

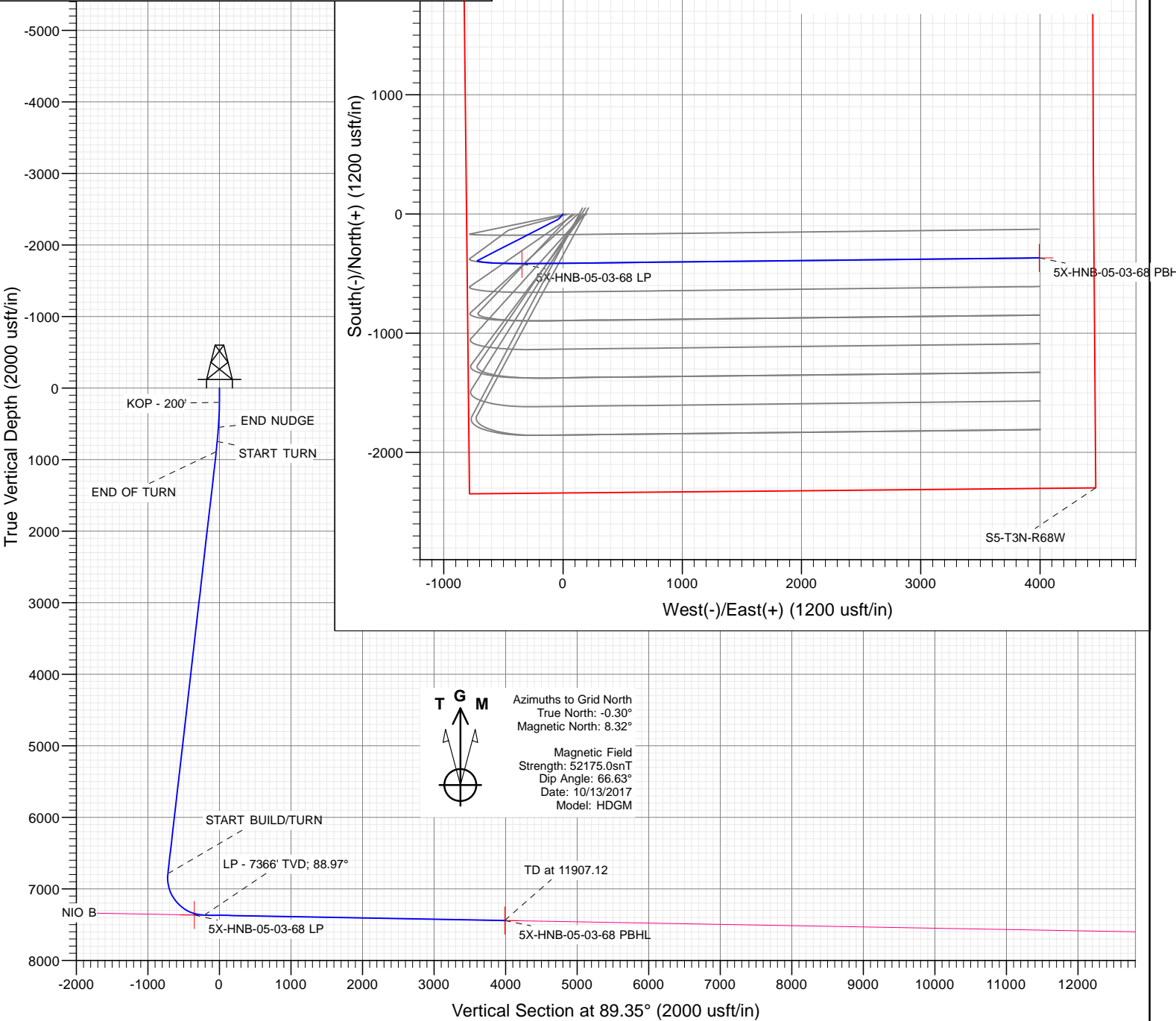
Nickel Road Operating LLC

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	892.27	7.29	242.90	888.83	-45.79	-43.01	2.00	95.57	-43.52	
6	6838.96	7.29	242.90	6787.41	-389.62	-715.04	0.00	0.00	-719.41	
7	7707.12	88.97	89.35	7366.49	-416.25	-206.56	11.00	-153.43	-211.27	
8	11907.12	88.97	89.35	7442.00	-368.46	3992.49	0.00	0.00	3988.06	5X-HNB-05-03-68 PBHL

PLAN #1 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	Target	Target	Target	Target	Target	Target	Target	Target
User	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target
Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target
Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target
Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target
Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target
Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target
Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target
Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target
Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target	No Target

Project: WELD COUNTY, CO  
Site: S5-T3N-R68W  
Well: 5X-HNB-05-03-68  
Wellbore: OH  
Design: PLAN #1



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Company:</b>	Nickel Road Operating LLC	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Project:</b>	WELD COUNTY, CO	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site:</b>	S5-T3N-R68W	<b>North Reference:</b>	Grid
<b>Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

<b>Project</b>	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		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

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

<b>Design</b>	PLAN #1			
<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	89.35

<b>Plan Sections</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	<b>TFO</b>	<b>Target</b>
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
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	
892.27	7.29	242.90	888.83	-45.79	-43.01	2.00	0.21	16.10	95.57	
6,838.96	7.29	242.90	6,787.41	-389.62	-715.04	0.00	0.00	0.00	0.00	
7,707.12	88.97	89.35	7,366.49	-416.25	-206.56	11.00	9.41	-17.69	-153.43	
11,907.12	88.97	89.35	7,442.00	-368.46	3,992.49	0.00	0.00	0.00	0.00	5X-HNB-05-03-68 PB

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Company:</b>	Nickel Road Operating LLC	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Project:</b>	WELD COUNTY, CO	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site:</b>	S5-T3N-R68W	<b>North Reference:</b>	Grid
<b>Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

### 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'
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	END NUDGE
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 TURN
800.00	6.97	228.22	797.27	-39.39	-33.62	-34.06	2.00	-0.05	
892.27	7.29	242.90	888.83	-45.79	-43.01	-43.52	2.00	0.35	END OF TURN
900.00	7.29	242.90	896.50	-46.23	-43.88	-44.40	0.00	0.00	
1,000.00	7.29	242.90	995.69	-52.01	-55.18	-55.77	0.00	0.00	
1,100.00	7.29	242.90	1,094.88	-57.80	-66.48	-67.13	0.00	0.00	
1,200.00	7.29	242.90	1,194.07	-63.58	-77.78	-78.50	0.00	0.00	
1,300.00	7.29	242.90	1,293.26	-69.36	-89.08	-89.87	0.00	0.00	
1,400.00	7.29	242.90	1,392.46	-75.14	-100.39	-101.23	0.00	0.00	
1,500.00	7.29	242.90	1,491.65	-80.92	-111.69	-112.60	0.00	0.00	
1,600.00	7.29	242.90	1,590.84	-86.71	-122.99	-123.96	0.00	0.00	
1,700.00	7.29	242.90	1,690.03	-92.49	-134.29	-135.33	0.00	0.00	
1,800.00	7.29	242.90	1,789.22	-98.27	-145.59	-146.69	0.00	0.00	
1,900.00	7.29	242.90	1,888.41	-104.05	-156.89	-158.06	0.00	0.00	
2,000.00	7.29	242.90	1,987.60	-109.83	-168.19	-169.43	0.00	0.00	
2,100.00	7.29	242.90	2,086.79	-115.62	-179.49	-180.79	0.00	0.00	
2,200.00	7.29	242.90	2,185.98	-121.40	-190.79	-192.16	0.00	0.00	
2,300.00	7.29	242.90	2,285.17	-127.18	-202.09	-203.52	0.00	0.00	
2,400.00	7.29	242.90	2,384.37	-132.96	-213.39	-214.89	0.00	0.00	
2,500.00	7.29	242.90	2,483.56	-138.74	-224.70	-226.26	0.00	0.00	
2,600.00	7.29	242.90	2,582.75	-144.52	-236.00	-237.62	0.00	0.00	
2,700.00	7.29	242.90	2,681.94	-150.31	-247.30	-248.99	0.00	0.00	
2,800.00	7.29	242.90	2,781.13	-156.09	-258.60	-260.35	0.00	0.00	
2,900.00	7.29	242.90	2,880.32	-161.87	-269.90	-271.72	0.00	0.00	
3,000.00	7.29	242.90	2,979.51	-167.65	-281.20	-283.08	0.00	0.00	
3,100.00	7.29	242.90	3,078.70	-173.43	-292.50	-294.45	0.00	0.00	
3,200.00	7.29	242.90	3,177.89	-179.22	-303.80	-305.82	0.00	0.00	
3,300.00	7.29	242.90	3,277.08	-185.00	-315.10	-317.18	0.00	0.00	
3,400.00	7.29	242.90	3,376.28	-190.78	-326.40	-328.55	0.00	0.00	
3,500.00	7.29	242.90	3,475.47	-196.56	-337.71	-339.91	0.00	0.00	
3,600.00	7.29	242.90	3,574.66	-202.34	-349.01	-351.28	0.00	0.00	
3,700.00	7.29	242.90	3,673.85	-208.13	-360.31	-362.64	0.00	0.00	
3,800.00	7.29	242.90	3,773.04	-213.91	-371.61	-374.01	0.00	0.00	
3,900.00	7.29	242.90	3,872.23	-219.69	-382.91	-385.38	0.00	0.00	
4,000.00	7.29	242.90	3,971.42	-225.47	-394.21	-396.74	0.00	0.00	
4,100.00	7.29	242.90	4,070.61	-231.25	-405.51	-408.11	0.00	0.00	
4,200.00	7.29	242.90	4,169.80	-237.03	-416.81	-419.47	0.00	0.00	
4,300.00	7.29	242.90	4,268.99	-242.82	-428.11	-430.84	0.00	0.00	
4,400.00	7.29	242.90	4,368.19	-248.60	-439.41	-442.21	0.00	0.00	
4,500.00	7.29	242.90	4,467.38	-254.38	-450.71	-453.57	0.00	0.00	
4,600.00	7.29	242.90	4,566.57	-260.16	-462.02	-464.94	0.00	0.00	
4,700.00	7.29	242.90	4,665.76	-265.94	-473.32	-476.30	0.00	0.00	
4,800.00	7.29	242.90	4,764.95	-271.73	-484.62	-487.67	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Company:</b>	Nickel Road Operating LLC	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Project:</b>	WELD COUNTY, CO	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site:</b>	S5-T3N-R68W	<b>North Reference:</b>	Grid
<b>Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

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	7.29	242.90	4,864.14	-277.51	-495.92	-499.03	0.00	0.00	
5,000.00	7.29	242.90	4,963.33	-283.29	-507.22	-510.40	0.00	0.00	
5,100.00	7.29	242.90	5,062.52	-289.07	-518.52	-521.77	0.00	0.00	
5,200.00	7.29	242.90	5,161.71	-294.85	-529.82	-533.13	0.00	0.00	
5,300.00	7.29	242.90	5,260.90	-300.64	-541.12	-544.50	0.00	0.00	
5,400.00	7.29	242.90	5,360.10	-306.42	-552.42	-555.86	0.00	0.00	
5,500.00	7.29	242.90	5,459.29	-312.20	-563.72	-567.23	0.00	0.00	
5,600.00	7.29	242.90	5,558.48	-317.98	-575.02	-578.60	0.00	0.00	
5,700.00	7.29	242.90	5,657.67	-323.76	-586.33	-589.96	0.00	0.00	
5,800.00	7.29	242.90	5,756.86	-329.55	-597.63	-601.33	0.00	0.00	
5,900.00	7.29	242.90	5,856.05	-335.33	-608.93	-612.69	0.00	0.00	
6,000.00	7.29	242.90	5,955.24	-341.11	-620.23	-624.06	0.00	0.00	
6,100.00	7.29	242.90	6,054.43	-346.89	-631.53	-635.42	0.00	0.00	
6,200.00	7.29	242.90	6,153.62	-352.67	-642.83	-646.79	0.00	0.00	
6,300.00	7.29	242.90	6,252.82	-358.45	-654.13	-658.16	0.00	0.00	
6,400.00	7.29	242.90	6,352.01	-364.24	-665.43	-669.52	0.00	0.00	
6,500.00	7.29	242.90	6,451.20	-370.02	-676.73	-680.89	0.00	0.00	
6,600.00	7.29	242.90	6,550.39	-375.80	-688.03	-692.25	0.00	0.00	
6,700.00	7.29	242.90	6,649.58	-381.58	-699.33	-703.62	0.00	0.00	
6,800.00	7.29	242.90	6,748.77	-387.36	-710.64	-714.98	0.00	0.00	
6,838.96	7.29	242.90	6,787.41	-389.62	-715.04	-719.41	0.00	0.00	START BUILD/TURN
6,900.00	3.26	176.03	6,848.23	-393.12	-718.37	-722.78	11.00	-6.61	
7,000.00	11.64	105.31	6,947.42	-398.64	-708.41	-712.89	11.00	8.38	
7,100.00	22.41	97.22	7,042.91	-403.71	-679.68	-684.22	11.00	10.77	
7,200.00	33.33	94.25	7,131.18	-408.16	-633.23	-637.82	11.00	10.92	
7,300.00	44.28	92.63	7,209.00	-411.81	-570.77	-575.41	11.00	10.95	
7,400.00	55.25	91.55	7,273.49	-414.53	-494.60	-499.27	11.00	10.97	
7,500.00	66.23	90.73	7,322.30	-416.23	-407.51	-412.21	11.00	10.98	
7,600.00	77.21	90.03	7,353.63	-416.83	-312.71	-317.42	11.00	10.98	
7,700.00	88.19	89.39	7,366.32	-416.33	-213.67	-218.38	11.00	10.98	
7,707.12	88.97	89.35	7,366.49	-416.25	-206.56	-211.27	11.00	10.98	LP - 7366' TVD; 88.97°
7,800.00	88.97	89.35	7,368.16	-415.19	-113.70	-118.40	0.00	0.00	
7,900.00	88.97	89.35	7,369.96	-414.05	-13.72	-18.42	0.00	0.00	
8,000.00	88.97	89.35	7,371.76	-412.92	86.26	81.57	0.00	0.00	
8,100.00	88.97	89.35	7,373.56	-411.78	186.23	181.55	0.00	0.00	
8,200.00	88.97	89.35	7,375.36	-410.64	286.21	281.54	0.00	0.00	
8,300.00	88.97	89.35	7,377.15	-409.50	386.19	381.52	0.00	0.00	
8,400.00	88.97	89.35	7,378.95	-408.36	486.17	481.50	0.00	0.00	
8,500.00	88.97	89.35	7,380.75	-407.23	586.14	581.49	0.00	0.00	
8,600.00	88.97	89.35	7,382.55	-406.09	686.12	681.47	0.00	0.00	
8,700.00	88.97	89.35	7,384.34	-404.95	786.10	781.45	0.00	0.00	
8,800.00	88.97	89.35	7,386.14	-403.81	886.08	881.44	0.00	0.00	
8,900.00	88.97	89.35	7,387.94	-402.68	986.05	981.42	0.00	0.00	
9,000.00	88.97	89.35	7,389.74	-401.54	1,086.03	1,081.41	0.00	0.00	
9,100.00	88.97	89.35	7,391.54	-400.40	1,186.01	1,181.39	0.00	0.00	
9,200.00	88.97	89.35	7,393.33	-399.26	1,285.99	1,281.37	0.00	0.00	
9,300.00	88.97	89.35	7,395.13	-398.13	1,385.96	1,381.36	0.00	0.00	
9,400.00	88.97	89.35	7,396.93	-396.99	1,485.94	1,481.34	0.00	0.00	
9,500.00	88.97	89.35	7,398.73	-395.85	1,585.92	1,581.33	0.00	0.00	
9,600.00	88.97	89.35	7,400.52	-394.71	1,685.90	1,681.31	0.00	0.00	
9,700.00	88.97	89.35	7,402.32	-393.57	1,785.87	1,781.29	0.00	0.00	
9,800.00	88.97	89.35	7,404.12	-392.44	1,885.85	1,881.28	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Company:</b>	Nickel Road Operating LLC	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Project:</b>	WELD COUNTY, CO	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site:</b>	S5-T3N-R68W	<b>North Reference:</b>	Grid
<b>Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	PLAN #1		

### 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
9,900.00	88.97	89.35	7,405.92	-391.30	1,985.83	1,981.26	0.00	0.00	
10,000.00	88.97	89.35	7,407.71	-390.16	2,085.80	2,081.24	0.00	0.00	
10,100.00	88.97	89.35	7,409.51	-389.02	2,185.78	2,181.23	0.00	0.00	
10,200.00	88.97	89.35	7,411.31	-387.89	2,285.76	2,281.21	0.00	0.00	
10,300.00	88.97	89.35	7,413.11	-386.75	2,385.74	2,381.20	0.00	0.00	
10,400.00	88.97	89.35	7,414.91	-385.61	2,485.71	2,481.18	0.00	0.00	
10,500.00	88.97	89.35	7,416.70	-384.47	2,585.69	2,581.16	0.00	0.00	
10,600.00	88.97	89.35	7,418.50	-383.34	2,685.67	2,681.15	0.00	0.00	
10,700.00	88.97	89.35	7,420.30	-382.20	2,785.65	2,781.13	0.00	0.00	
10,800.00	88.97	89.35	7,422.10	-381.06	2,885.62	2,881.12	0.00	0.00	
10,900.00	88.97	89.35	7,423.89	-379.92	2,985.60	2,981.10	0.00	0.00	
11,000.00	88.97	89.35	7,425.69	-378.78	3,085.58	3,081.08	0.00	0.00	
11,100.00	88.97	89.35	7,427.49	-377.65	3,185.56	3,181.07	0.00	0.00	
11,200.00	88.97	89.35	7,429.29	-376.51	3,285.53	3,281.05	0.00	0.00	
11,300.00	88.97	89.35	7,431.09	-375.37	3,385.51	3,381.03	0.00	0.00	
11,400.00	88.97	89.35	7,432.88	-374.23	3,485.49	3,481.02	0.00	0.00	
11,500.00	88.97	89.35	7,434.68	-373.10	3,585.47	3,581.00	0.00	0.00	
11,600.00	88.97	89.35	7,436.48	-371.96	3,685.44	3,680.99	0.00	0.00	
11,700.00	88.97	89.35	7,438.28	-370.82	3,785.42	3,780.97	0.00	0.00	
11,800.00	88.97	89.35	7,440.07	-369.68	3,885.40	3,880.95	0.00	0.00	
11,900.00	88.97	89.35	7,441.87	-368.55	3,985.37	3,980.94	0.00	0.00	
11,907.12	88.97	89.35	7,442.00	-368.46	3,992.49	3,988.06	0.00	0.00	TD at 11907.12

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
5X-HNB-05-03-68 LP - hit/miss target - Shape	0.00	0.00	7,364.00	-417.83	-345.31	1,335,301.19	3,129,818.21	40.252866	-105.034891
- plan misses target center by 18.19usft at 7572.27usft MD (7346.77 TVD, -416.78 N, -339.58 E) - Point									
5X-HNB-05-03-68 PBHL - plan hits target center - Point	0.00	0.00	7,442.00	-368.46	3,992.49	1,335,350.56	3,134,156.01	40.252938	-105.019349

### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
200.00	200.00	0.00	0.00	KOP - 200'
550.00	549.13	-16.36	-13.73	END NUDGE
750.00	747.64	-35.03	-29.39	START TURN
892.27	888.83	-45.79	-43.01	END OF TURN
6,838.96	6,787.41	-389.62	-715.04	START BUILD/TURN
7,707.12	7,366.49	-416.25	-206.56	LP - 7366' TVD; 88.97°
11,907.12	7,442.00	-368.46	3,992.49	TD at 11907.12

# **Nickel Road Operating LLC**

**WELD COUNTY, CO**

**S5-T3N-R68W**

**5X-HNB-05-03-68**

**OH**

**PLAN #1**

## **Anticollision Report**

**19 October, 2017**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	PLAN #1		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD + Stations Interval 100.00usft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,176.98usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	10/19/2017		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.00	200.00	PLAN #1 (OH)	INC-ONLY_A027Ua	OWSG Inclination Only Surveys
201.00	11,907.12	PLAN #1 (OH)	MWD+HDGM	OWSG MWD + HDGM

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S5-T3N-R68W						
5X-HC-05-03-68 - OH - PLAN #1	200.00	200.00	49.96	45.08	10.224	CC
5X-HC-05-03-68 - OH - PLAN #1	6,850.00	6,859.45	52.92	-0.73	0.986	Level 1, ES, SF
5X-HNC-05-03-68 - OH - PLAN #1	200.00	200.00	24.84	19.96	5.084	CC
5X-HNC-05-03-68 - OH - PLAN #1	11,907.12	12,030.60	247.58	-45.94	0.843	Level 1, ES, SF
6X-HC-05-03-68 - OH - PLAN #1	1,729.45	1,747.37	120.70	105.33	7.853	CC
6X-HC-05-03-68 - OH - PLAN #1	1,900.00	1,917.41	121.40	104.85	7.336	ES
6X-HC-05-03-68 - OH - PLAN #1	11,907.12	12,242.96	525.25	247.85	1.893	SF
6X-HNB-05-03-68 - OH - PLAN #1	882.59	908.81	64.78	56.49	7.807	CC, ES
6X-HNB-05-03-68 - OH - PLAN #1	11,907.12	11,948.89	480.13	180.01	1.600	SF
6X-HNC-05-03-68 - OH - PLAN #1	2,243.02	2,256.19	71.32	53.27	3.952	CC
6X-HNC-05-03-68 - OH - PLAN #1	11,907.12	12,062.56	247.94	-45.17	0.846	Level 1, ES, SF
7X-HC-05-03-68 - OH - PLAN #1	1,465.20	1,505.99	194.76	180.86	14.014	CC
7X-HC-05-03-68 - OH - PLAN #1	1,500.00	1,528.42	194.83	180.74	13.826	ES
7X-HC-05-03-68 - OH - PLAN #1	11,907.12	12,313.99	981.07	685.09	3.315	SF
7X-HNB-05-03-68 - OH - PLAN #1	888.28	906.66	146.63	138.28	17.570	CC
7X-HNB-05-03-68 - OH - PLAN #1	900.00	918.26	146.65	138.23	17.434	ES
7X-HNB-05-03-68 - OH - PLAN #1	11,907.12	12,034.66	960.41	659.79	3.195	SF
7X-HNC-05-03-68 - OH - PLAN #1	1,377.57	1,401.64	166.29	154.04	13.568	CC
7X-HNC-05-03-68 - OH - PLAN #1	1,500.00	1,523.28	166.88	153.77	12.735	ES
7X-HNC-05-03-68 - OH - PLAN #1	11,907.12	12,119.99	721.60	419.68	2.390	SF
8X-HC-05-03-68 - OH - PLAN #1	200.00	200.00	169.89	165.00	34.763	CC
8X-HC-05-03-68 - OH - PLAN #1	300.00	300.02	171.35	163.84	22.815	ES
8X-HC-05-03-68 - OH - PLAN #1	1,800.00	1,820.96	204.67	188.19	12.416	SF
8X-HNB-05-03-68 - OH - PLAN #1	200.00	200.00	218.21	213.32	44.652	CC
8X-HNB-05-03-68 - OH - PLAN #1	300.00	300.02	219.61	212.10	29.241	ES
8X-HNB-05-03-68 - OH - PLAN #1	2,100.00	2,130.93	267.38	246.65	12.898	SF
8X-HNC-05-03-68 - OH - PLAN #1	200.00	200.00	193.81	188.92	39.659	CC
8X-HNC-05-03-68 - OH - PLAN #1	300.00	300.02	195.24	187.73	25.996	ES
8X-HNC-05-03-68 - OH - PLAN #1	2,100.00	2,127.84	223.53	203.93	11.401	SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 5X-HC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM												Offset Well Error:	0.00 usft
Reference	Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		Uncertainty Axis	Factor
0.00	0.00	0.00	0.00	0.00	0.00	90.11	-0.10	49.96	49.96				
100.00	100.00	100.00	100.00	0.70	0.70	90.11	-0.10	49.96	49.96	48.57		1.40	35.783
200.00	200.00	200.00	200.00	2.44	2.44	90.11	-0.10	49.96	49.96	45.08		4.89	10.224 CC
300.00	299.98	299.98	299.98	3.32	4.19	-131.37	-0.10	49.96	51.10	43.59		7.51	6.804
400.00	399.84	401.71	401.69	3.36	5.08	-135.21	-0.56	48.22	52.95	44.52		8.44	6.277
500.00	499.45	503.46	503.28	3.44	5.09	-140.84	-1.97	42.99	54.15	45.64		8.51	6.361
550.00	549.13	554.31	553.98	3.50	5.12	-144.34	-3.02	39.07	54.67	46.08		8.58	6.369
600.00	598.76	605.16	604.58	3.57	5.15	-148.06	-4.30	34.28	54.86	46.20		8.66	6.335
700.00	698.01	706.79	705.43	3.74	5.24	-155.84	-7.56	22.11	53.29	44.43		8.86	6.017
750.00	747.64	756.51	754.66	3.84	5.30	-159.99	-9.35	15.44	52.14	43.14		9.00	5.793
800.00	797.27	806.38	804.05	3.94	5.36	-171.99	-11.15	8.73	51.35	42.20		9.15	5.614
892.27	888.83	901.46	895.31	4.15	5.50	168.67	-14.46	-3.66	50.71	41.25		9.46	5.361
900.00	896.50	906.27	902.96	4.17	5.51	168.41	-14.74	-4.70	50.68	41.20		9.48	5.345
1,000.00	995.69	1,006.22	1,001.95	4.42	5.68	164.95	-18.34	-18.13	50.45	40.59		9.86	5.116
1,074.67	1,069.76	1,080.86	1,075.85	4.63	5.83	162.35	-21.03	-28.17	50.40	40.22		10.18	4.951
1,100.00	1,094.88	1,106.18	1,100.93	4.70	5.88	161.47	-21.94	-31.57	50.41	40.12		10.29	4.899
1,200.00	1,194.07	1,206.13	1,199.91	4.99	6.11	158.00	-25.54	-45.01	50.55	39.79		10.76	4.698
1,300.00	1,293.26	1,306.08	1,298.89	5.30	6.35	154.57	-29.14	-58.44	50.87	39.60		11.27	4.516
1,400.00	1,392.46	1,406.04	1,397.87	5.62	6.61	151.19	-32.75	-71.88	51.37	39.56		11.81	4.350
1,500.00	1,491.65	1,505.99	1,496.85	5.95	6.88	147.88	-36.35	-85.32	52.05	39.66		12.39	4.201
1,600.00	1,590.84	1,605.94	1,595.83	6.30	7.17	144.67	-39.95	-98.75	52.90	39.90		13.00	4.070
1,700.00	1,690.03	1,705.90	1,694.81	6.64	7.47	141.57	-43.55	-112.19	53.91	40.28		13.64	3.954
1,800.00	1,789.22	1,805.85	1,793.79	7.00	7.78	138.60	-47.15	-125.63	55.07	40.77		14.30	3.852
1,900.00	1,888.41	1,905.80	1,892.77	7.36	8.10	135.75	-50.75	-139.07	56.37	41.39		14.98	3.763
2,000.00	1,987.60	2,005.76	1,991.75	7.72	8.43	133.04	-54.35	-152.50	57.81	42.13		15.68	3.686
2,100.00	2,086.79	2,105.71	2,090.73	8.09	8.77	130.46	-57.95	-165.94	59.37	42.97		16.40	3.620
2,200.00	2,185.98	2,205.66	2,189.71	8.47	9.11	128.02	-61.55	-179.38	61.04	43.91		17.13	3.563
2,300.00	2,285.17	2,305.61	2,288.69	8.84	9.46	125.72	-65.15	-192.81	62.82	44.94		17.88	3.514
2,400.00	2,384.37	2,405.57	2,387.67	9.22	9.82	123.54	-68.75	-206.25	64.69	46.06		18.63	3.472
2,500.00	2,483.56	2,505.52	2,486.65	9.60	10.18	121.49	-72.35	-219.69	66.65	47.26		19.39	3.437
2,600.00	2,582.75	2,605.47	2,585.63	9.98	10.54	119.56	-75.95	-233.12	68.70	48.53		20.16	3.407
2,700.00	2,681.94	2,705.43	2,684.61	10.37	10.91	117.75	-79.55	-246.56	70.81	49.87		20.94	3.382
2,800.00	2,781.13	2,805.38	2,783.59	10.76	11.28	116.04	-83.15	-260.00	72.99	51.28		21.72	3.361
2,900.00	2,880.32	2,905.33	2,882.57	11.14	11.65	114.43	-86.75	-273.43	75.24	52.74		22.50	3.344
3,000.00	2,979.51	3,005.29	2,981.55	11.53	12.03	112.91	-90.35	-286.87	77.54	54.25		23.29	3.329
3,100.00	3,078.70	3,105.24	3,080.53	11.92	12.41	111.48	-93.95	-300.31	79.89	55.81		24.08	3.318
3,200.00	3,177.89	3,205.19	3,179.51	12.32	12.79	110.14	-97.55	-313.74	82.28	57.41		24.87	3.308
3,300.00	3,277.08	3,305.15	3,278.49	12.71	13.17	108.87	-101.15	-327.18	84.72	59.06		25.67	3.301
3,400.00	3,376.28	3,405.10	3,377.48	13.10	13.56	107.68	-104.75	-340.62	87.20	60.74		26.46	3.295
3,500.00	3,475.47	3,505.05	3,476.46	13.50	13.95	106.55	-108.35	-354.05	89.72	62.46		27.26	3.291
3,600.00	3,574.66	3,605.01	3,575.44	13.89	14.34	105.48	-111.95	-367.49	92.26	64.20		28.06	3.288
3,700.00	3,673.85	3,704.96	3,674.42	14.29	14.73	104.47	-115.55	-380.93	94.84	65.98		28.86	3.286
3,800.00	3,773.04	3,804.91	3,773.40	14.69	15.12	103.51	-119.15	-394.36	97.45	67.79		29.66	3.285
3,900.00	3,872.23	3,904.87	3,872.38	15.08	15.51	102.60	-122.75	-407.80	100.08	69.62		30.46	3.285
4,000.00	3,971.42	4,004.82	3,971.36	15.48	15.91	101.75	-126.35	-421.24	102.74	71.47		31.27	3.286
4,100.00	4,070.61	4,104.77	4,070.34	15.88	16.30	100.93	-129.96	-434.67	105.41	73.34		32.07	3.287
4,200.00	4,169.80	4,204.91	4,169.50	16.28	16.70	100.15	-133.57	-448.13	108.11	75.23		32.87	3.288
4,300.00	4,268.99	4,308.83	4,272.41	16.68	17.11	99.44	-139.24	-461.38	108.84	75.15		33.69	3.231
4,400.00	4,368.19	4,410.40	4,372.94	17.08	17.51	98.81	-147.63	-473.27	106.60	72.12		34.48	3.092
4,500.00	4,467.38	4,510.36	4,471.86	17.48	17.90	98.18	-156.16	-484.85	104.08	68.80		35.28	2.950
4,600.00	4,566.57	4,610.32	4,570.78	17.88	18.30	97.51	-164.70	-496.44	101.57	65.49		36.08	2.815

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 5X-HC-05-03-68 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis				Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,700.00	4,665.76	4,710.28	4,669.69	18.28	18.69	96.81	-173.24	-508.02	99.07	62.18	36.88	2.686		
4,800.00	4,764.95	4,810.25	4,768.61	18.68	19.09	96.07	-181.77	-519.61	96.59	58.90	37.69	2.563		
4,900.00	4,864.14	4,910.21	4,867.53	19.08	19.49	95.29	-190.31	-531.19	94.12	55.63	38.50	2.445		
5,000.00	4,963.33	5,010.17	4,966.45	19.48	19.89	94.47	-198.85	-542.78	91.68	52.37	39.30	2.332		
5,100.00	5,062.52	5,110.13	5,065.37	19.88	20.29	93.61	-207.39	-554.37	89.25	49.14	40.11	2.225		
5,200.00	5,161.71	5,210.09	5,164.29	20.29	20.69	92.70	-215.92	-565.95	86.85	45.92	40.92	2.122		
5,300.00	5,260.90	5,310.05	5,263.21	20.69	21.09	91.73	-224.46	-577.54	84.46	42.73	41.73	2.024		
5,400.00	5,360.10	5,410.01	5,362.13	21.09	21.49	90.71	-233.00	-589.12	82.11	39.57	42.54	1.930		
5,500.00	5,459.29	5,509.97	5,461.05	21.49	21.89	89.63	-241.53	-600.71	79.78	36.43	43.35	1.840		
5,600.00	5,558.48	5,609.94	5,559.97	21.90	22.30	88.49	-250.07	-612.29	77.48	33.32	44.16	1.755		
5,700.00	5,657.67	5,709.90	5,658.89	22.30	22.70	87.28	-258.61	-623.88	75.21	30.25	44.96	1.673		
5,800.00	5,756.86	5,809.86	5,757.81	22.70	23.11	85.99	-267.15	-635.47	72.98	27.22	45.77	1.595		
5,900.00	5,856.05	5,909.82	5,856.73	23.11	23.51	84.62	-275.68	-647.05	70.79	24.23	46.56	1.520		
6,000.00	5,955.24	6,009.78	5,955.65	23.51	23.92	83.17	-284.22	-658.64	68.64	21.28	47.36	1.449 Level 3		
6,100.00	6,054.43	6,109.74	6,054.57	23.91	24.32	81.62	-292.76	-670.22	66.54	18.39	48.15	1.382 Level 3		
6,200.00	6,153.62	6,209.70	6,153.49	24.32	24.73	79.98	-301.30	-681.81	64.49	15.56	48.92	1.318 Level 3		
6,300.00	6,252.82	6,309.66	6,252.41	24.72	25.14	78.22	-309.83	-693.39	62.50	12.80	49.69	1.258 Level 3		
6,400.00	6,352.01	6,409.63	6,351.33	25.13	25.55	76.36	-318.37	-704.98	60.57	10.11	50.45	1.200 Level 2		
6,500.00	6,451.20	6,509.59	6,450.25	25.53	25.95	74.37	-326.91	-716.56	58.70	7.51	51.20	1.147 Level 2		
6,600.00	6,550.39	6,609.55	6,549.17	25.94	26.36	72.25	-335.44	-728.15	56.92	4.99	51.92	1.096 Level 2		
6,700.00	6,649.58	6,709.51	6,648.09	26.34	26.77	70.00	-343.98	-739.74	55.21	2.58	52.63	1.049 Level 2		
6,800.00	6,748.77	6,809.47	6,747.01	26.74	27.18	67.62	-352.52	-751.32	53.60	0.28	53.32	1.005 Level 2		
6,838.96	6,787.41	6,848.41	6,785.55	26.90	27.34	66.65	-355.84	-755.83	52.99	-0.59	53.58	0.989 Level 1		
6,849.21	6,797.60	6,858.66	6,795.69	26.94	27.38	70.88	-356.72	-757.02	52.92	-0.73	53.64	0.986 Level 1		
6,850.00	6,798.38	6,859.45	6,796.47	26.95	27.39	71.26	-356.79	-757.11	52.92	-0.73	53.65	0.986 Level 1, ES, SF		
6,900.00	6,848.23	6,909.28	6,845.78	27.12	27.59	129.58	-361.04	-762.89	54.92	1.11	53.81	1.021 Level 2		
6,950.00	6,898.06	6,958.54	6,894.52	27.27	27.79	-178.83	-365.25	-768.60	61.18	7.43	53.75	1.138 Level 2		
7,000.00	6,947.42	7,006.76	6,942.25	27.39	27.99	-171.01	-369.37	-774.19	72.18	18.60	53.58	1.347 Level 3		
7,050.00	6,995.85	7,053.51	6,988.51	27.50	28.18	-170.89	-373.36	-779.61	88.11	34.71	53.41	1.650		
7,100.00	7,042.91	7,106.54	7,041.13	27.59	28.39	-172.74	-377.88	-784.17	107.65	54.45	53.20	2.023		
7,150.00	7,088.16	7,165.08	7,099.43	27.68	28.56	-174.50	-382.81	-783.10	127.16	74.57	52.60	2.418		
7,200.00	7,131.18	7,227.17	7,160.71	27.76	28.71	-175.90	-387.90	-774.81	146.03	94.59	51.44	2.839		
7,250.00	7,171.59	7,293.15	7,224.26	27.85	28.84	-177.03	-393.07	-758.05	163.81	114.19	49.63	3.301		
7,300.00	7,209.00	7,363.29	7,288.96	27.95	28.96	-177.93	-398.22	-731.55	180.08	133.02	47.06	3.826		
7,350.00	7,243.07	7,437.74	7,353.08	28.06	29.08	-178.66	-403.17	-694.18	194.39	150.67	43.71	4.447		
7,400.00	7,273.49	7,516.37	7,414.32	28.20	29.23	-179.23	-407.73	-645.20	206.29	166.65	39.64	5.204		
7,450.00	7,299.98	7,598.73	7,469.83	28.39	29.42	-179.66	-411.66	-584.60	215.38	180.31	35.07	6.142		
7,500.00	7,322.30	7,684.00	7,516.56	28.64	29.74	-179.95	-414.70	-513.45	221.28	190.80	30.47	7.261		
7,550.00	7,340.24	7,771.01	7,551.69	28.96	30.23	179.88	-416.65	-433.99	223.74	197.04	26.69	8.382		
7,600.00	7,353.63	7,858.32	7,573.21	29.36	30.93	179.85	-417.39	-349.48	222.65	197.86	24.79	8.982		
7,650.00	7,362.35	7,940.78	7,580.40	29.84	31.82	179.95	-416.94	-267.41	218.09	192.80	25.29	8.623		
7,700.00	7,366.32	8,009.33	7,581.30	30.39	32.71	180.00	-416.37	-217.54	215.01	189.42	25.59	8.401		
7,707.12	7,366.49	8,002.21	7,581.43	30.47	32.60	180.00	-416.29	-210.42	214.97	189.37	25.59	8.400		
7,793.76	7,368.05	8,084.43	7,582.98	31.63	33.82	180.00	-415.31	-123.80	214.97	188.90	26.06	8.248		
7,800.00	7,368.16	8,109.33	7,583.10	31.72	34.21	180.00	-415.23	-117.56	214.97	188.81	26.16	8.219		
7,900.00	7,369.96	8,190.67	7,584.89	33.33	35.62	180.00	-414.10	-17.58	214.97	188.23	26.73	8.041		
8,000.00	7,371.76	8,309.33	7,586.69	35.17	37.91	180.00	-412.96	82.39	214.97	187.45	27.52	7.812		
8,078.87	7,373.18	8,369.54	7,588.11	36.78	39.18	180.00	-412.06	161.24	214.97	186.91	28.06	7.661		
8,100.00	7,373.56	8,409.33	7,588.49	37.21	40.03	180.00	-411.82	182.37	214.97	186.66	28.30	7.595		
8,200.00	7,375.36	8,490.67	7,590.29	39.41	41.86	180.00	-410.68	282.35	214.97	185.90	29.07	7.395		
8,300.00	7,377.15	8,609.33	7,592.08	41.75	44.67	180.00	-409.55	382.33	214.97	184.91	30.06	7.151		
8,400.00	7,378.95	8,690.67	7,593.88	44.20	46.69	180.00	-408.41	482.30	214.97	184.04	30.93	6.951		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 5X-HC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
8,500.00	7,380.75	8,809.33	7,595.68	46.75	49.73	180.00	-407.27	582.28	214.97	182.94	32.03	6.712	
8,600.00	7,382.55	8,890.67	7,597.48	49.37	51.87	180.00	-406.13	682.26	214.97	181.98	32.98	6.518	
8,700.00	7,384.34	9,009.33	7,599.27	52.07	55.07	180.00	-405.00	782.23	214.97	180.79	34.17	6.290	
8,800.00	7,386.14	9,090.67	7,601.07	54.82	57.31	180.00	-403.86	882.21	214.97	179.77	35.19	6.108	
8,900.00	7,387.94	9,209.33	7,602.87	57.62	60.64	180.00	-402.72	982.19	214.97	178.50	36.46	5.896	
8,978.00	7,389.34	9,268.67	7,604.27	59.84	62.32	180.00	-401.83	1,060.18	214.97	177.69	37.28	5.766	
9,000.00	7,389.74	9,309.33	7,604.67	60.46	63.48	180.00	-401.58	1,082.17	214.97	177.31	37.65	5.709	
9,100.00	7,391.54	9,390.67	7,606.47	63.34	65.82	180.00	-400.44	1,182.14	214.97	176.21	38.76	5.547	
9,200.00	7,393.33	9,509.33	7,608.26	66.25	69.27	180.00	-399.31	1,282.12	214.97	174.85	40.11	5.359	
9,300.00	7,395.13	9,590.67	7,610.06	69.19	71.66	180.00	-398.17	1,382.10	214.97	173.71	41.26	5.210	
9,400.00	7,396.93	9,709.33	7,611.86	72.16	75.17	180.00	-397.03	1,482.08	214.97	172.30	42.66	5.039	
9,500.00	7,398.73	9,790.67	7,613.66	75.14	77.59	180.00	-395.89	1,582.05	214.97	171.12	43.84	4.903	
9,600.00	7,400.52	9,909.33	7,615.45	78.14	81.15	180.00	-394.76	1,682.03	214.97	169.68	45.28	4.747	
9,678.87	7,401.94	9,969.54	7,616.87	80.53	82.97	180.00	-393.86	1,760.88	214.97	168.75	46.21	4.652	
9,700.00	7,402.32	10,009.33	7,617.25	81.17	84.17	180.00	-393.62	1,782.01	214.97	168.34	46.62	4.611	
9,800.00	7,404.12	10,090.67	7,619.05	84.20	86.63	180.00	-392.48	1,881.99	214.97	167.12	47.84	4.493	
9,900.00	7,405.92	10,209.33	7,620.85	87.25	90.24	180.00	-391.34	1,981.96	214.97	165.63	49.33	4.357	
10,000.00	7,407.71	10,309.33	7,622.65	90.31	93.30	180.00	-390.21	2,081.94	214.97	164.26	50.71	4.239	
10,100.00	7,409.51	10,409.33	7,624.44	93.39	96.37	180.00	-389.07	2,181.92	214.97	162.87	52.09	4.127	
10,102.41	7,409.56	10,393.08	7,624.49	93.46	95.87	180.00	-389.04	2,184.33	214.97	162.97	52.00	4.134	
10,200.00	7,411.31	10,509.33	7,626.24	96.47	99.45	180.00	-387.93	2,281.90	214.97	161.48	53.49	4.019	
10,300.00	7,413.11	10,609.33	7,628.04	99.56	102.53	180.00	-386.79	2,381.87	214.97	160.07	54.89	3.916	
10,302.41	7,413.15	10,593.08	7,628.08	99.64	102.03	180.00	-386.77	2,384.28	214.97	160.17	54.80	3.923	
10,400.00	7,414.91	10,690.67	7,629.84	102.66	105.05	180.00	-385.65	2,481.85	214.97	158.79	56.18	3.827	
10,500.00	7,416.70	10,809.33	7,631.63	105.77	108.73	180.00	-384.52	2,581.83	214.97	157.24	57.73	3.724	
10,578.87	7,418.12	10,869.54	7,633.05	108.23	110.60	180.00	-383.62	2,660.68	214.97	156.24	58.72	3.661	
10,600.00	7,418.50	10,909.33	7,633.43	108.88	111.84	180.00	-383.38	2,681.80	214.97	155.81	59.16	3.634	
10,700.00	7,420.30	10,990.67	7,635.23	112.00	114.38	180.00	-382.24	2,781.78	214.97	154.50	60.46	3.555	
10,800.00	7,422.10	11,109.33	7,637.03	115.13	118.08	180.00	-381.10	2,881.76	214.97	152.93	62.04	3.465	
10,900.00	7,423.89	11,190.67	7,638.83	118.26	120.62	180.00	-379.97	2,981.74	214.97	151.61	63.35	3.393	
11,000.00	7,425.69	11,309.33	7,640.62	121.40	124.34	180.00	-378.83	3,081.71	214.97	150.02	64.94	3.310	
11,100.00	7,427.49	11,390.67	7,642.42	124.54	126.89	180.00	-377.69	3,181.69	214.97	148.70	66.26	3.244	
11,200.00	7,429.29	11,509.33	7,644.22	127.69	130.62	180.00	-376.55	3,281.67	214.97	147.10	67.86	3.168	
11,300.00	7,431.09	11,609.33	7,646.02	130.83	133.76	180.00	-375.42	3,381.65	214.97	145.63	69.33	3.100	
11,400.00	7,432.88	11,690.67	7,647.81	133.99	136.32	180.00	-374.28	3,481.62	214.97	144.30	70.67	3.042	
11,418.87	7,433.22	11,709.54	7,648.15	134.58	136.92	180.00	-374.06	3,500.49	214.97	144.02	70.95	3.030	
11,500.00	7,434.68	11,809.33	7,649.61	137.14	140.06	180.00	-373.14	3,581.60	214.97	142.68	72.28	2.974	
11,600.00	7,436.48	11,890.67	7,651.41	140.30	142.63	180.00	-372.00	3,681.58	214.97	141.34	73.63	2.920	
11,700.00	7,438.28	12,009.33	7,653.21	143.47	146.38	180.00	-370.86	3,781.56	214.97	139.71	75.25	2.857	
11,800.00	7,440.07	12,109.33	7,655.00	146.63	149.54	180.00	-369.73	3,881.53	214.97	138.23	76.74	2.801	
11,821.13	7,440.45	12,111.80	7,655.38	147.30	149.62	180.00	-369.49	3,902.66	214.97	138.05	76.92	2.795	
11,900.00	7,441.87	12,190.67	7,656.80	149.80	152.11	180.00	-368.59	3,981.51	214.97	136.87	78.09	2.753	
11,907.12	7,442.00	12,197.79	7,656.93	150.02	152.34	180.00	-368.51	3,988.63	214.97	136.77	78.20	2.749	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 5X-HNC-05-03-68 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 251-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	90.54	-0.23	24.84	24.84					
100.00	100.00	100.00	100.00	0.70	0.70	90.54	-0.23	24.84	24.84	23.45	1.40	17.793		
200.00	200.00	200.00	200.00	2.44	2.44	90.54	-0.23	24.84	24.84	19.96	4.89	5.084	CC	
300.00	299.98	300.43	300.42	3.32	3.75	-132.28	-0.32	24.41	25.55	18.48	7.07	3.612		
400.00	399.84	401.27	401.20	3.36	3.78	-139.66	-1.05	20.93	25.82	18.68	7.13	3.620		
500.00	499.45	502.03	501.70	3.44	3.85	-151.69	-2.50	14.00	26.00	18.74	7.26	3.582		
550.00	549.13	552.35	551.79	3.50	3.89	-159.37	-3.49	9.24	26.46	19.11	7.35	3.600		
600.00	598.76	602.64	601.75	3.57	3.95	-167.65	-4.66	3.62	27.00	19.55	7.45	3.624		
700.00	698.01	702.41	700.72	3.74	4.09	175.86	-7.25	-8.79	28.63	20.89	7.74	3.698		
750.00	747.64	752.25	750.14	3.84	4.17	168.56	-8.55	-15.00	30.24	22.32	7.92	3.818		
800.00	797.27	802.11	799.60	3.94	4.26	154.60	-9.85	-21.22	32.12	24.01	8.11	3.961		
892.27	888.83	905.74	891.00	4.15	4.48	134.26	-12.25	-32.71	35.15	26.63	8.52	4.127		
900.00	896.50	901.99	898.67	4.17	4.47	134.00	-12.45	-33.67	35.36	26.83	8.53	4.147		
1,000.00	995.69	1,001.94	997.80	4.42	4.70	130.93	-15.05	-46.13	38.12	29.12	9.00	4.237		
1,100.00	1,094.88	1,101.88	1,096.93	4.70	4.95	128.28	-17.65	-58.59	40.97	31.45	9.51	4.306		
1,200.00	1,194.07	1,201.82	1,196.06	4.99	5.23	125.98	-20.25	-71.05	43.89	33.82	10.07	4.359		
1,300.00	1,293.26	1,301.76	1,295.19	5.30	5.52	123.96	-22.85	-83.51	46.88	36.22	10.66	4.397		
1,400.00	1,392.46	1,401.71	1,394.31	5.62	5.82	122.19	-25.45	-95.97	49.92	38.64	11.28	4.425		
1,500.00	1,491.65	1,501.65	1,493.44	5.95	6.14	120.63	-28.05	-108.43	53.00	41.08	11.92	4.445		
1,600.00	1,590.84	1,601.59	1,592.57	6.30	6.47	119.24	-30.65	-120.89	56.12	43.53	12.59	4.458		
1,700.00	1,690.03	1,701.54	1,691.70	6.64	6.80	117.99	-33.26	-133.35	59.26	46.00	13.27	4.467		
1,800.00	1,789.22	1,801.48	1,790.83	7.00	7.15	116.87	-35.86	-145.81	62.43	48.47	13.96	4.471		
1,900.00	1,888.41	1,901.42	1,889.96	7.36	7.49	115.86	-38.46	-158.27	65.63	50.95	14.67	4.473		
2,000.00	1,987.60	2,001.36	1,989.09	7.72	7.85	114.95	-41.06	-170.73	68.84	53.45	15.39	4.473		
2,100.00	2,086.79	2,101.31	2,088.22	8.09	8.21	114.11	-43.66	-183.19	72.06	55.95	16.12	4.471		
2,200.00	2,185.98	2,201.25	2,187.34	8.47	8.57	113.35	-46.26	-195.65	75.31	58.45	16.86	4.468		
2,300.00	2,285.17	2,301.19	2,286.47	8.84	8.94	112.65	-48.86	-208.11	78.56	60.96	17.60	4.464		
2,400.00	2,384.37	2,401.13	2,385.60	9.22	9.31	112.00	-51.46	-220.57	81.82	63.47	18.35	4.459		
2,500.00	2,483.56	2,501.08	2,484.73	9.60	9.69	111.41	-54.06	-233.03	85.10	65.99	19.10	4.455		
2,600.00	2,582.75	2,601.02	2,583.86	9.98	10.06	110.86	-56.66	-245.49	88.38	68.52	19.86	4.449		
2,700.00	2,681.94	2,700.96	2,682.99	10.37	10.44	110.35	-59.27	-257.95	91.67	71.04	20.63	4.444		
2,800.00	2,781.13	2,800.90	2,782.12	10.76	10.82	109.87	-61.87	-270.41	94.97	73.57	21.39	4.439		
2,900.00	2,880.32	2,900.85	2,881.25	11.14	11.21	109.43	-64.47	-282.87	98.27	76.10	22.17	4.433		
3,000.00	2,979.51	3,000.79	2,980.37	11.53	11.59	109.01	-67.07	-295.33	101.58	78.64	22.94	4.428		
3,100.00	3,078.70	3,100.73	3,079.50	11.92	11.98	108.62	-69.67	-307.79	104.89	81.17	23.72	4.423		
3,200.00	3,177.89	3,200.67	3,178.63	12.32	12.36	108.26	-72.27	-320.25	108.21	83.71	24.50	4.417		
3,300.00	3,277.08	3,300.62	3,277.76	12.71	12.75	107.92	-74.87	-332.71	111.53	86.25	25.28	4.412		
3,400.00	3,376.28	3,400.56	3,376.89	13.10	13.14	107.59	-77.47	-345.17	114.85	88.79	26.06	4.407		
3,500.00	3,475.47	3,500.50	3,476.02	13.50	13.53	107.29	-80.07	-357.63	118.18	91.34	26.85	4.402		
3,600.00	3,574.66	3,600.45	3,575.15	13.89	13.93	107.00	-82.67	-370.09	121.51	93.88	27.63	4.397		
3,700.00	3,673.85	3,700.39	3,674.28	14.29	14.32	106.73	-85.27	-382.55	124.85	96.43	28.42	4.393		
3,800.00	3,773.04	3,800.33	3,773.40	14.69	14.71	106.47	-87.88	-395.01	128.19	98.97	29.21	4.388		
3,900.00	3,872.23	3,900.27	3,872.53	15.08	15.11	106.22	-90.48	-407.47	131.53	101.52	30.00	4.384		
4,000.00	3,971.42	4,000.22	3,971.66	15.48	15.50	105.99	-93.08	-419.93	134.87	104.07	30.80	4.379		
4,100.00	4,070.61	4,100.16	4,070.79	15.88	15.90	105.77	-95.68	-432.39	138.21	106.62	31.59	4.375		
4,200.00	4,169.80	4,200.10	4,169.92	16.28	16.29	105.55	-98.28	-444.85	141.56	109.18	32.38	4.371		
4,300.00	4,268.99	4,300.04	4,269.05	16.68	16.69	105.35	-100.88	-457.31	144.91	111.73	33.18	4.367		
4,400.00	4,368.19	4,400.01	4,368.18	17.08	17.09	105.16	-103.48	-469.78	148.26	114.28	33.98	4.364		
4,500.00	4,467.38	4,500.07	4,467.31	17.48	17.49	104.98	-106.08	-482.24	151.61	116.84	34.77	4.360		
4,600.00	4,566.57	4,600.13	4,566.43	17.88	17.88	104.80	-108.68	-494.70	154.96	119.39	35.57	4.356		
4,700.00	4,665.76	4,700.19	4,665.56	18.28	18.28	104.63	-111.28	-507.16	158.32	121.95	36.37	4.353		
4,800.00	4,764.95	4,800.24	4,764.69	18.68	18.68	104.47	-113.89	-519.62	161.67	124.50	37.17	4.349		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 5X-HNC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 251-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning
4,900.00	4,864.14	4,900.30	4,863.82	19.08	19.08	104.31	-116.49	-532.08	165.03	127.06	37.97	4.346	
5,000.00	4,963.33	5,000.36	4,962.95	19.48	19.48	104.16	-119.09	-544.54	168.39	129.62	38.77	4.343	
5,100.00	5,062.52	5,100.41	5,062.08	19.88	19.88	104.02	-121.69	-557.00	171.75	132.17	39.58	4.340	
5,200.00	5,161.71	5,200.47	5,161.21	20.29	20.28	103.88	-124.29	-569.46	175.11	134.73	40.38	4.337	
5,300.00	5,260.90	5,300.53	5,260.34	20.69	20.68	103.75	-126.89	-581.92	178.47	137.29	41.18	4.334	
5,400.00	5,360.10	5,400.59	5,359.46	21.09	21.09	103.62	-129.49	-594.38	181.83	139.85	41.98	4.331	
5,500.00	5,459.29	5,500.64	5,458.59	21.49	21.49	103.50	-132.09	-606.84	185.20	142.41	42.79	4.328	
5,600.00	5,558.48	5,599.30	5,557.72	21.90	21.88	103.38	-134.69	-619.30	188.56	144.98	43.58	4.326	
5,700.00	5,657.67	5,700.76	5,656.85	22.30	22.29	103.27	-137.29	-631.76	191.93	147.53	44.39	4.323	
5,800.00	5,756.86	5,800.82	5,755.98	22.70	22.69	103.16	-139.90	-644.22	195.29	150.09	45.20	4.321	
5,900.00	5,856.05	5,900.87	5,855.11	23.11	23.09	103.05	-142.50	-656.68	198.66	152.65	46.00	4.318	
6,000.00	5,955.24	6,000.93	5,954.24	23.51	23.50	102.95	-145.10	-669.14	202.02	155.21	46.81	4.316	
6,100.00	6,054.43	6,099.01	6,053.37	23.91	23.89	102.85	-147.70	-681.60	205.39	157.78	47.61	4.314	
6,200.00	6,153.62	6,201.05	6,152.49	24.32	24.30	102.75	-150.30	-694.06	208.76	160.34	48.42	4.311	
6,300.00	6,252.82	6,301.10	6,251.62	24.72	24.71	102.66	-152.90	-706.52	212.13	162.90	49.23	4.309	
6,400.00	6,352.01	6,401.16	6,350.75	25.13	25.11	102.57	-155.50	-718.98	215.50	165.46	50.03	4.307	
6,500.00	6,451.20	6,501.22	6,449.88	25.53	25.51	102.48	-158.10	-731.44	218.87	168.03	50.84	4.305	
6,600.00	6,550.39	6,601.27	6,549.01	25.94	25.92	102.39	-160.70	-743.90	222.24	170.59	51.65	4.303	
6,700.00	6,649.58	6,698.67	6,648.14	26.34	26.31	102.31	-163.30	-756.36	225.61	173.16	52.44	4.302	
6,800.00	6,748.77	6,801.39	6,747.27	26.74	26.72	102.23	-165.91	-768.82	228.98	175.72	53.26	4.299	
6,838.96	6,787.41	6,837.55	6,785.89	26.90	26.87	102.20	-166.92	-773.67	230.29	176.73	53.57	4.299	
6,850.00	6,798.38	6,848.58	6,796.83	26.95	26.91	107.18	-167.21	-775.05	230.69	177.04	53.65	4.300	
6,900.00	6,848.23	6,898.98	6,846.82	27.12	27.12	168.29	-168.52	-781.31	233.26	179.20	54.05	4.315	
6,950.00	6,898.06	6,955.54	6,903.23	27.27	27.32	-135.87	-169.95	-784.74	236.31	181.89	54.42	4.343	
7,000.00	6,947.42	7,012.84	6,960.42	27.39	27.47	-123.23	-171.34	-781.95	239.25	184.60	54.66	4.377	
7,050.00	6,995.85	7,070.81	7,017.61	27.50	27.61	-118.78	-172.65	-772.77	242.01	187.22	54.79	4.417	
7,100.00	7,042.91	7,129.35	7,073.98	27.59	27.73	-116.65	-173.86	-757.10	244.52	189.70	54.83	4.460	
7,150.00	7,088.16	7,188.36	7,128.64	27.68	27.84	-115.37	-174.95	-735.01	246.73	191.94	54.79	4.504	
7,200.00	7,131.18	7,247.70	7,180.75	27.76	27.95	-114.45	-175.91	-706.71	248.58	193.89	54.70	4.545	
7,250.00	7,171.59	7,307.24	7,229.47	27.85	28.07	-113.66	-176.72	-672.54	250.06	195.45	54.60	4.580	
7,300.00	7,209.00	7,366.84	7,274.01	27.95	28.22	-112.87	-177.35	-632.99	251.13	196.57	54.56	4.603	
7,350.00	7,243.07	7,426.35	7,313.70	28.06	28.41	-112.04	-177.82	-588.69	251.80	197.17	54.63	4.609	
7,400.00	7,273.49	7,485.63	7,347.95	28.20	28.66	-111.14	-178.10	-540.35	252.07	197.21	54.86	4.595	
7,450.00	7,299.98	7,544.55	7,376.34	28.39	28.98	-110.13	-178.20	-488.76	251.96	196.66	55.30	4.557	
7,500.00	7,322.30	7,602.98	7,398.57	28.64	29.40	-109.03	-178.11	-434.76	251.51	195.53	55.98	4.493	
7,550.00	7,340.24	7,660.81	7,414.48	28.96	29.91	-107.82	-177.85	-379.19	250.76	193.84	56.92	4.405	
7,600.00	7,353.63	7,717.95	7,424.06	29.36	30.51	-106.51	-177.43	-322.89	249.76	191.65	58.10	4.298	
7,650.00	7,362.35	7,773.60	7,427.45	29.84	31.16	-105.14	-176.86	-267.37	248.56	189.09	59.48	4.179	
7,700.00	7,366.32	7,823.48	7,428.35	30.39	31.84	-104.49	-176.30	-217.50	247.94	187.08	60.86	4.074	
7,707.12	7,366.49	7,830.60	7,428.47	30.47	31.95	-104.48	-176.22	-210.38	247.93	186.88	61.05	4.061	
7,800.00	7,368.16	7,923.48	7,430.14	31.72	33.36	-104.48	-175.17	-117.52	247.92	184.23	63.70	3.892	
7,900.00	7,369.96	8,023.48	7,431.94	33.33	35.11	-104.48	-174.04	-17.54	247.92	180.92	66.99	3.701	
8,000.00	7,371.76	8,123.48	7,433.74	35.17	37.06	-104.48	-172.91	82.43	247.91	177.22	70.69	3.507	
8,100.00	7,373.56	8,223.48	7,435.53	37.21	39.19	-104.48	-171.78	182.41	247.90	173.17	74.73	3.317	
8,200.00	7,375.36	8,323.48	7,437.33	39.41	41.45	-104.48	-170.65	282.39	247.89	168.83	79.06	3.136	
8,300.00	7,377.15	8,423.48	7,439.13	41.75	43.84	-104.48	-169.52	382.37	247.88	164.25	83.63	2.964	
8,400.00	7,378.95	8,523.48	7,440.93	44.20	46.33	-104.48	-168.39	482.34	247.87	159.46	88.41	2.804	
8,500.00	7,380.75	8,623.48	7,442.72	46.75	48.90	-104.48	-167.27	582.32	247.86	154.50	93.37	2.655	
8,600.00	7,382.55	8,723.48	7,444.52	49.37	51.55	-104.48	-166.14	682.30	247.86	149.39	98.47	2.517	
8,700.00	7,384.34	8,823.48	7,446.32	52.07	54.27	-104.48	-165.01	782.27	247.85	144.15	103.70	2.390	
8,800.00	7,386.14	8,923.48	7,448.12	54.82	57.03	-104.48	-163.88	882.25	247.84	138.80	109.04	2.273	
8,900.00	7,387.94	9,023.48	7,449.91	57.62	59.84	-104.48	-162.75	982.23	247.83	133.36	114.47	2.165	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 5X-HNC-05-03-68 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 251-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
9,000.00	7,389.74	9,123.48	7,451.71	60.46	62.69	-104.48	-161.62	1,082.21	247.82	127.85	119.98	2.066		
9,100.00	7,391.54	9,223.48	7,453.51	63.34	65.58	-104.48	-160.49	1,182.18	247.81	122.26	125.56	1.974		
9,200.00	7,393.33	9,323.48	7,455.30	66.25	68.50	-104.48	-159.36	1,282.16	247.81	116.61	131.20	1.889		
9,300.00	7,395.13	9,423.48	7,457.10	69.19	71.44	-104.49	-158.23	1,382.14	247.80	110.90	136.90	1.810		
9,400.00	7,396.93	9,523.48	7,458.90	72.16	74.40	-104.49	-157.10	1,482.12	247.79	105.15	142.64	1.737		
9,500.00	7,398.73	9,623.48	7,460.70	75.14	77.39	-104.49	-155.97	1,582.09	247.78	99.36	148.42	1.669		
9,600.00	7,400.52	9,723.48	7,462.49	78.14	80.40	-104.49	-154.85	1,682.07	247.77	93.53	154.24	1.606		
9,700.00	7,402.32	9,823.48	7,464.29	81.17	83.42	-104.49	-153.72	1,782.05	247.76	87.67	160.09	1.548		
9,800.00	7,404.12	9,923.48	7,466.09	84.20	86.46	-104.49	-152.59	1,882.03	247.76	81.78	165.98	1.493 Level 3		
9,900.00	7,405.92	10,023.48	7,467.89	87.25	89.51	-104.49	-151.46	1,982.00	247.75	75.86	171.88	1.441 Level 3		
10,000.00	7,407.71	10,123.48	7,469.68	90.31	92.57	-104.49	-150.33	2,081.98	247.74	69.92	177.82	1.393 Level 3		
10,100.00	7,409.51	10,223.48	7,471.48	93.39	95.64	-104.49	-149.20	2,181.96	247.73	63.96	183.77	1.348 Level 3		
10,200.00	7,411.31	10,323.48	7,473.28	96.47	98.72	-104.49	-148.07	2,281.94	247.72	57.98	189.74	1.306 Level 3		
10,300.00	7,413.11	10,423.48	7,475.07	99.56	101.81	-104.49	-146.94	2,381.91	247.71	51.98	195.73	1.266 Level 3		
10,400.00	7,414.91	10,523.48	7,476.87	102.66	104.91	-104.49	-145.81	2,481.89	247.71	45.96	201.74	1.228 Level 2		
10,500.00	7,416.70	10,623.48	7,478.67	105.77	108.02	-104.49	-144.68	2,581.87	247.70	39.93	207.76	1.192 Level 2		
10,600.00	7,418.50	10,723.48	7,480.47	108.88	111.13	-104.49	-143.55	2,681.85	247.69	33.89	213.80	1.159 Level 2		
10,700.00	7,420.30	10,823.48	7,482.26	112.00	114.25	-104.49	-142.42	2,781.82	247.68	27.84	219.84	1.127 Level 2		
10,800.00	7,422.10	10,923.48	7,484.06	115.13	117.38	-104.49	-141.30	2,881.80	247.67	21.77	225.90	1.096 Level 2		
10,900.00	7,423.89	11,023.48	7,485.86	118.26	120.51	-104.49	-140.17	2,981.78	247.66	15.69	231.97	1.068 Level 2		
11,000.00	7,425.69	11,123.48	7,487.66	121.40	123.64	-104.49	-139.04	3,081.76	247.66	9.61	238.05	1.040 Level 2		
11,100.00	7,427.49	11,223.48	7,489.45	124.54	126.78	-104.49	-137.91	3,181.73	247.65	3.51	244.14	1.014 Level 2		
11,200.00	7,429.29	11,323.48	7,491.25	127.69	129.93	-104.49	-136.78	3,281.71	247.64	-2.59	250.23	0.990 Level 1		
11,300.00	7,431.09	11,423.48	7,493.05	130.83	133.07	-104.49	-135.65	3,381.69	247.63	-8.70	256.33	0.966 Level 1		
11,400.00	7,432.88	11,523.48	7,494.85	133.99	136.23	-104.49	-134.52	3,481.67	247.62	-14.82	262.44	0.944 Level 1		
11,500.00	7,434.68	11,623.48	7,496.64	137.14	139.38	-104.49	-133.39	3,581.64	247.61	-20.95	268.56	0.922 Level 1		
11,600.00	7,436.48	11,723.48	7,498.44	140.30	142.54	-104.49	-132.26	3,681.62	247.60	-27.08	274.68	0.901 Level 1		
11,700.00	7,438.28	11,823.48	7,500.24	143.47	145.70	-104.49	-131.13	3,781.60	247.60	-33.22	280.81	0.882 Level 1		
11,800.00	7,440.07	11,923.48	7,502.03	146.63	148.86	-104.49	-130.00	3,881.58	247.59	-39.36	286.95	0.863 Level 1		
11,900.00	7,441.87	12,023.48	7,503.83	149.80	152.03	-104.50	-128.87	3,981.55	247.58	-45.51	293.09	0.845 Level 1		
11,907.12	7,442.00	12,030.60	7,503.96	150.02	152.26	-104.50	-128.79	3,988.67	247.58	-45.94	293.52	0.843 Level 1, ES, SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 401-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	90.03	-0.07	124.76	124.76				
100.00	100.00	100.00	100.00	0.70	0.70	90.03	-0.07	124.76	124.76	123.37	1.40	89.356	
200.00	200.00	200.00	200.00	2.44	2.44	90.03	-0.07	124.76	124.76	119.88	4.89	25.530	
300.00	299.98	300.02	299.98	3.32	4.19	-130.56	-0.07	124.76	125.89	118.38	7.51	16.762	
400.00	399.84	399.84	399.84	3.36	5.93	-132.27	-0.07	124.76	129.36	120.06	9.29	13.919	
500.00	499.45	503.28	503.26	3.44	6.84	-134.54	-1.33	123.39	133.96	123.69	10.28	13.036	
550.00	549.13	555.10	555.03	3.50	6.82	-135.67	-2.91	121.67	136.19	125.88	10.31	13.210	
600.00	598.76	607.01	606.83	3.57	6.83	-136.69	-5.13	119.26	138.06	127.68	10.38	13.303	
700.00	698.01	711.08	710.47	3.74	6.87	-138.00	-11.49	112.34	139.66	129.11	10.55	13.233	
750.00	747.64	763.16	762.19	3.84	6.91	-138.32	-15.63	107.84	139.36	128.69	10.66	13.068	
800.00	797.27	815.24	813.79	3.94	6.95	-146.42	-20.40	102.65	138.57	127.79	10.78	12.852	
892.27	888.83	911.19	908.48	4.15	7.04	-159.47	-30.85	91.28	136.53	125.50	11.03	12.379	
900.00	896.50	919.22	916.38	4.17	7.05	-159.26	-31.83	90.22	136.33	125.28	11.05	12.335	
1,000.00	995.69	1,020.07	1,015.41	4.42	7.18	-156.35	-44.72	76.19	133.04	121.64	11.40	11.665	
1,100.00	1,094.88	1,119.77	1,113.29	4.70	7.34	-153.29	-57.57	62.21	130.00	118.18	11.82	11.002	
1,200.00	1,194.07	1,219.48	1,211.17	4.99	7.52	-150.09	-70.43	48.23	127.35	115.07	12.27	10.375	
1,300.00	1,293.26	1,319.18	1,309.05	5.30	7.72	-146.76	-83.28	34.25	125.11	112.34	12.78	9.792	
1,400.00	1,392.46	1,418.89	1,406.93	5.62	7.95	-143.33	-96.13	20.26	123.31	109.99	13.32	9.257	
1,500.00	1,491.65	1,518.59	1,504.81	5.95	8.19	-139.81	-108.98	6.28	121.97	108.07	13.90	8.773	
1,600.00	1,590.84	1,618.30	1,602.69	6.30	8.46	-136.22	-121.83	-7.70	121.10	106.58	14.52	8.340	
1,700.00	1,690.03	1,718.00	1,700.57	6.64	8.74	-132.60	-134.68	-21.68	120.72	105.55	15.17	7.957	
1,729.45	1,719.24	1,747.37	1,729.40	6.75	8.82	-131.53	-138.47	-25.80	120.70	105.33	15.37	7.853 CC	
1,800.00	1,789.22	1,817.71	1,798.45	7.00	9.03	-128.97	-147.53	-35.66	120.82	104.97	15.85	7.623	
1,900.00	1,888.41	1,917.41	1,896.33	7.36	9.34	-125.36	-160.38	-49.64	121.40	104.85	16.55	7.336 ES	
2,000.00	1,987.60	2,017.12	1,994.21	7.72	9.66	-121.80	-173.24	-63.62	122.47	105.20	17.27	7.093	
2,100.00	2,086.79	2,116.83	2,092.09	8.09	10.00	-118.32	-186.09	-77.60	124.00	106.00	18.00	6.889	
2,200.00	2,185.98	2,216.53	2,189.97	8.47	10.34	-114.93	-198.94	-91.58	125.98	107.24	18.74	6.722	
2,300.00	2,285.17	2,316.24	2,287.85	8.84	10.69	-111.65	-211.79	-105.56	128.39	108.90	19.49	6.587	
2,400.00	2,384.37	2,415.94	2,385.73	9.22	11.05	-108.51	-224.64	-119.55	131.20	110.96	20.25	6.481	
2,500.00	2,483.56	2,515.65	2,483.61	9.60	11.42	-105.50	-237.49	-133.53	134.40	113.40	21.00	6.399	
2,600.00	2,582.75	2,615.35	2,581.49	9.98	11.79	-102.64	-250.34	-147.51	137.95	116.19	21.76	6.340	
2,700.00	2,681.94	2,715.06	2,679.37	10.37	12.17	-99.93	-263.19	-161.49	141.82	119.31	22.51	6.300	
2,800.00	2,781.13	2,814.76	2,777.25	10.76	12.55	-97.37	-276.05	-175.47	146.00	122.73	23.27	6.275	
2,900.00	2,880.32	2,914.47	2,875.13	11.14	12.94	-94.96	-288.90	-189.45	150.45	126.43	24.02	6.264	
3,000.00	2,979.51	3,014.17	2,973.01	11.53	13.34	-92.69	-301.75	-203.43	155.15	130.38	24.77	6.264	
3,100.00	3,078.70	3,113.88	3,070.89	11.92	13.74	-90.55	-314.60	-217.41	160.08	134.57	25.52	6.274	
3,200.00	3,177.89	3,213.58	3,168.77	12.32	14.14	-88.55	-327.45	-231.39	165.23	138.97	26.26	6.292	
3,300.00	3,277.08	3,313.29	3,266.65	12.71	14.55	-86.66	-340.30	-245.38	170.56	143.55	27.01	6.316	
3,400.00	3,376.28	3,412.99	3,364.53	13.10	14.95	-84.89	-353.15	-259.36	176.06	148.32	27.75	6.345	
3,500.00	3,475.47	3,512.70	3,462.41	13.50	15.37	-83.24	-366.01	-273.34	181.73	153.24	28.49	6.378	
3,600.00	3,574.66	3,612.40	3,560.29	13.89	15.78	-81.68	-378.86	-287.32	187.53	158.30	29.23	6.415	
3,700.00	3,673.85	3,712.11	3,658.17	14.29	16.20	-80.21	-391.71	-301.30	193.47	163.50	29.97	6.455	
3,800.00	3,773.04	3,811.81	3,756.05	14.69	16.62	-78.84	-404.56	-315.28	199.52	168.81	30.71	6.496	
3,900.00	3,872.23	3,911.52	3,853.93	15.08	17.04	-77.54	-417.41	-329.26	205.69	174.23	31.45	6.539	
4,000.00	3,971.42	4,011.22	3,951.81	15.48	17.47	-76.33	-430.26	-343.24	211.95	179.75	32.19	6.583	
4,100.00	4,070.61	4,110.93	4,049.69	15.88	17.89	-75.18	-443.11	-357.22	218.30	185.36	32.93	6.628	
4,200.00	4,169.80	4,210.63	4,147.57	16.28	18.32	-74.09	-455.96	-371.20	224.73	191.06	33.68	6.673	
4,300.00	4,268.99	4,310.34	4,245.45	16.68	18.75	-73.07	-468.82	-385.19	231.24	196.82	34.42	6.719	
4,400.00	4,368.19	4,410.04	4,343.33	17.08	19.18	-72.11	-481.67	-399.17	237.82	202.66	35.16	6.764	
4,500.00	4,467.38	4,509.75	4,441.21	17.48	19.61	-71.19	-494.52	-413.15	244.46	208.56	35.90	6.809	
4,600.00	4,566.57	4,609.45	4,539.09	17.88	20.05	-70.33	-507.37	-427.13	251.16	214.52	36.65	6.854	
4,700.00	4,665.76	4,709.16	4,636.97	18.28	20.48	-69.51	-520.22	-441.11	257.92	220.53	37.39	6.898	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 401-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
4,800.00	4,764.95	4,808.86	4,734.85	18.68	20.92	-68.73	-533.07	-455.09	264.72	226.59	38.13	6.942	
4,900.00	4,864.14	4,908.57	4,832.73	19.08	21.35	-67.99	-545.92	-469.07	271.58	232.70	38.88	6.985	
5,000.00	4,963.33	5,008.28	4,930.61	19.48	21.79	-67.28	-558.77	-483.05	278.47	238.84	39.63	7.027	
5,100.00	5,062.52	5,107.98	5,028.49	19.88	22.23	-66.62	-571.63	-497.03	285.41	245.03	40.37	7.069	
5,200.00	5,161.71	5,207.69	5,126.37	20.29	22.67	-65.98	-584.48	-511.01	292.38	251.25	41.12	7.110	
5,300.00	5,260.90	5,307.39	5,224.25	20.69	23.11	-65.37	-597.33	-525.00	299.38	257.51	41.87	7.150	
5,400.00	5,360.10	5,407.10	5,322.13	21.09	23.55	-64.79	-610.18	-538.98	306.42	263.80	42.62	7.189	
5,500.00	5,459.29	5,506.80	5,420.01	21.49	24.00	-64.24	-623.03	-552.96	313.49	270.12	43.37	7.228	
5,600.00	5,558.48	5,606.51	5,517.89	21.90	24.44	-63.71	-635.88	-566.94	320.58	276.46	44.12	7.266	
5,700.00	5,657.67	5,706.21	5,615.77	22.30	24.88	-63.20	-648.73	-580.92	327.70	282.83	44.88	7.303	
5,800.00	5,756.86	5,805.92	5,713.65	22.70	25.33	-62.72	-661.58	-594.90	334.85	289.22	45.63	7.339	
5,900.00	5,856.05	5,905.62	5,811.53	23.11	25.77	-62.25	-674.44	-608.88	342.02	295.64	46.38	7.374	
6,000.00	5,955.24	6,005.33	5,909.41	23.51	26.22	-61.81	-687.29	-622.86	349.21	302.07	47.14	7.409	
6,100.00	6,054.43	6,105.03	6,007.29	23.91	26.67	-61.38	-700.14	-636.84	356.42	308.53	47.89	7.442	
6,200.00	6,153.62	6,204.74	6,105.17	24.32	27.11	-60.97	-712.99	-650.83	363.65	315.00	48.65	7.475	
6,300.00	6,252.82	6,304.44	6,203.05	24.72	27.56	-60.58	-725.84	-664.81	370.89	321.49	49.40	7.508	
6,400.00	6,352.01	6,404.15	6,300.93	25.13	28.01	-60.20	-738.69	-678.79	378.16	328.00	50.16	7.539	
6,500.00	6,451.20	6,503.85	6,398.81	25.53	28.46	-59.83	-751.54	-692.77	385.44	334.52	50.92	7.570	
6,600.00	6,550.39	6,603.56	6,496.69	25.94	28.90	-59.48	-764.40	-706.75	392.73	341.06	51.68	7.600	
6,700.00	6,649.58	6,703.26	6,594.57	26.34	29.35	-59.14	-777.25	-720.73	400.04	347.61	52.43	7.629	
6,800.00	6,748.77	6,802.97	6,692.45	26.74	29.80	-58.82	-790.10	-734.71	407.36	354.17	53.19	7.658	
6,838.96	6,787.41	6,841.81	6,730.59	26.90	29.98	-58.69	-795.10	-740.16	410.22	356.73	53.49	7.669	
6,850.00	6,798.38	6,852.82	6,741.39	26.95	30.03	-53.75	-796.52	-741.70	411.04	357.47	53.57	7.673	
6,900.00	6,848.23	6,902.43	6,790.10	27.12	30.25	8.14	-802.92	-748.66	415.01	361.14	53.87	7.704	
6,950.00	6,898.06	6,951.35	6,838.12	27.27	30.47	65.78	-809.22	-755.52	419.51	365.46	54.05	7.761	
7,000.00	6,947.42	6,999.13	6,885.02	27.39	30.69	80.51	-815.38	-762.22	424.81	370.68	54.14	7.847	
7,050.00	6,995.85	7,045.31	6,930.36	27.50	30.90	87.20	-821.33	-768.69	431.28	377.15	54.14	7.967	
7,100.00	7,042.91	7,089.49	6,973.73	27.59	31.10	91.56	-827.03	-774.89	439.37	385.31	54.06	8.128	
7,150.00	7,088.16	7,142.63	7,026.13	27.68	31.32	95.50	-833.88	-780.31	449.14	395.12	54.02	8.314	
7,200.00	7,131.18	7,201.62	7,084.60	27.76	31.52	98.97	-841.44	-780.04	459.84	405.84	54.01	8.515	
7,250.00	7,171.59	7,265.54	7,147.49	27.85	31.68	102.07	-849.46	-772.23	471.14	417.19	53.94	8.734	
7,300.00	7,209.00	7,335.21	7,214.40	27.95	31.81	104.90	-857.87	-754.95	482.62	428.83	53.79	8.972	
7,350.00	7,243.07	7,411.45	7,284.30	28.06	31.93	107.48	-866.50	-725.93	493.81	440.31	53.50	9.230	
7,400.00	7,273.49	7,494.89	7,355.10	28.20	32.02	109.76	-875.06	-682.79	504.14	451.06	53.08	9.498	
7,450.00	7,299.98	7,585.68	7,423.32	28.39	32.12	111.65	-883.05	-623.60	513.00	460.36	52.64	9.745	
7,500.00	7,322.30	7,683.17	7,484.06	28.64	32.25	113.04	-889.85	-547.83	519.78	467.33	52.46	9.909	
7,550.00	7,340.24	7,785.63	7,531.67	28.96	32.48	113.80	-894.75	-457.42	523.96	471.06	52.90	9.905	
7,600.00	7,353.63	7,890.31	7,561.28	29.36	32.92	113.84	-897.18	-357.23	525.20	470.93	54.27	9.678	
7,650.00	7,362.35	7,985.96	7,570.54	29.84	33.57	113.28	-897.05	-262.16	523.51	467.16	56.35	9.290	
7,700.00	7,366.32	8,035.85	7,571.53	30.39	34.05	113.14	-896.48	-212.28	522.17	464.55	57.62	9.062	
7,706.27	7,366.48	8,042.12	7,571.66	30.46	34.12	113.14	-896.41	-206.01	522.16	464.38	57.78	9.037	
7,707.12	7,366.49	8,042.97	7,571.67	30.47	34.13	113.14	-896.40	-205.16	522.16	464.36	57.80	9.034	
7,800.00	7,368.16	8,135.85	7,573.52	31.72	35.24	113.16	-895.34	-112.31	522.22	461.99	60.23	8.670	
7,900.00	7,369.96	8,235.85	7,575.50	33.33	36.75	113.18	-894.20	-12.33	522.30	459.00	63.29	8.252	
8,000.00	7,371.76	8,335.85	7,577.48	35.17	38.52	113.20	-893.07	87.64	522.37	455.62	66.75	7.826	
8,100.00	7,373.56	8,435.85	7,579.46	37.21	40.51	113.22	-891.93	187.62	522.44	451.91	70.53	7.407	
8,200.00	7,375.36	8,535.85	7,581.45	39.41	42.66	113.23	-890.79	287.59	522.51	447.91	74.61	7.004	
8,300.00	7,377.15	8,635.85	7,583.43	41.75	44.96	113.25	-889.65	387.56	522.59	443.67	78.92	6.622	
8,400.00	7,378.95	8,735.85	7,585.41	44.20	47.38	113.27	-888.52	487.54	522.66	439.23	83.43	6.265	
8,500.00	7,380.75	8,835.85	7,587.40	46.75	49.89	113.29	-887.38	587.51	522.73	434.62	88.11	5.933	
8,600.00	7,382.55	8,935.85	7,589.38	49.37	52.48	113.31	-886.24	687.48	522.81	429.87	92.94	5.625	
8,700.00	7,384.34	9,035.85	7,591.36	52.07	55.14	113.33	-885.10	787.46	522.88	424.99	97.89	5.342	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HC-05-03-68 - OH - PLAN #1											Offset Site Error: 0.00 usft		
Survey Program: 0-INC-ONLY_A027Ua, 401-MWD+HDGM											Offset Well Error: 0.00 usft		
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
8,800.00	7,386.14	9,135.85	7,593.34	54.82	57.86	113.35	-883.96	887.43	522.95	420.01	102.94	5.080	
8,900.00	7,387.94	9,235.85	7,595.33	57.62	60.63	113.37	-882.83	987.41	523.02	414.94	108.09	4.839	
9,000.00	7,389.74	9,335.85	7,597.31	60.46	63.45	113.38	-881.69	1,087.38	523.10	409.79	113.31	4.617	
9,100.00	7,391.54	9,435.85	7,599.29	63.34	66.30	113.40	-880.55	1,187.35	523.17	404.58	118.59	4.411	
9,200.00	7,393.33	9,535.85	7,601.27	66.25	69.18	113.42	-879.41	1,287.33	523.24	399.31	123.94	4.222	
9,300.00	7,395.13	9,635.85	7,603.26	69.19	72.10	113.44	-878.27	1,387.30	523.32	393.98	129.33	4.046	
9,400.00	7,396.93	9,735.85	7,605.24	72.16	75.04	113.46	-877.14	1,487.27	523.39	388.62	134.77	3.883	
9,500.00	7,398.73	9,835.85	7,607.22	75.14	78.00	113.48	-876.00	1,587.25	523.47	383.21	140.25	3.732	
9,600.00	7,400.52	9,935.85	7,609.21	78.14	80.98	113.50	-874.86	1,687.22	523.54	377.77	145.77	3.592	
9,700.00	7,402.32	10,035.85	7,611.19	81.17	83.99	113.51	-873.72	1,787.20	523.61	372.30	151.31	3.461	
9,800.00	7,404.12	10,135.85	7,613.17	84.20	87.00	113.53	-872.59	1,887.17	523.69	366.80	156.88	3.338	
9,900.00	7,405.92	10,235.85	7,615.15	87.25	90.03	113.55	-871.45	1,987.14	523.76	361.28	162.48	3.224	
10,000.00	7,407.71	10,335.85	7,617.14	90.31	93.08	113.57	-870.31	2,087.12	523.83	355.74	168.09	3.116	
10,100.00	7,409.51	10,435.85	7,619.12	93.39	96.13	113.59	-869.17	2,187.09	523.91	350.18	173.73	3.016	
10,200.00	7,411.31	10,535.85	7,621.10	96.47	99.20	113.61	-868.03	2,287.06	523.98	344.60	179.38	2.921	
10,300.00	7,413.11	10,635.85	7,623.09	99.56	102.28	113.63	-866.90	2,387.04	524.06	339.01	185.05	2.832	
10,400.00	7,414.91	10,735.85	7,625.07	102.66	105.36	113.64	-865.76	2,487.01	524.13	333.40	190.73	2.748	
10,500.00	7,416.70	10,835.85	7,627.05	105.77	108.46	113.66	-864.62	2,586.98	524.20	327.78	196.43	2.669	
10,600.00	7,418.50	10,935.85	7,629.03	108.88	111.56	113.68	-863.48	2,686.96	524.28	322.14	202.13	2.594	
10,700.00	7,420.30	11,035.85	7,631.02	112.00	114.66	113.70	-862.34	2,786.93	524.35	316.50	207.85	2.523	
10,800.00	7,422.10	11,135.85	7,633.00	115.13	117.78	113.72	-861.21	2,886.91	524.43	310.85	213.58	2.455	
10,900.00	7,423.89	11,235.85	7,634.98	118.26	120.90	113.74	-860.07	2,986.88	524.50	305.19	219.31	2.392	
11,000.00	7,425.69	11,335.85	7,636.96	121.40	124.02	113.76	-858.93	3,086.85	524.57	299.52	225.05	2.331	
11,100.00	7,427.49	11,435.85	7,638.95	124.54	127.15	113.77	-857.79	3,186.83	524.65	293.85	230.80	2.273	
11,200.00	7,429.29	11,535.85	7,640.93	127.69	130.29	113.79	-856.66	3,286.80	524.72	288.16	236.56	2.218	
11,300.00	7,431.09	11,635.85	7,642.91	130.83	133.43	113.81	-855.52	3,386.77	524.80	282.48	242.32	2.166	
11,400.00	7,432.88	11,735.85	7,644.90	133.99	136.57	113.83	-854.38	3,486.75	524.87	276.78	248.09	2.116	
11,500.00	7,434.68	11,835.85	7,646.88	137.14	139.72	113.85	-853.24	3,586.72	524.95	271.09	253.86	2.068	
11,600.00	7,436.48	11,935.85	7,648.86	140.30	142.87	113.87	-852.10	3,686.70	525.02	265.39	259.64	2.022	
11,700.00	7,438.28	12,035.84	7,650.84	143.47	146.02	113.88	-850.97	3,786.67	525.10	259.68	265.42	1.978	
11,800.00	7,440.07	12,135.84	7,652.83	146.63	149.18	113.90	-849.83	3,886.64	525.17	253.97	271.20	1.936	
11,900.00	7,441.87	12,235.84	7,654.81	149.80	152.34	113.92	-848.69	3,986.62	525.25	248.26	276.99	1.896	
11,907.12	7,442.00	12,242.96	7,654.95	150.02	152.56	113.92	-848.61	3,993.73	525.25	247.85	277.40	1.893 SF	



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<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HNB-05-03-68 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 201-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	90.26	-0.34	74.80	74.81					
100.00	100.00	100.00	100.00	0.70	0.70	90.26	-0.34	74.80	74.81	73.41	1.40	53.575		
200.00	200.00	200.00	200.00	2.44	2.44	90.26	-0.34	74.80	74.81	69.92	4.89	15.307		
300.00	299.98	301.82	301.80	3.32	3.32	-129.77	-1.66	73.56	74.70	68.06	6.64	11.248		
400.00	399.84	403.63	403.46	3.36	3.37	-129.89	-5.60	69.83	74.40	67.69	6.72	11.075		
500.00	499.45	505.44	504.87	3.44	3.45	-130.08	-12.15	63.62	73.90	67.03	6.87	10.754		
550.00	549.13	556.35	555.43	3.50	3.52	-130.21	-16.41	59.58	73.58	66.59	6.99	10.531		
600.00	598.76	607.24	605.87	3.57	3.58	-130.08	-21.32	54.93	72.92	65.81	7.11	10.258		
700.00	698.01	708.88	706.21	3.74	3.77	-128.20	-33.07	43.80	69.82	62.38	7.43	9.394		
750.00	747.64	758.85	755.38	3.84	3.88	-126.62	-39.51	37.70	67.69	60.05	7.63	8.866		
800.00	797.27	808.77	804.51	3.94	3.99	-132.83	-45.95	31.60	65.95	58.09	7.85	8.400		
882.59	879.23	908.81	885.62	4.13	4.26	-141.50	-56.58	21.53	64.78	56.49	8.30	7.807 CC, ES		
892.27	888.83	900.84	895.12	4.15	4.23	-142.35	-57.83	20.35	64.80	56.50	8.30	7.807		
900.00	896.50	908.56	902.71	4.17	4.26	-141.86	-58.82	19.41	64.83	56.49	8.34	7.772		
1,000.00	995.69	1,008.29	1,000.86	4.42	4.55	-135.58	-71.69	7.22	65.64	56.74	8.90	7.378		
1,100.00	1,094.88	1,108.03	1,099.01	4.70	4.86	-129.52	-84.55	-4.96	67.22	57.71	9.50	7.073		
1,200.00	1,194.07	1,207.77	1,197.17	4.99	5.20	-123.79	-97.42	-17.15	69.51	59.36	10.15	6.848		
1,300.00	1,293.26	1,307.51	1,295.32	5.30	5.55	-118.48	-110.28	-29.33	72.45	61.62	10.83	6.692		
1,400.00	1,392.46	1,407.25	1,393.47	5.62	5.91	-113.62	-123.15	-41.52	75.97	64.44	11.52	6.593		
1,500.00	1,491.65	1,506.99	1,491.62	5.95	6.29	-109.22	-136.01	-53.71	79.98	67.74	12.24	6.537		
1,600.00	1,590.84	1,606.73	1,589.78	6.30	6.67	-105.26	-148.88	-65.89	84.42	71.46	12.96	6.515		
1,700.00	1,690.03	1,706.47	1,687.93	6.64	7.06	-101.71	-161.74	-78.08	89.22	75.54	13.69	6.519		
1,800.00	1,789.22	1,806.21	1,786.08	7.00	7.46	-98.53	-174.61	-90.26	94.33	79.91	14.42	6.541		
1,900.00	1,888.41	1,905.95	1,884.23	7.36	7.87	-95.68	-187.47	-102.45	99.70	84.54	15.16	6.577		
2,000.00	1,987.60	2,005.69	1,982.39	7.72	8.27	-93.13	-200.34	-114.64	105.29	89.39	15.90	6.621		
2,100.00	2,086.79	2,105.43	2,080.54	8.09	8.69	-90.84	-213.20	-126.82	111.07	94.42	16.65	6.672		
2,200.00	2,185.98	2,205.17	2,178.69	8.47	9.10	-88.78	-226.07	-139.01	117.01	99.61	17.40	6.726		
2,300.00	2,285.17	2,304.91	2,276.85	8.84	9.52	-86.92	-238.93	-151.19	123.08	104.94	18.15	6.782		
2,400.00	2,384.37	2,404.65	2,375.00	9.22	9.94	-85.24	-251.80	-163.38	129.27	110.37	18.90	6.839		
2,500.00	2,483.56	2,504.39	2,473.15	9.60	10.37	-83.71	-264.66	-175.57	135.57	115.91	19.66	6.896		
2,600.00	2,582.75	2,604.13	2,571.30	9.98	10.79	-82.32	-277.53	-187.75	141.95	121.53	20.42	6.953		
2,700.00	2,681.94	2,703.87	2,669.46	10.37	11.22	-81.04	-290.39	-199.94	148.40	127.23	21.18	7.008		
2,800.00	2,781.13	2,803.61	2,767.61	10.76	11.65	-79.88	-303.26	-212.12	154.93	132.99	21.94	7.062		
2,900.00	2,880.32	2,903.35	2,865.76	11.14	12.08	-78.81	-316.12	-224.31	161.51	138.81	22.70	7.115		
3,000.00	2,979.51	3,003.09	2,963.91	11.53	12.51	-77.82	-328.99	-236.50	168.14	144.68	23.47	7.165		
3,100.00	3,078.70	3,102.82	3,062.07	11.92	12.95	-76.91	-341.85	-248.68	174.82	150.59	24.23	7.214		
3,200.00	3,177.89	3,202.56	3,160.22	12.32	13.38	-76.06	-354.72	-260.87	181.54	156.54	25.00	7.261		
3,300.00	3,277.08	3,302.30	3,258.37	12.71	13.82	-75.28	-367.58	-273.05	188.30	162.53	25.77	7.307		
3,400.00	3,376.28	3,402.04	3,356.53	13.10	14.25	-74.55	-380.45	-285.24	195.09	168.55	26.54	7.350		
3,500.00	3,475.47	3,501.78	3,454.68	13.50	14.69	-73.87	-393.31	-297.42	201.91	174.59	27.31	7.392		
3,600.00	3,574.66	3,601.52	3,552.83	13.89	15.13	-73.23	-406.18	-309.61	208.75	180.67	28.09	7.433		
3,700.00	3,673.85	3,701.26	3,650.98	14.29	15.57	-72.64	-419.04	-321.80	215.62	186.76	28.86	7.471		
3,800.00	3,773.04	3,801.00	3,749.14	14.69	16.00	-72.08	-431.91	-333.98	222.51	192.88	29.64	7.508		
3,900.00	3,872.23	3,900.74	3,847.29	15.08	16.44	-71.55	-444.77	-346.17	229.42	199.01	30.41	7.544		
4,000.00	3,971.42	4,000.48	3,945.44	15.48	16.88	-71.06	-457.64	-358.35	236.35	205.16	31.19	7.578		
4,100.00	4,070.61	4,100.22	4,043.60	15.88	17.32	-70.59	-470.50	-370.54	243.30	211.33	31.97	7.611		
4,200.00	4,169.80	4,200.04	4,141.75	16.28	17.77	-70.15	-483.37	-382.73	250.26	217.51	32.74	7.643		
4,300.00	4,268.99	4,300.30	4,239.90	16.68	18.21	-69.74	-496.23	-394.91	257.23	223.71	33.53	7.673		
4,400.00	4,368.19	4,400.56	4,338.05	17.08	18.65	-69.34	-509.10	-407.10	264.22	229.91	34.31	7.702		
4,500.00	4,467.38	4,500.82	4,436.21	17.48	19.10	-68.97	-521.96	-419.28	271.22	236.13	35.09	7.729		
4,600.00	4,566.57	4,601.08	4,534.36	17.88	19.54	-68.61	-534.83	-431.47	278.23	242.36	35.87	7.756		
4,700.00	4,665.76	4,701.34	4,632.51	18.28	19.99	-68.28	-547.69	-443.66	285.25	248.59	36.66	7.782		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HNB-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 201-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
4,800.00	4,764.95	4,801.60	4,730.66	18.68	20.43	-67.95	-560.56	-455.84	292.28	254.84	37.44	7.806	
4,900.00	4,864.14	4,901.86	4,828.82	19.08	20.88	-67.65	-573.42	-468.03	299.32	261.09	38.23	7.830	
5,000.00	4,963.33	4,997.88	4,926.97	19.48	21.30	-67.36	-586.29	-480.21	306.37	267.37	38.99	7.857	
5,100.00	5,062.52	5,102.39	5,025.12	19.88	21.77	-67.08	-599.15	-492.40	313.42	273.62	39.80	7.875	
5,200.00	5,161.71	5,202.65	5,123.28	20.29	22.22	-66.81	-612.02	-504.59	320.48	279.90	40.58	7.897	
5,300.00	5,260.90	5,302.91	5,221.43	20.69	22.66	-66.55	-624.88	-516.77	327.55	286.18	41.37	7.918	
5,400.00	5,360.10	5,403.17	5,319.58	21.09	23.11	-66.31	-637.75	-528.96	334.62	292.47	42.16	7.938	
5,500.00	5,459.29	5,503.43	5,417.73	21.49	23.56	-66.07	-650.61	-541.14	341.70	298.76	42.94	7.957	
5,600.00	5,558.48	5,596.31	5,515.89	21.90	23.97	-65.85	-663.48	-553.33	348.79	305.09	43.70	7.981	
5,700.00	5,657.67	5,703.95	5,614.04	22.30	24.45	-65.63	-676.34	-565.52	355.88	311.36	44.52	7.994	
5,800.00	5,756.86	5,804.21	5,712.19	22.70	24.90	-65.43	-689.21	-577.70	362.97	317.67	45.31	8.011	
5,900.00	5,856.05	5,904.47	5,810.34	23.11	25.34	-65.23	-702.07	-589.89	370.07	323.98	46.10	8.028	
6,000.00	5,955.24	6,004.73	5,908.50	23.51	25.79	-65.03	-714.94	-602.07	377.18	330.29	46.89	8.045	
6,100.00	6,054.43	6,095.01	6,006.65	23.91	26.20	-64.85	-727.80	-614.26	384.29	336.65	47.63	8.068	
6,200.00	6,153.62	6,194.75	6,104.80	24.32	26.64	-64.67	-740.67	-626.45	391.40	342.98	48.42	8.083	
6,300.00	6,252.82	6,294.49	6,202.96	24.72	27.09	-64.50	-753.53	-638.63	398.52	349.31	49.21	8.098	
6,400.00	6,352.01	6,405.77	6,301.11	25.13	27.58	-64.33	-766.40	-650.82	405.63	355.59	50.04	8.106	
6,500.00	6,451.20	6,506.03	6,399.26	25.53	28.03	-64.17	-779.26	-663.00	412.76	361.92	50.83	8.120	
6,600.00	6,550.39	6,593.71	6,497.41	25.94	28.42	-64.02	-792.13	-675.19	419.88	368.31	51.57	8.142	
6,700.00	6,649.58	6,693.45	6,595.57	26.34	28.87	-63.87	-804.99	-687.38	427.01	374.65	52.36	8.155	
6,800.00	6,748.77	6,806.81	6,693.72	26.74	29.38	-63.72	-817.86	-699.56	434.14	380.94	53.21	8.160	
6,838.96	6,787.41	6,832.04	6,731.96	26.90	29.49	-63.67	-822.87	-704.31	436.92	383.46	53.46	8.173	
6,850.00	6,798.38	6,843.05	6,742.79	26.95	29.54	-63.58	-824.29	-705.65	437.71	384.17	53.54	8.175	
6,900.00	6,848.23	6,892.73	6,791.71	27.12	29.76	3.04	-830.70	-711.43	441.27	387.41	53.86	8.193	
6,950.00	6,898.06	6,942.53	6,841.03	27.27	29.95	60.14	-837.11	-713.46	444.86	390.75	54.11	8.221	
7,000.00	6,947.42	6,992.78	6,890.78	27.39	30.11	73.86	-843.50	-710.69	448.46	394.15	54.32	8.256	
7,050.00	6,995.85	7,043.51	6,940.50	27.50	30.24	79.20	-849.82	-703.01	452.03	397.54	54.50	8.295	
7,100.00	7,042.91	7,094.71	6,989.71	27.59	30.35	82.03	-856.01	-690.35	455.54	400.88	54.66	8.334	
7,150.00	7,088.16	7,146.40	7,037.90	27.68	30.44	83.80	-861.99	-672.70	458.95	404.14	54.81	8.373	
7,200.00	7,131.18	7,198.57	7,084.54	27.76	30.52	85.02	-867.71	-650.10	462.22	407.25	54.97	8.409	
7,250.00	7,171.59	7,251.21	7,129.11	27.85	30.58	85.92	-873.08	-622.64	465.32	410.17	55.15	8.438	
7,300.00	7,209.00	7,304.31	7,171.05	27.95	30.64	86.60	-878.06	-590.50	468.21	412.84	55.37	8.456	
7,350.00	7,243.07	7,357.85	7,209.85	28.06	30.69	87.14	-882.56	-553.91	470.85	415.20	55.65	8.461	
7,400.00	7,273.49	7,411.78	7,244.96	28.20	30.75	87.56	-886.53	-513.20	473.23	417.20	56.02	8.447	
7,450.00	7,299.98	7,466.09	7,275.92	28.39	30.81	87.90	-889.91	-468.74	475.29	418.77	56.52	8.410	
7,500.00	7,322.30	7,520.71	7,302.26	28.64	30.90	88.16	-892.64	-421.00	477.03	419.87	57.16	8.346	
7,550.00	7,340.24	7,575.59	7,323.60	28.96	31.03	88.35	-894.69	-370.50	478.41	420.45	57.95	8.255	
7,600.00	7,353.63	7,630.68	7,339.60	29.36	31.22	88.49	-896.02	-317.83	479.42	420.50	58.92	8.136	
7,650.00	7,362.35	7,685.91	7,350.02	29.84	31.49	88.58	-896.60	-263.62	480.04	419.99	60.06	7.993	
7,700.00	7,366.32	7,741.22	7,354.69	30.39	31.86	88.61	-896.43	-208.54	480.28	418.94	61.34	7.830	
7,707.12	7,366.49	7,749.10	7,354.89	30.47	31.92	88.61	-896.35	-200.66	480.28	418.75	61.53	7.806	
7,746.85	7,367.21	7,788.64	7,355.71	31.00	32.28	88.63	-895.90	-161.13	480.27	417.68	62.60	7.672	
7,800.00	7,368.16	7,841.79	7,356.82	31.72	32.88	88.65	-895.29	-108.00	480.27	416.16	64.12	7.491	
7,900.00	7,369.96	7,941.79	7,358.89	33.33	34.26	88.68	-894.16	-8.03	480.26	412.91	67.36	7.130	
8,000.00	7,371.76	8,041.79	7,360.97	35.17	35.96	88.71	-893.02	91.95	480.26	409.22	71.04	6.760	
8,100.00	7,373.56	8,141.79	7,363.04	37.21	37.89	88.74	-891.88	191.92	480.25	405.16	75.09	6.395	
8,200.00	7,375.36	8,241.79	7,365.12	39.41	40.03	88.78	-890.74	291.89	480.25	400.78	79.47	6.043	
8,300.00	7,377.15	8,341.79	7,367.19	41.75	42.31	88.81	-889.60	391.86	480.24	396.13	84.11	5.710	
8,400.00	7,378.95	8,441.79	7,369.26	44.20	44.71	88.84	-888.47	491.83	480.23	391.26	88.97	5.398	
8,500.00	7,380.75	8,541.79	7,371.34	46.75	47.22	88.88	-887.33	591.80	480.23	386.20	94.03	5.107	
8,600.00	7,382.55	8,641.79	7,373.41	49.37	49.81	88.91	-886.19	691.78	480.22	380.97	99.25	4.839	
8,700.00	7,384.34	8,741.79	7,375.49	52.07	52.48	88.94	-885.05	791.75	480.22	375.61	104.60	4.591	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HNB-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 201-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
8,800.00	7,386.14	8,841.78	7,377.56	54.82	55.20	88.98	-883.92	891.72	480.21	370.14	110.08	4.363	
8,900.00	7,387.94	8,941.78	7,379.64	57.62	57.98	89.01	-882.78	991.69	480.21	364.56	115.65	4.152	
9,000.00	7,389.74	9,041.78	7,381.71	60.46	60.80	89.04	-881.64	1,091.66	480.20	358.89	121.31	3.958	
9,100.00	7,391.54	9,141.78	7,383.79	63.34	63.67	89.08	-880.50	1,191.63	480.20	353.15	127.05	3.780	
9,200.00	7,393.33	9,241.78	7,385.86	66.25	66.56	89.11	-879.36	1,291.61	480.19	347.34	132.85	3.615	
9,300.00	7,395.13	9,341.78	7,387.94	69.19	69.48	89.14	-878.23	1,391.58	480.19	341.48	138.71	3.462	
9,400.00	7,396.93	9,441.78	7,390.01	72.16	72.43	89.17	-877.09	1,491.55	480.18	335.57	144.61	3.320	
9,500.00	7,398.73	9,541.78	7,392.09	75.14	75.40	89.21	-875.95	1,591.52	480.18	329.61	150.57	3.189	
9,600.00	7,400.52	9,641.78	7,394.16	78.14	78.39	89.24	-874.81	1,691.49	480.17	323.61	156.56	3.067	
9,700.00	7,402.32	9,741.78	7,396.24	81.17	81.40	89.27	-873.67	1,791.46	480.17	317.58	162.59	2.953	
9,800.00	7,404.12	9,841.78	7,398.31	84.20	84.43	89.31	-872.54	1,891.43	480.17	311.52	168.65	2.847	
9,900.00	7,405.92	9,941.78	7,400.39	87.25	87.47	89.34	-871.40	1,991.41	480.16	305.43	174.73	2.748	
10,000.00	7,407.71	10,041.78	7,402.46	90.31	90.52	89.37	-870.26	2,091.38	480.16	299.31	180.85	2.655	
10,100.00	7,409.51	10,141.78	7,404.54	93.39	93.59	89.41	-869.12	2,191.35	480.16	293.18	186.98	2.568	
10,200.00	7,411.31	10,241.78	7,406.61	96.47	96.66	89.44	-867.99	2,291.32	480.15	287.02	193.14	2.486	
10,300.00	7,413.11	10,341.78	7,408.69	99.56	99.74	89.47	-866.85	2,391.29	480.15	280.84	199.31	2.409	
10,400.00	7,414.91	10,441.78	7,410.76	102.66	102.84	89.51	-865.71	2,491.26	480.15	274.65	205.50	2.336	
10,500.00	7,416.70	10,541.78	7,412.84	105.77	105.94	89.54	-864.57	2,591.24	480.15	268.44	211.71	2.268	
10,600.00	7,418.50	10,641.78	7,414.91	108.88	109.04	89.57	-863.43	2,691.21	480.14	262.22	217.93	2.203	
10,700.00	7,420.30	10,741.78	7,416.99	112.00	112.16	89.60	-862.30	2,791.18	480.14	255.98	224.16	2.142	
10,800.00	7,422.10	10,841.78	7,419.06	115.13	115.28	89.64	-861.16	2,891.15	480.14	249.73	230.41	2.084	
10,900.00	7,423.89	10,941.78	7,421.14	118.26	118.40	89.67	-860.02	2,991.12	480.14	243.48	236.66	2.029	
11,000.00	7,425.69	11,041.78	7,423.21	121.40	121.53	89.70	-858.88	3,091.09	480.14	237.21	242.93	1.976	
11,100.00	7,427.49	11,141.78	7,425.29	124.54	124.67	89.74	-857.74	3,191.07	480.13	230.93	249.20	1.927	
11,200.00	7,429.29	11,241.78	7,427.36	127.69	127.81	89.77	-856.61	3,291.04	480.13	224.65	255.49	1.879	
11,300.00	7,431.09	11,341.78	7,429.44	130.83	130.95	89.80	-855.47	3,391.01	480.13	218.35	261.78	1.834	
11,400.00	7,432.88	11,441.77	7,431.51	133.99	134.10	89.84	-854.33	3,490.98	480.13	212.05	268.08	1.791	
11,500.00	7,434.68	11,541.77	7,433.59	137.14	137.25	89.87	-853.19	3,590.95	480.13	205.74	274.39	1.750	
11,600.00	7,436.48	11,641.77	7,435.66	140.30	140.41	89.90	-852.06	3,690.92	480.13	199.43	280.70	1.710	
11,700.00	7,438.28	11,741.77	7,437.74	143.47	143.57	89.94	-850.92	3,790.90	480.13	193.11	287.02	1.673	
11,800.00	7,440.07	11,841.77	7,439.81	146.63	146.73	89.97	-849.78	3,890.87	480.13	186.79	293.34	1.637	
11,900.00	7,441.87	11,941.77	7,441.89	149.80	149.89	90.00	-848.64	3,990.84	480.13	180.46	299.67	1.602	
11,907.12	7,442.00	11,948.89	7,442.04	150.02	150.12	90.00	-848.56	3,997.96	480.13	180.01	300.12	1.600 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HNC-05-03-68 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	90.12	-0.20	99.92	99.92					
100.00	100.00	100.00	100.00	0.70	0.70	90.12	-0.20	99.92	99.92	98.53	1.40	71.565		
200.00	200.00	200.00	200.00	2.44	2.44	90.12	-0.20	99.92	99.92	95.04	4.89	20.447		
300.00	299.98	299.98	299.98	3.32	4.19	-130.63	-0.20	99.92	101.05	93.54	7.51	13.456		
400.00	399.84	402.99	402.97	3.36	5.09	-132.30	-1.26	98.40	103.02	94.57	8.45	12.193		
500.00	499.45	506.10	505.92	3.44	5.10	-134.30	-4.42	93.83	104.39	95.87	8.52	12.252		
550.00	549.13	557.69	557.35	3.50	5.12	-135.42	-6.79	90.40	104.88	96.29	8.59	12.204		
600.00	598.76	609.32	608.72	3.57	5.15	-136.48	-9.69	86.20	104.93	96.26	8.68	12.092		
700.00	698.01	712.58	711.16	3.74	5.25	-137.89	-17.07	75.53	102.72	93.83	8.89	11.552		
750.00	747.64	764.16	762.13	3.84	5.31	-138.27	-21.54	69.06	100.42	91.40	9.02	11.134		
800.00	797.27	814.66	811.93	3.94	5.38	-146.38	-26.32	62.14	97.75	88.58	9.17	10.658		
892.27	888.83	906.83	902.79	4.15	5.52	-159.72	-35.11	49.43	94.09	84.60	9.50	9.909		
900.00	896.50	914.56	910.41	4.17	5.54	-159.56	-35.84	48.36	93.87	84.34	9.53	9.854		
1,000.00	995.69	1,014.45	1,008.89	4.42	5.73	-157.38	-45.37	34.59	90.98	81.04	9.93	9.159		
1,100.00	1,094.88	1,114.35	1,107.38	4.70	5.94	-155.07	-54.89	20.81	88.23	77.84	10.39	8.494		
1,200.00	1,194.07	1,214.25	1,205.86	4.99	6.18	-152.61	-64.42	7.03	85.63	74.75	10.89	7.866		
1,300.00	1,293.26	1,314.14	1,304.34	5.30	6.45	-150.01	-73.94	-6.75	83.20	71.78	11.43	7.281		
1,400.00	1,392.46	1,414.04	1,402.82	5.62	6.73	-147.25	-83.46	-20.53	80.96	68.95	12.01	6.743		
1,500.00	1,491.65	1,513.94	1,501.31	5.95	7.02	-144.35	-92.99	-34.31	78.91	66.29	12.62	6.252		
1,600.00	1,590.84	1,613.83	1,599.79	6.30	7.34	-141.29	-102.51	-48.08	77.07	63.81	13.27	5.808		
1,700.00	1,690.03	1,713.73	1,698.27	6.64	7.66	-138.10	-112.04	-61.86	75.47	61.52	13.95	5.410		
1,800.00	1,789.22	1,813.63	1,796.75	7.00	8.00	-134.78	-121.56	-75.64	74.11	59.45	14.66	5.056		
1,900.00	1,888.41	1,913.53	1,895.24	7.36	8.34	-131.35	-131.09	-89.42	73.01	57.62	15.39	4.744		
2,000.00	1,987.60	2,013.42	1,993.72	7.72	8.70	-127.83	-140.61	-103.20	72.17	56.03	16.15	4.470		
2,100.00	2,086.79	2,113.32	2,092.20	8.09	9.06	-124.24	-150.13	-116.98	71.62	54.70	16.92	4.233		
2,200.00	2,185.98	2,213.22	2,190.68	8.47	9.43	-120.61	-159.66	-130.75	71.35	53.64	17.71	4.030		
2,243.02	2,228.66	2,256.19	2,233.05	8.63	9.59	-119.04	-163.76	-136.68	71.32	53.27	18.05	3.952 CC		
2,300.00	2,285.17	2,313.11	2,289.17	8.84	9.80	-116.96	-169.18	-144.53	71.37	52.87	18.50	3.857		
2,400.00	2,384.37	2,413.01	2,387.65	9.22	10.18	-113.33	-178.71	-158.31	71.68	52.37	19.30	3.713		
2,500.00	2,483.56	2,512.91	2,486.13	9.60	10.57	-109.75	-188.23	-172.09	72.27	52.16	20.11	3.594		
2,600.00	2,582.75	2,612.80	2,584.61	9.98	10.96	-106.24	-197.76	-185.87	73.14	52.23	20.91	3.498		
2,700.00	2,681.94	2,712.70	2,683.10	10.37	11.35	-102.82	-207.28	-199.65	74.28	52.58	21.71	3.422		
2,800.00	2,781.13	2,812.60	2,781.58	10.76	11.75	-99.52	-216.80	-213.42	75.68	53.18	22.50	3.363		
2,900.00	2,880.32	2,912.49	2,880.06	11.14	12.15	-96.35	-226.33	-227.20	77.32	54.03	23.28	3.321		
3,000.00	2,979.51	3,012.39	2,978.54	11.53	12.55	-93.32	-235.85	-240.98	79.18	55.12	24.06	3.291		
3,100.00	3,078.70	3,112.29	3,077.03	11.92	12.95	-90.43	-245.38	-254.76	81.26	56.43	24.83	3.273		
3,200.00	3,177.89	3,212.18	3,175.51	12.32	13.36	-87.70	-254.90	-268.54	83.53	57.94	25.59	3.264		
3,300.00	3,277.08	3,312.08	3,273.99	12.71	13.77	-85.11	-264.43	-282.32	85.98	59.64	26.34	3.264		
3,400.00	3,376.28	3,411.98	3,372.47	13.10	14.18	-82.67	-273.95	-296.09	88.60	61.51	27.09	3.271		
3,500.00	3,475.47	3,511.87	3,470.96	13.50	14.59	-80.38	-283.47	-309.87	91.37	63.54	27.83	3.283		
3,600.00	3,574.66	3,611.77	3,569.44	13.89	15.01	-78.23	-293.00	-323.65	94.28	65.71	28.57	3.300		
3,700.00	3,673.85	3,711.67	3,667.92	14.29	15.42	-76.20	-302.52	-337.43	97.31	68.01	29.30	3.321		
3,800.00	3,773.04	3,811.56	3,766.40	14.69	15.84	-74.30	-312.05	-351.21	100.46	70.43	30.03	3.346		
3,900.00	3,872.23	3,911.46	3,864.89	15.08	16.26	-72.52	-321.57	-364.99	103.71	72.95	30.75	3.372		
4,000.00	3,971.42	4,011.36	3,963.37	15.48	16.68	-70.85	-331.10	-378.76	107.05	75.57	31.48	3.401		
4,100.00	4,070.61	4,111.25	4,061.85	15.88	17.10	-69.28	-340.62	-392.54	110.48	78.28	32.20	3.431		
4,200.00	4,169.80	4,211.15	4,160.33	16.28	17.52	-67.80	-350.14	-406.32	113.99	81.07	32.92	3.462		
4,300.00	4,268.99	4,311.05	4,258.82	16.68	17.95	-66.42	-359.67	-420.10	117.57	83.92	33.64	3.495		
4,400.00	4,368.19	4,410.94	4,357.30	17.08	18.37	-65.11	-369.19	-433.88	121.21	86.85	34.36	3.527		
4,500.00	4,467.38	4,510.84	4,455.78	17.48	18.79	-63.89	-378.72	-447.66	124.91	89.83	35.09	3.560		
4,600.00	4,566.57	4,610.74	4,554.26	17.88	19.22	-62.73	-388.24	-461.43	128.67	92.86	35.81	3.593		
4,700.00	4,665.76	4,710.63	4,652.75	18.28	19.65	-61.64	-397.77	-475.21	132.48	95.95	36.53	3.627		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HNC-05-03-68 - OH - PLAN #1											Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Between Centres (usft)	Between Ellipses (usft)				
4,800.00	4,764.95	4,810.53	4,751.23	18.68	20.07	-60.61	-407.29	-488.99	136.33	99.07	37.25	3.660
4,900.00	4,864.14	4,910.43	4,849.71	19.08	20.50	-59.64	-416.81	-502.77	140.22	102.24	37.98	3.692
5,000.00	4,963.33	5,010.32	4,948.19	19.48	20.93	-58.72	-426.34	-516.55	144.15	105.45	38.70	3.725
5,100.00	5,062.52	5,110.22	5,046.68	19.88	21.36	-57.85	-435.86	-530.33	148.11	108.69	39.42	3.757
5,200.00	5,161.71	5,210.12	5,145.16	20.29	21.79	-57.03	-445.39	-544.10	152.11	111.96	40.15	3.789
5,300.00	5,260.90	5,310.01	5,243.64	20.69	22.22	-56.24	-454.91	-557.88	156.14	115.26	40.88	3.820
5,400.00	5,360.10	5,409.91	5,342.12	21.09	22.65	-55.50	-464.43	-571.66	160.20	118.59	41.60	3.850
5,500.00	5,459.29	5,509.81	5,440.61	21.49	23.08	-54.79	-473.96	-585.44	164.28	121.94	42.33	3.881
5,600.00	5,558.48	5,609.70	5,539.09	21.90	23.51	-54.12	-483.48	-599.22	168.38	125.32	43.06	3.910
5,700.00	5,657.67	5,709.60	5,637.57	22.30	23.94	-53.48	-493.01	-613.00	172.51	128.72	43.79	3.939
5,800.00	5,756.86	5,809.50	5,736.05	22.70	24.37	-52.87	-502.53	-626.77	176.65	132.13	44.52	3.968
5,900.00	5,856.05	5,909.39	5,834.53	23.11	24.80	-52.29	-512.06	-640.55	180.82	135.57	45.26	3.996
6,000.00	5,955.24	6,009.29	5,933.02	23.51	25.23	-51.74	-521.58	-654.33	185.00	139.02	45.99	4.023
6,100.00	6,054.43	6,109.19	6,031.50	23.91	25.67	-51.20	-531.10	-668.11	189.21	142.48	46.72	4.050
6,200.00	6,153.62	6,209.08	6,129.98	24.32	26.10	-50.70	-540.63	-681.89	193.42	145.96	47.46	4.076
6,300.00	6,252.82	6,308.98	6,228.46	24.72	26.53	-50.21	-550.15	-695.67	197.65	149.46	48.19	4.101
6,400.00	6,352.01	6,408.88	6,326.95	25.13	26.97	-49.75	-559.68	-709.44	201.90	152.97	48.93	4.126
6,500.00	6,451.20	6,508.77	6,425.43	25.53	27.40	-49.30	-569.20	-723.22	206.15	156.49	49.66	4.151
6,600.00	6,550.39	6,608.67	6,523.91	25.94	27.83	-48.87	-578.73	-737.00	210.42	160.02	50.40	4.175
6,700.00	6,649.58	6,708.57	6,622.39	26.34	28.27	-48.46	-588.25	-750.78	214.70	163.56	51.14	4.198
6,800.00	6,748.77	6,808.46	6,720.88	26.74	28.70	-48.06	-597.77	-764.56	218.99	167.11	51.88	4.221
6,838.96	6,787.41	6,847.38	6,759.24	26.90	28.87	-47.91	-601.48	-769.93	220.67	168.50	52.17	4.230
6,850.00	6,798.38	6,858.41	6,770.11	26.95	28.92	-42.92	-602.54	-771.45	221.17	168.93	52.25	4.233
6,900.00	6,848.23	6,908.13	6,819.13	27.12	29.14	19.49	-607.28	-778.30	224.28	171.78	52.50	4.272
6,950.00	6,898.06	6,964.05	6,874.52	27.27	29.36	77.81	-612.60	-783.62	228.27	175.58	52.69	4.332
7,000.00	6,947.42	7,021.79	6,931.96	27.39	29.54	92.59	-618.04	-782.85	232.20	179.37	52.83	4.395
7,050.00	6,995.85	7,080.48	6,989.91	27.50	29.68	98.77	-623.44	-775.53	235.96	183.06	52.90	4.461
7,100.00	7,042.91	7,140.03	7,047.51	27.59	29.79	102.24	-628.71	-761.47	239.45	186.54	52.91	4.526
7,150.00	7,088.16	7,200.34	7,103.83	27.68	29.89	104.42	-633.77	-740.60	242.58	189.72	52.86	4.589
7,200.00	7,131.18	7,261.25	7,157.90	27.76	29.98	105.85	-638.53	-713.03	245.27	192.48	52.78	4.647
7,250.00	7,171.59	7,322.62	7,208.76	27.85	30.06	106.73	-642.91	-679.04	247.46	194.73	52.73	4.693
7,300.00	7,209.00	7,384.25	7,255.49	27.95	30.15	107.19	-646.80	-639.11	249.11	196.35	52.76	4.721
7,350.00	7,243.07	7,445.95	7,297.26	28.06	30.26	107.30	-650.16	-593.87	250.20	197.25	52.95	4.725
7,400.00	7,273.49	7,507.53	7,333.35	28.20	30.40	107.10	-652.92	-544.09	250.72	197.37	53.35	4.700
7,450.00	7,299.98	7,568.80	7,363.22	28.39	30.62	106.61	-655.04	-490.67	250.70	196.65	54.05	4.638
7,500.00	7,322.30	7,629.59	7,386.48	28.64	30.90	105.87	-656.50	-434.57	250.16	195.13	55.03	4.546
7,550.00	7,340.24	7,689.72	7,402.94	28.96	31.27	104.90	-657.29	-376.77	249.16	192.85	56.31	4.425
7,600.00	7,353.63	7,749.07	7,412.58	29.36	31.75	103.71	-657.42	-318.24	247.77	189.92	57.85	4.283
7,650.00	7,362.35	7,805.56	7,415.68	29.84	32.31	102.41	-656.96	-261.87	246.10	186.58	59.52	4.135
7,700.00	7,366.32	7,855.45	7,416.71	30.39	32.90	101.86	-656.39	-211.99	245.31	184.37	60.93	4.026
7,705.99	7,366.47	7,861.44	7,416.84	30.46	32.98	101.85	-656.33	-206.00	245.30	184.21	61.09	4.015
7,707.12	7,366.49	7,862.57	7,416.86	30.47	32.99	101.85	-656.31	-204.87	245.30	184.18	61.12	4.013
7,800.00	7,368.16	7,955.45	7,418.79	31.72	34.28	101.91	-655.26	-112.02	245.35	181.59	63.76	3.848
7,900.00	7,369.96	8,055.45	7,420.86	33.33	35.94	101.97	-654.12	-12.04	245.41	178.35	67.06	3.660
8,000.00	7,371.76	8,155.45	7,422.94	35.17	37.82	102.04	-652.98	87.93	245.46	174.70	70.76	3.469
8,100.00	7,373.56	8,255.45	7,425.01	37.21	39.89	102.10	-651.84	187.90	245.52	170.70	74.82	3.282
8,200.00	7,375.36	8,355.45	7,427.08	39.41	42.11	102.16	-650.70	287.87	245.58	166.41	79.17	3.102
8,300.00	7,377.15	8,455.45	7,429.16	41.75	44.46	102.23	-649.57	387.84	245.64	161.87	83.76	2.933
8,400.00	7,378.95	8,555.45	7,431.23	44.20	46.92	102.29	-648.43	487.81	245.70	157.13	88.57	2.774
8,500.00	7,380.75	8,655.45	7,433.31	46.75	49.47	102.35	-647.29	587.79	245.76	152.21	93.55	2.627
8,600.00	7,382.55	8,755.45	7,435.38	49.37	52.10	102.41	-646.15	687.76	245.82	147.14	98.67	2.491
8,700.00	7,384.34	8,855.45	7,437.46	52.07	54.79	102.48	-645.02	787.73	245.88	141.95	103.93	2.366

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 6X-HNC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
8,800.00	7,386.14	8,955.45	7,439.53	54.82	57.54	102.54	-643.88	887.70	245.93	136.65	109.29	2.250	
8,900.00	7,387.94	9,055.45	7,441.61	57.62	60.34	102.60	-642.74	987.67	246.00	131.26	114.74	2.144	
9,000.00	7,389.74	9,155.45	7,443.68	60.46	63.18	102.67	-641.60	1,087.64	246.06	125.79	120.27	2.046	
9,100.00	7,391.54	9,255.45	7,445.76	63.34	66.05	102.73	-640.46	1,187.62	246.12	120.25	125.87	1.955	
9,200.00	7,393.33	9,355.45	7,447.83	66.25	68.95	102.79	-639.33	1,287.59	246.18	114.65	131.52	1.872	
9,300.00	7,395.13	9,455.45	7,449.90	69.19	71.89	102.86	-638.19	1,387.56	246.24	109.01	137.23	1.794	
9,400.00	7,396.93	9,555.45	7,451.98	72.16	74.84	102.92	-637.05	1,487.53	246.30	103.32	142.98	1.723	
9,500.00	7,398.73	9,655.45	7,454.05	75.14	77.82	102.98	-635.91	1,587.50	246.36	97.59	148.77	1.656	
9,600.00	7,400.52	9,755.45	7,456.13	78.14	80.82	103.04	-634.78	1,687.47	246.42	91.83	154.60	1.594	
9,700.00	7,402.32	9,855.45	7,458.20	81.17	83.83	103.11	-633.64	1,787.45	246.49	86.03	160.45	1.536	
9,800.00	7,404.12	9,955.44	7,460.28	84.20	86.86	103.17	-632.50	1,887.42	246.55	80.22	166.33	1.482 Level 3	
9,900.00	7,405.92	10,055.44	7,462.35	87.25	89.90	103.23	-631.36	1,987.39	246.61	74.38	172.24	1.432 Level 3	
10,000.00	7,407.71	10,155.44	7,464.43	90.31	92.95	103.29	-630.23	2,087.36	246.68	68.51	178.16	1.385 Level 3	
10,100.00	7,409.51	10,255.44	7,466.50	93.39	96.02	103.36	-629.09	2,187.33	246.74	62.63	184.11	1.340 Level 3	
10,200.00	7,411.31	10,355.44	7,468.58	96.47	99.10	103.42	-627.95	2,287.30	246.80	56.74	190.07	1.299 Level 3	
10,300.00	7,413.11	10,455.44	7,470.65	99.56	102.18	103.48	-626.81	2,387.27	246.87	50.83	196.04	1.259 Level 3	
10,400.00	7,414.91	10,555.44	7,472.73	102.66	105.27	103.54	-625.67	2,487.25	246.93	44.91	202.03	1.222 Level 2	
10,500.00	7,416.70	10,655.44	7,474.80	105.77	108.38	103.61	-624.54	2,587.22	247.00	38.97	208.03	1.187 Level 2	
10,600.00	7,418.50	10,755.44	7,476.87	108.88	111.48	103.67	-623.40	2,687.19	247.06	33.03	214.03	1.154 Level 2	
10,700.00	7,420.30	10,855.44	7,478.95	112.00	114.60	103.73	-622.26	2,787.16	247.13	27.08	220.05	1.123 Level 2	
10,800.00	7,422.10	10,955.44	7,481.02	115.13	117.72	103.79	-621.12	2,887.13	247.19	21.12	226.08	1.093 Level 2	
10,900.00	7,423.89	11,055.44	7,483.10	118.26	120.85	103.86	-619.99	2,987.10	247.26	15.15	232.11	1.065 Level 2	
11,000.00	7,425.69	11,155.44	7,485.17	121.40	123.98	103.92	-618.85	3,087.08	247.33	9.18	238.15	1.039 Level 2	
11,100.00	7,427.49	11,255.44	7,487.25	124.54	127.11	103.98	-617.71	3,187.05	247.39	3.20	244.19	1.013 Level 2	
11,200.00	7,429.29	11,355.44	7,489.32	127.69	130.25	104.04	-616.57	3,287.02	247.46	-2.78	250.24	0.989 Level 1	
11,300.00	7,431.09	11,455.44	7,491.40	130.83	133.40	104.11	-615.43	3,386.99	247.53	-8.77	256.30	0.966 Level 1	
11,400.00	7,432.88	11,555.44	7,493.47	133.99	136.54	104.17	-614.30	3,486.96	247.60	-14.76	262.36	0.944 Level 1	
11,500.00	7,434.68	11,655.44	7,495.55	137.14	139.70	104.23	-613.16	3,586.93	247.66	-20.75	268.42	0.923 Level 1	
11,600.00	7,436.48	11,755.44	7,497.62	140.30	142.85	104.29	-612.02	3,686.91	247.73	-26.75	274.48	0.903 Level 1	
11,700.00	7,438.28	11,855.44	7,499.69	143.47	146.01	104.35	-610.88	3,786.88	247.80	-32.75	280.55	0.883 Level 1	
11,800.00	7,440.07	11,955.44	7,501.77	146.63	149.17	104.42	-609.75	3,886.85	247.87	-38.75	286.62	0.865 Level 1	
11,900.00	7,441.87	12,055.44	7,503.84	149.80	152.33	104.48	-608.61	3,986.82	247.94	-44.75	292.68	0.847 Level 1	
11,907.12	7,442.00	12,062.56	7,503.99	150.02	152.56	104.48	-608.53	3,993.94	247.94	-45.17	293.12	0.846 Level 1, ES, SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HC-05-03-68 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 401-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	90.01	-0.05	199.85	199.85					
100.00	100.00	100.00	100.00	0.70	0.70	90.01	-0.05	199.85	199.85	198.45	1.40	143.129		
200.00	200.00	200.00	200.00	2.44	2.44	90.01	-0.05	199.85	199.85	194.96	4.89	40.894		
300.00	299.98	300.02	299.98	3.32	4.19	-130.35	-0.05	199.85	200.97	193.46	7.51	26.759		
400.00	399.84	399.84	399.84	3.36	5.93	-131.42	-0.05	199.85	204.40	195.11	9.29	21.994		
500.00	499.45	506.38	506.36	3.44	6.81	-133.01	-1.03	198.14	208.63	198.38	10.25	20.358		
550.00	549.13	559.74	559.66	3.50	6.82	-133.88	-2.27	195.99	210.45	200.14	10.31	20.418		
600.00	598.76	613.19	612.99	3.57	6.83	-134.74	-4.01	192.98	211.79	201.41	10.37	20.417		
700.00	698.01	720.28	719.61	3.74	6.88	-136.10	-8.99	184.36	212.02	201.47	10.55	20.098		
750.00	747.64	772.95	771.90	3.84	6.92	-136.60	-12.21	178.90	210.94	200.28	10.66	19.792		
800.00	797.27	824.51	822.99	3.94	6.96	-144.92	-16.18	173.19	209.69	198.90	10.78	19.443		
892.27	888.83	919.57	916.89	4.15	7.05	-158.68	-25.80	161.93	207.81	196.76	11.05	18.809		
900.00	896.50	927.53	924.72	4.17	7.06	-158.55	-26.74	160.94	207.67	196.60	11.07	18.756		
1,000.00	995.69	1,030.07	1,025.43	4.42	7.19	-156.35	-40.72	147.64	205.30	193.89	11.42	17.983		
1,100.00	1,094.88	1,131.90	1,124.75	4.70	7.36	-153.15	-58.00	133.36	202.07	190.24	11.83	17.088		
1,200.00	1,194.07	1,231.75	1,221.50	4.99	7.56	-149.11	-77.69	118.51	198.70	186.39	12.31	16.139		
1,300.00	1,293.26	1,330.64	1,317.26	5.30	7.79	-144.90	-97.48	103.70	196.30	183.44	12.86	15.267		
1,400.00	1,392.46	1,429.53	1,413.01	5.62	8.05	-140.62	-117.27	88.90	195.00	181.55	13.45	14.495		
1,465.20	1,457.13	1,505.99	1,475.45	5.84	8.26	-137.80	-130.18	79.24	194.76	180.86	13.90	14.014 CC		
1,500.00	1,491.65	1,528.42	1,508.77	5.95	8.33	-136.30	-137.06	74.09	194.83	180.74	14.09	13.826 ES		
1,600.00	1,590.84	1,627.32	1,604.52	6.30	8.63	-132.00	-156.85	59.29	195.79	181.02	14.77	13.257		
1,700.00	1,690.03	1,726.21	1,700.27	6.64	8.96	-127.77	-176.65	44.48	197.85	182.38	15.47	12.786		
1,800.00	1,789.22	1,825.10	1,796.03	7.00	9.30	-123.64	-196.44	29.68	201.00	184.80	16.20	12.405		
1,900.00	1,888.41	1,923.99	1,891.78	7.36	9.65	-119.66	-216.23	14.87	205.18	188.23	16.95	12.105		
2,000.00	1,987.60	2,022.88	1,987.54	7.72	10.03	-115.85	-236.02	0.07	210.32	192.61	17.70	11.879		
2,100.00	2,086.79	2,121.78	2,083.29	8.09	10.41	-112.24	-255.81	-14.74	216.36	197.89	18.47	11.717		
2,200.00	2,185.98	2,220.67	2,179.04	8.47	10.80	-108.83	-275.60	-29.54	223.22	203.99	19.23	11.609		
2,300.00	2,285.17	2,319.56	2,274.80	8.84	11.21	-105.63	-295.39	-44.35	230.84	210.85	19.99	11.547		
2,400.00	2,384.37	2,418.45	2,370.55	9.22	11.62	-102.64	-315.18	-59.15	239.14	218.38	20.75	11.523		
2,500.00	2,483.56	2,517.34	2,466.31	9.60	12.05	-99.85	-334.97	-73.96	248.04	226.53	21.51	11.530		
2,600.00	2,582.75	2,616.24	2,562.06	9.98	12.48	-97.26	-354.76	-88.76	257.50	235.23	22.27	11.563		
2,700.00	2,681.94	2,715.13	2,657.81	10.37	12.91	-94.86	-374.55	-103.57	267.45	244.42	23.02	11.616		
2,800.00	2,781.13	2,814.02	2,753.57	10.76	13.36	-92.63	-394.34	-118.37	277.83	254.05	23.78	11.685		
2,900.00	2,880.32	2,912.91	2,849.32	11.14	13.81	-90.56	-414.13	-133.18	288.60	264.08	24.53	11.766		
3,000.00	2,979.51	3,011.81	2,945.07	11.53	14.26	-88.65	-433.93	-147.98	299.72	274.45	25.28	11.857		
3,100.00	3,078.70	3,110.70	3,040.83	11.92	14.72	-86.87	-453.72	-162.78	311.16	285.13	26.03	11.956		
3,200.00	3,177.89	3,209.59	3,136.58	12.32	15.18	-85.21	-473.51	-177.59	322.87	296.09	26.77	12.059		
3,300.00	3,277.08	3,308.48	3,232.34	12.71	15.64	-83.68	-493.30	-192.39	334.83	307.30	27.52	12.166		
3,400.00	3,376.28	3,407.37	3,328.09	13.10	16.11	-82.24	-513.09	-207.20	347.01	318.74	28.27	12.275		
3,500.00	3,475.47	3,506.27	3,423.84	13.50	16.58	-80.91	-532.88	-222.00	359.39	330.37	29.02	12.385		
3,600.00	3,574.66	3,605.16	3,519.60	13.89	17.06	-79.67	-552.67	-236.81	371.95	342.18	29.77	12.495		
3,700.00	3,673.85	3,704.05	3,615.35	14.29	17.53	-78.50	-572.46	-251.61	384.68	354.16	30.52	12.605		
3,800.00	3,773.04	3,802.94	3,711.11	14.69	18.01	-77.41	-592.25	-266.42	397.55	366.28	31.27	12.714		
3,900.00	3,872.23	3,901.84	3,806.86	15.08	18.49	-76.39	-612.04	-281.22	410.55	378.53	32.02	12.822		
4,000.00	3,971.42	4,000.73	3,902.61	15.48	18.98	-75.43	-631.83	-296.03	423.68	390.91	32.77	12.928		
4,100.00	4,070.61	4,100.38	3,998.37	15.88	19.47	-74.53	-651.62	-310.83	436.91	403.38	33.53	13.030		
4,200.00	4,169.80	4,201.49	4,094.12	16.28	19.96	-73.68	-671.41	-325.64	450.25	415.96	34.30	13.129		
4,300.00	4,268.99	4,297.40	4,189.88	16.68	20.44	-72.89	-691.20	-340.44	463.68	428.64	35.04	13.233		
4,400.00	4,368.19	4,396.30	4,285.63	17.08	20.93	-72.13	-711.00	-355.25	477.19	441.39	35.80	13.331		
4,500.00	4,467.38	4,504.81	4,381.38	17.48	21.47	-71.42	-730.79	-370.05	490.78	454.18	36.60	13.410		
4,600.00	4,566.57	4,605.92	4,477.14	17.88	21.97	-70.74	-750.58	-384.86	504.44	467.07	37.37	13.500		
4,700.00	4,665.76	4,707.03	4,572.89	18.28	22.48	-70.11	-770.37	-399.66	518.16	480.03	38.14	13.587		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 401-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
4,800.00	4,764.95	4,808.14	4,668.64	18.68	22.98	-69.50	-790.16	-414.47	531.95	493.04	38.91	13.672	
4,900.00	4,864.14	4,909.24	4,764.40	19.08	23.49	-68.93	-809.95	-429.27	545.79	506.11	39.68	13.754	
5,000.00	4,963.33	4,989.65	4,860.15	19.48	23.89	-68.38	-829.74	-444.08	559.68	519.31	40.36	13.866	
5,100.00	5,062.52	5,088.54	4,955.91	19.88	24.39	-67.86	-849.53	-458.88	573.62	532.49	41.13	13.946	
5,200.00	5,161.71	5,187.43	5,051.66	20.29	24.89	-67.36	-869.32	-473.69	587.60	545.71	41.90	14.025	
5,300.00	5,260.90	5,286.33	5,147.41	20.69	25.39	-66.89	-889.11	-488.49	601.63	558.96	42.66	14.102	
5,400.00	5,360.10	5,385.22	5,243.17	21.09	25.89	-66.44	-908.90	-503.30	615.69	572.26	43.43	14.176	
5,500.00	5,459.29	5,484.11	5,338.92	21.49	26.39	-66.01	-928.69	-518.10	629.79	585.59	44.20	14.248	
5,600.00	5,558.48	5,583.00	5,434.68	21.90	26.90	-65.60	-948.48	-532.91	643.92	598.95	44.97	14.319	
5,700.00	5,657.67	5,681.89	5,530.43	22.30	27.40	-65.20	-968.28	-547.71	658.09	612.34	45.74	14.387	
5,800.00	5,756.86	5,780.79	5,626.18	22.70	27.90	-64.82	-988.07	-562.51	672.28	625.76	46.51	14.453	
5,900.00	5,856.05	5,879.68	5,721.94	23.11	28.41	-64.46	-1,007.86	-577.32	686.50	639.21	47.29	14.518	
6,000.00	5,955.24	5,978.57	5,817.69	23.51	28.91	-64.11	-1,027.65	-592.12	700.75	652.69	48.06	14.581	
6,100.00	6,054.43	6,077.46	5,913.45	23.91	29.41	-63.78	-1,047.44	-606.93	715.02	666.18	48.83	14.642	
6,200.00	6,153.62	6,176.36	6,009.20	24.32	29.92	-63.46	-1,067.23	-621.73	729.31	679.70	49.61	14.701	
6,300.00	6,252.82	6,275.25	6,104.95	24.72	30.43	-63.15	-1,087.02	-636.54	743.63	693.24	50.38	14.759	
6,400.00	6,352.01	6,374.14	6,200.71	25.13	30.93	-62.85	-1,106.81	-651.34	757.96	706.80	51.16	14.815	
6,500.00	6,451.20	6,473.03	6,296.46	25.53	31.44	-62.57	-1,126.60	-666.15	772.32	720.38	51.94	14.870	
6,600.00	6,550.39	6,571.92	6,392.21	25.94	31.95	-62.29	-1,146.39	-680.95	786.69	733.97	52.72	14.923	
6,700.00	6,649.58	6,670.82	6,487.97	26.34	32.45	-62.03	-1,166.18	-695.76	801.08	747.59	53.49	14.975	
6,800.00	6,748.77	6,769.71	6,583.72	26.74	32.96	-61.77	-1,185.97	-710.56	815.49	761.21	54.27	15.026	
6,838.96	6,787.41	6,808.23	6,621.03	26.90	33.16	-61.67	-1,193.68	-716.33	821.10	766.53	54.58	15.045	
6,850.00	6,798.38	6,819.15	6,631.59	26.95	33.22	-66.84	-1,195.87	-717.96	822.70	768.04	54.66	15.051	
6,900.00	6,848.23	6,868.32	6,679.20	27.12	33.47	4.41	-1,205.71	-725.33	830.01	775.03	54.99	15.095	
6,950.00	6,898.06	6,916.75	6,726.09	27.27	33.72	61.14	-1,215.40	-732.58	837.50	782.27	55.22	15.165	
7,000.00	6,947.42	6,963.98	6,771.83	27.39	33.96	74.74	-1,224.85	-739.65	845.25	789.86	55.39	15.260	
7,050.00	6,995.85	7,009.59	6,815.99	27.50	34.20	80.15	-1,233.98	-746.47	853.42	797.93	55.49	15.381	
7,100.00	7,042.91	7,053.15	6,858.17	27.59	34.42	83.18	-1,242.70	-753.00	862.21	806.68	55.52	15.529	
7,150.00	7,088.16	7,094.27	6,897.98	27.68	34.63	85.19	-1,250.93	-759.15	871.86	816.35	55.51	15.706	
7,200.00	7,131.18	7,132.56	6,935.06	27.76	34.83	86.62	-1,258.59	-764.88	882.63	827.17	55.46	15.915	
7,250.00	7,171.59	7,170.31	6,971.62	27.85	35.02	87.71	-1,266.14	-770.48	894.75	839.35	55.40	16.150	
7,300.00	7,209.00	7,225.71	7,025.67	27.95	35.27	89.32	-1,277.26	-775.05	907.93	852.43	55.51	16.357	
7,350.00	7,243.07	7,289.36	7,087.97	28.06	35.51	91.00	-1,289.95	-773.04	921.74	866.07	55.68	16.555	
7,400.00	7,273.49	7,364.72	7,160.78	28.20	35.71	92.89	-1,304.63	-760.66	935.83	879.94	55.89	16.744	
7,450.00	7,299.98	7,456.88	7,246.30	28.39	35.88	95.07	-1,321.64	-731.19	949.62	893.51	56.11	16.925	
7,500.00	7,322.30	7,572.59	7,344.35	28.64	36.01	97.53	-1,340.76	-673.28	962.23	905.91	56.32	17.086	
7,550.00	7,340.24	7,550.00	7,426.77	28.96	36.01	99.28	-1,356.37	-595.01	972.30	916.02	56.28	17.277	
7,600.00	7,353.63	7,892.18	7,526.09	29.36	36.21	101.32	-1,373.90	-418.63	978.24	919.96	58.28	16.785	
7,650.00	7,362.35	7,650.00	7,551.78	29.84	35.90	101.19	-1,376.90	-274.68	978.75	922.08	56.68	17.269	
7,700.00	7,366.32	8,106.89	7,553.71	30.39	36.77	101.05	-1,376.23	-206.80	978.05	915.66	62.40	15.675	
7,705.65	7,366.47	8,112.54	7,553.83	30.46	36.80	101.05	-1,376.17	-201.16	978.04	915.50	62.54	15.638	
7,707.12	7,366.49	8,114.01	7,553.87	30.47	36.81	101.05	-1,376.15	-199.69	978.05	915.46	62.58	15.628	
7,800.00	7,368.16	8,206.89	7,555.84	31.72	37.42	101.06	-1,375.10	-106.83	978.11	912.97	65.14	15.016	
7,900.00	7,369.96	8,306.89	7,557.96	33.33	38.45	101.08	-1,373.97	-6.86	978.18	909.82	68.36	14.310	
8,000.00	7,371.76	8,406.89	7,560.08	35.17	39.87	101.10	-1,372.84	93.11	978.25	906.26	71.99	13.588	
8,100.00	7,373.56	8,506.89	7,562.20	37.21	41.62	101.12	-1,371.71	193.08	978.32	902.34	75.99	12.875	
8,200.00	7,375.36	8,606.89	7,564.32	39.41	43.61	101.14	-1,370.58	293.05	978.39	898.11	80.28	12.187	
8,300.00	7,377.15	8,706.89	7,566.45	41.75	45.79	101.16	-1,369.45	393.02	978.46	893.63	84.83	11.535	
8,400.00	7,378.95	8,806.89	7,568.57	44.20	48.12	101.18	-1,368.32	492.99	978.53	888.94	89.59	10.922	
8,500.00	7,380.75	8,906.89	7,570.69	46.75	50.57	101.19	-1,367.20	592.96	978.60	884.06	94.54	10.351	
8,600.00	7,382.55	9,006.89	7,572.81	49.37	53.11	101.21	-1,366.07	692.93	978.67	879.03	99.65	9.822	
8,700.00	7,384.34	9,106.89	7,574.93	52.07	55.72	101.23	-1,364.94	792.90	978.74	873.86	104.88	9.332	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HC-05-03-68 - OH - PLAN #1											Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 401-MWD+HDGM											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				
8,800.00	7,386.14	9,206.89	7,577.06	54.82	58.41	101.25	-1,363.81	892.87	978.82	868.58	110.23	8.879
8,900.00	7,387.94	9,306.89	7,579.18	57.62	61.14	101.27	-1,362.68	992.84	978.89	863.20	115.68	8.462
9,000.00	7,389.74	9,406.89	7,581.30	60.46	63.93	101.29	-1,361.55	1,092.81	978.96	857.74	121.22	8.076
9,100.00	7,391.54	9,506.89	7,583.42	63.34	66.75	101.31	-1,360.42	1,192.78	979.03	852.20	126.83	7.719
9,200.00	7,393.33	9,606.88	7,585.54	66.25	69.61	101.32	-1,359.29	1,292.75	979.10	846.60	132.50	7.390
9,300.00	7,395.13	9,706.88	7,587.67	69.19	72.51	101.34	-1,358.16	1,392.73	979.17	840.95	138.23	7.084
9,400.00	7,396.93	9,806.88	7,589.79	72.16	75.43	101.36	-1,357.03	1,492.70	979.24	835.24	144.00	6.800
9,500.00	7,398.73	9,906.88	7,591.91	75.14	78.37	101.38	-1,355.90	1,592.67	979.32	829.49	149.82	6.536
9,600.00	7,400.52	10,006.88	7,594.03	78.14	81.34	101.40	-1,354.77	1,692.64	979.39	823.70	155.68	6.291
9,700.00	7,402.32	10,106.88	7,596.15	81.17	84.32	101.42	-1,353.64	1,792.61	979.46	817.88	161.58	6.062
9,800.00	7,404.12	10,206.88	7,598.28	84.20	87.32	101.44	-1,352.51	1,892.58	979.53	812.03	167.50	5.848
9,900.00	7,405.92	10,306.88	7,600.40	87.25	90.34	101.45	-1,351.38	1,992.55	979.60	806.15	173.45	5.648
10,000.00	7,407.71	10,406.88	7,602.52	90.31	93.37	101.47	-1,350.25	2,092.52	979.68	800.25	179.43	5.460
10,100.00	7,409.51	10,506.88	7,604.64	93.39	96.41	101.49	-1,349.12	2,192.49	979.75	794.32	185.42	5.284
10,200.00	7,411.31	10,606.88	7,606.76	96.47	99.47	101.51	-1,347.99	2,292.46	979.82	788.38	191.44	5.118
10,300.00	7,413.11	10,706.88	7,608.89	99.56	102.54	101.53	-1,346.86	2,392.43	979.89	782.42	197.48	4.962
10,400.00	7,414.91	10,806.88	7,611.01	102.66	105.61	101.55	-1,345.73	2,492.40	979.96	776.44	203.53	4.815
10,500.00	7,416.70	10,906.88	7,613.13	105.77	108.69	101.56	-1,344.60	2,592.37	980.04	770.44	209.60	4.676
10,600.00	7,418.50	11,006.88	7,615.25	108.88	111.79	101.58	-1,343.47	2,692.34	980.11	764.43	215.68	4.544
10,700.00	7,420.30	11,106.88	7,617.37	112.00	114.88	101.60	-1,342.34	2,792.31	980.18	758.42	221.77	4.420
10,800.00	7,422.10	11,206.88	7,619.50	115.13	117.99	101.62	-1,341.21	2,892.28	980.26	752.38	227.87	4.302
10,900.00	7,423.89	11,306.88	7,621.62	118.26	121.10	101.64	-1,340.08	2,992.25	980.33	746.34	233.99	4.190
11,000.00	7,425.69	11,406.88	7,623.74	121.40	124.22	101.66	-1,338.95	3,092.22	980.40	740.29	240.11	4.083
11,100.00	7,427.49	11,506.87	7,625.86	124.54	127.34	101.68	-1,337.82	3,192.20	980.48	734.23	246.24	3.982
11,200.00	7,429.29	11,606.87	7,627.98	127.69	130.47	101.69	-1,336.69	3,292.17	980.55	728.17	252.38	3.885
11,300.00	7,431.09	11,706.87	7,630.10	130.83	133.60	101.71	-1,335.56	3,392.14	980.62	722.09	258.53	3.793
11,400.00	7,432.88	11,806.87	7,632.23	133.99	136.74	101.73	-1,334.43	3,492.11	980.70	716.01	264.68	3.705
11,500.00	7,434.68	11,906.87	7,634.35	137.14	139.88	101.75	-1,333.30	3,592.08	980.77	709.92	270.85	3.621
11,600.00	7,436.48	12,006.87	7,636.47	140.30	143.02	101.77	-1,332.17	3,692.05	980.84	703.83	277.01	3.541
11,700.00	7,438.28	12,106.87	7,638.59	143.47	146.17	101.79	-1,331.04	3,792.02	980.92	697.73	283.18	3.464
11,800.00	7,440.07	12,206.87	7,640.71	146.63	149.32	101.80	-1,329.92	3,891.99	980.99	691.63	289.36	3.390
11,900.00	7,441.87	12,306.87	7,642.84	149.80	152.48	101.82	-1,328.79	3,991.96	981.07	685.52	295.54	3.320
11,907.12	7,442.00	12,313.99	7,642.99	150.02	152.70	101.82	-1,328.70	3,999.08	981.07	685.09	295.98	3.315 SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HNB-05-03-68 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-INC-ONLY_A027Ua, 201-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	90.12	-0.30	149.89	149.89					
100.00	100.00	100.00	100.00	0.70	0.70	90.12	-0.30	149.89	149.89	148.49	1.40	107.348		
200.00	200.00	200.00	200.00	2.44	2.44	90.12	-0.30	149.89	149.89	145.00	4.89	30.671		
300.00	299.98	303.03	303.01	3.32	3.35	-129.82	-1.83	148.84	149.99	143.33	6.67	22.495		
400.00	399.84	406.06	405.88	3.36	3.37	-129.65	-6.42	145.70	150.31	143.59	6.72	22.360		
500.00	499.45	509.08	508.48	3.44	3.45	-129.35	-14.05	140.48	150.85	143.97	6.88	21.922		
550.00	549.13	560.58	559.63	3.50	3.52	-129.16	-19.01	137.09	151.20	144.20	7.00	21.595		
600.00	598.76	612.07	610.65	3.57	3.59	-128.82	-24.72	133.18	151.34	144.20	7.13	21.214		
700.00	698.01	714.89	712.12	3.74	3.78	-127.24	-38.39	123.83	150.19	142.72	7.47	20.106		
750.00	747.64	766.16	762.48	3.84	3.90	-125.99	-46.33	118.40	148.97	141.30	7.67	19.414		
800.00	797.27	817.27	812.51	3.94	4.02	-132.45	-54.98	112.48	147.72	139.82	7.89	18.710		
888.28	884.88	906.66	899.52	4.14	4.28	-142.14	-71.85	100.94	146.63	138.28	8.35	17.570 CC		
892.27	888.83	910.61	903.35	4.15	4.29	-142.52	-72.63	100.41	146.63	138.26	8.37	17.524		
900.00	896.50	918.26	910.78	4.17	4.32	-142.09	-74.15	99.37	146.65	138.23	8.41	17.434 ES		
1,000.00	995.69	1,017.23	1,006.87	4.42	4.64	-136.59	-93.73	85.97	147.62	138.61	9.01	16.392		
1,100.00	1,094.88	1,116.20	1,102.95	4.70	5.00	-131.20	-113.32	72.58	149.95	140.30	9.65	15.532		
1,200.00	1,194.07	1,215.18	1,199.04	4.99	5.38	-126.03	-132.91	59.18	153.59	143.24	10.35	14.845		
1,300.00	1,293.26	1,314.15	1,295.12	5.30	5.79	-121.12	-152.49	45.78	158.44	147.37	11.07	14.316		
1,400.00	1,392.46	1,413.12	1,391.21	5.62	6.20	-116.53	-172.08	32.38	164.40	152.59	11.81	13.922		
1,500.00	1,491.65	1,512.09	1,487.29	5.95	6.63	-112.29	-191.67	18.98	171.34	158.78	12.56	13.640		
1,600.00	1,590.84	1,611.06	1,583.38	6.30	7.07	-108.39	-211.25	5.58	179.16	165.84	13.32	13.448		
1,700.00	1,690.03	1,710.03	1,679.46	6.64	7.52	-104.82	-230.84	-7.81	187.75	173.66	14.09	13.327		
1,800.00	1,789.22	1,809.01	1,775.55	7.00	7.98	-101.58	-250.43	-21.21	197.00	182.15	14.85	13.262		
1,900.00	1,888.41	1,907.98	1,871.63	7.36	8.44	-98.63	-270.01	-34.61	206.83	191.21	15.62	13.240		
2,000.00	1,987.60	2,006.95	1,967.71	7.72	8.91	-95.95	-289.60	-48.01	217.15	200.76	16.39	13.249		
2,100.00	2,086.79	2,105.92	2,063.80	8.09	9.38	-93.52	-309.19	-61.41	227.91	210.75	17.16	13.283		
2,200.00	2,185.98	2,204.89	2,159.88	8.47	9.85	-91.31	-328.77	-74.80	239.04	221.11	17.93	13.335		
2,300.00	2,285.17	2,303.86	2,255.97	8.84	10.33	-89.29	-348.36	-88.20	250.49	231.80	18.70	13.399		
2,400.00	2,384.37	2,402.83	2,352.05	9.22	10.81	-87.46	-367.95	-101.60	262.22	242.76	19.46	13.472		
2,500.00	2,483.56	2,501.81	2,448.14	9.60	11.29	-85.78	-387.53	-115.00	274.20	253.97	20.23	13.551		
2,600.00	2,582.75	2,600.78	2,544.22	9.98	11.78	-84.24	-407.12	-128.40	286.39	265.38	21.00	13.634		
2,700.00	2,681.94	2,699.75	2,640.31	10.37	12.27	-82.83	-426.71	-141.80	298.77	276.99	21.78	13.720		
2,800.00	2,781.13	2,801.28	2,736.39	10.76	12.77	-81.53	-446.29	-155.19	311.31	288.75	22.56	13.799		
2,900.00	2,880.32	2,902.31	2,832.47	11.14	13.27	-80.33	-465.88	-168.59	324.00	300.66	23.34	13.880		
3,000.00	2,979.51	2,996.66	2,928.56	11.53	13.73	-79.22	-485.47	-181.99	336.82	312.72	24.10	13.978		
3,100.00	3,078.70	3,104.36	3,024.64	11.92	14.27	-78.20	-505.05	-195.39	349.75	324.84	24.91	14.040		
3,200.00	3,177.89	3,205.39	3,120.73	12.32	14.77	-77.24	-524.64	-208.79	362.79	337.09	25.70	14.118		
3,300.00	3,277.08	3,306.42	3,216.81	12.71	15.28	-76.36	-544.23	-222.19	375.92	349.43	26.48	14.195		
3,400.00	3,376.28	3,392.55	3,312.90	13.10	15.71	-75.53	-563.81	-235.58	389.13	361.92	27.20	14.304		
3,500.00	3,475.47	3,508.48	3,408.98	13.50	16.29	-74.76	-583.40	-248.98	402.41	374.36	28.06	14.342		
3,600.00	3,574.66	3,609.51	3,505.07	13.89	16.80	-74.03	-602.99	-262.38	415.77	386.92	28.85	14.413		
3,700.00	3,673.85	3,689.47	3,601.15	14.29	17.20	-73.35	-622.57	-275.78	429.18	399.64	29.54	14.527		
3,800.00	3,773.04	3,788.44	3,697.24	14.69	17.70	-72.72	-642.16	-289.18	442.65	412.33	30.33	14.597		
3,900.00	3,872.23	3,887.41	3,793.32	15.08	18.20	-72.12	-661.75	-302.58	456.18	425.07	31.11	14.664		
4,000.00	3,971.42	3,986.38	3,889.40	15.48	18.70	-71.55	-681.33	-315.97	469.74	437.85	31.89	14.730		
4,100.00	4,070.61	4,085.35	3,985.49	15.88	19.19	-71.02	-700.92	-329.37	483.35	450.68	32.68	14.793		
4,200.00	4,169.80	4,184.32	4,081.57	16.28	19.69	-70.51	-720.51	-342.77	497.00	463.54	33.46	14.854		
4,300.00	4,268.99	4,283.30	4,177.66	16.68	20.19	-70.03	-740.09	-356.17	510.69	476.44	34.25	14.913		
4,400.00	4,368.19	4,382.27	4,273.74	17.08	20.70	-69.58	-759.68	-369.57	524.41	489.38	35.03	14.969		
4,500.00	4,467.38	4,481.24	4,369.83	17.48	21.20	-69.15	-779.27	-382.97	538.16	502.34	35.82	15.024		
4,600.00	4,566.57	4,580.21	4,465.91	17.88	21.70	-68.74	-798.85	-396.36	551.93	515.33	36.61	15.078		
4,700.00	4,665.76	4,679.18	4,562.00	18.28	22.20	-68.36	-818.44	-409.76	565.74	528.34	37.39	15.129		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HNB-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 201-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
4,800.00	4,764.95	4,778.15	4,658.08	18.68	22.70	-67.99	-838.03	-423.16	579.57	541.38	38.18	15.179	
4,900.00	4,864.14	4,877.13	4,754.16	19.08	23.20	-67.63	-857.61	-436.56	593.42	554.44	38.97	15.227	
5,000.00	4,963.33	4,976.10	4,850.25	19.48	23.70	-67.30	-877.20	-449.96	607.29	567.53	39.76	15.273	
5,100.00	5,062.52	5,075.07	4,946.33	19.88	24.21	-66.98	-896.79	-463.35	621.18	580.63	40.55	15.318	
5,200.00	5,161.71	5,174.04	5,042.42	20.29	24.71	-66.67	-916.37	-476.75	635.09	593.75	41.34	15.362	
5,300.00	5,260.90	5,273.01	5,138.50	20.69	25.21	-66.37	-935.96	-490.15	649.01	606.88	42.13	15.404	
5,400.00	5,360.10	5,371.98	5,234.59	21.09	25.72	-66.09	-955.55	-503.55	662.96	620.03	42.92	15.445	
5,500.00	5,459.29	5,470.95	5,330.67	21.49	26.22	-65.82	-975.13	-516.95	676.91	633.20	43.72	15.484	
5,600.00	5,558.48	5,569.93	5,426.76	21.90	26.72	-65.56	-994.72	-530.35	690.89	646.38	44.51	15.522	
5,700.00	5,657.67	5,668.90	5,522.84	22.30	27.23	-65.31	-1,014.31	-543.74	704.87	659.57	45.30	15.560	
5,800.00	5,756.86	5,767.87	5,618.92	22.70	27.73	-65.07	-1,033.89	-557.14	718.87	672.78	46.09	15.596	
5,900.00	5,856.05	5,866.84	5,715.01	23.11	28.23	-64.84	-1,053.48	-570.54	732.88	685.99	46.89	15.631	
6,000.00	5,955.24	5,965.81	5,811.09	23.51	28.74	-64.62	-1,073.07	-583.94	746.90	699.22	47.68	15.664	
6,100.00	6,054.43	6,064.78	5,907.18	23.91	29.24	-64.41	-1,092.65	-597.34	760.93	712.46	48.48	15.697	
6,200.00	6,153.62	6,163.76	6,003.26	24.32	29.75	-64.20	-1,112.24	-610.74	774.97	725.70	49.27	15.729	
6,300.00	6,252.82	6,262.73	6,099.35	24.72	30.25	-64.00	-1,131.83	-624.13	789.02	738.96	50.06	15.760	
6,400.00	6,352.01	6,361.70	6,195.43	25.13	30.76	-63.81	-1,151.41	-637.53	803.08	752.22	50.86	15.790	
6,500.00	6,451.20	6,460.67	6,291.52	25.53	31.26	-63.63	-1,171.00	-650.93	817.15	765.50	51.65	15.820	
6,600.00	6,550.39	6,559.64	6,387.60	25.94	31.76	-63.45	-1,190.59	-664.33	831.23	778.78	52.45	15.848	
6,700.00	6,649.58	6,658.61	6,483.69	26.34	32.27	-63.28	-1,210.17	-677.73	845.31	792.07	53.24	15.876	
6,800.00	6,748.77	6,757.59	6,579.77	26.74	32.77	-63.11	-1,229.76	-691.13	859.40	805.36	54.04	15.903	
6,838.96	6,787.41	6,803.86	6,617.20	26.90	33.01	-63.05	-1,237.39	-696.35	864.90	810.51	54.38	15.903	
6,850.00	6,798.38	6,807.07	6,627.81	26.95	33.03	-58.22	-1,239.55	-697.82	866.45	812.02	54.44	15.917	
6,900.00	6,848.23	6,856.33	6,675.63	27.12	33.28	3.01	-1,249.30	-704.49	873.52	818.75	54.77	15.948	
6,950.00	6,898.06	6,904.91	6,722.80	27.27	33.53	59.71	-1,258.92	-711.07	880.63	825.60	55.03	16.003	
7,000.00	6,947.42	6,952.73	6,769.22	27.39	33.77	73.30	-1,268.38	-717.48	887.86	832.64	55.22	16.080	
7,050.00	6,995.85	7,002.63	6,817.99	27.50	34.00	78.63	-1,278.27	-721.08	895.23	839.85	55.38	16.165	
7,100.00	7,042.91	7,054.23	6,868.53	27.59	34.20	81.47	-1,288.45	-719.79	902.65	847.13	55.52	16.257	
7,150.00	7,088.16	7,107.67	6,920.50	27.68	34.37	83.26	-1,298.83	-713.07	910.05	854.38	55.66	16.350	
7,200.00	7,131.18	7,163.14	6,973.45	27.76	34.50	84.53	-1,309.32	-700.41	917.32	861.52	55.81	16.437	
7,250.00	7,171.59	7,220.80	7,026.78	27.85	34.61	85.49	-1,319.78	-681.24	924.39	868.42	55.97	16.515	
7,300.00	7,209.00	7,280.76	7,079.71	27.95	34.70	86.26	-1,330.06	-655.06	931.13	874.96	56.17	16.576	
7,350.00	7,243.07	7,343.13	7,131.26	28.06	34.77	86.89	-1,339.95	-621.46	937.44	881.02	56.43	16.614	
7,400.00	7,273.49	7,407.90	7,180.26	28.20	34.82	87.42	-1,349.20	-580.18	943.20	886.43	56.77	16.615	
7,450.00	7,299.98	7,475.02	7,225.35	28.39	34.85	87.85	-1,357.55	-531.24	948.29	891.05	57.24	16.568	
7,500.00	7,322.30	7,544.30	7,265.04	28.64	34.87	88.19	-1,364.70	-474.97	952.59	894.72	57.87	16.460	
7,550.00	7,340.24	7,615.41	7,297.82	28.96	34.89	88.43	-1,370.35	-412.19	956.01	897.26	58.74	16.275	
7,600.00	7,353.63	7,687.91	7,322.32	29.36	34.93	88.58	-1,374.25	-344.12	958.45	898.59	59.85	16.013	
7,650.00	7,362.35	7,761.26	7,337.44	29.84	35.01	88.63	-1,376.21	-272.44	959.86	898.64	61.22	15.679	
7,700.00	7,366.32	7,831.57	7,342.60	30.39	35.15	88.58	-1,376.18	-202.36	960.22	897.47	62.74	15.304	
7,706.49	7,366.48	7,838.06	7,342.72	30.47	35.17	88.58	-1,376.11	-195.87	960.22	897.31	62.91	15.264	
7,707.12	7,366.49	7,838.69	7,342.73	30.47	35.17	88.58	-1,376.10	-195.24	960.22	897.29	62.93	15.260	
7,800.00	7,368.16	7,931.57	7,344.56	31.72	35.58	88.59	-1,375.05	-102.39	960.22	894.74	65.48	14.664	
7,900.00	7,369.96	8,031.57	7,346.52	33.33	36.38	88.60	-1,373.92	-2.41	960.22	891.53	68.70	13.978	
8,000.00	7,371.76	8,131.57	7,348.48	35.17	37.66	88.61	-1,372.79	97.56	960.23	887.88	72.34	13.273	
8,100.00	7,373.56	8,231.57	7,350.44	37.21	39.35	88.62	-1,371.66	197.54	960.23	883.87	76.36	12.574	
8,200.00	7,375.36	8,331.57	7,352.40	39.41	41.33	88.63	-1,370.53	297.51	960.24	879.54	80.70	11.899	
8,300.00	7,377.15	8,431.57	7,354.36	41.75	43.52	88.64	-1,369.40	397.48	960.24	874.94	85.30	11.257	
8,400.00	7,378.95	8,531.57	7,356.32	44.20	45.86	88.65	-1,368.27	497.46	960.24	870.11	90.13	10.654	
8,500.00	7,380.75	8,631.57	7,358.28	46.75	48.31	88.66	-1,367.14	597.43	960.25	865.10	95.15	10.092	
8,600.00	7,382.55	8,731.57	7,360.24	49.37	50.86	88.67	-1,366.01	697.41	960.25	859.92	100.34	9.570	
8,700.00	7,384.34	8,831.57	7,362.20	52.07	53.49	88.68	-1,364.89	797.38	960.26	854.60	105.66	9.088	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HNB-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 201-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
8,800.00	7,386.14	8,931.57	7,364.16	54.82	56.19	88.69	-1,363.76	897.36	960.26	849.16	111.10	8.643	
8,900.00	7,387.94	9,031.57	7,366.12	57.62	58.93	88.70	-1,362.63	997.33	960.26	843.62	116.65	8.232	
9,000.00	7,389.74	9,131.57	7,368.08	60.46	61.73	88.71	-1,361.50	1,097.30	960.27	837.99	122.28	7.853	
9,100.00	7,391.54	9,231.57	7,370.04	63.34	64.57	88.72	-1,360.37	1,197.28	960.27	832.28	127.99	7.503	
9,200.00	7,393.33	9,331.57	7,372.00	66.25	67.44	88.73	-1,359.24	1,297.25	960.28	826.51	133.77	7.179	
9,300.00	7,395.13	9,431.57	7,373.96	69.19	70.35	88.74	-1,358.11	1,397.23	960.28	820.67	139.61	6.879	
9,400.00	7,396.93	9,531.57	7,375.92	72.16	73.28	88.75	-1,356.98	1,497.20	960.29	814.79	145.49	6.600	
9,500.00	7,398.73	9,631.57	7,377.89	75.14	76.23	88.76	-1,355.85	1,597.17	960.29	808.86	151.43	6.342	
9,600.00	7,400.52	9,731.57	7,379.85	78.14	79.21	88.77	-1,354.72	1,697.15	960.29	802.89	157.40	6.101	
9,700.00	7,402.32	9,831.57	7,381.81	81.17	82.20	88.78	-1,353.59	1,797.12	960.30	796.88	163.41	5.876	
9,800.00	7,404.12	9,931.57	7,383.77	84.20	85.21	88.79	-1,352.46	1,897.10	960.30	790.85	169.46	5.667	
9,900.00	7,405.92	10,031.57	7,385.73	87.25	88.24	88.80	-1,351.33	1,997.07	960.31	784.78	175.53	5.471	
10,000.00	7,407.71	10,131.57	7,387.69	90.31	91.28	88.80	-1,350.20	2,097.05	960.31	778.69	181.63	5.287	
10,100.00	7,409.51	10,231.57	7,389.65	93.39	94.33	88.81	-1,349.07	2,197.02	960.32	772.57	187.75	5.115	
10,200.00	7,411.31	10,331.57	7,391.61	96.47	97.39	88.82	-1,347.94	2,296.99	960.32	766.43	193.89	4.953	
10,300.00	7,413.11	10,431.57	7,393.57	99.56	100.47	88.83	-1,346.81	2,396.97	960.33	760.27	200.05	4.800	
10,400.00	7,414.91	10,531.57	7,395.53	102.66	103.55	88.84	-1,345.68	2,496.94	960.33	754.10	206.23	4.657	
10,500.00	7,416.70	10,631.57	7,397.49	105.77	106.64	88.85	-1,344.55	2,596.92	960.33	747.91	212.43	4.521	
10,600.00	7,418.50	10,731.57	7,399.45	108.88	109.74	88.86	-1,343.42	2,696.89	960.34	741.70	218.64	4.392	
10,700.00	7,420.30	10,831.57	7,401.41	112.00	112.84	88.87	-1,342.29	2,796.87	960.34	735.48	224.86	4.271	
10,800.00	7,422.10	10,931.57	7,403.37	115.13	115.96	88.88	-1,341.16	2,896.84	960.35	729.25	231.10	4.156	
10,900.00	7,423.89	11,031.57	7,405.33	118.26	119.07	88.89	-1,340.03	2,996.81	960.35	723.01	237.34	4.046	
11,000.00	7,425.69	11,131.57	7,407.29	121.40	122.20	88.90	-1,338.90	3,096.79	960.36	716.76	243.60	3.942	
11,100.00	7,427.49	11,231.57	7,409.25	124.54	125.33	88.91	-1,337.77	3,196.76	960.36	710.49	249.87	3.843	
11,200.00	7,429.29	11,331.57	7,411.22	127.69	128.46	88.92	-1,336.64	3,296.74	960.37	704.22	256.14	3.749	
11,300.00	7,431.09	11,431.57	7,413.18	130.83	131.60	88.93	-1,335.51	3,396.71	960.37	697.94	262.43	3.660	
11,400.00	7,432.88	11,531.57	7,415.14	133.99	134.74	88.94	-1,334.38	3,496.69	960.38	691.65	268.72	3.574	
11,500.00	7,434.68	11,631.57	7,417.10	137.14	137.89	88.95	-1,333.25	3,596.66	960.38	685.36	275.02	3.492	
11,600.00	7,436.48	11,731.57	7,419.06	140.30	141.03	88.96	-1,332.12	3,696.63	960.39	679.06	281.33	3.414	
11,700.00	7,438.28	11,831.57	7,421.02	143.47	144.19	88.97	-1,330.99	3,796.61	960.39	672.75	287.64	3.339	
11,800.00	7,440.07	11,931.57	7,422.98	146.63	147.34	88.98	-1,329.86	3,896.58	960.40	666.43	293.96	3.267	
11,900.00	7,441.87	12,031.57	7,424.94	149.80	150.50	88.99	-1,328.73	3,996.56	960.40	660.12	300.29	3.198	
11,900.00	7,441.87	12,031.57	7,424.94	149.80	150.50	88.99	-1,328.73	3,996.56	960.40	660.12	300.29	3.198	
11,907.12	7,442.00	12,034.66	7,425.00	150.02	150.60	88.99	-1,328.70	3,999.65	960.41	659.79	300.62	3.195 SF	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HNC-05-03-68 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	90.06	-0.17	175.01	175.01					
100.00	100.00	100.00	100.00	0.70	0.70	90.06	-0.17	175.01	175.01	173.61	1.40	125.338		
200.00	200.00	200.00	200.00	2.44	2.44	90.06	-0.17	175.01	175.01	170.12	4.89	35.811		
300.00	299.98	299.98	299.98	3.32	4.19	-130.36	-0.17	175.01	176.13	168.62	7.51	23.454		
400.00	399.84	404.32	404.30	3.36	5.07	-131.22	-1.58	173.73	178.31	169.89	8.42	21.165		
500.00	499.45	508.79	508.61	3.44	5.09	-132.05	-5.81	169.90	180.33	171.80	8.53	21.152		
550.00	549.13	561.08	560.72	3.50	5.13	-132.45	-8.98	167.03	181.27	172.67	8.61	21.064		
600.00	598.76	613.40	612.78	3.57	5.16	-132.76	-12.87	163.51	181.88	173.18	8.70	20.915		
700.00	698.01	718.09	716.60	3.74	5.25	-132.74	-22.75	154.56	181.16	172.23	8.93	20.288		
750.00	747.64	770.38	768.27	3.84	5.32	-132.40	-28.73	149.14	179.83	170.76	9.07	19.825		
800.00	797.27	822.59	819.69	3.94	5.39	-139.88	-35.41	143.10	178.18	168.95	9.23	19.308		
892.27	888.83	918.55	913.75	4.15	5.55	-151.98	-49.48	130.36	175.19	165.62	9.56	18.324		
900.00	896.50	926.56	921.58	4.17	5.57	-151.71	-50.76	129.20	174.94	165.35	9.59	18.241		
1,000.00	995.69	1,026.53	1,019.06	4.42	5.78	-148.11	-67.20	114.31	171.77	161.72	10.05	17.098		
1,100.00	1,094.88	1,125.88	1,115.92	4.70	6.03	-144.39	-83.56	99.49	169.27	158.71	10.56	16.028		
1,200.00	1,194.07	1,225.23	1,212.79	4.99	6.30	-140.58	-99.93	84.67	167.52	156.39	11.13	15.051		
1,300.00	1,293.26	1,324.58	1,309.65	5.30	6.60	-136.71	-116.30	69.85	166.53	154.78	11.75	14.175		
1,377.57	1,370.20	1,401.64	1,384.78	5.55	6.85	-133.69	-128.99	58.35	166.29	154.04	12.26	13.568 CC		
1,400.00	1,392.46	1,423.93	1,406.51	5.62	6.93	-132.82	-132.66	55.03	166.31	153.90	12.41	13.403		
1,500.00	1,491.65	1,523.28	1,503.38	5.95	7.27	-128.93	-149.03	40.21	166.88	153.77	13.10	12.735 ES		
1,600.00	1,590.84	1,622.62	1,600.24	6.30	7.63	-125.08	-165.40	25.39	168.21	154.39	13.83	12.165		
1,700.00	1,690.03	1,721.97	1,697.11	6.64	8.00	-121.31	-181.76	10.57	170.30	155.73	14.57	11.686		
1,800.00	1,789.22	1,821.32	1,793.97	7.00	8.38	-117.65	-198.13	-4.25	173.12	157.78	15.34	11.289		
1,900.00	1,888.41	1,920.67	1,890.84	7.36	8.78	-114.11	-214.50	-19.07	176.63	160.52	16.11	10.965		
2,000.00	1,987.60	2,020.02	1,987.70	7.72	9.18	-110.73	-230.86	-33.89	180.79	163.90	16.89	10.706		
2,100.00	2,086.79	2,119.37	2,084.56	8.09	9.60	-107.50	-247.23	-48.71	185.55	167.88	17.67	10.502		
2,200.00	2,185.98	2,218.72	2,181.43	8.47	10.02	-104.45	-263.60	-63.54	190.88	172.43	18.45	10.346		
2,300.00	2,285.17	2,318.07	2,278.29	8.84	10.44	-101.57	-279.96	-78.36	196.73	177.49	19.23	10.229		
2,400.00	2,384.37	2,417.41	2,375.16	9.22	10.88	-98.85	-296.33	-93.18	203.04	183.03	20.01	10.146		
2,500.00	2,483.56	2,516.76	2,472.02	9.60	11.31	-96.31	-312.69	-108.00	209.79	189.00	20.79	10.092		
2,600.00	2,582.75	2,616.11	2,568.88	9.98	11.76	-93.93	-329.06	-122.82	216.92	195.36	21.56	10.061		
2,700.00	2,681.94	2,715.46	2,665.75	10.37	12.20	-91.70	-345.43	-137.64	224.41	202.08	22.33	10.048		
2,800.00	2,781.13	2,814.81	2,762.61	10.76	12.65	-89.61	-361.79	-152.46	232.21	209.11	23.10	10.052		
2,900.00	2,880.32	2,914.16	2,859.48	11.14	13.10	-87.67	-378.16	-167.28	240.31	216.44	23.87	10.068		
3,000.00	2,979.51	3,013.51	2,956.34	11.53	13.56	-85.85	-394.53	-182.10	248.66	224.02	24.63	10.095		
3,100.00	3,078.70	3,112.86	3,053.20	11.92	14.01	-84.15	-410.89	-196.92	257.24	231.85	25.39	10.130		
3,200.00	3,177.89	3,212.20	3,150.07	12.32	14.47	-82.56	-427.26	-211.74	266.04	239.88	26.16	10.171		
3,300.00	3,277.08	3,311.55	3,246.93	12.71	14.94	-81.08	-443.63	-226.56	275.02	248.11	26.92	10.218		
3,400.00	3,376.28	3,410.90	3,343.80	13.10	15.40	-79.68	-459.99	-241.38	284.18	256.51	27.68	10.268		
3,500.00	3,475.47	3,510.25	3,440.66	13.50	15.87	-78.38	-476.36	-256.20	293.50	265.06	28.44	10.321		
3,600.00	3,574.66	3,609.60	3,537.53	13.89	16.33	-77.16	-492.73	-271.02	302.96	273.76	29.19	10.377		
3,700.00	3,673.85	3,708.95	3,634.39	14.29	16.80	-76.01	-509.09	-285.84	312.54	282.59	29.95	10.434		
3,800.00	3,773.04	3,808.30	3,731.25	14.69	17.27	-74.92	-525.46	-300.66	322.25	291.53	30.71	10.492		
3,900.00	3,872.23	3,907.65	3,828.12	15.08	17.74	-73.91	-541.83	-315.48	332.06	300.59	31.47	10.551		
4,000.00	3,971.42	4,006.99	3,924.98	15.48	18.21	-72.95	-558.19	-330.30	341.97	309.74	32.23	10.610		
4,100.00	4,070.61	4,106.34	4,021.85	15.88	18.69	-72.04	-574.56	-345.13	351.97	318.98	32.99	10.668		
4,200.00	4,169.80	4,205.69	4,118.71	16.28	19.16	-71.19	-590.92	-359.95	362.05	328.30	33.75	10.727		
4,300.00	4,268.99	4,305.04	4,215.57	16.68	19.64	-70.38	-607.29	-374.77	372.21	337.70	34.51	10.785		
4,400.00	4,368.19	4,404.39	4,312.44	17.08	20.11	-69.61	-623.66	-389.59	382.44	347.16	35.27	10.842		
4,500.00	4,467.38	4,503.74	4,409.30	17.48	20.59	-68.89	-640.02	-404.41	392.73	356.69	36.04	10.898		
4,600.00	4,566.57	4,603.09	4,506.17	17.88	21.07	-68.20	-656.39	-419.23	403.08	366.28	36.80	10.953		
4,700.00	4,665.76	4,702.43	4,603.03	18.28	21.55	-67.54	-672.76	-434.05	413.49	375.93	37.56	11.008		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HNC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
4,800.00	4,764.95	4,801.78	4,699.89	18.68	22.03	-66.92	-689.12	-448.87	423.95	385.62	38.33	11.061	
4,900.00	4,864.14	4,901.13	4,796.76	19.08	22.50	-66.33	-705.49	-463.69	434.45	395.36	39.09	11.114	
5,000.00	4,963.33	5,000.48	4,893.62	19.48	22.98	-65.77	-721.86	-478.51	445.00	405.14	39.86	11.165	
5,100.00	5,062.52	5,099.83	4,990.49	19.88	23.47	-65.23	-738.22	-493.33	455.59	414.97	40.62	11.215	
5,200.00	5,161.71	5,200.82	5,087.35	20.29	23.95	-64.71	-754.59	-508.15	466.21	424.82	41.40	11.262	
5,300.00	5,260.90	5,301.47	5,184.22	20.69	24.44	-64.22	-770.96	-522.97	476.88	434.71	42.17	11.309	
5,400.00	5,360.10	5,402.12	5,281.08	21.09	24.93	-63.75	-787.32	-537.79	487.57	444.63	42.94	11.354	
5,500.00	5,459.29	5,502.78	5,377.94	21.49	25.42	-63.30	-803.69	-552.61	498.30	454.58	43.72	11.399	
5,600.00	5,558.48	5,596.57	5,474.81	21.90	25.87	-62.87	-820.06	-567.43	509.05	464.59	44.46	11.450	
5,700.00	5,657.67	5,704.08	5,571.67	22.30	26.40	-62.46	-836.42	-582.25	519.84	474.57	45.26	11.484	
5,800.00	5,756.86	5,795.27	5,668.54	22.70	26.84	-62.07	-852.79	-597.07	530.65	484.65	46.00	11.536	
5,900.00	5,856.05	5,905.38	5,765.40	23.11	27.38	-61.69	-869.15	-611.89	541.48	494.66	46.82	11.566	
6,000.00	5,955.24	6,006.03	5,862.26	23.51	27.87	-61.32	-885.52	-626.72	552.33	504.74	47.59	11.605	
6,100.00	6,054.43	6,106.68	5,959.13	23.91	28.36	-60.97	-901.89	-641.54	563.21	514.84	48.37	11.644	
6,200.00	6,153.62	6,192.67	6,055.99	24.32	28.78	-60.63	-918.25	-656.36	574.11	525.02	49.08	11.696	
6,300.00	6,252.82	6,307.99	6,152.86	24.72	29.34	-60.31	-934.62	-671.18	585.02	535.10	49.92	11.718	
6,400.00	6,352.01	6,408.64	6,249.72	25.13	29.83	-59.99	-950.99	-686.00	595.95	545.25	50.70	11.754	
6,500.00	6,451.20	6,509.29	6,346.58	25.53	30.32	-59.69	-967.35	-700.82	606.90	555.42	51.48	11.789	
6,600.00	6,550.39	6,609.94	6,443.45	25.94	30.82	-59.40	-983.72	-715.64	617.87	565.61	52.26	11.823	
6,700.00	6,649.58	6,689.41	6,540.31	26.34	31.21	-59.12	-1,000.09	-730.46	628.85	575.90	52.95	11.876	
6,800.00	6,748.77	6,788.76	6,637.18	26.74	31.69	-58.85	-1,016.45	-745.28	639.85	586.12	53.72	11.910	
6,838.96	6,787.41	6,827.46	6,674.91	26.90	31.88	-58.75	-1,022.83	-751.05	644.14	590.11	54.03	11.923	
6,850.00	6,798.38	6,838.43	6,685.60	26.95	31.93	-53.86	-1,024.64	-752.69	645.36	591.25	54.11	11.927	
6,900.00	6,848.23	6,887.83	6,733.77	27.12	32.18	7.63	-1,032.77	-760.06	651.15	596.72	54.43	11.964	
6,950.00	6,898.06	6,936.49	6,781.22	27.27	32.41	64.65	-1,040.79	-767.32	657.40	602.74	54.65	12.029	
7,000.00	6,947.42	6,986.72	6,830.24	27.39	32.66	78.65	-1,049.07	-774.47	664.20	609.38	54.82	12.117	
7,050.00	6,995.85	7,043.20	6,885.82	27.50	32.89	84.41	-1,058.38	-777.83	671.26	616.27	54.99	12.207	
7,100.00	7,042.91	7,101.93	6,943.64	27.59	33.08	87.63	-1,067.98	-774.82	678.35	623.20	55.15	12.301	
7,150.00	7,088.16	7,163.00	7,003.04	27.68	33.23	89.75	-1,077.74	-764.73	685.36	630.06	55.29	12.395	
7,200.00	7,131.18	7,226.50	7,063.14	27.76	33.35	91.27	-1,087.49	-746.84	692.13	636.68	55.44	12.484	
7,250.00	7,171.59	7,292.40	7,122.79	27.85	33.44	92.40	-1,097.05	-720.59	698.52	642.91	55.60	12.562	
7,300.00	7,209.00	7,360.61	7,180.58	27.95	33.51	93.23	-1,106.18	-685.63	704.38	648.57	55.80	12.622	
7,350.00	7,243.07	7,430.90	7,234.91	28.06	33.57	93.82	-1,114.59	-641.93	709.57	653.49	56.08	12.652	
7,400.00	7,273.49	7,502.90	7,284.06	28.20	33.63	94.20	-1,122.03	-589.91	713.96	657.47	56.49	12.639	
7,450.00	7,299.98	7,576.15	7,326.33	28.39	33.70	94.36	-1,128.20	-530.48	717.46	660.35	57.11	12.563	
7,500.00	7,322.30	7,650.06	7,360.24	28.64	33.80	94.33	-1,132.90	-465.05	719.98	662.01	57.97	12.420	
7,550.00	7,340.24	7,723.99	7,384.70	28.96	33.97	94.10	-1,135.95	-395.41	721.49	662.36	59.13	12.202	
7,600.00	7,353.63	7,797.30	7,399.12	29.36	34.23	93.71	-1,137.31	-323.61	721.99	661.46	60.54	11.926	
7,650.00	7,362.35	7,865.00	7,403.59	29.84	34.58	93.21	-1,137.06	-256.10	721.56	659.49	62.07	11.624	
7,700.00	7,366.32	7,914.89	7,404.57	30.39	34.94	93.04	-1,136.50	-206.23	721.22	657.87	63.35	11.385	
7,706.73	7,366.49	7,921.62	7,404.70	30.47	34.99	93.04	-1,136.42	-199.50	721.22	657.69	63.53	11.352	
7,707.12	7,366.49	7,922.01	7,404.71	30.47	35.00	93.04	-1,136.41	-199.11	721.22	657.68	63.54	11.350	
7,800.00	7,368.16	8,014.89	7,406.53	31.72	35.91	93.05	-1,135.36	-106.25	721.23	655.02	66.20	10.894	
7,900.00	7,369.96	8,114.89	7,408.49	33.33	37.25	93.06	-1,134.22	-6.28	721.24	651.70	69.54	10.372	
8,000.00	7,371.76	8,214.89	7,410.45	35.17	38.90	93.08	-1,133.08	93.70	721.24	647.96	73.29	9.841	
8,100.00	7,373.56	8,314.89	7,412.41	37.21	40.82	93.09	-1,131.94	193.67	721.25	643.86	77.39	9.319	
8,200.00	7,375.36	8,414.89	7,414.37	39.41	42.93	93.10	-1,130.81	293.64	721.26	639.46	81.80	8.817	
8,300.00	7,377.15	8,514.89	7,416.33	41.75	45.20	93.11	-1,129.67	393.62	721.27	634.80	86.46	8.342	
8,400.00	7,378.95	8,614.89	7,418.29	44.20	47.59	93.13	-1,128.53	493.59	721.28	629.93	91.34	7.896	
8,500.00	7,380.75	8,714.89	7,420.25	46.75	50.09	93.14	-1,127.39	593.57	721.29	624.88	96.41	7.482	
8,600.00	7,382.55	8,814.89	7,422.21	49.37	52.67	93.15	-1,126.25	693.54	721.29	619.67	101.63	7.097	
8,700.00	7,384.34	8,914.89	7,424.17	52.07	55.33	93.17	-1,125.12	793.52	721.30	614.32	106.98	6.742	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 7X-HNC-05-03-68 - OH - PLAN #1											Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 301-MWD+HDGM											Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)				
8,800.00	7,386.14	9,014.89	7,426.13	54.82	58.04	93.18	-1,123.98	893.49	721.31	608.86	112.45	6.415
8,900.00	7,387.94	9,114.89	7,428.09	57.62	60.81	93.19	-1,122.84	993.46	721.32	603.31	118.01	6.112
9,000.00	7,389.74	9,214.89	7,430.05	60.46	63.62	93.20	-1,121.70	1,093.44	721.33	597.67	123.66	5.833
9,100.00	7,391.54	9,314.89	7,432.01	63.34	66.47	93.22	-1,120.56	1,193.41	721.34	591.95	129.38	5.575
9,200.00	7,393.33	9,414.89	7,433.97	66.25	69.36	93.23	-1,119.43	1,293.39	721.35	586.17	135.17	5.337
9,300.00	7,395.13	9,514.89	7,435.93	69.19	72.27	93.24	-1,118.29	1,393.36	721.35	580.34	141.02	5.115
9,400.00	7,396.93	9,614.89	7,437.89	72.16	75.21	93.26	-1,117.15	1,493.34	721.36	574.46	146.91	4.910
9,500.00	7,398.73	9,714.89	7,439.85	75.14	78.17	93.27	-1,116.01	1,593.31	721.37	568.53	152.85	4.720
9,600.00	7,400.52	9,814.89	7,441.81	78.14	81.15	93.28	-1,114.87	1,693.28	721.38	562.56	158.82	4.542
9,700.00	7,402.32	9,914.89	7,443.78	81.17	84.15	93.29	-1,113.74	1,793.26	721.39	556.56	164.83	4.376
9,800.00	7,404.12	10,014.89	7,445.74	84.20	87.16	93.31	-1,112.60	1,893.23	721.40	550.52	170.87	4.222
9,900.00	7,405.92	10,114.89	7,447.70	87.25	90.19	93.32	-1,111.46	1,993.21	721.41	544.46	176.94	4.077
10,000.00	7,407.71	10,214.89	7,449.66	90.31	93.24	93.33	-1,110.32	2,093.18	721.42	538.38	183.04	3.941
10,100.00	7,409.51	10,314.89	7,451.62	93.39	96.29	93.35	-1,109.18	2,193.15	721.43	532.27	189.16	3.814
10,200.00	7,411.31	10,414.89	7,453.58	96.47	99.36	93.36	-1,108.05	2,293.13	721.44	526.14	195.29	3.694
10,300.00	7,413.11	10,514.89	7,455.54	99.56	102.43	93.37	-1,106.91	2,393.10	721.44	520.00	201.45	3.581
10,400.00	7,414.91	10,614.89	7,457.50	102.66	105.52	93.39	-1,105.77	2,493.08	721.45	513.83	207.62	3.475
10,500.00	7,416.70	10,714.89	7,459.46	105.77	108.61	93.40	-1,104.63	2,593.05	721.46	507.65	213.81	3.374
10,600.00	7,418.50	10,814.89	7,461.42	108.88	111.71	93.41	-1,103.49	2,693.03	721.47	501.46	220.01	3.279
10,700.00	7,420.30	10,914.89	7,463.38	112.00	114.82	93.42	-1,102.35	2,793.00	721.48	495.25	226.23	3.189
10,800.00	7,422.10	11,014.89	7,465.34	115.13	117.93	93.44	-1,101.22	2,892.97	721.49	489.04	232.46	3.104
10,900.00	7,423.89	11,114.89	7,467.30	118.26	121.05	93.45	-1,100.08	2,992.95	721.50	482.81	238.69	3.023
11,000.00	7,425.69	11,214.89	7,469.26	121.40	124.18	93.46	-1,098.94	3,092.92	721.51	476.57	244.94	2.946
11,100.00	7,427.49	11,314.89	7,471.22	124.54	127.31	93.48	-1,097.80	3,192.90	721.52	470.32	251.20	2.872
11,200.00	7,429.29	11,414.89	7,473.18	127.69	130.44	93.49	-1,096.66	3,292.87	721.53	464.06	257.47	2.802
11,300.00	7,431.09	11,514.89	7,475.14	130.83	133.58	93.50	-1,095.53	3,392.84	721.54	457.80	263.74	2.736
11,400.00	7,432.88	11,614.88	7,477.10	133.99	136.72	93.51	-1,094.39	3,492.82	721.55	451.53	270.02	2.672
11,500.00	7,434.68	11,714.88	7,479.06	137.14	139.87	93.53	-1,093.25	3,592.79	721.56	445.25	276.31	2.611
11,600.00	7,436.48	11,814.88	7,481.02	140.30	143.02	93.54	-1,092.11	3,692.77	721.57	438.96	282.61	2.553
11,700.00	7,438.28	11,914.88	7,482.98	143.47	146.17	93.55	-1,090.97	3,792.74	721.58	432.67	288.91	2.498
11,800.00	7,440.07	12,014.88	7,484.94	146.63	149.33	93.57	-1,089.84	3,892.72	721.59	426.37	295.21	2.444
11,900.00	7,441.87	12,114.88	7,486.90	149.80	152.48	93.58	-1,088.70	3,992.69	721.60	420.07	301.52	2.393
11,900.02	7,441.87	12,114.91	7,486.90	149.80	152.49	93.58	-1,088.70	3,992.71	721.60	420.07	301.53	2.393
11,907.12	7,442.00	12,119.99	7,487.00	150.02	152.65	93.58	-1,088.64	3,997.79	721.60	419.68	301.92	2.390 SF



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 8X-HC-05-03-68 - OH - PLAN #1													Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 401-MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	73.00	49.67	162.46	169.89					
100.00	100.00	100.00	100.00	0.70	0.70	73.00	49.67	162.46	169.89	168.49	1.40	121.671		
200.00	200.00	200.00	200.00	2.44	2.44	73.00	49.67	162.46	169.89	165.00	4.89	34.763 CC		
300.00	299.98	300.02	299.98	3.32	4.19	-147.30	49.67	162.46	171.35	163.84	7.51	22.815 ES		
400.00	399.84	399.84	399.84	3.36	5.93	-148.18	49.67	162.46	175.78	166.48	9.29	18.913		
500.00	499.45	504.34	504.31	3.44	6.85	-149.21	47.99	161.57	181.91	171.63	10.29	17.685		
550.00	549.13	556.69	556.61	3.50	6.82	-149.62	45.89	160.46	185.12	174.81	10.31	17.955		
600.00	598.76	609.12	608.94	3.57	6.83	-149.92	42.93	158.89	188.03	177.66	10.38	18.121		
700.00	698.01	714.23	713.60	3.74	6.88	-149.92	34.46	154.40	191.83	181.27	10.56	18.170		
750.00	747.64	766.83	765.82	3.84	6.91	-149.63	28.95	151.48	192.71	182.04	10.67	18.065		
800.00	797.27	819.39	817.89	3.94	6.95	-157.20	22.60	148.11	193.11	182.32	10.79	17.899		
892.27	888.83	916.06	913.27	4.15	7.05	-169.51	8.71	140.75	193.22	182.17	11.05	17.490		
900.00	896.50	924.13	921.21	4.17	7.06	-169.26	7.43	140.07	193.20	182.13	11.07	17.450		
1,000.00	995.69	1,028.17	1,023.14	4.42	7.20	-165.54	-10.93	130.33	191.98	180.57	11.42	16.817		
1,100.00	1,094.88	1,131.33	1,123.42	4.70	7.37	-160.93	-32.36	118.98	189.36	177.53	11.83	16.005		
1,200.00	1,194.07	1,233.39	1,221.68	4.99	7.59	-155.33	-56.68	106.08	186.06	173.73	12.33	15.089		
1,300.00	1,293.26	1,333.11	1,316.77	5.30	7.85	-148.81	-83.22	92.01	183.14	170.22	12.92	14.170		
1,376.01	1,368.66	1,407.27	1,387.32	5.55	8.06	-143.72	-103.41	81.31	182.38	168.96	13.43	13.585		
1,400.00	1,392.46	1,430.68	1,409.59	5.62	8.14	-142.11	-109.78	77.93	182.46	168.87	13.59	13.426		
1,500.00	1,491.65	1,528.25	1,502.42	5.95	8.46	-135.45	-136.34	63.85	184.39	170.10	14.29	12.901		
1,600.00	1,590.84	1,625.82	1,595.24	6.30	8.80	-129.01	-162.90	49.77	188.87	173.85	15.02	12.576		
1,700.00	1,690.03	1,723.39	1,688.07	6.64	9.17	-122.93	-189.46	35.69	195.71	179.95	15.75	12.424		
1,800.00	1,789.22	1,820.96	1,780.89	7.00	9.56	-117.30	-216.02	21.62	204.67	188.19	16.48	12.416 SF		
1,900.00	1,888.41	1,918.53	1,873.72	7.36	9.96	-112.16	-242.57	7.54	215.50	198.29	17.21	12.522		
2,000.00	1,987.60	2,016.10	1,966.54	7.72	10.39	-107.54	-269.13	-6.54	227.92	210.00	17.93	12.712		
2,100.00	2,086.79	2,113.67	2,059.37	8.09	10.83	-103.40	-295.69	-20.62	241.70	223.06	18.64	12.965		
2,200.00	2,185.98	2,211.25	2,152.19	8.47	11.27	-99.72	-322.25	-34.70	256.61	237.26	19.35	13.261		
2,300.00	2,285.17	2,308.82	2,245.02	8.84	11.74	-96.44	-348.81	-48.78	272.46	252.41	20.06	13.584		
2,400.00	2,384.37	2,406.39	2,337.84	9.22	12.21	-93.52	-375.37	-62.86	289.11	268.35	20.76	13.924		
2,500.00	2,483.56	2,503.96	2,430.67	9.60	12.69	-90.92	-401.93	-76.94	306.42	284.95	21.47	14.271		
2,600.00	2,582.75	2,601.53	2,523.49	9.98	13.17	-88.60	-428.48	-91.02	324.29	302.11	22.18	14.620		
2,700.00	2,681.94	2,700.90	2,616.32	10.37	13.68	-86.52	-455.04	-105.10	342.62	319.72	22.90	14.960		
2,800.00	2,781.13	2,803.33	2,709.14	10.76	14.20	-84.65	-481.60	-119.18	361.36	337.72	23.64	15.285		
2,900.00	2,880.32	2,894.24	2,801.97	11.14	14.67	-82.96	-508.16	-133.26	380.43	356.10	24.33	15.635		
3,000.00	2,979.51	2,991.81	2,894.79	11.53	15.19	-81.44	-534.72	-147.34	399.79	374.74	25.06	15.956		
3,100.00	3,078.70	3,089.38	2,987.62	11.92	15.70	-80.05	-561.28	-161.42	419.41	393.62	25.79	16.265		
3,200.00	3,177.89	3,186.95	3,080.44	12.32	16.22	-78.79	-587.84	-175.50	439.24	412.72	26.52	16.564		
3,300.00	3,277.08	3,284.53	3,173.27	12.71	16.75	-77.64	-614.39	-189.58	459.26	432.00	27.25	16.851		
3,400.00	3,376.28	3,382.10	3,266.09	13.10	17.27	-76.58	-640.95	-203.65	479.44	451.45	27.99	17.126		
3,500.00	3,475.47	3,479.67	3,358.92	13.50	17.80	-75.61	-667.51	-217.73	499.77	471.03	28.74	17.391		
3,600.00	3,574.66	3,577.24	3,451.74	13.89	18.34	-74.71	-694.07	-231.81	520.23	490.74	29.48	17.644		
3,700.00	3,673.85	3,674.81	3,544.57	14.29	18.87	-73.88	-720.63	-245.89	540.80	510.56	30.24	17.887		
3,800.00	3,773.04	3,772.38	3,637.39	14.69	19.41	-73.11	-747.19	-259.97	561.47	530.48	30.99	18.119		
3,900.00	3,872.23	3,869.95	3,730.22	15.08	19.95	-72.40	-773.75	-274.05	582.23	550.49	31.74	18.341		
4,000.00	3,971.42	3,967.52	3,823.04	15.48	20.49	-71.73	-800.30	-288.13	603.08	570.57	32.50	18.554		
4,100.00	4,070.61	4,065.09	3,915.87	15.88	21.03	-71.11	-826.86	-302.21	623.99	590.73	33.26	18.758		
4,200.00	4,169.80	4,162.66	4,008.69	16.28	21.58	-70.53	-853.42	-316.29	644.98	610.95	34.03	18.954		
4,300.00	4,268.99	4,260.23	4,101.52	16.68	22.13	-69.99	-879.98	-330.37	666.02	631.22	34.79	19.141		
4,400.00	4,368.19	4,357.81	4,194.34	17.08	22.68	-69.48	-906.54	-344.45	687.11	651.55	35.56	19.321		
4,500.00	4,467.38	4,455.38	4,287.17	17.48	23.23	-69.00	-933.10	-358.53	708.26	671.93	36.33	19.493		
4,600.00	4,566.57	4,552.95	4,379.99	17.88	23.78	-68.54	-959.66	-372.61	729.45	692.34	37.11	19.659		
4,700.00	4,665.76	4,650.52	4,472.82	18.28	24.33	-68.12	-986.21	-386.69	750.68	712.80	37.88	19.818		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 8X-HC-05-03-68 - OH - PLAN #1													Offset Site Error: 0.00 usft	
Survey Program: 0-INC-ONLY_A027Ua, 401-MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis				Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor		
4,800.00	4,764.95	4,748.09	4,565.64	18.68	24.88	-67.71	-1,012.77	-400.77	771.95	733.29	38.66	19.970		
4,900.00	4,864.14	4,845.66	4,658.47	19.08	25.44	-67.33	-1,039.33	-414.85	793.25	753.82	39.43	20.117		
5,000.00	4,963.33	4,943.23	4,751.29	19.48	25.99	-66.97	-1,065.89	-428.93	814.59	774.38	40.21	20.258		
5,100.00	5,062.52	5,040.80	4,844.12	19.88	26.55	-66.62	-1,092.45	-443.00	835.95	794.96	40.99	20.393		
5,200.00	5,161.71	5,138.37	4,936.94	20.29	27.11	-66.30	-1,119.01	-457.08	857.35	815.57	41.77	20.524		
5,300.00	5,260.90	5,235.94	5,029.77	20.69	27.67	-65.99	-1,145.57	-471.16	878.76	836.21	42.56	20.649		
5,400.00	5,360.10	5,333.51	5,122.59	21.09	28.22	-65.69	-1,172.12	-485.24	900.21	856.86	43.34	20.770		
5,500.00	5,459.29	5,431.09	5,215.42	21.49	28.78	-65.41	-1,198.68	-499.32	921.67	877.54	44.13	20.887		
5,600.00	5,558.48	5,528.66	5,308.24	21.90	29.34	-65.14	-1,225.24	-513.40	943.15	898.24	44.91	21.000		
5,700.00	5,657.67	5,626.23	5,401.07	22.30	29.90	-64.88	-1,251.80	-527.48	964.65	918.95	45.70	21.108		
5,800.00	5,756.86	5,723.80	5,493.89	22.70	30.47	-64.64	-1,278.36	-541.56	986.18	939.69	46.49	21.213		
5,900.00	5,856.05	5,821.37	5,586.72	23.11	31.03	-64.40	-1,304.92	-555.64	1,007.71	960.43	47.28	21.314		
6,000.00	5,955.24	5,918.94	5,679.54	23.51	31.59	-64.17	-1,331.48	-569.72	1,029.27	981.20	48.07	21.412		
6,100.00	6,054.43	6,016.51	5,772.37	23.91	32.15	-63.96	-1,358.04	-583.80	1,050.83	1,001.97	48.86	21.507		
6,200.00	6,153.62	6,114.08	5,865.19	24.32	32.72	-63.75	-1,384.59	-597.88	1,072.41	1,022.76	49.65	21.598		
6,300.00	6,252.82	6,211.65	5,958.02	24.72	33.28	-63.55	-1,411.15	-611.96	1,094.01	1,043.56	50.45	21.687		
6,400.00	6,352.01	6,309.22	6,050.85	25.13	33.85	-63.36	-1,437.71	-626.04	1,115.61	1,064.38	51.24	21.773		
6,500.00	6,451.20	6,406.80	6,143.67	25.53	34.41	-63.17	-1,464.27	-640.12	1,137.23	1,085.20	52.03	21.856		
6,600.00	6,550.39	6,504.37	6,236.50	25.94	34.98	-63.00	-1,490.83	-654.20	1,158.86	1,106.03	52.83	21.936		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 8X-HNB-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 601-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	76.77	49.93	212.42	218.21				
100.00	100.00	100.00	100.00	0.70	0.70	76.77	49.93	212.42	218.21	1.40	156.282		
200.00	200.00	200.00	200.00	2.44	2.44	76.77	49.93	212.42	218.21	4.89	44.652 CC		
300.00	299.98	300.02	299.98	3.32	4.19	-143.48	49.93	212.42	219.61	7.51	29.241 ES		
400.00	399.84	400.16	399.84	3.36	5.94	-144.23	49.93	212.42	223.84	9.30	24.070		
500.00	499.45	500.55	499.45	3.44	7.69	-145.41	49.93	212.42	230.97	11.13	20.746		
550.00	549.13	549.13	549.13	3.50	8.54	-146.14	49.93	212.42	235.66	12.04	19.575		
600.00	598.76	598.76	598.76	3.57	9.40	-146.95	49.93	212.42	240.76	12.97	18.564		
700.00	698.01	704.67	704.64	3.74	10.34	-148.26	48.25	211.52	249.78	14.05	17.776		
750.00	747.64	757.93	757.85	3.84	10.31	-148.65	46.10	210.36	253.32	14.10	17.967		
800.00	797.27	811.30	811.11	3.94	10.31	-157.01	43.07	208.73	256.37	14.19	18.064		
892.27	888.83	909.90	909.30	4.15	10.34	-171.04	35.18	204.50	261.21	14.39	18.154		
900.00	896.50	918.16	917.51	4.17	10.35	-170.94	34.39	204.07	261.57	14.41	18.154		
1,000.00	995.69	1,024.89	1,023.33	4.42	10.40	-169.33	22.23	197.54	264.84	14.66	18.070		
1,100.00	1,094.88	1,131.28	1,128.24	4.70	10.47	-167.16	6.66	189.17	265.76	14.94	17.783		
1,200.00	1,194.07	1,237.03	1,231.79	4.99	10.57	-164.38	-12.20	179.04	264.61	15.28	17.322		
1,300.00	1,293.26	1,341.87	1,333.60	5.30	10.69	-160.94	-34.21	167.21	261.82	15.66	16.717		
1,400.00	1,392.46	1,445.53	1,433.31	5.62	10.85	-156.79	-59.18	153.79	257.93	16.11	16.007		
1,500.00	1,491.65	1,547.76	1,530.57	5.95	11.04	-151.88	-86.91	138.89	253.65	16.64	15.246		
1,600.00	1,590.84	1,645.34	1,622.74	6.30	11.27	-146.63	-115.13	123.73	250.39	17.25	14.512		
1,695.16	1,685.23	1,737.76	1,710.03	6.63	11.50	-141.59	-141.86	109.36	249.36	17.88	13.948		
1,700.00	1,690.03	1,742.46	1,714.47	6.64	11.51	-141.33	-143.22	108.63	249.36	17.91	13.923		
1,800.00	1,789.22	1,839.58	1,806.20	7.00	11.78	-136.03	-171.32	93.53	250.61	18.60	13.476		
1,900.00	1,888.41	1,936.69	1,897.93	7.36	12.08	-130.82	-199.42	78.44	254.09	19.30	13.165		
2,000.00	1,987.60	2,033.81	1,989.66	7.72	12.39	-125.79	-227.52	63.34	259.73	20.01	12.977		
2,100.00	2,086.79	2,130.93	2,081.39	8.09	12.73	-120.99	-255.61	48.24	267.38	20.73	12.898 SF		
2,200.00	2,185.98	2,228.05	2,173.12	8.47	13.09	-116.48	-283.71	33.14	276.87	21.44	12.913		
2,300.00	2,285.17	2,325.17	2,264.85	8.84	13.46	-112.27	-311.81	18.04	288.03	22.15	13.005		
2,400.00	2,384.37	2,422.28	2,356.58	9.22	13.85	-108.39	-339.91	2.95	300.67	22.85	13.159		
2,500.00	2,483.56	2,519.40	2,448.31	9.60	14.25	-104.82	-368.01	-12.15	314.61	23.54	13.364		
2,600.00	2,582.75	2,616.52	2,540.04	9.98	14.67	-101.56	-396.10	-27.25	329.68	24.23	13.606		
2,700.00	2,681.94	2,713.64	2,631.77	10.37	15.10	-98.58	-424.20	-42.35	345.74	24.92	13.876		
2,800.00	2,781.13	2,810.76	2,723.50	10.76	15.54	-95.86	-452.30	-57.45	362.66	25.60	14.166		
2,900.00	2,880.32	2,907.87	2,815.24	11.14	15.99	-93.39	-480.40	-72.54	380.32	26.28	14.470		
3,000.00	2,979.51	3,004.99	2,906.97	11.53	16.45	-91.13	-508.50	-87.64	398.62	26.97	14.782		
3,100.00	3,078.70	3,102.11	2,998.70	11.92	16.92	-89.07	-536.59	-102.74	417.49	27.65	15.097		
3,200.00	3,177.89	3,199.23	3,090.43	12.32	17.40	-87.18	-564.69	-117.84	436.83	28.34	15.413		
3,300.00	3,277.08	3,303.65	3,182.16	12.71	17.92	-85.46	-592.79	-132.94	456.61	29.07	15.709		
3,400.00	3,376.28	3,393.47	3,273.89	13.10	18.37	-83.87	-620.89	-148.03	476.75	29.73	16.036		
3,500.00	3,475.47	3,490.58	3,365.62	13.50	18.87	-82.42	-648.98	-163.13	497.22	30.43	16.341		
3,600.00	3,574.66	3,587.70	3,457.35	13.89	19.37	-81.08	-677.08	-178.23	517.98	31.13	16.639		
3,700.00	3,673.85	3,684.82	3,549.08	14.29	19.88	-79.84	-705.18	-193.33	538.99	31.84	16.930		
3,800.00	3,773.04	3,781.94	3,640.81	14.69	20.40	-78.69	-733.28	-208.43	560.23	32.55	17.213		
3,900.00	3,872.23	3,879.06	3,732.54	15.08	20.92	-77.63	-761.38	-223.52	581.67	33.26	17.488		
4,000.00	3,971.42	3,976.17	3,824.27	15.48	21.44	-76.64	-789.47	-238.62	603.29	33.98	17.755		
4,100.00	4,070.61	4,073.29	3,916.00	15.88	21.96	-75.72	-817.57	-253.72	625.07	34.70	18.013		
4,200.00	4,169.80	4,170.41	4,007.73	16.28	22.49	-74.86	-845.67	-268.82	647.00	35.43	18.263		
4,300.00	4,268.99	4,267.53	4,099.46	16.68	23.03	-74.05	-873.77	-283.92	669.05	36.16	18.505		
4,400.00	4,368.19	4,364.65	4,191.19	17.08	23.56	-73.30	-901.87	-299.02	691.23	36.89	18.739		
4,500.00	4,467.38	4,461.76	4,282.92	17.48	24.10	-72.60	-929.96	-314.11	713.51	37.62	18.965		
4,600.00	4,566.57	4,558.88	4,374.65	17.88	24.65	-71.93	-958.06	-329.21	735.89	38.36	19.184		
4,700.00	4,665.76	4,656.00	4,466.38	18.28	25.19	-71.31	-986.16	-344.31	758.36	39.10	19.395		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 8X-HNB-05-03-68 - OH - PLAN #1												Offset Site Error: 0.00 usft	
Survey Program: 0-INC-ONLY_A027Ua, 601-MWD+HDGM												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Total Uncertainty Axis	Separation Factor	
4,800.00	4,764.95	4,753.12	4,558.11	18.68	25.74	-70.72	-1,014.26	-359.41	780.90	741.06	39.85	19.598	
4,900.00	4,864.14	4,850.24	4,649.85	19.08	26.29	-70.17	-1,042.35	-374.51	803.53	762.93	40.59	19.795	
5,000.00	4,963.33	4,947.35	4,741.58	19.48	26.84	-69.64	-1,070.45	-389.60	826.22	784.88	41.34	19.985	
5,100.00	5,062.52	5,044.47	4,833.31	19.88	27.39	-69.14	-1,098.55	-404.70	848.97	806.88	42.09	20.169	
5,200.00	5,161.71	5,141.59	4,925.04	20.29	27.95	-68.67	-1,126.65	-419.80	871.78	828.93	42.85	20.346	
5,300.00	5,260.90	5,238.71	5,016.77	20.69	28.51	-68.22	-1,154.75	-434.90	894.65	851.04	43.60	20.518	
5,400.00	5,360.10	5,335.83	5,108.50	21.09	29.07	-67.80	-1,182.84	-450.00	917.56	873.20	44.36	20.684	
5,500.00	5,459.29	5,432.94	5,200.23	21.49	29.63	-67.40	-1,210.94	-465.09	940.52	895.40	45.12	20.844	
5,600.00	5,558.48	5,530.06	5,291.96	21.90	30.19	-67.01	-1,239.04	-480.19	963.52	917.64	45.88	20.999	
5,700.00	5,657.67	5,627.18	5,383.69	22.30	30.75	-66.64	-1,267.14	-495.29	986.56	939.92	46.65	21.149	
5,800.00	5,756.86	5,724.30	5,475.42	22.70	31.32	-66.29	-1,295.24	-510.39	1,009.64	962.23	47.41	21.294	
5,900.00	5,856.05	5,821.42	5,567.15	23.11	31.88	-65.96	-1,323.33	-525.49	1,032.75	984.57	48.18	21.434	
6,000.00	5,955.24	5,918.54	5,658.88	23.51	32.45	-65.64	-1,351.43	-540.58	1,055.90	1,006.95	48.95	21.570	
6,100.00	6,054.43	6,015.65	5,750.61	23.91	33.02	-65.33	-1,379.53	-555.68	1,079.07	1,029.35	49.72	21.702	
6,200.00	6,153.62	6,112.77	5,842.34	24.32	33.59	-65.04	-1,407.63	-570.78	1,102.28	1,051.78	50.49	21.829	
6,300.00	6,252.82	6,209.89	5,934.07	24.72	34.16	-64.75	-1,435.72	-585.88	1,125.51	1,074.24	51.27	21.953	
6,400.00	6,352.01	6,307.01	6,025.80	25.13	34.73	-64.48	-1,463.82	-600.98	1,148.76	1,096.72	52.04	22.073	
6,500.00	6,451.20	6,404.13	6,117.53	25.53	35.30	-64.22	-1,491.92	-616.07	1,172.04	1,119.22	52.82	22.189	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 8X-HNC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 501-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	75.11	49.80	187.30	193.81				
100.00	100.00	100.00	100.00	0.70	0.70	75.11	49.80	187.30	193.81	1.40	138.806		
200.00	200.00	200.00	200.00	2.44	2.44	75.11	49.80	187.30	193.81	4.89	39.659 CC		
300.00	299.98	300.02	299.98	3.32	4.19	-145.17	49.80	187.30	195.24	7.51	25.996 ES		
400.00	399.84	400.16	399.84	3.36	5.94	-145.98	49.80	187.30	199.56	9.30	21.459		
500.00	499.45	499.45	499.45	3.44	7.67	-147.25	49.80	187.30	206.85	11.11	18.610		
550.00	549.13	552.09	552.08	3.50	8.14	-147.99	49.40	187.05	211.29	11.63	18.161		
600.00	598.76	604.90	604.87	3.57	8.60	-148.66	48.17	186.28	215.43	12.16	17.724		
700.00	698.01	710.98	710.79	3.74	8.57	-149.44	43.22	183.17	221.62	12.27	18.065		
750.00	747.64	764.18	763.81	3.84	8.59	-149.59	39.49	180.83	223.63	12.36	18.091		
800.00	797.27	817.43	816.78	3.94	8.61	-157.66	34.92	177.96	225.10	12.46	18.061		
892.27	888.83	915.60	914.14	4.15	8.67	-171.07	24.31	171.31	226.90	12.68	17.898		
900.00	896.50	923.81	922.27	4.17	8.67	-170.92	23.29	170.67	227.00	12.70	17.877		
1,000.00	995.69	1,029.81	1,026.80	4.42	8.76	-168.61	8.42	161.34	226.94	12.97	17.491		
1,100.00	1,094.88	1,135.22	1,130.03	4.70	8.87	-165.63	-9.61	150.03	224.57	13.30	16.884		
1,200.00	1,194.07	1,239.76	1,231.56	4.99	9.02	-161.88	-30.66	136.82	220.33	13.69	16.097		
1,300.00	1,293.26	1,343.17	1,331.05	5.30	9.21	-157.26	-54.55	121.83	214.78	14.14	15.187		
1,400.00	1,392.46	1,441.52	1,425.10	5.62	9.42	-152.21	-78.89	106.55	209.53	14.70	14.250		
1,500.00	1,491.65	1,539.56	1,518.87	5.95	9.66	-146.97	-103.17	91.32	206.03	15.32	13.449		
1,600.00	1,590.84	1,637.61	1,612.63	6.30	9.93	-141.60	-127.45	76.09	204.37	15.98	12.791		
1,638.09	1,628.62	1,674.96	1,648.35	6.43	10.04	-139.54	-136.70	70.28	204.23	16.24	12.577		
1,700.00	1,690.03	1,735.65	1,706.39	6.64	10.22	-136.19	-151.73	60.85	204.59	16.67	12.271		
1,800.00	1,789.22	1,833.70	1,800.16	7.00	10.53	-130.84	-176.01	45.62	206.70	17.39	11.884		
1,900.00	1,888.41	1,931.75	1,893.92	7.36	10.86	-125.64	-200.29	30.39	210.63	18.13	11.620		
2,000.00	1,987.60	2,029.79	1,987.68	7.72	11.21	-120.67	-224.56	15.16	216.28	18.87	11.463		
2,100.00	2,086.79	2,127.84	2,081.44	8.09	11.58	-115.97	-248.84	-0.08	223.53	19.61	11.401 SF		
2,200.00	2,185.98	2,225.88	2,175.21	8.47	11.96	-111.58	-273.12	-15.31	232.23	20.34	11.416		
2,300.00	2,285.17	2,323.93	2,268.97	8.84	12.36	-107.52	-297.40	-30.54	242.21	21.07	11.496		
2,400.00	2,384.37	2,421.97	2,362.73	9.22	12.77	-103.80	-321.68	-45.78	253.33	21.79	11.626		
2,500.00	2,483.56	2,520.02	2,456.50	9.60	13.19	-100.39	-345.95	-61.01	265.45	22.50	11.795		
2,600.00	2,582.75	2,618.07	2,550.26	9.98	13.62	-97.28	-370.23	-76.24	278.43	23.21	11.994		
2,700.00	2,681.94	2,716.11	2,644.02	10.37	14.06	-94.45	-394.51	-91.48	292.15	23.92	12.213		
2,800.00	2,781.13	2,814.16	2,737.78	10.76	14.51	-91.88	-418.79	-106.71	306.53	24.63	12.447		
2,900.00	2,880.32	2,912.20	2,831.55	11.14	14.97	-89.53	-443.07	-121.94	321.47	25.33	12.691		
3,000.00	2,979.51	3,010.25	2,925.31	11.53	15.43	-87.40	-467.35	-137.18	336.89	26.04	12.940		
3,100.00	3,078.70	3,108.30	3,019.07	11.92	15.90	-85.45	-491.62	-152.41	352.74	26.74	13.191		
3,200.00	3,177.89	3,206.34	3,112.84	12.32	16.38	-83.67	-515.90	-167.64	368.96	27.45	13.442		
3,300.00	3,277.08	3,304.39	3,206.60	12.71	16.86	-82.04	-540.18	-182.87	385.50	28.16	13.690		
3,400.00	3,376.28	3,402.43	3,300.36	13.10	17.35	-80.54	-564.46	-198.11	402.32	28.87	13.934		
3,500.00	3,475.47	3,500.48	3,394.13	13.50	17.84	-79.16	-588.74	-213.34	419.38	29.59	14.174		
3,600.00	3,574.66	3,601.48	3,487.89	13.89	18.35	-77.89	-613.01	-228.57	436.67	30.32	14.402		
3,700.00	3,673.85	3,703.43	3,581.65	14.29	18.86	-76.72	-637.29	-243.81	454.15	31.06	14.622		
3,800.00	3,773.04	3,805.38	3,675.41	14.69	19.39	-75.63	-661.57	-259.04	471.81	31.80	14.836		
3,900.00	3,872.23	3,892.66	3,769.18	15.08	19.84	-74.62	-685.85	-274.27	489.62	32.48	15.073		
4,000.00	3,971.42	4,009.29	3,862.94	15.48	20.44	-73.68	-710.13	-289.51	507.56	33.30	15.244		
4,100.00	4,070.61	4,088.75	3,956.70	15.88	20.86	-72.81	-734.40	-304.74	525.63	33.95	15.483		
4,200.00	4,169.80	4,186.80	4,050.47	16.28	21.37	-71.99	-758.68	-319.97	543.82	34.69	15.678		
4,300.00	4,268.99	4,284.84	4,144.23	16.68	21.89	-71.23	-782.96	-335.21	562.10	35.43	15.867		
4,400.00	4,368.19	4,382.89	4,237.99	17.08	22.41	-70.51	-807.24	-350.44	580.47	36.17	16.049		
4,500.00	4,467.38	4,480.94	4,331.75	17.48	22.93	-69.84	-831.52	-365.67	598.93	36.91	16.225		
4,600.00	4,566.57	4,578.98	4,425.52	17.88	23.45	-69.21	-855.80	-380.90	617.46	37.66	16.395		
4,700.00	4,665.76	4,677.03	4,519.28	18.28	23.97	-68.61	-880.07	-396.14	636.06	38.41	16.559		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S5-T3N-R68W - 8X-HNC-05-03-68 - OH - PLAN #1												Offset Site Error:	0.00 usft
Survey Program: 0-INC-ONLY_A027Ua, 501-MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)					
4,800.00	4,764.95	4,775.07	4,613.04	18.68	24.50	-68.05	-904.35	-411.37	654.72	615.55	39.16	16.718	
4,900.00	4,864.14	4,873.12	4,706.81	19.08	25.03	-67.52	-928.63	-426.60	673.44	633.52	39.92	16.871	
5,000.00	4,963.33	4,971.16	4,800.57	19.48	25.56	-67.02	-952.91	-441.84	692.21	651.54	40.67	17.019	
5,100.00	5,062.52	5,069.21	4,894.33	19.88	26.09	-66.54	-977.19	-457.07	711.03	669.60	41.43	17.162	
5,200.00	5,161.71	5,167.26	4,988.10	20.29	26.62	-66.09	-1,001.46	-472.30	729.90	687.71	42.19	17.300	
5,300.00	5,260.90	5,265.30	5,081.86	20.69	27.15	-65.66	-1,025.74	-487.54	748.80	705.85	42.95	17.433	
5,400.00	5,360.10	5,363.35	5,175.62	21.09	27.69	-65.26	-1,050.02	-502.77	767.75	724.03	43.72	17.562	
5,500.00	5,459.29	5,461.39	5,269.38	21.49	28.22	-64.87	-1,074.30	-518.00	786.73	742.25	44.48	17.687	
5,600.00	5,558.48	5,559.44	5,363.15	21.90	28.76	-64.50	-1,098.58	-533.23	805.75	760.50	45.25	17.808	
5,700.00	5,657.67	5,657.48	5,456.91	22.30	29.30	-64.15	-1,122.85	-548.47	824.79	778.78	46.02	17.924	
5,800.00	5,756.86	5,755.53	5,550.67	22.70	29.84	-63.81	-1,147.13	-563.70	843.87	797.08	46.78	18.037	
5,900.00	5,856.05	5,853.58	5,644.44	23.11	30.38	-63.49	-1,171.41	-578.93	862.97	815.41	47.56	18.147	
6,000.00	5,955.24	5,951.62	5,738.20	23.51	30.92	-63.18	-1,195.69	-594.17	882.10	833.77	48.33	18.253	
6,100.00	6,054.43	6,049.67	5,831.96	23.91	31.46	-62.89	-1,219.97	-609.40	901.25	852.15	49.10	18.355	
6,200.00	6,153.62	6,147.71	5,925.72	24.32	32.00	-62.60	-1,244.25	-624.63	920.42	870.54	49.87	18.455	
6,300.00	6,252.82	6,245.76	6,019.49	24.72	32.54	-62.33	-1,268.52	-639.87	939.61	888.96	50.65	18.551	
6,400.00	6,352.01	6,343.80	6,113.25	25.13	33.09	-62.07	-1,292.80	-655.10	958.82	907.40	51.43	18.645	
6,500.00	6,451.20	6,441.85	6,207.01	25.53	33.63	-61.82	-1,317.08	-670.33	978.06	925.85	52.20	18.735	
6,600.00	6,550.39	6,539.90	6,300.78	25.94	34.17	-61.58	-1,341.36	-685.57	997.30	944.32	52.98	18.823	
6,700.00	6,649.58	6,637.94	6,394.54	26.34	34.72	-61.35	-1,365.64	-700.80	1,016.57	962.81	53.76	18.909	
6,800.00	6,748.77	6,735.99	6,488.30	26.74	35.26	-61.13	-1,389.91	-716.03	1,035.85	981.30	54.54	18.992	
6,838.96	6,787.41	6,774.18	6,524.83	26.90	35.48	-61.04	-1,399.37	-721.97	1,043.36	988.52	54.85	19.023	
6,850.00	6,798.38	6,785.00	6,535.18	26.95	35.54	-56.27	-1,402.05	-723.65	1,045.50	990.57	54.93	19.033	
6,900.00	6,848.23	6,833.73	6,581.77	27.12	35.81	4.63	-1,414.12	-731.22	1,055.27	1,000.01	55.26	19.096	
6,950.00	6,898.06	6,881.68	6,627.63	27.27	36.08	60.94	-1,425.99	-738.67	1,065.23	1,009.71	55.51	19.188	
7,000.00	6,947.42	6,928.41	6,672.32	27.39	36.34	74.07	-1,437.56	-745.93	1,075.39	1,019.69	55.70	19.308	
7,050.00	6,995.85	6,973.49	6,715.43	27.50	36.59	78.98	-1,448.73	-752.93	1,085.85	1,030.03	55.82	19.453	
7,100.00	7,042.91	7,016.52	6,756.58	27.59	36.83	81.48	-1,459.38	-759.62	1,096.73	1,040.84	55.89	19.624	
7,150.00	7,088.16	7,057.08	6,795.37	27.68	37.06	82.96	-1,469.42	-765.92	1,108.18	1,052.27	55.91	19.821	
7,200.00	7,131.18	7,101.63	6,838.04	27.76	37.30	84.10	-1,480.46	-772.35	1,120.33	1,064.37	55.96	20.021	
7,250.00	7,171.59	7,158.25	6,892.76	27.85	37.57	85.27	-1,494.55	-775.65	1,132.83	1,076.71	56.11	20.188	
7,300.00	7,209.00	7,221.60	6,953.99	27.95	37.82	86.37	-1,510.19	-772.05	1,145.42	1,089.09	56.33	20.334	
7,350.00	7,243.07	7,293.72	7,022.63	28.06	38.03	87.49	-1,527.58	-758.66	1,157.85	1,101.24	56.61	20.453	
7,400.00	7,273.49	7,377.21	7,099.00	28.20	38.20	88.69	-1,546.74	-731.14	1,169.74	1,112.78	56.96	20.537	

# Cathedral Energy Services

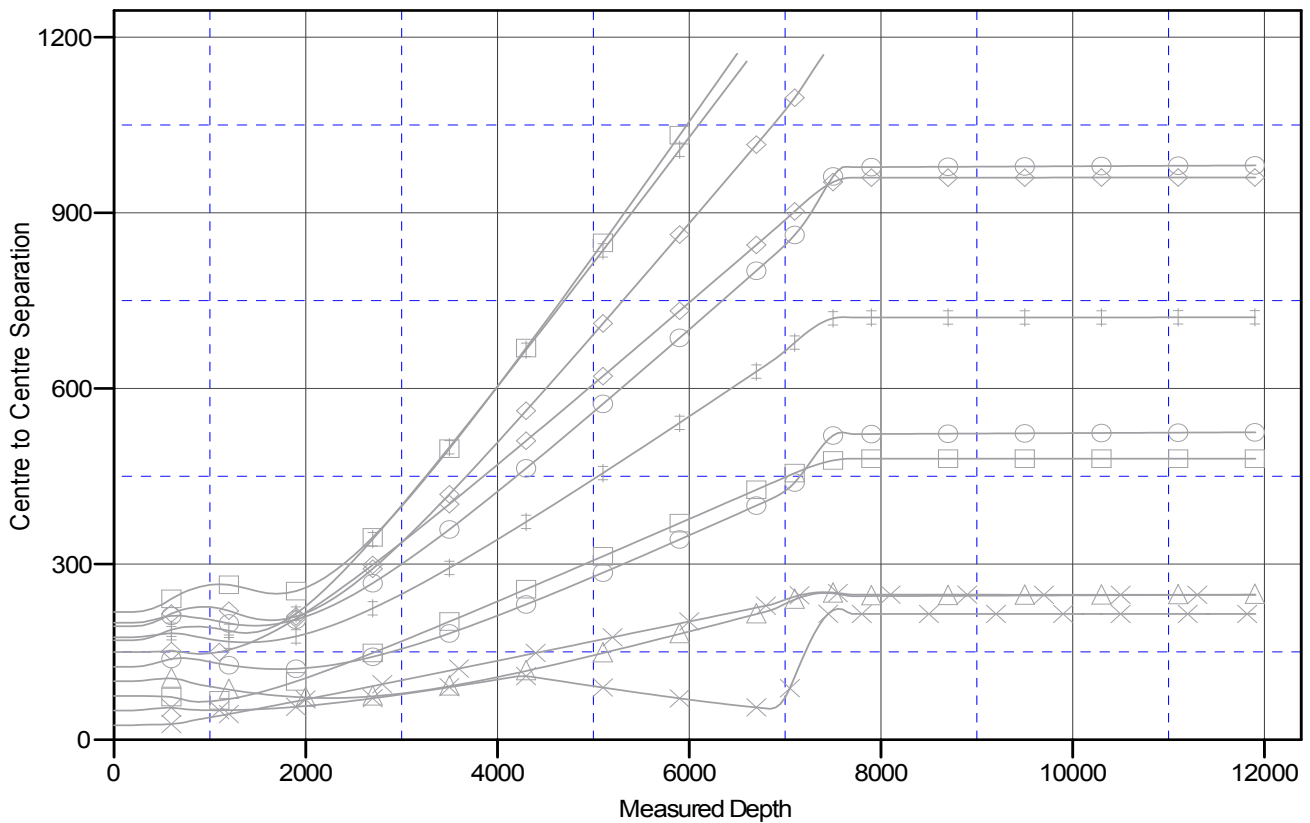
## Anticollision Report

<b>Company:</b>	Nickel Road Operating LLC	<b>Local Co-ordinate Reference:</b>	Well 5X-HNB-05-03-68
<b>Project:</b>	WELD COUNTY, CO	<b>TVD Reference:</b>	20' KB @ 5220.00usft
<b>Reference Site:</b>	S5-T3N-R68W	<b>MD Reference:</b>	20' KB @ 5220.00usft
<b>Site Error:</b>	0.00usft	<b>North Reference:</b>	Grid
<b>Reference Well:</b>	5X-HNB-05-03-68	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.00usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	PLAN #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to 20' KB @ 5220.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: 5X-HNB-05-03-68  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.30°

### Ladder Plot



### LEGEND

8X-HC-05-03-68, OH, PLAN#1 V0	5X-HC-05-03-68, OH, PLAN#1 V0	7X-HNC-05-03-68, OH, PLAN#1 V0
6X-HNB-05-03-68, OH, PLAN#1 V0	6X-HC-05-03-68, OH, PLAN#1 V0	8X-HNB-05-03-68, OH, PLAN#1 V0
7X-HC-05-03-68, OH, PLAN#1 V0	6X-HNC-05-03-68, OH, PLAN#1 V0	5X-HNC-05-03-68, OH, PLAN#1 V0
8X-HNC-05-03-68, OH, PLAN#1 V0	7X-HNB-05-03-68, OH, PLAN#1 V0	