

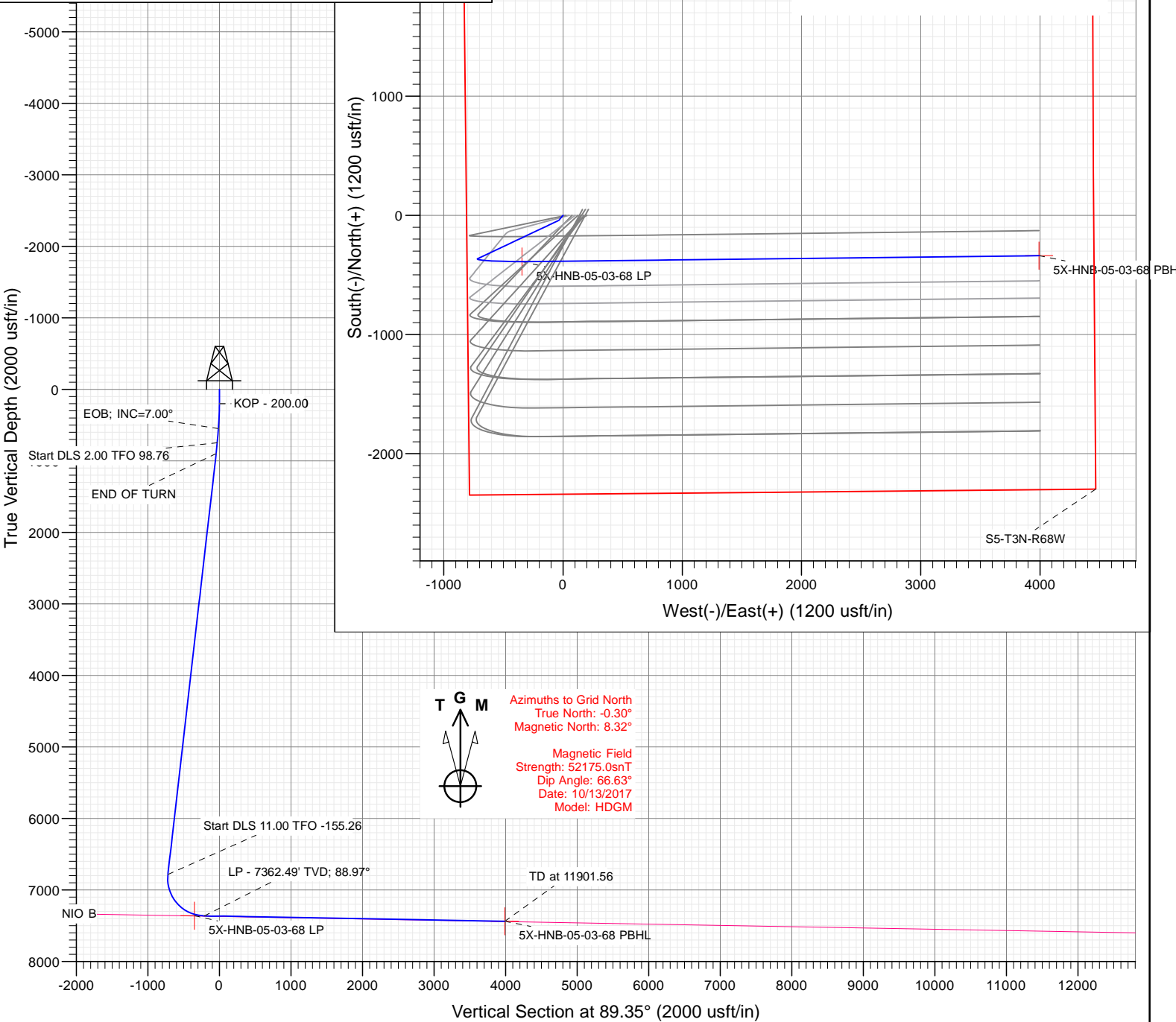
Nickel Road Operating LLC

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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	550.00	7.00	220.00	549.13	-16.36	-13.73	2.00	220.00	-13.91	
4	750.00	7.00	220.00	747.64	-35.03	-29.39	0.00	0.00	-29.79	
5	901.74	7.19	244.71	898.25	-46.17	-43.93	2.00	98.76	-44.45	
6	6833.35	7.19	244.71	6783.22	-363.28	-715.16	0.00	0.00	-719.23	
7	7701.56	88.97	89.34	7362.49	-387.33	-206.71	11.00	-155.26	-211.09	
8	11901.56	88.97	89.34	7438.00	-338.96	3992.33	0.00	0.00	3988.23	5X-HNB-05-03-68 PBHL

PLAN #2 5X-HNB-05-03-68 20' KB @ 5200.00usft Ground Level @ 5200.00 North American Datum, 1983 Well 5X-HNB-05-03-68, Grid North									
Type	Target	Origin	Slot	N/S	E/W	From TVD			
5X-HNB-05-03-68 LP	No Target (Freehand)	89.35	0.00	0.00	0.00	0.00			
5X-HNB-05-03-68 PBHL		7360.00	+N/-S	+E/-W	Latitude	Longitude			
		7438.00	-387.96	-345.46	40.252948	-105.034891			
			-338.96	3992.33	40.253019	-105.019340			

Project: WELD COUNTY, CO
Site: S5-T3N-R68W
Well: 5X-HNB-05-03-68
Wellbore: OH
Design: PLAN #2



WELL DETAILS: 5X-HNB-05-03-68

+N/-S	+E/-W	Northing	Easting	5200.00	Latitude	Longitude
0.00	0.00	1335719.02	3130163.52		40.254008	-105.033646

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 5X-HNB-05-03-68
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S5-T3N-R68W	North Reference:	Grid
Well:	5X-HNB-05-03-68	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Project	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	S5-T3N-R68W				
Site Position:		Northing:	1,335,718.93 usft	Latitude:	40.254007
From:	Lat/Long	Easting:	3,130,213.48 usft	Longitude:	-105.033467
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.30 °

Well	5X-HNB-05-03-68					
Well Position	+N/-S	0.00 usft	Northing:	1,335,719.02 usft	Latitude:	40.254008
	+E/-W	0.00 usft	Easting:	3,130,163.52 usft	Longitude:	-105.033646
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,200.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	10/13/2017	8.62	66.63	52,175.00000000

Design	PLAN #2			
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	89.35

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
550.00	7.00	220.00	549.13	-16.36	-13.73	2.00	2.00	0.00	220.00	
750.00	7.00	220.00	747.64	-35.03	-29.39	0.00	0.00	0.00	0.00	
901.74	7.19	244.71	898.25	-46.17	-43.93	2.00	0.13	16.29	98.76	
6,833.35	7.19	244.71	6,783.22	-363.28	-715.16	0.00	0.00	0.00	0.00	
7,701.56	88.97	89.34	7,362.49	-387.33	-206.71	11.00	9.42	-17.90	-155.26	
11,901.56	88.97	89.34	7,438.00	-338.96	3,992.33	0.00	0.00	0.00	0.00	5X-HNB-05-03-68 PB

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 5X-HNB-05-03-68
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S5-T3N-R68W	North Reference:	Grid
Well:	5X-HNB-05-03-68	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	KOP - 200.00
300.00	2.00	220.00	299.98	-1.34	-1.12	-1.14	2.00	2.00	
400.00	4.00	220.00	399.84	-5.35	-4.49	-4.55	2.00	2.00	
500.00	6.00	220.00	499.45	-12.02	-10.09	-10.22	2.00	2.00	
550.00	7.00	220.00	549.13	-16.36	-13.73	-13.91	2.00	2.00	EOB; INC=7.00°
600.00	7.00	220.00	598.76	-21.03	-17.64	-17.88	0.00	0.00	
700.00	7.00	220.00	698.01	-30.36	-25.48	-25.82	0.00	0.00	
750.00	7.00	220.00	747.64	-35.03	-29.39	-29.79	0.00	0.00	Start DLS 2.00 TFO 98.76
800.00	6.92	228.23	797.27	-39.37	-33.60	-34.04	2.00	-0.16	
900.00	7.18	244.45	896.53	-46.08	-43.73	-44.25	2.00	0.26	
901.74	7.19	244.71	898.25	-46.17	-43.93	-44.45	2.00	0.54	END OF TURN
1,000.00	7.19	244.71	995.74	-51.42	-55.04	-55.62	0.00	0.00	
1,100.00	7.19	244.71	1,094.95	-56.77	-66.36	-67.00	0.00	0.00	
1,200.00	7.19	244.71	1,194.17	-62.12	-77.68	-78.38	0.00	0.00	
1,300.00	7.19	244.71	1,293.38	-67.46	-88.99	-89.75	0.00	0.00	
1,400.00	7.19	244.71	1,392.59	-72.81	-100.31	-101.13	0.00	0.00	
1,500.00	7.19	244.71	1,491.81	-78.15	-111.63	-112.51	0.00	0.00	
1,600.00	7.19	244.71	1,591.02	-83.50	-122.94	-123.88	0.00	0.00	
1,700.00	7.19	244.71	1,690.24	-88.85	-134.26	-135.26	0.00	0.00	
1,800.00	7.19	244.71	1,789.45	-94.19	-145.57	-146.63	0.00	0.00	
1,900.00	7.19	244.71	1,888.66	-99.54	-156.89	-158.01	0.00	0.00	
2,000.00	7.19	244.71	1,987.88	-104.88	-168.21	-169.39	0.00	0.00	
2,100.00	7.19	244.71	2,087.09	-110.23	-179.52	-180.76	0.00	0.00	
2,200.00	7.19	244.71	2,186.30	-115.58	-190.84	-192.14	0.00	0.00	
2,300.00	7.19	244.71	2,285.52	-120.92	-202.16	-203.51	0.00	0.00	
2,400.00	7.19	244.71	2,384.73	-126.27	-213.47	-214.89	0.00	0.00	
2,500.00	7.19	244.71	2,483.95	-131.61	-224.79	-226.27	0.00	0.00	
2,600.00	7.19	244.71	2,583.16	-136.96	-236.10	-237.64	0.00	0.00	
2,700.00	7.19	244.71	2,682.37	-142.31	-247.42	-249.02	0.00	0.00	
2,800.00	7.19	244.71	2,781.59	-147.65	-258.74	-260.39	0.00	0.00	
2,900.00	7.19	244.71	2,880.80	-153.00	-270.05	-271.77	0.00	0.00	
3,000.00	7.19	244.71	2,980.01	-158.34	-281.37	-283.15	0.00	0.00	
3,100.00	7.19	244.71	3,079.23	-163.69	-292.68	-294.52	0.00	0.00	
3,200.00	7.19	244.71	3,178.44	-169.04	-304.00	-305.90	0.00	0.00	
3,300.00	7.19	244.71	3,277.66	-174.38	-315.32	-317.28	0.00	0.00	
3,400.00	7.19	244.71	3,376.87	-179.73	-326.63	-328.65	0.00	0.00	
3,500.00	7.19	244.71	3,476.08	-185.07	-337.95	-340.03	0.00	0.00	
3,600.00	7.19	244.71	3,575.30	-190.42	-349.27	-351.40	0.00	0.00	
3,700.00	7.19	244.71	3,674.51	-195.77	-360.58	-362.78	0.00	0.00	
3,800.00	7.19	244.71	3,773.72	-201.11	-371.90	-374.16	0.00	0.00	
3,900.00	7.19	244.71	3,872.94	-206.46	-383.21	-385.53	0.00	0.00	
4,000.00	7.19	244.71	3,972.15	-211.80	-394.53	-396.91	0.00	0.00	
4,100.00	7.19	244.71	4,071.37	-217.15	-405.85	-408.28	0.00	0.00	
4,200.00	7.19	244.71	4,170.58	-222.50	-417.16	-419.66	0.00	0.00	
4,300.00	7.19	244.71	4,269.79	-227.84	-428.48	-431.04	0.00	0.00	
4,400.00	7.19	244.71	4,369.01	-233.19	-439.80	-442.41	0.00	0.00	
4,500.00	7.19	244.71	4,468.22	-238.53	-451.11	-453.79	0.00	0.00	
4,600.00	7.19	244.71	4,567.43	-243.88	-462.43	-465.16	0.00	0.00	
4,700.00	7.19	244.71	4,666.65	-249.23	-473.74	-476.54	0.00	0.00	
4,800.00	7.19	244.71	4,765.86	-254.57	-485.06	-487.92	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 5X-HNB-05-03-68
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S5-T3N-R68W	North Reference:	Grid
Well:	5X-HNB-05-03-68	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
4,900.00	7.19	244.71	4,865.08	-259.92	-496.38	-499.29	0.00	0.00	
5,000.00	7.19	244.71	4,964.29	-265.26	-507.69	-510.67	0.00	0.00	
5,100.00	7.19	244.71	5,063.50	-270.61	-519.01	-522.05	0.00	0.00	
5,200.00	7.19	244.71	5,162.72	-275.96	-530.33	-533.42	0.00	0.00	
5,300.00	7.19	244.71	5,261.93	-281.30	-541.64	-544.80	0.00	0.00	
5,400.00	7.19	244.71	5,361.14	-286.65	-552.96	-556.17	0.00	0.00	
5,500.00	7.19	244.71	5,460.36	-292.00	-564.27	-567.55	0.00	0.00	
5,600.00	7.19	244.71	5,559.57	-297.34	-575.59	-578.93	0.00	0.00	
5,700.00	7.19	244.71	5,658.78	-302.69	-586.91	-590.30	0.00	0.00	
5,800.00	7.19	244.71	5,758.00	-308.03	-598.22	-601.68	0.00	0.00	
5,900.00	7.19	244.71	5,857.21	-313.38	-609.54	-613.05	0.00	0.00	
6,000.00	7.19	244.71	5,956.43	-318.73	-620.85	-624.43	0.00	0.00	
6,100.00	7.19	244.71	6,055.64	-324.07	-632.17	-635.81	0.00	0.00	
6,200.00	7.19	244.71	6,154.85	-329.42	-643.49	-647.18	0.00	0.00	
6,300.00	7.19	244.71	6,254.07	-334.76	-654.80	-658.56	0.00	0.00	
6,400.00	7.19	244.71	6,353.28	-340.11	-666.12	-669.93	0.00	0.00	
6,500.00	7.19	244.71	6,452.49	-345.46	-677.44	-681.31	0.00	0.00	
6,600.00	7.19	244.71	6,551.71	-350.80	-688.75	-692.69	0.00	0.00	
6,700.00	7.19	244.71	6,650.92	-356.15	-700.07	-704.06	0.00	0.00	
6,800.00	7.19	244.71	6,750.14	-361.49	-711.38	-715.44	0.00	0.00	
6,833.35	7.19	244.71	6,783.22	-363.28	-715.16	-719.23	0.00	0.00	Start DLS 11.00 TFO -155.26
6,900.00	3.11	164.43	6,849.65	-366.80	-718.45	-722.56	11.00	-6.13	
7,000.00	12.17	103.37	6,948.76	-371.86	-707.43	-711.61	11.00	9.06	
7,100.00	22.98	96.39	7,043.96	-376.49	-677.69	-681.92	11.00	10.82	
7,200.00	33.91	93.76	7,131.76	-380.50	-630.30	-634.58	11.00	10.93	
7,300.00	44.88	92.31	7,208.92	-383.76	-567.02	-571.34	11.00	10.96	
7,400.00	55.85	91.33	7,272.62	-386.15	-490.17	-494.52	11.00	10.97	
7,500.00	66.83	90.57	7,320.50	-387.57	-402.57	-406.94	11.00	10.98	
7,566.51	74.13	90.14	7,342.71	-387.95	-339.93	-344.31	11.00	10.98	5X-HNB-05-03-68 LP
7,600.00	77.81	89.94	7,350.82	-387.97	-307.44	-311.82	11.00	10.98	
7,700.00	88.80	89.35	7,362.46	-387.35	-208.27	-212.65	11.00	10.98	
7,701.56	88.97	89.34	7,362.49	-387.33	-206.71	-211.09	11.00	10.98	LP - 7362.49' TVD; 88.97°
7,800.00	88.97	89.34	7,364.26	-386.20	-108.30	-112.67	0.00	0.00	
7,900.00	88.97	89.34	7,366.06	-385.04	-8.32	-12.69	0.00	0.00	
8,000.00	88.97	89.34	7,367.86	-383.89	91.66	87.30	0.00	0.00	
8,100.00	88.97	89.34	7,369.66	-382.74	191.64	187.28	0.00	0.00	
8,200.00	88.97	89.34	7,371.46	-381.59	291.61	287.26	0.00	0.00	
8,300.00	88.97	89.34	7,373.25	-380.44	391.59	387.25	0.00	0.00	
8,400.00	88.97	89.34	7,375.05	-379.29	491.57	487.23	0.00	0.00	
8,500.00	88.97	89.34	7,376.85	-378.13	591.54	587.22	0.00	0.00	
8,600.00	88.97	89.34	7,378.65	-376.98	691.52	687.20	0.00	0.00	
8,700.00	88.97	89.34	7,380.44	-375.83	791.50	787.18	0.00	0.00	
8,800.00	88.97	89.34	7,382.24	-374.68	891.48	887.17	0.00	0.00	
8,900.00	88.97	89.34	7,384.04	-373.53	991.45	987.15	0.00	0.00	
9,000.00	88.97	89.34	7,385.84	-372.38	1,091.43	1,087.14	0.00	0.00	
9,100.00	88.97	89.34	7,387.64	-371.22	1,191.41	1,187.12	0.00	0.00	
9,200.00	88.97	89.34	7,389.43	-370.07	1,291.38	1,287.10	0.00	0.00	
9,300.00	88.97	89.34	7,391.23	-368.92	1,391.36	1,387.09	0.00	0.00	
9,400.00	88.97	89.34	7,393.03	-367.77	1,491.34	1,487.07	0.00	0.00	
9,500.00	88.97	89.34	7,394.83	-366.62	1,591.32	1,587.05	0.00	0.00	
9,600.00	88.97	89.34	7,396.62	-365.47	1,691.29	1,687.04	0.00	0.00	
9,700.00	88.97	89.34	7,398.42	-364.31	1,791.27	1,787.02	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well 5X-HNB-05-03-68
Company:	Nickel Road Operating LLC	TVD Reference:	20' KB @ 5220.00usft
Project:	WELD COUNTY, CO	MD Reference:	20' KB @ 5220.00usft
Site:	S5-T3N-R68W	North Reference:	Grid
Well:	5X-HNB-05-03-68	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,800.00	88.97	89.34	7,400.22	-363.16	1,891.25	1,887.01	0.00	0.00	
9,900.00	88.97	89.34	7,402.02	-362.01	1,991.22	1,986.99	0.00	0.00	
10,000.00	88.97	89.34	7,403.81	-360.86	2,091.20	2,086.97	0.00	0.00	
10,100.00	88.97	89.34	7,405.61	-359.71	2,191.18	2,186.96	0.00	0.00	
10,200.00	88.97	89.34	7,407.41	-358.55	2,291.16	2,286.94	0.00	0.00	
10,300.00	88.97	89.34	7,409.21	-357.40	2,391.13	2,386.93	0.00	0.00	
10,400.00	88.97	89.34	7,411.01	-356.25	2,491.11	2,486.91	0.00	0.00	
10,500.00	88.97	89.34	7,412.80	-355.10	2,591.09	2,586.89	0.00	0.00	
10,600.00	88.97	89.34	7,414.60	-353.95	2,691.07	2,686.88	0.00	0.00	
10,700.00	88.97	89.34	7,416.40	-352.80	2,791.04	2,786.86	0.00	0.00	
10,800.00	88.97	89.34	7,418.20	-351.64	2,891.02	2,886.84	0.00	0.00	
10,900.00	88.97	89.34	7,419.99	-350.49	2,991.00	2,986.83	0.00	0.00	
11,000.00	88.97	89.34	7,421.79	-349.34	3,090.97	3,086.81	0.00	0.00	
11,100.00	88.97	89.34	7,423.59	-348.19	3,190.95	3,186.80	0.00	0.00	
11,200.00	88.97	89.34	7,425.39	-347.04	3,290.93	3,286.78	0.00	0.00	
11,300.00	88.97	89.34	7,427.19	-345.89	3,390.91	3,386.76	0.00	0.00	
11,400.00	88.97	89.34	7,428.98	-344.73	3,490.88	3,486.75	0.00	0.00	
11,500.00	88.97	89.34	7,430.78	-343.58	3,590.86	3,586.73	0.00	0.00	
11,600.00	88.97	89.34	7,432.58	-342.43	3,690.84	3,686.72	0.00	0.00	
11,700.00	88.97	89.34	7,434.38	-341.28	3,790.81	3,786.70	0.00	0.00	
11,800.00	88.97	89.34	7,436.17	-340.13	3,890.79	3,886.68	0.00	0.00	
11,900.00	88.97	89.34	7,437.97	-338.98	3,990.77	3,986.67	0.00	0.00	
11,901.56	88.97	89.34	7,438.00	-338.96	3,992.33	3,988.23	0.00	0.00	TD at 11901.56 - 5X-HNB-05-03-68 PBHL

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									
5X-HNB-05-03-68 LP	0.00	0.00	7,360.00	-387.96	-345.46	1,335,331.06	3,129,818.06	40.252948	-105.034891
- plan misses target center by 18.16usft at 7566.51usft MD (7342.71 TVD, -387.95 N, -339.93 E)									
- Point									
5X-HNB-05-03-68 PBHL	0.00	0.00	7,438.00	-338.96	3,992.33	1,335,380.06	3,134,155.85	40.253019	-105.019349
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
200.00	200.00	0.00	0.00	KOP - 200.00
550.00	549.13	-16.36	-13.73	EOB; INC=7.00°
750.00	747.64	-35.03	-29.39	Start DLS 2.00 TFO 98.76
901.74	898.25	-46.17	-43.93	END OF TURN
6,833.35	6,783.22	-363.28	-715.16	Start DLS 11.00 TFO -155.26
7,701.56	7,362.49	-387.33	-206.71	LP - 7362.49' TVD; 88.97°
11,901.56	7,438.00	-338.96	3,992.33	TD at 11901.56