



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	300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
3	784.30	9.69	195.70	782.00	-39.31	-11.05	2.00	195.70	-39.40	
4	6405.81	9.69	195.70	6323.37	-949.83	-267.03	0.00	0.00	-951.99	
5	7647.60	90.00	0.47	7155.00	-242.85	-298.47	8.00	164.56	-245.29	RUEGGGE 3I-4H-N165 TPZ
6	12008.66	90.00	0.47	7155.00	4118.07	-262.44	0.00	0.00	4115.78	RUEGGGE 3I-4H-N165 BHL

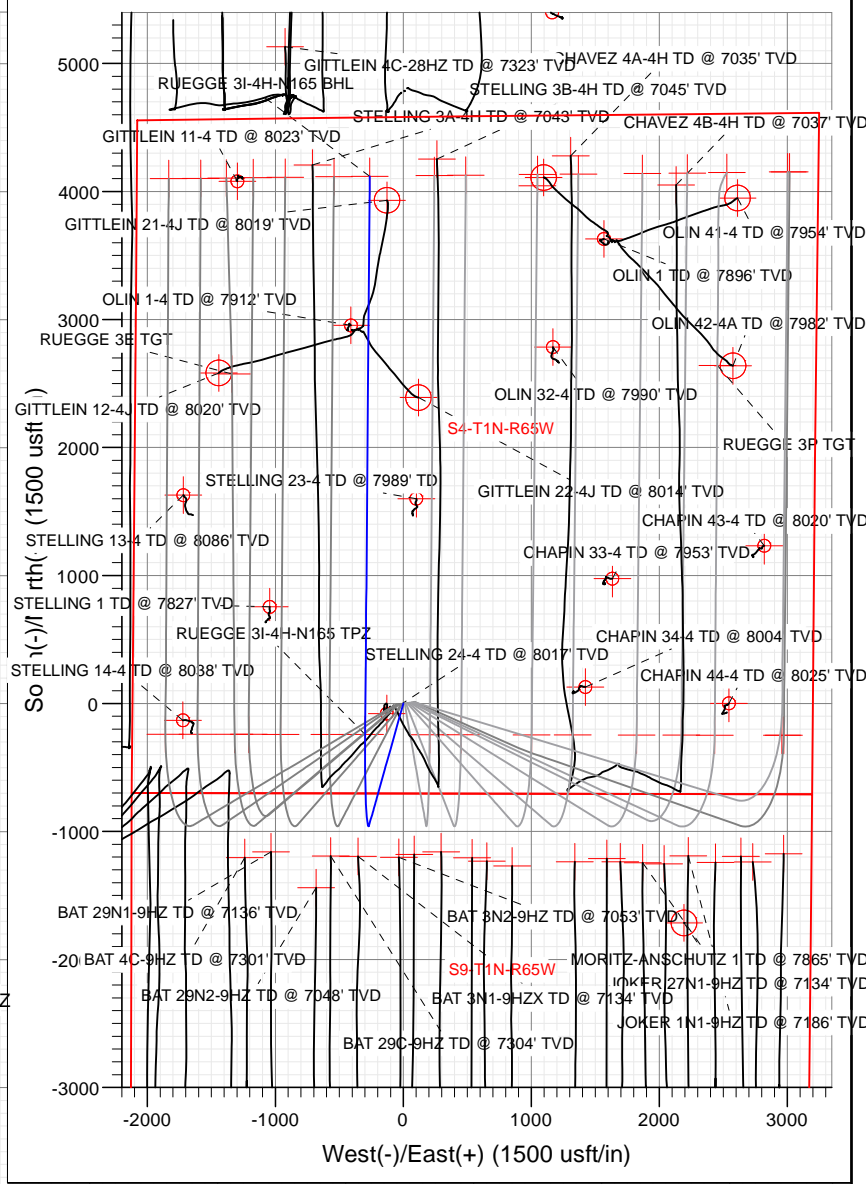
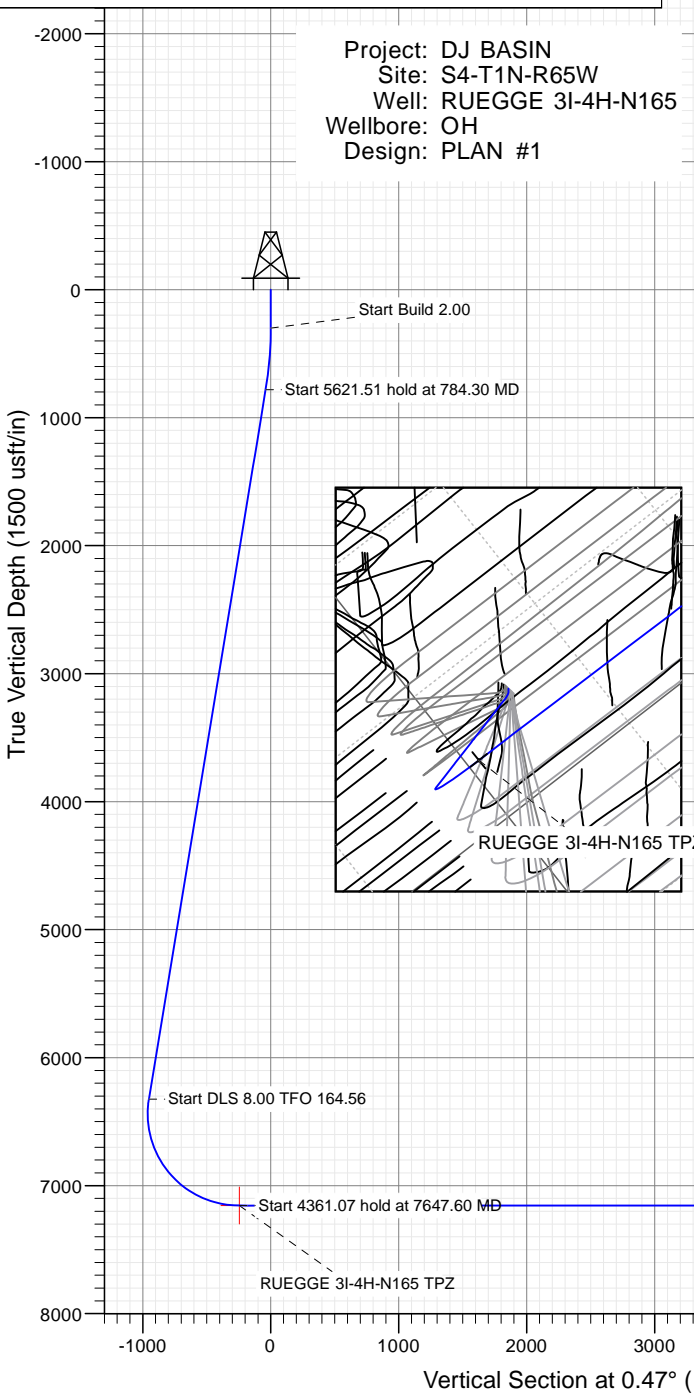
PLAN #1
 RUEGGGE 3I-4H-N165
 23' 1/2" @ 4930.00ast
 Ground Level @ 4916.00
 North American Datum 1983
 Well RUEGGGE 3I-4H-N165 - Slot RUEGGGE 3I-4H-N165 SHL, True North

Type	Target	Asimuth	Origin	Type	N/S	E/W	From	TVD
User	No Target (Freehand)	0.47	Slot	0.00	0.00	0.00	0.00	0.00

Name
 RUEGGGE 3I-4H-N165 BHL
 RUEGGGE 3I-4H-N165 TPZ

TVD	+N/-S	+E/-W	Latitude	Longitude
7155.00	4118.07	-262.44	40.086554	-104.671782
7155.00	-242.85	-298.47	40.074582	-104.671911

Project: DJ BASIN
 Site: S4-T1N-R65W
 Well: RUEGGGE 3I-4H-N165
 Wellbore: OH
 Design: PLAN #1



T M
 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: RUEGGGE 3I-4H-N165

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1271343.05	3232031.22	40.075249	-104.671782	RUEGGGE 3I-4H-N165 SHL

4916.00

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well RUEGGE 3I-4H-N165 - Slot RUEGGE 3I-4H
Company: Crestone Peak Resources	TVD Reference: 23' KB @ 4939.00usft
Project: DJ BASIN	MD Reference: 23' KB @ 4939.00usft
Site: S4-T1N-R65W	North Reference: True
Well: RUEGGE 3I-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 3I-4H-N165 - Slot RUEGGE 3I-4H-N165 SHL					
Well Position	+N/-S	0.00 usft	Northing:	1,271,343.05 usft	Latitude: 40.075249
	+E/-W	0.00 usft	Easting:	3,232,031.22 usft	Longitude: -104.670844
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level: 4,916.00 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	0.47

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
784.30	9.69	195.70	782.00	-39.31	-11.05	2.00	2.00	0.00	195.70	
6,405.81	9.69	195.70	6,323.37	-949.83	-267.03	0.00	0.00	0.00	0.00	
7,647.60	90.00	0.47	7,155.00	-242.85	-298.47	8.00	6.47	13.27	164.56	RUEGGE 3I-4H-N165
12,008.66	90.00	0.47	7,155.00	4,118.07	-262.44	0.00	0.00	0.00	0.00	RUEGGE 3I-4H-N165

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3I-4H-N165 - Slot RUEGGE 3I-4H
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4939.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4939.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3I-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	2.00	195.70	399.98	-1.68	-0.47	-1.68	2.00	2.00	
500.00	4.00	195.70	499.84	-6.72	-1.89	-6.73	2.00	2.00	
600.00	6.00	195.70	599.45	-15.11	-4.25	-15.14	2.00	2.00	
700.00	8.00	195.70	698.70	-26.84	-7.55	-26.90	2.00	2.00	
784.30	9.69	195.70	782.00	-39.31	-11.05	-39.40	2.00	2.00	
800.00	9.69	195.70	797.47	-41.86	-11.77	-41.95	0.00	0.00	
900.00	9.69	195.70	896.05	-58.05	-16.32	-58.19	0.00	0.00	
1,000.00	9.69	195.70	994.62	-74.25	-20.87	-74.42	0.00	0.00	
1,100.00	9.69	195.70	1,093.20	-90.45	-25.43	-90.65	0.00	0.00	
1,200.00	9.69	195.70	1,191.77	-106.65	-29.98	-106.89	0.00	0.00	
1,300.00	9.69	195.70	1,290.34	-122.84	-34.54	-123.12	0.00	0.00	
1,400.00	9.69	195.70	1,388.92	-139.04	-39.09	-139.36	0.00	0.00	
1,500.00	9.69	195.70	1,487.49	-155.24	-43.64	-155.59	0.00	0.00	
1,600.00	9.69	195.70	1,586.07	-171.43	-48.20	-171.82	0.00	0.00	
1,700.00	9.69	195.70	1,684.64	-187.63	-52.75	-188.06	0.00	0.00	
1,800.00	9.69	195.70	1,783.22	-203.83	-57.30	-204.29	0.00	0.00	
1,900.00	9.69	195.70	1,881.79	-220.02	-61.86	-220.52	0.00	0.00	
2,000.00	9.69	195.70	1,980.37	-236.22	-66.41	-236.76	0.00	0.00	
2,100.00	9.69	195.70	2,078.94	-252.42	-70.96	-252.99	0.00	0.00	
2,200.00	9.69	195.70	2,177.52	-268.62	-75.52	-269.23	0.00	0.00	
2,300.00	9.69	195.70	2,276.09	-284.81	-80.07	-285.46	0.00	0.00	
2,400.00	9.69	195.70	2,374.66	-301.01	-84.62	-301.69	0.00	0.00	
2,500.00	9.69	195.70	2,473.24	-317.21	-89.18	-317.93	0.00	0.00	
2,600.00	9.69	195.70	2,571.81	-333.40	-93.73	-334.16	0.00	0.00	
2,700.00	9.69	195.70	2,670.39	-349.60	-98.28	-350.39	0.00	0.00	
2,800.00	9.69	195.70	2,768.96	-365.80	-102.84	-366.63	0.00	0.00	
2,900.00	9.69	195.70	2,867.54	-381.99	-107.39	-382.86	0.00	0.00	
3,000.00	9.69	195.70	2,966.11	-398.19	-111.94	-399.10	0.00	0.00	
3,100.00	9.69	195.70	3,064.69	-414.39	-116.50	-415.33	0.00	0.00	
3,200.00	9.69	195.70	3,163.26	-430.58	-121.05	-431.56	0.00	0.00	
3,300.00	9.69	195.70	3,261.83	-446.78	-125.61	-447.80	0.00	0.00	
3,400.00	9.69	195.70	3,360.41	-462.98	-130.16	-464.03	0.00	0.00	
3,500.00	9.69	195.70	3,458.98	-479.18	-134.71	-480.26	0.00	0.00	
3,600.00	9.69	195.70	3,557.56	-495.37	-139.27	-496.50	0.00	0.00	
3,700.00	9.69	195.70	3,656.13	-511.57	-143.82	-512.73	0.00	0.00	
3,800.00	9.69	195.70	3,754.71	-527.77	-148.37	-528.97	0.00	0.00	
3,900.00	9.69	195.70	3,853.28	-543.96	-152.93	-545.20	0.00	0.00	
4,000.00	9.69	195.70	3,951.86	-560.16	-157.48	-561.43	0.00	0.00	
4,100.00	9.69	195.70	4,050.43	-576.36	-162.03	-577.67	0.00	0.00	
4,200.00	9.69	195.70	4,149.00	-592.55	-166.59	-593.90	0.00	0.00	
4,300.00	9.69	195.70	4,247.58	-608.75	-171.14	-610.14	0.00	0.00	
4,400.00	9.69	195.70	4,346.15	-624.95	-175.69	-626.37	0.00	0.00	
4,500.00	9.69	195.70	4,444.73	-641.15	-180.25	-642.60	0.00	0.00	
4,600.00	9.69	195.70	4,543.30	-657.34	-184.80	-658.84	0.00	0.00	
4,700.00	9.69	195.70	4,641.88	-673.54	-189.35	-675.07	0.00	0.00	
4,800.00	9.69	195.70	4,740.45	-689.74	-193.91	-691.30	0.00	0.00	
4,900.00	9.69	195.70	4,839.03	-705.93	-198.46	-707.54	0.00	0.00	
5,000.00	9.69	195.70	4,937.60	-722.13	-203.02	-723.77	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3I-4H-N165 - Slot RUEGGE 3I-4H
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4939.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4939.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3I-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	9.69	195.70	5,036.17	-738.33	-207.57	-740.01	0.00	0.00	
5,200.00	9.69	195.70	5,134.75	-754.52	-212.12	-756.24	0.00	0.00	
5,300.00	9.69	195.70	5,233.32	-770.72	-216.68	-772.47	0.00	0.00	
5,400.00	9.69	195.70	5,331.90	-786.92	-221.23	-788.71	0.00	0.00	
5,500.00	9.69	195.70	5,430.47	-803.12	-225.78	-804.94	0.00	0.00	
5,600.00	9.69	195.70	5,529.05	-819.31	-230.34	-821.17	0.00	0.00	
5,700.00	9.69	195.70	5,627.62	-835.51	-234.89	-837.41	0.00	0.00	
5,800.00	9.69	195.70	5,726.20	-851.71	-239.44	-853.64	0.00	0.00	
5,900.00	9.69	195.70	5,824.77	-867.90	-244.00	-869.88	0.00	0.00	
6,000.00	9.69	195.70	5,923.34	-884.10	-248.55	-886.11	0.00	0.00	
6,100.00	9.69	195.70	6,021.92	-900.30	-253.10	-902.34	0.00	0.00	
6,200.00	9.69	195.70	6,120.49	-916.49	-257.66	-918.58	0.00	0.00	
6,300.00	9.69	195.70	6,219.07	-932.69	-262.21	-934.81	0.00	0.00	
6,400.00	9.69	195.70	6,317.64	-948.89	-266.76	-951.04	0.00	0.00	
6,405.81	9.69	195.70	6,323.37	-949.83	-267.03	-951.99	0.00	0.00	
6,500.00	3.14	235.30	6,416.95	-958.94	-271.30	-961.13	8.00	-6.95	
6,600.00	6.70	338.04	6,516.70	-955.08	-275.74	-957.31	8.00	3.56	
6,700.00	14.42	350.43	6,614.94	-937.36	-280.00	-939.63	8.00	7.72	
6,800.00	22.33	354.21	6,709.77	-906.13	-283.99	-908.43	8.00	7.91	
6,900.00	30.29	356.07	6,799.34	-862.00	-287.64	-864.33	8.00	7.96	
7,000.00	38.27	357.21	6,881.90	-805.82	-290.88	-808.18	8.00	7.97	
7,100.00	46.25	358.01	6,955.86	-738.69	-293.64	-741.07	8.00	7.98	
7,200.00	54.23	358.62	7,019.76	-661.91	-295.87	-664.31	8.00	7.99	
7,300.00	62.22	359.12	7,072.38	-576.98	-297.53	-579.40	8.00	7.99	
7,400.00	70.21	359.55	7,112.67	-485.55	-298.58	-487.98	8.00	7.99	
7,500.00	78.20	359.94	7,139.86	-389.40	-299.01	-391.84	8.00	7.99	
7,600.00	86.20	0.30	7,153.42	-290.41	-298.80	-292.85	8.00	7.99	
7,647.60	90.00	0.47	7,155.00	-242.85	-298.47	-245.29	8.00	7.99	
7,700.00	90.00	0.47	7,155.00	-190.45	-298.04	-192.88	0.00	0.00	
7,800.00	90.00	0.47	7,155.00	-90.45	-297.21	-92.88	0.00	0.00	
7,900.00	90.00	0.47	7,155.00	9.55	-296.39	7.12	0.00	0.00	
8,000.00	90.00	0.47	7,155.00	109.54	-295.56	107.12	0.00	0.00	
8,100.00	90.00	0.47	7,155.00	209.54	-294.74	207.12	0.00	0.00	
8,200.00	90.00	0.47	7,155.00	309.54	-293.91	307.12	0.00	0.00	
8,300.00	90.00	0.47	7,155.00	409.53	-293.08	407.12	0.00	0.00	
8,400.00	90.00	0.47	7,155.00	509.53	-292.26	507.12	0.00	0.00	
8,500.00	90.00	0.47	7,155.00	609.53	-291.43	607.12	0.00	0.00	
8,600.00	90.00	0.47	7,155.00	709.52	-290.60	707.12	0.00	0.00	
8,700.00	90.00	0.47	7,155.00	809.52	-289.78	807.12	0.00	0.00	
8,800.00	90.00	0.47	7,155.00	909.52	-288.95	907.12	0.00	0.00	
8,900.00	90.00	0.47	7,155.00	1,009.51	-288.12	1,007.12	0.00	0.00	
9,000.00	90.00	0.47	7,155.00	1,109.51	-287.30	1,107.12	0.00	0.00	
9,100.00	90.00	0.47	7,155.00	1,209.51	-286.47	1,207.12	0.00	0.00	
9,200.00	90.00	0.47	7,155.00	1,309.50	-285.65	1,307.12	0.00	0.00	
9,300.00	90.00	0.47	7,155.00	1,409.50	-284.82	1,407.12	0.00	0.00	
9,400.00	90.00	0.47	7,155.00	1,509.50	-283.99	1,507.12	0.00	0.00	
9,500.00	90.00	0.47	7,155.00	1,609.49	-283.17	1,607.12	0.00	0.00	
9,600.00	90.00	0.47	7,155.00	1,709.49	-282.34	1,707.12	0.00	0.00	
9,700.00	90.00	0.47	7,155.00	1,809.49	-281.51	1,807.12	0.00	0.00	
9,800.00	90.00	0.47	7,155.00	1,909.48	-280.69	1,907.12	0.00	0.00	
9,900.00	90.00	0.47	7,155.00	2,009.48	-279.86	2,007.12	0.00	0.00	
10,000.00	90.00	0.47	7,155.00	2,109.48	-279.04	2,107.12	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RUEGGE 3I-4H-N165 - Slot RUEGGE 3I-4H
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 4939.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 4939.00usft
Site:	S4-T1N-R65W	North Reference:	True
Well:	RUEGGE 3I-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
10,100.00	90.00	0.47	7,155.00	2,209.47	-278.21	2,207.12	0.00	0.00	
10,200.00	90.00	0.47	7,155.00	2,309.47	-277.38	2,307.12	0.00	0.00	
10,300.00	90.00	0.47	7,155.00	2,409.46	-276.56	2,407.12	0.00	0.00	
10,400.00	90.00	0.47	7,155.00	2,509.46	-275.73	2,507.12	0.00	0.00	
10,500.00	90.00	0.47	7,155.00	2,609.46	-274.90	2,607.12	0.00	0.00	
10,600.00	90.00	0.47	7,155.00	2,709.45	-274.08	2,707.12	0.00	0.00	
10,700.00	90.00	0.47	7,155.00	2,809.45	-273.25	2,807.12	0.00	0.00	
10,800.00	90.00	0.47	7,155.00	2,909.45	-272.42	2,907.12	0.00	0.00	
10,900.00	90.00	0.47	7,155.00	3,009.44	-271.60	3,007.12	0.00	0.00	
11,000.00	90.00	0.47	7,155.00	3,109.44	-270.77	3,107.12	0.00	0.00	
11,100.00	90.00	0.47	7,155.00	3,209.44	-269.95	3,207.12	0.00	0.00	
11,200.00	90.00	0.47	7,155.00	3,309.43	-269.12	3,307.12	0.00	0.00	
11,300.00	90.00	0.47	7,155.00	3,409.43	-268.29	3,407.12	0.00	0.00	
11,400.00	90.00	0.47	7,155.00	3,509.43	-267.47	3,507.12	0.00	0.00	
11,500.00	90.00	0.47	7,155.00	3,609.42	-266.64	3,607.12	0.00	0.00	
11,600.00	90.00	0.47	7,155.00	3,709.42	-265.81	3,707.12	0.00	0.00	
11,700.00	90.00	0.47	7,155.00	3,809.42	-264.99	3,807.12	0.00	0.00	
11,800.00	90.00	0.47	7,155.00	3,909.41	-264.16	3,907.12	0.00	0.00	
11,900.00	90.00	0.47	7,155.00	4,009.41	-263.33	4,007.12	0.00	0.00	
12,000.00	90.00	0.47	7,155.00	4,109.41	-262.51	4,107.12	0.00	0.00	
12,008.66	90.00	0.47	7,155.00	4,118.07	-262.44	4,115.78	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
RUEGGE 3I-4H-N165 B - hit/miss target - Shape - Point	0.00	0.00	7,155.00	4,118.07	-262.44	1,275,458.49	3,231,730.29	40.086554	-104.671782
RUEGGE 3I-4H-N165 T - plan hits target center - Point	0.00	0.00	7,155.00	-242.85	-298.47	1,271,097.43	3,231,735.03	40.074582	-104.671911