00
5,840.0	12.69	256.14	5,570.8	-357.2	-1,447.6	1,491.0	2.00	-2.00	0.00
5,880.0	11.89	256.14	5,609.9	-359.2	-1,455.9	1,499.5	2.00	-2.00	0.00
5,920.0	11.09	256.14	5,649.1	-361.1	-1,463.6	1,507.5	2.00	-2.00	0.00
5,960.0	10.29	256.14	5,688.4	-362.9	-1,470.8	1,514.9	2.00	-2.00	0.00
6,000.0	9.49	256.14	5,727.8	-364.5	-1,477.5	1,521.8	2.00	-2.00	0.00
6,040.0	8.69	256.14	5,767.3	-366.1	-1,483.6	1,528.1	2.00	-2.00	0.00
6,080.0	7.89	256.14	5,806.9	-367.4	-1,489.2	1,533.9	2.00	-2.00	0.00
6,120.0	7.09	256.14	5,846.6	-368.7	-1,494.3	1,539.1	2.00	-2.00	0.00
6,160.0	6.29	256.14	5,886.3	-369.8	-1,498.8	1,543.7	2.00	-2.00	0.00
6,200.0	5.49	256.14	5,926.1	-370.8	-1,502.8	1,547.8	2.00	-2.00	0.00
6,240.0	4.69	256.14	5,965.9	-371.6	-1,506.2	1,551.4	2.00	-2.00	0.00
6,280.0	3.89	256.14	6,005.8	-372.4	-1,509.1	1,554.4	2.00	-2.00	0.00
6,320.0	3.09	256.14	6,045.7	-372.9	-1,511.5	1,556.8	2.00	-2.00	0.00
6,360.0	2.29	256.14	6,085.7	-373.4	-1,513.3	1,558.7	2.00	-2.00	0.00



Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Horse Iron P21-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4802.0ft (Original Well Elev)
Project:	SEC.21-T3N-R67W	MD Reference:	WELL @ 4802.0ft (Original Well Elev)
Site:	Horse Iron Pad Sec.21-T3N-R67W	North Reference:	True
Well:	Horse Iron P21-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (07-22-09)		

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)
6,400.0	1.49	256.14	6,125.7	-373.7	-1,514.6	1,560.0	2.00	-2.00	0.00
6,440.0	0.69	256.14	6,165.7	-373.9	-1,515.3	1,560.8	2.00	-2.00	0.00
6,474.3	0.00	0.00	6,200.0	-373.9	-1,515.5	1,561.0	2.00	-2.00	0.00
TARGET BHL 2454'FSL, 2522'FEL									
6,480.0	0.00	0.00	6,205.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,520.0	0.00	0.00	6,245.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,560.0	0.00	0.00	6,285.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,325.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,640.0	0.00	0.00	6,365.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,680.0	0.00	0.00	6,405.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,720.0	0.00	0.00	6,445.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,760.0	0.00	0.00	6,485.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,525.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,840.0	0.00	0.00	6,565.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,880.0	0.00	0.00	6,605.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,920.0	0.00	0.00	6,645.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
6,960.0	0.00	0.00	6,685.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,000.0	0.00	0.00	6,725.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,040.0	0.00	0.00	6,765.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,069.3	0.00	0.00	6,795.0	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
NIOBRARA									
7,080.0	0.00	0.00	6,805.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,120.0	0.00	0.00	6,845.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,160.0	0.00	0.00	6,885.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,200.0	0.00	0.00	6,925.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,240.0	0.00	0.00	6,965.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,280.0	0.00	0.00	7,005.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,320.0	0.00	0.00	7,045.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,360.0	0.00	0.00	7,085.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,361.3	0.00	0.00	7,087.0	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
CODELL									
7,400.0	0.00	0.00	7,125.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,440.0	0.00	0.00	7,165.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,480.0	0.00	0.00	7,205.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,520.0	0.00	0.00	7,245.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,560.0	0.00	0.00	7,285.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,325.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,640.0	0.00	0.00	7,365.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,680.0	0.00	0.00	7,405.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,720.0	0.00	0.00	7,445.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,760.0	0.00	0.00	7,485.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,788.3	0.00	0.00	7,514.0	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
J-SAND									
7,800.0	0.00	0.00	7,525.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,840.0	0.00	0.00	7,565.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,880.0	0.00	0.00	7,605.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,920.0	0.00	0.00	7,645.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,960.0	0.00	0.00	7,685.7	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
7,988.3	0.00	0.00	7,714.0	-373.9	-1,515.5	1,561.0	0.00	0.00	0.00
HARDLINES 199'N & 75'W OF BHL									



<b>Database:</b>	EDM den0-adp01 Server Data	<b>Local Co-ordinate Reference:</b>	Well Horse Iron P21-21D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4802.0ft (Original Well Elev)
<b>Project:</b>	SEC.21-T3N-R67W	<b>MD Reference:</b>	WELL @ 4802.0ft (Original Well Elev)
<b>Site:</b>	Horse Iron Pad Sec.21-T3N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Horse Iron P21-21D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (07-22-09)		

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)		
TARGET BHL 2454'F	0.00	0.00	6,200.0	-373.9	-1,515.5	1,320,177.92	3,168,963.43	40° 12' 38.532 N	104° 53' 42.058 W
- plan hits target center									
- Point									
HARDLINES 199'N &	0.00	0.00	7,714.0	-174.9	-1,590.5	1,320,376.42	3,168,887.09	40° 12' 40.499 N	104° 53' 43.025 W
- plan misses target center by 212.7ft at 7988.3ft MD (7714.0 TVD, -373.9 N, -1515.5 E)									
- Polygon									
Point 1			7,714.0	0.0	0.0	1,320,376.42	3,168,887.09		
Point 2			7,714.0	-300.0	0.0	1,320,076.44	3,168,889.16		
Point 3			7,714.0	0.0	0.0	1,320,376.42	3,168,887.09		
Point 4			7,714.0	0.0	300.0	1,320,378.48	3,169,187.07		

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
7,069.3	6,795.0	NIOBRARA		0.00		
7,361.3	7,087.0	CODELL		0.00		
7,788.3	7,514.0	J-SAND		0.00		