EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)
NE SE SEC. 8 T5N R66W 6th P.M.
TC-HILAND KNOLLS 1-9-11

ORIGINAL WELLBORE

23 July, 2015

Plan: PROPOSAL #1

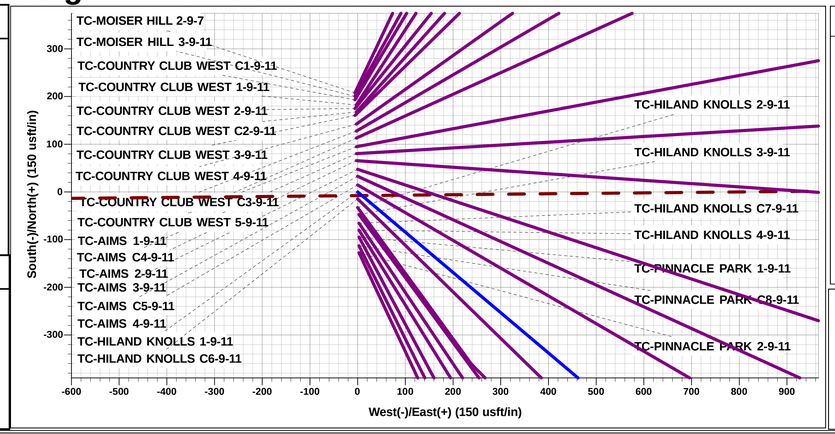
Project: WELD COUNTY, COLORADO (NAD 83)
Site: NE SE SEC. 8 T5N R66W 6th P.M.
Well: TC-HILAND KNOLLS 1-9-11
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation
900.0	900.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1600.0	1607.2	14.14	130.18	-56.0	66.4	70.3	86.8	9 5/8" SURFACE CASING
1663.1	1672.2	14.14	130.18	-66.3	78.5	83.2	102.7	START NUDGE (2°/100ft BUR)
1703.5	1714.0	14.98	130.18	-73.1	86.5	91.7	113.2	EOB TO 14.98° INC
6639.3	6823.4	14.98	130.18	-925.1	1095.7	1161.3	1434.0	START BUILD & TURN
7092.0	7609.0	90.00	90.26	-1005.4	1656.9	1726.8	2006.0	LANDING PNT - TC-HILAND KNOLLS 1-9-11
7092.0	20257.5	90.00	90.26	-1063.3	14305.2	14344.7	14654.5	BHL - TC-HILAND KNOLLS 1-9-11

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LANDING PNT - TC-HILAND KNOLLS 1-9-11	7092.0	-1005.4	1656.9	40.411400	-104.792720
BHL - TC-HILAND KNOLLS 1-9-11	7092.0	-1063.3	14305.3	40.411230	-104.747300

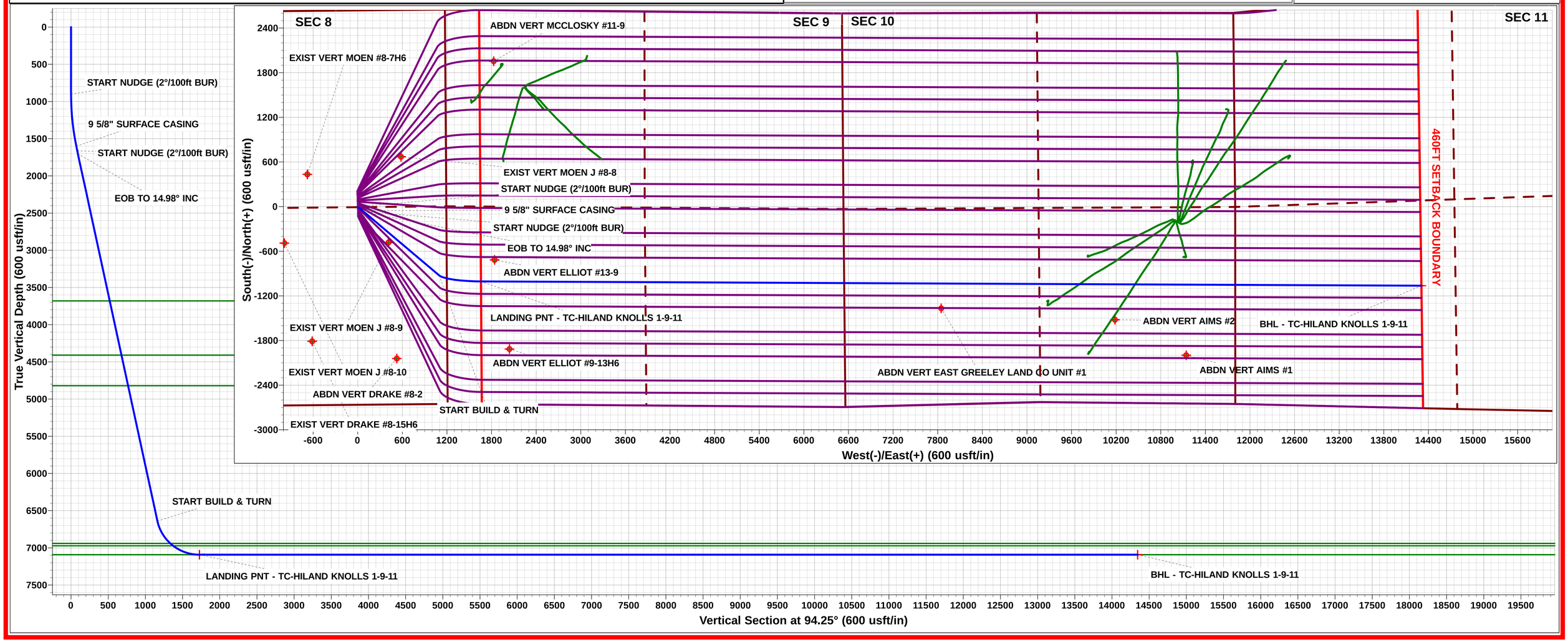


FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3680.0	3760.0	PARKMAN
4410.0	4515.7	SUSSEX
4820.0	4940.1	SHANNON
6940.0	7178.6	SHARON SPRINGS
6972.0	7228.6	NIOBRARA
7092.0	7609.0	NIO B TARGET

Azimuths to True North
Magnetic North: 8.43°

Magnetic Field
Strength: 52613.4snT
Dip Angle: 66.91°
Date: 23/07/2015
Model: IGRF2015



Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well TC-HILAND KNOLLS 1-9-11
Company:	EXTRACTION OIL & GAS	**TVD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	**MD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	**North Reference:**	True
Well:	TC-HILAND KNOLLS 1-9-11	**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	**Latitude:**	40.413810
From:	Lat/Long	**Easting:**	3,195,288.63 usft	**Longitude:**	-104.798660
Position Uncertainty:	0.0 usft	**Slot Radius:**	1.10000 ft	**Grid Convergence:**	0.45 °

Well TC-HILAND KNOLLS 1-9-11

Well Position	**+N/-S**	127.5 usft	**Northing:**	1,394,491.09 usft	**Latitude:**	40.414160
	+E/-W	-2.8 usft	**Easting:**	3,195,284.83 usft	**Longitude:**	-104.798670
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	usft	**Ground Level:**	4,790.0 usft

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 (°)
	0.0	0.0	0.0	94.25

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	-4,806.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	-3,906.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,607.2	14.14	130.18	1,600.0	-3,206.0	-56.0	66.3	2.00	2.00	0.00	130.18	
1,672.2	14.14	130.18	1,663.0	-3,143.0	-66.3	78.5	0.00	0.00	0.00	0.00	
1,714.0	14.98	130.18	1,703.5	-3,102.5	-73.1	86.5	2.00	2.00	0.00	0.00	
1,714.0	14.98	130.18	1,703.5	-3,102.5	-73.1	86.5	10.00	6.84	-28.16	-46.77	
6,823.4	14.98	130.18	6,639.3	1,833.3	-925.1	1,095.7	0.00	0.00	0.00	0.00	
7,609.0	90.00	90.26	7,092.0	2,286.0	-1,005.4	1,656.9	10.00	9.55	-5.08	-40.89	LANDING PNT - TC
20,257.5	90.00	90.26	7,092.0	2,286.0	-1,063.3	14,305.3	0.00	0.00	0.00	0.00	BHL - TC-HILAND I

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Project:	WELD COUNTY, COLORADO (NAD 83)	**MD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	**North Reference:**	True
Well:	TC-HILAND KNOLLS 1-9-11	**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	4,806.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,706.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,606.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,506.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,406.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,306.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,206.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	4,106.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	4,006.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
900.0	***0.00***	***0.00***	***900.0***	***3,906.00***	***0.0***	***0.0***	***0.0***	***0.00***	***0.00***	***0.00***
1,000.0	2.00	130.18	1,000.0	3,806.02	-1.1	1.3	1.4	2.00	2.00	0.00
1,100.0	4.00	130.18	1,099.8	3,706.16	-4.5	5.3	5.7	2.00	2.00	0.00
1,200.0	6.00	130.18	1,199.5	3,606.55	-10.1	12.0	12.7	2.00	2.00	0.00
1,300.0	8.00	130.18	1,298.7	3,507.30	-18.0	21.3	22.6	2.00	2.00	0.00
1,400.0	10.00	130.18	1,397.5	3,408.53	-28.1	33.3	35.2	2.00	2.00	0.00
1,500.0	12.00	130.18	1,495.6	3,310.38	-40.4	47.8	50.7	2.00	2.00	0.00
1,600.0	14.00	130.18	1,593.1	3,212.94	-54.9	65.0	68.9	2.00	2.00	0.00
9 5/8" SURFACE CASING										
1,607.2	***14.14***	***130.18***	***1,600.0***	***3,205.96***	***-56.0***	***66.4***	***70.3***	***1.99***	***1.99***	***0.00***
START NUDGE (2°/100ft BUR)										
1,672.2	***14.14***	***130.18***	***1,663.1***	***3,142.93***	***-66.3***	***78.5***	***83.2***	***0.00***	***0.00***	***0.00***
1,700.0	14.70	130.18	1,690.0	3,116.01	-70.7	83.8	88.8	2.00	2.00	0.00
EOB TO 14.98° INC										
1,714.0	***14.98***	***130.18***	***1,703.5***	***3,102.47***	***-73.1***	***86.5***	***91.7***	***2.00***	***2.00***	***0.00***
1,800.0	14.98	130.18	1,786.6	3,019.40	-87.4	103.5	109.7	0.00	0.00	-0.01
1,900.0	14.98	130.18	1,883.2	2,922.80	-104.1	123.3	130.6	0.00	0.00	0.00
2,000.0	14.98	130.18	1,979.8	2,826.20	-120.8	143.0	151.6	0.00	0.00	0.00
2,100.0	14.98	130.18	2,076.4	2,729.59	-137.4	162.8	172.5	0.00	0.00	0.00
2,200.0	14.98	130.18	2,173.0	2,632.99	-154.1	182.5	193.4	0.00	0.00	0.00
2,300.0	14.98	130.18	2,269.6	2,536.39	-170.8	202.3	214.4	0.00	0.00	0.00
2,400.0	14.98	130.18	2,366.2	2,439.79	-187.5	222.0	235.3	0.00	0.00	0.00
2,500.0	14.98	130.18	2,462.8	2,343.19	-204.1	241.8	256.2	0.00	0.00	0.00
2,600.0	14.98	130.18	2,559.4	2,246.59	-220.8	261.5	277.2	0.00	0.00	0.00
2,700.0	14.98	130.18	2,656.0	2,149.99	-237.5	281.3	298.1	0.00	0.00	0.00
2,800.0	14.98	130.18	2,752.6	2,053.39	-254.2	301.0	319.0	0.00	0.00	0.00
2,900.0	14.98	130.18	2,849.2	1,956.79	-270.8	320.8	340.0	0.00	0.00	0.00
3,000.0	14.98	130.18	2,945.8	1,860.18	-287.5	340.5	360.9	0.00	0.00	0.00
3,100.0	14.98	130.18	3,042.4	1,763.58	-304.2	360.3	381.8	0.00	0.00	0.00
3,200.0	14.98	130.18	3,139.0	1,666.98	-320.9	380.0	402.8	0.00	0.00	0.00
3,300.0	14.98	130.18	3,235.6	1,570.38	-337.6	399.8	423.7	0.00	0.00	0.00
3,400.0	14.98	130.18	3,332.2	1,473.78	-354.2	419.5	444.6	0.00	0.00	0.00
3,500.0	14.98	130.18	3,428.8	1,377.18	-370.9	439.3	465.6	0.00	0.00	0.00
3,600.0	14.98	130.18	3,525.4	1,280.58	-387.6	459.0	486.5	0.00	0.00	0.00
3,700.0	14.98	130.18	3,622.0	1,183.98	-404.3	478.8	507.4	0.00	0.00	0.00
PARKMAN										
3,760.0	***14.98***	***130.18***	***3,680.0***	***1,126.00***	***-414.3***	***490.6***	***520.0***	***0.00***	***0.00***	***0.00***
3,800.0	14.98	130.18	3,718.6	1,087.38	-420.9	498.5	528.4	0.00	0.00	0.00
3,900.0	14.98	130.18	3,815.2	990.77	-437.6	518.3	549.3	0.00	0.00	0.00
4,000.0	14.98	130.18	3,911.8	894.17	-454.3	538.0	570.2	0.00	0.00	0.00
4,100.0	14.98	130.18	4,008.4	797.57	-471.0	557.8	591.2	0.00	0.00	0.00
4,200.0	14.98	130.18	4,105.0	700.97	-487.6	577.5	612.1	0.00	0.00	0.00
4,300.0	14.98	130.18	4,201.6	604.37	-504.3	597.3	633.0	0.00	0.00	0.00
4,400.0	14.98	130.18	4,298.2	507.77	-521.0	617.0	654.0	0.00	0.00	0.00

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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)
4,500.0	14.98	130.18	4,394.8	411.17	-537.7	636.8	674.9	0.00	0.00	0.00
SUSSEX										
4,515.7	***14.98***	***130.18***	***4,410.0***	***396.00***	***-540.3***	***639.9***	***678.2***	***0.00***	***0.00***	***0.00***
4,600.0	14.98	130.18	4,491.4	314.57	-554.3	656.5	695.8	0.00	0.00	0.00
4,700.0	14.98	130.18	4,588.0	217.97	-571.0	676.3	716.8	0.00	0.00	0.00
4,800.0	14.98	130.18	4,684.6	121.36	-587.7	696.0	737.7	0.00	0.00	0.00
4,900.0	14.98	130.18	4,781.2	24.76	-604.4	715.8	758.6	0.00	0.00	0.00
SHANNON										
4,940.1	***14.98***	***130.18***	***4,820.0***	***-14.00***	***-611.1***	***723.7***	***767.0***	***0.00***	***0.00***	***0.00***
5,000.0	14.98	130.18	4,877.8	-71.84	-621.1	735.6	779.6	0.00	0.00	0.00
5,100.0	14.98	130.18	4,974.4	-168.44	-637.7	755.3	800.5	0.00	0.00	0.00
5,200.0	14.98	130.18	5,071.0	-265.04	-654.4	775.1	821.4	0.00	0.00	0.00
5,300.0	14.98	130.18	5,167.6	-361.64	-671.1	794.8	842.4	0.00	0.00	0.00
5,400.0	14.98	130.18	5,264.2	-458.24	-687.8	814.6	863.3	0.00	0.00	0.00
5,500.0	14.98	130.18	5,360.8	-554.84	-704.4	834.3	884.2	0.00	0.00	0.00
5,600.0	14.98	130.18	5,457.4	-651.44	-721.1	854.1	905.2	0.00	0.00	0.00
5,700.0	14.98	130.18	5,554.0	-748.04	-737.8	873.8	926.1	0.00	0.00	0.00
5,800.0	14.98	130.18	5,650.6	-844.65	-754.5	893.6	947.0	0.00	0.00	0.00
5,900.0	14.98	130.18	5,747.2	-941.25	-771.1	913.3	968.0	0.00	0.00	0.00
6,000.0	14.98	130.18	5,843.8	-1,037.85	-787.8	933.1	988.9	0.00	0.00	0.00
6,100.0	14.98	130.18	5,940.4	-1,134.45	-804.5	952.8	1,009.8	0.00	0.00	0.00
6,200.0	14.98	130.18	6,037.1	-1,231.05	-821.2	972.6	1,030.8	0.00	0.00	0.00
6,300.0	14.98	130.18	6,133.7	-1,327.65	-837.9	992.3	1,051.7	0.00	0.00	0.00
6,400.0	14.98	130.18	6,230.3	-1,424.25	-854.5	1,012.1	1,072.6	0.00	0.00	0.00
6,500.0	14.98	130.18	6,326.9	-1,520.85	-871.2	1,031.8	1,093.6	0.00	0.00	0.00
6,600.0	14.98	130.18	6,423.5	-1,617.45	-887.9	1,051.6	1,114.5	0.00	0.00	0.00
6,700.0	14.98	130.18	6,520.1	-1,714.06	-904.6	1,071.3	1,135.4	0.00	0.00	0.00
6,800.0	14.98	130.18	6,616.7	-1,810.66	-921.2	1,091.1	1,156.4	0.00	0.00	0.00
START BUILD & TURN										
6,823.4	***14.98***	***130.18***	***6,639.3***	***-1,833.26***	***-925.1***	***1,095.7***	***1,161.3***	***0.00***	***0.00***	***0.00***
6,900.0	21.35	116.31	6,712.0	-1,906.04	-937.7	1,115.8	1,182.2	10.00	8.32	-18.10
7,000.0	30.55	107.18	6,801.9	-1,995.89	-953.3	1,156.5	1,224.0	10.00	9.19	-9.14
7,100.0	40.10	102.03	6,883.4	-2,077.41	-967.6	1,212.4	1,280.8	10.00	9.55	-5.15
SHARON SPRINGS										
7,178.6	***47.72***	***99.24***	***6,940.0***	***-2,134.00***	***-977.6***	***1,266.0***	***1,334.9***	***10.00***	***9.70***	***-3.54***
7,200.0	49.81	98.60	6,954.1	-2,148.10	-980.0	1,281.9	1,351.0	10.00	9.74	-2.99
NIOBRARA										
7,228.6	***52.60***	***97.81***	***6,972.0***	***-2,166.00***	***-983.2***	***1,303.9***	***1,373.2***	***10.00***	***9.76***	***-2.79***
7,300.0	59.59	96.05	7,011.8	-2,205.83	-990.3	1,362.7	1,432.4	10.00	9.79	-2.46
7,400.0	69.41	93.96	7,054.8	-2,248.83	-998.1	1,452.5	1,522.5	10.00	9.82	-2.09
7,500.0	79.25	92.13	7,081.8	-2,275.80	-1,003.2	1,548.5	1,618.6	10.00	9.84	-1.83
7,600.0	89.11	90.42	7,091.9	-2,285.93	-1,005.4	1,647.9	1,717.9	10.00	9.85	-1.71
LANDING PNT - TC-HILAND KNOLLS 1-9-11 - NIO B TARGET										
7,609.0	***90.00***	***90.26***	***7,092.0***	***-2,286.00***	***-1,005.4***	***1,656.9***	***1,726.9***	***10.00***	***9.86***	***-1.69***
7,700.0	90.00	90.26	7,092.0	-2,286.00	-1,005.9	1,747.9	1,817.6	0.00	0.00	0.00
7,800.0	90.00	90.26	7,092.0	-2,286.00	-1,006.3	1,847.9	1,917.4	0.00	0.00	0.00
7,900.0	90.00	90.26	7,092.0	-2,286.00	-1,006.8	1,947.9	2,017.1	0.00	0.00	0.00
8,000.0	90.00	90.26	7,092.0	-2,286.00	-1,007.2	2,047.9	2,116.9	0.00	0.00	0.00
8,100.0	90.00	90.26	7,092.0	-2,286.00	-1,007.7	2,147.9	2,216.7	0.00	0.00	0.00
8,200.0	90.00	90.26	7,092.0	-2,286.00	-1,008.1	2,247.9	2,316.4	0.00	0.00	0.00
8,300.0	90.00	90.26	7,092.0	-2,286.00	-1,008.6	2,347.9	2,416.2	0.00	0.00	0.00
8,400.0	90.00	90.26	7,092.0	-2,286.00	-1,009.1	2,447.9	2,515.9	0.00	0.00	0.00
8,500.0	90.00	90.26	7,092.0	-2,286.00	-1,009.5	2,547.9	2,615.7	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well TC-HILAND KNOLLS 1-9-11
Company:	EXTRACTION OIL & GAS	**TVD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	**MD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	**North Reference:**	True
Well:	TC-HILAND KNOLLS 1-9-11	**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)
8,600.0	90.00	90.26	7,092.0	-2,286.00	-1,010.0	2,647.9	2,715.4	0.00	0.00	0.00
8,700.0	90.00	90.26	7,092.0	-2,286.00	-1,010.4	2,747.9	2,815.2	0.00	0.00	0.00
8,800.0	90.00	90.26	7,092.0	-2,286.00	-1,010.9	2,847.9	2,915.0	0.00	0.00	0.00
8,900.0	90.00	90.26	7,092.0	-2,286.00	-1,011.3	2,947.9	3,014.7	0.00	0.00	0.00
9,000.0	90.00	90.26	7,092.0	-2,286.00	-1,011.8	3,047.9	3,114.5	0.00	0.00	0.00
9,100.0	90.00	90.26	7,092.0	-2,286.00	-1,012.3	3,147.9	3,214.2	0.00	0.00	0.00
9,200.0	90.00	90.26	7,092.0	-2,286.00	-1,012.7	3,247.9	3,314.0	0.00	0.00	0.00
9,300.0	90.00	90.26	7,092.0	-2,286.00	-1,013.2	3,347.9	3,413.7	0.00	0.00	0.00
9,400.0	90.00	90.26	7,092.0	-2,286.00	-1,013.6	3,447.9	3,513.5	0.00	0.00	0.00
9,500.0	90.00	90.26	7,092.0	-2,286.00	-1,014.1	3,547.9	3,613.3	0.00	0.00	0.00
9,600.0	90.00	90.26	7,092.0	-2,286.00	-1,014.5	3,647.9	3,713.0	0.00	0.00	0.00
9,700.0	90.00	90.26	7,092.0	-2,286.00	-1,015.0	3,747.9	3,812.8	0.00	0.00	0.00
9,800.0	90.00	90.26	7,092.0	-2,286.00	-1,015.5	3,847.9	3,912.5	0.00	0.00	0.00
9,900.0	90.00	90.26	7,092.0	-2,286.00	-1,015.9	3,947.9	4,012.3	0.00	0.00	0.00
10,000.0	90.00	90.26	7,092.0	-2,286.00	-1,016.4	4,047.8	4,112.1	0.00	0.00	0.00
10,100.0	90.00	90.26	7,092.0	-2,286.00	-1,016.8	4,147.8	4,211.8	0.00	0.00	0.00
10,200.0	90.00	90.26	7,092.0	-2,286.00	-1,017.3	4,247.8	4,311.6	0.00	0.00	0.00
10,300.0	90.00	90.26	7,092.0	-2,286.00	-1,017.7	4,347.8	4,411.3	0.00	0.00	0.00
10,400.0	90.00	90.26	7,092.0	-2,286.00	-1,018.2	4,447.8	4,511.1	0.00	0.00	0.00
10,500.0	90.00	90.26	7,092.0	-2,286.00	-1,018.7	4,547.8	4,610.8	0.00	0.00	0.00
10,600.0	90.00	90.26	7,092.0	-2,286.00	-1,019.1	4,647.8	4,710.6	0.00	0.00	0.00
10,700.0	90.00	90.26	7,092.0	-2,286.00	-1,019.6	4,747.8	4,810.4	0.00	0.00	0.00
10,800.0	90.00	90.26	7,092.0	-2,286.00	-1,020.0	4,847.8	4,910.1	0.00	0.00	0.00
10,900.0	90.00	90.26	7,092.0	-2,286.00	-1,020.5	4,947.8	5,009.9	0.00	0.00	0.00
11,000.0	90.00	90.26	7,092.0	-2,286.00	-1,020.9	5,047.8	5,109.6	0.00	0.00	0.00
11,100.0	90.00	90.26	7,092.0	-2,286.00	-1,021.4	5,147.8	5,209.4	0.00	0.00	0.00
11,200.0	90.00	90.26	7,092.0	-2,286.00	-1,021.9	5,247.8	5,309.1	0.00	0.00	0.00
11,300.0	90.00	90.26	7,092.0	-2,286.00	-1,022.3	5,347.8	5,408.9	0.00	0.00	0.00
11,400.0	90.00	90.26	7,092.0	-2,286.00	-1,022.8	5,447.8	5,508.7	0.00	0.00	0.00
11,500.0	90.00	90.26	7,092.0	-2,286.00	-1,023.2	5,547.8	5,608.4	0.00	0.00	0.00
11,600.0	90.00	90.26	7,092.0	-2,286.00	-1,023.7	5,647.8	5,708.2	0.00	0.00	0.00
11,700.0	90.00	90.26	7,092.0	-2,286.00	-1,024.1	5,747.8	5,807.9	0.00	0.00	0.00
11,800.0	90.00	90.26	7,092.0	-2,286.00	-1,024.6	5,847.8	5,907.7	0.00	0.00	0.00
11,900.0	90.00	90.26	7,092.0	-2,286.00	-1,025.1	5,947.8	6,007.4	0.00	0.00	0.00
12,000.0	90.00	90.26	7,092.0	-2,286.00	-1,025.5	6,047.8	6,107.2	0.00	0.00	0.00
12,100.0	90.00	90.26	7,092.0	-2,286.00	-1,026.0	6,147.8	6,207.0	0.00	0.00	0.00
12,200.0	90.00	90.26	7,092.0	-2,286.00	-1,026.4	6,247.8	6,306.7	0.00	0.00	0.00
12,300.0	90.00	90.26	7,092.0	-2,286.00	-1,026.9	6,347.8	6,406.5	0.00	0.00	0.00
12,400.0	90.00	90.26	7,092.0	-2,286.00	-1,027.3	6,447.8	6,506.2	0.00	0.00	0.00
12,500.0	90.00	90.26	7,092.0	-2,286.00	-1,027.8	6,547.8	6,606.0	0.00	0.00	0.00
12,600.0	90.00	90.26	7,092.0	-2,286.00	-1,028.3	6,647.8	6,705.8	0.00	0.00	0.00
12,700.0	90.00	90.26	7,092.0	-2,286.00	-1,028.7	6,747.8	6,805.5	0.00	0.00	0.00
12,800.0	90.00	90.26	7,092.0	-2,286.00	-1,029.2	6,847.8	6,905.3	0.00	0.00	0.00
12,900.0	90.00	90.26	7,092.0	-2,286.00	-1,029.6	6,947.8	7,005.0	0.00	0.00	0.00
13,000.0	90.00	90.26	7,092.0	-2,286.00	-1,030.1	7,047.8	7,104.8	0.00	0.00	0.00
13,100.0	90.00	90.26	7,092.0	-2,286.00	-1,030.5	7,147.8	7,204.5	0.00	0.00	0.00
13,200.0	90.00	90.26	7,092.0	-2,286.00	-1,031.0	7,247.8	7,304.3	0.00	0.00	0.00
13,300.0	90.00	90.26	7,092.0	-2,286.00	-1,031.5	7,347.8	7,404.1	0.00	0.00	0.00
13,400.0	90.00	90.26	7,092.0	-2,286.00	-1,031.9	7,447.8	7,503.8	0.00	0.00	0.00
13,500.0	90.00	90.26	7,092.0	-2,286.00	-1,032.4	7,547.8	7,603.6	0.00	0.00	0.00
13,600.0	90.00	90.26	7,092.0	-2,286.00	-1,032.8	7,647.8	7,703.3	0.00	0.00	0.00
13,700.0	90.00	90.26	7,092.0	-2,286.00	-1,033.3	7,747.8	7,803.1	0.00	0.00	0.00
13,800.0	90.00	90.26	7,092.0	-2,286.00	-1,033.8	7,847.8	7,902.8	0.00	0.00	0.00
13,900.0	90.00	90.26	7,092.0	-2,286.00	-1,034.2	7,947.8	8,002.6	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well TC-HILAND KNOLLS 1-9-11
Company:	EXTRACTION OIL & GAS	**TVD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	**MD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	**North Reference:**	True
Well:	TC-HILAND KNOLLS 1-9-11	**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)
14,000.0	90.00	90.26	7,092.0	-2,286.00	-1,034.7	8,047.8	8,102.4	0.00	0.00	0.00
14,100.0	90.00	90.26	7,092.0	-2,286.00	-1,035.1	8,147.8	8,202.1	0.00	0.00	0.00
14,200.0	90.00	90.26	7,092.0	-2,286.00	-1,035.6	8,247.8	8,301.9	0.00	0.00	0.00
14,300.0	90.00	90.26	7,092.0	-2,286.00	-1,036.0	8,347.8	8,401.6	0.00	0.00	0.00
14,400.0	90.00	90.26	7,092.0	-2,286.00	-1,036.5	8,447.8	8,501.4	0.00	0.00	0.00
14,500.0	90.00	90.26	7,092.0	-2,286.00	-1,037.0	8,547.8	8,601.2	0.00	0.00	0.00
14,600.0	90.00	90.26	7,092.0	-2,286.00	-1,037.4	8,647.8	8,700.9	0.00	0.00	0.00
14,700.0	90.00	90.26	7,092.0	-2,286.00	-1,037.9	8,747.8	8,800.7	0.00	0.00	0.00
14,800.0	90.00	90.26	7,092.0	-2,286.00	-1,038.3	8,847.8	8,900.4	0.00	0.00	0.00
14,900.0	90.00	90.26	7,092.0	-2,286.00	-1,038.8	8,947.8	9,000.2	0.00	0.00	0.00
15,000.0	90.00	90.26	7,092.0	-2,286.00	-1,039.2	9,047.8	9,099.9	0.00	0.00	0.00
15,100.0	90.00	90.26	7,092.0	-2,286.00	-1,039.7	9,147.8	9,199.7	0.00	0.00	0.00
15,200.0	90.00	90.26	7,092.0	-2,286.00	-1,040.2	9,247.8	9,299.5	0.00	0.00	0.00
15,300.0	90.00	90.26	7,092.0	-2,286.00	-1,040.6	9,347.8	9,399.2	0.00	0.00	0.00
15,400.0	90.00	90.26	7,092.0	-2,286.00	-1,041.1	9,447.8	9,499.0	0.00	0.00	0.00
15,500.0	90.00	90.26	7,092.0	-2,286.00	-1,041.5	9,547.8	9,598.7	0.00	0.00	0.00
15,600.0	90.00	90.26	7,092.0	-2,286.00	-1,042.0	9,647.8	9,698.5	0.00	0.00	0.00
15,700.0	90.00	90.26	7,092.0	-2,286.00	-1,042.4	9,747.8	9,798.2	0.00	0.00	0.00
15,800.0	90.00	90.26	7,092.0	-2,286.00	-1,042.9	9,847.8	9,898.0	0.00	0.00	0.00
15,900.0	90.00	90.26	7,092.0	-2,286.00	-1,043.4	9,947.8	9,997.8	0.00	0.00	0.00
16,000.0	90.00	90.26	7,092.0	-2,286.00	-1,043.8	10,047.8	10,097.5	0.00	0.00	0.00
16,100.0	90.00	90.26	7,092.0	-2,286.00	-1,044.3	10,147.8	10,197.3	0.00	0.00	0.00
16,200.0	90.00	90.26	7,092.0	-2,286.00	-1,044.7	10,247.8	10,297.0	0.00	0.00	0.00
16,300.0	90.00	90.26	7,092.0	-2,286.00	-1,045.2	10,347.8	10,396.8	0.00	0.00	0.00
16,400.0	90.00	90.26	7,092.0	-2,286.00	-1,045.6	10,447.8	10,496.5	0.00	0.00	0.00
16,500.0	90.00	90.26	7,092.0	-2,286.00	-1,046.1	10,547.8	10,596.3	0.00	0.00	0.00
16,600.0	90.00	90.26	7,092.0	-2,286.00	-1,046.6	10,647.8	10,696.1	0.00	0.00	0.00
16,700.0	90.00	90.26	7,092.0	-2,286.00	-1,047.0	10,747.8	10,795.8	0.00	0.00	0.00
16,800.0	90.00	90.26	7,092.0	-2,286.00	-1,047.5	10,847.8	10,895.6	0.00	0.00	0.00
16,900.0	90.00	90.26	7,092.0	-2,286.00	-1,047.9	10,947.8	10,995.3	0.00	0.00	0.00
17,000.0	90.00	90.26	7,092.0	-2,286.00	-1,048.4	11,047.8	11,095.1	0.00	0.00	0.00
17,100.0	90.00	90.26	7,092.0	-2,286.00	-1,048.8	11,147.8	11,194.9	0.00	0.00	0.00
17,200.0	90.00	90.26	7,092.0	-2,286.00	-1,049.3	11,247.8	11,294.6	0.00	0.00	0.00
17,300.0	90.00	90.26	7,092.0	-2,286.00	-1,049.8	11,347.8	11,394.4	0.00	0.00	0.00
17,400.0	90.00	90.26	7,092.0	-2,286.00	-1,050.2	11,447.8	11,494.1	0.00	0.00	0.00
17,500.0	90.00	90.26	7,092.0	-2,286.00	-1,050.7	11,547.8	11,593.9	0.00	0.00	0.00
17,600.0	90.00	90.26	7,092.0	-2,286.00	-1,051.1	11,647.8	11,693.6	0.00	0.00	0.00
17,700.0	90.00	90.26	7,092.0	-2,286.00	-1,051.6	11,747.8	11,793.4	0.00	0.00	0.00
17,800.0	90.00	90.26	7,092.0	-2,286.00	-1,052.0	11,847.8	11,893.2	0.00	0.00	0.00
17,900.0	90.00	90.26	7,092.0	-2,286.00	-1,052.5	11,947.8	11,992.9	0.00	0.00	0.00
18,000.0	90.00	90.26	7,092.0	-2,286.00	-1,053.0	12,047.8	12,092.7	0.00	0.00	0.00
18,100.0	90.00	90.26	7,092.0	-2,286.00	-1,053.4	12,147.8	12,192.4	0.00	0.00	0.00
18,200.0	90.00	90.26	7,092.0	-2,286.00	-1,053.9	12,247.8	12,292.2	0.00	0.00	0.00
18,300.0	90.00	90.26	7,092.0	-2,286.00	-1,054.3	12,347.8	12,391.9	0.00	0.00	0.00
18,400.0	90.00	90.26	7,092.0	-2,286.00	-1,054.8	12,447.8	12,491.7	0.00	0.00	0.00
18,500.0	90.00	90.26	7,092.0	-2,286.00	-1,055.2	12,547.8	12,591.5	0.00	0.00	0.00
18,600.0	90.00	90.26	7,092.0	-2,286.00	-1,055.7	12,647.8	12,691.2	0.00	0.00	0.00
18,700.0	90.00	90.26	7,092.0	-2,286.00	-1,056.2	12,747.8	12,791.0	0.00	0.00	0.00
18,800.0	90.00	90.26	7,092.0	-2,286.00	-1,056.6	12,847.8	12,890.7	0.00	0.00	0.00
18,900.0	90.00	90.26	7,092.0	-2,286.00	-1,057.1	12,947.8	12,990.5	0.00	0.00	0.00
19,000.0	90.00	90.26	7,092.0	-2,286.00	-1,057.5	13,047.8	13,090.3	0.00	0.00	0.00
19,100.0	90.00	90.26	7,092.0	-2,286.00	-1,058.0	13,147.8	13,190.0	0.00	0.00	0.00
19,200.0	90.00	90.26	7,092.0	-2,286.00	-1,058.4	13,247.8	13,289.8	0.00	0.00	0.00
19,300.0	90.00	90.26	7,092.0	-2,286.00	-1,058.9	13,347.8	13,389.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well TC-HILAND KNOLLS 1-9-11
Company:	EXTRACTION OIL & GAS	**TVD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	**MD Reference:**	KB-EST @ 4806.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	**North Reference:**	True
Well:	TC-HILAND KNOLLS 1-9-11	**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)
19,400.0	90.00	90.26	7,092.0	-2,286.00	-1,059.4	13,447.8	13,489.3	0.00	0.00	0.00
19,500.0	90.00	90.26	7,092.0	-2,286.00	-1,059.8	13,547.8	13,589.0	0.00	0.00	0.00
19,600.0	90.00	90.26	7,092.0	-2,286.00	-1,060.3	13,647.7	13,688.8	0.00	0.00	0.00
19,700.0	90.00	90.26	7,092.0	-2,286.00	-1,060.7	13,747.7	13,788.6	0.00	0.00	0.00
19,800.0	90.00	90.26	7,092.0	-2,286.00	-1,061.2	13,847.7	13,888.3	0.00	0.00	0.00
19,900.0	90.00	90.26	7,092.0	-2,286.00	-1,061.6	13,947.7	13,988.1	0.00	0.00	0.00
20,000.0	90.00	90.26	7,092.0	-2,286.00	-1,062.1	14,047.7	14,087.8	0.00	0.00	0.00
20,100.0	90.00	90.26	7,092.0	-2,286.00	-1,062.6	14,147.7	14,187.6	0.00	0.00	0.00
20,200.0	90.00	90.26	7,092.0	-2,286.00	-1,063.0	14,247.7	14,287.3	0.00	0.00	0.00
BHL - TC-HILAND KNOLLS 1-9-11										
20,257.5	***90.00***	***90.26***	***7,092.0***	***-2,286.00***	***-1,063.3***	***14,305.2***	***14,344.7***	***0.00***	***0.00***	***0.00***

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,760.0	3,680.0	PARKMAN			
4,515.7	4,410.0	SUSSEX			
4,940.1	4,820.0	SHANNON			
7,178.6	6,940.0	SHARON SPRINGS			
7,228.6	6,972.0	NIOBRARA			
7,609.0	7,092.0	NIO B TARGET			

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
900.0	900.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,607.2	1,600.0	-56.0	66.4	9 5/8" SURFACE CASING
1,672.2	1,663.1	-66.3	78.5	START NUDGE (2°/100ft BUR)
1,714.0	1,703.5	-73.1	86.5	EOB TO 14.98° INC
6,823.4	6,639.3	-925.1	1,095.7	START BUILD & TURN
7,609.0	7,092.0	-1,005.4	1,656.9	LANDING PNT - TC-HILAND KNOLLS 1-9-11
20,257.5	7,092.0	-1,063.3	14,305.2	BHL - TC-HILAND KNOLLS 1-9-11