

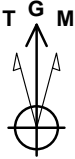
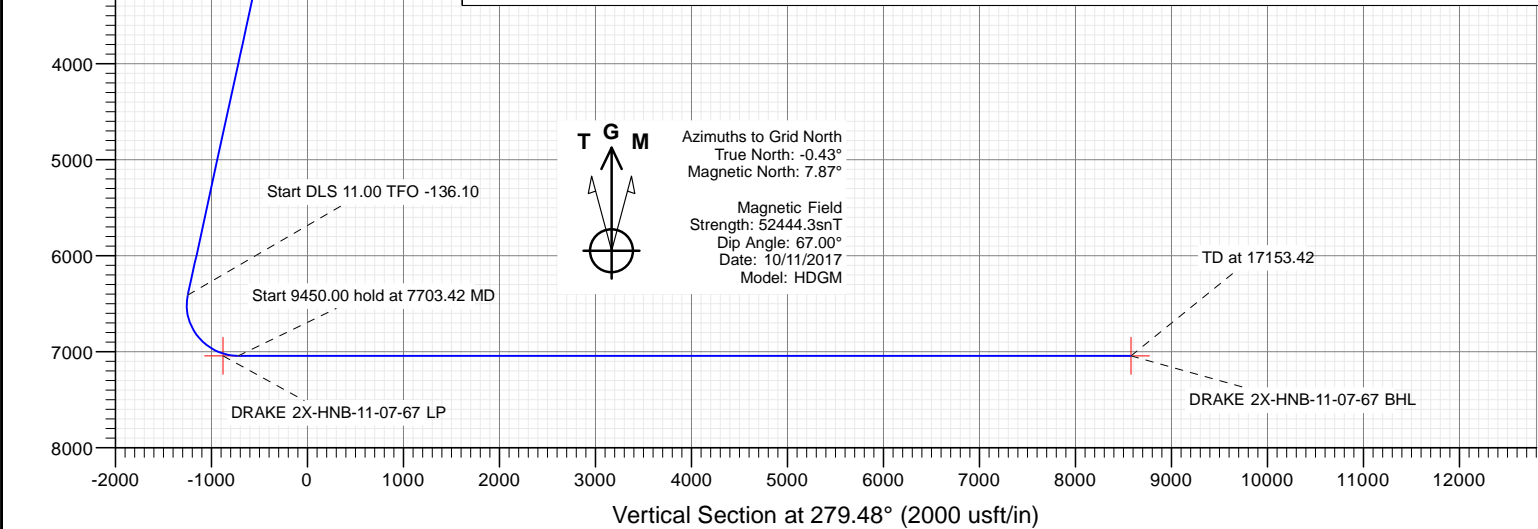
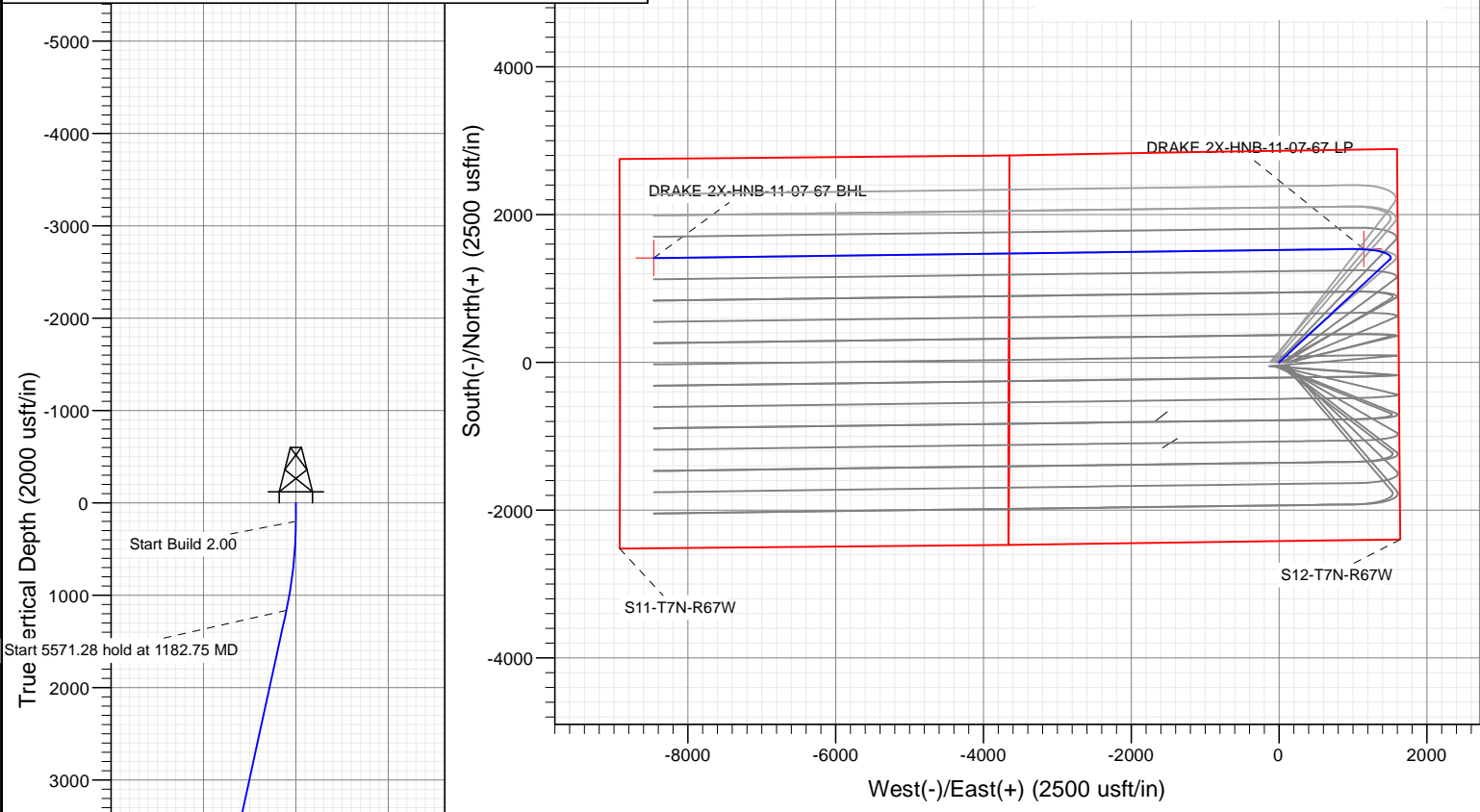
Nickel Road Operating LLC

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	1182.75	19.66	47.07	1163.59	113.69	122.22	2.00	47.07	-101.83	
4	6754.04	19.66	47.07	6410.26	1390.03	1494.29	0.00	0.00	-1244.98	
5	7703.42	90.00	269.26	7043.00	1535.24	987.93	11.00	-136.10	-721.62	
6	17153.42	90.00	269.26	7043.00	1412.68	-8461.27	0.00	0.00	8578.39	DRAKE 2X-HNB-11-07-67 BHL

PLAN #1 DRAKE 2X-HNB-11-07-67 20' KB @ 5220.00usft Ground Level @ 5200.00 North American Datum 1983 Well DRAKE 2X-HNB-11-07-67, Grid North								
Type TD	Target No Target (Freehand)	Azimuth 279.48	Origin Slot	N/S 0.00	E/W 0.00	From TVD 0.00		
Name		TVD	+N/-S	+E/-W	Latitude	Longitude		
DRAKE 2X-HNB-11-07-67 BHL		7043.00	1412.68	-8461.27	40.592220	-104.868071		
DRAKE 2X-HNB-11-07-67 LP		7043.00	1537.31	-1147.20	40.592369	-104.833471		

Project: WELD COUNTY, CO  
Site: S12-T7N-R67W  
Well: DRAKE 2X-HNB-11-07-67  
Wellbore: OH  
Design: PLAN #1



Azimuths to Grid North  
True North: -0.43°  
Magnetic North: 7.87°  
  
Magnetic Field  
Strength: 52444.3snT  
Dip Angle: 67.00°  
Date: 10/11/2017  
Model: HDGM



WELL DETAILS: DRAKE 2X-HNB-11-07-67

+N/-S	+E/-W	Northing	Easting	5200.00	Latitude	Longitude
0.00	0.00	1457799.80	3183959.52		40.588173	-104.837643



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well DRAKE 2X-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 2X-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 2X-HNB-11-07-67					
Well Position	+N/-S	0.00 usft	Northing:	1,457,799.80 usft	Latitude:	40.588173
	+E/-W	0.00 usft	Easting:	3,183,959.52 usft	Longitude:	-104.837643
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 (nT)</b>
	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) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	279.48	

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,182.75	19.66	47.07	1,163.59	113.69	122.22	2.00	2.00	0.00	47.07	
6,754.04	19.66	47.07	6,410.26	1,390.03	1,494.29	0.00	0.00	0.00	0.00	
7,703.42	90.00	269.26	7,043.00	1,535.24	987.93	11.00	7.41	-14.52	-136.10	
17,153.42	90.00	269.26	7,043.00	1,412.68	-8,461.27	0.00	0.00	0.00	0.00	DRAKE 2X-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 2X-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 2X-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	47.07	299.98	1.19	1.28	-1.06	2.00	2.00	
400.00	4.00	47.07	399.84	4.75	5.11	-4.26	2.00	2.00	
500.00	6.00	47.07	499.45	10.69	11.49	-9.57	2.00	2.00	
600.00	8.00	47.07	598.70	18.99	20.41	-17.01	2.00	2.00	
700.00	10.00	47.07	697.47	29.64	31.87	-26.55	2.00	2.00	
800.00	12.00	47.07	795.62	42.64	45.84	-38.19	2.00	2.00	
900.00	14.00	47.07	893.06	57.96	62.31	-51.91	2.00	2.00	
1,000.00	16.00	47.07	989.64	75.59	81.26	-67.70	2.00	2.00	
1,100.00	18.00	47.07	1,085.27	95.50	102.66	-85.53	2.00	2.00	
1,182.75	19.66	47.07	1,163.59	113.69	122.22	-101.83	2.00	2.00	
1,200.00	19.66	47.07	1,179.83	117.64	126.46	-105.36	0.00	0.00	
1,300.00	19.66	47.07	1,274.01	140.55	151.09	-125.88	0.00	0.00	
1,400.00	19.66	47.07	1,368.18	163.46	175.72	-146.40	0.00	0.00	
1,500.00	19.66	47.07	1,462.35	186.37	200.35	-166.92	0.00	0.00	
1,600.00	19.66	47.07	1,556.53	209.28	224.97	-187.44	0.00	0.00	
1,700.00	19.66	47.07	1,650.70	232.19	249.60	-207.96	0.00	0.00	
1,800.00	19.66	47.07	1,744.87	255.10	274.23	-228.48	0.00	0.00	
1,900.00	19.66	47.07	1,839.05	278.00	298.86	-249.00	0.00	0.00	
2,000.00	19.66	47.07	1,933.22	300.91	323.48	-269.51	0.00	0.00	
2,100.00	19.66	47.07	2,027.39	323.82	348.11	-290.03	0.00	0.00	
2,200.00	19.66	47.07	2,121.57	346.73	372.74	-310.55	0.00	0.00	
2,300.00	19.66	47.07	2,215.74	369.64	397.37	-331.07	0.00	0.00	
2,400.00	19.66	47.07	2,309.91	392.55	422.00	-351.59	0.00	0.00	
2,500.00	19.66	47.07	2,404.09	415.46	446.62	-372.11	0.00	0.00	
2,600.00	19.66	47.07	2,498.26	438.37	471.25	-392.63	0.00	0.00	
2,700.00	19.66	47.07	2,592.43	461.28	495.88	-413.15	0.00	0.00	
2,800.00	19.66	47.07	2,686.61	484.19	520.51	-433.66	0.00	0.00	
2,900.00	19.66	47.07	2,780.78	507.10	545.13	-454.18	0.00	0.00	
3,000.00	19.66	47.07	2,874.96	530.01	569.76	-474.70	0.00	0.00	
3,100.00	19.66	47.07	2,969.13	552.92	594.39	-495.22	0.00	0.00	
3,200.00	19.66	47.07	3,063.30	575.83	619.02	-515.74	0.00	0.00	
3,300.00	19.66	47.07	3,157.48	598.74	643.64	-536.26	0.00	0.00	
3,400.00	19.66	47.07	3,251.65	621.64	668.27	-556.78	0.00	0.00	
3,500.00	19.66	47.07	3,345.82	644.55	692.90	-577.30	0.00	0.00	
3,600.00	19.66	47.07	3,440.00	667.46	717.53	-597.81	0.00	0.00	
3,700.00	19.66	47.07	3,534.17	690.37	742.16	-618.33	0.00	0.00	
3,800.00	19.66	47.07	3,628.34	713.28	766.78	-638.85	0.00	0.00	
3,900.00	19.66	47.07	3,722.52	736.19	791.41	-659.37	0.00	0.00	
4,000.00	19.66	47.07	3,816.69	759.10	816.04	-679.89	0.00	0.00	
4,100.00	19.66	47.07	3,910.86	782.01	840.67	-700.41	0.00	0.00	
4,200.00	19.66	47.07	4,005.04	804.92	865.29	-720.93	0.00	0.00	
4,300.00	19.66	47.07	4,099.21	827.83	889.92	-741.45	0.00	0.00	
4,400.00	19.66	47.07	4,193.38	850.74	914.55	-761.96	0.00	0.00	
4,500.00	19.66	47.07	4,287.56	873.65	939.18	-782.48	0.00	0.00	
4,600.00	19.66	47.07	4,381.73	896.56	963.80	-803.00	0.00	0.00	
4,700.00	19.66	47.07	4,475.90	919.47	988.43	-823.52	0.00	0.00	
4,800.00	19.66	47.07	4,570.08	942.38	1,013.06	-844.04	0.00	0.00	
4,900.00	19.66	47.07	4,664.25	965.29	1,037.69	-864.56	0.00	0.00	
5,000.00	19.66	47.07	4,758.42	988.19	1,062.32	-885.08	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 2X-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 2X-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
5,100.00	19.66	47.07	4,852.60	1,011.10	1,086.94	-905.60	0.00	0.00	
5,200.00	19.66	47.07	4,946.77	1,034.01	1,111.57	-926.12	0.00	0.00	
5,300.00	19.66	47.07	5,040.94	1,056.92	1,136.20	-946.63	0.00	0.00	
5,400.00	19.66	47.07	5,135.12	1,079.83	1,160.83	-967.15	0.00	0.00	
5,500.00	19.66	47.07	5,229.29	1,102.74	1,185.45	-987.67	0.00	0.00	
5,600.00	19.66	47.07	5,323.46	1,125.65	1,210.08	-1,008.19	0.00	0.00	
5,700.00	19.66	47.07	5,417.64	1,148.56	1,234.71	-1,028.71	0.00	0.00	
5,800.00	19.66	47.07	5,511.81	1,171.47	1,259.34	-1,049.23	0.00	0.00	
5,900.00	19.66	47.07	5,605.99	1,194.38	1,283.96	-1,069.75	0.00	0.00	
6,000.00	19.66	47.07	5,700.16	1,217.29	1,308.59	-1,090.27	0.00	0.00	
6,100.00	19.66	47.07	5,794.33	1,240.20	1,333.22	-1,110.78	0.00	0.00	
6,200.00	19.66	47.07	5,888.51	1,263.11	1,357.85	-1,131.30	0.00	0.00	
6,300.00	19.66	47.07	5,982.68	1,286.02	1,382.48	-1,151.82	0.00	0.00	
6,400.00	19.66	47.07	6,076.85	1,308.93	1,407.10	-1,172.34	0.00	0.00	
6,500.00	19.66	47.07	6,171.03	1,331.83	1,431.73	-1,192.86	0.00	0.00	
6,600.00	19.66	47.07	6,265.20	1,354.74	1,456.36	-1,213.38	0.00	0.00	
6,700.00	19.66	47.07	6,359.37	1,377.65	1,480.99	-1,233.90	0.00	0.00	
6,754.04	19.66	47.07	6,410.26	1,390.03	1,494.29	-1,244.98	0.00	0.00	
6,800.00	16.38	34.55	6,453.98	1,400.64	1,503.63	-1,252.45	11.00	-7.13	
6,900.00	13.58	352.33	6,550.85	1,423.96	1,510.08	-1,254.97	11.00	-2.79	
7,000.00	18.39	315.42	6,647.19	1,446.91	1,497.40	-1,238.68	11.00	4.81	
7,100.00	27.01	297.33	6,739.47	1,468.64	1,466.06	-1,204.19	11.00	8.62	
7,200.00	36.85	287.92	6,824.29	1,488.35	1,417.20	-1,152.75	11.00	9.84	
7,300.00	47.15	282.11	6,898.53	1,505.32	1,352.63	-1,086.27	11.00	10.30	
7,400.00	57.66	277.99	6,959.47	1,518.93	1,274.71	-1,007.18	11.00	10.51	
7,500.00	68.27	274.74	7,004.86	1,528.67	1,186.32	-918.38	11.00	10.61	
7,600.00	78.94	271.94	7,033.05	1,534.19	1,090.69	-823.15	11.00	10.67	
7,700.00	89.63	269.34	7,042.99	1,535.28	991.35	-724.99	11.00	10.69	
7,703.42	90.00	269.26	7,043.00	1,535.24	987.93	-721.62	11.00	10.70	
7,800.00	90.00	269.26	7,043.00	1,533.99	891.36	-626.57	0.00	0.00	
7,900.00	90.00	269.26	7,043.00	1,532.69	791.37	-528.16	0.00	0.00	
8,000.00	90.00	269.26	7,043.00	1,531.40	691.37	-429.75	0.00	0.00	
8,100.00	90.00	269.26	7,043.00	1,530.10	591.38	-331.33	0.00	0.00	
8,200.00	90.00	269.26	7,043.00	1,528.80	491.39	-232.92	0.00	0.00	
8,300.00	90.00	269.26	7,043.00	1,527.51	391.40	-134.51	0.00	0.00	
8,400.00	90.00	269.26	7,043.00	1,526.21	291.41	-36.10	0.00	0.00	
8,500.00	90.00	269.26	7,043.00	1,524.91	191.42	62.32	0.00	0.00	
8,600.00	90.00	269.26	7,043.00	1,523.61	91.42	160.73	0.00	0.00	
8,700.00	90.00	269.26	7,043.00	1,522.32	-8.57	259.14	0.00	0.00	
8,800.00	90.00	269.26	7,043.00	1,521.02	-108.56	357.56	0.00	0.00	
8,900.00	90.00	269.26	7,043.00	1,519.72	-208.55	455.97	0.00	0.00	
9,000.00	90.00	269.26	7,043.00	1,518.43	-308.54	554.38	0.00	0.00	
9,100.00	90.00	269.26	7,043.00	1,517.13	-408.53	652.79	0.00	0.00	
9,200.00	90.00	269.26	7,043.00	1,515.83	-508.52	751.21	0.00	0.00	
9,300.00	90.00	269.26	7,043.00	1,514.54	-608.52	849.62	0.00	0.00	
9,400.00	90.00	269.26	7,043.00	1,513.24	-708.51	948.03	0.00	0.00	
9,500.00	90.00	269.26	7,043.00	1,511.94	-808.50	1,046.45	0.00	0.00	
9,600.00	90.00	269.26	7,043.00	1,510.64	-908.49	1,144.86	0.00	0.00	
9,700.00	90.00	269.26	7,043.00	1,509.35	-1,008.48	1,243.27	0.00	0.00	
9,800.00	90.00	269.26	7,043.00	1,508.05	-1,108.47	1,341.68	0.00	0.00	
9,900.00	90.00	269.26	7,043.00	1,506.75	-1,208.47	1,440.10	0.00	0.00	
10,000.00	90.00	269.26	7,043.00	1,505.46	-1,308.46	1,538.51	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 2X-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 2X-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
10,100.00	90.00	269.26	7,043.00	1,504.16	-1,408.45	1,636.92	0.00	0.00	
10,200.00	90.00	269.26	7,043.00	1,502.86	-1,508.44	1,735.34	0.00	0.00	
10,300.00	90.00	269.26	7,043.00	1,501.57	-1,608.43	1,833.75	0.00	0.00	
10,400.00	90.00	269.26	7,043.00	1,500.27	-1,708.42	1,932.16	0.00	0.00	
10,500.00	90.00	269.26	7,043.00	1,498.97	-1,808.42	2,030.57	0.00	0.00	
10,600.00	90.00	269.26	7,043.00	1,497.67	-1,908.41	2,128.99	0.00	0.00	
10,700.00	90.00	269.26	7,043.00	1,496.38	-2,008.40	2,227.40	0.00	0.00	
10,800.00	90.00	269.26	7,043.00	1,495.08	-2,108.39	2,325.81	0.00	0.00	
10,900.00	90.00	269.26	7,043.00	1,493.78	-2,208.38	2,424.23	0.00	0.00	
11,000.00	90.00	269.26	7,043.00	1,492.49	-2,308.37	2,522.64	0.00	0.00	
11,100.00	90.00	269.26	7,043.00	1,491.19	-2,408.36	2,621.05	0.00	0.00	
11,200.00	90.00	269.26	7,043.00	1,489.89	-2,508.36	2,719.46	0.00	0.00	
11,300.00	90.00	269.26	7,043.00	1,488.59	-2,608.35	2,817.88	0.00	0.00	
11,400.00	90.00	269.26	7,043.00	1,487.30	-2,708.34	2,916.29	0.00	0.00	
11,500.00	90.00	269.26	7,043.00	1,486.00	-2,808.33	3,014.70	0.00	0.00	
11,600.00	90.00	269.26	7,043.00	1,484.70	-2,908.32	3,113.12	0.00	0.00	
11,700.00	90.00	269.26	7,043.00	1,483.41	-3,008.31	3,211.53	0.00	0.00	
11,800.00	90.00	269.26	7,043.00	1,482.11	-3,108.31	3,309.94	0.00	0.00	
11,900.00	90.00	269.26	7,043.00	1,480.81	-3,208.30	3,408.35	0.00	0.00	
12,000.00	90.00	269.26	7,043.00	1,479.52	-3,308.29	3,506.77	0.00	0.00	
12,100.00	90.00	269.26	7,043.00	1,478.22	-3,408.28	3,605.18	0.00	0.00	
12,200.00	90.00	269.26	7,043.00	1,476.92	-3,508.27	3,703.59	0.00	0.00	
12,300.00	90.00	269.26	7,043.00	1,475.62	-3,608.26	3,802.01	0.00	0.00	
12,400.00	90.00	269.26	7,043.00	1,474.33	-3,708.26	3,900.42	0.00	0.00	
12,500.00	90.00	269.26	7,043.00	1,473.03	-3,808.25	3,998.83	0.00	0.00	
12,600.00	90.00	269.26	7,043.00	1,471.73	-3,908.24	4,097.24	0.00	0.00	
12,700.00	90.00	269.26	7,043.00	1,470.44	-4,008.23	4,195.66	0.00	0.00	
12,800.00	90.00	269.26	7,043.00	1,469.14	-4,108.22	4,294.07	0.00	0.00	
12,900.00	90.00	269.26	7,043.00	1,467.84	-4,208.21	4,392.48	0.00	0.00	
13,000.00	90.00	269.26	7,043.00	1,466.55	-4,308.21	4,490.89	0.00	0.00	
13,100.00	90.00	269.26	7,043.00	1,465.25	-4,408.20	4,589.31	0.00	0.00	
13,200.00	90.00	269.26	7,043.00	1,463.95	-4,508.19	4,687.72	0.00	0.00	
13,300.00	90.00	269.26	7,043.00	1,462.65	-4,608.18	4,786.13	0.00	0.00	
13,400.00	90.00	269.26	7,043.00	1,461.36	-4,708.17	4,884.55	0.00	0.00	
13,500.00	90.00	269.26	7,043.00	1,460.06	-4,808.16	4,982.96	0.00	0.00	
13,600.00	90.00	269.26	7,043.00	1,458.76	-4,908.15	5,081.37	0.00	0.00	
13,700.00	90.00	269.26	7,043.00	1,457.47	-5,008.15	5,179.78	0.00	0.00	
13,800.00	90.00	269.26	7,043.00	1,456.17	-5,108.14	5,278.20	0.00	0.00	
13,900.00	90.00	269.26	7,043.00	1,454.87	-5,208.13	5,376.61	0.00	0.00	
14,000.00	90.00	269.26	7,043.00	1,453.58	-5,308.12	5,475.02	0.00	0.00	
14,100.00	90.00	269.26	7,043.00	1,452.28	-5,408.11	5,573.44	0.00	0.00	
14,200.00	90.00	269.26	7,043.00	1,450.98	-5,508.10	5,671.85	0.00	0.00	
14,300.00	90.00	269.26	7,043.00	1,449.68	-5,608.10	5,770.26	0.00	0.00	
14,400.00	90.00	269.26	7,043.00	1,448.39	-5,708.09	5,868.67	0.00	0.00	
14,500.00	90.00	269.26	7,043.00	1,447.09	-5,808.08	5,967.09	0.00	0.00	
14,600.00	90.00	269.26	7,043.00	1,445.79	-5,908.07	6,065.50	0.00	0.00	
14,700.00	90.00	269.26	7,043.00	1,444.50	-6,008.06	6,163.91	0.00	0.00	
14,800.00	90.00	269.26	7,043.00	1,443.20	-6,108.05	6,262.33	0.00	0.00	
14,900.00	90.00	269.26	7,043.00	1,441.90	-6,208.05	6,360.74	0.00	0.00	
15,000.00	90.00	269.26	7,043.00	1,440.61	-6,308.04	6,459.15	0.00	0.00	
15,100.00	90.00	269.26	7,043.00	1,439.31	-6,408.03	6,557.56	0.00	0.00	
15,200.00	90.00	269.26	7,043.00	1,438.01	-6,508.02	6,655.98	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 2X-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 2X-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
15,300.00	90.00	269.26	7,043.00	1,436.71	-6,608.01	6,754.39	0.00	0.00	
15,400.00	90.00	269.26	7,043.00	1,435.42	-6,708.00	6,852.80	0.00	0.00	
15,500.00	90.00	269.26	7,043.00	1,434.12	-6,807.99	6,951.22	0.00	0.00	
15,600.00	90.00	269.26	7,043.00	1,432.82	-6,907.99	7,049.63	0.00	0.00	
15,700.00	90.00	269.26	7,043.00	1,431.53	-7,007.98	7,148.04	0.00	0.00	
15,800.00	90.00	269.26	7,043.00	1,430.23	-7,107.97	7,246.45	0.00	0.00	
15,900.00	90.00	269.26	7,043.00	1,428.93	-7,207.96	7,344.87	0.00	0.00	
16,000.00	90.00	269.26	7,043.00	1,427.64	-7,307.95	7,443.28	0.00	0.00	
16,100.00	90.00	269.26	7,043.00	1,426.34	-7,407.94	7,541.69	0.00	0.00	
16,200.00	90.00	269.26	7,043.00	1,425.04	-7,507.94	7,640.11	0.00	0.00	
16,300.00	90.00	269.26	7,043.00	1,423.74	-7,607.93	7,738.52	0.00	0.00	
16,400.00	90.00	269.26	7,043.00	1,422.45	-7,707.92	7,836.93	0.00	0.00	
16,500.00	90.00	269.26	7,043.00	1,421.15	-7,807.91	7,935.34	0.00	0.00	
16,600.00	90.00	269.26	7,043.00	1,419.85	-7,907.90	8,033.76	0.00	0.00	
16,700.00	90.00	269.26	7,043.00	1,418.56	-8,007.89	8,132.17	0.00	0.00	
16,800.00	90.00	269.26	7,043.00	1,417.26	-8,107.89	8,230.58	0.00	0.00	
16,900.00	90.00	269.26	7,043.00	1,415.96	-8,207.88	8,329.00	0.00	0.00	
17,000.00	90.00	269.26	7,043.00	1,414.67	-8,307.87	8,427.41	0.00	0.00	
17,100.00	90.00	269.26	7,043.00	1,413.37	-8,407.86	8,525.82	0.00	0.00	
17,153.42	90.00	269.26	7,043.00	1,412.68	-8,461.27	8,578.39	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 2X-HNB-11-07-67	0.00	359.57	7,043.00	1,537.31	1,147.20	1,459,337.11	3,185,106.72	40.592369	-104.833471
- plan misses target center by 23.81usft at 7548.79usft MD (7020.84 TVD, 1531.91 N, 1140.36 E)									
- Point									
DRAKE 2X-HNB-11-07-67	0.00	359.59	7,043.00	1,412.68	-8,461.27	1,459,212.48	3,175,498.25	40.592220	-104.868071
- plan hits target center									
- Point									