

NICKEL ROAD OPERATING

WELD COUNTY

SEC 5-T6N-R65W

REEMAN 2X-HC-04-06-65

OWB

Plan: PROPOSAL 1

Standard Planning Report

07 January, 2022



WELL DETAILS: REEMAN 2X-HC-04-06-65

+N/-S	+E/-W	Northing	Easting	4816.00 Latitude	Longitude	Slot
0.00	0.00	1432827.63	3224725.97	40.518701°N	104.691688°W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1216.34	16.33	292.82	1205.34	44.81	-106.48	2.00	292.82	-102.36	
4	6741.05	16.33	292.82	6507.26	647.26	-1537.96	0.00	0.00	-1478.52	
5	7795.31	90.26	91.40	7226.00	710.99	-980.68	10.00	157.73	-917.87	REEMAN 2X-HC-LP
6	15129.14	90.26	91.40	7193.00	532.34	6350.89	0.00	0.00	6373.16	REEMAN 2X-HC-PBHL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VFace	Departure	Annotation
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	Start Build 2.00
1216.34	16.33	292.82	1205.34	44.81	-106.48	-102.36	115.53	Start 5524.71 hold at 1216.34 MD
6741.05	16.33	292.82	6507.26	647.26	-1537.96	-1478.52	1668.61	Start DLS 10.00 TFO 157.73
7795.31	90.26	91.40	7226.00	710.99	-980.68	-917.87	2281.83	Start 7333.82 hold at 7795.31 MD
15129.14	90.26	91.40	7193.00	532.34	6350.89	6373.16	9615.58	TD at 15129.14

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
REEMAN 2X-HC-PBHL	7193.00	532.34	6350.89	1433359.97	3231076.86	40.520001°N	104.668828°W	Point
- plan hits target center								
REEMAN 2X-HC-LP	7226.00	710.99	-980.68	1433538.62	3223745.29	40.520677°N	104.695192°W	Point
- plan hits target center								

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
0.00	0.00	Laramie-Fox Hills
296.00	296.00	Upper Pierre Aquifer
1310.00	1325.40	Pierre Shale
4491.00	4640.07	Sussex
5027.00	5198.59	Shannon
5056.00	5228.81	Pierre Shale
6919.00	7167.31	Nio A
7192.00	7593.76	Fort Hays
7216.00	7685.18	Codell

PROJECT DETAILS: WELD COUNTY

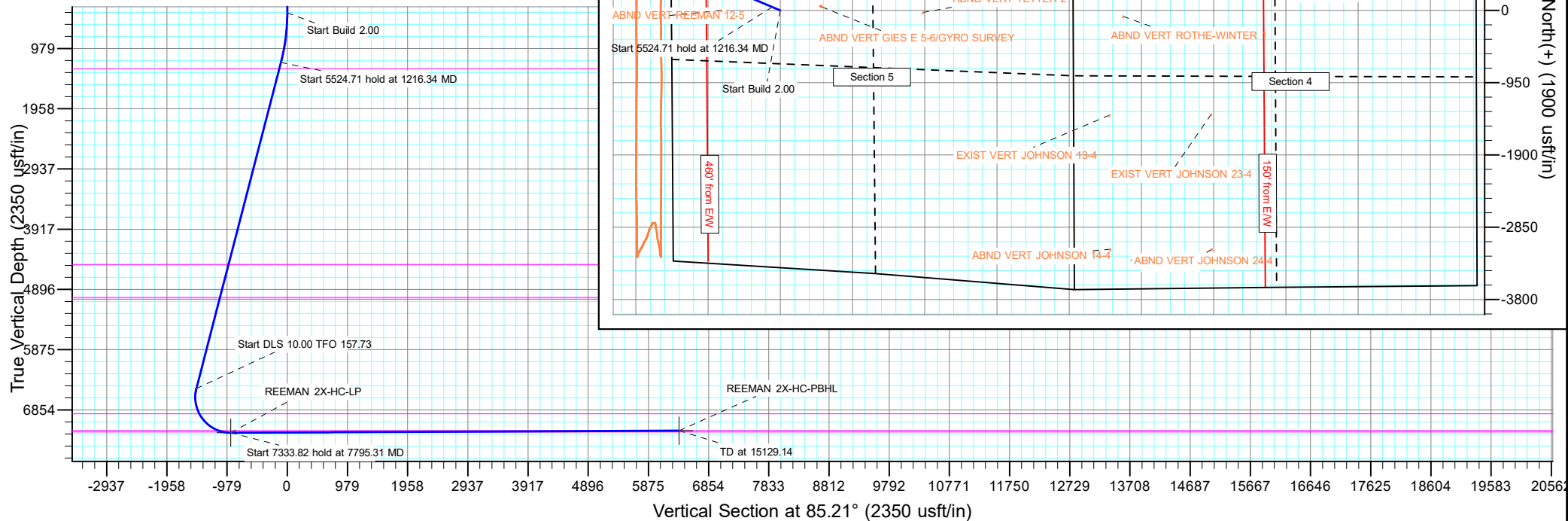
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone

System Datum: Mean Sea Level

SHL:
1979' FNL, 1434' FWL
Sec 5-T6N-R65W

LP:
1287' FNL, 460' FWL
Sec 5-T6N-R65W

BHL:
1332' FNL, 2503' FWL
Sec 4-T6N-R65W



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well REEMAN 2X-HC-04-06-65
Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 17' @ 4833.00usft
Project:	WELD COUNTY	MD Reference:	KB 17' @ 4833.00usft
Site:	SEC 5-T6N-R65W	North Reference:	Grid
Well:	REEMAN 2X-HC-04-06-65	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Project	WELD COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	SEC 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 2X-HC-04-06-65			
Well Position	+N/-S	0.00 usft	Northing:	1,432,827.63 usft
	+E/-W	0.00 usft	Easting:	3,224,725.97 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level: 4,816.00 usft
Grid Convergence:	0.52 °			

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	1/7/2022	7.76	66.73	51,963.76447429

Design	PROPOSAL 1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	85.21

Plan Survey Tool Program	Date	1/7/2022		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	15,129.14 PROPOSAL 1 (OWB)	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,216.34	16.33	292.82	1,205.34	44.81	-106.48	2.00	2.00	0.00	292.82	
6,741.05	16.33	292.82	6,507.26	647.26	-1,537.96	0.00	0.00	0.00	0.00	
7,795.31	90.26	91.40	7,226.00	710.99	-980.68	10.00	7.01	15.04	157.73	REEMAN 2X-HC-LP
15,129.14	90.26	91.40	7,193.00	532.34	6,350.89	0.00	0.00	0.00	0.00	REEMAN 2X-HC-PB

Planning Report

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Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 17' @ 4833.00usft
Project:	WELD COUNTY	MD Reference:	KB 17' @ 4833.00usft
Site:	SEC 5-T6N-R65W	North Reference:	Grid
Well:	REEMAN 2X-HC-04-06-65	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Laramie-Fox Hills									
296.00	0.00	0.00	296.00	0.00	0.00	0.00	0.00	0.00	0.00
Upper Pierre Aquifer									
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
500.00	2.00	292.82	499.98	0.68	-1.61	-1.55	2.00	2.00	0.00
600.00	4.00	292.82	599.84	2.71	-6.43	-6.18	2.00	2.00	0.00
700.00	6.00	292.82	699.45	6.09	-14.46	-13.91	2.00	2.00	0.00
800.00	8.00	292.82	798.70	10.81	-25.70	-24.70	2.00	2.00	0.00
900.00	10.00	292.82	897.47	16.88	-40.11	-38.56	2.00	2.00	0.00
1,000.00	12.00	292.82	995.62	24.28	-57.70	-55.47	2.00	2.00	0.00
1,100.00	14.00	292.82	1,093.06	33.01	-78.43	-75.40	2.00	2.00	0.00
1,200.00	16.00	292.82	1,189.64	43.05	-102.29	-98.33	2.00	2.00	0.00
1,216.34	16.33	292.82	1,205.34	44.81	-106.48	-102.36	2.00	2.00	0.00
Start 5524.71 hold at 1216.34 MD									
1,300.00	16.33	292.82	1,285.62	53.94	-128.16	-123.20	0.00	0.00	0.00
1,325.40	16.33	292.82	1,310.00	56.71	-134.74	-129.53	0.00	0.00	0.00
Pierre Shale									
1,400.00	16.33	292.82	1,381.59	64.84	-154.07	-148.11	0.00	0.00	0.00
1,500.00	16.33	292.82	1,477.56	75.75	-179.98	-173.02	0.00	0.00	0.00
1,600.00	16.33	292.82	1,573.53	86.65	-205.89	-197.93	0.00	0.00	0.00
1,700.00	16.33	292.82	1,669.49	97.55	-231.80	-222.84	0.00	0.00	0.00
1,800.00	16.33	292.82	1,765.46	108.46	-257.71	-247.75	0.00	0.00	0.00
1,900.00	16.33	292.82	1,861.43	119.36	-283.62	-272.66	0.00	0.00	0.00
2,000.00	16.33	292.82	1,957.39	130.27	-309.53	-297.57	0.00	0.00	0.00
2,100.00	16.33	292.82	2,053.36	141.17	-335.44	-322.48	0.00	0.00	0.00
2,200.00	16.33	292.82	2,149.33	152.08	-361.35	-347.39	0.00	0.00	0.00
2,300.00	16.33	292.82	2,245.30	162.98	-387.26	-372.29	0.00	0.00	0.00
2,400.00	16.33	292.82	2,341.26	173.89	-413.17	-397.20	0.00	0.00	0.00
2,500.00	16.33	292.82	2,437.23	184.79	-439.08	-422.11	0.00	0.00	0.00
2,600.00	16.33	292.82	2,533.20	195.70	-464.99	-447.02	0.00	0.00	0.00
2,700.00	16.33	292.82	2,629.17	206.60	-490.90	-471.93	0.00	0.00	0.00
2,800.00	16.33	292.82	2,725.13	217.51	-516.81	-496.84	0.00	0.00	0.00
2,900.00	16.33	292.82	2,821.10	228.41	-542.72	-521.75	0.00	0.00	0.00
3,000.00	16.33	292.82	2,917.07	239.32	-568.63	-546.66	0.00	0.00	0.00
3,100.00	16.33	292.82	3,013.04	250.22	-594.54	-571.57	0.00	0.00	0.00
3,200.00	16.33	292.82	3,109.00	261.12	-620.46	-596.48	0.00	0.00	0.00
3,300.00	16.33	292.82	3,204.97	272.03	-646.37	-621.38	0.00	0.00	0.00
3,400.00	16.33	292.82	3,300.94	282.93	-672.28	-646.29	0.00	0.00	0.00
3,500.00	16.33	292.82	3,396.91	293.84	-698.19	-671.20	0.00	0.00	0.00
3,600.00	16.33	292.82	3,492.87	304.74	-724.10	-696.11	0.00	0.00	0.00
3,700.00	16.33	292.82	3,588.84	315.65	-750.01	-721.02	0.00	0.00	0.00
3,800.00	16.33	292.82	3,684.81	326.55	-775.92	-745.93	0.00	0.00	0.00
3,900.00	16.33	292.82	3,780.78	337.46	-801.83	-770.84	0.00	0.00	0.00
4,000.00	16.33	292.82	3,876.74	348.36	-827.74	-795.75	0.00	0.00	0.00
4,100.00	16.33	292.82	3,972.71	359.27	-853.65	-820.66	0.00	0.00	0.00
4,200.00	16.33	292.82	4,068.68	370.17	-879.56	-845.57	0.00	0.00	0.00
4,300.00	16.33	292.82	4,164.64	381.08	-905.47	-870.47	0.00	0.00	0.00
4,400.00	16.33	292.82	4,260.61	391.98	-931.38	-895.38	0.00	0.00	0.00
4,500.00	16.33	292.82	4,356.58	402.89	-957.29	-920.29	0.00	0.00	0.00
4,600.00	16.33	292.82	4,452.55	413.79	-983.20	-945.20	0.00	0.00	0.00
4,640.07	16.33	292.82	4,491.00	418.16	-993.58	-955.18	0.00	0.00	0.00

Planning Report

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Project:	WELD COUNTY	MD Reference:	KB 17' @ 4833.00usft
Site:	SEC 5-T6N-R65W	North Reference:	Grid
Well:	REEMAN 2X-HC-04-06-65	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
Sussex										
4,700.00	16.33	292.82	4,548.51	424.69	-1,009.11	-970.11	0.00	0.00	0.00	
4,800.00	16.33	292.82	4,644.48	435.60	-1,035.02	-995.02	0.00	0.00	0.00	
4,900.00	16.33	292.82	4,740.45	446.50	-1,060.93	-1,019.93	0.00	0.00	0.00	
5,000.00	16.33	292.82	4,836.42	457.41	-1,086.84	-1,044.84	0.00	0.00	0.00	
5,100.00	16.33	292.82	4,932.38	468.31	-1,112.75	-1,069.75	0.00	0.00	0.00	
5,198.59	16.33	292.82	5,027.00	479.06	-1,138.30	-1,094.31	0.00	0.00	0.00	
Shannon										
5,200.00	16.33	292.82	5,028.35	479.22	-1,138.66	-1,094.66	0.00	0.00	0.00	
5,228.81	16.33	292.82	5,056.00	482.36	-1,146.13	-1,101.83	0.00	0.00	0.00	
Pierre Shale										
5,300.00	16.33	292.82	5,124.32	490.12	-1,164.57	-1,119.57	0.00	0.00	0.00	
5,400.00	16.33	292.82	5,220.29	501.03	-1,190.48	-1,144.47	0.00	0.00	0.00	
5,500.00	16.33	292.82	5,316.25	511.93	-1,216.40	-1,169.38	0.00	0.00	0.00	
5,600.00	16.33	292.82	5,412.22	522.84	-1,242.31	-1,194.29	0.00	0.00	0.00	
5,700.00	16.33	292.82	5,508.19	533.74	-1,268.22	-1,219.20	0.00	0.00	0.00	
5,800.00	16.33	292.82	5,604.16	544.65	-1,294.13	-1,244.11	0.00	0.00	0.00	
5,900.00	16.33	292.82	5,700.12	555.55	-1,320.04	-1,269.02	0.00	0.00	0.00	
6,000.00	16.33	292.82	5,796.09	566.45	-1,345.95	-1,293.93	0.00	0.00	0.00	
6,100.00	16.33	292.82	5,892.06	577.36	-1,371.86	-1,318.84	0.00	0.00	0.00	
6,200.00	16.33	292.82	5,988.02	588.26	-1,397.77	-1,343.75	0.00	0.00	0.00	
6,300.00	16.33	292.82	6,083.99	599.17	-1,423.68	-1,368.66	0.00	0.00	0.00	
6,400.00	16.33	292.82	6,179.96	610.07	-1,449.59	-1,393.56	0.00	0.00	0.00	
6,500.00	16.33	292.82	6,275.93	620.98	-1,475.50	-1,418.47	0.00	0.00	0.00	
6,600.00	16.33	292.82	6,371.89	631.88	-1,501.41	-1,443.38	0.00	0.00	0.00	
6,700.00	16.33	292.82	6,467.86	642.79	-1,527.32	-1,468.29	0.00	0.00	0.00	
6,741.05	16.33	292.82	6,507.26	647.26	-1,537.96	-1,478.52	0.00	0.00	0.00	
Start DLS 10.00 TFO 157.73										
6,750.00	15.50	294.09	6,515.86	648.24	-1,540.21	-1,480.68	10.00	-9.21	14.18	
6,800.00	11.09	304.50	6,564.52	653.70	-1,550.28	-1,490.26	10.00	-8.82	20.81	
6,850.00	7.46	326.33	6,613.87	659.12	-1,556.04	-1,495.55	10.00	-7.27	43.67	
6,900.00	6.16	8.17	6,663.55	664.48	-1,557.46	-1,496.52	10.00	-2.59	83.67	
6,950.00	8.37	44.64	6,713.17	669.73	-1,554.52	-1,493.15	10.00	4.43	72.95	
7,000.00	12.33	62.02	6,762.36	674.83	-1,547.25	-1,485.47	10.00	7.92	34.75	
7,050.00	16.85	70.65	6,810.74	679.74	-1,535.69	-1,473.54	10.00	9.03	17.26	
7,100.00	21.57	75.64	6,857.94	684.42	-1,519.94	-1,457.46	10.00	9.45	10.00	
7,150.00	26.40	78.90	6,903.61	688.84	-1,500.11	-1,437.33	10.00	9.65	6.51	
7,167.31	28.08	79.78	6,919.00	690.30	-1,492.33	-1,429.45	10.00	9.73	5.09	
Nio A										
7,200.00	31.27	81.21	6,947.40	692.97	-1,476.37	-1,413.32	10.00	9.77	4.36	
7,250.00	36.18	82.94	6,988.98	696.77	-1,448.88	-1,385.61	10.00	9.81	3.47	
7,300.00	41.11	84.31	7,028.02	700.21	-1,417.86	-1,354.41	10.00	9.85	2.74	
7,350.00	46.04	85.44	7,064.23	703.27	-1,383.54	-1,319.96	10.00	9.88	2.25	
7,400.00	50.99	86.39	7,097.34	705.93	-1,346.19	-1,282.52	10.00	9.90	1.90	
7,450.00	55.95	87.22	7,127.09	708.16	-1,306.08	-1,242.37	10.00	9.91	1.65	
7,500.00	60.91	87.95	7,153.26	709.95	-1,263.53	-1,199.82	10.00	9.92	1.47	
7,550.00	65.87	88.62	7,175.65	711.28	-1,218.86	-1,155.19	10.00	9.93	1.33	
7,593.76	70.22	89.16	7,192.00	712.06	-1,178.30	-1,114.70	10.00	9.93	1.24	
Fort Hays										
7,600.00	70.84	89.23	7,194.08	712.15	-1,172.41	-1,108.83	10.00	9.94	1.20	
7,650.00	75.81	89.82	7,208.42	712.54	-1,124.53	-1,061.08	10.00	9.94	1.16	
7,685.18	79.31	90.21	7,216.00	712.53	-1,090.18	-1,026.86	10.00	9.94	1.12	
Codell										

Planning Report

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Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 17' @ 4833.00usft
Project:	WELD COUNTY	MD Reference:	KB 17' @ 4833.00usft
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Well:	REEMAN 2X-HC-04-06-65	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,700.00	80.78	90.37	7,218.56	712.46	-1,075.59	-1,012.32	10.00	9.94	1.10
7,750.00	85.75	90.91	7,224.42	711.90	-1,025.95	-962.90	10.00	9.94	1.08
7,795.31	90.26	91.40	7,226.00	710.99	-980.68	-917.87	10.00	9.94	1.07
Start 7333.82 hold at 7795.31 MD									
7,800.00	90.26	91.40	7,225.98	710.87	-976.00	-913.21	0.00	0.00	0.00
7,900.00	90.26	91.40	7,225.53	708.44	-876.03	-813.79	0.00	0.00	0.00
8,000.00	90.26	91.40	7,225.08	706.00	-776.06	-714.38	0.00	0.00	0.00
8,100.00	90.26	91.40	7,224.63	703.57	-676.09	-614.96	0.00	0.00	0.00
8,200.00	90.26	91.40	7,224.18	701.13	-576.12	-515.54	0.00	0.00	0.00
8,300.00	90.26	91.40	7,223.73	698.69	-476.15	-416.13	0.00	0.00	0.00
8,400.00	90.26	91.40	7,223.28	696.26	-376.18	-316.71	0.00	0.00	0.00
8,500.00	90.26	91.40	7,222.83	693.82	-276.21	-217.30	0.00	0.00	0.00
8,600.00	90.26	91.40	7,222.38	691.39	-176.25	-117.88	0.00	0.00	0.00
8,700.00	90.26	91.40	7,221.93	688.95	-76.28	-18.46	0.00	0.00	0.00
8,800.00	90.26	91.40	7,221.48	686.51	23.69	80.95	0.00	0.00	0.00
8,900.00	90.26	91.40	7,221.03	684.08	123.66	180.37	0.00	0.00	0.00
9,000.00	90.26	91.40	7,220.58	681.64	223.63	279.79	0.00	0.00	0.00
9,100.00	90.26	91.40	7,220.13	679.21	323.60	379.20	0.00	0.00	0.00
9,200.00	90.26	91.40	7,219.68	676.77	423.57	478.62	0.00	0.00	0.00
9,300.00	90.26	91.40	7,219.23	674.34	523.54	578.04	0.00	0.00	0.00
9,400.00	90.26	91.40	7,218.78	671.90	623.51	677.45	0.00	0.00	0.00
9,500.00	90.26	91.40	7,218.33	669.46	723.48	776.87	0.00	0.00	0.00
9,600.00	90.26	91.40	7,217.88	667.03	823.45	876.29	0.00	0.00	0.00
9,700.00	90.26	91.40	7,217.43	664.59	923.42	975.70	0.00	0.00	0.00
9,800.00	90.26	91.40	7,216.98	662.16	1,023.39	1,075.12	0.00	0.00	0.00
9,900.00	90.26	91.40	7,216.53	659.72	1,123.36	1,174.54	0.00	0.00	0.00
10,000.00	90.26	91.40	7,216.08	657.28	1,223.33	1,273.95	0.00	0.00	0.00
10,100.00	90.26	91.40	7,215.63	654.85	1,323.29	1,373.37	0.00	0.00	0.00
10,200.00	90.26	91.40	7,215.18	652.41	1,423.26	1,472.78	0.00	0.00	0.00
10,300.00	90.26	91.40	7,214.73	649.98	1,523.23	1,572.20	0.00	0.00	0.00
10,400.00	90.26	91.40	7,214.28	647.54	1,623.20	1,671.62	0.00	0.00	0.00
10,500.00	90.26	91.40	7,213.83	645.10	1,723.17	1,771.03	0.00	0.00	0.00
10,600.00	90.26	91.40	7,213.38	642.67	1,823.14	1,870.45	0.00	0.00	0.00
10,700.00	90.26	91.40	7,212.93	640.23	1,923.11	1,969.87	0.00	0.00	0.00
10,800.00	90.26	91.40	7,212.48	637.80	2,023.08	2,069.28	0.00	0.00	0.00
10,900.00	90.26	91.40	7,212.03	635.36	2,123.05	2,168.70	0.00	0.00	0.00
11,000.00	90.26	91.40	7,211.58	632.92	2,223.02	2,268.12	0.00	0.00	0.00
11,100.00	90.26	91.40	7,211.13	630.49	2,322.99	2,367.53	0.00	0.00	0.00
11,200.00	90.26	91.40	7,210.68	628.05	2,422.96	2,466.95	0.00	0.00	0.00
11,300.00	90.26	91.40	7,210.23	625.62	2,522.93	2,566.37	0.00	0.00	0.00
11,400.00	90.26	91.40	7,209.78	623.18	2,622.90	2,665.78	0.00	0.00	0.00
11,500.00	90.26	91.40	7,209.33	620.74	2,722.86	2,765.20	0.00	0.00	0.00
11,600.00	90.26	91.40	7,208.88	618.31	2,822.83	2,864.62	0.00	0.00	0.00
11,700.00	90.26	91.40	7,208.43	615.87	2,922.80	2,964.03	0.00	0.00	0.00
11,800.00	90.26	91.40	7,207.98	613.44	3,022.77	3,063.45	0.00	0.00	0.00
11,900.00	90.26	91.40	7,207.53	611.00	3,122.74	3,162.87	0.00	0.00	0.00
12,000.00	90.26	91.40	7,207.08	608.56	3,222.71	3,262.28	0.00	0.00	0.00
12,100.00	90.26	91.40	7,206.63	606.13	3,322.68	3,361.70	0.00	0.00	0.00
12,200.00	90.26	91.40	7,206.18	603.69	3,422.65	3,461.11	0.00	0.00	0.00
12,300.00	90.26	91.40	7,205.73	601.26	3,522.62	3,560.53	0.00	0.00	0.00
12,400.00	90.26	91.40	7,205.28	598.82	3,622.59	3,659.95	0.00	0.00	0.00
12,500.00	90.26	91.40	7,204.83	596.38	3,722.56	3,759.36	0.00	0.00	0.00
12,600.00	90.26	91.40	7,204.38	593.95	3,822.53	3,858.78	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well REEMAN 2X-HC-04-06-65
Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 17' @ 4833.00usft
Project:	WELD COUNTY	MD Reference:	KB 17' @ 4833.00usft
Site:	SEC 5-T6N-R65W	North Reference:	Grid
Well:	REEMAN 2X-HC-04-06-65	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
12,700.00	90.26	91.40	7,203.93	591.51	3,922.50	3,958.20	0.00	0.00	0.00	
12,800.00	90.26	91.40	7,203.48	589.08	4,022.47	4,057.61	0.00	0.00	0.00	
12,900.00	90.26	91.40	7,203.03	586.64	4,122.44	4,157.03	0.00	0.00	0.00	
13,000.00	90.26	91.40	7,202.58	584.20	4,222.40	4,256.45	0.00	0.00	0.00	
13,100.00	90.26	91.40	7,202.13	581.77	4,322.37	4,355.86	0.00	0.00	0.00	
13,200.00	90.26	91.40	7,201.68	579.33	4,422.34	4,455.28	0.00	0.00	0.00	
13,300.00	90.26	91.40	7,201.23	576.90	4,522.31	4,554.70	0.00	0.00	0.00	
13,400.00	90.26	91.40	7,200.78	574.46	4,622.28	4,654.11	0.00	0.00	0.00	
13,500.00	90.26	91.40	7,200.33	572.02	4,722.25	4,753.53	0.00	0.00	0.00	
13,600.00	90.26	91.40	7,199.88	569.59	4,822.22	4,852.95	0.00	0.00	0.00	
13,700.00	90.26	91.40	7,199.43	567.15	4,922.19	4,952.36	0.00	0.00	0.00	
13,800.00	90.26	91.40	7,198.98	564.72	5,022.16	5,051.78	0.00	0.00	0.00	
13,900.00	90.26	91.40	7,198.53	562.28	5,122.13	5,151.20	0.00	0.00	0.00	
14,000.00	90.26	91.40	7,198.08	559.84	5,222.10	5,250.61	0.00	0.00	0.00	
14,100.00	90.26	91.40	7,197.63	557.41	5,322.07	5,350.03	0.00	0.00	0.00	
14,200.00	90.26	91.40	7,197.18	554.97	5,422.04	5,449.44	0.00	0.00	0.00	
14,300.00	90.26	91.40	7,196.73	552.54	5,522.01	5,548.86	0.00	0.00	0.00	
14,400.00	90.26	91.40	7,196.28	550.10	5,621.98	5,648.28	0.00	0.00	0.00	
14,500.00	90.26	91.40	7,195.83	547.66	5,721.94	5,747.69	0.00	0.00	0.00	
14,600.00	90.26	91.40	7,195.38	545.23	5,821.91	5,847.11	0.00	0.00	0.00	
14,700.00	90.26	91.40	7,194.93	542.79	5,921.88	5,946.53	0.00	0.00	0.00	
14,800.00	90.26	91.40	7,194.48	540.36	6,021.85	6,045.94	0.00	0.00	0.00	
14,900.00	90.26	91.40	7,194.03	537.92	6,121.82	6,145.36	0.00	0.00	0.00	
15,000.00	90.26	91.40	7,193.58	535.48	6,221.79	6,244.78	0.00	0.00	0.00	
15,100.00	90.26	91.40	7,193.13	533.05	6,321.76	6,344.19	0.00	0.00	0.00	
15,129.14	90.26	91.40	7,193.00	532.34	6,350.89	6,373.16	0.00	0.00	0.00	
TD at 15129.14										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
REEMAN 2X-HC-PBHL	0.00	0.00	7,193.00	532.34	6,350.89	1,433,359.97	3,231,076.86	40.520001°N	104.668828°W
- plan hits target center									
- Point									
REEMAN 2X-HC-LP	0.00	0.00	7,226.00	710.99	-980.68	1,433,538.62	3,223,745.29	40.520677°N	104.695192°W
- plan hits target center									
- Point									

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well REEMAN 2X-HC-04-06-65
Company:	NICKEL ROAD OPERATING	TVD Reference:	KB 17' @ 4833.00usft
Project:	WELD COUNTY	MD Reference:	KB 17' @ 4833.00usft
Site:	SEC 5-T6N-R65W	North Reference:	Grid
Well:	REEMAN 2X-HC-04-06-65	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
0.00	0.00	Laramie-Fox Hills				
296.00	296.00	Upper Pierre Aquifer				
1,325.40	1,310.00	Pierre Shale				
4,640.07	4,491.00	Sussex				
5,198.59	5,027.00	Shannon				
5,228.81	5,056.00	Pierre Shale				
7,167.31	6,919.00	Nio A				
7,593.76	7,192.00	Fort Hays				
7,685.18	7,216.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
400.00	400.00	0.00	0.00	Start Build 2.00	
1,216.34	1,205.34	44.81	-106.48	Start 5524.71 hold at 1216.34 MD	
6,741.05	6,507.26	647.26	-1,537.96	Start DLS 10.00 TFO 157.73	
7,795.31	7,226.00	710.99	-980.68	Start 7333.82 hold at 7795.31 MD	
15,129.14	7,193.00	532.34	6,350.89	TD at 15129.14	