

Well Name:

BLEHM-8X-HC-10-07-67

Project Name:

Sec. 9-T7N-R67W

Pad Name:	
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BLEHM Pad

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00	Surf Csg
1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	Start Build 2.00
4635.38	60.71	231.24	4098.48	-915.98	-1140.96	-337.31	1463.14	Hold 60.71 Inc, 231.24 Az
9505.03	60.71	231.24	6481.04	-3574.73	-4452.75	-1316.42	5710.13	KOP 10°/100
10831.78	89.52	89.80	7131.80	-4284.08	-4034.50	-550.57	6832.62	LP 89.52 Inc, 89.80 Az
20324.81	89.52	89.80	7211.84	-4251.05	5457.14	6917.50	16324.31	TD at 20324.81

Geodetic Datum:

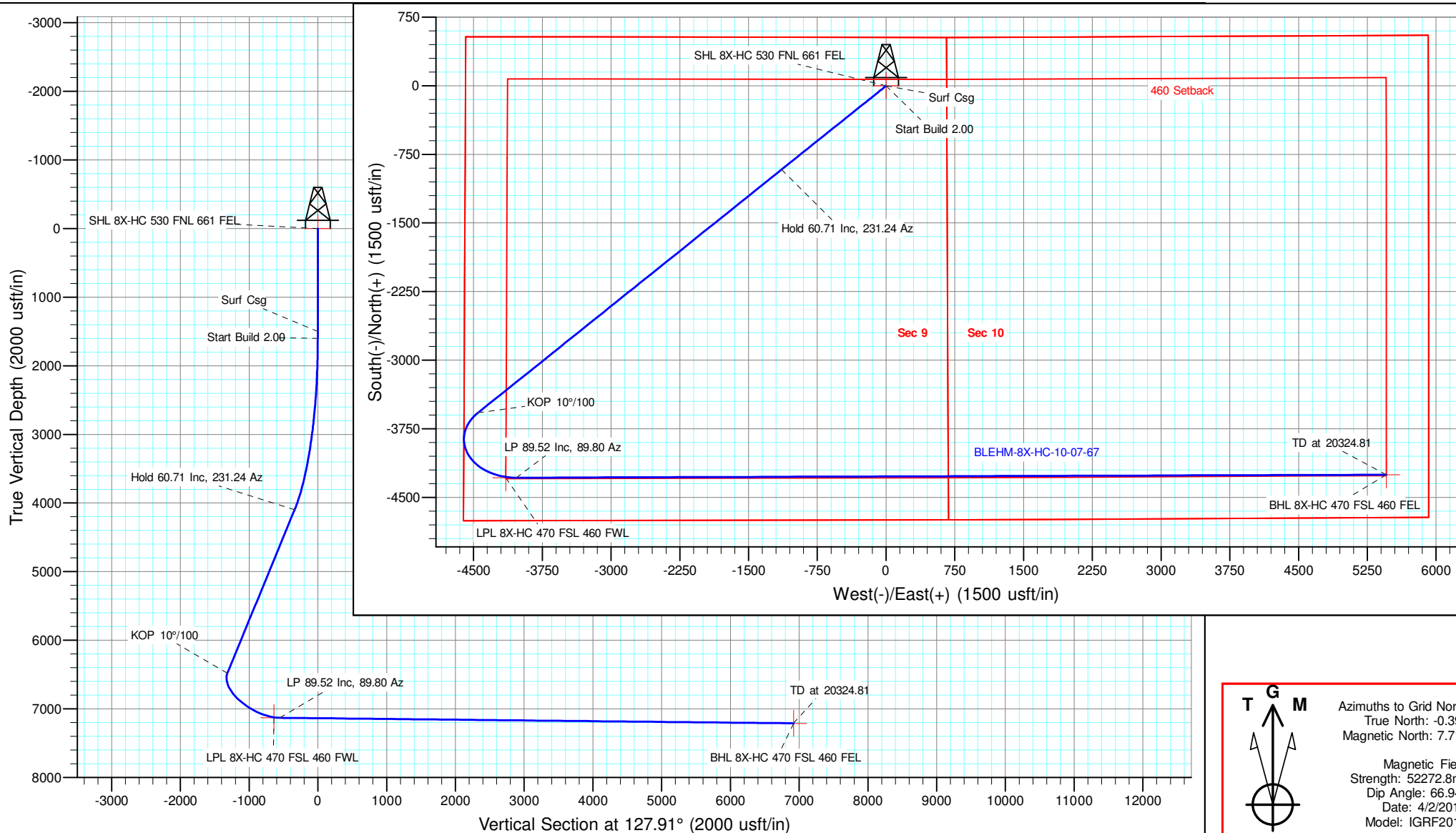
North American Datum 1983
US State Plane 1983, Colorado Northern Zone

Elevation:

Ground Elevation: 5088.00
KB Elevation: KB @ 5115.00usft

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SHL 8X-HC 530 FNL 661 FEL	0.00	0.00	0.00	1459999.569	3169121.505	40.594503	-104.891012	Point
LPL 8X-HC 470 FSL 460 FWL	7131.00	-4284.47	-4147.90	1455715.097	3164973.609	40.582820	-104.906051	Point
BHL 8X-HC 470 FSL 460 FEL	7212.00	-4251.05	5458.14	1455748.524	3174579.620	40.582730	-104.871467	Point



NICKEL ROAD

O P E R A T I N G

Nickel Road Operating

Sec. 9-T7N-R67W

BLEHM Pad

BLEHM-8X-HC-10-07-67

Wellbore #1

Plan: Plan #3

Standard Planning Report - Geographic

11 March, 2021

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HC-10-07-67
Company:	Nickel Road Operating	TVD Reference:	KB @ 5115.00usft
Project:	Sec. 9-T7N-R67W	MD Reference:	KB @ 5115.00usft
Site:	BLEHM Pad	North Reference:	Grid
Well:	BLEHM-8X-HC-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Project	Sec. 9-T7N-R67W, Weld County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	BLEHM Pad				
Site Position:		Northing:	1,458,460.008 usft	Latitude:	40.590318
From:	Lat/Long	Easting:	3,166,936.305 usft	Longitude:	-104.898918
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.39

Well	BLEHM-8X-HC-10-07-67					
Well Position	+N/-S	0.00 usft	Northing:	1,459,999.569 usft	Latitude:	40.594503
	+E/-W	0.00 usft	Easting:	3,169,121.505 usft	Longitude:	-104.891012
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,088.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/2/2019	8.10	66.94	52,272.84637453

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	127.91

Plan Survey Tool Program	Date	3/11/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,324.06 Plan #3 (Wellbore #1)	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,635.38	60.71	231.24	4,098.48	-915.98	-1,140.96	2.00	2.00	0.00	231.24	
9,505.03	60.71	231.24	6,481.04	-3,574.73	-4,452.75	0.00	0.00	0.00	0.00	
10,831.78	89.52	89.80	7,131.80	-4,284.08	-4,034.50	10.00	2.17	-10.66	-122.03	
20,324.81	89.52	89.80	7,212.00	-4,251.05	5,458.14	0.00	0.00	0.00	0.00	BHL 8X-HC 470 FSL

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HC-10-07-67
Company:	Nickel Road Operating	TVD Reference:	KB @ 5115.00usft
Project:	Sec. 9-T7N-R67W	MD Reference:	KB @ 5115.00usft
Site:	BLEHM Pad	North Reference:	Grid
Well:	BLEHM-8X-HC-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey										
Measured										
Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
Laramie-Fox Hills - SHL 8X-HC 530 FNL 661 FEL										
100.00	0.00	0.00	100.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
200.00	0.00	0.00	200.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
300.00	0.00	0.00	300.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
Upper Pierre										
400.00	0.00	0.00	400.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
500.00	0.00	0.00	500.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
600.00	0.00	0.00	600.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
700.00	0.00	0.00	700.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
800.00	0.00	0.00	800.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
900.00	0.00	0.00	900.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
1,314.00	0.00	0.00	1,314.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
Pierre Shale										
1,400.00	0.00	0.00	1,400.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
Surf Csg										
1,600.00	0.00	0.00	1,600.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
Start Build 2.00										
1,700.00	2.00	231.24	1,699.98	-1.09	-1.36	1,459,998.476	3,169,120.144	40.594500	-104.891017	
1,800.00	4.00	231.24	1,799.84	-4.37	-5.44	1,459,995.200	3,169,116.063	40.594491	-104.891032	
1,900.00	6.00	231.24	1,899.45	-9.82	-12.24	1,459,989.744	3,169,109.267	40.594476	-104.891057	
2,000.00	8.00	231.24	1,998.70	-17.45	-21.74	1,459,982.115	3,169,099.764	40.594455	-104.891091	
2,100.00	10.00	231.24	2,097.47	-27.25	-33.94	1,459,972.322	3,169,087.566	40.594429	-104.891135	
2,200.00	12.00	231.24	2,195.62	-39.19	-48.82	1,459,960.378	3,169,072.688	40.594396	-104.891189	
2,300.00	14.00	231.24	2,293.06	-53.27	-66.36	1,459,946.296	3,169,055.147	40.594358	-104.891253	
2,400.00	16.00	231.24	2,389.64	-69.48	-86.54	1,459,930.094	3,169,034.966	40.594314	-104.891326	
2,500.00	18.00	231.24	2,485.27	-87.78	-109.34	1,459,911.791	3,169,012.168	40.594264	-104.891408	
2,600.00	20.00	231.24	2,579.82	-108.16	-134.72	1,459,891.411	3,168,986.781	40.594209	-104.891500	
2,700.00	22.00	231.24	2,673.17	-130.59	-162.67	1,459,868.977	3,168,958.837	40.594148	-104.891601	
2,800.00	24.00	231.24	2,765.21	-155.05	-193.14	1,459,844.517	3,168,928.370	40.594081	-104.891712	
2,900.00	26.00	231.24	2,855.84	-181.51	-226.09	1,459,818.061	3,168,895.416	40.594009	-104.891831	
3,000.00	28.00	231.24	2,944.94	-209.93	-261.49	1,459,789.641	3,168,860.015	40.593932	-104.891959	
3,100.00	30.00	231.24	3,032.39	-240.28	-299.29	1,459,759.292	3,168,822.212	40.593849	-104.892096	
3,200.00	32.00	231.24	3,118.11	-272.52	-339.45	1,459,727.051	3,168,782.052	40.593761	-104.892241	
3,300.00	34.00	231.24	3,201.97	-306.61	-381.92	1,459,692.956	3,168,739.583	40.593669	-104.892395	
3,400.00	36.00	231.24	3,283.88	-342.52	-426.65	1,459,657.050	3,168,694.858	40.593571	-104.892557	
3,500.00	38.00	231.24	3,363.74	-380.19	-473.57	1,459,619.377	3,168,647.931	40.593468	-104.892727	
3,600.00	40.00	231.24	3,441.45	-419.59	-522.65	1,459,579.981	3,168,598.859	40.593361	-104.892905	
3,700.00	42.00	231.24	3,516.92	-460.66	-573.80	1,459,538.912	3,168,547.702	40.593249	-104.893090	
3,800.00	44.00	231.24	3,590.05	-503.35	-626.98	1,459,496.219	3,168,494.522	40.593133	-104.893282	
3,900.00	46.00	231.24	3,660.76	-547.62	-682.12	1,459,451.954	3,168,439.385	40.593013	-104.893482	
4,000.00	48.00	231.24	3,728.95	-593.40	-739.15	1,459,406.171	3,168,382.357	40.592888	-104.893688	
4,100.00	50.00	231.24	3,794.56	-640.64	-798.00	1,459,358.926	3,168,323.508	40.592760	-104.893901	
4,200.00	52.00	231.24	3,857.48	-689.29	-858.59	1,459,310.277	3,168,262.910	40.592627	-104.894121	
4,300.00	54.00	231.24	3,917.66	-739.29	-920.87	1,459,260.282	3,168,200.635	40.592491	-104.894346	
4,400.00	56.00	231.24	3,975.02	-790.57	-984.74	1,459,209.003	3,168,136.761	40.592352	-104.894578	
4,500.00	58.00	231.24	4,029.48	-843.07	-1,050.14	1,459,156.502	3,168,071.366	40.592209	-104.894814	
4,600.00	60.00	231.24	4,080.98	-896.73	-1,116.98	1,459,102.843	3,168,004.527	40.592063	-104.895056	

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HC-10-07-67
Company:	Nickel Road Operating	TVD Reference:	KB @ 5115.00usft
Project:	Sec. 9-T7N-R67W	MD Reference:	KB @ 5115.00usft
Site:	BLEHM Pad	North Reference:	Grid
Well:	BLEHM-8X-HC-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
4,635.38	60.71	231.24	4,098.48	-915.98	-1,140.96	1,459,083.593	3,167,980.549	40.592010	-104.895143	
Hold 60.71 Inc, 231.24 Az										
4,700.00	60.71	231.24	4,130.10	-951.26	-1,184.90	1,459,048.312	3,167,936.602	40.591914	-104.895302	
4,800.00	60.71	231.24	4,179.02	-1,005.86	-1,252.91	1,458,993.714	3,167,868.594	40.591766	-104.895548	
4,851.05	60.71	231.24	4,204.00	-1,033.73	-1,287.63	1,458,965.841	3,167,833.875	40.591690	-104.895677	
Sussex										
4,900.00	60.71	231.24	4,227.95	-1,060.45	-1,320.92	1,458,939.115	3,167,800.585	40.591617	-104.895795	
5,000.00	60.71	231.24	4,276.88	-1,115.05	-1,388.93	1,458,884.517	3,167,732.576	40.591468	-104.896041	
5,100.00	60.71	231.24	4,325.80	-1,169.65	-1,456.94	1,458,829.918	3,167,664.567	40.591320	-104.896287	
5,200.00	60.71	231.24	4,374.73	-1,224.25	-1,524.95	1,458,775.320	3,167,596.558	40.591171	-104.896533	
5,300.00	60.71	231.24	4,423.66	-1,278.85	-1,592.95	1,458,720.722	3,167,528.550	40.591023	-104.896779	
5,400.00	60.71	231.24	4,472.58	-1,333.45	-1,660.96	1,458,666.123	3,167,460.541	40.590874	-104.897026	
5,500.00	60.71	231.24	4,521.51	-1,388.04	-1,728.97	1,458,611.525	3,167,392.532	40.590725	-104.897272	
5,564.36	60.71	231.24	4,553.00	-1,423.19	-1,772.74	1,458,576.384	3,167,348.760	40.590630	-104.897430	
Shannon										
5,600.00	60.71	231.24	4,570.44	-1,442.64	-1,796.98	1,458,556.926	3,167,324.523	40.590577	-104.897518	
5,623.64	60.71	231.24	4,582.00	-1,455.55	-1,813.05	1,458,544.022	3,167,308.449	40.590542	-104.897576	
Pierre Shale										
5,700.00	60.71	231.24	4,619.36	-1,497.24	-1,864.99	1,458,502.328	3,167,256.515	40.590428	-104.897764	
5,800.00	60.71	231.24	4,668.29	-1,551.84	-1,933.00	1,458,447.729	3,167,188.506	40.590280	-104.898010	
5,900.00	60.71	231.24	4,717.22	-1,606.44	-2,001.01	1,458,393.131	3,167,120.497	40.590131	-104.898257	
6,000.00	60.71	231.24	4,766.14	-1,661.04	-2,069.02	1,458,338.532	3,167,052.488	40.589982	-104.898503	
6,100.00	60.71	231.24	4,815.07	-1,715.64	-2,137.02	1,458,283.934	3,166,984.479	40.589834	-104.898749	
6,200.00	60.71	231.24	4,864.00	-1,770.23	-2,205.03	1,458,229.336	3,166,916.471	40.589685	-104.898995	
6,300.00	60.71	231.24	4,912.92	-1,824.83	-2,273.04	1,458,174.737	3,166,848.462	40.589537	-104.899242	
6,400.00	60.71	231.24	4,961.85	-1,879.43	-2,341.05	1,458,120.139	3,166,780.453	40.589388	-104.899488	
6,500.00	60.71	231.24	5,010.78	-1,934.03	-2,409.06	1,458,065.540	3,166,712.444	40.589240	-104.899734	
6,600.00	60.71	231.24	5,059.70	-1,988.63	-2,477.07	1,458,010.942	3,166,644.436	40.589091	-104.899980	
6,700.00	60.71	231.24	5,108.63	-2,043.23	-2,545.08	1,457,956.343	3,166,576.427	40.588942	-104.900226	
6,800.00	60.71	231.24	5,157.56	-2,097.82	-2,613.09	1,457,901.745	3,166,508.418	40.588794	-104.900472	
6,900.00	60.71	231.24	5,206.48	-2,152.42	-2,681.10	1,457,847.146	3,166,440.409	40.588645	-104.900719	
7,000.00	60.71	231.24	5,255.41	-2,207.02	-2,749.10	1,457,792.548	3,166,372.400	40.588497	-104.900965	
7,100.00	60.71	231.24	5,304.34	-2,261.62	-2,817.11	1,457,737.949	3,166,304.392	40.588348	-104.901211	
7,200.00	60.71	231.24	5,353.26	-2,316.22	-2,885.12	1,457,683.351	3,166,236.383	40.588199	-104.901457	
7,300.00	60.71	231.24	5,402.19	-2,370.82	-2,953.13	1,457,628.753	3,166,168.374	40.588051	-104.901703	
7,400.00	60.71	231.24	5,451.12	-2,425.41	-3,021.14	1,457,574.154	3,166,100.365	40.587902	-104.901950	
7,500.00	60.71	231.24	5,500.04	-2,480.01	-3,089.15	1,457,519.556	3,166,032.357	40.587753	-104.902196	
7,600.00	60.71	231.24	5,548.97	-2,534.61	-3,157.16	1,457,464.957	3,165,964.348	40.587605	-104.902442	
7,700.00	60.71	231.24	5,597.90	-2,589.21	-3,225.17	1,457,410.359	3,165,896.339	40.587456	-104.902688	
7,800.00	60.71	231.24	5,646.82	-2,643.81	-3,293.17	1,457,355.760	3,165,828.330	40.587308	-104.902934	
7,900.00	60.71	231.24	5,695.75	-2,698.41	-3,361.18	1,457,301.162	3,165,760.322	40.587159	-104.903181	
8,000.00	60.71	231.24	5,744.68	-2,753.01	-3,429.19	1,457,246.563	3,165,692.313	40.587010	-104.903427	
8,100.00	60.71	231.24	5,793.60	-2,807.60	-3,497.20	1,457,191.965	3,165,624.304	40.586862	-104.903673	
8,200.00	60.71	231.24	5,842.53	-2,862.20	-3,565.21	1,457,137.367	3,165,556.295	40.586713	-104.903919	
8,300.00	60.71	231.24	5,891.46	-2,916.80	-3,633.22	1,457,082.768	3,165,488.286	40.586565	-104.904165	
8,400.00	60.71	231.24	5,940.38	-2,971.40	-3,701.23	1,457,028.170	3,165,420.278	40.586416	-104.904411	
8,500.00	60.71	231.24	5,989.31	-3,026.00	-3,769.24	1,456,973.571	3,165,352.269	40.586267	-104.904658	
8,600.00	60.71	231.24	6,038.24	-3,080.60	-3,837.24	1,456,918.973	3,165,284.260	40.586119	-104.904904	
8,700.00	60.71	231.24	6,087.16	-3,135.19	-3,905.25	1,456,864.374	3,165,216.251	40.585970	-104.905150	
8,800.00	60.71	231.24	6,136.09	-3,189.79	-3,973.26	1,456,809.776	3,165,148.243	40.585822	-104.905396	
8,900.00	60.71	231.24	6,185.01	-3,244.39	-4,041.27	1,456,755.177	3,165,080.234	40.585673	-104.905642	
9,000.00	60.71	231.24	6,233.94	-3,298.99	-4,109.28	1,456,700.579	3,165,012.225	40.585524	-104.905888	
9,100.00	60.71	231.24	6,282.87	-3,353.59	-4,177.29	1,456,645.981	3,164,944.216	40.585376	-104.906135	
9,200.00	60.71	231.24	6,331.79	-3,408.19	-4,245.30	1,456,591.382	3,164,876.207	40.585227	-104.906381	

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HC-10-07-67
Company:	Nickel Road Operating	TVD Reference:	KB @ 5115.00usft
Project:	Sec. 9-T7N-R67W	MD Reference:	KB @ 5115.00usft
Site:	BLEHM Pad	North Reference:	Grid
Well:	BLEHM-8X-HC-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,300.00	60.71	231.24	6,380.72	-3,462.79	-4,313.31	1,456,536.784	3,164,808.199	40.585079	-104.906627	
9,400.00	60.71	231.24	6,429.65	-3,517.38	-4,381.31	1,456,482.185	3,164,740.190	40.584930	-104.906873	
9,500.00	60.71	231.24	6,478.57	-3,571.98	-4,449.32	1,456,427.587	3,164,672.181	40.584781	-104.907119	
9,505.03	60.71	231.24	6,481.04	-3,574.73	-4,452.75	1,456,424.839	3,164,668.759	40.584774	-104.907132	
KOP 10°/100										
9,600.00	56.02	221.53	6,530.92	-3,630.26	-4,511.28	1,456,369.310	3,164,610.224	40.584622	-104.907344	
9,700.00	52.01	210.20	6,589.79	-3,695.52	-4,558.71	1,456,304.050	3,164,562.792	40.584444	-104.907516	
9,800.00	49.19	197.77	6,653.41	-3,765.79	-4,590.16	1,456,233.780	3,164,531.341	40.584252	-104.907631	
9,900.00	47.80	184.53	6,719.85	-3,838.93	-4,604.68	1,456,160.634	3,164,516.829	40.584051	-104.907685	
10,000.00	47.97	171.04	6,787.08	-3,912.73	-4,601.81	1,456,086.836	3,164,519.694	40.583849	-104.907676	
10,047.95	48.61	164.67	6,819.00	-3,947.69	-4,594.28	1,456,051.879	3,164,527.226	40.583753	-104.907650	
Niobrara										
10,100.00	49.69	157.94	6,853.07	-3,984.94	-4,581.65	1,456,014.626	3,164,539.852	40.583650	-104.907606	
10,200.00	52.80	145.74	6,915.80	-4,053.37	-4,544.82	1,455,946.200	3,164,576.688	40.583462	-104.907475	
10,300.00	57.04	134.66	6,973.38	-4,115.93	-4,492.42	1,455,883.636	3,164,629.084	40.583289	-104.907288	
10,400.00	62.17	124.70	7,024.05	-4,170.73	-4,426.06	1,455,828.835	3,164,695.448	40.583137	-104.907050	
10,500.00	67.95	115.69	7,066.27	-4,216.11	-4,347.74	1,455,783.463	3,164,773.763	40.583011	-104.906769	
10,569.66	72.25	109.86	7,090.00	-4,241.40	-4,287.37	1,455,758.173	3,164,834.129	40.582941	-104.906552	
Fort Hays										
10,600.00	74.17	107.41	7,098.76	-4,250.67	-4,259.86	1,455,748.898	3,164,861.649	40.582915	-104.906454	
10,659.20	78.01	102.76	7,113.00	-4,265.60	-4,204.40	1,455,733.971	3,164,917.108	40.582873	-104.906254	
Codell										
10,700.00	80.69	99.64	7,120.54	-4,273.38	-4,165.07	1,455,726.190	3,164,956.437	40.582851	-104.906113	
10,719.23	81.97	98.18	7,123.44	-4,276.32	-4,146.29	1,455,723.247	3,164,975.218	40.582842	-104.906045	
LPL 8X-HC 470 FSL 460 FWL										
10,800.00	87.38	92.15	7,130.94	-4,283.54	-4,066.26	1,455,716.030	3,165,055.247	40.582821	-104.905757	
10,831.78	89.52	89.80	7,131.80	-4,284.08	-4,034.50	1,455,715.489	3,165,087.004	40.582819	-104.905643	
LP 89.52 Inc, 89.80 Az										
10,900.00	89.52	89.80	7,132.38	-4,283.84	-3,966.28	1,455,715.726	3,165,155.224	40.582818	-104.905397	
11,000.00	89.52	89.80	7,133.22	-4,283.49	-3,866.28	1,455,716.074	3,165,255.219	40.582818	-104.905037	
11,100.00	89.52	89.80	7,134.06	-4,283.15	-3,766.29	1,455,716.422	3,165,355.215	40.582817	-104.904677	
11,200.00	89.52	89.80	7,134.90	-4,282.80	-3,666.29	1,455,716.770	3,165,455.211	40.582816	-104.904317	
11,300.00	89.52	89.80	7,135.75	-4,282.45	-3,566.30	1,455,717.118	3,165,555.207	40.582815	-104.903957	
11,400.00	89.52	89.80	7,136.59	-4,282.10	-3,466.30	1,455,717.466	3,165,655.203	40.582814	-104.903597	
11,500.00	89.52	89.80	7,137.43	-4,281.75	-3,366.31	1,455,717.814	3,165,755.199	40.582813	-104.903237	
11,600.00	89.52	89.80	7,138.28	-4,281.41	-3,266.31	1,455,718.162	3,165,855.194	40.582812	-104.902877	
11,700.00	89.52	89.80	7,139.12	-4,281.06	-3,166.31	1,455,718.510	3,165,955.190	40.582811	-104.902517	
11,800.00	89.52	89.80	7,139.96	-4,280.71	-3,066.32	1,455,718.858	3,166,055.186	40.582810	-104.902157	
11,900.00	89.52	89.80	7,140.81	-4,280.36	-2,966.32	1,455,719.206	3,166,155.182	40.582810	-104.901797	
12,000.00	89.52	89.80	7,141.65	-4,280.02	-2,866.33	1,455,719.554	3,166,255.178	40.582809	-104.901437	
12,100.00	89.52	89.80	7,142.49	-4,279.67	-2,766.33	1,455,719.902	3,166,355.174	40.582808	-104.901077	
12,200.00	89.52	89.80	7,143.34	-4,279.32	-2,666.33	1,455,720.250	3,166,455.169	40.582807	-104.900717	
12,300.00	89.52	89.80	7,144.18	-4,278.97	-2,566.34	1,455,720.598	3,166,555.165	40.582806	-104.900357	
12,400.00	89.52	89.80	7,145.02	-4,278.62	-2,466.34	1,455,720.946	3,166,655.161	40.582805	-104.899997	
12,500.00	89.52	89.80	7,145.87	-4,278.28	-2,366.35	1,455,721.294	3,166,755.157	40.582804	-104.899637	
12,600.00	89.52	89.80	7,146.71	-4,277.93	-2,266.35	1,455,721.642	3,166,855.153	40.582803	-104.899277	
12,700.00	89.52	89.80	7,147.55	-4,277.58	-2,166.36	1,455,721.990	3,166,955.149	40.582802	-104.898917	
12,800.00	89.52	89.80	7,148.40	-4,277.23	-2,066.36	1,455,722.338	3,167,055.144	40.582801	-104.898557	
12,900.00	89.52	89.80	7,149.24	-4,276.88	-1,966.36	1,455,722.686	3,167,155.140	40.582801	-104.898197	
13,000.00	89.52	89.80	7,150.08	-4,276.54	-1,866.37	1,455,723.034	3,167,255.136	40.582800	-104.897837	
13,100.00	89.52	89.80	7,150.93	-4,276.19	-1,766.37	1,455,723.382	3,167,355.132	40.582799	-104.897477	
13,200.00	89.52	89.80	7,151.77	-4,275.84	-1,666.38	1,455,723.730	3,167,455.128	40.582798	-104.897117	
13,300.00	89.52	89.80	7,152.61	-4,275.49	-1,566.38	1,455,724.078	3,167,555.124	40.582797	-104.896757	
13,400.00	89.52	89.80	7,153.46	-4,275.14	-1,466.38	1,455,724.426	3,167,655.119	40.582796	-104.896397	

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HC-10-07-67
Company:	Nickel Road Operating	TVD Reference:	KB @ 5115.00usft
Project:	Sec. 9-T7N-R67W	MD Reference:	KB @ 5115.00usft
Site:	BLEHM Pad	North Reference:	Grid
Well:	BLEHM-8X-HC-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,500.00	89.52	89.80	7,154.30	-4,274.80	-1,366.39	1,455,724.774	3,167,755.115	40.582795	-104.896037	
13,600.00	89.52	89.80	7,155.14	-4,274.45	-1,266.39	1,455,725.122	3,167,855.111	40.582794	-104.895677	
13,700.00	89.52	89.80	7,155.98	-4,274.10	-1,166.40	1,455,725.469	3,167,955.107	40.582793	-104.895317	
13,800.00	89.52	89.80	7,156.83	-4,273.75	-1,066.40	1,455,725.817	3,168,055.103	40.582792	-104.894957	
13,900.00	89.52	89.80	7,157.67	-4,273.40	-966.41	1,455,726.165	3,168,155.099	40.582791	-104.894597	
14,000.00	89.52	89.80	7,158.51	-4,273.06	-866.41	1,455,726.513	3,168,255.094	40.582790	-104.894237	
14,100.00	89.52	89.80	7,159.36	-4,272.71	-766.41	1,455,726.861	3,168,355.090	40.582790	-104.893877	
14,200.00	89.52	89.80	7,160.20	-4,272.36	-666.42	1,455,727.209	3,168,455.086	40.582789	-104.893517	
14,300.00	89.52	89.80	7,161.04	-4,272.01	-566.42	1,455,727.557	3,168,555.082	40.582788	-104.893157	
14,400.00	89.52	89.80	7,161.89	-4,271.66	-466.43	1,455,727.905	3,168,655.079	40.582787	-104.892797	
14,500.00	89.52	89.80	7,162.73	-4,271.32	-366.43	1,455,728.253	3,168,755.075	40.582786	-104.892437	
14,600.00	89.52	89.80	7,163.57	-4,270.97	-266.43	1,455,728.601	3,168,855.070	40.582785	-104.892077	
14,700.00	89.52	89.80	7,164.42	-4,270.62	-166.44	1,455,728.949	3,168,955.066	40.582784	-104.891717	
14,800.00	89.52	89.80	7,165.26	-4,270.27	-66.44	1,455,729.297	3,169,055.062	40.582783	-104.891357	
14,900.00	89.52	89.80	7,166.10	-4,269.92	33.55	1,455,729.645	3,169,155.058	40.582782	-104.890997	
15,000.00	89.52	89.80	7,166.95	-4,269.58	133.55	1,455,729.993	3,169,255.054	40.582781	-104.890637	
15,100.00	89.52	89.80	7,167.79	-4,269.23	233.54	1,455,730.341	3,169,355.050	40.582780	-104.890277	
15,200.00	89.52	89.80	7,168.63	-4,268.88	333.54	1,455,730.689	3,169,455.045	40.582779	-104.889917	
15,300.00	89.52	89.80	7,169.48	-4,268.53	433.54	1,455,731.037	3,169,555.041	40.582778	-104.889557	
15,400.00	89.52	89.80	7,170.32	-4,268.18	533.53	1,455,731.385	3,169,655.037	40.582778	-104.889197	
15,500.00	89.52	89.80	7,171.16	-4,267.84	633.53	1,455,731.733	3,169,755.033	40.582777	-104.888837	
15,600.00	89.52	89.80	7,172.01	-4,267.49	733.52	1,455,732.081	3,169,855.029	40.582776	-104.888477	
15,700.00	89.52	89.80	7,172.85	-4,267.14	833.52	1,455,732.429	3,169,955.025	40.582775	-104.888117	
15,800.00	89.52	89.80	7,173.69	-4,266.79	933.52	1,455,732.777	3,170,055.020	40.582774	-104.887757	
15,900.00	89.52	89.80	7,174.53	-4,266.44	1,033.51	1,455,733.125	3,170,155.016	40.582773	-104.887397	
16,000.00	89.52	89.80	7,175.38	-4,266.10	1,133.51	1,455,733.473	3,170,255.012	40.582772	-104.887037	
16,100.00	89.52	89.80	7,176.22	-4,265.75	1,233.50	1,455,733.821	3,170,355.008	40.582771	-104.886677	
16,200.00	89.52	89.80	7,177.06	-4,265.40	1,333.50	1,455,734.169	3,170,455.004	40.582770	-104.886317	
16,300.00	89.52	89.80	7,177.91	-4,265.05	1,433.49	1,455,734.517	3,170,555.000	40.582769	-104.885957	
16,400.00	89.52	89.80	7,178.75	-4,264.70	1,533.49	1,455,734.865	3,170,654.995	40.582768	-104.885597	
16,500.00	89.52	89.80	7,179.59	-4,264.36	1,633.49	1,455,735.212	3,170,754.991	40.582767	-104.885237	
16,600.00	89.52	89.80	7,180.44	-4,264.01	1,733.48	1,455,735.560	3,170,854.987	40.582766	-104.884877	
16,700.00	89.52	89.80	7,181.28	-4,263.66	1,833.48	1,455,735.908	3,170,954.983	40.582765	-104.884517	
16,800.00	89.52	89.80	7,182.12	-4,263.31	1,933.47	1,455,736.256	3,171,054.979	40.582764	-104.884157	
16,900.00	89.52	89.80	7,182.97	-4,262.96	2,033.47	1,455,736.604	3,171,154.975	40.582763	-104.883797	
17,000.00	89.52	89.80	7,183.81	-4,262.62	2,133.47	1,455,736.952	3,171,254.970	40.582762	-104.883437	
17,100.00	89.52	89.80	7,184.65	-4,262.27	2,233.46	1,455,737.300	3,171,354.966	40.582761	-104.883077	
17,200.00	89.52	89.80	7,185.50	-4,261.92	2,333.46	1,455,737.648	3,171,454.962	40.582760	-104.882717	
17,300.00	89.52	89.80	7,186.34	-4,261.57	2,433.45	1,455,737.996	3,171,554.958	40.582760	-104.882357	
17,400.00	89.52	89.80	7,187.18	-4,261.22	2,533.45	1,455,738.344	3,171,654.954	40.582759	-104.881997	
17,500.00	89.52	89.80	7,188.03	-4,260.88	2,633.44	1,455,738.692	3,171,754.950	40.582758	-104.881637	
17,600.00	89.52	89.80	7,188.87	-4,260.53	2,733.44	1,455,739.040	3,171,854.946	40.582757	-104.881277	
17,700.00	89.52	89.80	7,189.71	-4,260.18	2,833.44	1,455,739.388	3,171,954.941	40.582756	-104.880917	
17,800.00	89.52	89.80	7,190.56	-4,259.83	2,933.43	1,455,739.736	3,172,054.937	40.582755	-104.880557	
17,900.00	89.52	89.80	7,191.40	-4,259.49	3,033.43	1,455,740.084	3,172,154.933	40.582754	-104.880197	
18,000.00	89.52	89.80	7,192.24	-4,259.14	3,133.42	1,455,740.432	3,172,254.929	40.582753	-104.879837	
18,100.00	89.52	89.80	7,193.08	-4,258.79	3,233.42	1,455,740.780	3,172,354.925	40.582752	-104.879477	
18,200.00	89.52	89.80	7,193.93	-4,258.44	3,333.42	1,455,741.128	3,172,454.921	40.582751	-104.879117	
18,300.00	89.52	89.80	7,194.77	-4,258.09	3,433.41	1,455,741.476	3,172,554.916	40.582750	-104.878757	
18,400.00	89.52	89.80	7,195.61	-4,257.75	3,533.41	1,455,741.824	3,172,654.912	40.582749	-104.878397	
18,500.00	89.52	89.80	7,196.46	-4,257.40	3,633.40	1,455,742.172	3,172,754.908	40.582748	-104.878037	
18,600.00	89.52	89.80	7,197.30	-4,257.05	3,733.40	1,455,742.520	3,172,854.904	40.582747	-104.877677	
18,700.00	89.52	89.80	7,198.14	-4,256.70	3,833.39	1,455,742.868	3,172,954.900	40.582746	-104.877317	
18,800.00	89.52	89.80	7,198.99	-4,256.35	3,933.39	1,455,743.216	3,173,054.896	40.582745	-104.876957	
18,900.00	89.52	89.80	7,199.83	-4,256.01	4,033.39	1,455,743.564	3,173,154.891	40.582744	-104.876597	

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HC-10-07-67
Company:	Nickel Road Operating	TVD Reference:	KB @ 5115.00usft
Project:	Sec. 9-T7N-R67W	MD Reference:	KB @ 5115.00usft
Site:	BLEHM Pad	North Reference:	Grid
Well:	BLEHM-8X-HC-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
19,000.00	89.52	89.80	7,200.67	-4,255.66	4,133.38	1,455,743.912	3,173,254.887	40.582743	-104.876237	
19,100.00	89.52	89.80	7,201.52	-4,255.31	4,233.38	1,455,744.260	3,173,354.883	40.582742	-104.875877	
19,200.00	89.52	89.80	7,202.36	-4,254.96	4,333.37	1,455,744.608	3,173,454.879	40.582741	-104.875517	
19,300.00	89.52	89.80	7,203.20	-4,254.61	4,433.37	1,455,744.956	3,173,554.875	40.582740	-104.875157	
19,400.00	89.52	89.80	7,204.05	-4,254.27	4,533.37	1,455,745.303	3,173,654.871	40.582739	-104.874797	
19,500.00	89.52	89.80	7,204.89	-4,253.92	4,633.36	1,455,745.651	3,173,754.866	40.582738	-104.874437	
19,600.00	89.52	89.80	7,205.73	-4,253.57	4,733.36	1,455,745.999	3,173,854.862	40.582737	-104.874077	
19,700.00	89.52	89.80	7,206.58	-4,253.22	4,833.35	1,455,746.347	3,173,954.858	40.582736	-104.873717	
19,800.00	89.52	89.80	7,207.42	-4,252.87	4,933.35	1,455,746.695	3,174,054.854	40.582735	-104.873357	
19,900.00	89.52	89.80	7,208.26	-4,252.53	5,033.34	1,455,747.043	3,174,154.850	40.582734	-104.872997	
20,000.00	89.52	89.80	7,209.11	-4,252.18	5,133.34	1,455,747.391	3,174,254.846	40.582733	-104.872637	
20,100.00	89.52	89.80	7,209.95	-4,251.83	5,233.34	1,455,747.739	3,174,354.841	40.582732	-104.872277	
20,200.00	89.52	89.80	7,210.79	-4,251.48	5,333.33	1,455,748.087	3,174,454.837	40.582731	-104.871917	
20,300.00	89.52	89.80	7,211.63	-4,251.13	5,433.33	1,455,748.435	3,174,554.833	40.582730	-104.871557	
20,324.81	89.52	89.80	7,212.00	-4,251.05	5,458.14	1,455,748.524	3,174,579.640	40.582730	-104.871467	
TD at 20324.81 - TD - BHL 8X-HC 470 FSL 460 FEL										

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	
SHL 8X-HC 530 FNL 66 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	1,459,999.569	3,169,121.505	40.594503	-104.891012	
LPL 8X-HC 470 FSL 460 - plan misses target center by 11.23usft at 10719.23usft MD (7123.44 TVD, -4276.32 N, -4146.29 E) - Point	0.00	0.00	7,131.00	-4,284.47	-4,147.90	1,455,715.097	3,164,973.609	40.582820	-104.906051	
BHL 8X-HC 470 FSL 460 - plan hits target center - Point	0.00	0.01	7,212.00	-4,251.05	5,458.14	1,455,748.524	3,174,579.640	40.582730	-104.871467	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.00	0.00	Laramie-Fox Hills				
300.00	300.00	Upper Pierre				
1,314.00	1,314.00	Pierre Shale				
4,851.05	4,204.00	Sussex				
5,564.36	4,553.00	Shannon				
5,623.64	4,582.00	Pierre Shale				
10,047.95	6,819.00	Niobrara				
10,569.66	7,090.00	Fort Hays				
10,659.20	7,113.00	Codell				
20,324.81	7,212.00	TD				

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HC-10-07-67
Company:	Nickel Road Operating	TVD Reference:	KB @ 5115.00usft
Project:	Sec. 9-T7N-R67W	MD Reference:	KB @ 5115.00usft
Site:	BLEHM Pad	North Reference:	Grid
Well:	BLEHM-8X-HC-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,500.00	1,500.00	0.00	0.00	Surf Csg
1,600.00	1,600.00	0.00	0.00	Start Build 2.00
4,635.38	4,098.48	-915.98	-1,140.96	Hold 60.71 Inc, 231.24 Az
9,505.03	6,481.04	-3,574.73	-4,452.75	KOP 10°/100
10,831.78	7,131.80	-4,284.08	-4,034.50	LP 89.52 Inc, 89.80 Az
20,324.81	7,212.00	-4,251.05	5,458.14	TD at 20324.81