

# **NICKEL ROAD OPERATING**

**WELD COUNTY**

**SEC 5-T6N-R65W**

**REEMAN 6X-HNB-04-06-65**

**OWB**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**08 January, 2022**



WELL DETAILS: REEMAN 6X-HNB-04-06-65

+N/-S	+E/-W	Northing	Easting	4816.00 Latitude	Longitude	Slot
0.00	0.00	1432740.01	3224746.51	40.518460°N	104.691617°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	800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	
3	1959.86	23.20	225.89	1928.43	-161.22	-166.28	2.00	225.89	-110.56	
4	6772.53	23.20	225.89	6352.02	-1480.80	-1527.30	0.00	0.00	-1015.53	
5	7835.58	90.51	92.09	7048.00	-1718.30	-979.49	10.00	-131.23	-421.80	REEMAN 6X-HNB-LP
6	15167.22	90.51	92.09	6983.00	-1985.53	6346.99	0.00	0.00	6650.30	REEMAN 6X-HNB-PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Departure	Annotation
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	Start Build 2.00
1959.86	23.20	225.89	1928.43	-161.22	-166.28	-110.56	231.60	Start 4812.67 hold at 1959.86 MD
6772.53	23.20	225.89	6352.02	-1480.80	-1527.30	-1015.53	2127.30	Start DLS 10.00 TFO -131.23
7835.58	90.51	92.09	7048.00	-1718.30	-979.49	-421.80	2812.50	Start 7331.64 hold at 7835.58 MD
15167.22	90.51	92.09	6983.00	-1985.53	6346.99	6650.30	10143.85	TD at 15167.22

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
REEMAN 6X-HNB-PBHL6983.00		-1985.53	6346.99	1430754.49	3231093.50	40.512849°N	104.668856°W	Point
- plan hits target center								
REEMAN 6X-HNB-LP 7048.00		-1718.30	-979.49	1431021.71	3223767.02	40.513768°N	104.695196°W	Point
- plan hits target center								

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
0.00	0.00	Laramie-Fox Hills
299.00	299.00	Upper Pierre Aquifer
1313.00	1315.78	Pierre Shale
4494.00	4751.09	Sussex
5030.00	5334.23	Shannon
5059.00	5365.78	Pierre Shale
6922.00	7433.55	Nio A

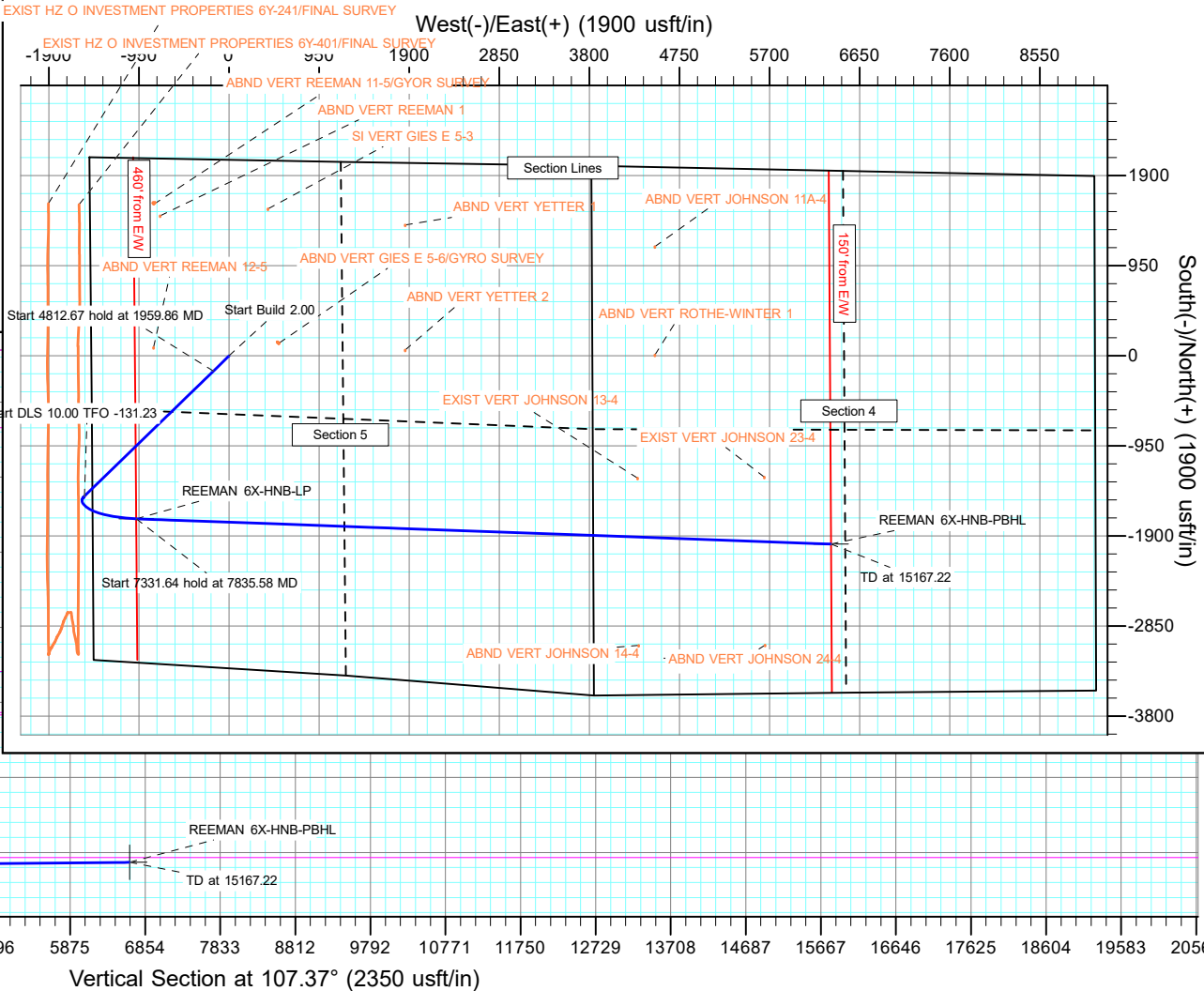
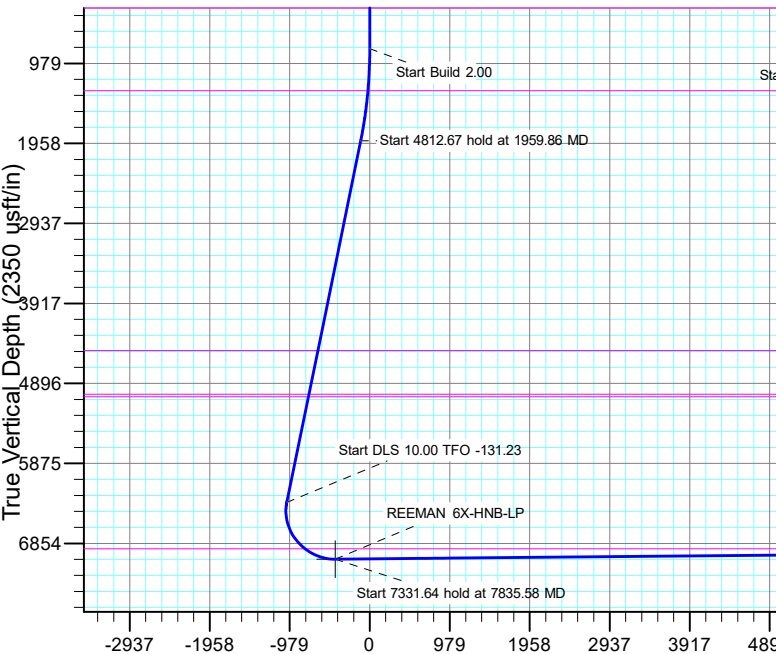
PROJECT DETAILS: WELD COUNTY

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

SHL:  
2066' FNL, 1454' FWL  
Sec 5-T6N-R65W

LP:  
1514' FSL, 460' FWL  
Sec 5-T6N-R65W

BHL:  
1569' FSL, 2507' FWL  
Sec 4-T6N-R65W



## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well REEMAN 6X-HNB-04-06-65
<b>Company:</b>	NICKEL ROAD OPERATING	<b>TVD Reference:</b>	KB 17' @ 4833.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 17' @ 4833.00usft
<b>Site:</b>	SEC 5-T6N-R65W	<b>North Reference:</b>	Grid
<b>Well:</b>	REEMAN 6X-HNB-04-06-65	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	WELD COUNTY		
<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		SEC 5-T6N-R65W				
Site Position:		Northing:	1,434,834.96	usft	Latitude:	40.524247°N
From:	Lat/Long	Easting:	3,223,272.58	usft	Longitude:	104.696850°W
Position Uncertainty:		0.00	usft	Slot Radius:	13.200	in

Well		REEMAN 6X-HNB-04-06-65				
Well Position	+N/-S	0.00 usft	Northing:	1,432,740.02 usft	Latitude:	40.518460°N
	+E/-W	0.00 usft	Easting:	3,224,746.51 usft	Longitude:	104.691617°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,816.00 usft
Grid Convergence:		0.52 °				

<b>Wellbore</b>	OWB				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	1/7/2022	7.76	66.73	51,963.64642823

<b>Design</b>	PROPOSAL 1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	107.37	

<b>Plan Survey Tool Program</b>	<b>Date</b>	1/8/2022			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	15,167.22 PROPOSAL 1 (OWB)	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 (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</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	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,959.86	23.20	225.89	1,928.43	-161.22	-166.28	2.00	2.00	0.00	225.89	
6,772.53	23.20	225.89	6,352.02	-1,480.80	-1,527.30	0.00	0.00	0.00	0.00	
7,835.58	90.51	92.09	7,048.00	-1,718.30	-979.49	10.00	6.33	-12.59	-131.23	REEMAN 6X-HNB-LF
15,167.22	90.51	92.09	6,983.00	-1,985.53	6,346.99	0.00	0.00	0.00	0.00	REEMAN 6X-HNB-PF

# Planning Report

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<b>Company:</b>	NICKEL ROAD OPERATING	<b>TVD Reference:</b>	KB 17' @ 4833.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 17' @ 4833.00usft
<b>Site:</b>	SEC 5-T6N-R65W	<b>North Reference:</b>	Grid
<b>Well:</b>	REEMAN 6X-HNB-04-06-65	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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
<b>Laramie-Fox Hills</b>									
299.00	0.00	0.00	299.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Upper Pierre Aquifer</b>									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
900.00	2.00	225.89	899.98	-1.21	-1.25	-0.83	2.00	2.00	0.00
1,000.00	4.00	225.89	999.84	-4.86	-5.01	-3.33	2.00	2.00	0.00
1,100.00	6.00	225.89	1,099.45	-10.92	-11.27	-7.49	2.00	2.00	0.00
1,200.00	8.00	225.89	1,198.70	-19.41	-20.02	-13.31	2.00	2.00	0.00
1,300.00	10.00	225.89	1,297.47	-30.30	-31.25	-20.78	2.00	2.00	0.00
1,315.78	10.32	225.89	1,313.00	-32.23	-33.25	-22.11	2.00	2.00	0.00
<b>Pierre Shale</b>									
1,400.00	12.00	225.89	1,395.62	-43.58	-44.95	-29.89	2.00	2.00	0.00
1,500.00	14.00	225.89	1,493.06	-59.24	-61.10	-40.62	2.00	2.00	0.00
1,600.00	16.00	225.89	1,589.64	-77.25	-79.68	-52.98	2.00	2.00	0.00
1,700.00	18.00	225.89	1,685.27	-97.60	-100.67	-66.94	2.00	2.00	0.00
1,800.00	20.00	225.89	1,779.82	-120.26	-124.04	-82.48	2.00	2.00	0.00
1,900.00	22.00	225.89	1,873.17	-145.21	-149.77	-99.58	2.00	2.00	0.00
1,959.86	23.20	225.89	1,928.43	-161.22	-166.28	-110.56	2.00	2.00	0.00
<b>Start 4812.67 hold at 1959.86 MD</b>									
2,000.00	23.20	225.89	1,965.33	-172.22	-177.63	-118.11	0.00	0.00	0.00
2,100.00	23.20	225.89	2,057.24	-199.64	-205.91	-136.92	0.00	0.00	0.00
2,200.00	23.20	225.89	2,149.16	-227.06	-234.19	-155.72	0.00	0.00	0.00
2,300.00	23.20	225.89	2,241.07	-254.48	-262.47	-174.52	0.00	0.00	0.00
2,400.00	23.20	225.89	2,332.99	-281.90	-290.75	-193.33	0.00	0.00	0.00
2,500.00	23.20	225.89	2,424.90	-309.32	-319.03	-212.13	0.00	0.00	0.00
2,600.00	23.20	225.89	2,516.82	-336.74	-347.31	-230.94	0.00	0.00	0.00
2,700.00	23.20	225.89	2,608.73	-364.16	-375.59	-249.74	0.00	0.00	0.00
2,800.00	23.20	225.89	2,700.65	-391.58	-403.87	-268.54	0.00	0.00	0.00
2,900.00	23.20	225.89	2,792.57	-418.99	-432.15	-287.35	0.00	0.00	0.00
3,000.00	23.20	225.89	2,884.48	-446.41	-460.43	-306.15	0.00	0.00	0.00
3,100.00	23.20	225.89	2,976.40	-473.83	-488.71	-324.95	0.00	0.00	0.00
3,200.00	23.20	225.89	3,068.31	-501.25	-516.99	-343.76	0.00	0.00	0.00
3,300.00	23.20	225.89	3,160.23	-528.67	-545.27	-362.56	0.00	0.00	0.00
3,400.00	23.20	225.89	3,252.14	-556.09	-573.55	-381.37	0.00	0.00	0.00
3,500.00	23.20	225.89	3,344.06	-583.51	-601.83	-400.17	0.00	0.00	0.00
3,600.00	23.20	225.89	3,435.97	-610.93	-630.11	-418.97	0.00	0.00	0.00
3,700.00	23.20	225.89	3,527.89	-638.34	-658.39	-437.78	0.00	0.00	0.00
3,800.00	23.20	225.89	3,619.80	-665.76	-686.67	-456.58	0.00	0.00	0.00
3,900.00	23.20	225.89	3,711.72	-693.18	-714.95	-475.39	0.00	0.00	0.00
4,000.00	23.20	225.89	3,803.64	-720.60	-743.23	-494.19	0.00	0.00	0.00
4,100.00	23.20	225.89	3,895.55	-748.02	-771.51	-512.99	0.00	0.00	0.00
4,200.00	23.20	225.89	3,987.47	-775.44	-799.79	-531.80	0.00	0.00	0.00
4,300.00	23.20	225.89	4,079.38	-802.86	-828.07	-550.60	0.00	0.00	0.00
4,400.00	23.20	225.89	4,171.30	-830.28	-856.35	-569.41	0.00	0.00	0.00
4,500.00	23.20	225.89	4,263.21	-857.70	-884.63	-588.21	0.00	0.00	0.00
4,600.00	23.20	225.89	4,355.13	-885.11	-912.91	-607.01	0.00	0.00	0.00
4,700.00	23.20	225.89	4,447.04	-912.53	-941.19	-625.82	0.00	0.00	0.00
4,751.09	23.20	225.89	4,494.00	-926.54	-955.64	-635.42	0.00	0.00	0.00
<b>Sussex</b>									
4,800.00	23.20	225.89	4,538.96	-939.95	-969.47	-644.62	0.00	0.00	0.00
4,900.00	23.20	225.89	4,630.87	-967.37	-997.75	-663.42	0.00	0.00	0.00

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<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 17' @ 4833.00usft
<b>Site:</b>	SEC 5-T6N-R65W	<b>North Reference:</b>	Grid
<b>Well:</b>	REEMAN 6X-HNB-04-06-65	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)	
5,000.00	23.20	225.89	4,722.79	-994.79	-1,026.03	-682.23	0.00	0.00	0.00	
5,100.00	23.20	225.89	4,814.71	-1,022.21	-1,054.31	-701.03	0.00	0.00	0.00	
5,200.00	23.20	225.89	4,906.62	-1,049.63	-1,082.59	-719.84	0.00	0.00	0.00	
5,300.00	23.20	225.89	4,998.54	-1,077.05	-1,110.87	-738.64	0.00	0.00	0.00	
5,334.23	23.20	225.89	5,030.00	-1,086.43	-1,120.55	-745.08	0.00	0.00	0.00	
Shannon										
5,365.78	23.20	225.89	5,059.00	-1,095.08	-1,129.47	-751.01	0.00	0.00	0.00	
Pierre Shale										
5,400.00	23.20	225.89	5,090.45	-1,104.46	-1,139.15	-757.44	0.00	0.00	0.00	
5,500.00	23.20	225.89	5,182.37	-1,131.88	-1,167.43	-776.25	0.00	0.00	0.00	
5,600.00	23.20	225.89	5,274.28	-1,159.30	-1,195.71	-795.05	0.00	0.00	0.00	
5,700.00	23.20	225.89	5,366.20	-1,186.72	-1,223.99	-813.86	0.00	0.00	0.00	
5,800.00	23.20	225.89	5,458.11	-1,214.14	-1,252.27	-832.66	0.00	0.00	0.00	
5,900.00	23.20	225.89	5,550.03	-1,241.56	-1,280.55	-851.46	0.00	0.00	0.00	
6,000.00	23.20	225.89	5,641.95	-1,268.98	-1,308.83	-870.27	0.00	0.00	0.00	
6,100.00	23.20	225.89	5,733.86	-1,296.40	-1,337.11	-889.07	0.00	0.00	0.00	
6,200.00	23.20	225.89	5,825.78	-1,323.82	-1,365.39	-907.88	0.00	0.00	0.00	
6,300.00	23.20	225.89	5,917.69	-1,351.23	-1,393.67	-926.68	0.00	0.00	0.00	
6,400.00	23.20	225.89	6,009.61	-1,378.65	-1,421.95	-945.48	0.00	0.00	0.00	
6,500.00	23.20	225.89	6,101.52	-1,406.07	-1,450.23	-964.29	0.00	0.00	0.00	
6,600.00	23.20	225.89	6,193.44	-1,433.49	-1,478.51	-983.09	0.00	0.00	0.00	
6,700.00	23.20	225.89	6,285.35	-1,460.91	-1,506.79	-1,001.89	0.00	0.00	0.00	
6,772.53	23.20	225.89	6,352.02	-1,480.80	-1,527.30	-1,015.53	0.00	0.00	0.00	
Start DLS 10.00 TFO -131.23										
6,800.00	21.48	220.24	6,377.43	-1,488.40	-1,534.44	-1,020.07	10.00	-6.25	-20.56	
6,850.00	18.96	207.70	6,424.37	-1,502.59	-1,544.13	-1,025.09	10.00	-5.05	-25.07	
6,900.00	17.49	192.37	6,471.89	-1,517.13	-1,549.52	-1,025.89	10.00	-2.94	-30.67	
6,950.00	17.34	175.61	6,519.63	-1,531.90	-1,550.56	-1,022.47	10.00	-0.29	-33.51	
7,000.00	18.55	159.81	6,567.22	-1,546.81	-1,547.24	-1,014.86	10.00	2.42	-31.60	
7,050.00	20.88	146.65	6,614.31	-1,561.72	-1,539.60	-1,003.10	10.00	4.66	-26.33	
7,100.00	24.00	136.39	6,660.54	-1,576.54	-1,527.67	-987.30	10.00	6.25	-20.52	
7,150.00	27.66	128.53	6,705.55	-1,591.14	-1,511.57	-967.57	10.00	7.31	-15.72	
7,200.00	31.66	122.45	6,749.00	-1,605.42	-1,491.41	-944.07	10.00	8.00	-12.17	
7,250.00	35.88	117.63	6,790.56	-1,619.26	-1,467.34	-916.96	10.00	8.45	-9.63	
7,300.00	40.27	113.72	6,829.92	-1,632.57	-1,439.55	-886.47	10.00	8.77	-7.82	
7,350.00	44.76	110.47	6,866.77	-1,645.23	-1,408.24	-852.81	10.00	8.99	-6.50	
7,400.00	49.33	107.70	6,900.84	-1,657.16	-1,373.67	-816.25	10.00	9.14	-5.54	
7,433.55	52.43	106.05	6,922.00	-1,664.71	-1,348.76	-790.23	10.00	9.24	-4.93	
Nio A										
7,450.00	53.96	105.29	6,931.86	-1,668.26	-1,336.08	-777.06	10.00	9.29	-4.62	
7,500.00	58.63	103.15	6,959.60	-1,678.46	-1,295.77	-735.55	10.00	9.34	-4.29	
7,550.00	63.33	101.21	6,983.85	-1,687.66	-1,253.04	-692.02	10.00	9.41	-3.88	
7,600.00	68.06	99.42	7,004.42	-1,695.80	-1,208.22	-646.81	10.00	9.46	-3.57	
7,650.00	72.81	97.75	7,021.16	-1,702.82	-1,161.65	-600.27	10.00	9.49	-3.34	
7,700.00	77.57	96.17	7,033.94	-1,708.67	-1,113.68	-552.74	10.00	9.52	-3.17	
7,750.00	82.34	94.64	7,042.66	-1,713.30	-1,064.68	-504.60	10.00	9.54	-3.06	
7,800.00	87.11	93.14	7,047.26	-1,716.68	-1,015.02	-456.20	10.00	9.55	-2.99	
7,835.58	90.51	92.09	7,048.00	-1,718.30	-979.49	-421.80	10.00	9.55	-2.96	
Start 7331.64 hold at 7835.58 MD										
7,900.00	90.51	92.09	7,047.43	-1,720.65	-915.12	-359.66	0.00	0.00	0.00	
8,000.00	90.51	92.09	7,046.54	-1,724.29	-815.19	-263.20	0.00	0.00	0.00	
8,100.00	90.51	92.09	7,045.66	-1,727.94	-715.26	-166.74	0.00	0.00	0.00	
8,200.00	90.51	92.09	7,044.77	-1,731.58	-615.33	-70.28	0.00	0.00	0.00	

# Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well REEMAN 6X-HNB-04-06-65
<b>Company:</b>	NICKEL ROAD OPERATING	<b>TVD Reference:</b>	KB 17' @ 4833.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 17' @ 4833.00usft
<b>Site:</b>	SEC 5-T6N-R65W	<b>North Reference:</b>	Grid
<b>Well:</b>	REEMAN 6X-HNB-04-06-65	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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)	
8,300.00	90.51	92.09	7,043.88	-1,735.23	-515.40	26.18	0.00	0.00	0.00	
8,400.00	90.51	92.09	7,043.00	-1,738.87	-415.47	122.64	0.00	0.00	0.00	
8,500.00	90.51	92.09	7,042.11	-1,742.52	-315.54	219.10	0.00	0.00	0.00	
8,600.00	90.51	92.09	7,041.22	-1,746.16	-215.61	315.56	0.00	0.00	0.00	
8,700.00	90.51	92.09	7,040.34	-1,749.81	-115.68	412.02	0.00	0.00	0.00	
8,800.00	90.51	92.09	7,039.45	-1,753.45	-15.75	508.48	0.00	0.00	0.00	
8,900.00	90.51	92.09	7,038.56	-1,757.10	84.18	604.94	0.00	0.00	0.00	
9,000.00	90.51	92.09	7,037.68	-1,760.74	184.11	701.40	0.00	0.00	0.00	
9,100.00	90.51	92.09	7,036.79	-1,764.39	284.03	797.86	0.00	0.00	0.00	
9,200.00	90.51	92.09	7,035.90	-1,768.03	383.96	894.32	0.00	0.00	0.00	
9,300.00	90.51	92.09	7,035.02	-1,771.68	483.89	990.78	0.00	0.00	0.00	
9,400.00	90.51	92.09	7,034.13	-1,775.32	583.82	1,087.24	0.00	0.00	0.00	
9,500.00	90.51	92.09	7,033.24	-1,778.97	683.75	1,183.70	0.00	0.00	0.00	
9,600.00	90.51	92.09	7,032.36	-1,782.61	783.68	1,280.16	0.00	0.00	0.00	
9,700.00	90.51	92.09	7,031.47	-1,786.26	883.61	1,376.62	0.00	0.00	0.00	
9,800.00	90.51	92.09	7,030.58	-1,789.90	983.54	1,473.08	0.00	0.00	0.00	
9,900.00	90.51	92.09	7,029.70	-1,793.55	1,083.47	1,569.54	0.00	0.00	0.00	
10,000.00	90.51	92.09	7,028.81	-1,797.19	1,183.40	1,666.00	0.00	0.00	0.00	
10,100.00	90.51	92.09	7,027.92	-1,800.84	1,283.33	1,762.46	0.00	0.00	0.00	
10,200.00	90.51	92.09	7,027.04	-1,804.48	1,383.26	1,858.92	0.00	0.00	0.00	
10,300.00	90.51	92.09	7,026.15	-1,808.12	1,483.19	1,955.38	0.00	0.00	0.00	
10,400.00	90.51	92.09	7,025.26	-1,811.77	1,583.12	2,051.84	0.00	0.00	0.00	
10,500.00	90.51	92.09	7,024.38	-1,815.41	1,683.05	2,148.30	0.00	0.00	0.00	
10,600.00	90.51	92.09	7,023.49	-1,819.06	1,782.98	2,244.76	0.00	0.00	0.00	
10,700.00	90.51	92.09	7,022.61	-1,822.70	1,882.91	2,341.22	0.00	0.00	0.00	
10,800.00	90.51	92.09	7,021.72	-1,826.35	1,982.84	2,437.68	0.00	0.00	0.00	
10,900.00	90.51	92.09	7,020.83	-1,829.99	2,082.77	2,534.14	0.00	0.00	0.00	
11,000.00	90.51	92.09	7,019.95	-1,833.64	2,182.70	2,630.60	0.00	0.00	0.00	
11,100.00	90.51	92.09	7,019.06	-1,837.28	2,282.63	2,727.06	0.00	0.00	0.00	
11,200.00	90.51	92.09	7,018.17	-1,840.93	2,382.56	2,823.52	0.00	0.00	0.00	
11,300.00	90.51	92.09	7,017.29	-1,844.57	2,482.49	2,919.98	0.00	0.00	0.00	
11,400.00	90.51	92.09	7,016.40	-1,848.22	2,582.42	3,016.44	0.00	0.00	0.00	
11,500.00	90.51	92.09	7,015.51	-1,851.86	2,682.35	3,112.90	0.00	0.00	0.00	
11,600.00	90.51	92.09	7,014.63	-1,855.51	2,782.28	3,209.36	0.00	0.00	0.00	
11,700.00	90.51	92.09	7,013.74	-1,859.15	2,882.21	3,305.82	0.00	0.00	0.00	
11,800.00	90.51	92.09	7,012.85	-1,862.80	2,982.13	3,402.28	0.00	0.00	0.00	
11,900.00	90.51	92.09	7,011.97	-1,866.44	3,082.06	3,498.74	0.00	0.00	0.00	
12,000.00	90.51	92.09	7,011.08	-1,870.09	3,181.99	3,595.20	0.00	0.00	0.00	
12,100.00	90.51	92.09	7,010.19	-1,873.73	3,281.92	3,691.66	0.00	0.00	0.00	
12,200.00	90.51	92.09	7,009.31	-1,877.38	3,381.85	3,788.12	0.00	0.00	0.00	
12,300.00	90.51	92.09	7,008.42	-1,881.02	3,481.78	3,884.58	0.00	0.00	0.00	
12,400.00	90.51	92.09	7,007.53	-1,884.67	3,581.71	3,981.04	0.00	0.00	0.00	
12,500.00	90.51	92.09	7,006.65	-1,888.31	3,681.64	4,077.50	0.00	0.00	0.00	
12,600.00	90.51	92.09	7,005.76	-1,891.96	3,781.57	4,173.96	0.00	0.00	0.00	
12,700.00	90.51	92.09	7,004.87	-1,895.60	3,881.50	4,270.42	0.00	0.00	0.00	
12,800.00	90.51	92.09	7,003.99	-1,899.25	3,981.43	4,366.88	0.00	0.00	0.00	
12,900.00	90.51	92.09	7,003.10	-1,902.89	4,081.36	4,463.34	0.00	0.00	0.00	
13,000.00	90.51	92.09	7,002.21	-1,906.54	4,181.29	4,559.80	0.00	0.00	0.00	
13,100.00	90.51	92.09	7,001.33	-1,910.18	4,281.22	4,656.26	0.00	0.00	0.00	
13,200.00	90.51	92.09	7,000.44	-1,913.83	4,381.15	4,752.72	0.00	0.00	0.00	
13,300.00	90.51	92.09	6,999.55	-1,917.47	4,481.08	4,849.18	0.00	0.00	0.00	
13,400.00	90.51	92.09	6,998.67	-1,921.12	4,581.01	4,945.64	0.00	0.00	0.00	
13,500.00	90.51	92.09	6,997.78	-1,924.76	4,680.94	5,042.10	0.00	0.00	0.00	
13,600.00	90.51	92.09	6,996.89	-1,928.41	4,780.87	5,138.56	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well REEMAN 6X-HNB-04-06-65
<b>Company:</b>	NICKEL ROAD OPERATING	<b>TVD Reference:</b>	KB 17' @ 4833.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 17' @ 4833.00usft
<b>Site:</b>	SEC 5-T6N-R65W	<b>North Reference:</b>	Grid
<b>Well:</b>	REEMAN 6X-HNB-04-06-65	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	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	90.51	92.09	6,996.01	-1,932.05	4,880.80	5,235.02	0.00	0.00	0.00	
13,800.00	90.51	92.09	6,995.12	-1,935.69	4,980.73	5,331.48	0.00	0.00	0.00	
13,900.00	90.51	92.09	6,994.23	-1,939.34	5,080.66	5,427.94	0.00	0.00	0.00	
14,000.00	90.51	92.09	6,993.35	-1,942.98	5,180.59	5,524.40	0.00	0.00	0.00	
14,100.00	90.51	92.09	6,992.46	-1,946.63	5,280.52	5,620.86	0.00	0.00	0.00	
14,200.00	90.51	92.09	6,991.58	-1,950.27	5,380.45	5,717.32	0.00	0.00	0.00	
14,300.00	90.51	92.09	6,990.69	-1,953.92	5,480.38	5,813.78	0.00	0.00	0.00	
14,400.00	90.51	92.09	6,989.80	-1,957.56	5,580.30	5,910.24	0.00	0.00	0.00	
14,500.00	90.51	92.09	6,988.92	-1,961.21	5,680.23	6,006.70	0.00	0.00	0.00	
14,600.00	90.51	92.09	6,988.03	-1,964.85	5,780.16	6,103.16	0.00	0.00	0.00	
14,700.00	90.51	92.09	6,987.14	-1,968.50	5,880.09	6,199.62	0.00	0.00	0.00	
14,800.00	90.51	92.09	6,986.26	-1,972.14	5,980.02	6,296.08	0.00	0.00	0.00	
14,900.00	90.51	92.09	6,985.37	-1,975.79	6,079.95	6,392.54	0.00	0.00	0.00	
15,000.00	90.51	92.09	6,984.48	-1,979.43	6,179.88	6,489.00	0.00	0.00	0.00	
15,100.00	90.51	92.09	6,983.60	-1,983.08	6,279.81	6,585.46	0.00	0.00	0.00	
15,167.22	90.51	92.09	6,983.00	-1,985.53	6,346.99	6,650.30	0.00	0.00	0.00	
TD at 15167.22										

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									
REEMAN 6X-HNB-PBHI	0.00	0.00	6,983.00	-1,985.53	6,346.99	1,430,754.49	3,231,093.50	40.512849°N	104.668856°W
- plan hits target center									
- Point									
REEMAN 6X-HNB-LP	0.00	0.00	7,048.00	-1,718.30	-979.49	1,431,021.72	3,223,767.02	40.513768°N	104.695196°W
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.00	0.00	Laramie-Fox Hills				
299.00	299.00	Upper Pierre Aquifer				
1,315.78	1,313.00	Pierre Shale				
4,751.09	4,494.00	Sussex				
5,334.23	5,030.00	Shannon				
5,365.78	5,059.00	Pierre Shale				
7,433.55	6,922.00	Nio A				

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well REEMAN 6X-HNB-04-06-65
<b>Company:</b>	NICKEL ROAD OPERATING	<b>TVD Reference:</b>	KB 17' @ 4833.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 17' @ 4833.00usft
<b>Site:</b>	SEC 5-T6N-R65W	<b>North Reference:</b>	Grid
<b>Well:</b>	REEMAN 6X-HNB-04-06-65	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OWB		
<b>Design:</b>	PROPOSAL 1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
800.00	800.00	0.00	0.00	Start Build 2.00
1,959.86	1,928.43	-161.22	-166.28	Start 4812.67 hold at 1959.86 MD
6,772.53	6,352.02	-1,480.80	-1,527.30	Start DLS 10.00 TFO -131.23
7,835.58	7,048.00	-1,718.30	-979.49	Start 7331.64 hold at 7835.58 MD
15,167.22	6,983.00	-1,985.53	6,346.99	TD at 15167.22