

Well Name:

BLEHM-8X-HNB-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	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
4686.33	61.73	233.27	4123.01	-901.79	-1208.40	-442.64	1507.80	Head 61.73 Inc, 233.27 Az
9258.14	61.73	233.27	6288.58	-3309.90	-4435.28	-1624.65	5534.18	KOP 10°/100
10605.54	89.55	89.80	6950.50	-4029.02	-4031.00	-873.72	6673.81	LP 89.55 Inc, 89.80 Az
20097.13	89.55	89.80	7025.59	-3995.64	5459.23	6765.23	16164.10	TD at 20097.13

Geodetic Datum:

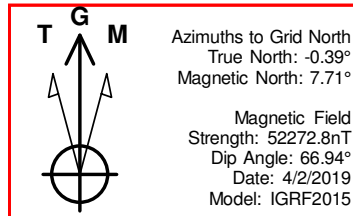
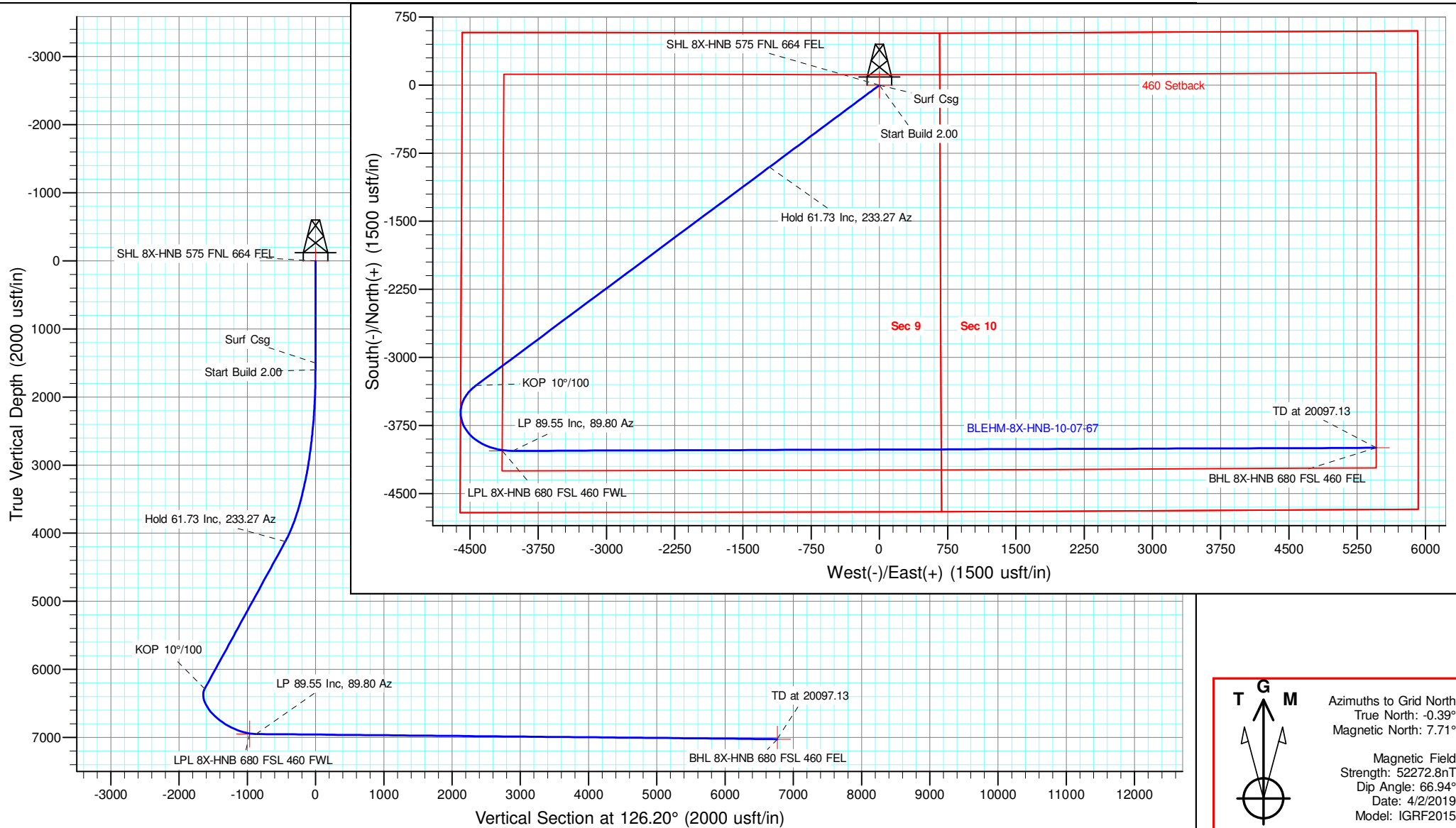
North American Datum 1983
US State Plane 1983, Colorado Northern Zone

Elevation:

Ground Elevation: 5088.00
KB Elevation: KB @ 5115.00usft

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	North	Easting	Latitude	Longitude	Shape
SHL 8X-HNB 575 FNL 664 FEL	0.00	0.00	0.00	1459594.378	3169119.316	40.594379	-104.891021	Point
LPL 8X-HNB 680 FSL 460 FWL	6950.00	-4029.42	-1444.61	1455924.954	3164974.703	40.583396	-104.906042	Point
BHL 8X-HNB 680 FSL 460 FEL	7026.00	-3995.64	5460.22	1455958.738	3174579.529	40.583307	-104.871462	Point



NICKEL ROAD

O P E R A T I N G

Nickel Road Operating

Sec. 9-T7N-R67W

BLEHM Pad

BLEHM-8X-HNB-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-HNB-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-HNB-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-HNB-10-07-67					
Well Position	+N/-S	0.00 usft	Northing:	1,459,954.378 usft	Latitude:	40.594379
	+E/-W	0.00 usft	Easting:	3,169,119.316 usft	Longitude:	-104.891021
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	52,272.78160908

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	126.20

Plan Survey Tool Program	Date	3/11/2021		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,096.88 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	
4,686.33	61.73	233.27	4,123.01	-901.79	-1,208.40	2.00	2.00	0.00	233.27	
9,258.14	61.73	233.27	6,288.58	-3,309.90	-4,435.28	0.00	0.00	0.00	0.00	
10,605.54	89.55	89.80	6,950.50	-4,029.02	-4,031.00	10.00	2.06	-10.65	-123.07	
20,097.13	89.55	89.80	7,026.00	-3,995.64	5,460.22	0.00	0.00	0.00	0.00	BHL 8X-HNB 680 FSI

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HNB-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-HNB-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	1,459,954.378	3,169,119.316	40.594379	-104.891021	
Laramie-Fox Hills - SHL 8X-HNB 575 FNL 664 FEL										
100.00	0.00	0.00	100.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
200.00	0.00	0.00	200.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
300.00	0.00	0.00	300.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
Upper Pierre										
400.00	0.00	0.00	400.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
500.00	0.00	0.00	500.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
600.00	0.00	0.00	600.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
700.00	0.00	0.00	700.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
800.00	0.00	0.00	800.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
900.00	0.00	0.00	900.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
1,100.00	0.00	0.00	1,100.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
1,200.00	0.00	0.00	1,200.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
1,300.00	0.00	0.00	1,300.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
1,314.00	0.00	0.00	1,314.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
Pierre Shale										
1,400.00	0.00	0.00	1,400.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
1,500.00	0.00	0.00	1,500.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
Surf Csg										
1,600.00	0.00	0.00	1,600.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021	
Start Build 2.00										
1,700.00	2.00	233.27	1,699.98	-1.04	-1.40	1,459,953.334	3,169,117.917	40.594376	-104.891026	
1,800.00	4.00	233.27	1,799.84	-4.17	-5.59	1,459,950.204	3,169,113.723	40.594368	-104.891042	
1,900.00	6.00	233.27	1,899.45	-9.39	-12.58	1,459,944.992	3,169,106.739	40.594353	-104.891067	
2,000.00	8.00	233.27	1,998.70	-16.67	-22.34	1,459,937.703	3,169,096.972	40.594334	-104.891102	
2,100.00	10.00	233.27	2,097.47	-26.03	-34.88	1,459,928.348	3,169,084.436	40.594308	-104.891148	
2,200.00	12.00	233.27	2,195.62	-37.44	-50.17	1,459,916.936	3,169,069.144	40.594277	-104.891203	
2,300.00	14.00	233.27	2,293.06	-50.89	-68.20	1,459,903.483	3,169,051.117	40.594241	-104.891268	
2,400.00	16.00	233.27	2,389.64	-66.37	-88.94	1,459,888.004	3,169,030.375	40.594198	-104.891343	
2,500.00	18.00	233.27	2,485.27	-83.86	-112.37	1,459,870.519	3,169,006.945	40.594151	-104.891428	
2,600.00	20.00	233.27	2,579.82	-103.33	-138.46	1,459,851.048	3,168,980.854	40.594098	-104.891522	
2,700.00	22.00	233.27	2,673.17	-124.76	-167.18	1,459,829.616	3,168,952.135	40.594040	-104.891626	
2,800.00	24.00	233.27	2,765.21	-148.13	-198.49	1,459,806.248	3,168,920.822	40.593976	-104.891740	
2,900.00	26.00	233.27	2,855.84	-173.40	-232.36	1,459,780.973	3,168,886.953	40.593907	-104.891862	
3,000.00	28.00	233.27	2,944.94	-200.56	-268.75	1,459,753.822	3,168,850.571	40.593834	-104.891994	
3,100.00	30.00	233.27	3,032.39	-229.55	-307.60	1,459,724.828	3,168,811.718	40.593755	-104.892135	
3,200.00	32.00	233.27	3,118.11	-260.35	-348.87	1,459,694.026	3,168,770.444	40.593671	-104.892284	
3,300.00	34.00	233.27	3,201.97	-292.92	-392.52	1,459,661.454	3,168,726.797	40.593582	-104.892442	
3,400.00	36.00	233.27	3,283.88	-327.23	-438.49	1,459,627.151	3,168,680.831	40.593489	-104.892608	
3,500.00	38.00	233.27	3,363.74	-363.22	-486.71	1,459,591.159	3,168,632.601	40.593391	-104.892783	
3,600.00	40.00	233.27	3,441.45	-400.86	-537.15	1,459,553.523	3,168,582.167	40.593289	-104.892965	
3,700.00	42.00	233.27	3,516.92	-440.09	-589.72	1,459,514.287	3,168,529.591	40.593182	-104.893156	
3,800.00	44.00	233.27	3,590.05	-480.88	-644.38	1,459,473.500	3,168,474.936	40.593071	-104.893353	
3,900.00	46.00	233.27	3,660.76	-523.17	-701.05	1,459,431.211	3,168,418.269	40.592956	-104.893558	
4,000.00	48.00	233.27	3,728.95	-566.91	-759.66	1,459,387.472	3,168,359.659	40.592837	-104.893771	
4,100.00	50.00	233.27	3,794.56	-612.04	-820.14	1,459,342.337	3,168,299.177	40.592714	-104.893989	
4,200.00	52.00	233.27	3,857.48	-658.52	-882.42	1,459,295.859	3,168,236.897	40.592588	-104.894215	
4,300.00	54.00	233.27	3,917.66	-706.28	-946.42	1,459,248.097	3,168,172.895	40.592458	-104.894446	
4,400.00	56.00	233.27	3,975.02	-755.27	-1,012.07	1,459,199.107	3,168,107.248	40.592325	-104.894684	
4,500.00	58.00	233.27	4,029.48	-805.43	-1,079.28	1,459,148.950	3,168,040.038	40.592189	-104.894927	
4,600.00	60.00	233.27	4,080.98	-856.69	-1,147.97	1,459,097.687	3,167,971.345	40.592049	-104.895176	

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HNB-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-HNB-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	
4,686.33	61.73	233.27	4,123.01	-901.79	-1,208.40	1,459,052.590	3,167,910.914	40.591926	-104.895395	
Hold 61.73 Inc, 233.27 Az										
4,700.00	61.73	233.27	4,129.49	-908.99	-1,218.05	1,459,045.389	3,167,901.266	40.591907	-104.895429	
4,800.00	61.73	233.27	4,176.86	-961.66	-1,288.63	1,458,992.716	3,167,830.684	40.591764	-104.895685	
4,861.53	61.73	233.27	4,206.00	-994.07	-1,332.06	1,458,960.307	3,167,787.256	40.591675	-104.895842	
Sussex										
4,900.00	61.73	233.27	4,224.22	-1,014.33	-1,359.21	1,458,940.043	3,167,760.102	40.591620	-104.895940	
5,000.00	61.73	233.27	4,271.59	-1,067.01	-1,429.80	1,458,887.370	3,167,689.520	40.591477	-104.896196	
5,100.00	61.73	233.27	4,318.96	-1,119.68	-1,500.38	1,458,834.697	3,167,618.938	40.591334	-104.896451	
5,200.00	61.73	233.27	4,366.33	-1,172.35	-1,570.96	1,458,782.024	3,167,548.355	40.591191	-104.896707	
5,300.00	61.73	233.27	4,413.69	-1,225.03	-1,641.54	1,458,729.351	3,167,477.773	40.591047	-104.896962	
5,400.00	61.73	233.27	4,461.06	-1,277.70	-1,712.12	1,458,676.678	3,167,407.191	40.590904	-104.897218	
5,500.00	61.73	233.27	4,508.43	-1,330.37	-1,782.71	1,458,624.005	3,167,336.609	40.590761	-104.897473	
5,598.31	61.73	233.27	4,555.00	-1,382.16	-1,852.10	1,458,572.220	3,167,267.217	40.590620	-104.897724	
Shannon										
5,600.00	61.73	233.27	4,555.80	-1,383.05	-1,853.29	1,458,571.332	3,167,266.027	40.590618	-104.897728	
5,659.54	61.73	233.27	4,584.00	-1,414.41	-1,895.31	1,458,539.972	3,167,224.005	40.590532	-104.897880	
Pierre Shale										
5,700.00	61.73	233.27	4,603.17	-1,435.72	-1,923.87	1,458,518.659	3,167,195.445	40.590474	-104.897984	
5,800.00	61.73	233.27	4,650.53	-1,488.39	-1,994.45	1,458,465.986	3,167,124.863	40.590331	-104.898239	
5,900.00	61.73	233.27	4,697.90	-1,541.06	-2,065.03	1,458,413.313	3,167,054.281	40.590188	-104.898495	
6,000.00	61.73	233.27	4,745.27	-1,593.74	-2,135.62	1,458,360.640	3,166,983.699	40.590044	-104.898750	
6,100.00	61.73	233.27	4,792.64	-1,646.41	-2,206.20	1,458,307.967	3,166,913.117	40.589901	-104.899005	
6,200.00	61.73	233.27	4,840.01	-1,699.08	-2,276.78	1,458,255.294	3,166,842.534	40.589758	-104.899261	
6,300.00	61.73	233.27	4,887.37	-1,751.76	-2,347.36	1,458,202.621	3,166,771.952	40.589615	-104.899516	
6,400.00	61.73	233.27	4,934.74	-1,804.43	-2,417.94	1,458,149.948	3,166,701.370	40.589471	-104.899772	
6,500.00	61.73	233.27	4,982.11	-1,857.10	-2,488.53	1,458,097.275	3,166,630.788	40.589328	-104.900027	
6,600.00	61.73	233.27	5,029.48	-1,909.78	-2,559.11	1,458,044.602	3,166,560.206	40.589185	-104.900283	
6,700.00	61.73	233.27	5,076.85	-1,962.45	-2,629.69	1,457,991.929	3,166,489.624	40.589042	-104.900538	
6,800.00	61.73	233.27	5,124.21	-2,015.12	-2,700.27	1,457,939.256	3,166,419.042	40.588898	-104.900793	
6,900.00	61.73	233.27	5,171.58	-2,067.79	-2,770.86	1,457,886.583	3,166,348.460	40.588755	-104.901049	
7,000.00	61.73	233.27	5,218.95	-2,120.47	-2,841.44	1,457,833.910	3,166,277.878	40.588612	-104.901304	
7,100.00	61.73	233.27	5,266.32	-2,173.14	-2,912.02	1,457,781.237	3,166,207.296	40.588469	-104.901560	
7,200.00	61.73	233.27	5,313.69	-2,225.81	-2,982.60	1,457,728.564	3,166,136.713	40.588325	-104.901815	
7,300.00	61.73	233.27	5,361.05	-2,278.49	-3,053.18	1,457,675.891	3,166,066.131	40.588182	-104.902070	
7,400.00	61.73	233.27	5,408.42	-2,331.16	-3,123.77	1,457,623.218	3,165,995.549	40.588039	-104.902326	
7,500.00	61.73	233.27	5,455.79	-2,383.83	-3,194.35	1,457,570.545	3,165,924.967	40.587895	-104.902581	
7,600.00	61.73	233.27	5,503.16	-2,436.51	-3,264.93	1,457,517.872	3,165,854.385	40.587752	-104.902837	
7,700.00	61.73	233.27	5,550.53	-2,489.18	-3,335.51	1,457,465.199	3,165,783.803	40.587609	-104.903092	
7,800.00	61.73	233.27	5,597.89	-2,541.85	-3,406.09	1,457,412.526	3,165,713.221	40.587466	-104.903347	
7,900.00	61.73	233.27	5,645.26	-2,594.52	-3,476.68	1,457,359.853	3,165,642.639	40.587322	-104.903603	
8,000.00	61.73	233.27	5,692.63	-2,647.20	-3,547.26	1,457,307.180	3,165,572.057	40.587179	-104.903858	
8,100.00	61.73	233.27	5,740.00	-2,699.87	-3,617.84	1,457,254.507	3,165,501.475	40.587036	-104.904114	
8,200.00	61.73	233.27	5,787.36	-2,752.54	-3,688.42	1,457,201.834	3,165,430.892	40.586893	-104.904369	
8,300.00	61.73	233.27	5,834.73	-2,805.22	-3,759.00	1,457,149.161	3,165,360.310	40.586749	-104.904624	
8,400.00	61.73	233.27	5,882.10	-2,857.89	-3,829.59	1,457,096.488	3,165,289.728	40.586606	-104.904880	
8,500.00	61.73	233.27	5,929.47	-2,910.56	-3,900.17	1,457,043.815	3,165,219.146	40.586463	-104.905135	
8,600.00	61.73	233.27	5,976.84	-2,963.24	-3,970.75	1,456,991.142	3,165,148.564	40.586319	-104.905391	
8,700.00	61.73	233.27	6,024.20	-3,015.91	-4,041.33	1,456,938.469	3,165,077.982	40.586176	-104.905646	
8,800.00	61.73	233.27	6,071.57	-3,068.58	-4,111.92	1,456,885.796	3,165,007.400	40.586033	-104.905901	
8,900.00	61.73	233.27	6,118.94	-3,121.25	-4,182.50	1,456,833.123	3,164,936.818	40.585890	-104.906157	
9,000.00	61.73	233.27	6,166.31	-3,173.93	-4,253.08	1,456,780.450	3,164,866.236	40.585746	-104.906412	
9,100.00	61.73	233.27	6,213.68	-3,226.60	-4,323.66	1,456,727.777	3,164,795.654	40.585603	-104.906668	
9,200.00	61.73	233.27	6,261.04	-3,279.27	-4,394.24	1,456,675.104	3,164,725.071	40.585460	-104.906923	

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HNB-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-HNB-10-07-67	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3		

Planned Survey									
Measured									
Depth	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map		
(usft)	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting	Latitude	Longitude
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
9,258.14	61.73	233.27	6,288.58	-3,309.90	-4,435.28	1,456,644.481	3,164,684.036	40.585376	-104.907071
KOP 10°/100									
9,300.00	59.50	229.20	6,309.13	-3,332.72	-4,463.72	1,456,621.660	3,164,655.598	40.585314	-104.907174
9,400.00	54.76	218.70	6,363.49	-3,392.89	-4,522.01	1,456,561.485	3,164,597.304	40.585150	-104.907386
9,500.00	51.02	207.06	6,423.94	-3,459.55	-4,565.34	1,456,494.831	3,164,553.976	40.584968	-104.907543
9,600.00	48.56	194.36	6,488.65	-3,530.66	-4,592.38	1,456,423.723	3,164,526.932	40.584773	-104.907642
9,700.00	47.58	180.96	6,555.64	-3,604.06	-4,602.32	1,456,350.321	3,164,516.993	40.584572	-104.907680
9,800.00	48.17	167.49	6,622.89	-3,677.52	-4,594.85	1,456,276.856	3,164,524.460	40.584370	-104.907655
9,900.00	50.29	154.57	6,688.34	-3,748.82	-4,570.21	1,456,205.560	3,164,549.108	40.584174	-104.907568
10,000.00	53.74	142.65	6,750.01	-3,815.78	-4,529.13	1,456,138.600	3,164,590.188	40.583990	-104.907421
10,100.00	58.26	131.88	6,806.03	-3,876.37	-4,472.87	1,456,078.009	3,164,646.450	40.583822	-104.907220
10,129.06	59.74	128.96	6,821.00	-3,892.51	-4,453.90	1,456,061.865	3,164,665.415	40.583778	-104.907152
Niobrara									
10,200.00	63.60	122.19	6,854.69	-3,928.75	-4,403.13	1,456,025.630	3,164,716.186	40.583677	-104.906971
10,300.00	69.52	113.41	6,894.52	-3,971.33	-4,322.04	1,455,983.053	3,164,797.277	40.583559	-104.906680
10,400.00	75.86	105.30	6,924.30	-4,002.81	-4,232.06	1,455,951.572	3,164,887.259	40.583471	-104.906356
10,494.32	82.07	98.06	6,942.36	-4,021.47	-4,141.50	1,455,932.912	3,164,977.820	40.583418	-104.906031
LPL 8X-HNB 680 FSL 460 FWL									
10,500.00	82.45	97.64	6,943.13	-4,022.23	-4,135.92	1,455,932.144	3,164,983.397	40.583416	-104.906011
10,600.00	89.17	90.21	6,950.44	-4,029.02	-4,036.54	1,455,925.358	3,165,082.771	40.583395	-104.905653
10,605.54	89.55	89.80	6,950.50	-4,029.02	-4,031.00	1,455,925.358	3,165,088.315	40.583395	-104.905633
LP 89.55 Inc, 89.80 Az									
10,700.00	89.55	89.80	6,951.25	-4,028.69	-3,936.55	1,455,925.690	3,165,182.767	40.583394	-104.905293
10,800.00	89.55	89.80	6,952.04	-4,028.34	-3,836.55	1,455,926.042	3,165,282.763	40.583393	-104.904933
10,900.00	89.55	89.80	6,952.83	-4,027.98	-3,736.56	1,455,926.394	3,165,382.759	40.583393	-104.904573
11,000.00	89.55	89.80	6,953.62	-4,027.63	-3,636.56	1,455,926.745	3,165,482.756	40.583392	-104.904213
11,100.00	89.55	89.80	6,954.41	-4,027.28	-3,536.56	1,455,927.097	3,165,582.752	40.583391	-104.903853
11,200.00	89.55	89.80	6,955.20	-4,026.93	-3,436.57	1,455,927.449	3,165,682.748	40.583390	-104.903493
11,300.00	89.55	89.80	6,955.99	-4,026.58	-3,336.57	1,455,927.801	3,165,782.744	40.583389	-104.903133
11,400.00	89.55	89.80	6,956.79	-4,026.23	-3,236.57	1,455,928.152	3,165,882.741	40.583388	-104.902773
11,500.00	89.55	89.80	6,957.58	-4,025.87	-3,136.58	1,455,928.504	3,165,982.737	40.583387	-104.902413
11,600.00	89.55	89.80	6,958.37	-4,025.52	-3,036.58	1,455,928.856	3,166,082.733	40.583386	-104.902053
11,700.00	89.55	89.80	6,959.16	-4,025.17	-2,936.59	1,455,929.207	3,166,182.729	40.583385	-104.901693
11,800.00	89.55	89.80	6,959.95	-4,024.82	-2,836.59	1,455,929.559	3,166,282.726	40.583385	-104.901333
11,900.00	89.55	89.80	6,960.74	-4,024.47	-2,736.59	1,455,929.911	3,166,382.722	40.583384	-104.900973
12,000.00	89.55	89.80	6,961.53	-4,024.12	-2,636.60	1,455,930.263	3,166,482.718	40.583383	-104.900613
12,100.00	89.55	89.80	6,962.32	-4,023.76	-2,536.60	1,455,930.614	3,166,582.714	40.583382	-104.900253
12,200.00	89.55	89.80	6,963.12	-4,023.41	-2,436.60	1,455,930.966	3,166,682.711	40.583381	-104.899893
12,300.00	89.55	89.80	6,963.91	-4,023.06	-2,336.61	1,455,931.318	3,166,782.707	40.583380	-104.899533
12,400.00	89.55	89.80	6,964.70	-4,022.71	-2,236.61	1,455,931.670	3,166,882.703	40.583379	-104.899173
12,500.00	89.55	89.80	6,965.49	-4,022.36	-2,136.62	1,455,932.021	3,166,982.699	40.583378	-104.898813
12,600.00	89.55	89.80	6,966.28	-4,022.01	-2,036.62	1,455,932.373	3,167,082.696	40.583377	-104.898453
12,700.00	89.55	89.80	6,967.07	-4,021.65	-1,936.62	1,455,932.725	3,167,182.692	40.583377	-104.898093
12,800.00	89.55	89.80	6,967.86	-4,021.30	-1,836.63	1,455,933.076	3,167,282.688	40.583376	-104.897733
12,900.00	89.55	89.80	6,968.65	-4,020.95	-1,736.63	1,455,933.428	3,167,382.684	40.583375	-104.897373
13,000.00	89.55	89.80	6,969.45	-4,020.60	-1,636.63	1,455,933.780	3,167,482.681	40.583374	-104.897013
13,100.00	89.55	89.80	6,970.24	-4,020.25	-1,536.64	1,455,934.132	3,167,582.677	40.583373	-104.896653
13,200.00	89.55	89.80	6,971.03	-4,019.89	-1,436.64	1,455,934.483	3,167,682.673	40.583372	-104.896293
13,300.00	89.55	89.80	6,971.82	-4,019.54	-1,336.65	1,455,934.835	3,167,782.669	40.583371	-104.895933
13,400.00	89.55	89.80	6,972.61	-4,019.19	-1,236.65	1,455,935.187	3,167,882.666	40.583370	-104.895573
13,500.00	89.55	89.80	6,973.40	-4,018.84	-1,136.65	1,455,935.538	3,167,982.662	40.583369	-104.895213
13,600.00	89.55	89.80	6,974.19	-4,018.49	-1,036.66	1,455,935.890	3,168,082.658	40.583368	-104.894853
13,700.00	89.55	89.80	6,974.98	-4,018.14	-936.66	1,455,936.242	3,168,182.654	40.583368	-104.894493
13,800.00	89.55	89.80	6,975.78	-4,017.78	-836.66	1,455,936.594	3,168,282.651	40.583367	-104.894133

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HNB-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-HNB-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
13,900.00	89.55	89.80	6,976.57	-4,017.43	-736.67	1,455,936.945	3,168,382.647	40.583366	-104.893773
14,000.00	89.55	89.80	6,977.36	-4,017.08	-636.67	1,455,937.297	3,168,482.643	40.583365	-104.893413
14,100.00	89.55	89.80	6,978.15	-4,016.73	-536.68	1,455,937.649	3,168,582.639	40.583364	-104.893053
14,200.00	89.55	89.80	6,978.94	-4,016.38	-436.68	1,455,938.001	3,168,682.637	40.583363	-104.892693
14,300.00	89.55	89.80	6,979.73	-4,016.03	-336.68	1,455,938.352	3,168,782.633	40.583362	-104.892333
14,400.00	89.55	89.80	6,980.52	-4,015.67	-236.69	1,455,938.704	3,168,882.629	40.583361	-104.891973
14,500.00	89.55	89.80	6,981.31	-4,015.32	-136.69	1,455,939.056	3,168,982.625	40.583360	-104.891613
14,600.00	89.55	89.80	6,982.11	-4,014.97	-36.69	1,455,939.407	3,169,082.622	40.583359	-104.891253
14,700.00	89.55	89.80	6,982.90	-4,014.62	63.30	1,455,939.759	3,169,182.618	40.583358	-104.890893
14,800.00	89.55	89.80	6,983.69	-4,014.27	163.30	1,455,940.111	3,169,282.614	40.583357	-104.890533
14,900.00	89.55	89.80	6,984.48	-4,013.92	263.29	1,455,940.463	3,169,382.610	40.583357	-104.890173
15,000.00	89.55	89.80	6,985.27	-4,013.56	363.29	1,455,940.814	3,169,482.607	40.583356	-104.889813
15,100.00	89.55	89.80	6,986.06	-4,013.21	463.29	1,455,941.166	3,169,582.603	40.583355	-104.889453
15,200.00	89.55	89.80	6,986.85	-4,012.86	563.28	1,455,941.518	3,169,682.599	40.583354	-104.889093
15,300.00	89.55	89.80	6,987.64	-4,012.51	663.28	1,455,941.870	3,169,782.595	40.583353	-104.888733
15,400.00	89.55	89.80	6,988.44	-4,012.16	763.28	1,455,942.221	3,169,882.592	40.583352	-104.888373
15,500.00	89.55	89.80	6,989.23	-4,011.81	863.27	1,455,942.573	3,169,982.588	40.583351	-104.888013
15,600.00	89.55	89.80	6,990.02	-4,011.45	963.27	1,455,942.925	3,170,082.584	40.583350	-104.887653
15,700.00	89.55	89.80	6,990.81	-4,011.10	1,063.26	1,455,943.276	3,170,182.580	40.583349	-104.887292
15,800.00	89.55	89.80	6,991.60	-4,010.75	1,163.26	1,455,943.628	3,170,282.577	40.583348	-104.886932
15,900.00	89.55	89.80	6,992.39	-4,010.40	1,263.26	1,455,943.980	3,170,382.573	40.583347	-104.886572
16,000.00	89.55	89.80	6,993.18	-4,010.05	1,363.25	1,455,944.332	3,170,482.569	40.583346	-104.886212
16,100.00	89.55	89.80	6,993.97	-4,009.69	1,463.25	1,455,944.683	3,170,582.565	40.583345	-104.885852
16,200.00	89.55	89.80	6,994.77	-4,009.34	1,563.25	1,455,945.035	3,170,682.561	40.583344	-104.885492
16,300.00	89.55	89.80	6,995.56	-4,008.99	1,663.24	1,455,945.387	3,170,782.558	40.583344	-104.885132
16,400.00	89.55	89.80	6,996.35	-4,008.64	1,763.24	1,455,945.738	3,170,882.554	40.583343	-104.884772
16,500.00	89.55	89.80	6,997.14	-4,008.29	1,863.23	1,455,946.090	3,170,982.550	40.583342	-104.884412
16,600.00	89.55	89.80	6,997.93	-4,007.94	1,963.23	1,455,946.442	3,171,082.546	40.583341	-104.884052
16,700.00	89.55	89.80	6,998.72	-4,007.58	2,063.23	1,455,946.794	3,171,182.543	40.583340	-104.883692
16,800.00	89.55	89.80	6,999.51	-4,007.23	2,163.22	1,455,947.145	3,171,282.539	40.583339	-104.883332
16,900.00	89.55	89.80	7,000.30	-4,006.88	2,263.22	1,455,947.497	3,171,382.535	40.583338	-104.882972
17,000.00	89.55	89.80	7,001.10	-4,006.53	2,363.22	1,455,947.849	3,171,482.531	40.583337	-104.882612
17,100.00	89.55	89.80	7,001.89	-4,006.18	2,463.21	1,455,948.201	3,171,582.528	40.583336	-104.882252
17,200.00	89.55	89.80	7,002.68	-4,005.83	2,563.21	1,455,948.552	3,171,682.524	40.583335	-104.881892
17,300.00	89.55	89.80	7,003.47	-4,005.47	2,663.20	1,455,948.904	3,171,782.520	40.583334	-104.881532
17,400.00	89.55	89.80	7,004.26	-4,005.12	2,763.20	1,455,949.256	3,171,882.516	40.583333	-104.881172
17,500.00	89.55	89.80	7,005.05	-4,004.77	2,863.20	1,455,949.607	3,171,982.513	40.583332	-104.880812
17,600.00	89.55	89.80	7,005.84	-4,004.42	2,963.19	1,455,949.959	3,172,082.509	40.583331	-104.880452
17,700.00	89.55	89.80	7,006.63	-4,004.07	3,063.19	1,455,950.311	3,172,182.505	40.583330	-104.880092
17,800.00	89.55	89.80	7,007.43	-4,003.72	3,163.19	1,455,950.663	3,172,282.501	40.583329	-104.879732
17,900.00	89.55	89.80	7,008.22	-4,003.36	3,263.18	1,455,951.014	3,172,382.498	40.583328	-104.879372
18,000.00	89.55	89.80	7,009.01	-4,003.01	3,363.18	1,455,951.366	3,172,482.494	40.583327	-104.879012
18,100.00	89.55	89.80	7,009.80	-4,002.66	3,463.17	1,455,951.718	3,172,582.490	40.583326	-104.878652
18,200.00	89.55	89.80	7,010.59	-4,002.31	3,563.17	1,455,952.070	3,172,682.486	40.583325	-104.878292
18,300.00	89.55	89.80	7,011.38	-4,001.96	3,663.17	1,455,952.421	3,172,782.483	40.583325	-104.877932
18,400.00	89.55	89.80	7,012.17	-4,001.61	3,763.16	1,455,952.773	3,172,882.479	40.583324	-104.877572
18,500.00	89.55	89.80	7,012.96	-4,001.25	3,863.16	1,455,953.125	3,172,982.475	40.583323	-104.877212
18,600.00	89.55	89.80	7,013.76	-4,000.90	3,963.16	1,455,953.476	3,173,082.471	40.583322	-104.876852
18,700.00	89.55	89.80	7,014.55	-4,000.55	4,063.15	1,455,953.828	3,173,182.468	40.583321	-104.876492
18,800.00	89.55	89.80	7,015.34	-4,000.20	4,163.15	1,455,954.180	3,173,282.464	40.583320	-104.876132
18,900.00	89.55	89.80	7,016.13	-3,999.85	4,263.14	1,455,954.532	3,173,382.460	40.583319	-104.875772
19,000.00	89.55	89.80	7,016.92	-3,999.49	4,363.14	1,455,954.883	3,173,482.456	40.583318	-104.875412
19,100.00	89.55	89.80	7,017.71	-3,999.14	4,463.14	1,455,955.235	3,173,582.453	40.583317	-104.875052
19,200.00	89.55	89.80	7,018.50	-3,998.79	4,563.13	1,455,955.587	3,173,682.449	40.583316	-104.874692
19,300.00	89.55	89.80	7,019.29	-3,998.44	4,663.13	1,455,955.939	3,173,782.445	40.583315	-104.874332

Database:	EDM 5000.15 Single User Db	Local Co-ordinate Reference:	Well BLEHM-8X-HNB-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-HNB-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
19,400.00	89.55	89.80	7,020.09	-3,998.09	4,763.13	1,455,956.290	3,173,882.441	40.583314	-104.873972
19,500.00	89.55	89.80	7,020.88	-3,997.74	4,863.12	1,455,956.642	3,173,982.438	40.583313	-104.873612
19,600.00	89.55	89.80	7,021.67	-3,997.38	4,963.12	1,455,956.994	3,174,082.434	40.583312	-104.873252
19,700.00	89.55	89.80	7,022.46	-3,997.03	5,063.11	1,455,957.345	3,174,182.430	40.583311	-104.872892
19,800.00	89.55	89.80	7,023.25	-3,996.68	5,163.11	1,455,957.697	3,174,282.426	40.583310	-104.872532
19,900.00	89.55	89.80	7,024.04	-3,996.33	5,263.11	1,455,958.049	3,174,382.423	40.583309	-104.872172
20,000.00	89.55	89.80	7,024.83	-3,995.98	5,363.10	1,455,958.401	3,174,482.419	40.583308	-104.871812
20,097.13	89.55	89.80	7,026.00	-3,995.64	5,460.22	1,455,958.737	3,174,579.539	40.583307	-104.871462
TD at 20097.13 - TD - BHL 8X-HNB 680 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-HNB 575 FNL 6	0.00	0.00	0.00	0.00	0.00	1,459,954.378	3,169,119.316	40.594379	-104.891021
- plan hits target center									
- Point									
LPL 8X-HNB 680 FSL 460	0.00	0.01	6,950.00	-4,029.42	-4,144.61	1,455,924.953	3,164,974.703	40.583396	-104.906042
- plan misses target center by 11.46usft at 10494.32usft MD (6942.36 TVD, -4021.47 N, -4141.50 E)									
- Point									
BHL 8X-HNB 680 FSL 460	0.00	0.00	7,026.00	-3,995.64	5,460.22	1,455,958.737	3,174,579.539	40.583307	-104.871462
- 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				
4,861.53	4,206.00	Sussex				
5,598.31	4,555.00	Shannon				
5,659.54	4,584.00	Pierre Shale				
10,129.06	6,821.00	Niobrara				
20,097.13	7,026.00	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
4,686.33	4,123.01	-901.79	-1,208.40	Hold 61.73 Inc, 233.27 Az
9,258.14	6,288.58	-3,309.90	-4,435.28	KOP 10°/100
10,605.54	6,950.50	-4,029.02	-4,031.00	LP 89.55 Inc, 89.80 Az
20,097.13	7,026.00	-3,995.64	5,460.22	TD at 20097.13