

Well Name:  
**BLEHM-8X-HNC-10-07-67**

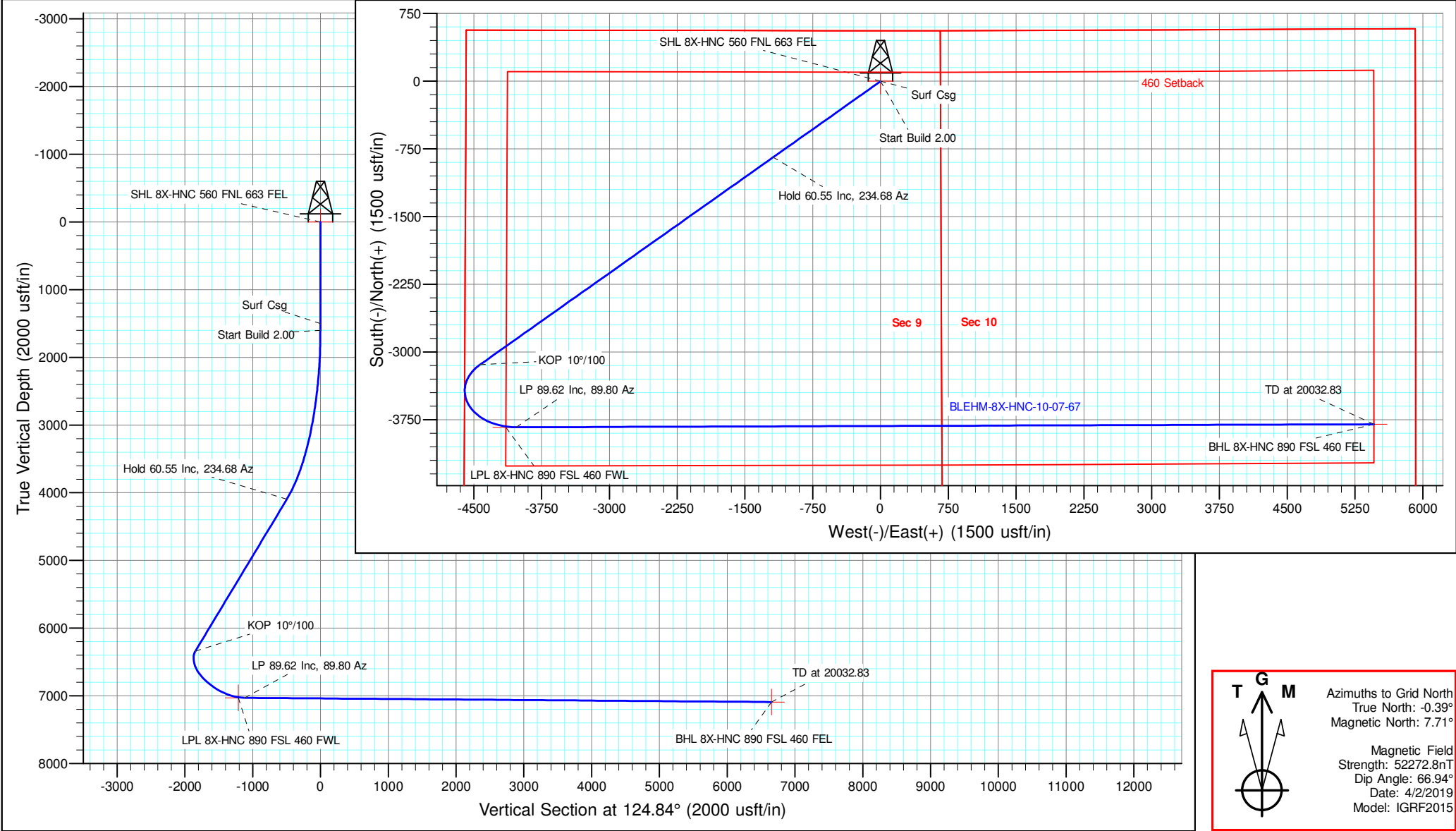
Project Name:  
**Sec. 9-T7N-R67W**

Pad Name:  
**BLEHM Pad**

ANNOTATIONS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	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	
4627.54	60.55	234.68	4094.64	-841.88	-1188.31	-494.26	1456.31	Hold 60.55 Inc, 234.68 Az	
9191.82	60.55	234.68	6338.67	-3139.53	-4431.42	-1843.19	5430.85	KOP 10°/100	
10543.39	89.62	89.80	7030.50	-3833.74	-4029.50	-1116.71	6553.30	LP 89.62 Inc, 89.80 Az	
20032.83	89.62	89.80	7092.74	-3800.73	5458.68	6651.52	16041.53	TD at 20032.83	

Geodetic Datum:				Elevation:			
North American Datum 1983 US State Plane 1983, Colorado Northern Zone				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-HNC 560 FNL 663 FEL	0.00	0.00	0.00	1459969.320	3169120.046	40.594420	-104.891018	Point
LPL 8X-HNC 890 FSL 460 FWL	7030.00	-3834.15	-4144.53	1456135.173	3164975.517	40.583973	-104.906034	Point
- plan misses target center by 11.62usft at 10430.01usft MD (7021.89 TVD, -3826.19 N, -4142.12 E)								
BHL 8X-HNC 890 FSL 460 FEL	7093.00	-3800.73	5459.67	1456168.589	3174579.718	40.583883	-104.871456	Point



# NICKEL ROAD

O P E R A T I N G

## **Nickel Road Operating**

**Sec. 9-T7N-R67W**

**BLEHM Pad**

**BLEHM-8X-HNC-10-07-67**

**Wellbore #1**

**Plan: Plan #3**

## **Standard Planning Report - Geographic**

**11 March, 2021**

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

<b>Project</b>	Sec. 9-T7N-R67W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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-HNC-10-07-67					
Well Position	+N/-S	0.00 usft	Northing:	1,459,969.320 usft	Latitude:	40.594420
	+E/-W	0.00 usft	Easting:	3,169,120.047 usft	Longitude:	-104.891018
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	5,088.00 usft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	4/2/2019	8.10	66.94	52,272.80302602

<b>Design</b>	Plan #3			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	124.84

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/11/2021		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	20,032.21 Plan #3 (Wellbore #1)	MWD	
			OWSG MWD - Standard	

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
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	
4,627.54	60.55	234.68	4,094.64	-841.88	-1,188.31	2.00	2.00	0.00	234.68	
9,191.82	60.55	234.68	6,338.67	-3,139.53	-4,431.42	0.00	0.00	0.00	0.00	
10,543.39	89.62	89.80	7,030.50	-3,833.74	-4,029.50	10.00	2.15	-10.72	-125.34	
20,032.83	89.62	89.80	7,093.00	-3,800.73	5,459.67	0.00	0.00	0.00	0.00	BHL 8X-HNC 890 FSI

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLEHM-8X-HNC-10-07-67
<b>Company:</b>	Nickel Road Operating	<b>TVD Reference:</b>	KB @ 5115.00usft
<b>Project:</b>	Sec. 9-T7N-R67W	<b>MD Reference:</b>	KB @ 5115.00usft
<b>Site:</b>	BLEHM Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BLEHM-8X-HNC-10-07-67	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	1,459,969.320	3,169,120.047	40.594420	-104.891018	
Laramie-Fox Hills - SHL 8X-HNC 560 FNL 663 FEL										
100.00	0.00	0.00	100.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
200.00	0.00	0.00	200.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
300.00	0.00	0.00	300.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
Upper Pierre										
400.00	0.00	0.00	400.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
500.00	0.00	0.00	500.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
600.00	0.00	0.00	600.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
700.00	0.00	0.00	700.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
800.00	0.00	0.00	800.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
900.00	0.00	0.00	900.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
1,314.00	0.00	0.00	1,314.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
Pierre Shale										
1,400.00	0.00	0.00	1,400.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
Surf Csg										
1,600.00	0.00	0.00	1,600.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018	
Start Build 2.00										
1,700.00	2.00	234.68	1,699.98	-1.01	-1.42	1,459,968.311	3,169,118.623	40.594417	-104.891023	
1,800.00	4.00	234.68	1,799.84	-4.03	-5.69	1,459,965.286	3,169,114.352	40.594409	-104.891039	
1,900.00	6.00	234.68	1,899.45	-9.07	-12.81	1,459,960.248	3,169,107.241	40.594395	-104.891065	
2,000.00	8.00	234.68	1,998.70	-16.12	-22.75	1,459,953.203	3,169,097.297	40.594376	-104.891101	
2,100.00	10.00	234.68	2,097.47	-25.16	-35.51	1,459,944.160	3,169,084.533	40.594352	-104.891147	
2,200.00	12.00	234.68	2,195.62	-36.19	-51.08	1,459,933.130	3,169,068.965	40.594322	-104.891203	
2,300.00	14.00	234.68	2,293.06	-49.19	-69.44	1,459,920.126	3,169,050.610	40.594286	-104.891270	
2,400.00	16.00	234.68	2,389.64	-64.16	-90.55	1,459,905.165	3,169,029.492	40.594246	-104.891346	
2,500.00	18.00	234.68	2,485.27	-81.06	-114.41	1,459,888.264	3,169,005.637	40.594200	-104.891432	
2,600.00	20.00	234.68	2,579.82	-99.88	-140.97	1,459,869.444	3,168,979.073	40.594148	-104.891528	
2,700.00	22.00	234.68	2,673.17	-120.59	-170.21	1,459,848.728	3,168,949.833	40.594092	-104.891634	
2,800.00	24.00	234.68	2,765.21	-143.18	-202.09	1,459,826.142	3,168,917.952	40.594031	-104.891749	
2,900.00	26.00	234.68	2,855.84	-167.61	-236.58	1,459,801.712	3,168,883.469	40.593964	-104.891874	
3,000.00	28.00	234.68	2,944.94	-193.85	-273.62	1,459,775.468	3,168,846.427	40.593893	-104.892008	
3,100.00	30.00	234.68	3,032.39	-221.88	-313.18	1,459,747.443	3,168,806.870	40.593817	-104.892151	
3,200.00	32.00	234.68	3,118.11	-251.65	-355.20	1,459,717.670	3,168,764.846	40.593736	-104.892303	
3,300.00	34.00	234.68	3,201.97	-283.13	-399.64	1,459,686.187	3,168,720.407	40.593650	-104.892464	
3,400.00	36.00	234.68	3,283.88	-316.29	-446.44	1,459,653.031	3,168,673.608	40.593560	-104.892634	
3,500.00	38.00	234.68	3,363.74	-351.08	-495.54	1,459,618.242	3,168,624.504	40.593466	-104.892811	
3,600.00	40.00	234.68	3,441.45	-387.46	-546.89	1,459,581.863	3,168,573.155	40.593367	-104.892997	
3,700.00	42.00	234.68	3,516.92	-425.38	-600.42	1,459,543.939	3,168,519.625	40.593264	-104.893191	
3,800.00	44.00	234.68	3,590.05	-464.81	-656.07	1,459,504.515	3,168,463.978	40.593157	-104.893392	
3,900.00	46.00	234.68	3,660.76	-505.68	-713.76	1,459,463.640	3,168,406.283	40.593045	-104.893601	
4,000.00	48.00	234.68	3,728.95	-547.96	-773.44	1,459,421.363	3,168,346.610	40.592930	-104.893817	
4,100.00	50.00	234.68	3,794.56	-591.58	-835.01	1,459,377.736	3,168,285.031	40.592812	-104.894040	
4,200.00	52.00	234.68	3,857.48	-636.51	-898.42	1,459,332.812	3,168,221.622	40.592690	-104.894269	
4,300.00	54.00	234.68	3,917.66	-682.67	-963.59	1,459,286.646	3,168,156.458	40.592564	-104.894505	
4,400.00	56.00	234.68	3,975.02	-730.03	-1,030.42	1,459,239.294	3,168,089.621	40.592436	-104.894747	
4,500.00	58.00	234.68	4,029.48	-778.51	-1,098.85	1,459,190.813	3,168,021.192	40.592304	-104.894994	
4,600.00	60.00	234.68	4,080.98	-828.06	-1,168.79	1,459,141.263	3,167,951.253	40.592169	-104.895247	

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLEHM-8X-HNC-10-07-67
<b>Company:</b>	Nickel Road Operating	<b>TVD Reference:</b>	KB @ 5115.00usft
<b>Project:</b>	Sec. 9-T7N-R67W	<b>MD Reference:</b>	KB @ 5115.00usft
<b>Site:</b>	BLEHM Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BLEHM-8X-HNC-10-07-67	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	
4,627.54	60.55	234.68	4,094.64	-841.88	-1,188.31	1,459,127.437	3,167,931.736	40.592131	-104.895318	
Hold 60.55 Inc, 234.68 Az										
4,700.00	60.55	234.68	4,130.26	-878.36	-1,239.79	1,459,090.961	3,167,880.252	40.592032	-104.895504	
4,800.00	60.55	234.68	4,179.43	-928.70	-1,310.85	1,459,040.622	3,167,809.198	40.591895	-104.895761	
4,852.02	60.55	234.68	4,205.00	-954.88	-1,347.81	1,459,014.436	3,167,772.237	40.591824	-104.895895	
Sussex										
4,900.00	60.55	234.68	4,228.59	-979.04	-1,381.90	1,458,990.282	3,167,738.144	40.591759	-104.896018	
5,000.00	60.55	234.68	4,277.76	-1,029.38	-1,452.96	1,458,939.942	3,167,667.090	40.591622	-104.896275	
5,100.00	60.55	234.68	4,326.92	-1,079.72	-1,524.01	1,458,889.602	3,167,596.036	40.591485	-104.896532	
5,200.00	60.55	234.68	4,376.09	-1,130.06	-1,595.06	1,458,839.262	3,167,524.981	40.591348	-104.896789	
5,300.00	60.55	234.68	4,425.25	-1,180.40	-1,666.12	1,458,788.922	3,167,453.927	40.591211	-104.897046	
5,400.00	60.55	234.68	4,474.42	-1,230.74	-1,737.17	1,458,738.582	3,167,382.873	40.591074	-104.897304	
5,500.00	60.55	234.68	4,523.58	-1,281.08	-1,808.23	1,458,688.243	3,167,311.819	40.590938	-104.897561	
5,561.87	60.55	234.68	4,554.00	-1,312.22	-1,852.19	1,458,657.097	3,167,267.857	40.590853	-104.897720	
Shannon										
5,600.00	60.55	234.68	4,572.75	-1,331.42	-1,879.28	1,458,637.903	3,167,240.765	40.590801	-104.897818	
5,620.86	60.55	234.68	4,583.00	-1,341.92	-1,894.10	1,458,627.404	3,167,225.946	40.590772	-104.897871	
Pierre Shale										
5,700.00	60.55	234.68	4,621.91	-1,381.76	-1,950.33	1,458,587.563	3,167,169.711	40.590664	-104.898075	
5,800.00	60.55	234.68	4,671.08	-1,432.10	-2,021.39	1,458,537.223	3,167,098.657	40.590527	-104.898332	
5,900.00	60.55	234.68	4,720.24	-1,482.44	-2,092.44	1,458,486.883	3,167,027.602	40.590390	-104.898589	
6,000.00	60.55	234.68	4,769.41	-1,532.78	-2,163.50	1,458,436.543	3,166,956.548	40.590253	-104.898846	
6,100.00	60.55	234.68	4,818.57	-1,583.12	-2,234.55	1,458,386.203	3,166,885.494	40.590116	-104.899103	
6,200.00	60.55	234.68	4,867.74	-1,633.46	-2,305.61	1,458,335.864	3,166,814.440	40.589980	-104.899360	
6,300.00	60.55	234.68	4,916.90	-1,683.80	-2,376.66	1,458,285.524	3,166,743.386	40.589843	-104.899617	
6,400.00	60.55	234.68	4,966.07	-1,734.14	-2,447.71	1,458,235.184	3,166,672.332	40.589706	-104.899874	
6,500.00	60.55	234.68	5,015.23	-1,784.48	-2,518.77	1,458,184.844	3,166,601.278	40.589569	-104.900131	
6,600.00	60.55	234.68	5,064.40	-1,834.82	-2,589.82	1,458,134.504	3,166,530.223	40.589432	-104.900388	
6,700.00	60.55	234.68	5,113.56	-1,885.16	-2,660.88	1,458,084.164	3,166,459.169	40.589295	-104.900645	
6,800.00	60.55	234.68	5,162.73	-1,935.50	-2,731.93	1,458,033.824	3,166,388.115	40.589158	-104.900902	
6,900.00	60.55	234.68	5,211.89	-1,985.84	-2,802.98	1,457,983.485	3,166,317.061	40.589022	-104.901159	
7,000.00	60.55	234.68	5,261.06	-2,036.18	-2,874.04	1,457,933.145	3,166,246.007	40.588885	-104.901417	
7,100.00	60.55	234.68	5,310.22	-2,086.52	-2,945.09	1,457,882.805	3,166,174.953	40.588748	-104.901674	
7,200.00	60.55	234.68	5,359.39	-2,136.86	-3,016.15	1,457,832.465	3,166,103.899	40.588611	-104.901931	
7,300.00	60.55	234.68	5,408.55	-2,187.20	-3,087.20	1,457,782.125	3,166,032.844	40.588474	-104.902188	
7,400.00	60.55	234.68	5,457.72	-2,237.53	-3,158.26	1,457,731.785	3,165,961.790	40.588337	-104.902445	
7,500.00	60.55	234.68	5,506.88	-2,287.87	-3,229.31	1,457,681.445	3,165,890.736	40.588200	-104.902702	
7,600.00	60.55	234.68	5,556.05	-2,338.21	-3,300.36	1,457,631.106	3,165,819.682	40.588064	-104.902959	
7,700.00	60.55	234.68	5,605.21	-2,388.55	-3,371.42	1,457,580.766	3,165,748.628	40.587927	-104.903216	
7,800.00	60.55	234.68	5,654.38	-2,438.89	-3,442.47	1,457,530.426	3,165,677.574	40.587790	-104.903473	
7,900.00	60.55	234.68	5,703.54	-2,489.23	-3,513.53	1,457,480.086	3,165,606.520	40.587653	-104.903730	
8,000.00	60.55	234.68	5,752.71	-2,539.57	-3,584.58	1,457,429.746	3,165,535.465	40.587516	-104.903987	
8,100.00	60.55	234.68	5,801.87	-2,589.91	-3,655.63	1,457,379.406	3,165,464.411	40.587379	-104.904244	
8,200.00	60.55	234.68	5,851.04	-2,640.25	-3,726.69	1,457,329.066	3,165,393.357	40.587242	-104.904501	
8,300.00	60.55	234.68	5,900.20	-2,690.59	-3,797.74	1,457,278.727	3,165,322.303	40.587106	-104.904758	
8,400.00	60.55	234.68	5,949.37	-2,740.93	-3,868.80	1,457,228.387	3,165,251.249	40.586969	-104.905015	
8,500.00	60.55	234.68	5,998.53	-2,791.27	-3,939.85	1,457,178.047	3,165,180.195	40.586832	-104.905272	
8,600.00	60.55	234.68	6,047.70	-2,841.61	-4,010.91	1,457,127.707	3,165,109.141	40.586695	-104.905529	
8,700.00	60.55	234.68	6,096.86	-2,891.95	-4,081.96	1,457,077.367	3,165,038.086	40.586558	-104.905786	
8,800.00	60.55	234.68	6,146.03	-2,942.29	-4,153.01	1,457,027.027	3,164,967.032	40.586421	-104.906043	
8,900.00	60.55	234.68	6,195.19	-2,992.63	-4,224.07	1,456,976.687	3,164,895.978	40.586284	-104.906300	
9,000.00	60.55	234.68	6,244.36	-3,042.97	-4,295.12	1,456,926.348	3,164,824.924	40.586147	-104.906557	
9,100.00	60.55	234.68	6,293.52	-3,093.31	-4,366.18	1,456,876.008	3,164,753.870	40.586011	-104.906814	

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLEHM-8X-HNC-10-07-67
<b>Company:</b>	Nickel Road Operating	<b>TVD Reference:</b>	KB @ 5115.00usft
<b>Project:</b>	Sec. 9-T7N-R67W	<b>MD Reference:</b>	KB @ 5115.00usft
<b>Site:</b>	BLEHM Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BLEHM-8X-HNC-10-07-67	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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
9,191.82	60.55	234.68	6,338.67	-3,139.53	-4,431.42	1,456,829.788	3,164,688.631	40.585885	-104.907050
KOP 10°/100									
9,200.00	60.08	233.91	6,342.72	-3,143.68	-4,437.19	1,456,825.639	3,164,682.857	40.585874	-104.907071
9,300.00	54.73	223.87	6,396.67	-3,198.77	-4,500.66	1,456,770.547	3,164,619.382	40.585724	-104.907301
9,400.00	50.32	212.55	6,457.62	-3,260.79	-4,549.78	1,456,708.529	3,164,570.261	40.585554	-104.907479
9,500.00	47.14	199.92	6,523.73	-3,327.85	-4,583.06	1,456,641.469	3,164,536.986	40.585371	-104.907601
9,600.00	45.47	186.27	6,592.99	-3,397.92	-4,599.48	1,456,571.405	3,164,520.568	40.585179	-104.907662
9,700.00	45.49	172.22	6,663.28	-3,468.85	-4,598.54	1,456,500.466	3,164,521.506	40.584984	-104.907660
9,800.00	47.20	158.59	6,732.48	-3,538.51	-4,580.27	1,456,430.807	3,164,539.771	40.584793	-104.907596
9,900.00	50.41	145.99	6,798.48	-3,604.78	-4,545.24	1,456,364.545	3,164,574.808	40.584610	-104.907471
9,934.27	51.81	141.97	6,820.00	-3,626.33	-4,529.55	1,456,342.987	3,164,590.495	40.584551	-104.907415
Niobrara									
10,000.00	54.85	134.70	6,859.28	-3,665.63	-4,494.49	1,456,303.692	3,164,625.553	40.584442	-104.907290
10,100.00	60.23	124.69	6,913.03	-3,719.22	-4,429.58	1,456,250.099	3,164,690.465	40.584294	-104.907058
10,200.00	66.27	115.76	6,958.10	-3,763.93	-4,352.48	1,456,205.393	3,164,767.569	40.584170	-104.906781
10,300.00	72.78	107.65	6,993.11	-3,798.39	-4,265.52	1,456,170.933	3,164,854.525	40.584073	-104.906469
10,400.00	79.59	100.10	7,017.01	-3,821.55	-4,171.36	1,456,147.766	3,164,948.689	40.584008	-104.906131
10,429.48	81.64	97.95	7,021.81	-3,826.12	-4,142.64	1,456,143.204	3,164,977.407	40.583995	-104.906027
LPL 8X-HNC 890 FSL 460 FWL									
10,500.00	86.57	92.89	7,029.06	-3,832.72	-4,072.85	1,456,136.596	3,165,047.201	40.583976	-104.905776
10,543.39	89.62	89.80	7,030.50	-3,833.74	-4,029.50	1,456,135.580	3,165,090.546	40.583972	-104.905620
LP 89.62 Inc, 89.80 Az									
10,600.00	89.62	89.80	7,030.87	-3,833.54	-3,972.89	1,456,135.777	3,165,147.153	40.583972	-104.905416
10,700.00	89.62	89.80	7,031.53	-3,833.20	-3,872.90	1,456,136.125	3,165,247.150	40.583971	-104.905056
10,800.00	89.62	89.80	7,032.18	-3,832.85	-3,772.90	1,456,136.473	3,165,347.148	40.583970	-104.904696
10,900.00	89.62	89.80	7,032.84	-3,832.50	-3,672.90	1,456,136.821	3,165,447.145	40.583969	-104.904336
11,000.00	89.62	89.80	7,033.50	-3,832.15	-3,572.90	1,456,137.169	3,165,547.142	40.583968	-104.903976
11,100.00	89.62	89.80	7,034.15	-3,831.80	-3,472.91	1,456,137.517	3,165,647.139	40.583967	-104.903616
11,200.00	89.62	89.80	7,034.81	-3,831.46	-3,372.91	1,456,137.865	3,165,747.136	40.583966	-104.903256
11,300.00	89.62	89.80	7,035.46	-3,831.11	-3,272.91	1,456,138.213	3,165,847.134	40.583965	-104.902896
11,400.00	89.62	89.80	7,036.12	-3,830.76	-3,172.91	1,456,138.561	3,165,947.131	40.583964	-104.902536
11,500.00	89.62	89.80	7,036.77	-3,830.41	-3,072.92	1,456,138.908	3,166,047.128	40.583964	-104.902176
11,600.00	89.62	89.80	7,037.43	-3,830.06	-2,972.92	1,456,139.256	3,166,147.125	40.583963	-104.901816
11,700.00	89.62	89.80	7,038.09	-3,829.72	-2,872.92	1,456,139.604	3,166,247.123	40.583962	-104.901456
11,800.00	89.62	89.80	7,038.74	-3,829.37	-2,772.93	1,456,139.952	3,166,347.120	40.583961	-104.901096
11,900.00	89.62	89.80	7,039.40	-3,829.02	-2,672.93	1,456,140.300	3,166,447.117	40.583960	-104.900736
12,000.00	89.62	89.80	7,040.05	-3,828.67	-2,572.93	1,456,140.648	3,166,547.114	40.583959	-104.900376
12,100.00	89.62	89.80	7,040.71	-3,828.32	-2,472.93	1,456,140.996	3,166,647.112	40.583958	-104.900016
12,200.00	89.62	89.80	7,041.37	-3,827.98	-2,372.94	1,456,141.344	3,166,747.109	40.583957	-104.899656
12,300.00	89.62	89.80	7,042.02	-3,827.63	-2,272.94	1,456,141.692	3,166,847.106	40.583956	-104.899296
12,400.00	89.62	89.80	7,042.68	-3,827.28	-2,172.94	1,456,142.040	3,166,947.103	40.583955	-104.898936
12,500.00	89.62	89.80	7,043.33	-3,826.93	-2,072.95	1,456,142.388	3,167,047.101	40.583955	-104.898576
12,600.00	89.62	89.80	7,043.99	-3,826.58	-1,972.95	1,456,142.736	3,167,147.098	40.583954	-104.898216
12,700.00	89.62	89.80	7,044.65	-3,826.24	-1,872.95	1,456,143.083	3,167,247.095	40.583953	-104.897856
12,800.00	89.62	89.80	7,045.30	-3,825.89	-1,772.95	1,456,143.431	3,167,347.092	40.583952	-104.897496
12,900.00	89.62	89.80	7,045.96	-3,825.54	-1,672.96	1,456,143.779	3,167,447.090	40.583951	-104.897136
13,000.00	89.62	89.80	7,046.61	-3,825.19	-1,572.96	1,456,144.127	3,167,547.087	40.583950	-104.896776
13,100.00	89.62	89.80	7,047.27	-3,824.85	-1,472.96	1,456,144.475	3,167,647.084	40.583949	-104.896416
13,200.00	89.62	89.80	7,047.93	-3,824.50	-1,372.96	1,456,144.823	3,167,747.081	40.583948	-104.896056
13,300.00	89.62	89.80	7,048.58	-3,824.15	-1,272.97	1,456,145.171	3,167,847.078	40.583947	-104.895696
13,400.00	89.62	89.80	7,049.24	-3,823.80	-1,172.97	1,456,145.519	3,167,947.076	40.583946	-104.895336
13,500.00	89.62	89.80	7,049.89	-3,823.45	-1,072.97	1,456,145.867	3,168,047.073	40.583945	-104.894976
13,600.00	89.62	89.80	7,050.55	-3,823.11	-972.98	1,456,146.215	3,168,147.070	40.583945	-104.894616
13,700.00	89.62	89.80	7,051.21	-3,822.76	-872.98	1,456,146.563	3,168,247.067	40.583944	-104.894256

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLEHM-8X-HNC-10-07-67
<b>Company:</b>	Nickel Road Operating	<b>TVD Reference:</b>	KB @ 5115.00usft
<b>Project:</b>	Sec. 9-T7N-R67W	<b>MD Reference:</b>	KB @ 5115.00usft
<b>Site:</b>	BLEHM Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BLEHM-8X-HNC-10-07-67	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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	
13,800.00	89.62	89.80	7,051.86	-3,822.41	-772.98	1,456,146.911	3,168,347.065	40.583943	-104.893896	
13,900.00	89.62	89.80	7,052.52	-3,822.06	-672.98	1,456,147.259	3,168,447.062	40.583942	-104.893536	
14,000.00	89.62	89.80	7,053.17	-3,821.71	-572.99	1,456,147.606	3,168,547.059	40.583941	-104.893176	
14,100.00	89.62	89.80	7,053.83	-3,821.37	-472.99	1,456,147.954	3,168,647.057	40.583940	-104.892816	
14,200.00	89.62	89.80	7,054.49	-3,821.02	-372.99	1,456,148.302	3,168,747.055	40.583939	-104.892456	
14,300.00	89.62	89.80	7,055.14	-3,820.67	-272.99	1,456,148.650	3,168,847.052	40.583938	-104.892096	
14,400.00	89.62	89.80	7,055.80	-3,820.32	-173.00	1,456,148.998	3,168,947.049	40.583937	-104.891736	
14,500.00	89.62	89.80	7,056.45	-3,819.97	-73.00	1,456,149.346	3,169,047.046	40.583936	-104.891376	
14,600.00	89.62	89.80	7,057.11	-3,819.63	27.00	1,456,149.694	3,169,147.044	40.583935	-104.891016	
14,700.00	89.62	89.80	7,057.77	-3,819.28	126.99	1,456,150.042	3,169,247.041	40.583934	-104.890655	
14,800.00	89.62	89.80	7,058.42	-3,818.93	226.99	1,456,150.390	3,169,347.038	40.583933	-104.890295	
14,900.00	89.62	89.80	7,059.08	-3,818.58	326.99	1,456,150.738	3,169,447.035	40.583932	-104.889935	
15,000.00	89.62	89.80	7,059.73	-3,818.23	426.99	1,456,151.086	3,169,547.033	40.583932	-104.889575	
15,100.00	89.62	89.80	7,060.39	-3,817.89	526.98	1,456,151.434	3,169,647.030	40.583931	-104.889215	
15,200.00	89.62	89.80	7,061.04	-3,817.54	626.98	1,456,151.782	3,169,747.027	40.583930	-104.888855	
15,300.00	89.62	89.80	7,061.70	-3,817.19	726.98	1,456,152.129	3,169,847.024	40.583929	-104.888495	
15,400.00	89.62	89.80	7,062.36	-3,816.84	826.97	1,456,152.477	3,169,947.021	40.583928	-104.888135	
15,500.00	89.62	89.80	7,063.01	-3,816.50	926.97	1,456,152.825	3,170,047.019	40.583927	-104.887775	
15,600.00	89.62	89.80	7,063.67	-3,816.15	1,026.97	1,456,153.173	3,170,147.016	40.583926	-104.887415	
15,700.00	89.62	89.80	7,064.32	-3,815.80	1,126.97	1,456,153.521	3,170,247.013	40.583925	-104.887055	
15,800.00	89.62	89.80	7,064.98	-3,815.45	1,226.96	1,456,153.869	3,170,347.010	40.583924	-104.886695	
15,900.00	89.62	89.80	7,065.64	-3,815.10	1,326.96	1,456,154.217	3,170,447.008	40.583923	-104.886335	
16,000.00	89.62	89.80	7,066.29	-3,814.76	1,426.96	1,456,154.565	3,170,547.005	40.583922	-104.885975	
16,100.00	89.62	89.80	7,066.95	-3,814.41	1,526.96	1,456,154.913	3,170,647.002	40.583921	-104.885615	
16,200.00	89.62	89.80	7,067.60	-3,814.06	1,626.95	1,456,155.261	3,170,746.999	40.583920	-104.885255	
16,300.00	89.62	89.80	7,068.26	-3,813.71	1,726.95	1,456,155.609	3,170,846.997	40.583919	-104.884895	
16,400.00	89.62	89.80	7,068.92	-3,813.36	1,826.95	1,456,155.957	3,170,946.994	40.583918	-104.884535	
16,500.00	89.62	89.80	7,069.57	-3,813.02	1,926.94	1,456,156.304	3,171,046.991	40.583917	-104.884175	
16,600.00	89.62	89.80	7,070.23	-3,812.67	2,026.94	1,456,156.652	3,171,146.988	40.583916	-104.883815	
16,700.00	89.62	89.80	7,070.88	-3,812.32	2,126.94	1,456,157.000	3,171,246.986	40.583916	-104.883455	
16,800.00	89.62	89.80	7,071.54	-3,811.97	2,226.94	1,456,157.348	3,171,346.983	40.583915	-104.883095	
16,900.00	89.62	89.80	7,072.20	-3,811.62	2,326.93	1,456,157.696	3,171,446.980	40.583914	-104.882735	
17,000.00	89.62	89.80	7,072.85	-3,811.28	2,426.93	1,456,158.044	3,171,546.977	40.583913	-104.882375	
17,100.00	89.62	89.80	7,073.51	-3,810.93	2,526.93	1,456,158.392	3,171,646.975	40.583912	-104.882015	
17,200.00	89.62	89.80	7,074.16	-3,810.58	2,626.93	1,456,158.740	3,171,746.972	40.583911	-104.881655	
17,300.00	89.62	89.80	7,074.82	-3,810.23	2,726.92	1,456,159.088	3,171,846.969	40.583910	-104.881295	
17,400.00	89.62	89.80	7,075.48	-3,809.88	2,826.92	1,456,159.436	3,171,946.966	40.583909	-104.880935	
17,500.00	89.62	89.80	7,076.13	-3,809.54	2,926.92	1,456,159.784	3,172,046.963	40.583908	-104.880575	
17,600.00	89.62	89.80	7,076.79	-3,809.19	3,026.91	1,456,160.132	3,172,146.961	40.583907	-104.880215	
17,700.00	89.62	89.80	7,077.44	-3,808.84	3,126.91	1,456,160.480	3,172,246.958	40.583906	-104.879855	
17,800.00	89.62	89.80	7,078.10	-3,808.49	3,226.91	1,456,160.827	3,172,346.955	40.583905	-104.879495	
17,900.00	89.62	89.80	7,078.76	-3,808.14	3,326.91	1,456,161.175	3,172,446.952	40.583904	-104.879135	
18,000.00	89.62	89.80	7,079.41	-3,807.80	3,426.90	1,456,161.523	3,172,546.950	40.583903	-104.878775	
18,100.00	89.62	89.80	7,080.07	-3,807.45	3,526.90	1,456,161.871	3,172,646.947	40.583902	-104.878415	
18,200.00	89.62	89.80	7,080.72	-3,807.10	3,626.90	1,456,162.219	3,172,746.944	40.583901	-104.878055	
18,300.00	89.62	89.80	7,081.38	-3,806.75	3,726.90	1,456,162.567	3,172,846.941	40.583900	-104.877695	
18,400.00	89.62	89.80	7,082.04	-3,806.41	3,826.89	1,456,162.915	3,172,946.939	40.583899	-104.877335	
18,500.00	89.62	89.80	7,082.69	-3,806.06	3,926.89	1,456,163.263	3,173,046.936	40.583898	-104.876975	
18,600.00	89.62	89.80	7,083.35	-3,805.71	4,026.89	1,456,163.611	3,173,146.933	40.583897	-104.876615	
18,700.00	89.62	89.80	7,084.00	-3,805.36	4,126.88	1,456,163.959	3,173,246.930	40.583896	-104.876255	
18,800.00	89.62	89.80	7,084.66	-3,805.01	4,226.88	1,456,164.307	3,173,346.928	40.583895	-104.875895	
18,900.00	89.62	89.80	7,085.31	-3,804.67	4,326.88	1,456,164.655	3,173,446.925	40.583894	-104.875535	
19,000.00	89.62	89.80	7,085.97	-3,804.32	4,426.88	1,456,165.002	3,173,546.922	40.583893	-104.875175	
19,100.00	89.62	89.80	7,086.63	-3,803.97	4,526.87	1,456,165.350	3,173,646.919	40.583892	-104.874815	
19,200.00	89.62	89.80	7,087.28	-3,803.62	4,626.87	1,456,165.698	3,173,746.917	40.583891	-104.874455	

<b>Database:</b>	EDM 5000.15 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLEHM-8X-HNC-10-07-67
<b>Company:</b>	Nickel Road Operating	<b>TVD Reference:</b>	KB @ 5115.00usft
<b>Project:</b>	Sec. 9-T7N-R67W	<b>MD Reference:</b>	KB @ 5115.00usft
<b>Site:</b>	BLEHM Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	BLEHM-8X-HNC-10-07-67	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	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
19,300.00	89.62	89.80	7,087.94	-3,803.27	4,726.87	1,456,166.046	3,173,846.914	40.583890	-104.874095
19,400.00	89.62	89.80	7,088.59	-3,802.93	4,826.86	1,456,166.394	3,173,946.911	40.583889	-104.873735
19,500.00	89.62	89.80	7,089.25	-3,802.58	4,926.86	1,456,166.742	3,174,046.908	40.583888	-104.873375
19,600.00	89.62	89.80	7,089.91	-3,802.23	5,026.86	1,456,167.090	3,174,146.906	40.583887	-104.873015
19,700.00	89.62	89.80	7,090.56	-3,801.88	5,126.86	1,456,167.438	3,174,246.903	40.583886	-104.872654
19,800.00	89.62	89.80	7,091.22	-3,801.53	5,226.85	1,456,167.786	3,174,346.900	40.583885	-104.872294
19,900.00	89.62	89.80	7,091.87	-3,801.19	5,326.85	1,456,168.134	3,174,446.897	40.583884	-104.871934
20,000.00	89.62	89.80	7,092.53	-3,800.84	5,426.85	1,456,168.482	3,174,546.894	40.583883	-104.871574
20,032.83	89.62	89.80	7,093.00	-3,800.73	5,459.67	1,456,168.588	3,174,579.718	40.583883	-104.871456
TD at 20032.83 - TD - BHL 8X-HNC 890 FSL 460 FEL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 8X-HNC 560 FNL 6	0.00	0.01	0.00	0.00	0.00	1,459,969.320	3,169,120.047	40.594420	-104.891018
- plan hits target center									
- Point									
LPL 8X-HNC 890 FSL 4i	0.00	0.00	7,030.00	-3,834.15	-4,144.53	1,456,135.172	3,164,975.517	40.583973	-104.906034
- plan misses target center by 11.62usft at 10429.48usft MD (7021.81 TVD, -3826.12 N, -4142.64 E)									
- Point									
BHL 8X-HNC 890 FSL 4	0.00	0.00	7,093.00	-3,800.73	5,459.67	1,456,168.588	3,174,579.718	40.583883	-104.871456
- plan hits target center									
- Point									

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				
4,852.02	4,205.00	Sussex				
5,561.87	4,554.00	Shannon				
5,620.86	4,583.00	Pierre Shale				
9,934.27	6,820.00	Niobrara				
20,032.83	7,093.00	TD				

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
4,627.54	4,094.64	-841.88	-1,188.31	Hold 60.55 Inc, 234.68 Az
9,191.82	6,338.67	-3,139.53	-4,431.42	KOP 10°/100
10,543.39	7,030.50	-3,833.74	-4,029.50	LP 89.62 Inc, 89.80 Az
20,032.83	7,093.00	-3,800.73	5,459.67	TD at 20032.83