

NICKEL ROAD OPERATING

WELD COUNTY

SEC 9-T7N-R67W

BLEHM 5X-HNB-10-07-67

OWB

Plan: PROPOSAL 1

Standard Planning Report

13 April, 2021



WELL DETAILS: BLEHM 5X-HNB-10-07-67

+N/-S	+E/-W	Northing	Easting	5088.00 Latitude	Longitude	Slot
0.00	0.00	1460032.06	3169073.24	40.594593°N	104.891185°W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
3	2533.27	49.00	245.81	2341.34	-269.09	-599.18	3.00	245.81	-442.27	
4	8203.40	49.00	245.81	6061.43	-2022.21	-4502.77	0.00	0.00	-3323.60	
5	9534.81	89.52	89.83	6940.00	-2427.17	-4090.90	10.00	-146.09	-2784.45	BLEHM 5X-HNB-LP
6	14644.02	89.52	89.83	6983.00	-2412.38	1018.11	0.00	0.00	1895.28	BLEHM 5X-HNB-WP
7	14654.83	89.72	89.76	6983.07	-2412.34	1028.92	2.00	-20.63	1905.17	BLEHM 5X-HNB-PBHL
8	19133.17	89.72	89.76	7005.00	-2393.42	5507.17	0.00	0.00	6004.78	BLEHM 5X-HNB-PBHL

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
300.00	300.00	Upper Pierre
1314.00	1317.31	Pierre Shale
4202.00	5369.27	Sussex
4551.00	5901.21	Shannon
4580.00	5945.41	Pierre Shale
6817.00	9137.67	Niobrara
7005.00	19133.17	TD

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:
497' FNL, 710' FEL
Sec 9-T7N-R67W

LP:
2360' FSL, 460' FWL
Sec 9-T7N-R67W

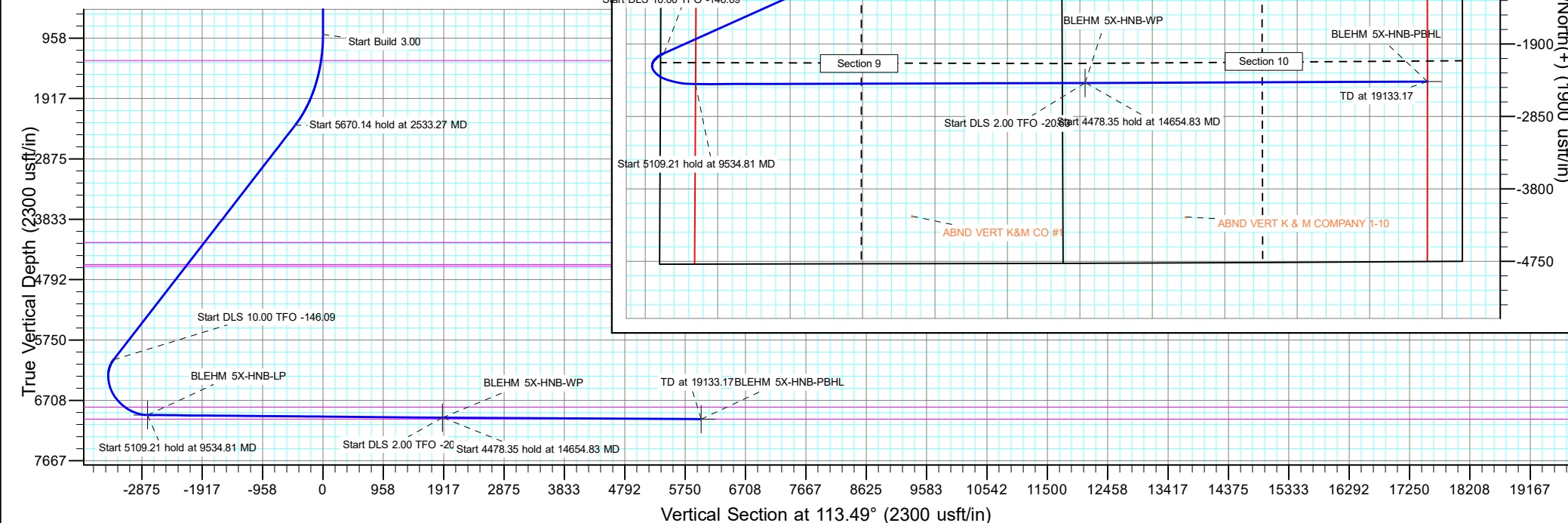
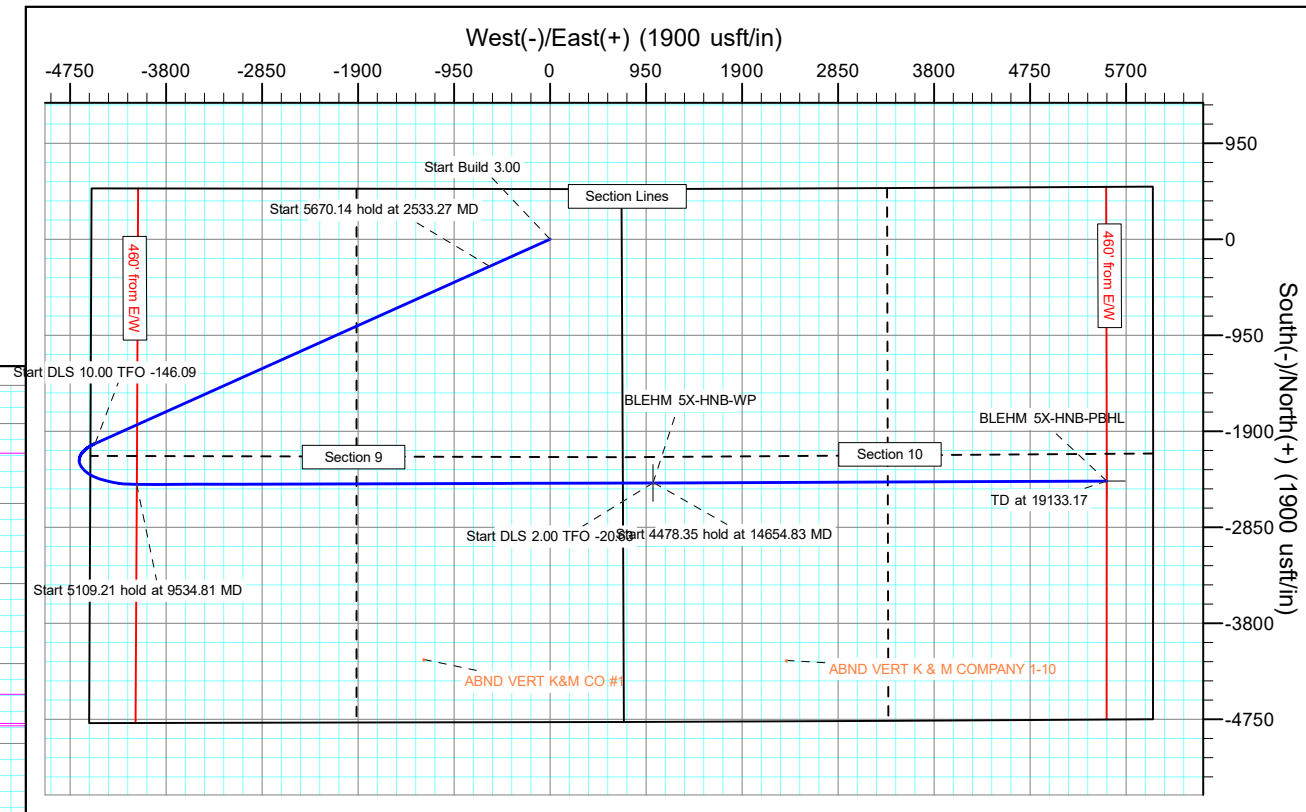
BHL:
2360' FSL, 460' FEL
Sec 10-T7N-R67W

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	Start Build 3.00
2533.27	49.00	245.81	2341.34	-269.09	-599.18	-442.27	656.83	Start 5670.14 hold at 2533.27 MD
8203.40	49.00	245.81	6061.43	-2022.21	-4502.77	-3323.60	4936.01	Start DLS 10.00 TFO -146.09
9534.81	89.52	89.83	6940.00	-2427.17	-4090.90	-2784.45	5839.87	Start 5109.21 hold at 9534.81 MD
14644.02	89.52	89.83	6983.00	-2412.38	1018.11	1895.28	10948.90	Start DLS 2.00 TFO -20.63
14654.83	89.72	89.76	6983.07	-2412.34	1028.92	1905.17	10959.71	Start 4478.35 hold at 14654.83 MD
19133.17	89.72	89.76	7005.00	-2393.42	5507.17	6004.78	15438.01	TD at 19133.17

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BLEHM 5X-HNB-LP	6940.00	-2427.17	-4090.90	1457604.89	3164982.34	40.588007°N	104.905974°W	Point
- plan hits target center								
BLEHM 5X-HNB-WP	6983.00	-2412.38	1018.11	1457619.68	3170091.35	40.587952°N	104.887579°W	Point
- plan hits target center								
BLEHM 5X-HNB-PBHL	7005.00	-2393.42	5507.17	1457638.64	3174580.41	40.587918°N	104.871416°W	Point
- plan hits target center								



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BLEHM 5X-HNB-10-07-67
Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 27' @ 5115.00usft
Project:	WELD COUNTY	MD Reference:	KB 27' @ 5115.00usft
Site:	SEC 9-T7N-R67W	North Reference:	Grid
Well:	BLEHM 5X-HNB-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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 9-T7N-R67W			
Site Position:		Northing:	1,460,528.41 usft	Latitude: 40.595942°N
From:	Lat/Long	Easting:	3,169,780.77 usft	Longitude: 104.888625°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	

Well	BLEHM 5X-HNB-10-07-67			
Well Position	+N/-S	0.00 usft	Northing:	1,460,032.06 usft
	+E/-W	0.00 usft	Easting:	3,169,073.24 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft
Grid Convergence:		0.39 °	Ground Level:	5,088.00 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/15/2021	7.96	66.80	52,066.40195529

Design	PROPOSAL 1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	113.49	

Plan Survey Tool Program	Date	4/13/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	19,133.18 PROPOSAL 1 (OWB)	MWD		
			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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,533.27	49.00	245.81	2,341.34	-269.09	-599.18	3.00	3.00	0.00	245.81	
8,203.40	49.00	245.81	6,061.43	-2,022.21	-4,502.77	0.00	0.00	0.00	0.00	
9,534.81	89.52	89.83	6,940.00	-2,427.17	-4,090.90	10.00	3.04	-11.72	-146.09	BLEHM 5X-HNB-LP
14,644.02	89.52	89.83	6,983.00	-2,412.38	1,018.11	0.00	0.00	0.00	0.00	BLEHM 5X-HNB-WP
14,654.83	89.72	89.76	6,983.07	-2,412.34	1,028.92	2.00	1.87	-0.70	-20.63	BLEHM 5X-HNB-PBH
19,133.18	89.72	89.76	7,005.00	-2,393.42	5,507.17	0.00	0.00	0.00	0.00	BLEHM 5X-HNB-PBH

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Project:	WELD COUNTY	MD Reference:	KB 27' @ 5115.00usft
Site:	SEC 9-T7N-R67W	North Reference:	Grid
Well:	BLEHM 5X-HNB-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre									
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
1,000.00	3.00	245.81	999.95	-1.07	-2.39	-1.76	3.00	3.00	0.00
1,100.00	6.00	245.81	1,099.63	-4.29	-9.54	-7.04	3.00	3.00	0.00
1,200.00	9.00	245.81	1,198.77	-9.63	-21.45	-15.83	3.00	3.00	0.00
1,300.00	12.00	245.81	1,297.08	-17.10	-38.07	-28.10	3.00	3.00	0.00
1,317.31	12.52	245.81	1,314.00	-18.60	-41.43	-30.58	3.00	3.00	0.00
Pierre Shale									
1,400.00	15.00	245.81	1,394.31	-26.66	-59.37	-43.82	3.00	3.00	0.00
1,500.00	18.00	245.81	1,490.18	-38.30	-85.27	-62.94	3.00	3.00	0.00
1,600.00	21.00	245.81	1,584.43	-51.97	-115.72	-85.41	3.00	3.00	0.00
1,700.00	24.00	245.81	1,676.81	-67.65	-150.62	-111.18	3.00	3.00	0.00
1,800.00	27.00	245.81	1,767.06	-85.28	-189.89	-140.16	3.00	3.00	0.00
1,900.00	30.00	245.81	1,854.93	-104.83	-233.41	-172.29	3.00	3.00	0.00
2,000.00	33.00	245.81	1,940.18	-126.23	-281.07	-207.47	3.00	3.00	0.00
2,100.00	36.00	245.81	2,022.59	-149.43	-332.74	-245.60	3.00	3.00	0.00
2,200.00	39.00	245.81	2,101.91	-174.37	-388.26	-286.59	3.00	3.00	0.00
2,300.00	42.00	245.81	2,177.94	-200.97	-447.50	-330.31	3.00	3.00	0.00
2,400.00	45.00	245.81	2,250.47	-229.17	-510.29	-376.66	3.00	3.00	0.00
2,500.00	48.00	245.81	2,319.30	-258.89	-576.45	-425.49	3.00	3.00	0.00
2,533.27	49.00	245.81	2,341.34	-269.09	-599.18	-442.27	3.00	3.00	0.00
Start 5670.14 hold at 2533.27 MD									
2,600.00	49.00	245.81	2,385.13	-289.73	-645.12	-476.18	0.00	0.00	0.00
2,700.00	49.00	245.81	2,450.74	-320.64	-713.97	-527.00	0.00	0.00	0.00
2,800.00	49.00	245.81	2,516.34	-351.56	-782.81	-577.81	0.00	0.00	0.00
2,900.00	49.00	245.81	2,581.95	-382.48	-851.65	-628.63	0.00	0.00	0.00
3,000.00	49.00	245.81	2,647.56	-413.40	-920.50	-679.44	0.00	0.00	0.00
3,100.00	49.00	245.81	2,713.17	-444.32	-989.34	-730.26	0.00	0.00	0.00
3,200.00	49.00	245.81	2,778.78	-475.24	-1,058.19	-781.07	0.00	0.00	0.00
3,300.00	49.00	245.81	2,844.39	-506.15	-1,127.03	-831.89	0.00	0.00	0.00
3,400.00	49.00	245.81	2,909.99	-537.07	-1,195.88	-882.71	0.00	0.00	0.00
3,500.00	49.00	245.81	2,975.60	-567.99	-1,264.72	-933.52	0.00	0.00	0.00
3,600.00	49.00	245.81	3,041.21	-598.91	-1,333.57	-984.34	0.00	0.00	0.00
3,700.00	49.00	245.81	3,106.82	-629.83	-1,402.41	-1,035.15	0.00	0.00	0.00
3,800.00	49.00	245.81	3,172.43	-660.75	-1,471.26	-1,085.97	0.00	0.00	0.00
3,900.00	49.00	245.81	3,238.04	-691.66	-1,540.10	-1,136.79	0.00	0.00	0.00
4,000.00	49.00	245.81	3,303.65	-722.58	-1,608.95	-1,187.60	0.00	0.00	0.00
4,100.00	49.00	245.81	3,369.25	-753.50	-1,677.79	-1,238.42	0.00	0.00	0.00
4,200.00	49.00	245.81	3,434.86	-784.42	-1,746.64	-1,289.23	0.00	0.00	0.00
4,300.00	49.00	245.81	3,500.47	-815.34	-1,815.48	-1,340.05	0.00	0.00	0.00
4,400.00	49.00	245.81	3,566.08	-846.26	-1,884.32	-1,390.87	0.00	0.00	0.00
4,500.00	49.00	245.81	3,631.69	-877.17	-1,953.17	-1,441.68	0.00	0.00	0.00
4,600.00	49.00	245.81	3,697.30	-908.09	-2,022.01	-1,492.50	0.00	0.00	0.00
4,700.00	49.00	245.81	3,762.90	-939.01	-2,090.86	-1,543.31	0.00	0.00	0.00
4,800.00	49.00	245.81	3,828.51	-969.93	-2,159.70	-1,594.13	0.00	0.00	0.00
4,900.00	49.00	245.81	3,894.12	-1,000.85	-2,228.55	-1,644.95	0.00	0.00	0.00
5,000.00	49.00	245.81	3,959.73	-1,031.77	-2,297.39	-1,695.76	0.00	0.00	0.00
5,100.00	49.00	245.81	4,025.34	-1,062.69	-2,366.24	-1,746.58	0.00	0.00	0.00
5,200.00	49.00	245.81	4,090.95	-1,093.60	-2,435.08	-1,797.39	0.00	0.00	0.00
5,300.00	49.00	245.81	4,156.55	-1,124.52	-2,503.93	-1,848.21	0.00	0.00	0.00
5,369.27	49.00	245.81	4,202.00	-1,145.94	-2,551.61	-1,883.41	0.00	0.00	0.00

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Site:	SEC 9-T7N-R67W	North Reference:	Grid
Well:	BLEHM 5X-HNB-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)
Sussex									
5,400.00	49.00	245.81	4,222.16	-1,155.44	-2,572.77	-1,899.03	0.00	0.00	0.00
5,500.00	49.00	245.81	4,287.77	-1,186.36	-2,641.62	-1,949.84	0.00	0.00	0.00
5,600.00	49.00	245.81	4,353.38	-1,217.28	-2,710.46	-2,000.66	0.00	0.00	0.00
5,700.00	49.00	245.81	4,418.99	-1,248.20	-2,779.31	-2,051.47	0.00	0.00	0.00
5,800.00	49.00	245.81	4,484.60	-1,279.11	-2,848.15	-2,102.29	0.00	0.00	0.00
5,900.00	49.00	245.81	4,550.21	-1,310.03	-2,916.99	-2,153.11	0.00	0.00	0.00
5,901.21	49.00	245.81	4,551.00	-1,310.41	-2,917.83	-2,153.72	0.00	0.00	0.00
Shannon									
5,945.41	49.00	245.81	4,580.00	-1,324.07	-2,948.26	-2,176.18	0.00	0.00	0.00
Pierre Shale									
6,000.00	49.00	245.81	4,615.81	-1,340.95	-2,985.84	-2,203.92	0.00	0.00	0.00
6,100.00	49.00	245.81	4,681.42	-1,371.87	-3,054.68	-2,254.74	0.00	0.00	0.00
6,200.00	49.00	245.81	4,747.03	-1,402.79	-3,123.53	-2,305.55	0.00	0.00	0.00
6,300.00	49.00	245.81	4,812.64	-1,433.71	-3,192.37	-2,356.37	0.00	0.00	0.00
6,400.00	49.00	245.81	4,878.25	-1,464.62	-3,261.22	-2,407.19	0.00	0.00	0.00
6,500.00	49.00	245.81	4,943.86	-1,495.54	-3,330.06	-2,458.00	0.00	0.00	0.00
6,600.00	49.00	245.81	5,009.46	-1,526.46	-3,398.91	-2,508.82	0.00	0.00	0.00
6,700.00	49.00	245.81	5,075.07	-1,557.38	-3,467.75	-2,559.63	0.00	0.00	0.00
6,800.00	49.00	245.81	5,140.68	-1,588.30	-3,536.60	-2,610.45	0.00	0.00	0.00
6,900.00	49.00	245.81	5,206.29	-1,619.22	-3,605.44	-2,661.26	0.00	0.00	0.00
7,000.00	49.00	245.81	5,271.90	-1,650.13	-3,674.29	-2,712.08	0.00	0.00	0.00
7,100.00	49.00	245.81	5,337.51	-1,681.05	-3,743.13	-2,762.90	0.00	0.00	0.00
7,200.00	49.00	245.81	5,403.11	-1,711.97	-3,811.98	-2,813.71	0.00	0.00	0.00
7,300.00	49.00	245.81	5,468.72	-1,742.89	-3,880.82	-2,864.53	0.00	0.00	0.00
7,400.00	49.00	245.81	5,534.33	-1,773.81	-3,949.67	-2,915.34	0.00	0.00	0.00
7,500.00	49.00	245.81	5,599.94	-1,804.73	-4,018.51	-2,966.16	0.00	0.00	0.00
7,600.00	49.00	245.81	5,665.55	-1,835.64	-4,087.35	-3,016.98	0.00	0.00	0.00
7,700.00	49.00	245.81	5,731.16	-1,866.56	-4,156.20	-3,067.79	0.00	0.00	0.00
7,800.00	49.00	245.81	5,796.77	-1,897.48	-4,225.04	-3,118.61	0.00	0.00	0.00
7,900.00	49.00	245.81	5,862.37	-1,928.40	-4,293.89	-3,169.42	0.00	0.00	0.00
8,000.00	49.00	245.81	5,927.98	-1,959.32	-4,362.73	-3,220.24	0.00	0.00	0.00
8,100.00	49.00	245.81	5,993.59	-1,990.24	-4,431.58	-3,271.06	0.00	0.00	0.00
8,203.40	49.00	245.81	6,061.43	-2,022.21	-4,502.77	-3,323.60	0.00	0.00	0.00
Start DLS 10.00 TFO -146.09									
8,250.00	45.19	242.15	6,093.16	-2,037.14	-4,533.44	-3,345.78	10.00	-8.18	-7.86
8,300.00	41.25	237.65	6,129.60	-2,054.25	-4,563.06	-3,366.13	10.00	-7.88	-9.00
8,350.00	37.51	232.41	6,168.25	-2,072.37	-4,589.06	-3,382.76	10.00	-7.47	-10.49
8,400.00	34.05	226.23	6,208.82	-2,091.35	-4,611.25	-3,395.54	10.00	-6.92	-12.36
8,450.00	30.95	218.91	6,251.00	-2,111.05	-4,629.44	-3,404.37	10.00	-6.19	-14.64
8,500.00	28.35	210.27	6,294.47	-2,131.32	-4,643.51	-3,409.20	10.00	-5.21	-17.28
8,550.00	26.38	200.26	6,338.90	-2,152.01	-4,653.35	-3,409.97	10.00	-3.94	-20.03
8,600.00	25.20	189.07	6,383.94	-2,172.95	-4,658.88	-3,406.69	10.00	-2.36	-22.37
8,650.00	24.91	177.27	6,429.27	-2,194.00	-4,660.05	-3,399.38	10.00	-0.57	-23.61
8,700.00	25.56	165.62	6,474.52	-2,214.98	-4,656.87	-3,388.10	10.00	1.29	-23.29
8,750.00	27.07	154.85	6,519.36	-2,235.74	-4,649.35	-3,372.93	10.00	3.02	-21.54
8,800.00	29.31	145.37	6,563.45	-2,256.12	-4,637.55	-3,353.99	10.00	4.48	-18.96
8,850.00	32.12	137.27	6,606.45	-2,275.97	-4,621.57	-3,331.41	10.00	5.63	-16.21
8,900.00	35.38	130.42	6,648.03	-2,295.13	-4,601.52	-3,305.39	10.00	6.51	-13.69
8,950.00	38.96	124.64	6,687.88	-2,313.46	-4,577.55	-3,276.10	10.00	7.16	-11.57
9,000.00	42.78	119.71	6,725.70	-2,330.83	-4,549.85	-3,243.78	10.00	7.65	-9.86
9,050.00	46.79	115.46	6,761.19	-2,347.08	-4,518.64	-3,208.66	10.00	8.01	-8.50
9,100.00	50.93	111.74	6,794.08	-2,362.12	-4,484.13	-3,171.03	10.00	8.29	-7.44

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BLEHM 5X-HNB-10-07-67
Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 27' @ 5115.00usft
Project:	WELD COUNTY	MD Reference:	KB 27' @ 5115.00usft
Site:	SEC 9-T7N-R67W	North Reference:	Grid
Well:	BLEHM 5X-HNB-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)
9,137.67	54.12	109.22	6,817.00	-2,372.56	-4,456.13	-3,141.18	10.00	8.48	-6.69
Niobrara									
9,150.00	55.18	108.44	6,824.13	-2,375.81	-4,446.61	-3,131.16	10.00	8.57	-6.33
9,200.00	59.51	105.47	6,851.11	-2,388.06	-4,406.35	-3,089.36	10.00	8.66	-5.95
9,250.00	63.90	102.75	6,874.81	-2,398.76	-4,363.67	-3,045.94	10.00	8.78	-5.44
9,300.00	68.34	100.23	6,895.04	-2,407.85	-4,318.88	-3,001.24	10.00	8.88	-5.04
9,350.00	72.81	97.86	6,911.67	-2,415.25	-4,272.32	-2,955.59	10.00	8.95	-4.74
9,400.00	77.31	95.61	6,924.56	-2,420.91	-4,224.36	-2,909.35	10.00	9.00	-4.51
9,450.00	81.83	93.43	6,933.61	-2,424.77	-4,175.35	-2,862.87	10.00	9.04	-4.35
9,500.00	86.36	91.30	6,938.75	-2,426.82	-4,125.68	-2,816.49	10.00	9.06	-4.26
9,534.81	89.52	89.83	6,940.00	-2,427.17	-4,090.90	-2,784.45	10.00	9.07	-4.22
Start 5109.21 hold at 9534.81 MD									
9,600.00	89.52	89.83	6,940.55	-2,426.98	-4,025.71	-2,724.74	0.00	0.00	0.00
9,700.00	89.52	89.83	6,941.39	-2,426.69	-3,925.71	-2,633.15	0.00	0.00	0.00
9,800.00	89.52	89.83	6,942.23	-2,426.40	-3,825.72	-2,541.56	0.00	0.00	0.00
9,900.00	89.52	89.83	6,943.07	-2,426.11	-3,725.72	-2,449.96	0.00	0.00	0.00
10,000.00	89.52	89.83	6,943.92	-2,425.82	-3,625.73	-2,358.37	0.00	0.00	0.00
10,100.00	89.52	89.83	6,944.76	-2,425.53	-3,525.73	-2,266.77	0.00	0.00	0.00
10,200.00	89.52	89.83	6,945.60	-2,425.24	-3,425.73	-2,175.18	0.00	0.00	0.00
10,300.00	89.52	89.83	6,946.44	-2,424.95	-3,325.74	-2,083.58	0.00	0.00	0.00
10,400.00	89.52	89.83	6,947.28	-2,424.66	-3,225.74	-1,991.99	0.00	0.00	0.00
10,500.00	89.52	89.83	6,948.12	-2,424.37	-3,125.75	-1,900.40	0.00	0.00	0.00
10,600.00	89.52	89.83	6,948.97	-2,424.08	-3,025.75	-1,808.80	0.00	0.00	0.00
10,700.00	89.52	89.83	6,949.81	-2,423.79	-2,925.75	-1,717.21	0.00	0.00	0.00
10,800.00	89.52	89.83	6,950.65	-2,423.50	-2,825.76	-1,625.61	0.00	0.00	0.00
10,900.00	89.52	89.83	6,951.49	-2,423.21	-2,725.76	-1,534.02	0.00	0.00	0.00
11,000.00	89.52	89.83	6,952.33	-2,422.93	-2,625.77	-1,442.43	0.00	0.00	0.00
11,100.00	89.52	89.83	6,953.17	-2,422.64	-2,525.77	-1,350.83	0.00	0.00	0.00
11,200.00	89.52	89.83	6,954.02	-2,422.35	-2,425.77	-1,259.24	0.00	0.00	0.00
11,300.00	89.52	89.83	6,954.86	-2,422.06	-2,325.78	-1,167.64	0.00	0.00	0.00
11,400.00	89.52	89.83	6,955.70	-2,421.77	-2,225.78	-1,076.05	0.00	0.00	0.00
11,500.00	89.52	89.83	6,956.54	-2,421.48	-2,125.79	-984.46	0.00	0.00	0.00
11,600.00	89.52	89.83	6,957.38	-2,421.19	-2,025.79	-892.86	0.00	0.00	0.00
11,700.00	89.52	89.83	6,958.22	-2,420.90	-1,925.79	-801.27	0.00	0.00	0.00
11,800.00	89.52	89.83	6,959.07	-2,420.61	-1,825.80	-709.67	0.00	0.00	0.00
11,900.00	89.52	89.83	6,959.91	-2,420.32	-1,725.80	-618.08	0.00	0.00	0.00
12,000.00	89.52	89.83	6,960.75	-2,420.03	-1,625.81	-526.49	0.00	0.00	0.00
12,100.00	89.52	89.83	6,961.59	-2,419.74	-1,525.81	-434.89	0.00	0.00	0.00
12,200.00	89.52	89.83	6,962.43	-2,419.45	-1,425.81	-343.30	0.00	0.00	0.00
12,300.00	89.52	89.83	6,963.27	-2,419.16	-1,325.82	-251.70	0.00	0.00	0.00
12,400.00	89.52	89.83	6,964.12	-2,418.87	-1,225.82	-160.11	0.00	0.00	0.00
12,500.00	89.52	89.83	6,964.96	-2,418.58	-1,125.82	-68.51	0.00	0.00	0.00
12,600.00	89.52	89.83	6,965.80	-2,418.29	-1,025.83	23.08	0.00	0.00	0.00
12,700.00	89.52	89.83	6,966.64	-2,418.00	-925.83	114.67	0.00	0.00	0.00
12,800.00	89.52	89.83	6,967.48	-2,417.71	-825.84	206.27	0.00	0.00	0.00
12,900.00	89.52	89.83	6,968.32	-2,417.43	-725.84	297.86	0.00	0.00	0.00
13,000.00	89.52	89.83	6,969.17	-2,417.14	-625.84	389.46	0.00	0.00	0.00
13,100.00	89.52	89.83	6,970.01	-2,416.85	-525.85	481.05	0.00	0.00	0.00
13,200.00	89.52	89.83	6,970.85	-2,416.56	-425.85	572.64	0.00	0.00	0.00
13,300.00	89.52	89.83	6,971.69	-2,416.27	-325.86	664.24	0.00	0.00	0.00
13,400.00	89.52	89.83	6,972.53	-2,415.98	-225.86	755.83	0.00	0.00	0.00
13,500.00	89.52	89.83	6,973.37	-2,415.69	-125.86	847.43	0.00	0.00	0.00
13,600.00	89.52	89.83	6,974.22	-2,415.40	-25.87	939.02	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BLEHM 5X-HNB-10-07-67
Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 27' @ 5115.00usft
Project:	WELD COUNTY	MD Reference:	KB 27' @ 5115.00usft
Site:	SEC 9-T7N-R67W	North Reference:	Grid
Well:	BLEHM 5X-HNB-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)	
13,700.00	89.52	89.83	6,975.06	-2,415.11	74.13	1,030.61	0.00	0.00	0.00	
13,800.00	89.52	89.83	6,975.90	-2,414.82	174.12	1,122.21	0.00	0.00	0.00	
13,900.00	89.52	89.83	6,976.74	-2,414.53	274.12	1,213.80	0.00	0.00	0.00	
14,000.00	89.52	89.83	6,977.58	-2,414.24	374.12	1,305.40	0.00	0.00	0.00	
14,100.00	89.52	89.83	6,978.42	-2,413.95	474.11	1,396.99	0.00	0.00	0.00	
14,200.00	89.52	89.83	6,979.27	-2,413.66	574.11	1,488.58	0.00	0.00	0.00	
14,300.00	89.52	89.83	6,980.11	-2,413.37	674.10	1,580.18	0.00	0.00	0.00	
14,400.00	89.52	89.83	6,980.95	-2,413.08	774.10	1,671.77	0.00	0.00	0.00	
14,500.00	89.52	89.83	6,981.79	-2,412.79	874.10	1,763.37	0.00	0.00	0.00	
14,600.00	89.52	89.83	6,982.63	-2,412.50	974.09	1,854.96	0.00	0.00	0.00	
14,644.02	89.52	89.83	6,983.00	-2,412.38	1,018.11	1,895.28	0.00	0.00	0.00	
Start DLS 2.00 TFO -20.63										
14,654.83	89.72	89.76	6,983.07	-2,412.34	1,028.92	1,905.17	2.00	1.87	-0.70	
Start 4478.35 hold at 14654.83 MD										
14,700.00	89.72	89.76	6,983.29	-2,412.15	1,074.09	1,946.53	0.00	0.00	0.00	
14,800.00	89.72	89.76	6,983.78	-2,411.72	1,174.09	2,038.07	0.00	0.00	0.00	
14,900.00	89.72	89.76	6,984.27	-2,411.30	1,274.08	2,129.61	0.00	0.00	0.00	
15,000.00	89.72	89.76	6,984.76	-2,410.88	1,374.08	2,221.16	0.00	0.00	0.00	
15,100.00	89.72	89.76	6,985.25	-2,410.46	1,474.08	2,312.70	0.00	0.00	0.00	
15,200.00	89.72	89.76	6,985.74	-2,410.04	1,574.08	2,404.24	0.00	0.00	0.00	
15,300.00	89.72	89.76	6,986.22	-2,409.61	1,674.08	2,495.79	0.00	0.00	0.00	
15,400.00	89.72	89.76	6,986.71	-2,409.19	1,774.07	2,587.33	0.00	0.00	0.00	
15,500.00	89.72	89.76	6,987.20	-2,408.77	1,874.07	2,678.87	0.00	0.00	0.00	
15,600.00	89.72	89.76	6,987.69	-2,408.35	1,974.07	2,770.41	0.00	0.00	0.00	
15,700.00	89.72	89.76	6,988.18	-2,407.92	2,074.07	2,861.96	0.00	0.00	0.00	
15,800.00	89.72	89.76	6,988.67	-2,407.50	2,174.07	2,953.50	0.00	0.00	0.00	
15,900.00	89.72	89.76	6,989.16	-2,407.08	2,274.06	3,045.04	0.00	0.00	0.00	
16,000.00	89.72	89.76	6,989.65	-2,406.66	2,374.06	3,136.59	0.00	0.00	0.00	
16,100.00	89.72	89.76	6,990.13	-2,406.23	2,474.06	3,228.13	0.00	0.00	0.00	
16,200.00	89.72	89.76	6,990.62	-2,405.81	2,574.06	3,319.67	0.00	0.00	0.00	
16,300.00	89.72	89.76	6,991.11	-2,405.39	2,674.06	3,411.21	0.00	0.00	0.00	
16,400.00	89.72	89.76	6,991.60	-2,404.97	2,774.05	3,502.76	0.00	0.00	0.00	
16,500.00	89.72	89.76	6,992.09	-2,404.54	2,874.05	3,594.30	0.00	0.00	0.00	
16,600.00	89.72	89.76	6,992.58	-2,404.12	2,974.05	3,685.84	0.00	0.00	0.00	
16,700.00	89.72	89.76	6,993.07	-2,403.70	3,074.05	3,777.39	0.00	0.00	0.00	
16,800.00	89.72	89.76	6,993.56	-2,403.28	3,174.05	3,868.93	0.00	0.00	0.00	
16,900.00	89.72	89.76	6,994.04	-2,402.86	3,274.04	3,960.47	0.00	0.00	0.00	
17,000.00	89.72	89.76	6,994.53	-2,402.43	3,374.04	4,052.01	0.00	0.00	0.00	
17,100.00	89.72	89.76	6,995.02	-2,402.01	3,474.04	4,143.56	0.00	0.00	0.00	
17,200.00	89.72	89.76	6,995.51	-2,401.59	3,574.04	4,235.10	0.00	0.00	0.00	
17,300.00	89.72	89.76	6,996.00	-2,401.17	3,674.03	4,326.64	0.00	0.00	0.00	
17,400.00	89.72	89.76	6,996.49	-2,400.74	3,774.03	4,418.18	0.00	0.00	0.00	
17,500.00	89.72	89.76	6,996.98	-2,400.32	3,874.03	4,509.73	0.00	0.00	0.00	
17,600.00	89.72	89.76	6,997.46	-2,399.90	3,974.03	4,601.27	0.00	0.00	0.00	
17,700.00	89.72	89.76	6,997.95	-2,399.48	4,074.03	4,692.81	0.00	0.00	0.00	
17,800.00	89.72	89.76	6,998.44	-2,399.05	4,174.02	4,784.36	0.00	0.00	0.00	
17,900.00	89.72	89.76	6,998.93	-2,398.63	4,274.02	4,875.90	0.00	0.00	0.00	
18,000.00	89.72	89.76	6,999.42	-2,398.21	4,374.02	4,967.44	0.00	0.00	0.00	
18,100.00	89.72	89.76	6,999.91	-2,397.79	4,474.02	5,058.98	0.00	0.00	0.00	
18,200.00	89.72	89.76	7,000.40	-2,397.36	4,574.02	5,150.53	0.00	0.00	0.00	
18,300.00	89.72	89.76	7,000.89	-2,396.94	4,674.01	5,242.07	0.00	0.00	0.00	
18,400.00	89.72	89.76	7,001.37	-2,396.52	4,774.01	5,333.61	0.00	0.00	0.00	
18,500.00	89.72	89.76	7,001.86	-2,396.10	4,874.01	5,425.16	0.00	0.00	0.00	
18,600.00	89.72	89.76	7,002.35	-2,395.68	4,974.01	5,516.70	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BLEHM 5X-HNB-10-07-67
Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 27' @ 5115.00usft
Project:	WELD COUNTY	MD Reference:	KB 27' @ 5115.00usft
Site:	SEC 9-T7N-R67W	North Reference:	Grid
Well:	BLEHM 5X-HNB-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
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)	
18,700.00	89.72	89.76	7,002.84	-2,395.25	5,074.01	5,608.24	0.00	0.00	0.00	
18,800.00	89.72	89.76	7,003.33	-2,394.83	5,174.00	5,699.78	0.00	0.00	0.00	
18,900.00	89.72	89.76	7,003.82	-2,394.41	5,274.00	5,791.33	0.00	0.00	0.00	
19,000.00	89.72	89.76	7,004.31	-2,393.99	5,374.00	5,882.87	0.00	0.00	0.00	
19,100.00	89.72	89.76	7,004.80	-2,393.56	5,474.00	5,974.41	0.00	0.00	0.00	
19,133.18	89.72	89.76	7,005.00	-2,393.42	5,507.17	6,004.78	0.00	0.00	0.00	
TD at 19133.17 - TD										

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BLEHM 5X-HNB-LP - plan hits target center - Point	0.00	0.00	6,940.00	-2,427.17	-4,090.90	1,457,604.90	3,164,982.34	40.588007°N	104.905974°W
BLEHM 5X-HNB-WP - plan hits target center - Point	0.00	0.00	6,983.00	-2,412.38	1,018.11	1,457,619.69	3,170,091.35	40.587952°N	104.887579°W
BLEHM 5X-HNB-PBHL - plan hits target center - Point	0.00	0.00	7,005.00	-2,393.42	5,507.17	1,457,638.64	3,174,580.41	40.587918°N	104.871416°W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
300.00	300.00	Upper Pierre				
1,317.31	1,314.00	Pierre Shale				
5,369.27	4,202.00	Sussex				
5,901.21	4,551.00	Shannon				
5,945.41	4,580.00	Pierre Shale				
9,137.67	6,817.00	Niobrara				
19,133.18	7,005.00	TD		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
900.00	900.00	0.00	0.00	Start Build 3.00	
2,533.27	2,341.34	-269.09	-599.18	Start 5670.14 hold at 2533.27 MD	
8,203.40	6,061.43	-2,022.21	-4,502.77	Start DLS 10.00 TFO -146.09	
9,534.81	6,940.00	-2,427.17	-4,090.90	Start 5109.21 hold at 9534.81 MD	
14,644.02	6,983.00	-2,412.38	1,018.11	Start DLS 2.00 TFO -20.63	
14,654.83	6,983.07	-2,412.34	1,028.92	Start 4478.35 hold at 14654.83 MD	
19,133.18	7,005.00	-2,393.42	5,507.17	TD at 19133.17	