

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

TC-HILAND KNOLLS C6-9-11

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 C6-9-11
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation	
800.0	800.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2"/100ft BUR)	
1549.2	1558.0	15.16	134.28	-69.6	71.4	77.0	99.7	EOB TO 15.16° INC	
6837.8	7037.3	15.16	134.28	-1069.9	1097.4	1183.8	1532.6	START BUILD & TURN	
7295.0	7828.9	90.00	90.25	-1158.4	1659.7	1751.6	2108.1	LANDING PNT - TC-HILAND KNOLLS C6-9-11	
7295.0	20477.5	90.00	90.25	-1212.6	14308.1	14359.4	14756.7	BHL - TC-HILAND KNOLLS C6-9-11	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
LANDING PNT - TC-HILAND KNOLLS C6-9-11	7295.0	-1158.4	1659.7	40.410940	-104.792710
BHL - TC-HILAND KNOLLS C6-9-11	7295.0	-1212.6	14308.1	40.410780	-104.747290

TC-MOISER HILL 2-9-7
TC-MOISER HILL 3-9-11
TC-COUNTRY CLUB WEST C1-9-11
TC-COUNTRY CLUB WEST 1-9-11
TC-COUNTRY CLUB WEST 2-9-11
TC-COUNTRY CLUB WEST C2-9-11
TC-COUNTRY CLUB WEST 3-9-11
TC-COUNTRY CLUB WEST 4-9-11
TC-COUNTRY CLUB WEST C3-9-11
TC-COUNTRY CLUB WEST 5-9-11
TC-AIMS 1-9-11
TC-AIMS C4-9-11
TC-AIMS 2-9-11
TC-AIMS 3-9-11
TC-AIMS C5-9-11
TC-AIMS 4-9-11
TC-HILAND KNOLLS 1-9-11
TC-HILAND KNOLLS C6-9-11

TC-HILAND KNOLLS 2-9-11
TC-HILAND KNOLLS 3-9-11
TC-HILAND KNOLLS C7-9-11
TC-HILAND KNOLLS 4-9-11
TC-PINNACLE PARK 1-9-11
TC-PINNACLE PARK C8-9-11
TC-PINNACLE PARK 2-9-11

South(-)/North(+) (150 usft/in)

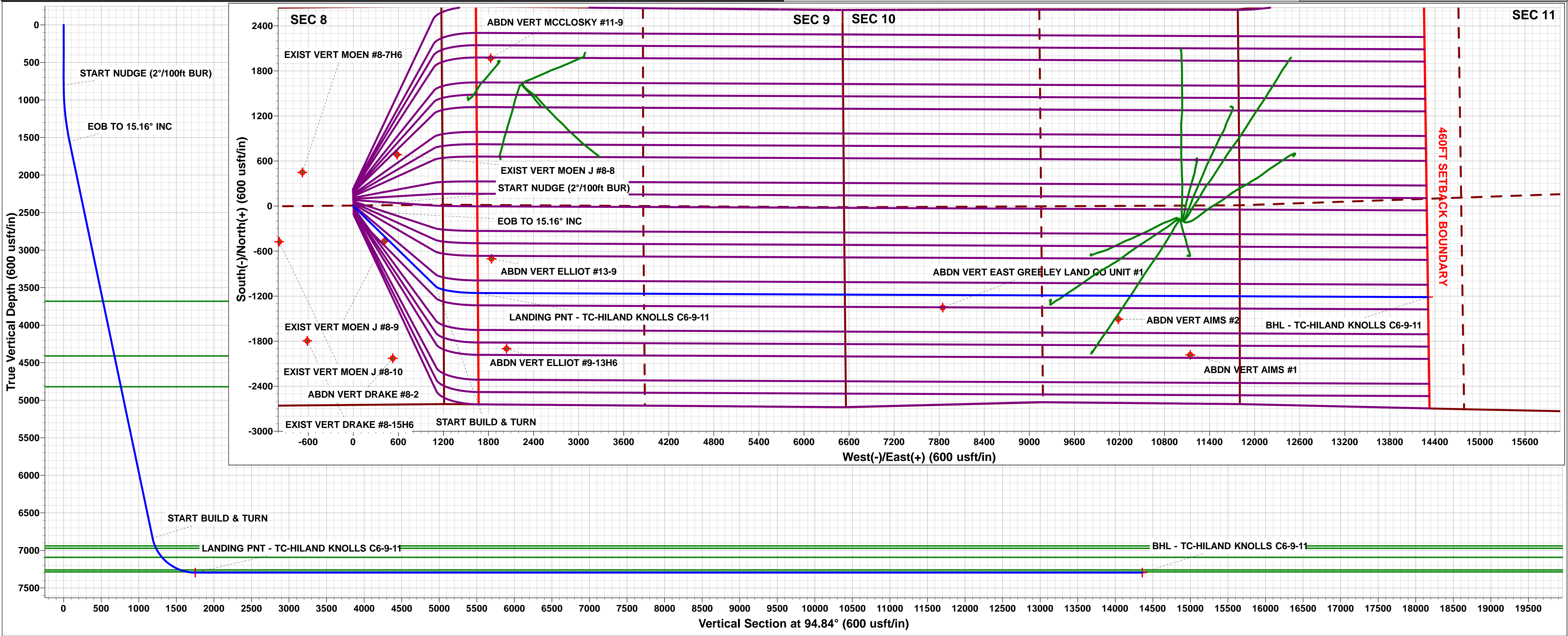
West(-)/East(+) (150 usft/in)

FORMATION TOP DETAILS		
TVDPth	MDPth	Formation
3680.0	3765.6	PARKMAN
4410.0	4522.0	SUSSEX
4820.0	4946.7	SHANNON
6940.0	7145.8	SHARON SPRINGS
6972.0	7181.3	NIOBRARA
7092.0	7326.5	NIO B TARGET
7260.0	7625.9	FORT HAYS
7285.0	7720.8	CODELL

T
M

Azimuths to True North
Magnetic North: 8.43°

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



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TC-HILAND KNOLLS C6-9-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS C6-9-11	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 C6-9-11		
Well Position	+N/-S	112.9 usft	Northing:
	+E/-W	-2.8 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 (°)	
	7,295.0	0.0	0.0	94.84	

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	-4,807.0	0.0	0.0	0.00	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	-4,007.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,558.0	15.16	134.28	1,549.2	-3,257.8	-69.6	71.4	2.00	2.00	0.00	134.28	
1,558.0	15.16	134.28	1,549.2	-3,257.8	-69.6	71.4	10.00	0.97	-38.03	-84.40	
7,037.3	15.16	134.28	6,837.8	2,030.8	-1,069.9	1,097.4	0.00	0.00	0.00	0.00	
7,828.9	90.00	90.25	7,295.0	2,488.0	-1,158.4	1,659.7	10.00	9.45	-5.56	-45.04	LANDING PNT - TC
20,477.5	90.00	90.25	7,295.0	2,488.0	-1,212.6	14,308.1	0.00	0.00	0.00	0.00	BHL - TC-HILAND I

Planning Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS C6-9-11	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	4,807.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,707.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,607.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,507.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,407.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,307.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,207.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	4,107.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
800.0	0.00	0.00	800.0	4,007.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	2.00	134.28	900.0	3,907.02	-1.2	1.2	1.3	2.00	2.00	0.00
1,000.0	4.00	134.28	999.8	3,807.16	-4.9	5.0	5.4	2.00	2.00	0.00
1,100.0	6.00	134.28	1,099.5	3,707.55	-11.0	11.2	12.1	2.00	2.00	0.00
1,200.0	8.00	134.28	1,198.7	3,608.30	-19.5	20.0	21.5	2.00	2.00	0.00
1,300.0	10.00	134.28	1,297.5	3,509.53	-30.4	31.2	33.6	2.00	2.00	0.00
1,400.0	12.00	134.28	1,395.6	3,411.38	-43.7	44.8	48.4	2.00	2.00	0.00
1,500.0	14.00	134.28	1,493.1	3,313.94	-59.4	60.9	65.7	2.00	2.00	0.00
EOB TO 15.16° INC										
1,558.0	15.16	134.28	1,549.2	3,257.81	-69.6	71.4	77.0	2.00	2.00	0.00
1,600.0	15.16	134.28	1,589.7	3,217.28	-77.3	79.2	85.5	0.00	0.00	-0.01
1,700.0	15.16	134.28	1,686.2	3,120.76	-95.5	98.0	105.7	0.00	0.00	0.00
1,800.0	15.16	134.28	1,782.8	3,024.24	-113.8	116.7	125.9	0.00	0.00	0.00
1,900.0	15.16	134.28	1,879.3	2,927.72	-132.0	135.4	146.1	0.00	0.00	0.00
2,000.0	15.16	134.28	1,975.8	2,831.20	-150.3	154.1	166.3	0.00	0.00	0.00
2,100.0	15.16	134.28	2,072.3	2,734.68	-168.6	172.9	186.5	0.00	0.00	0.00
2,200.0	15.16	134.28	2,168.8	2,638.16	-186.8	191.6	206.7	0.00	0.00	0.00
2,300.0	15.16	134.28	2,265.4	2,541.64	-205.1	210.3	226.9	0.00	0.00	0.00
2,400.0	15.16	134.28	2,361.9	2,445.12	-223.3	229.0	247.1	0.00	0.00	0.00
2,500.0	15.16	134.28	2,458.4	2,348.60	-241.6	247.8	267.3	0.00	0.00	0.00
2,600.0	15.16	134.28	2,554.9	2,252.08	-259.8	266.5	287.5	0.00	0.00	0.00
2,700.0	15.16	134.28	2,651.4	2,155.56	-278.1	285.2	307.7	0.00	0.00	0.00
2,800.0	15.16	134.28	2,748.0	2,059.04	-296.4	303.9	327.9	0.00	0.00	0.00
2,900.0	15.16	134.28	2,844.5	1,962.52	-314.6	322.7	348.1	0.00	0.00	0.00
3,000.0	15.16	134.28	2,941.0	1,866.00	-332.9	341.4	368.3	0.00	0.00	0.00
3,100.0	15.16	134.28	3,037.5	1,769.48	-351.1	360.1	388.5	0.00	0.00	0.00
3,200.0	15.16	134.28	3,134.0	1,672.96	-369.4	378.8	408.7	0.00	0.00	0.00
3,300.0	15.16	134.28	3,230.6	1,576.44	-387.6	397.6	428.9	0.00	0.00	0.00
3,400.0	15.16	134.28	3,327.1	1,479.92	-405.9	416.3	449.1	0.00	0.00	0.00
3,500.0	15.16	134.28	3,423.6	1,383.40	-424.1	435.0	469.3	0.00	0.00	0.00
3,600.0	15.16	134.28	3,520.1	1,286.88	-442.4	453.7	489.5	0.00	0.00	0.00
3,700.0	15.16	134.28	3,616.6	1,190.36	-460.7	472.5	509.7	0.00	0.00	0.00
PARKMAN										
3,765.6	15.16	134.28	3,680.0	1,127.00	-472.6	484.7	522.9	0.00	0.00	0.00
3,800.0	15.16	134.28	3,713.2	1,093.84	-478.9	491.2	529.9	0.00	0.00	0.00
3,900.0	15.16	134.28	3,809.7	997.32	-497.2	509.9	550.1	0.00	0.00	0.00
4,000.0	15.16	134.28	3,906.2	900.80	-515.4	528.6	570.3	0.00	0.00	0.00
4,100.0	15.16	134.28	4,002.7	804.28	-533.7	547.4	590.5	0.00	0.00	0.00
4,200.0	15.16	134.28	4,099.2	707.76	-551.9	566.1	610.7	0.00	0.00	0.00
4,300.0	15.16	134.28	4,195.8	611.24	-570.2	584.8	630.9	0.00	0.00	0.00
4,400.0	15.16	134.28	4,292.3	514.72	-588.5	603.5	651.1	0.00	0.00	0.00
4,500.0	15.16	134.28	4,388.8	418.20	-606.7	622.3	671.3	0.00	0.00	0.00
SUSSEX										
4,522.0	15.16	134.28	4,410.0	397.00	-610.7	626.4	675.7	0.00	0.00	0.00
4,600.0	15.16	134.28	4,485.3	321.68	-625.0	641.0	691.5	0.00	0.00	0.00

Planning Report



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Well:	TC-HILAND KNOLLS C6-9-11	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)
4,700.0	15.16	134.28	4,581.8	225.16	-643.2	659.7	711.7	0.00	0.00	0.00
4,800.0	15.16	134.28	4,678.4	128.64	-661.5	678.4	731.9	0.00	0.00	0.00
4,900.0	15.16	134.28	4,774.9	32.12	-679.7	697.2	752.1	0.00	0.00	0.00
SHANNON										
4,946.7	15.16	134.28	4,820.0	-13.00	-688.3	705.9	761.5	0.00	0.00	0.00
5,000.0	15.16	134.28	4,871.4	-64.40	-698.0	715.9	772.3	0.00	0.00	0.00
5,100.0	15.16	134.28	4,967.9	-160.92	-716.3	734.6	792.5	0.00	0.00	0.00
5,200.0	15.16	134.28	5,064.4	-257.44	-734.5	753.3	812.7	0.00	0.00	0.00
5,300.0	15.16	134.28	5,161.0	-353.96	-752.8	772.1	832.9	0.00	0.00	0.00
5,400.0	15.16	134.28	5,257.5	-450.48	-771.0	790.8	853.1	0.00	0.00	0.00
5,500.0	15.16	134.28	5,354.0	-547.00	-789.3	809.5	873.3	0.00	0.00	0.00
5,600.0	15.16	134.28	5,450.5	-643.52	-807.5	828.2	893.5	0.00	0.00	0.00
5,700.0	15.16	134.28	5,547.0	-740.04	-825.8	846.9	913.7	0.00	0.00	0.00
5,800.0	15.16	134.28	5,643.6	-836.56	-844.1	865.7	933.9	0.00	0.00	0.00
5,900.0	15.16	134.28	5,740.1	-933.08	-862.3	884.4	954.1	0.00	0.00	0.00
6,000.0	15.16	134.28	5,836.6	-1,029.60	-880.6	903.1	974.3	0.00	0.00	0.00
6,100.0	15.16	134.28	5,933.1	-1,126.12	-898.8	921.8	994.5	0.00	0.00	0.00
6,200.0	15.16	134.28	6,029.6	-1,222.64	-917.1	940.6	1,014.7	0.00	0.00	0.00
6,300.0	15.16	134.28	6,126.2	-1,319.16	-935.3	959.3	1,034.9	0.00	0.00	0.00
6,400.0	15.16	134.28	6,222.7	-1,415.68	-953.6	978.0	1,055.1	0.00	0.00	0.00
6,500.0	15.16	134.28	6,319.2	-1,512.20	-971.8	996.7	1,075.3	0.00	0.00	0.00
6,600.0	15.16	134.28	6,415.7	-1,608.72	-990.1	1,015.5	1,095.5	0.00	0.00	0.00
6,700.0	15.16	134.28	6,512.2	-1,705.24	-1,008.4	1,034.2	1,115.7	0.00	0.00	0.00
6,800.0	15.16	134.28	6,608.8	-1,801.76	-1,026.6	1,052.9	1,135.9	0.00	0.00	0.00
6,900.0	15.16	134.28	6,705.3	-1,898.28	-1,044.9	1,071.6	1,156.1	0.00	0.00	0.00
7,000.0	15.16	134.28	6,801.8	-1,994.80	-1,063.1	1,090.4	1,176.3	0.00	0.00	0.00
START BUILD & TURN										
7,037.3	15.16	134.28	6,837.8	-2,030.80	-1,069.9	1,097.4	1,183.8	0.00	0.00	0.00
7,100.0	20.07	121.26	6,897.6	-2,090.56	-1,081.3	1,112.4	1,199.8	10.00	7.84	-20.75
SHARON SPRINGS										
7,145.8	24.05	115.20	6,940.0	-2,133.00	-1,089.3	1,127.6	1,215.6	10.00	8.69	-13.24
NIOBRARA										
7,181.3	27.26	111.68	6,972.0	-2,165.00	-1,095.4	1,141.7	1,230.1	10.00	9.04	-9.91
7,200.0	28.98	110.12	6,988.5	-2,181.50	-1,098.5	1,149.9	1,238.6	10.00	9.20	-8.34
7,300.0	38.40	103.99	7,071.6	-2,264.63	-1,114.4	1,203.0	1,292.8	10.00	9.42	-6.13
NIO B TARGET										
7,326.5	40.93	102.79	7,092.0	-2,285.00	-1,118.3	1,219.4	1,309.5	10.00	9.57	-4.55
7,400.0	48.02	100.00	7,144.4	-2,337.45	-1,128.4	1,269.9	1,360.6	10.00	9.64	-3.79
7,500.0	57.74	97.07	7,204.7	-2,397.73	-1,140.1	1,348.6	1,440.1	10.00	9.73	-2.93
7,600.0	67.52	94.71	7,250.6	-2,443.65	-1,149.1	1,436.9	1,528.8	10.00	9.78	-2.36
FORT HAYS										
7,625.9	70.06	94.16	7,260.0	-2,453.00	-1,151.0	1,460.9	1,552.9	10.00	9.80	-2.13
7,700.0	77.33	92.67	7,280.8	-2,473.80	-1,155.2	1,531.9	1,624.0	10.00	9.81	-2.01
CODELL										
7,720.8	79.37	92.27	7,285.0	-2,478.00	-1,156.1	1,552.2	1,644.3	10.00	9.82	-1.93
7,800.0	87.16	90.78	7,294.3	-2,487.28	-1,158.2	1,630.8	1,722.8	10.00	9.82	-1.88
LANDING PNT - TC-HILAND KNOLLS C6-9-11										
7,828.9	90.00	90.25	7,295.0	-2,488.00	-1,158.4	1,659.7	1,751.6	10.00	9.83	-1.85
7,900.0	90.00	90.25	7,295.0	-2,488.00	-1,158.8	1,730.8	1,822.5	0.00	0.00	0.00
8,000.0	90.00	90.25	7,295.0	-2,488.00	-1,159.2	1,830.8	1,922.1	0.00	0.00	0.00
8,100.0	90.00	90.25	7,295.0	-2,488.00	-1,159.6	1,930.8	2,021.8	0.00	0.00	0.00
8,200.0	90.00	90.25	7,295.0	-2,488.00	-1,160.0	2,030.8	2,121.5	0.00	0.00	0.00
8,300.0	90.00	90.25	7,295.0	-2,488.00	-1,160.5	2,130.8	2,221.2	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TC-HILAND KNOLLS C6-9-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS C6-9-11	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)
8,400.0	90.00	90.25	7,295.0	-2,488.00	-1,160.9	2,230.8	2,320.8	0.00	0.00	0.00
8,500.0	90.00	90.25	7,295.0	-2,488.00	-1,161.3	2,330.8	2,420.5	0.00	0.00	0.00
8,600.0	90.00	90.25	7,295.0	-2,488.00	-1,161.8	2,430.8	2,520.2	0.00	0.00	0.00
8,700.0	90.00	90.25	7,295.0	-2,488.00	-1,162.2	2,530.8	2,619.9	0.00	0.00	0.00
8,800.0	90.00	90.25	7,295.0	-2,488.00	-1,162.6	2,630.8	2,719.6	0.00	0.00	0.00
8,900.0	90.00	90.25	7,295.0	-2,488.00	-1,163.0	2,730.8	2,819.2	0.00	0.00	0.00
9,000.0	90.00	90.25	7,295.0	-2,488.00	-1,163.5	2,830.8	2,918.9	0.00	0.00	0.00
9,100.0	90.00	90.25	7,295.0	-2,488.00	-1,163.9	2,930.8	3,018.6	0.00	0.00	0.00
9,200.0	90.00	90.25	7,295.0	-2,488.00	-1,164.3	3,030.8	3,118.3	0.00	0.00	0.00
9,300.0	90.00	90.25	7,295.0	-2,488.00	-1,164.8	3,130.8	3,218.0	0.00	0.00	0.00
9,400.0	90.00	90.25	7,295.0	-2,488.00	-1,165.2	3,230.8	3,317.6	0.00	0.00	0.00
9,500.0	90.00	90.25	7,295.0	-2,488.00	-1,165.6	3,330.8	3,417.3	0.00	0.00	0.00
9,600.0	90.00	90.25	7,295.0	-2,488.00	-1,166.0	3,430.8	3,517.0	0.00	0.00	0.00
9,700.0	90.00	90.25	7,295.0	-2,488.00	-1,166.5	3,530.8	3,616.7	0.00	0.00	0.00
9,800.0	90.00	90.25	7,295.0	-2,488.00	-1,166.9	3,630.8	3,716.3	0.00	0.00	0.00
9,900.0	90.00	90.25	7,295.0	-2,488.00	-1,167.3	3,730.8	3,816.0	0.00	0.00	0.00
10,000.0	90.00	90.25	7,295.0	-2,488.00	-1,167.8	3,830.8	3,915.7	0.00	0.00	0.00
10,100.0	90.00	90.25	7,295.0	-2,488.00	-1,168.2	3,930.8	4,015.4	0.00	0.00	0.00
10,200.0	90.00	90.25	7,295.0	-2,488.00	-1,168.6	4,030.8	4,115.1	0.00	0.00	0.00
10,300.0	90.00	90.25	7,295.0	-2,488.00	-1,169.0	4,130.8	4,214.7	0.00	0.00	0.00
10,400.0	90.00	90.25	7,295.0	-2,488.00	-1,169.5	4,230.8	4,314.4	0.00	0.00	0.00
10,500.0	90.00	90.25	7,295.0	-2,488.00	-1,169.9	4,330.8	4,414.1	0.00	0.00	0.00
10,600.0	90.00	90.25	7,295.0	-2,488.00	-1,170.3	4,430.8	4,513.8	0.00	0.00	0.00
10,700.0	90.00	90.25	7,295.0	-2,488.00	-1,170.8	4,530.8	4,613.4	0.00	0.00	0.00
10,800.0	90.00	90.25	7,295.0	-2,488.00	-1,171.2	4,630.8	4,713.1	0.00	0.00	0.00
10,900.0	90.00	90.25	7,295.0	-2,488.00	-1,171.6	4,730.8	4,812.8	0.00	0.00	0.00
11,000.0	90.00	90.25	7,295.0	-2,488.00	-1,172.0	4,830.8	4,912.5	0.00	0.00	0.00
11,100.0	90.00	90.25	7,295.0	-2,488.00	-1,172.5	4,930.8	5,012.2	0.00	0.00	0.00
11,200.0	90.00	90.25	7,295.0	-2,488.00	-1,172.9	5,030.8	5,111.8	0.00	0.00	0.00
11,300.0	90.00	90.25	7,295.0	-2,488.00	-1,173.3	5,130.8	5,211.5	0.00	0.00	0.00
11,400.0	90.00	90.25	7,295.0	-2,488.00	-1,173.8	5,230.8	5,311.2	0.00	0.00	0.00
11,500.0	90.00	90.25	7,295.0	-2,488.00	-1,174.2	5,330.8	5,410.9	0.00	0.00	0.00
11,600.0	90.00	90.25	7,295.0	-2,488.00	-1,174.6	5,430.8	5,510.5	0.00	0.00	0.00
11,700.0	90.00	90.25	7,295.0	-2,488.00	-1,175.0	5,530.7	5,610.2	0.00	0.00	0.00
11,800.0	90.00	90.25	7,295.0	-2,488.00	-1,175.5	5,630.7	5,709.9	0.00	0.00	0.00
11,900.0	90.00	90.25	7,295.0	-2,488.00	-1,175.9	5,730.7	5,809.6	0.00	0.00	0.00
12,000.0	90.00	90.25	7,295.0	-2,488.00	-1,176.3	5,830.7	5,909.3	0.00	0.00	0.00
12,100.0	90.00	90.25	7,295.0	-2,488.00	-1,176.8	5,930.7	6,008.9	0.00	0.00	0.00
12,200.0	90.00	90.25	7,295.0	-2,488.00	-1,177.2	6,030.7	6,108.6	0.00	0.00	0.00
12,300.0	90.00	90.25	7,295.0	-2,488.00	-1,177.6	6,130.7	6,208.3	0.00	0.00	0.00
12,400.0	90.00	90.25	7,295.0	-2,488.00	-1,178.0	6,230.7	6,308.0	0.00	0.00	0.00
12,500.0	90.00	90.25	7,295.0	-2,488.00	-1,178.5	6,330.7	6,407.6	0.00	0.00	0.00
12,600.0	90.00	90.25	7,295.0	-2,488.00	-1,178.9	6,430.7	6,507.3	0.00	0.00	0.00
12,700.0	90.00	90.25	7,295.0	-2,488.00	-1,179.3	6,530.7	6,607.0	0.00	0.00	0.00
12,800.0	90.00	90.25	7,295.0	-2,488.00	-1,179.8	6,630.7	6,706.7	0.00	0.00	0.00
12,900.0	90.00	90.25	7,295.0	-2,488.00	-1,180.2	6,730.7	6,806.4	0.00	0.00	0.00
13,000.0	90.00	90.25	7,295.0	-2,488.00	-1,180.6	6,830.7	6,906.0	0.00	0.00	0.00
13,100.0	90.00	90.25	7,295.0	-2,488.00	-1,181.0	6,930.7	7,005.7	0.00	0.00	0.00
13,200.0	90.00	90.25	7,295.0	-2,488.00	-1,181.5	7,030.7	7,105.4	0.00	0.00	0.00
13,300.0	90.00	90.25	7,295.0	-2,488.00	-1,181.9	7,130.7	7,205.1	0.00	0.00	0.00
13,400.0	90.00	90.25	7,295.0	-2,488.00	-1,182.3	7,230.7	7,304.8	0.00	0.00	0.00
13,500.0	90.00	90.25	7,295.0	-2,488.00	-1,182.7	7,330.7	7,404.4	0.00	0.00	0.00
13,600.0	90.00	90.25	7,295.0	-2,488.00	-1,183.2	7,430.7	7,504.1	0.00	0.00	0.00
13,700.0	90.00	90.25	7,295.0	-2,488.00	-1,183.6	7,530.7	7,603.8	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TC-HILAND KNOLLS C6-9-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS C6-9-11	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)
13,800.0	90.00	90.25	7,295.0	-2,488.00	-1,184.0	7,630.7	7,703.5	0.00	0.00	0.00
13,900.0	90.00	90.25	7,295.0	-2,488.00	-1,184.5	7,730.7	7,803.1	0.00	0.00	0.00
14,000.0	90.00	90.25	7,295.0	-2,488.00	-1,184.9	7,830.7	7,902.8	0.00	0.00	0.00
14,100.0	90.00	90.25	7,295.0	-2,488.00	-1,185.3	7,930.7	8,002.5	0.00	0.00	0.00
14,200.0	90.00	90.25	7,295.0	-2,488.00	-1,185.7	8,030.7	8,102.2	0.00	0.00	0.00
14,300.0	90.00	90.25	7,295.0	-2,488.00	-1,186.2	8,130.7	8,201.9	0.00	0.00	0.00
14,400.0	90.00	90.25	7,295.0	-2,488.00	-1,186.6	8,230.7	8,301.5	0.00	0.00	0.00
14,500.0	90.00	90.25	7,295.0	-2,488.00	-1,187.0	8,330.7	8,401.2	0.00	0.00	0.00
14,600.0	90.00	90.25	7,295.0	-2,488.00	-1,187.5	8,430.7	8,500.9	0.00	0.00	0.00
14,700.0	90.00	90.25	7,295.0	-2,488.00	-1,187.9	8,530.7	8,600.6	0.00	0.00	0.00
14,800.0	90.00	90.25	7,295.0	-2,488.00	-1,188.3	8,630.7	8,700.2	0.00	0.00	0.00
14,900.0	90.00	90.25	7,295.0	-2,488.00	-1,188.7	8,730.7	8,799.9	0.00	0.00	0.00
15,000.0	90.00	90.25	7,295.0	-2,488.00	-1,189.2	8,830.7	8,899.6	0.00	0.00	0.00
15,100.0	90.00	90.25	7,295.0	-2,488.00	-1,189.6	8,930.7	8,999.3	0.00	0.00	0.00
15,200.0	90.00	90.25	7,295.0	-2,488.00	-1,190.0	9,030.7	9,099.0	0.00	0.00	0.00
15,300.0	90.00	90.25	7,295.0	-2,488.00	-1,190.5	9,130.7	9,198.6	0.00	0.00	0.00
15,400.0	90.00	90.25	7,295.0	-2,488.00	-1,190.9	9,230.7	9,298.3	0.00	0.00	0.00
15,500.0	90.00	90.25	7,295.0	-2,488.00	-1,191.3	9,330.7	9,398.0	0.00	0.00	0.00
15,600.0	90.00	90.25	7,295.0	-2,488.00	-1,191.7	9,430.7	9,497.7	0.00	0.00	0.00
15,700.0	90.00	90.25	7,295.0	-2,488.00	-1,192.2	9,530.7	9,597.3	0.00	0.00	0.00
15,800.0	90.00	90.25	7,295.0	-2,488.00	-1,192.6	9,630.7	9,697.0	0.00	0.00	0.00
15,900.0	90.00	90.25	7,295.0	-2,488.00	-1,193.0	9,730.7	9,796.7	0.00	0.00	0.00
16,000.0	90.00	90.25	7,295.0	-2,488.00	-1,193.5	9,830.7	9,896.4	0.00	0.00	0.00
16,100.0	90.00	90.25	7,295.0	-2,488.00	-1,193.9	9,930.7	9,996.1	0.00	0.00	0.00
16,200.0	90.00	90.25	7,295.0	-2,488.00	-1,194.3	10,030.7	10,095.7	0.00	0.00	0.00
16,300.0	90.00	90.25	7,295.0	-2,488.00	-1,194.7	10,130.7	10,195.4	0.00	0.00	0.00
16,400.0	90.00	90.25	7,295.0	-2,488.00	-1,195.2	10,230.7	10,295.1	0.00	0.00	0.00
16,500.0	90.00	90.25	7,295.0	-2,488.00	-1,195.6	10,330.7	10,394.8	0.00	0.00	0.00
16,600.0	90.00	90.25	7,295.0	-2,488.00	-1,196.0	10,430.7	10,494.4	0.00	0.00	0.00
16,700.0	90.00	90.25	7,295.0	-2,488.00	-1,196.5	10,530.7	10,594.1	0.00	0.00	0.00
16,800.0	90.00	90.25	7,295.0	-2,488.00	-1,196.9	10,630.7	10,693.8	0.00	0.00	0.00
16,900.0	90.00	90.25	7,295.0	-2,488.00	-1,197.3	10,730.7	10,793.5	0.00	0.00	0.00
17,000.0	90.00	90.25	7,295.0	-2,488.00	-1,197.7	10,830.7	10,893.2	0.00	0.00	0.00
17,100.0	90.00	90.25	7,295.0	-2,488.00	-1,198.2	10,930.7	10,992.8	0.00	0.00	0.00
17,200.0	90.00	90.25	7,295.0	-2,488.00	-1,198.6	11,030.7	11,092.5	0.00	0.00	0.00
17,300.0	90.00	90.25	7,295.0	-2,488.00	-1,199.0	11,130.7	11,192.2	0.00	0.00	0.00
17,400.0	90.00	90.25	7,295.0	-2,488.00	-1,199.5	11,230.7	11,291.9	0.00	0.00	0.00
17,500.0	90.00	90.25	7,295.0	-2,488.00	-1,199.9	11,330.7	11,391.6	0.00	0.00	0.00
17,600.0	90.00	90.25	7,295.0	-2,488.00	-1,200.3	11,430.7	11,491.2	0.00	0.00	0.00
17,700.0	90.00	90.25	7,295.0	-2,488.00	-1,200.7	11,530.7	11,590.9	0.00	0.00	0.00
17,800.0	90.00	90.25	7,295.0	-2,488.00	-1,201.2	11,630.7	11,690.6	0.00	0.00	0.00
17,900.0	90.00	90.25	7,295.0	-2,488.00	-1,201.6	11,730.7	11,790.3	0.00	0.00	0.00
18,000.0	90.00	90.25	7,295.0	-2,488.00	-1,202.0	11,830.7	11,889.9	0.00	0.00	0.00
18,100.0	90.00	90.25	7,295.0	-2,488.00	-1,202.5	11,930.7	11,989.6	0.00	0.00	0.00
18,200.0	90.00	90.25	7,295.0	-2,488.00	-1,202.9	12,030.7	12,089.3	0.00	0.00	0.00
18,300.0	90.00	90.25	7,295.0	-2,488.00	-1,203.3	12,130.7	12,189.0	0.00	0.00	0.00
18,400.0	90.00	90.25	7,295.0	-2,488.00	-1,203.7	12,230.7	12,288.7	0.00	0.00	0.00
18,500.0	90.00	90.25	7,295.0	-2,488.00	-1,204.2	12,330.7	12,388.3	0.00	0.00	0.00
18,600.0	90.00	90.25	7,295.0	-2,488.00	-1,204.6	12,430.7	12,488.0	0.00	0.00	0.00
18,700.0	90.00	90.25	7,295.0	-2,488.00	-1,205.0	12,530.7	12,587.7	0.00	0.00	0.00
18,800.0	90.00	90.25	7,295.0	-2,488.00	-1,205.5	12,630.7	12,687.4	0.00	0.00	0.00
18,900.0	90.00	90.25	7,295.0	-2,488.00	-1,205.9	12,730.7	12,787.0	0.00	0.00	0.00
19,000.0	90.00	90.25	7,295.0	-2,488.00	-1,206.3	12,830.7	12,886.7	0.00	0.00	0.00
19,100.0	90.00	90.25	7,295.0	-2,488.00	-1,206.7	12,930.7	12,986.4	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well TC-HILAND KNOLLS C6-9-11
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4807.0usft (Original Well Elev)
Site:	NE SE SEC. 8 T5N R66W 6th P.M.	North Reference:	True
Well:	TC-HILAND KNOLLS C6-9-11	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)
19,200.0	90.00	90.25	7,295.0	-2,488.00	-1,207.2	13,030.7	13,086.1	0.00	0.00	0.00
19,300.0	90.00	90.25	7,295.0	-2,488.00	-1,207.6	13,130.7	13,185.8	0.00	0.00	0.00
19,400.0	90.00	90.25	7,295.0	-2,488.00	-1,208.0	13,230.7	13,285.4	0.00	0.00	0.00
19,500.0	90.00	90.25	7,295.0	-2,488.00	-1,208.5	13,330.7	13,385.1	0.00	0.00	0.00
19,600.0	90.00	90.25	7,295.0	-2,488.00	-1,208.9	13,430.7	13,484.8	0.00	0.00	0.00
19,700.0	90.00	90.25	7,295.0	-2,488.00	-1,209.3	13,530.7	13,584.5	0.00	0.00	0.00
19,800.0	90.00	90.25	7,295.0	-2,488.00	-1,209.7	13,630.7	13,684.1	0.00	0.00	0.00
19,900.0	90.00	90.25	7,295.0	-2,488.00	-1,210.2	13,730.7	13,783.8	0.00	0.00	0.00
20,000.0	90.00	90.25	7,295.0	-2,488.00	-1,210.6	13,830.7	13,883.5	0.00	0.00	0.00
20,100.0	90.00	90.25	7,295.0	-2,488.00	-1,211.0	13,930.7	13,983.2	0.00	0.00	0.00
20,200.0	90.00	90.25	7,295.0	-2,488.00	-1,211.5	14,030.7	14,082.9	0.00	0.00	0.00
20,300.0	90.00	90.25	7,295.0	-2,488.00	-1,211.9	14,130.7	14,182.5	0.00	0.00	0.00
20,400.0	90.00	90.25	7,295.0	-2,488.00	-1,212.3	14,230.7	14,282.2	0.00	0.00	0.00
BHL - TC-HILAND KNOLLS C6-9-11										
20,477.5	90.00	90.25	7,295.0	-2,488.00	-1,212.6	14,308.1	14,359.4	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,765.6	3,680.0	PARKMAN			
4,522.0	4,410.0	SUSSEX			
4,946.7	4,820.0	SHANNON			
7,145.8	6,940.0	SHARON SPRINGS			
7,181.3	6,972.0	NIOBRARA			
7,326.5	7,092.0	NIO B TARGET			
7,625.9	7,260.0	FORT HAYS			
7,720.8	7,285.0	CODELL			

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
800.0	800.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,558.0	1,549.2	-69.6	71.4	EOB TO 15.16° INC
7,037.3	6,837.8	-1,069.9	1,097.4	START BUILD & TURN
7,828.9	7,295.0	-1,158.4	1,659.7	LANDING PNT - TC-HILAND KNOLLS C6-9-11
20,477.5	7,295.0	-1,212.6	14,308.1	BHL - TC-HILAND KNOLLS C6-9-11