



CRESTONE PEAK
RESOURCES

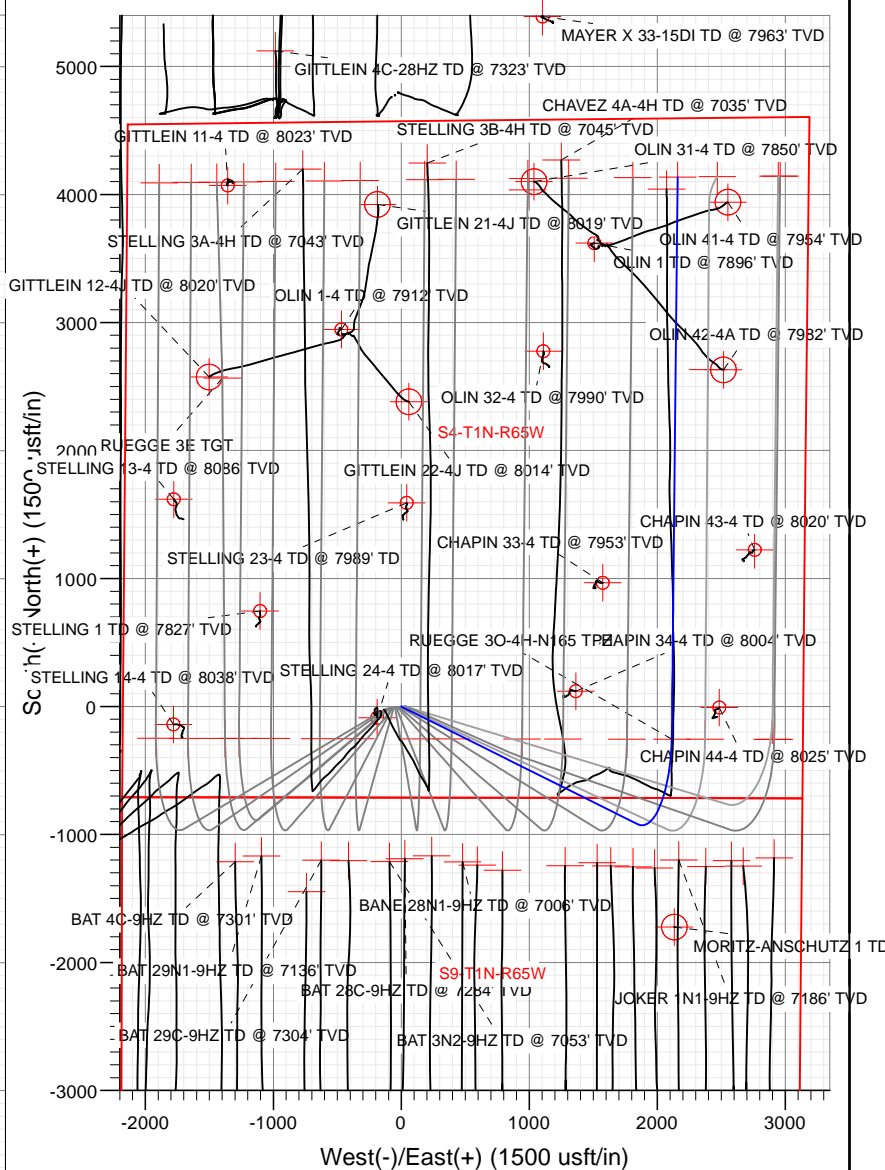
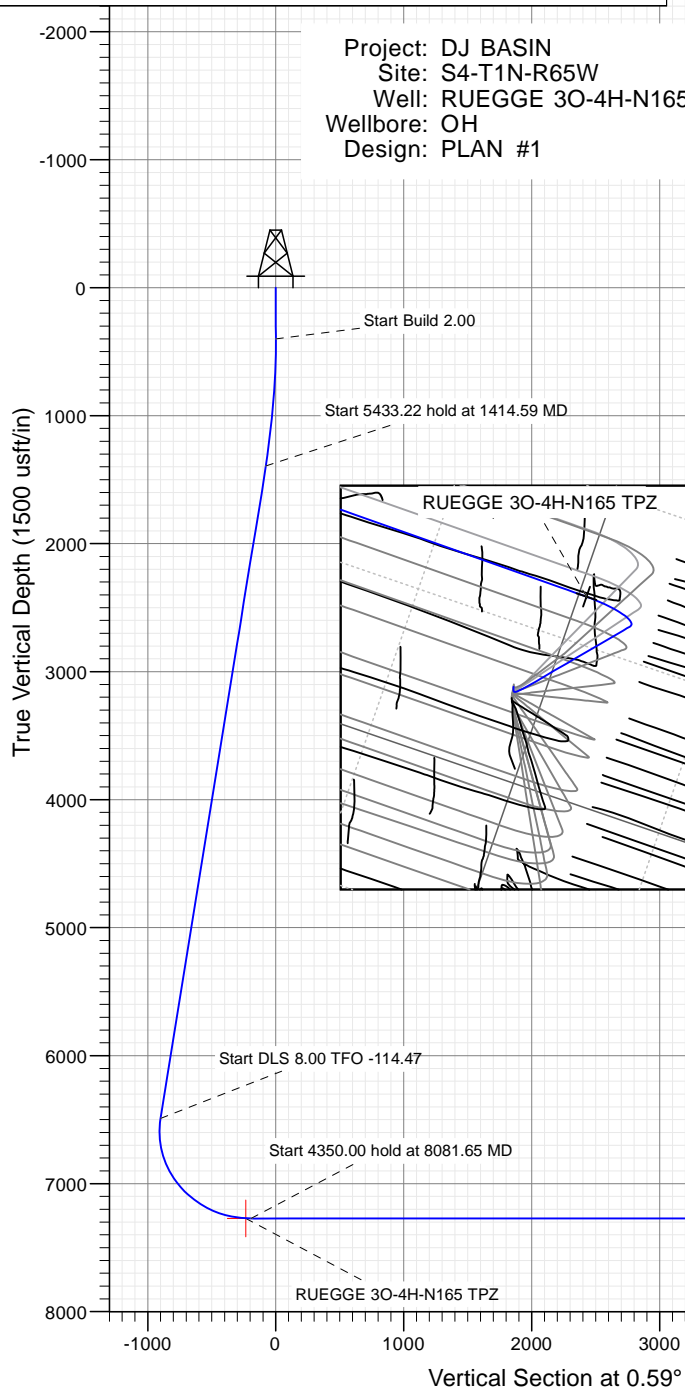
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1414.59	20.29	116.48	1393.51	-79.26	159.14	2.00	116.48	-77.62	
4	6847.81	20.29	116.48	6489.54	-919.31	1845.77	0.00	0.00	-900.25	
5	8081.65	90.00	0.59	7272.00	-214.10	2113.38	8.00	-114.47	-192.33	
6	12431.65	90.00	0.59	7272.00	4135.67	2158.46	0.00	0.00	4157.67	RUEGGE 30-4H-N165 BHL

PLAN #1
RUEGGE 30-4H-N165
23' 1/2" @ 4335.00bust
Ground Level @ 4915.00
North American Datum 1983
Well RUEGGE 30-4H-N165 - Slot RUEGGE 30-4H-N165 SHL True North

Type	Target	Asimuth	Origin	Type	N/S	E/W	From
User	No Target (Freehand)	0.59	Slot	0.00	0.00	0.00	TVD
Name							
RUEGGE 30-4H-N165 BHL							
RUEGGE 30-4H-N165 TPZ							

Project: DJ BASIN
Site: S4-T1N-R65W
Well: RUEGGE 30-4H-N165
Wellbore: OH
Design: PLAN #1



Azimuths to True North
Magnetic North: 8.22°

Magnetic Field
Strength: 52188.7snT
Dip Angle: 66.50°
Date: 11/2/2017
Model: HDGM

WELL DETAILS: RUEGGE 30-4H-N165

4915.00
+N/-S 0.00 +E/-W 0.00 Northing 1271352.43 Easting 3232090.49 Latitude 40.075273 Longitude -104.663062 Slot RUEGGE 30-4H-N165 SHL

CATHEDRAL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 30-4H-N165 - Slot RUEGGE 30
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4938.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4938.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 30-4H-N165	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #1		

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

Site		S4-T1N-R65W			
Site Position:		Northing:	1,271,333.68 usft	Latitude:	40.075225
From:	Map	Easting:	3,231,971.96 usft	Longitude:	-104.671056
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well	RUEGGE 30-4H-N165 - Slot RUEGGE 30-4H-N165 SHL					
Well Position	+N/-S	0.00 usft	Northing:	1,271,352.43 usft	Latitude:	40.075273
	+E/-W	0.00 usft	Easting:	3,232,090.49 usft	Longitude:	-104.670632
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,915.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	11/2/2017	8.22	66.50	52,188.70000000

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	0.59

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,414.59	20.29	116.48	1,393.51	-79.26	159.14	2.00	2.00	0.00	116.48	
6,847.81	20.29	116.48	6,489.54	-919.31	1,845.77	0.00	0.00	0.00	0.00	
8,081.65	90.00	0.59	7,272.00	-214.10	2,113.38	8.00	5.65	-9.39	-114.47	
12,431.65	90.00	0.59	7,272.00	4,135.67	2,158.46	0.00	0.00	0.00	0.00	RUEGGE 30-4H-N16

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3O-4H-N165 - Slot RUEGGE 3O
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4938.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4938.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3O-4H-N165	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
500.00	2.00	116.48	499.98	-0.78	1.56	-0.76	2.00	2.00	
600.00	4.00	116.48	599.84	-3.11	6.25	-3.05	2.00	2.00	
700.00	6.00	116.48	699.45	-7.00	14.05	-6.85	2.00	2.00	
800.00	8.00	116.48	798.70	-12.43	24.96	-12.17	2.00	2.00	
900.00	10.00	116.48	897.47	-19.40	38.96	-19.00	2.00	2.00	
1,000.00	12.00	116.48	995.62	-27.91	56.04	-27.33	2.00	2.00	
1,100.00	14.00	116.48	1,093.06	-37.94	76.17	-37.15	2.00	2.00	
1,200.00	16.00	116.48	1,189.64	-49.48	99.34	-48.45	2.00	2.00	
1,300.00	18.00	116.48	1,285.27	-62.51	125.51	-61.21	2.00	2.00	
1,400.00	20.00	116.48	1,379.82	-77.02	154.65	-75.43	2.00	2.00	
1,414.59	20.29	116.48	1,393.51	-79.26	159.14	-77.62	2.00	2.00	
1,500.00	20.29	116.48	1,473.62	-92.47	185.66	-90.55	0.00	0.00	
1,600.00	20.29	116.48	1,567.42	-107.93	216.70	-105.69	0.00	0.00	
1,700.00	20.29	116.48	1,661.21	-123.39	247.75	-120.83	0.00	0.00	
1,800.00	20.29	116.48	1,755.00	-138.85	278.79	-135.98	0.00	0.00	
1,900.00	20.29	116.48	1,848.80	-154.32	309.83	-151.12	0.00	0.00	
2,000.00	20.29	116.48	1,942.59	-169.78	340.87	-166.26	0.00	0.00	
2,100.00	20.29	116.48	2,036.39	-185.24	371.92	-181.40	0.00	0.00	
2,200.00	20.29	116.48	2,130.18	-200.70	402.96	-196.54	0.00	0.00	
2,300.00	20.29	116.48	2,223.97	-216.16	434.00	-211.68	0.00	0.00	
2,400.00	20.29	116.48	2,317.77	-231.62	465.04	-226.82	0.00	0.00	
2,500.00	20.29	116.48	2,411.56	-247.08	496.09	-241.96	0.00	0.00	
2,600.00	20.29	116.48	2,505.36	-262.54	527.13	-257.10	0.00	0.00	
2,700.00	20.29	116.48	2,599.15	-278.01	558.17	-272.24	0.00	0.00	
2,800.00	20.29	116.48	2,692.94	-293.47	589.22	-287.38	0.00	0.00	
2,900.00	20.29	116.48	2,786.74	-308.93	620.26	-302.52	0.00	0.00	
3,000.00	20.29	116.48	2,880.53	-324.39	651.30	-317.66	0.00	0.00	
3,100.00	20.29	116.48	2,974.32	-339.85	682.34	-332.81	0.00	0.00	
3,200.00	20.29	116.48	3,068.12	-355.31	713.39	-347.95	0.00	0.00	
3,300.00	20.29	116.48	3,161.91	-370.77	744.43	-363.09	0.00	0.00	
3,400.00	20.29	116.48	3,255.71	-386.23	775.47	-378.23	0.00	0.00	
3,500.00	20.29	116.48	3,349.50	-401.70	806.52	-393.37	0.00	0.00	
3,600.00	20.29	116.48	3,443.29	-417.16	837.56	-408.51	0.00	0.00	
3,700.00	20.29	116.48	3,537.09	-432.62	868.60	-423.65	0.00	0.00	
3,800.00	20.29	116.48	3,630.88	-448.08	899.64	-438.79	0.00	0.00	
3,900.00	20.29	116.48	3,724.68	-463.54	930.69	-453.93	0.00	0.00	
4,000.00	20.29	116.48	3,818.47	-479.00	961.73	-469.07	0.00	0.00	
4,100.00	20.29	116.48	3,912.26	-494.46	992.77	-484.21	0.00	0.00	
4,200.00	20.29	116.48	4,006.06	-509.92	1,023.81	-499.35	0.00	0.00	
4,300.00	20.29	116.48	4,099.85	-525.39	1,054.86	-514.50	0.00	0.00	
4,400.00	20.29	116.48	4,193.65	-540.85	1,085.90	-529.64	0.00	0.00	
4,500.00	20.29	116.48	4,287.44	-556.31	1,116.94	-544.78	0.00	0.00	
4,600.00	20.29	116.48	4,381.23	-571.77	1,147.99	-559.92	0.00	0.00	
4,700.00	20.29	116.48	4,475.03	-587.23	1,179.03	-575.06	0.00	0.00	
4,800.00	20.29	116.48	4,568.82	-602.69	1,210.07	-590.20	0.00	0.00	
4,900.00	20.29	116.48	4,662.61	-618.15	1,241.11	-605.34	0.00	0.00	
5,000.00	20.29	116.48	4,756.41	-633.61	1,272.16	-620.48	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 30-4H-N165 - Slot RUEGGE 30
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4938.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4938.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 30-4H-N165	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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	20.29	116.48	4,850.20	-649.08	1,303.20	-635.62	0.00	0.00	
5,200.00	20.29	116.48	4,944.00	-664.54	1,334.24	-650.76	0.00	0.00	
5,300.00	20.29	116.48	5,037.79	-680.00	1,365.29	-665.90	0.00	0.00	
5,400.00	20.29	116.48	5,131.58	-695.46	1,396.33	-681.04	0.00	0.00	
5,500.00	20.29	116.48	5,225.38	-710.92	1,427.37	-696.18	0.00	0.00	
5,600.00	20.29	116.48	5,319.17	-726.38	1,458.41	-711.33	0.00	0.00	
5,700.00	20.29	116.48	5,412.97	-741.84	1,489.46	-726.47	0.00	0.00	
5,800.00	20.29	116.48	5,506.76	-757.30	1,520.50	-741.61	0.00	0.00	
5,900.00	20.29	116.48	5,600.55	-772.77	1,551.54	-756.75	0.00	0.00	
6,000.00	20.29	116.48	5,694.35	-788.23	1,582.59	-771.89	0.00	0.00	
6,100.00	20.29	116.48	5,788.14	-803.69	1,613.63	-787.03	0.00	0.00	
6,200.00	20.29	116.48	5,881.94	-819.15	1,644.67	-802.17	0.00	0.00	
6,300.00	20.29	116.48	5,975.73	-834.61	1,675.71	-817.31	0.00	0.00	
6,400.00	20.29	116.48	6,069.52	-850.07	1,706.76	-832.45	0.00	0.00	
6,500.00	20.29	116.48	6,163.32	-865.53	1,737.80	-847.59	0.00	0.00	
6,600.00	20.29	116.48	6,257.11	-880.99	1,768.84	-862.73	0.00	0.00	
6,700.00	20.29	116.48	6,350.90	-896.46	1,799.88	-877.87	0.00	0.00	
6,800.00	20.29	116.48	6,444.70	-911.92	1,830.93	-893.01	0.00	0.00	
6,847.81	20.29	116.48	6,489.54	-919.31	1,845.77	-900.25	0.00	0.00	
6,900.00	18.93	104.69	6,538.72	-925.49	1,862.07	-906.27	8.00	-2.61	
7,000.00	18.71	79.73	6,633.53	-926.75	1,893.59	-907.20	8.00	-0.22	
7,100.00	21.58	57.86	6,727.53	-914.08	1,925.00	-894.21	8.00	2.86	
7,200.00	26.54	42.36	6,818.91	-887.75	1,955.67	-867.57	8.00	4.96	
7,300.00	32.66	31.86	6,905.88	-848.26	1,985.01	-827.78	8.00	6.12	
7,400.00	39.39	24.49	6,986.75	-796.38	2,012.45	-775.62	8.00	6.74	
7,500.00	46.48	19.01	7,059.94	-733.13	2,037.46	-712.11	8.00	7.08	
7,600.00	53.76	14.70	7,124.03	-659.72	2,059.54	-638.48	8.00	7.29	
7,700.00	61.18	11.14	7,177.77	-577.60	2,078.27	-556.17	8.00	7.42	
7,800.00	68.68	8.05	7,220.13	-488.35	2,093.28	-466.77	8.00	7.50	
7,900.00	76.23	5.27	7,250.26	-393.72	2,104.29	-372.03	8.00	7.55	
8,000.00	83.80	2.66	7,267.59	-295.55	2,111.07	-273.80	8.00	7.58	
8,039.79	86.82	1.65	7,270.84	-255.93	2,112.56	-234.16	8.00	7.59	RUEGGE 30-4H-N165 TPZ
8,081.65	90.00	0.59	7,272.00	-214.10	2,113.38	-192.33	8.00	7.59	
8,100.00	90.00	0.59	7,272.00	-195.75	2,113.57	-173.97	0.00	0.00	
8,200.00	90.00	0.59	7,272.00	-95.75	2,114.61	-73.97	0.00	0.00	
8,300.00	90.00	0.59	7,272.00	4.24	2,115.64	26.03	0.00	0.00	
8,400.00	90.00	0.59	7,272.00	104.23	2,116.68	126.03	0.00	0.00	
8,500.00	90.00	0.59	7,272.00	204.23	2,117.72	226.03	0.00	0.00	
8,600.00	90.00	0.59	7,272.00	304.22	2,118.75	326.03	0.00	0.00	
8,700.00	90.00	0.59	7,272.00	404.22	2,119.79	426.03	0.00	0.00	
8,800.00	90.00	0.59	7,272.00	504.21	2,120.83	526.03	0.00	0.00	
8,900.00	90.00	0.59	7,272.00	604.21	2,121.86	626.03	0.00	0.00	
9,000.00	90.00	0.59	7,272.00	704.20	2,122.90	726.03	0.00	0.00	
9,100.00	90.00	0.59	7,272.00	804.20	2,123.93	826.03	0.00	0.00	
9,200.00	90.00	0.59	7,272.00	904.19	2,124.97	926.03	0.00	0.00	
9,300.00	90.00	0.59	7,272.00	1,004.19	2,126.01	1,026.03	0.00	0.00	
9,400.00	90.00	0.59	7,272.00	1,104.18	2,127.04	1,126.03	0.00	0.00	
9,500.00	90.00	0.59	7,272.00	1,204.18	2,128.08	1,226.03	0.00	0.00	
9,600.00	90.00	0.59	7,272.00	1,304.17	2,129.12	1,326.03	0.00	0.00	
9,700.00	90.00	0.59	7,272.00	1,404.17	2,130.15	1,426.03	0.00	0.00	
9,800.00	90.00	0.59	7,272.00	1,504.16	2,131.19	1,526.03	0.00	0.00	
9,900.00	90.00	0.59	7,272.00	1,604.15	2,132.22	1,626.03	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3O-4H-N165 - Slot RUEGGE 3O
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4938.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4938.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3O-4H-N165	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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	0.59	7,272.00	1,704.15	2,133.26	1,726.03	0.00	0.00	
10,100.00	90.00	0.59	7,272.00	1,804.14	2,134.30	1,826.03	0.00	0.00	
10,200.00	90.00	0.59	7,272.00	1,904.14	2,135.33	1,926.03	0.00	0.00	
10,300.00	90.00	0.59	7,272.00	2,004.13	2,136.37	2,026.03	0.00	0.00	
10,400.00	90.00	0.59	7,272.00	2,104.13	2,137.41	2,126.03	0.00	0.00	
10,500.00	90.00	0.59	7,272.00	2,204.12	2,138.44	2,226.03	0.00	0.00	
10,600.00	90.00	0.59	7,272.00	2,304.12	2,139.48	2,326.03	0.00	0.00	
10,700.00	90.00	0.59	7,272.00	2,404.11	2,140.51	2,426.03	0.00	0.00	
10,800.00	90.00	0.59	7,272.00	2,504.11	2,141.55	2,526.03	0.00	0.00	
10,900.00	90.00	0.59	7,272.00	2,604.10	2,142.59	2,626.03	0.00	0.00	
11,000.00	90.00	0.59	7,272.00	2,704.10	2,143.62	2,726.03	0.00	0.00	
11,100.00	90.00	0.59	7,272.00	2,804.09	2,144.66	2,826.03	0.00	0.00	
11,200.00	90.00	0.59	7,272.00	2,904.08	2,145.69	2,926.03	0.00	0.00	
11,300.00	90.00	0.59	7,272.00	3,004.08	2,146.73	3,026.03	0.00	0.00	
11,400.00	90.00	0.59	7,272.00	3,104.07	2,147.77	3,126.03	0.00	0.00	
11,500.00	90.00	0.59	7,272.00	3,204.07	2,148.80	3,226.03	0.00	0.00	
11,600.00	90.00	0.59	7,272.00	3,304.06	2,149.84	3,326.03	0.00	0.00	
11,700.00	90.00	0.59	7,272.00	3,404.06	2,150.88	3,426.03	0.00	0.00	
11,800.00	90.00	0.59	7,272.00	3,504.05	2,151.91	3,526.03	0.00	0.00	
11,900.00	90.00	0.59	7,272.00	3,604.05	2,152.95	3,626.03	0.00	0.00	
12,000.00	90.00	0.59	7,272.00	3,704.04	2,153.98	3,726.03	0.00	0.00	
12,100.00	90.00	0.59	7,272.00	3,804.04	2,155.02	3,826.03	0.00	0.00	
12,200.00	90.00	0.59	7,272.00	3,904.03	2,156.06	3,926.03	0.00	0.00	
12,300.00	90.00	0.59	7,272.00	4,004.03	2,157.09	4,026.03	0.00	0.00	
12,400.00	90.00	0.59	7,272.00	4,104.02	2,158.13	4,126.03	0.00	0.00	
12,431.65	90.00	0.59	7,272.00	4,135.67	2,158.46	4,157.67	0.00	0.00	RUEGGE 3O-4H-N165 BHL

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									
RUEGGE 3O-4H-N165 I - plan hits target center - Point	0.00	0.00	7,272.00	4,135.67	2,158.46	1,275,508.10	3,234,210.17	40.086626	-104.662918
RUEGGE 3O-4H-N165 ` - plan hits target center - Point	0.00	0.00	7,270.84	-255.93	2,112.56	1,271,116.27	3,234,205.35	40.074571	-104.663083