

EXTRACTION OIL & GAS

Weld County

Sec 7-T4N-R68W

BERTHOUD FARMS 8E-10-1N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

22 May, 2017



WELL DETAILS: BERTHOUD FARMS 8E-10-1N

+N/-S	+E/-W	Northing	Easting	5035.0	Latitude	Longitude	Slot
0.0	0.0	1361363.03	3128263.97	40° 19' 27.944 N	105° 2' 23.910 W		

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	100.0	0.00	0.00	100.0	0.0	0.0	0.00	0.00	0.0	
3	2147.6	51.19	348.60	1885.9	838.6	-169.2	2.50	348.60	314.9	
4	4661.1	51.19	348.60	3461.1	2758.4	-556.4	0.00	0.00	1035.9	
5	6708.7	0.00	0.00	5247.0	3597.0	-725.6	2.50	180.00	1350.8	
6	6808.7	0.00	0.00	5347.0	3597.0	-725.6	0.00	0.00	1350.8	
7	7708.7	90.00	89.06	5920.0	3606.4	-152.7	10.00	89.06	1836.4	
8	9160.2	90.00	89.06	5920.0	3630.2	1298.6	0.00	0.00	3066.4	BF 1 - LP
9	13575.1	90.00	88.84	5920.0	3711.0	5712.7	0.00	-90.00	6812.2	BF 1 - PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.0	Build 2.50°/100'
2147.6	51.19	348.60	1885.9	838.6	-169.2	314.9	855.4	Hold 51.19° Inc
4661.1	51.19	348.60	3461.1	2758.4	-556.4	1035.9	2814.0	Drop 2.50°/100'
6708.7	0.00	0.00	5247.0	3597.0	-725.6	1350.8	3669.5	Hold Vertical
6808.7	0.00	0.00	5347.0	3597.0	-725.6	1350.8	3669.5	KOP, Build 10°/100'
7708.7	90.00	89.06	5920.0	3606.4	-152.7	1836.4	4242.5	LP @ 90° Inc
9160.2	90.00	89.06	5920.0	3630.2	1298.6	3066.4	5693.9	Hold
13575.1	90.00	88.84	5920.0	3711.0	5712.7	6812.2	10108.8	TD at 13575.1' MD

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BF 1 - LP	5920.0	3630.2	1298.6	1364999.92	3129543.69	40° 20' 3.818 N	105° 2' 7.141 W	Point
- plan hits target center								
BF 1 - PBHL	5920.0	3711.0	5712.7	1365103.59	3133957.38	40° 20' 4.610 N	105° 1' 10.139 W	Point
- plan hits target center								

FORMATION TOP DETAILS

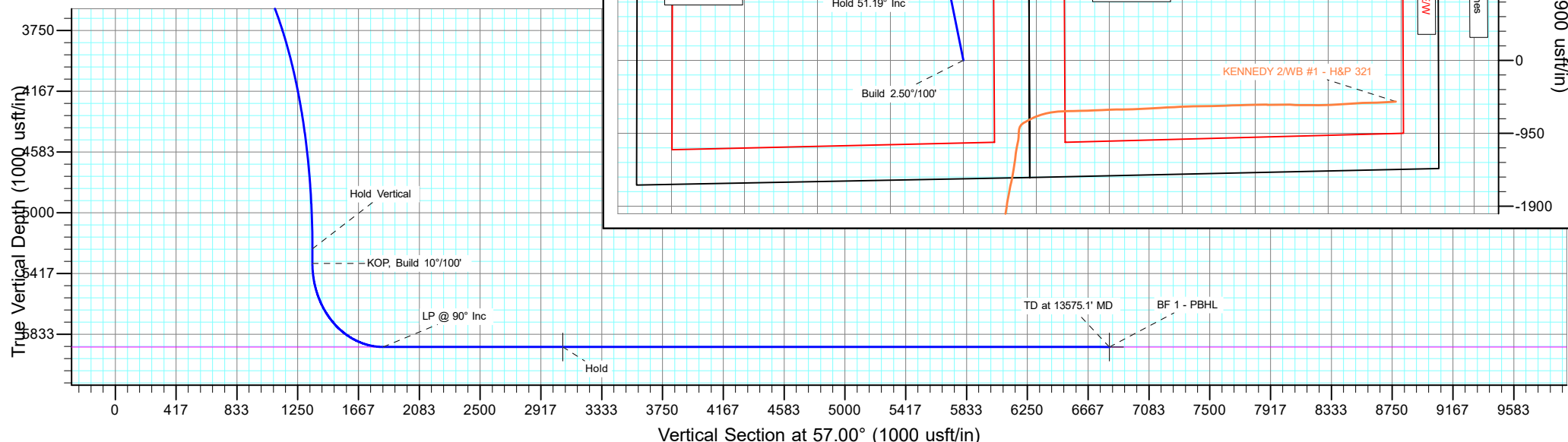
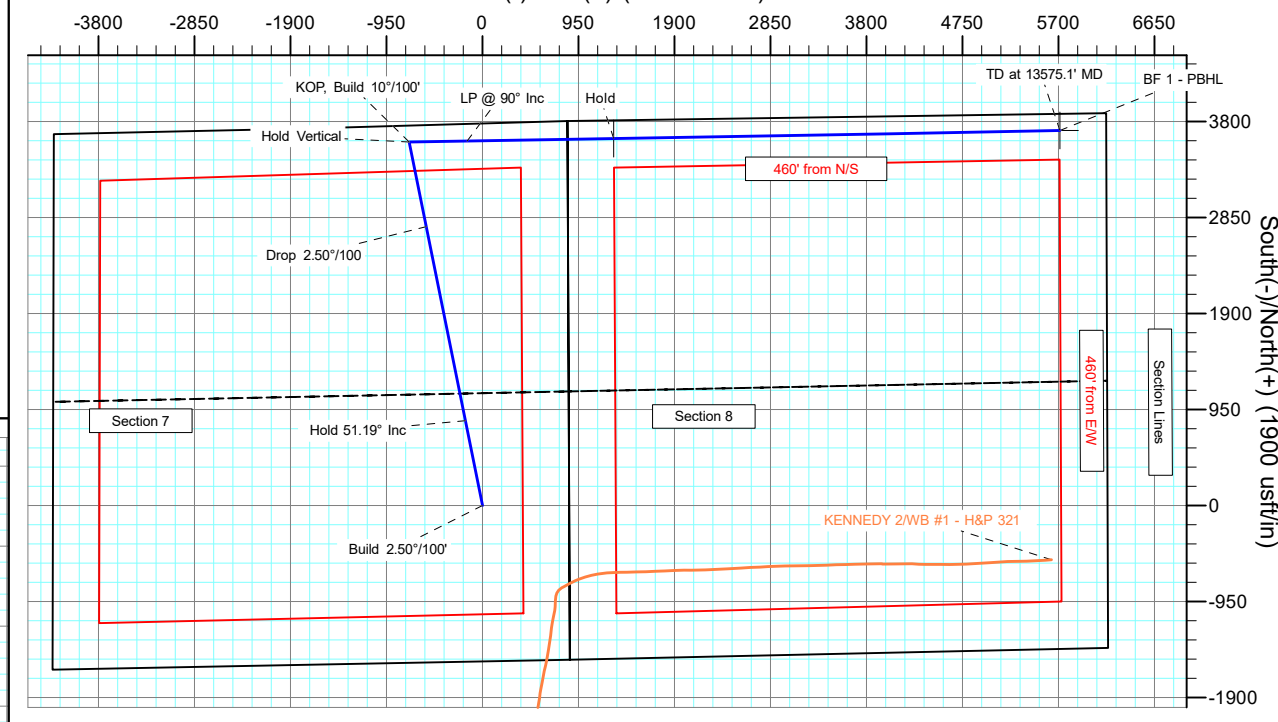
TVDPath	MDPath	Formation
2410.0	2983.9	PARKMAN
3010.0	3941.2	SUSSEX
3450.0	4643.3	SHANNON
5920.0	7708.7	NIOBRARA

PROJECT DETAILS: Weld County

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level

SHL:
1544' FSL 858' FEL
Sec 7-T4N-R68W
LP:
160' FNL, 460' FWL
Sec 8-T4N-R68W
BHL:
160' FNL, 460' FEL
Sec 8-T4N-R68W

West(-)/East(+) (1900 usft/in)



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well BERTHOUD FARMS 8E-10-1N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 24' @ 5059.0usft
Project:	Weld County	MD Reference:	KB 24' @ 5059.0usft
Site:	Sec 7-T4N-R68W	North Reference:	True
Well:	BERTHOUD FARMS 8E-10-1N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Weld County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 7-T4N-R68W			
Site Position:		Northing:	1,359,838.99 usft	Latitude:	40° 19' 12.839 N
From:	Lat/Long	Easting:	3,129,136.57 usft	Longitude:	105° 2' 12.746 W
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in	Grid Convergence:	0.30 °

Well	BERTHOUD FARMS 8E-10-1N					
Well Position	+N/-S	1,528.6 usft	Northing:	1,361,363.03 usft	Latitude:	40° 19' 27.944 N
	+E/-W	-864.6 usft	Easting:	3,128,263.97 usft	Longitude:	105° 2' 23.910 W
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:	5,035.0 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/4/2017	8.37	66.76	52,345.15733501

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	57.00

Plan Survey Tool Program	Date	5/22/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	13,575.1	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	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	
100.0	0.00	0.00	100.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,147.6	51.19	348.60	1,885.9	838.6	-169.2	2.50	2.50	0.00	348.60	
4,661.1	51.19	348.60	3,461.1	2,758.4	-556.4	0.00	0.00	0.00	0.00	
6,708.7	0.00	0.00	5,247.0	3,597.0	-725.6	2.50	-2.50	0.00	180.00	
6,808.7	0.00	0.00	5,347.0	3,597.0	-725.6	0.00	0.00	0.00	0.00	
7,708.7	90.00	89.06	5,920.0	3,606.4	-152.7	10.00	10.00	0.00	89.06	
9,160.2	90.00	89.06	5,920.0	3,630.2	1,298.6	0.00	0.00	0.00	0.00	BF 1 - LP
13,575.1	90.00	88.84	5,920.0	3,711.0	5,712.7	0.00	0.00	0.00	-90.00	BF 1 - PBHL

Planning Report

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 24' @ 5059.0usft
Project:	Weld County	MD Reference:	KB 24' @ 5059.0usft
Site:	Sec 7-T4N-R68W	North Reference:	True
Well:	BERTHOUD FARMS 8E-10-1N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	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
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
Build 2.50°/100'									
200.0	2.50	348.60	200.0	2.1	-0.4	0.8	2.50	2.50	0.00
300.0	5.00	348.60	299.7	8.5	-1.7	3.2	2.50	2.50	0.00
400.0	7.50	348.60	399.1	19.2	-3.9	7.2	2.50	2.50	0.00
500.0	10.00	348.60	498.0	34.1	-6.9	12.8	2.50	2.50	0.00
600.0	12.50	348.60	596.0	53.3	-10.7	20.0	2.50	2.50	0.00
700.0	15.00	348.60	693.2	76.6	-15.4	28.7	2.50	2.50	0.00
800.0	17.50	348.60	789.2	104.0	-21.0	39.0	2.50	2.50	0.00
900.0	20.00	348.60	883.9	135.5	-27.3	50.9	2.50	2.50	0.00
1,000.0	22.50	348.60	977.0	171.0	-34.5	64.2	2.50	2.50	0.00
1,100.0	25.00	348.60	1,068.6	210.5	-42.5	79.0	2.50	2.50	0.00
1,200.0	27.50	348.60	1,158.2	253.8	-51.2	95.3	2.50	2.50	0.00
1,300.0	30.00	348.60	1,245.9	301.0	-60.7	113.0	2.50	2.50	0.00
1,400.0	32.50	348.60	1,331.4	351.8	-71.0	132.1	2.50	2.50	0.00
1,500.0	35.00	348.60	1,414.5	406.3	-82.0	152.6	2.50	2.50	0.00
1,600.0	37.50	348.60	1,495.2	464.2	-93.6	174.3	2.50	2.50	0.00
1,700.0	40.00	348.60	1,573.2	525.6	-106.0	197.4	2.50	2.50	0.00
1,800.0	42.50	348.60	1,648.3	590.2	-119.1	221.6	2.50	2.50	0.00
1,900.0	45.00	348.60	1,720.6	658.0	-132.7	247.1	2.50	2.50	0.00
2,000.0	47.50	348.60	1,789.7	728.8	-147.0	273.7	2.50	2.50	0.00
2,100.0	50.00	348.60	1,855.6	802.5	-161.9	301.4	2.50	2.50	0.00
2,147.6	51.19	348.60	1,885.9	838.6	-169.2	314.9	2.50	2.50	0.00
Hold 51.19° Inc									
2,200.0	51.19	348.60	1,918.7	878.6	-177.2	329.9	0.00	0.00	0.00
2,300.0	51.19	348.60	1,981.4	955.0	-192.6	358.6	0.00	0.00	0.00
2,400.0	51.19	348.60	2,044.0	1,031.4	-208.0	387.3	0.00	0.00	0.00
2,500.0	51.19	348.60	2,106.7	1,107.7	-223.5	416.0	0.00	0.00	0.00
2,600.0	51.19	348.60	2,169.4	1,184.1	-238.9	444.7	0.00	0.00	0.00
2,700.0	51.19	348.60	2,232.1	1,260.5	-254.3	473.4	0.00	0.00	0.00
2,800.0	51.19	348.60	2,294.7	1,336.9	-269.7	502.0	0.00	0.00	0.00
2,900.0	51.19	348.60	2,357.4	1,413.3	-285.1	530.7	0.00	0.00	0.00
2,983.9	51.19	348.60	2,410.0	1,477.4	-298.0	554.8	0.00	0.00	0.00
PARKMAN									
3,000.0	51.19	348.60	2,420.1	1,489.7	-300.5	559.4	0.00	0.00	0.00
3,100.0	51.19	348.60	2,482.8	1,566.0	-315.9	588.1	0.00	0.00	0.00
3,200.0	51.19	348.60	2,545.4	1,642.4	-331.3	616.8	0.00	0.00	0.00
3,300.0	51.19	348.60	2,608.1	1,718.8	-346.7	645.5	0.00	0.00	0.00
3,400.0	51.19	348.60	2,670.8	1,795.2	-362.1	674.2	0.00	0.00	0.00
3,500.0	51.19	348.60	2,733.5	1,871.6	-377.5	702.8	0.00	0.00	0.00
3,600.0	51.19	348.60	2,796.1	1,948.0	-393.0	731.5	0.00	0.00	0.00
3,700.0	51.19	348.60	2,858.8	2,024.3	-408.4	760.2	0.00	0.00	0.00
3,800.0	51.19	348.60	2,921.5	2,100.7	-423.8	788.9	0.00	0.00	0.00
3,900.0	51.19	348.60	2,984.2	2,177.1	-439.2	817.6	0.00	0.00	0.00
3,941.2	51.19	348.60	3,010.0	2,208.6	-445.5	829.4	0.00	0.00	0.00
SUSSEX									
4,000.0	51.19	348.60	3,046.8	2,253.5	-454.6	846.3	0.00	0.00	0.00
4,100.0	51.19	348.60	3,109.5	2,329.9	-470.0	874.9	0.00	0.00	0.00
4,200.0	51.19	348.60	3,172.2	2,406.3	-485.4	903.6	0.00	0.00	0.00
4,300.0	51.19	348.60	3,234.9	2,482.7	-500.8	932.3	0.00	0.00	0.00
4,400.0	51.19	348.60	3,297.5	2,559.0	-516.2	961.0	0.00	0.00	0.00
4,500.0	51.19	348.60	3,360.2	2,635.4	-531.6	989.7	0.00	0.00	0.00

Planning Report

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 24' @ 5059.0usft
Project:	Weld County	MD Reference:	KB 24' @ 5059.0usft
Site:	Sec 7-T4N-R68W	North Reference:	True
Well:	BERTHOUD FARMS 8E-10-1N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.0	51.19	348.60	3,422.9	2,711.8	-547.0	1,018.4	0.00	0.00	0.00
4,643.3	51.19	348.60	3,450.0	2,744.9	-553.7	1,030.8	0.00	0.00	0.00
SHANNON									
4,661.1	51.19	348.60	3,461.1	2,758.4	-556.4	1,035.9	0.00	0.00	0.00
Drop 2.50°/100									
4,700.0	50.22	348.60	3,485.8	2,788.0	-562.4	1,047.0	2.50	-2.50	0.00
4,800.0	47.72	348.60	3,551.5	2,861.9	-577.3	1,074.7	2.50	-2.50	0.00
4,900.0	45.22	348.60	3,620.3	2,933.0	-591.7	1,101.4	2.50	-2.50	0.00
5,000.0	42.72	348.60	3,692.3	3,001.0	-605.4	1,127.0	2.50	-2.50	0.00
5,100.0	40.22	348.60	3,767.2	3,065.9	-618.5	1,151.4	2.50	-2.50	0.00
5,200.0	37.72	348.60	3,845.0	3,127.6	-630.9	1,174.5	2.50	-2.50	0.00
5,300.0	35.22	348.60	3,925.4	3,185.8	-642.7	1,196.4	2.50	-2.50	0.00
5,400.0	32.72	348.60	4,008.3	3,240.6	-653.7	1,216.9	2.50	-2.50	0.00
5,500.0	30.22	348.60	4,093.6	3,291.8	-664.0	1,236.2	2.50	-2.50	0.00
5,600.0	27.72	348.60	4,181.1	3,339.2	-673.6	1,254.0	2.50	-2.50	0.00
5,700.0	25.22	348.60	4,270.6	3,382.9	-682.4	1,270.4	2.50	-2.50	0.00
5,800.0	22.72	348.60	4,362.0	3,422.7	-690.4	1,285.3	2.50	-2.50	0.00
5,900.0	20.22	348.60	4,455.0	3,458.6	-697.7	1,298.8	2.50	-2.50	0.00
6,000.0	17.72	348.60	4,549.6	3,490.5	-704.1	1,310.8	2.50	-2.50	0.00
6,100.0	15.22	348.60	4,645.5	3,518.2	-709.7	1,321.2	2.50	-2.50	0.00
6,200.0	12.72	348.60	4,742.5	3,541.9	-714.5	1,330.1	2.50	-2.50	0.00
6,300.0	10.22	348.60	4,840.5	3,561.4	-718.4	1,337.4	2.50	-2.50	0.00
6,400.0	7.72	348.60	4,939.3	3,576.7	-721.5	1,343.1	2.50	-2.50	0.00
6,500.0	5.22	348.60	5,038.6	3,587.7	-723.7	1,347.3	2.50	-2.50	0.00
6,600.0	2.72	348.60	5,138.4	3,594.5	-725.1	1,349.8	2.50	-2.50	0.00
6,708.7	0.00	0.00	5,247.0	3,597.0	-725.6	1,350.8	2.50	-2.50	0.00
Hold Vertical									
6,808.7	0.00	0.00	5,347.0	3,597.0	-725.6	1,350.8	0.00	0.00	0.00
KOP, Build 10°/100'									
6,850.0	4.13	89.06	5,388.3	3,597.0	-724.1	1,352.0	10.00	10.00	0.00
6,900.0	9.13	89.06	5,438.0	3,597.1	-718.3	1,356.9	10.00	10.00	0.00
6,950.0	14.13	89.06	5,486.9	3,597.3	-708.3	1,365.5	10.00	10.00	0.00
7,000.0	19.13	89.06	5,534.8	3,597.5	-694.0	1,377.6	10.00	10.00	0.00
7,050.0	24.13	89.06	5,581.3	3,597.8	-675.5	1,393.2	10.00	10.00	0.00
7,100.0	29.13	89.06	5,626.0	3,598.2	-653.1	1,412.2	10.00	10.00	0.00
7,150.0	34.13	89.06	5,668.5	3,598.6	-626.9	1,434.4	10.00	10.00	0.00
7,200.0	39.13	89.06	5,708.6	3,599.1	-597.1	1,459.7	10.00	10.00	0.00
7,250.0	44.13	89.06	5,746.0	3,599.7	-563.9	1,487.8	10.00	10.00	0.00
7,300.0	49.13	89.06	5,780.3	3,600.2	-527.6	1,518.6	10.00	10.00	0.00
7,350.0	54.13	89.06	5,811.3	3,600.9	-488.4	1,551.8	10.00	10.00	0.00
7,400.0	59.13	89.06	5,838.8	3,601.6	-446.6	1,587.2	10.00	10.00	0.00
7,450.0	64.13	89.06	5,862.6	3,602.3	-402.7	1,624.5	10.00	10.00	0.00
7,500.0	69.13	89.06	5,882.4	3,603.1	-356.8	1,663.4	10.00	10.00	0.00
7,550.0	74.13	89.06	5,898.2	3,603.8	-309.4	1,703.6	10.00	10.00	0.00
7,600.0	79.13	89.06	5,909.7	3,604.6	-260.7	1,744.8	10.00	10.00	0.00
7,650.0	84.13	89.06	5,917.0	3,605.4	-211.3	1,786.7	10.00	10.00	0.00
7,700.0	89.13	89.06	5,919.9	3,606.3	-161.4	1,829.0	10.00	10.00	0.00
7,708.7	90.00	89.06	5,920.0	3,606.4	-152.7	1,836.4	10.00	10.00	0.00
LP @ 90° Inc - NIOBRARA									
7,800.0	90.00	89.06	5,920.0	3,607.9	-61.4	1,913.7	0.00	0.00	0.00
7,900.0	90.00	89.06	5,920.0	3,609.5	38.6	1,998.5	0.00	0.00	0.00
8,000.0	90.00	89.06	5,920.0	3,611.2	138.6	2,083.2	0.00	0.00	0.00
8,100.0	90.00	89.06	5,920.0	3,612.8	238.6	2,168.0	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well BERTHOUD FARMS 8E-10-1N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 24' @ 5059.0usft
Project:	Weld County	MD Reference:	KB 24' @ 5059.0usft
Site:	Sec 7-T4N-R68W	North Reference:	True
Well:	BERTHOUD FARMS 8E-10-1N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,200.0	90.00	89.06	5,920.0	3,614.5	338.5	2,252.7	0.00	0.00	0.00	
8,300.0	90.00	89.06	5,920.0	3,616.1	438.5	2,337.5	0.00	0.00	0.00	
8,400.0	90.00	89.06	5,920.0	3,617.7	538.5	2,422.2	0.00	0.00	0.00	
8,500.0	90.00	89.06	5,920.0	3,619.4	638.5	2,506.9	0.00	0.00	0.00	
8,600.0	90.00	89.06	5,920.0	3,621.0	738.5	2,591.7	0.00	0.00	0.00	
8,700.0	90.00	89.06	5,920.0	3,622.7	838.5	2,676.4	0.00	0.00	0.00	
8,800.0	90.00	89.06	5,920.0	3,624.3	938.5	2,761.2	0.00	0.00	0.00	
8,900.0	90.00	89.06	5,920.0	3,625.9	1,038.4	2,845.9	0.00	0.00	0.00	
9,000.0	90.00	89.06	5,920.0	3,627.6	1,138.4	2,930.7	0.00	0.00	0.00	
9,100.0	90.00	89.06	5,920.0	3,629.2	1,238.4	3,015.4	0.00	0.00	0.00	
9,160.2	90.00	89.06	5,920.0	3,630.2	1,298.6	3,066.4	0.00	0.00	0.00	
Hold										
9,200.0	90.00	89.06	5,920.0	3,630.9	1,338.4	3,100.2	0.00	0.00	0.00	
9,300.0	90.00	89.05	5,920.0	3,632.5	1,438.4	3,184.9	0.00	0.00	0.00	
9,400.0	90.00	89.05	5,920.0	3,634.2	1,538.4	3,269.7	0.00	0.00	0.00	
9,500.0	90.00	89.04	5,920.0	3,635.8	1,638.4	3,354.4	0.00	0.00	0.00	
9,600.0	90.00	89.04	5,920.0	3,637.5	1,738.3	3,439.2	0.00	0.00	0.00	
9,700.0	90.00	89.03	5,920.0	3,639.2	1,838.3	3,524.0	0.00	0.00	0.00	
9,800.0	90.00	89.03	5,920.0	3,640.9	1,938.3	3,608.7	0.00	0.00	0.00	
9,900.0	90.00	89.02	5,920.0	3,642.6	2,038.3	3,693.5	0.00	0.00	0.00	
10,000.0	90.00	89.02	5,920.0	3,644.3	2,138.3	3,778.3	0.00	0.00	0.00	
10,100.0	90.00	89.01	5,920.0	3,646.0	2,238.3	3,863.1	0.00	0.00	0.00	
10,200.0	90.00	89.01	5,920.0	3,647.7	2,338.3	3,947.9	0.00	0.00	0.00	
10,300.0	90.00	89.00	5,920.0	3,649.5	2,438.2	4,032.7	0.00	0.00	0.00	
10,400.0	90.00	89.00	5,920.0	3,651.2	2,538.2	4,117.5	0.00	0.00	0.00	
10,500.0	90.00	88.99	5,920.0	3,653.0	2,638.2	4,202.3	0.00	0.00	0.00	
10,600.0	90.00	88.99	5,920.0	3,654.7	2,738.2	4,287.1	0.00	0.00	0.00	
10,700.0	90.00	88.98	5,920.0	3,656.5	2,838.2	4,371.9	0.00	0.00	0.00	
10,800.0	90.00	88.98	5,920.0	3,658.3	2,938.2	4,456.7	0.00	0.00	0.00	
10,900.0	90.00	88.97	5,920.0	3,660.0	3,038.2	4,541.5	0.00	0.00	0.00	
11,000.0	90.00	88.97	5,920.0	3,661.8	3,138.1	4,626.3	0.00	0.00	0.00	
11,100.0	90.00	88.96	5,920.0	3,663.6	3,238.1	4,711.2	0.00	0.00	0.00	
11,200.0	90.00	88.96	5,920.0	3,665.5	3,338.1	4,796.0	0.00	0.00	0.00	
11,300.0	90.00	88.96	5,920.0	3,667.3	3,438.1	4,880.9	0.00	0.00	0.00	
11,400.0	90.00	88.95	5,920.0	3,669.1	3,538.1	4,965.7	0.00	0.00	0.00	
11,500.0	90.00	88.95	5,920.0	3,670.9	3,638.1	5,050.5	0.00	0.00	0.00	
11,600.0	90.00	88.94	5,920.0	3,672.8	3,738.0	5,135.4	0.00	0.00	0.00	
11,700.0	90.00	88.94	5,920.0	3,674.6	3,838.0	5,220.3	0.00	0.00	0.00	
11,800.0	90.00	88.93	5,920.0	3,676.5	3,938.0	5,305.1	0.00	0.00	0.00	
11,900.0	90.00	88.93	5,920.0	3,678.4	4,038.0	5,390.0	0.00	0.00	0.00	
12,000.0	90.00	88.92	5,920.0	3,680.2	4,138.0	5,474.9	0.00	0.00	0.00	
12,100.0	90.00	88.92	5,920.0	3,682.1	4,237.9	5,559.7	0.00	0.00	0.00	
12,200.0	90.00	88.91	5,920.0	3,684.0	4,337.9	5,644.6	0.00	0.00	0.00	
12,300.0	90.00	88.91	5,920.0	3,685.9	4,437.9	5,729.5	0.00	0.00	0.00	
12,400.0	90.00	88.90	5,920.0	3,687.8	4,537.9	5,814.4	0.00	0.00	0.00	
12,500.0	90.00	88.90	5,920.0	3,689.8	4,637.9	5,899.3	0.00	0.00	0.00	
12,600.0	90.00	88.89	5,920.0	3,691.7	4,737.9	5,984.2	0.00	0.00	0.00	
12,700.0	90.00	88.89	5,920.0	3,693.6	4,837.8	6,069.1	0.00	0.00	0.00	
12,800.0	90.00	88.88	5,920.0	3,695.6	4,937.8	6,154.0	0.00	0.00	0.00	
12,900.0	90.00	88.88	5,920.0	3,697.5	5,037.8	6,238.9	0.00	0.00	0.00	
13,000.0	90.00	88.87	5,920.0	3,699.5	5,137.8	6,323.8	0.00	0.00	0.00	
13,100.0	90.00	88.87	5,920.0	3,701.5	5,237.8	6,408.7	0.00	0.00	0.00	
13,200.0	90.00	88.86	5,920.0	3,703.5	5,337.7	6,493.7	0.00	0.00	0.00	
13,300.0	90.00	88.86	5,920.0	3,705.5	5,437.7	6,578.6	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well BERTHOUD FARMS 8E-10-1N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 24' @ 5059.0usft
Project:	Weld County	MD Reference:	KB 24' @ 5059.0usft
Site:	Sec 7-T4N-R68W	North Reference:	True
Well:	BERTHOUD FARMS 8E-10-1N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,400.0	90.00	88.85	5,920.0	3,707.5	5,537.7	6,663.5	0.00	0.00	0.00
13,500.0	90.00	88.85	5,920.0	3,709.5	5,637.7	6,748.5	0.00	0.00	0.00
13,575.1	90.00	88.84	5,920.0	3,711.0	5,712.7	6,812.2	0.00	0.00	0.00
TD at 13575.1' MD									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BF 1 - LP - hit/miss target - Shape - Point	0.00	0.00	5,920.0	3,630.2	1,298.6	1,364,999.92	3,129,543.69	40° 20' 3.818 N	105° 2' 7.141 W
BF 1 - PBHL - plan hits target center - Point	0.00	0.00	5,920.0	3,711.0	5,712.7	1,365,103.59	3,133,957.38	40° 20' 4.610 N	105° 1' 10.139 W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,983.9	2,410.0	PARKMAN				
3,941.2	3,010.0	SUSSEX				
4,643.3	3,450.0	SHANNON				
7,708.7	5,920.0	NIOBRARA				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
100.0	100.0	0.0	0.0	Build 2.50°/100'
2,147.6	1,885.9	838.6	-169.2	Hold 51.19° Inc
4,661.1	3,461.1	2,758.4	-556.4	Drop 2.50°/100'
6,708.7	5,247.0	3,597.0	-725.6	Hold Vertical
6,808.7	5,347.0	3,597.0	-725.6	KOP, Build 10°/100'
7,708.7	5,920.0	3,606.4	-152.7	LP @ 90° Inc
9,160.2	5,920.0	3,630.2	1,298.6	Hold
13,575.1	5,920.0	3,711.0	5,712.7	TD at 13575.1' MD