

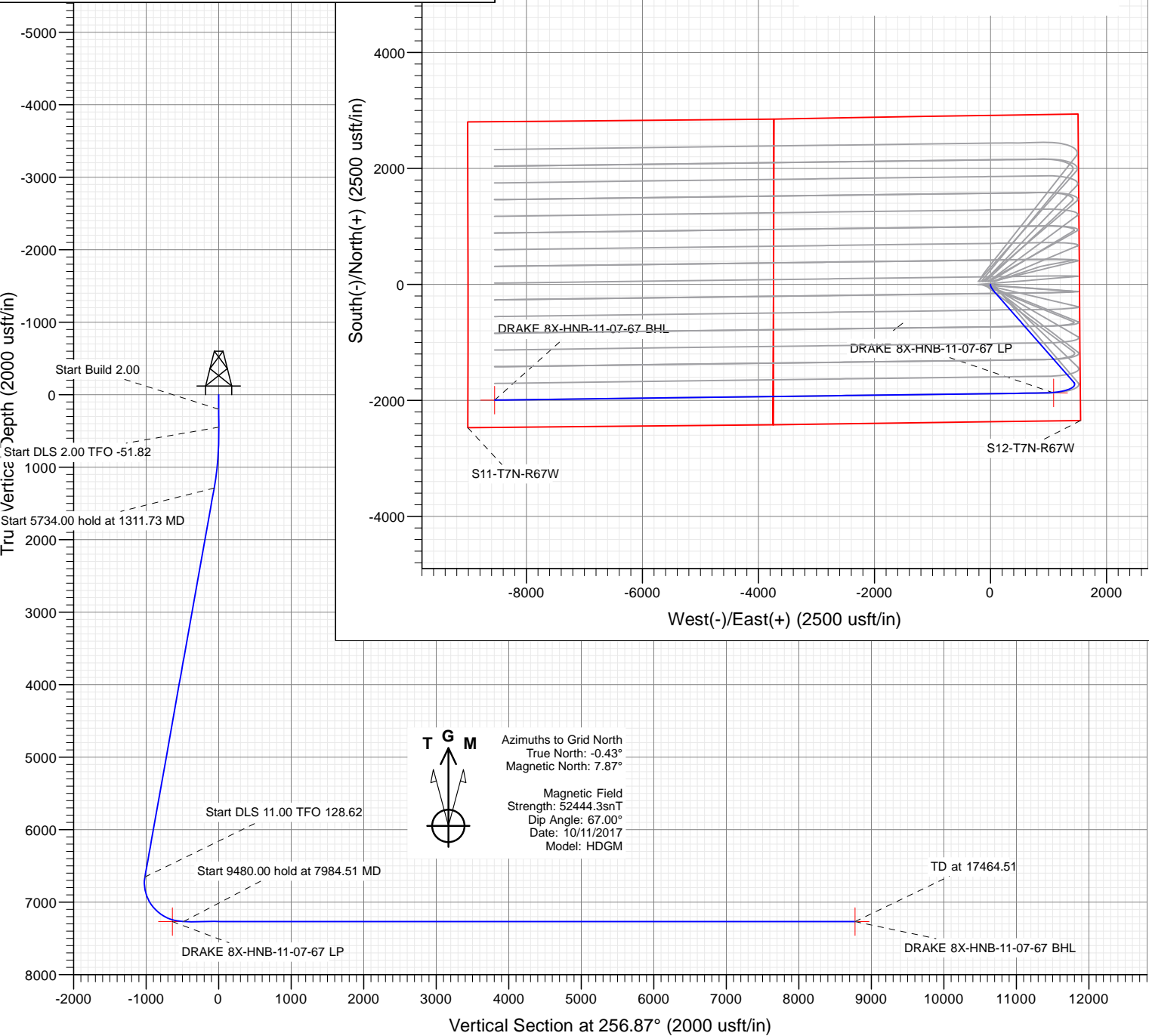
Nickel Road Operating LLC

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-/S	+E-/W	Dleg	TFace	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	450.00	5.00	180.00	449.68	-10.90	0.00	2.00	180.00	2.48	
4	1311.73	20.69	138.76	1288.32	-164.09	101.11	2.00	-51.82	-61.20	
5	7045.74	20.69	138.76	6652.50	-1687.55	1436.57	0.00	0.00	-1015.77	
6	7984.51	90.00	269.26	7268.00	-1870.86	931.93	11.00	128.62	-482.68	
7	17464.51	90.00	269.26	7268.00	-1993.29	-8547.28	0.00	0.00	8776.63	DRAKE 8X-HNB-11-07-67 BHL

PLAN #1 DRAKE 8X-HNB-11-07-67 20' KB @ 5220.00usft Ground Level @ 5200.00 North American Datum 1983 Well DRAKE 8X-HNB-11-07-67, Grid North									
Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD	
TD	No Target (Freehand)	256.87	Slot		0.00	0.00	0.00	0.00	
Name		TVD	+N-/S	+E-/W	Latitude	Longitude			
DRAKE 8X-HNB-11-07-67 BHL		7268.00	-1993.29	-8547.28	40.582734	-104.833459			
DRAKE 8X-HNB-11-07-67 LP		7268.00	-1868.82	1089.20					

Project: WELD COUNTY, CO  
Site: S12-T7N-R67W  
Well: DRAKE 8X-HNB-11-07-67  
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 DRAKE 8X-HNB-11-07-67
<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>	S12-T7N-R67W	<b>North Reference:</b>	Grid
<b>Well:</b>	DRAKE 8X-HNB-11-07-67	<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		S12-T7N-R67W			
Site Position:		Northing:	1,457,799.97 usft	Latitude:	40.588176
From:	Lat/Long	Easting:	3,183,834.54 usft	Longitude:	-104.838093
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.43 °

Well	DRAKE 8X-HNB-11-07-67					
Well Position	+N/-S	0.00 usft	Northing:	1,457,749.81 usft	Latitude:	40.588034
	+E/-W	0.00 usft	Easting:	3,184,046.83 usft	Longitude:	-104.837330
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	10/11/2017	8.30	67.00	52,444.30000000

<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	256.87

<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	
450.00	5.00	180.00	449.68	-10.90	0.00	2.00	2.00	0.00	180.00	
1,311.73	20.69	138.76	1,288.32	-164.09	101.11	2.00	1.82	-4.79	-51.82	
7,045.74	20.69	138.76	6,652.50	-1,687.55	1,436.57	0.00	0.00	0.00	0.00	
7,984.51	90.00	269.26	7,268.00	-1,870.86	931.93	11.00	7.38	13.90	128.62	
17,464.51	90.00	269.26	7,268.00	-1,993.29	-8,547.28	0.00	0.00	0.00	0.00	DRAKE 8X-HNB-11-0

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DRAKE 8X-HNB-11-07-67
<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>	S12-T7N-R67W	<b>North Reference:</b>	Grid
<b>Well:</b>	DRAKE 8X-HNB-11-07-67	<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	
300.00	2.00	180.00	299.98	-1.75	0.00	0.40	2.00	2.00	
400.00	4.00	180.00	399.84	-6.98	0.00	1.58	2.00	2.00	
450.00	5.00	180.00	449.68	-10.90	0.00	2.48	2.00	2.00	
500.00	5.67	172.02	499.47	-15.53	0.34	3.19	2.00	1.35	
600.00	7.25	160.97	598.83	-26.39	3.09	2.99	2.00	1.58	
700.00	8.99	154.00	697.83	-39.38	8.57	0.60	2.00	1.74	
800.00	10.83	149.33	796.33	-54.48	16.79	-3.97	2.00	1.83	
900.00	12.71	146.02	894.23	-71.68	27.73	-10.72	2.00	1.88	
1,000.00	14.62	143.55	991.39	-90.95	41.37	-19.64	2.00	1.91	
1,100.00	16.56	141.64	1,087.71	-112.28	57.72	-30.71	2.00	1.93	
1,200.00	18.50	140.13	1,183.06	-135.63	76.73	-43.92	2.00	1.95	
1,300.00	20.46	138.89	1,277.33	-160.98	98.40	-59.27	2.00	1.96	
1,311.73	20.69	138.76	1,288.32	-164.09	101.11	-61.20	2.00	1.96	
1,400.00	20.69	138.76	1,370.89	-187.54	121.67	-75.90	0.00	0.00	
1,500.00	20.69	138.76	1,464.44	-214.11	144.96	-92.55	0.00	0.00	
1,600.00	20.69	138.76	1,557.99	-240.68	168.25	-109.19	0.00	0.00	
1,700.00	20.69	138.76	1,651.54	-267.25	191.54	-125.84	0.00	0.00	
1,800.00	20.69	138.76	1,745.09	-293.81	214.83	-142.49	0.00	0.00	
1,900.00	20.69	138.76	1,838.65	-320.38	238.12	-159.14	0.00	0.00	
2,000.00	20.69	138.76	1,932.20	-346.95	261.41	-175.78	0.00	0.00	
2,100.00	20.69	138.76	2,025.75	-373.52	284.70	-192.43	0.00	0.00	
2,200.00	20.69	138.76	2,119.30	-400.09	307.99	-209.08	0.00	0.00	
2,300.00	20.69	138.76	2,212.85	-426.66	331.28	-225.73	0.00	0.00	
2,400.00	20.69	138.76	2,306.40	-453.23	354.57	-242.37	0.00	0.00	
2,500.00	20.69	138.76	2,399.95	-479.80	377.86	-259.02	0.00	0.00	
2,600.00	20.69	138.76	2,493.50	-506.37	401.15	-275.67	0.00	0.00	
2,700.00	20.69	138.76	2,587.05	-532.94	424.44	-292.32	0.00	0.00	
2,800.00	20.69	138.76	2,680.60	-559.50	447.73	-308.96	0.00	0.00	
2,900.00	20.69	138.76	2,774.15	-586.07	471.02	-325.61	0.00	0.00	
3,000.00	20.69	138.76	2,867.70	-612.64	494.31	-342.26	0.00	0.00	
3,100.00	20.69	138.76	2,961.25	-639.21	517.60	-358.90	0.00	0.00	
3,200.00	20.69	138.76	3,054.80	-665.78	540.89	-375.55	0.00	0.00	
3,300.00	20.69	138.76	3,148.35	-692.35	564.18	-392.20	0.00	0.00	
3,400.00	20.69	138.76	3,241.90	-718.92	587.48	-408.85	0.00	0.00	
3,500.00	20.69	138.76	3,335.45	-745.49	610.77	-425.49	0.00	0.00	
3,600.00	20.69	138.76	3,429.00	-772.06	634.06	-442.14	0.00	0.00	
3,700.00	20.69	138.76	3,522.55	-798.62	657.35	-458.79	0.00	0.00	
3,800.00	20.69	138.76	3,616.10	-825.19	680.64	-475.44	0.00	0.00	
3,900.00	20.69	138.76	3,709.65	-851.76	703.93	-492.08	0.00	0.00	
4,000.00	20.69	138.76	3,803.20	-878.33	727.22	-508.73	0.00	0.00	
4,100.00	20.69	138.76	3,896.75	-904.90	750.51	-525.38	0.00	0.00	
4,200.00	20.69	138.76	3,990.30	-931.47	773.80	-542.03	0.00	0.00	
4,300.00	20.69	138.76	4,083.85	-958.04	797.09	-558.67	0.00	0.00	
4,400.00	20.69	138.76	4,177.40	-984.61	820.38	-575.32	0.00	0.00	
4,500.00	20.69	138.76	4,270.95	-1,011.18	843.67	-591.97	0.00	0.00	
4,600.00	20.69	138.76	4,364.50	-1,037.75	866.96	-608.62	0.00	0.00	
4,700.00	20.69	138.76	4,458.05	-1,064.31	890.25	-625.26	0.00	0.00	
4,800.00	20.69	138.76	4,551.60	-1,090.88	913.54	-641.91	0.00	0.00	
4,900.00	20.69	138.76	4,645.15	-1,117.45	936.83	-658.56	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 DRAKE 8X-HNB-11-07-67
<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>	S12-T7N-R67W	<b>North Reference:</b>	Grid
<b>Well:</b>	DRAKE 8X-HNB-11-07-67	<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
5,000.00	20.69	138.76	4,738.70	-1,144.02	960.12	-675.21	0.00	0.00	
5,100.00	20.69	138.76	4,832.25	-1,170.59	983.41	-691.85	0.00	0.00	
5,200.00	20.69	138.76	4,925.80	-1,197.16	1,006.70	-708.50	0.00	0.00	
5,300.00	20.69	138.76	5,019.36	-1,223.73	1,029.99	-725.15	0.00	0.00	
5,400.00	20.69	138.76	5,112.91	-1,250.30	1,053.28	-741.80	0.00	0.00	
5,500.00	20.69	138.76	5,206.46	-1,276.87	1,076.57	-758.44	0.00	0.00	
5,600.00	20.69	138.76	5,300.01	-1,303.43	1,099.86	-775.09	0.00	0.00	
5,700.00	20.69	138.76	5,393.56	-1,330.00	1,123.15	-791.74	0.00	0.00	
5,800.00	20.69	138.76	5,487.11	-1,356.57	1,146.44	-808.39	0.00	0.00	
5,900.00	20.69	138.76	5,580.66	-1,383.14	1,169.73	-825.03	0.00	0.00	
6,000.00	20.69	138.76	5,674.21	-1,409.71	1,193.02	-841.68	0.00	0.00	
6,100.00	20.69	138.76	5,767.76	-1,436.28	1,216.31	-858.33	0.00	0.00	
6,200.00	20.69	138.76	5,861.31	-1,462.85	1,239.60	-874.97	0.00	0.00	
6,300.00	20.69	138.76	5,954.86	-1,489.42	1,262.89	-891.62	0.00	0.00	
6,400.00	20.69	138.76	6,048.41	-1,515.99	1,286.18	-908.27	0.00	0.00	
6,500.00	20.69	138.76	6,141.96	-1,542.55	1,309.47	-924.92	0.00	0.00	
6,600.00	20.69	138.76	6,235.51	-1,569.12	1,332.76	-941.56	0.00	0.00	
6,700.00	20.69	138.76	6,329.06	-1,595.69	1,356.05	-958.21	0.00	0.00	
6,800.00	20.69	138.76	6,422.61	-1,622.26	1,379.34	-974.86	0.00	0.00	
6,900.00	20.69	138.76	6,516.16	-1,648.83	1,402.63	-991.51	0.00	0.00	
7,000.00	20.69	138.76	6,609.71	-1,675.40	1,425.92	-1,008.15	0.00	0.00	
7,045.74	20.69	138.76	6,652.50	-1,687.55	1,436.57	-1,015.77	0.00	0.00	
7,100.00	17.57	154.38	6,703.79	-1,702.16	1,446.44	-1,022.06	11.00	-5.76	
7,200.00	16.44	192.46	6,799.71	-1,729.66	1,449.93	-1,019.21	11.00	-1.13	
7,300.00	21.62	222.81	6,894.44	-1,757.07	1,434.31	-997.77	11.00	5.18	
7,400.00	30.00	239.43	6,984.50	-1,783.38	1,400.16	-958.54	11.00	8.38	
7,500.00	39.59	248.94	7,066.59	-1,807.62	1,348.74	-902.96	11.00	9.60	
7,600.00	49.70	255.16	7,137.68	-1,828.90	1,281.94	-833.07	11.00	10.10	
7,700.00	60.05	259.73	7,195.16	-1,846.44	1,202.20	-751.43	11.00	10.35	
7,800.00	70.53	263.43	7,236.92	-1,859.60	1,112.47	-661.06	11.00	10.48	
7,900.00	81.07	266.67	7,261.43	-1,867.88	1,016.03	-565.26	11.00	10.54	
7,984.51	90.00	269.26	7,268.00	-1,870.86	931.93	-482.68	11.00	10.57	
8,000.00	90.00	269.26	7,268.00	-1,871.06	916.43	-467.54	0.00	0.00	
8,100.00	90.00	269.26	7,268.00	-1,872.35	816.44	-369.87	0.00	0.00	
8,200.00	90.00	269.26	7,268.00	-1,873.64	716.45	-272.20	0.00	0.00	
8,300.00	90.00	269.26	7,268.00	-1,874.93	616.46	-174.53	0.00	0.00	
8,400.00	90.00	269.26	7,268.00	-1,876.22	516.47	-76.86	0.00	0.00	
8,500.00	90.00	269.26	7,268.00	-1,877.51	416.48	20.82	0.00	0.00	
8,600.00	90.00	269.26	7,268.00	-1,878.81	316.48	118.49	0.00	0.00	
8,700.00	90.00	269.26	7,268.00	-1,880.10	216.49	216.16	0.00	0.00	
8,800.00	90.00	269.26	7,268.00	-1,881.39	116.50	313.83	0.00	0.00	
8,900.00	90.00	269.26	7,268.00	-1,882.68	16.51	411.51	0.00	0.00	
9,000.00	90.00	269.26	7,268.00	-1,883.97	-83.48	509.18	0.00	0.00	
9,100.00	90.00	269.26	7,268.00	-1,885.26	-183.47	606.85	0.00	0.00	
9,200.00	90.00	269.26	7,268.00	-1,886.55	-283.47	704.52	0.00	0.00	
9,300.00	90.00	269.26	7,268.00	-1,887.85	-383.46	802.19	0.00	0.00	
9,400.00	90.00	269.26	7,268.00	-1,889.14	-483.45	899.87	0.00	0.00	
9,500.00	90.00	269.26	7,268.00	-1,890.43	-583.44	997.54	0.00	0.00	
9,600.00	90.00	269.26	7,268.00	-1,891.72	-683.43	1,095.21	0.00	0.00	
9,700.00	90.00	269.26	7,268.00	-1,893.01	-783.42	1,192.88	0.00	0.00	
9,800.00	90.00	269.26	7,268.00	-1,894.30	-883.42	1,290.55	0.00	0.00	
9,900.00	90.00	269.26	7,268.00	-1,895.60	-983.41	1,388.23	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 DRAKE 8X-HNB-11-07-67
<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>	S12-T7N-R67W	<b>North Reference:</b>	Grid
<b>Well:</b>	DRAKE 8X-HNB-11-07-67	<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
10,000.00	90.00	269.26	7,268.00	-1,896.89	-1,083.40	1,485.90	0.00	0.00	
10,100.00	90.00	269.26	7,268.00	-1,898.18	-1,183.39	1,583.57	0.00	0.00	
10,200.00	90.00	269.26	7,268.00	-1,899.47	-1,283.38	1,681.24	0.00	0.00	
10,300.00	90.00	269.26	7,268.00	-1,900.76	-1,383.37	1,778.91	0.00	0.00	
10,400.00	90.00	269.26	7,268.00	-1,902.05	-1,483.37	1,876.59	0.00	0.00	
10,500.00	90.00	269.26	7,268.00	-1,903.34	-1,583.36	1,974.26	0.00	0.00	
10,600.00	90.00	269.26	7,268.00	-1,904.64	-1,683.35	2,071.93	0.00	0.00	
10,700.00	90.00	269.26	7,268.00	-1,905.93	-1,783.34	2,169.60	0.00	0.00	
10,800.00	90.00	269.26	7,268.00	-1,907.22	-1,883.33	2,267.27	0.00	0.00	
10,900.00	90.00	269.26	7,268.00	-1,908.51	-1,983.32	2,364.95	0.00	0.00	
11,000.00	90.00	269.26	7,268.00	-1,909.80	-2,083.32	2,462.62	0.00	0.00	
11,100.00	90.00	269.26	7,268.00	-1,911.09	-2,183.31	2,560.29	0.00	0.00	
11,200.00	90.00	269.26	7,268.00	-1,912.39	-2,283.30	2,657.96	0.00	0.00	
11,300.00	90.00	269.26	7,268.00	-1,913.68	-2,383.29	2,755.63	0.00	0.00	
11,400.00	90.00	269.26	7,268.00	-1,914.97	-2,483.28	2,853.31	0.00	0.00	
11,500.00	90.00	269.26	7,268.00	-1,916.26	-2,583.27	2,950.98	0.00	0.00	
11,600.00	90.00	269.26	7,268.00	-1,917.55	-2,683.27	3,048.65	0.00	0.00	
11,700.00	90.00	269.26	7,268.00	-1,918.84	-2,783.26	3,146.32	0.00	0.00	
11,800.00	90.00	269.26	7,268.00	-1,920.14	-2,883.25	3,243.99	0.00	0.00	
11,900.00	90.00	269.26	7,268.00	-1,921.43	-2,983.24	3,341.67	0.00	0.00	
12,000.00	90.00	269.26	7,268.00	-1,922.72	-3,083.23	3,439.34	0.00	0.00	
12,100.00	90.00	269.26	7,268.00	-1,924.01	-3,183.22	3,537.01	0.00	0.00	
12,200.00	90.00	269.26	7,268.00	-1,925.30	-3,283.22	3,634.68	0.00	0.00	
12,300.00	90.00	269.26	7,268.00	-1,926.59	-3,383.21	3,732.35	0.00	0.00	
12,400.00	90.00	269.26	7,268.00	-1,927.88	-3,483.20	3,830.03	0.00	0.00	
12,500.00	90.00	269.26	7,268.00	-1,929.18	-3,583.19	3,927.70	0.00	0.00	
12,600.00	90.00	269.26	7,268.00	-1,930.47	-3,683.18	4,025.37	0.00	0.00	
12,700.00	90.00	269.26	7,268.00	-1,931.76	-3,783.17	4,123.04	0.00	0.00	
12,800.00	90.00	269.26	7,268.00	-1,933.05	-3,883.17	4,220.71	0.00	0.00	
12,900.00	90.00	269.26	7,268.00	-1,934.34	-3,983.16	4,318.39	0.00	0.00	
13,000.00	90.00	269.26	7,268.00	-1,935.63	-4,083.15	4,416.06	0.00	0.00	
13,100.00	90.00	269.26	7,268.00	-1,936.93	-4,183.14	4,513.73	0.00	0.00	
13,200.00	90.00	269.26	7,268.00	-1,938.22	-4,283.13	4,611.40	0.00	0.00	
13,300.00	90.00	269.26	7,268.00	-1,939.51	-4,383.12	4,709.07	0.00	0.00	
13,400.00	90.00	269.26	7,268.00	-1,940.80	-4,483.12	4,806.75	0.00	0.00	
13,500.00	90.00	269.26	7,268.00	-1,942.09	-4,583.11	4,904.42	0.00	0.00	
13,600.00	90.00	269.26	7,268.00	-1,943.38	-4,683.10	5,002.09	0.00	0.00	
13,700.00	90.00	269.26	7,268.00	-1,944.67	-4,783.09	5,099.76	0.00	0.00	
13,800.00	90.00	269.26	7,268.00	-1,945.97	-4,883.08	5,197.43	0.00	0.00	
13,900.00	90.00	269.26	7,268.00	-1,947.26	-4,983.07	5,295.11	0.00	0.00	
14,000.00	90.00	269.26	7,268.00	-1,948.55	-5,083.07	5,392.78	0.00	0.00	
14,100.00	90.00	269.26	7,268.00	-1,949.84	-5,183.06	5,490.45	0.00	0.00	
14,200.00	90.00	269.26	7,268.00	-1,951.13	-5,283.05	5,588.12	0.00	0.00	
14,300.00	90.00	269.26	7,268.00	-1,952.42	-5,383.04	5,685.79	0.00	0.00	
14,400.00	90.00	269.26	7,268.00	-1,953.72	-5,483.03	5,783.47	0.00	0.00	
14,500.00	90.00	269.26	7,268.00	-1,955.01	-5,583.02	5,881.14	0.00	0.00	
14,600.00	90.00	269.26	7,268.00	-1,956.30	-5,683.02	5,978.81	0.00	0.00	
14,700.00	90.00	269.26	7,268.00	-1,957.59	-5,783.01	6,076.48	0.00	0.00	
14,800.00	90.00	269.26	7,268.00	-1,958.88	-5,883.00	6,174.15	0.00	0.00	
14,900.00	90.00	269.26	7,268.00	-1,960.17	-5,982.99	6,271.83	0.00	0.00	
15,000.00	90.00	269.26	7,268.00	-1,961.46	-6,082.98	6,369.50	0.00	0.00	
15,100.00	90.00	269.26	7,268.00	-1,962.76	-6,182.97	6,467.17	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 DRAKE 8X-HNB-11-07-67
<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>	S12-T7N-R67W	<b>North Reference:</b>	Grid
<b>Well:</b>	DRAKE 8X-HNB-11-07-67	<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
15,200.00	90.00	269.26	7,268.00	-1,964.05	-6,282.97	6,564.84	0.00	0.00	
15,300.00	90.00	269.26	7,268.00	-1,965.34	-6,382.96	6,662.51	0.00	0.00	
15,400.00	90.00	269.26	7,268.00	-1,966.63	-6,482.95	6,760.19	0.00	0.00	
15,500.00	90.00	269.26	7,268.00	-1,967.92	-6,582.94	6,857.86	0.00	0.00	
15,600.00	90.00	269.26	7,268.00	-1,969.21	-6,682.93	6,955.53	0.00	0.00	
15,700.00	90.00	269.26	7,268.00	-1,970.51	-6,782.92	7,053.20	0.00	0.00	
15,800.00	90.00	269.26	7,268.00	-1,971.80	-6,882.92	7,150.87	0.00	0.00	
15,900.00	90.00	269.26	7,268.00	-1,973.09	-6,982.91	7,248.55	0.00	0.00	
16,000.00	90.00	269.26	7,268.00	-1,974.38	-7,082.90	7,346.22	0.00	0.00	
16,100.00	90.00	269.26	7,268.00	-1,975.67	-7,182.89	7,443.89	0.00	0.00	
16,200.00	90.00	269.26	7,268.00	-1,976.96	-7,282.88	7,541.56	0.00	0.00	
16,300.00	90.00	269.26	7,268.00	-1,978.25	-7,382.87	7,639.24	0.00	0.00	
16,400.00	90.00	269.26	7,268.00	-1,979.55	-7,482.87	7,736.91	0.00	0.00	
16,500.00	90.00	269.26	7,268.00	-1,980.84	-7,582.86	7,834.58	0.00	0.00	
16,600.00	90.00	269.26	7,268.00	-1,982.13	-7,682.85	7,932.25	0.00	0.00	
16,700.00	90.00	269.26	7,268.00	-1,983.42	-7,782.84	8,029.92	0.00	0.00	
16,800.00	90.00	269.26	7,268.00	-1,984.71	-7,882.83	8,127.60	0.00	0.00	
16,900.00	90.00	269.26	7,268.00	-1,986.00	-7,982.82	8,225.27	0.00	0.00	
17,000.00	90.00	269.26	7,268.00	-1,987.30	-8,082.82	8,322.94	0.00	0.00	
17,100.00	90.00	269.26	7,268.00	-1,988.59	-8,182.81	8,420.61	0.00	0.00	
17,200.00	90.00	269.26	7,268.00	-1,989.88	-8,282.80	8,518.28	0.00	0.00	
17,300.00	90.00	269.26	7,268.00	-1,991.17	-8,382.79	8,615.96	0.00	0.00	
17,400.00	90.00	269.26	7,268.00	-1,992.46	-8,482.78	8,713.63	0.00	0.00	
17,464.51	90.00	269.26	7,268.00	-1,993.29	-8,547.28	8,776.63	0.00	0.00	

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
DRAKE 8X-HNB-11-07-67	0.00	359.57	7,268.00	-1,868.82	1,089.20	1,455,880.99	3,185,136.03	40.582882	-104.833459
- plan misses target center by 23.25usft at 7830.91usft MD (7246.39 TVD, -1862.70 N, 1083.21 E)									
- Point									
DRAKE 8X-HNB-11-07-67	0.00	359.59	7,268.00	-1,993.29	-8,547.28	1,455,756.52	3,175,499.55	40.582734	-104.868155
- plan hits target center									
- Point									