

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

NE SE SEC. 8 T5N R66W 6th P.M.

TC-HILAND KNOLLS 4-9-11

ORIGINAL WELLBORE

23 July, 2015

Plan: PROPOSAL #1

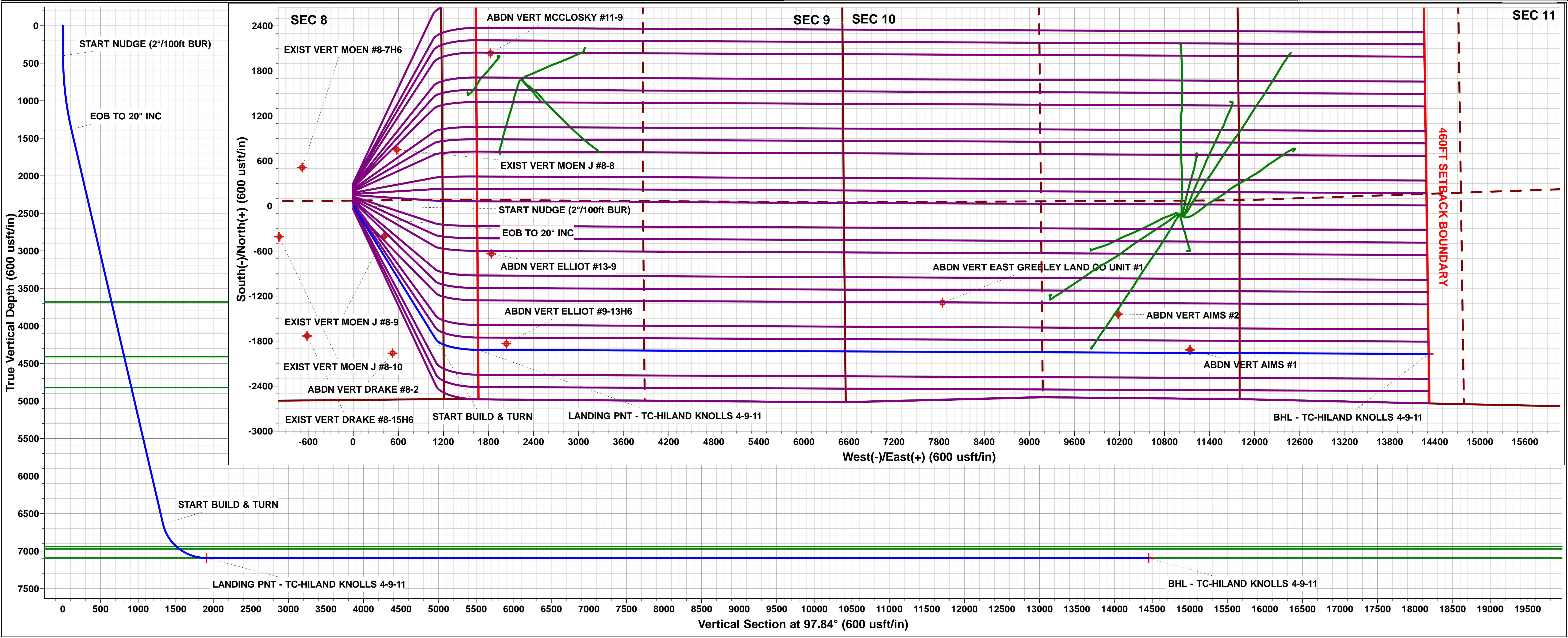
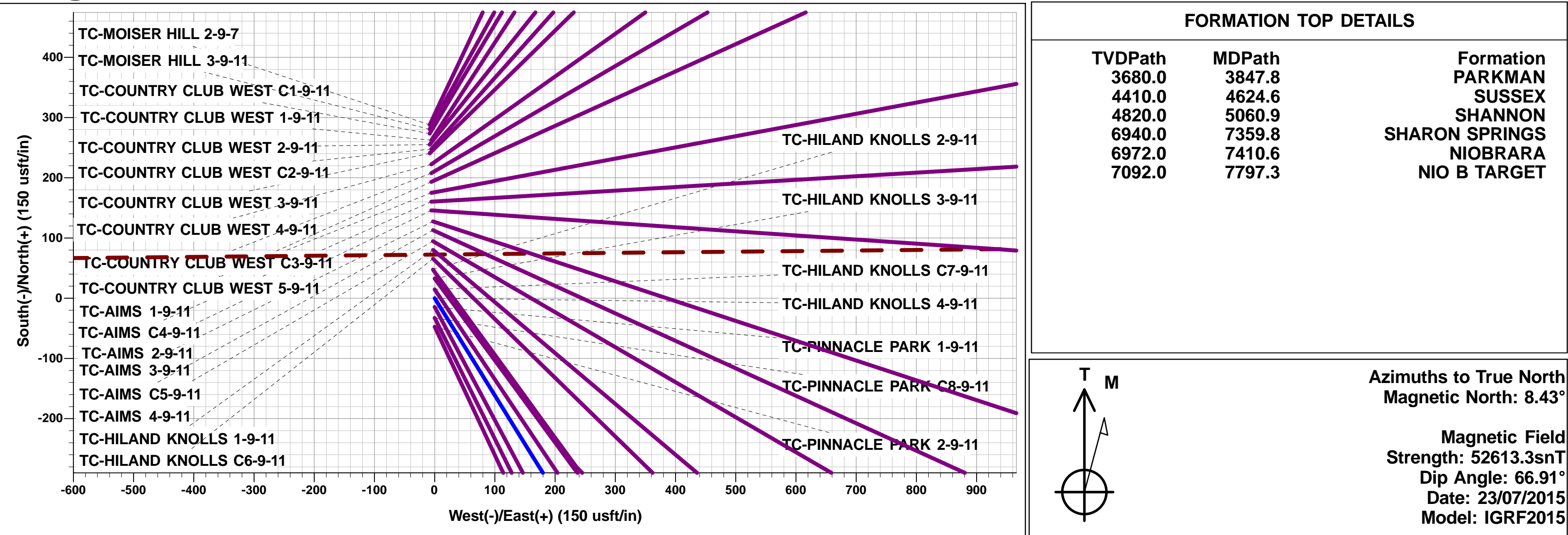




Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE SE SEC. 8 T5N R66W 6th P.M.
Well: TC-HILAND KNOLLS 4-9-11
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation	
400.0	400.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1379.8	1400.0	20.00	148.23	-146.9	91.0	110.1	172.8	EOB TO 20° INC	
6643.8	7001.7	20.00	148.23	-1775.5	1099.7	1331.5	2088.5	START BUILD & TURN	
7092.0	7797.3	90.00	90.25	-1916.2	1662.6	1908.3	2682.9	LANDING PNT - TC-HILAND KNOLLS 4-9-11	
7092.0	20451.8	90.00	90.25	-1970.4	14317.0	14451.9	15337.4	BHL - TC-HILAND KNOLLS 4-9-11	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LANDING PNT - TC-HILAND KNOLLS 4-9-11	7092.0	-1916.2	1662.6	40.408680	-104.792690
BHL - TC-HILAND KNOLLS 4-9-11	7092.0	-1970.4	14317.0	40.408520	-104.747250



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TC-HILAND KNOLLS 4-9-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS 4-9-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	WELD COUNTY, COLORADO (NAD 83)		
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	NE SE SEC. 8 T5N R66W 6th P.M.		
Site Position:		Northing:	1,394,363.62 usft
From:	Lat/Long	Easting:	3,195,288.63 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.413810
		Longitude:	-104.798660
		Grid Convergence:	0.45 °

Well	TC-HILAND KNOLLS 4-9-11		
Well Position	+N/-S	47.4 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty		0.0 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	23/07/2015	8.43	66.91	52,613

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 (°)
	7,092.0	0.0	0.0	97.84

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,808.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	-4,408.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	20.00	148.23	1,379.8	-3,428.2	-146.9	91.0	2.00	2.00	0.00	148.23	
1,400.0	20.00	148.23	1,379.8	-3,428.2	-146.9	91.0	10.00	-8.88	-13.44	-152.64	
7,001.7	20.00	148.23	6,643.8	1,835.8	-1,775.5	1,099.7	0.00	0.00	0.00	0.00	
7,797.3	90.00	90.25	7,092.0	2,284.0	-1,916.2	1,662.6	10.00	8.80	-7.29	-59.56	LANDING PNT - TC
20,451.8	90.00	90.25	7,092.0	2,284.0	-1,970.4	14,317.0	0.00	0.00	0.00	0.00	BHL - TC-HILAND I

Planning Report



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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS 4-9-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	4,808.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,708.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,608.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,508.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
400.0	0.00	0.00	400.0	4,408.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	2.00	148.23	500.0	4,308.02	-1.5	0.9	1.1	2.00	2.00	0.00
600.0	4.00	148.23	599.8	4,208.16	-5.9	3.7	4.4	2.00	2.00	0.00
700.0	6.00	148.23	699.5	4,108.55	-13.3	8.3	10.0	2.00	2.00	0.00
800.0	8.00	148.23	798.7	4,009.30	-23.7	14.7	17.8	2.00	2.00	0.00
900.0	10.00	148.23	897.5	3,910.53	-37.0	22.9	27.7	2.00	2.00	0.00
1,000.0	12.00	148.23	995.6	3,812.38	-53.2	33.0	39.9	2.00	2.00	0.00
1,100.0	14.00	148.23	1,093.1	3,714.94	-72.3	44.8	54.2	2.00	2.00	0.00
1,200.0	16.00	148.23	1,189.6	3,618.36	-94.3	58.4	70.7	2.00	2.00	0.00
1,300.0	18.00	148.23	1,285.3	3,522.73	-119.2	73.8	89.4	2.00	2.00	0.00
EOB TO 20° INC										
1,400.0	20.00	148.23	1,379.8	3,428.18	-146.9	91.0	110.1	2.00	2.00	0.00
1,500.0	20.00	148.23	1,473.8	3,334.21	-176.0	109.0	131.9	0.00	0.00	0.00
1,600.0	20.00	148.23	1,567.8	3,240.24	-205.0	127.0	153.7	0.00	0.00	0.00
1,700.0	20.00	148.23	1,661.7	3,146.27	-234.1	145.0	175.6	0.00	0.00	0.00
1,800.0	20.00	148.23	1,755.7	3,052.30	-263.2	163.0	197.4	0.00	0.00	0.00
1,900.0	20.00	148.23	1,849.7	2,958.33	-292.2	181.0	219.2	0.00	0.00	0.00
2,000.0	20.00	148.23	1,943.6	2,864.36	-321.3	199.0	241.0	0.00	0.00	0.00
2,100.0	20.00	148.23	2,037.6	2,770.39	-350.4	217.0	262.8	0.00	0.00	0.00
2,200.0	20.00	148.23	2,131.6	2,676.42	-379.5	235.0	284.6	0.00	0.00	0.00
2,300.0	20.00	148.23	2,225.6	2,582.45	-408.5	253.0	306.4	0.00	0.00	0.00
2,400.0	20.00	148.23	2,319.5	2,488.48	-437.6	271.0	328.2	0.00	0.00	0.00
2,500.0	20.00	148.23	2,413.5	2,394.51	-466.7	289.0	350.0	0.00	0.00	0.00
2,600.0	20.00	148.23	2,507.5	2,300.54	-495.8	307.1	371.8	0.00	0.00	0.00
2,700.0	20.00	148.23	2,601.4	2,206.57	-524.8	325.1	393.6	0.00	0.00	0.00
2,800.0	20.00	148.23	2,695.4	2,112.60	-553.9	343.1	415.4	0.00	0.00	0.00
2,900.0	20.00	148.23	2,789.4	2,018.63	-583.0	361.1	437.2	0.00	0.00	0.00
3,000.0	20.00	148.23	2,883.3	1,924.66	-612.1	379.1	459.0	0.00	0.00	0.00
3,100.0	20.00	148.23	2,977.3	1,830.69	-641.1	397.1	480.8	0.00	0.00	0.00
3,200.0	20.00	148.23	3,071.3	1,736.72	-670.2	415.1	502.6	0.00	0.00	0.00
3,300.0	20.00	148.23	3,165.3	1,642.74	-699.3	433.1	524.4	0.00	0.00	0.00
3,400.0	20.00	148.23	3,259.2	1,548.77	-728.4	451.1	546.2	0.00	0.00	0.00
3,500.0	20.00	148.23	3,353.2	1,454.80	-757.4	469.1	568.0	0.00	0.00	0.00
3,600.0	20.00	148.23	3,447.2	1,360.83	-786.5	487.1	589.8	0.00	0.00	0.00
3,700.0	20.00	148.23	3,541.1	1,266.86	-815.6	505.1	611.6	0.00	0.00	0.00
3,800.0	20.00	148.23	3,635.1	1,172.89	-844.6	523.1	633.4	0.00	0.00	0.00
PARKMAN										
3,847.8	20.00	148.23	3,680.0	1,128.00	-858.5	531.7	643.8	0.00	0.00	0.00
3,900.0	20.00	148.23	3,729.1	1,078.92	-873.7	541.2	655.2	0.00	0.00	0.00
4,000.0	20.00	148.23	3,823.0	984.95	-902.8	559.2	677.0	0.00	0.00	0.00
4,100.0	20.00	148.23	3,917.0	890.98	-931.9	577.2	698.8	0.00	0.00	0.00
4,200.0	20.00	148.23	4,011.0	797.01	-960.9	595.2	720.6	0.00	0.00	0.00
4,300.0	20.00	148.23	4,105.0	703.04	-990.0	613.2	742.4	0.00	0.00	0.00
4,400.0	20.00	148.23	4,198.9	609.07	-1,019.1	631.2	764.2	0.00	0.00	0.00
4,500.0	20.00	148.23	4,292.9	515.10	-1,048.2	649.2	786.0	0.00	0.00	0.00
4,600.0	20.00	148.23	4,386.9	421.13	-1,077.2	667.2	807.8	0.00	0.00	0.00
SUSSEX										
4,624.6	20.00	148.23	4,410.0	398.00	-1,084.4	671.6	813.2	0.00	0.00	0.00
4,700.0	20.00	148.23	4,480.8	327.16	-1,106.3	685.2	829.7	0.00	0.00	0.00

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Well:	TC-HILAND KNOLLS 4-9-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.0	20.00	148.23	4,574.8	233.19	-1,135.4	703.2	851.5	0.00	0.00	0.00
4,900.0	20.00	148.23	4,668.8	139.22	-1,164.5	721.2	873.3	0.00	0.00	0.00
5,000.0	20.00	148.23	4,762.8	45.25	-1,193.5	739.2	895.1	0.00	0.00	0.00
SHANNON										
5,060.9	20.00	148.23	4,820.0	-12.00	-1,211.2	750.2	908.3	0.00	0.00	0.00
5,100.0	20.00	148.23	4,856.7	-48.72	-1,222.6	757.2	916.9	0.00	0.00	0.00
5,200.0	20.00	148.23	4,950.7	-142.70	-1,251.7	775.3	938.7	0.00	0.00	0.00
5,300.0	20.00	148.23	5,044.7	-236.67	-1,280.7	793.3	960.5	0.00	0.00	0.00
5,400.0	20.00	148.23	5,138.6	-330.64	-1,309.8	811.3	982.3	0.00	0.00	0.00
5,500.0	20.00	148.23	5,232.6	-424.61	-1,338.9	829.3	1,004.1	0.00	0.00	0.00
5,600.0	20.00	148.23	5,326.6	-518.58	-1,368.0	847.3	1,025.9	0.00	0.00	0.00
5,700.0	20.00	148.23	5,420.5	-612.55	-1,397.0	865.3	1,047.7	0.00	0.00	0.00
5,800.0	20.00	148.23	5,514.5	-706.52	-1,426.1	883.3	1,069.5	0.00	0.00	0.00
5,900.0	20.00	148.23	5,608.5	-800.49	-1,455.2	901.3	1,091.3	0.00	0.00	0.00
6,000.0	20.00	148.23	5,702.5	-894.46	-1,484.3	919.3	1,113.1	0.00	0.00	0.00
6,100.0	20.00	148.23	5,796.4	-988.43	-1,513.3	937.3	1,134.9	0.00	0.00	0.00
6,200.0	20.00	148.23	5,890.4	-1,082.40	-1,542.4	955.3	1,156.7	0.00	0.00	0.00
6,300.0	20.00	148.23	5,984.4	-1,176.37	-1,571.5	973.3	1,178.5	0.00	0.00	0.00
6,400.0	20.00	148.23	6,078.3	-1,270.34	-1,600.6	991.3	1,200.3	0.00	0.00	0.00
6,500.0	20.00	148.23	6,172.3	-1,364.31	-1,629.6	1,009.3	1,222.1	0.00	0.00	0.00
6,600.0	20.00	148.23	6,266.3	-1,458.28	-1,658.7	1,027.4	1,243.9	0.00	0.00	0.00
6,700.0	20.00	148.23	6,360.3	-1,552.25	-1,687.8	1,045.4	1,265.7	0.00	0.00	0.00
6,800.0	20.00	148.23	6,454.2	-1,646.22	-1,716.9	1,063.4	1,287.5	0.00	0.00	0.00
6,900.0	20.00	148.23	6,548.2	-1,740.19	-1,745.9	1,081.4	1,309.3	0.00	0.00	0.00
7,000.0	20.00	148.23	6,642.2	-1,834.16	-1,775.0	1,099.4	1,331.1	0.00	0.00	0.00
START BUILD & TURN										
7,001.7	20.00	148.23	6,643.8	-1,835.76	-1,775.5	1,099.7	1,331.5	0.00	0.00	0.00
7,100.0	26.32	128.84	6,734.2	-1,926.23	-1,803.5	1,125.6	1,361.0	10.00	6.43	-19.72
7,200.0	34.39	117.04	6,820.5	-2,012.52	-1,830.3	1,168.1	1,406.7	10.00	8.07	-11.80
7,300.0	43.19	109.43	6,898.4	-2,090.44	-1,854.6	1,225.7	1,467.1	10.00	8.81	-7.61
SHARON SPRINGS										
7,359.8	48.64	106.01	6,940.0	-2,132.00	-1,867.6	1,266.6	1,509.4	10.00	9.12	-5.73
7,400.0	52.36	104.01	6,965.6	-2,157.59	-1,875.6	1,296.5	1,540.2	10.00	9.24	-4.96
NIOBRARA										
7,410.6	53.35	103.52	6,972.0	-2,164.00	-1,877.7	1,304.8	1,548.6	10.00	9.29	-4.64
7,500.0	61.72	99.80	7,020.0	-2,211.96	-1,892.8	1,378.6	1,623.7	10.00	9.37	-4.16
7,600.0	71.19	96.28	7,059.9	-2,251.87	-1,905.5	1,469.2	1,715.3	10.00	9.47	-3.52
7,700.0	80.71	93.14	7,084.1	-2,276.13	-1,913.4	1,565.8	1,812.0	10.00	9.53	-3.14
LANDING PNT - TC-HILAND KNOLLS 4-9-11 - NIO B TARGET										
7,797.3	90.00	90.25	7,092.0	-2,284.00	-1,916.2	1,662.6	1,908.3	10.00	9.55	-2.97
7,800.0	90.00	90.25	7,092.0	-2,284.00	-1,916.2	1,665.3	1,911.0	0.00	0.00	0.00
7,900.0	90.00	90.25	7,092.0	-2,284.00	-1,916.7	1,765.3	2,010.1	0.00	0.00	0.00
8,000.0	90.00	90.25	7,092.0	-2,284.00	-1,917.1	1,865.3	2,109.3	0.00	0.00	0.00
8,100.0	90.00	90.25	7,092.0	-2,284.00	-1,917.5	1,965.3	2,208.4	0.00	0.00	0.00
8,200.0	90.00	90.25	7,092.0	-2,284.00	-1,917.9	2,065.3	2,307.5	0.00	0.00	0.00
8,300.0	90.00	90.25	7,092.0	-2,284.00	-1,918.4	2,165.3	2,406.6	0.00	0.00	0.00
8,400.0	90.00	90.25	7,092.0	-2,284.00	-1,918.8	2,265.3	2,505.8	0.00	0.00	0.00
8,500.0	90.00	90.25	7,092.0	-2,284.00	-1,919.2	2,365.3	2,604.9	0.00	0.00	0.00
8,600.0	90.00	90.25	7,092.0	-2,284.00	-1,919.7	2,465.3	2,704.0	0.00	0.00	0.00
8,700.0	90.00	90.25	7,092.0	-2,284.00	-1,920.1	2,565.3	2,803.1	0.00	0.00	0.00
8,800.0	90.00	90.25	7,092.0	-2,284.00	-1,920.5	2,665.3	2,902.3	0.00	0.00	0.00
8,900.0	90.00	90.25	7,092.0	-2,284.00	-1,920.9	2,765.3	3,001.4	0.00	0.00	0.00
9,000.0	90.00	90.25	7,092.0	-2,284.00	-1,921.4	2,865.3	3,100.5	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TC-HILAND KNOLLS 4-9-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS 4-9-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,100.0	90.00	90.25	7,092.0	-2,284.00	-1,921.8	2,965.3	3,199.6	0.00	0.00	0.00
9,200.0	90.00	90.25	7,092.0	-2,284.00	-1,922.2	3,065.3	3,298.7	0.00	0.00	0.00
9,300.0	90.00	90.25	7,092.0	-2,284.00	-1,922.7	3,165.3	3,397.9	0.00	0.00	0.00
9,400.0	90.00	90.25	7,092.0	-2,284.00	-1,923.1	3,265.3	3,497.0	0.00	0.00	0.00
9,500.0	90.00	90.25	7,092.0	-2,284.00	-1,923.5	3,365.3	3,596.1	0.00	0.00	0.00
9,600.0	90.00	90.25	7,092.0	-2,284.00	-1,923.9	3,465.3	3,695.2	0.00	0.00	0.00
9,700.0	90.00	90.25	7,092.0	-2,284.00	-1,924.4	3,565.3	3,794.4	0.00	0.00	0.00
9,800.0	90.00	90.25	7,092.0	-2,284.00	-1,924.8	3,665.3	3,893.5	0.00	0.00	0.00
9,900.0	90.00	90.25	7,092.0	-2,284.00	-1,925.2	3,765.3	3,992.6	0.00	0.00	0.00
10,000.0	90.00	90.25	7,092.0	-2,284.00	-1,925.7	3,865.3	4,091.7	0.00	0.00	0.00
10,100.0	90.00	90.25	7,092.0	-2,284.00	-1,926.1	3,965.3	4,190.9	0.00	0.00	0.00
10,200.0	90.00	90.25	7,092.0	-2,284.00	-1,926.5	4,065.3	4,290.0	0.00	0.00	0.00
10,300.0	90.00	90.25	7,092.0	-2,284.00	-1,926.9	4,165.3	4,389.1	0.00	0.00	0.00
10,400.0	90.00	90.25	7,092.0	-2,284.00	-1,927.4	4,265.3	4,488.2	0.00	0.00	0.00
10,500.0	90.00	90.25	7,092.0	-2,284.00	-1,927.8	4,365.3	4,587.4	0.00	0.00	0.00
10,600.0	90.00	90.25	7,092.0	-2,284.00	-1,928.2	4,465.3	4,686.5	0.00	0.00	0.00
10,700.0	90.00	90.25	7,092.0	-2,284.00	-1,928.6	4,565.3	4,785.6	0.00	0.00	0.00
10,800.0	90.00	90.25	7,092.0	-2,284.00	-1,929.1	4,665.3	4,884.7	0.00	0.00	0.00
10,900.0	90.00	90.25	7,092.0	-2,284.00	-1,929.5	4,765.3	4,983.8	0.00	0.00	0.00
11,000.0	90.00	90.25	7,092.0	-2,284.00	-1,929.9	4,865.3	5,083.0	0.00	0.00	0.00
11,100.0	90.00	90.25	7,092.0	-2,284.00	-1,930.4	4,965.3	5,182.1	0.00	0.00	0.00
11,200.0	90.00	90.25	7,092.0	-2,284.00	-1,930.8	5,065.3	5,281.2	0.00	0.00	0.00
11,300.0	90.00	90.25	7,092.0	-2,284.00	-1,931.2	5,165.3	5,380.3	0.00	0.00	0.00
11,400.0	90.00	90.25	7,092.0	-2,284.00	-1,931.6	5,265.3	5,479.5	0.00	0.00	0.00
11,500.0	90.00	90.25	7,092.0	-2,284.00	-1,932.1	5,365.3	5,578.6	0.00	0.00	0.00
11,600.0	90.00	90.25	7,092.0	-2,284.00	-1,932.5	5,465.3	5,677.7	0.00	0.00	0.00
11,700.0	90.00	90.25	7,092.0	-2,284.00	-1,932.9	5,565.3	5,776.8	0.00	0.00	0.00
11,800.0	90.00	90.25	7,092.0	-2,284.00	-1,933.4	5,665.3	5,876.0	0.00	0.00	0.00
11,900.0	90.00	90.25	7,092.0	-2,284.00	-1,933.8	5,765.3	5,975.1	0.00	0.00	0.00
12,000.0	90.00	90.25	7,092.0	-2,284.00	-1,934.2	5,865.3	6,074.2	0.00	0.00	0.00
12,100.0	90.00	90.25	7,092.0	-2,284.00	-1,934.6	5,965.3	6,173.3	0.00	0.00	0.00
12,200.0	90.00	90.25	7,092.0	-2,284.00	-1,935.1	6,065.3	6,272.5	0.00	0.00	0.00
12,300.0	90.00	90.25	7,092.0	-2,284.00	-1,935.5	6,165.3	6,371.6	0.00	0.00	0.00
12,400.0	90.00	90.25	7,092.0	-2,284.00	-1,935.9	6,265.3	6,470.7	0.00	0.00	0.00
12,500.0	90.00	90.25	7,092.0	-2,284.00	-1,936.4	6,365.3	6,569.8	0.00	0.00	0.00
12,600.0	90.00	90.25	7,092.0	-2,284.00	-1,936.8	6,465.3	6,669.0	0.00	0.00	0.00
12,700.0	90.00	90.25	7,092.0	-2,284.00	-1,937.2	6,565.3	6,768.1	0.00	0.00	0.00
12,800.0	90.00	90.25	7,092.0	-2,284.00	-1,937.6	6,665.3	6,867.2	0.00	0.00	0.00
12,900.0	90.00	90.25	7,092.0	-2,284.00	-1,938.1	6,765.3	6,966.3	0.00	0.00	0.00
13,000.0	90.00	90.25	7,092.0	-2,284.00	-1,938.5	6,865.3	7,065.4	0.00	0.00	0.00
13,100.0	90.00	90.25	7,092.0	-2,284.00	-1,938.9	6,965.3	7,164.6	0.00	0.00	0.00
13,200.0	90.00	90.25	7,092.0	-2,284.00	-1,939.4	7,065.3	7,263.7	0.00	0.00	0.00
13,300.0	90.00	90.25	7,092.0	-2,284.00	-1,939.8	7,165.3	7,362.8	0.00	0.00	0.00
13,400.0	90.00	90.25	7,092.0	-2,284.00	-1,940.2	7,265.3	7,461.9	0.00	0.00	0.00
13,500.0	90.00	90.25	7,092.0	-2,284.00	-1,940.6	7,365.3	7,561.1	0.00	0.00	0.00
13,600.0	90.00	90.25	7,092.0	-2,284.00	-1,941.1	7,465.2	7,660.2	0.00	0.00	0.00
13,700.0	90.00	90.25	7,092.0	-2,284.00	-1,941.5	7,565.2	7,759.3	0.00	0.00	0.00
13,800.0	90.00	90.25	7,092.0	-2,284.00	-1,941.9	7,665.2	7,858.4	0.00	0.00	0.00
13,900.0	90.00	90.25	7,092.0	-2,284.00	-1,942.4	7,765.2	7,957.6	0.00	0.00	0.00
14,000.0	90.00	90.25	7,092.0	-2,284.00	-1,942.8	7,865.2	8,056.7	0.00	0.00	0.00
14,100.0	90.00	90.25	7,092.0	-2,284.00	-1,943.2	7,965.2	8,155.8	0.00	0.00	0.00
14,200.0	90.00	90.25	7,092.0	-2,284.00	-1,943.6	8,065.2	8,254.9	0.00	0.00	0.00
14,300.0	90.00	90.25	7,092.0	-2,284.00	-1,944.1	8,165.2	8,354.1	0.00	0.00	0.00
14,400.0	90.00	90.25	7,092.0	-2,284.00	-1,944.5	8,265.2	8,453.2	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TC-HILAND KNOLLS 4-9-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS 4-9-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,500.0	90.00	90.25	7,092.0	-2,284.00	-1,944.9	8,365.2	8,552.3	0.00	0.00	0.00
14,600.0	90.00	90.25	7,092.0	-2,284.00	-1,945.4	8,465.2	8,651.4	0.00	0.00	0.00
14,700.0	90.00	90.25	7,092.0	-2,284.00	-1,945.8	8,565.2	8,750.5	0.00	0.00	0.00
14,800.0	90.00	90.25	7,092.0	-2,284.00	-1,946.2	8,665.2	8,849.7	0.00	0.00	0.00
14,900.0	90.00	90.25	7,092.0	-2,284.00	-1,946.6	8,765.2	8,948.8	0.00	0.00	0.00
15,000.0	90.00	90.25	7,092.0	-2,284.00	-1,947.1	8,865.2	9,047.9	0.00	0.00	0.00
15,100.0	90.00	90.25	7,092.0	-2,284.00	-1,947.5	8,965.2	9,147.0	0.00	0.00	0.00
15,200.0	90.00	90.25	7,092.0	-2,284.00	-1,947.9	9,065.2	9,246.2	0.00	0.00	0.00
15,300.0	90.00	90.25	7,092.0	-2,284.00	-1,948.3	9,165.2	9,345.3	0.00	0.00	0.00
15,400.0	90.00	90.25	7,092.0	-2,284.00	-1,948.8	9,265.2	9,444.4	0.00	0.00	0.00
15,500.0	90.00	90.25	7,092.0	-2,284.00	-1,949.2	9,365.2	9,543.5	0.00	0.00	0.00
15,600.0	90.00	90.25	7,092.0	-2,284.00	-1,949.6	9,465.2	9,642.7	0.00	0.00	0.00
15,700.0	90.00	90.25	7,092.0	-2,284.00	-1,950.1	9,565.2	9,741.8	0.00	0.00	0.00
15,800.0	90.00	90.25	7,092.0	-2,284.00	-1,950.5	9,665.2	9,840.9	0.00	0.00	0.00
15,900.0	90.00	90.25	7,092.0	-2,284.00	-1,950.9	9,765.2	9,940.0	0.00	0.00	0.00
16,000.0	90.00	90.25	7,092.0	-2,284.00	-1,951.3	9,865.2	10,039.2	0.00	0.00	0.00
16,100.0	90.00	90.25	7,092.0	-2,284.00	-1,951.8	9,965.2	10,138.3	0.00	0.00	0.00
16,200.0	90.00	90.25	7,092.0	-2,284.00	-1,952.2	10,065.2	10,237.4	0.00	0.00	0.00
16,300.0	90.00	90.25	7,092.0	-2,284.00	-1,952.6	10,165.2	10,336.5	0.00	0.00	0.00
16,400.0	90.00	90.25	7,092.0	-2,284.00	-1,953.1	10,265.2	10,435.6	0.00	0.00	0.00
16,500.0	90.00	90.25	7,092.0	-2,284.00	-1,953.5	10,365.2	10,534.8	0.00	0.00	0.00
16,600.0	90.00	90.25	7,092.0	-2,284.00	-1,953.9	10,465.2	10,633.9	0.00	0.00	0.00
16,700.0	90.00	90.25	7,092.0	-2,284.00	-1,954.3	10,565.2	10,733.0	0.00	0.00	0.00
16,800.0	90.00	90.25	7,092.0	-2,284.00	-1,954.8	10,665.2	10,832.1	0.00	0.00	0.00
16,900.0	90.00	90.25	7,092.0	-2,284.00	-1,955.2	10,765.2	10,931.3	0.00	0.00	0.00
17,000.0	90.00	90.25	7,092.0	-2,284.00	-1,955.6	10,865.2	11,030.4	0.00	0.00	0.00
17,100.0	90.00	90.25	7,092.0	-2,284.00	-1,956.1	10,965.2	11,129.5	0.00	0.00	0.00
17,200.0	90.00	90.25	7,092.0	-2,284.00	-1,956.5	11,065.2	11,228.6	0.00	0.00	0.00
17,300.0	90.00	90.25	7,092.0	-2,284.00	-1,956.9	11,165.2	11,327.8	0.00	0.00	0.00
17,400.0	90.00	90.25	7,092.0	-2,284.00	-1,957.3	11,265.2	11,426.9	0.00	0.00	0.00
17,500.0	90.00	90.25	7,092.0	-2,284.00	-1,957.8	11,365.2	11,526.0	0.00	0.00	0.00
17,600.0	90.00	90.25	7,092.0	-2,284.00	-1,958.2	11,465.2	11,625.1	0.00	0.00	0.00
17,700.0	90.00	90.25	7,092.0	-2,284.00	-1,958.6	11,565.2	11,724.3	0.00	0.00	0.00
17,800.0	90.00	90.25	7,092.0	-2,284.00	-1,959.1	11,665.2	11,823.4	0.00	0.00	0.00
17,900.0	90.00	90.25	7,092.0	-2,284.00	-1,959.5	11,765.2	11,922.5	0.00	0.00	0.00
18,000.0	90.00	90.25	7,092.0	-2,284.00	-1,959.9	11,865.2	12,021.6	0.00	0.00	0.00
18,100.0	90.00	90.25	7,092.0	-2,284.00	-1,960.3	11,965.2	12,120.8	0.00	0.00	0.00
18,200.0	90.00	90.25	7,092.0	-2,284.00	-1,960.8	12,065.2	12,219.9	0.00	0.00	0.00
18,300.0	90.00	90.25	7,092.0	-2,284.00	-1,961.2	12,165.2	12,319.0	0.00	0.00	0.00
18,400.0	90.00	90.25	7,092.0	-2,284.00	-1,961.6	12,265.2	12,418.1	0.00	0.00	0.00
18,500.0	90.00	90.25	7,092.0	-2,284.00	-1,962.1	12,365.2	12,517.2	0.00	0.00	0.00
18,600.0	90.00	90.25	7,092.0	-2,284.00	-1,962.5	12,465.2	12,616.4	0.00	0.00	0.00
18,700.0	90.00	90.25	7,092.0	-2,284.00	-1,962.9	12,565.2	12,715.5	0.00	0.00	0.00
18,800.0	90.00	90.25	7,092.0	-2,284.00	-1,963.3	12,665.2	12,814.6	0.00	0.00	0.00
18,900.0	90.00	90.25	7,092.0	-2,284.00	-1,963.8	12,765.2	12,913.7	0.00	0.00	0.00
19,000.0	90.00	90.25	7,092.0	-2,284.00	-1,964.2	12,865.2	13,012.9	0.00	0.00	0.00
19,100.0	90.00	90.25	7,092.0	-2,284.00	-1,964.6	12,965.2	13,112.0	0.00	0.00	0.00
19,200.0	90.00	90.25	7,092.0	-2,284.00	-1,965.1	13,065.2	13,211.1	0.00	0.00	0.00
19,300.0	90.00	90.25	7,092.0	-2,284.00	-1,965.5	13,165.2	13,310.2	0.00	0.00	0.00
19,400.0	90.00	90.25	7,092.0	-2,284.00	-1,965.9	13,265.2	13,409.4	0.00	0.00	0.00
19,500.0	90.00	90.25	7,092.0	-2,284.00	-1,966.3	13,365.2	13,508.5	0.00	0.00	0.00
19,600.0	90.00	90.25	7,092.0	-2,284.00	-1,966.8	13,465.2	13,607.6	0.00	0.00	0.00
19,700.0	90.00	90.25	7,092.0	-2,284.00	-1,967.2	13,565.2	13,706.7	0.00	0.00	0.00
19,800.0	90.00	90.25	7,092.0	-2,284.00	-1,967.6	13,665.2	13,805.9	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TC-HILAND KNOLLS 4-9-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4808.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS 4-9-11	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,900.0	90.00	90.25	7,092.0	-2,284.00	-1,968.0	13,765.2	13,905.0	0.00	0.00	0.00
20,000.0	90.00	90.25	7,092.0	-2,284.00	-1,968.5	13,865.2	14,004.1	0.00	0.00	0.00
20,100.0	90.00	90.25	7,092.0	-2,284.00	-1,968.9	13,965.2	14,103.2	0.00	0.00	0.00
20,200.0	90.00	90.25	7,092.0	-2,284.00	-1,969.3	14,065.2	14,202.3	0.00	0.00	0.00
20,300.0	90.00	90.25	7,092.0	-2,284.00	-1,969.8	14,165.2	14,301.5	0.00	0.00	0.00
20,400.0	90.00	90.25	7,092.0	-2,284.00	-1,970.2	14,265.2	14,400.6	0.00	0.00	0.00
BHL - TC-HILAND KNOLLS 4-9-11										
20,451.8	90.00	90.25	7,092.0	-2,284.00	-1,970.4	14,317.0	14,451.9	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,847.8	3,680.0	PARKMAN				
4,624.6	4,410.0	SUSSEX				
5,060.9	4,820.0	SHANNON				
7,359.8	6,940.0	SHARON SPRINGS				
7,410.6	6,972.0	NIOBRARA				
7,797.3	7,092.0	NIO B TARGET				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.0	400.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,400.0	1,379.8	-146.9	91.0	EOB TO 20° INC
7,001.7	6,643.8	-1,775.5	1,099.7	START BUILD & TURN
7,797.3	7,092.0	-1,916.2	1,662.6	LANDING PNT - TC-HILAND KNOLLS 4-9-11
20,451.8	7,092.0	-1,970.4	14,317.0	BHL - TC-HILAND KNOLLS 4-9-11