



CRESTONE PEAK
RESOURCES

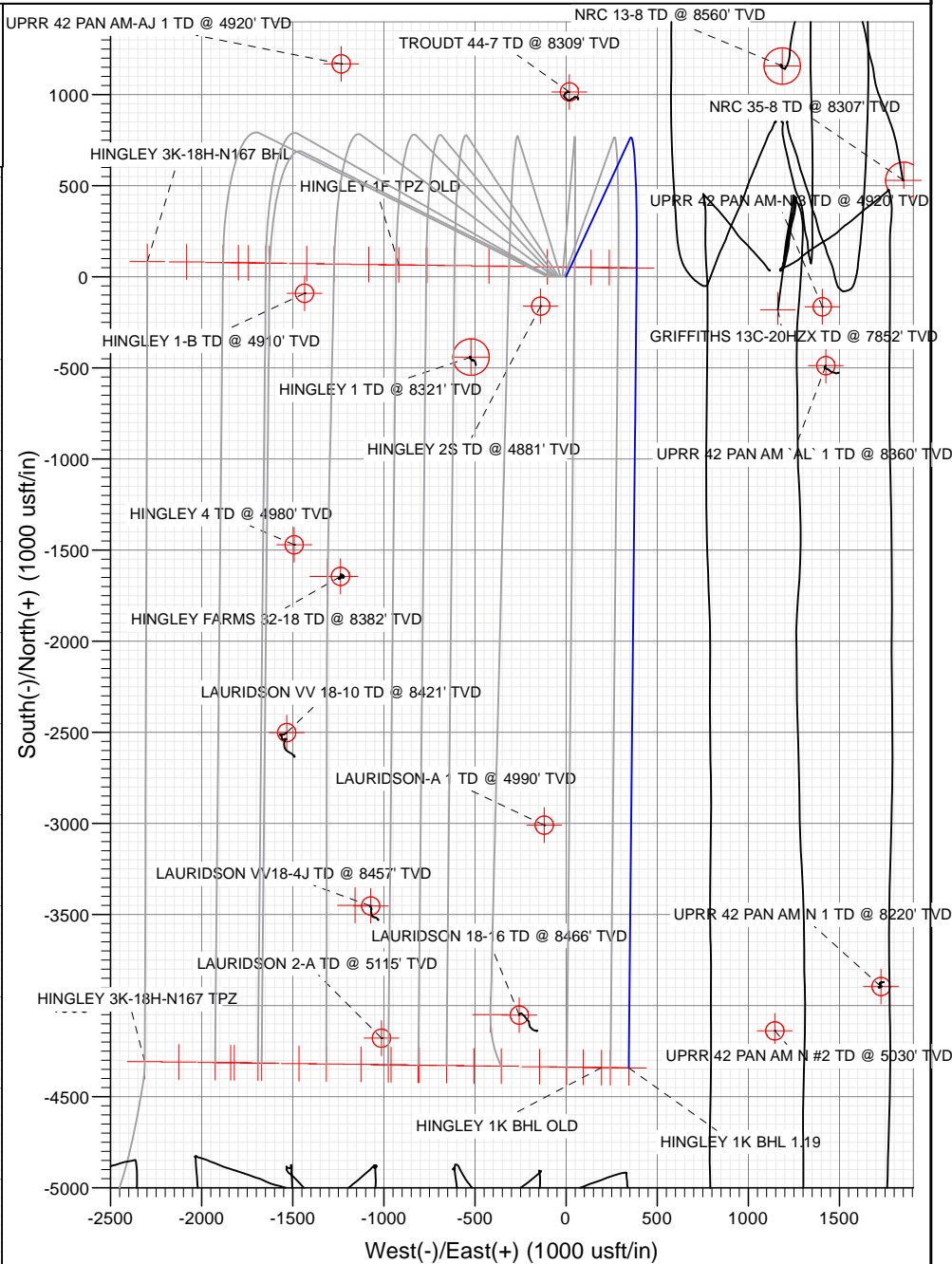
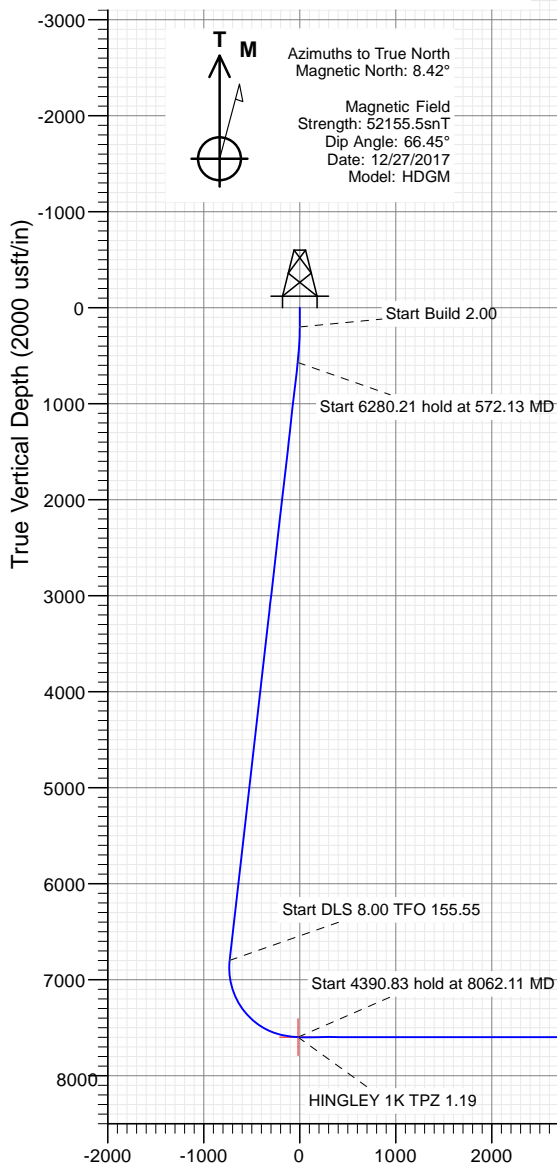
SECTION DETAILS

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	572.13	7.44	24.84	571.09	21.90	10.14	2.00	24.84	-21.03	
4	6852.34	7.44	24.84	6798.38	760.15	351.85	0.00	0.00	-729.97	
5	8062.11	90.00	180.57	7598.00	48.57	387.72	8.00	155.55	-17.79	HINGLEY 1K TPZ 1.19
6	12452.94	90.00	180.57	7598.00	-4342.05	344.12	0.00	0.00	4355.66	HINGLEY 1K BHL 1.19

PLAN #2
HINGLEY 1K-18H-A167
23 KB @ 5081.00usft
Ground Level @ 5098.00
North American Datum 1983
Well HINGLEY 1K-18H-A167 - Slot Hingley 1K-18H-A167 SHL True North

Type	Target	No Target (Freehand)	Azimuth	Origin	Type	N/S	E/W	From	TVD
Name									
HINGLEY 1K BHL 1.19			7598.00	-4342.05	344.12	40.045096	-104.925586		
HINGLEY 1K BHL OLD			7598.00	-4340.23	194.05	40.045091	-104.925122		
HINGLEY 1K TPZ 1.19			7598.00	48.57	387.72	40.057139	-104.924430		
HINGLEY 1K TPZ OLD			7598.00	50.39	237.69	40.057144	-104.924866		

Project: DJ BASIN
Site: S18-T1N-R67W (HINGLEY)
Well: HINGLEY 1K-18H-A167
Wellbore: OH
Design: PLAN #2



Vertical Section at 175.47° (2000 usft/in)

WELL DETAILS: HINGLEY 1K-18H-A167

+N/-S	+E/-W	North	East	5058.00	Latitude	Longitude
0.00	0.00	1264132.93	3160724.37		40.057006	-104.925815

CATHEDRAL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1K-18H-A167 - Slot Hingley 1K-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5081.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5081.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1K-18H-A167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

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		S18-T1N-R67W (HINGLEY)			
Site Position:		Northing:	1,257,176.93 usft	Latitude:	40.038044
From:	Lat/Long	Easting:	3,153,030.55 usft	Longitude:	-104.953454
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.35 °

Well	HINGLEY 1K-18H-A167 - Slot Hingley 1K-18H-A167 SHL					
Well Position	+N/-S	0.00 usft	Northing:	1,264,132.93 usft	Latitude:	40.057006
	+E/-W	0.00 usft	Easting:	3,160,724.37 usft	Longitude:	-104.925815
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,058.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	12/27/2017	8.42	66.45	52,155.50000000

Design	PLAN #2			
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	175.47

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
572.13	7.44	24.84	571.09	21.90	10.14	2.00	2.00	0.00	24.84	
6,852.34	7.44	24.84	6,798.38	760.15	351.85	0.00	0.00	0.00	0.00	
8,062.11	90.00	180.57	7,598.00	48.57	387.72	8.00	6.82	12.87	155.55	HINGLEY 1K TPZ 1.1
12,452.94	90.00	180.57	7,598.00	-4,342.05	344.12	0.00	0.00	0.00	0.00	HINGLEY 1K BHL 1.1

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1K-18H-A167 - Slot Hingley 1K-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5081.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5081.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1K-18H-A167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

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	24.84	299.98	1.58	0.73	-1.52	2.00	2.00	
400.00	4.00	24.84	399.84	6.33	2.93	-6.08	2.00	2.00	
500.00	6.00	24.84	499.45	14.24	6.59	-13.68	2.00	2.00	
572.13	7.44	24.84	571.09	21.90	10.14	-21.03	2.00	2.00	
600.00	7.44	24.84	598.72	25.18	11.65	-24.18	0.00	0.00	
700.00	7.44	24.84	697.88	36.93	17.10	-35.47	0.00	0.00	
800.00	7.44	24.84	797.03	48.69	22.54	-46.76	0.00	0.00	
900.00	7.44	24.84	896.19	60.44	27.98	-58.05	0.00	0.00	
1,000.00	7.44	24.84	995.35	72.20	33.42	-69.33	0.00	0.00	
1,100.00	7.44	24.84	1,094.51	83.95	38.86	-80.62	0.00	0.00	
1,200.00	7.44	24.84	1,193.66	95.71	44.30	-91.91	0.00	0.00	
1,300.00	7.44	24.84	1,292.82	107.46	49.74	-103.20	0.00	0.00	
1,400.00	7.44	24.84	1,391.98	119.22	55.18	-114.49	0.00	0.00	
1,500.00	7.44	24.84	1,491.14	130.98	60.63	-125.78	0.00	0.00	
1,600.00	7.44	24.84	1,590.29	142.73	66.07	-137.06	0.00	0.00	
1,700.00	7.44	24.84	1,689.45	154.49	71.51	-148.35	0.00	0.00	
1,800.00	7.44	24.84	1,788.61	166.24	76.95	-159.64	0.00	0.00	
1,900.00	7.44	24.84	1,887.77	178.00	82.39	-170.93	0.00	0.00	
2,000.00	7.44	24.84	1,986.92	189.75	87.83	-182.22	0.00	0.00	
2,100.00	7.44	24.84	2,086.08	201.51	93.27	-193.51	0.00	0.00	
2,200.00	7.44	24.84	2,185.24	213.26	98.71	-204.80	0.00	0.00	
2,300.00	7.44	24.84	2,284.40	225.02	104.15	-216.08	0.00	0.00	
2,400.00	7.44	24.84	2,383.55	236.77	109.60	-227.37	0.00	0.00	
2,500.00	7.44	24.84	2,482.71	248.53	115.04	-238.66	0.00	0.00	
2,600.00	7.44	24.84	2,581.87	260.28	120.48	-249.95	0.00	0.00	
2,700.00	7.44	24.84	2,681.03	272.04	125.92	-261.24	0.00	0.00	
2,800.00	7.44	24.84	2,780.18	283.79	131.36	-272.53	0.00	0.00	
2,900.00	7.44	24.84	2,879.34	295.55	136.80	-283.81	0.00	0.00	
3,000.00	7.44	24.84	2,978.50	307.30	142.24	-295.10	0.00	0.00	
3,100.00	7.44	24.84	3,077.66	319.06	147.68	-306.39	0.00	0.00	
3,200.00	7.44	24.84	3,176.81	330.81	153.12	-317.68	0.00	0.00	
3,300.00	7.44	24.84	3,275.97	342.57	158.57	-328.97	0.00	0.00	
3,400.00	7.44	24.84	3,375.13	354.32	164.01	-340.26	0.00	0.00	
3,500.00	7.44	24.84	3,474.29	366.08	169.45	-351.55	0.00	0.00	
3,600.00	7.44	24.84	3,573.44	377.83	174.89	-362.83	0.00	0.00	
3,700.00	7.44	24.84	3,672.60	389.59	180.33	-374.12	0.00	0.00	
3,800.00	7.44	24.84	3,771.76	401.34	185.77	-385.41	0.00	0.00	
3,900.00	7.44	24.84	3,870.92	413.10	191.21	-396.70	0.00	0.00	
4,000.00	7.44	24.84	3,970.07	424.85	196.65	-407.99	0.00	0.00	
4,100.00	7.44	24.84	4,069.23	436.61	202.09	-419.28	0.00	0.00	
4,200.00	7.44	24.84	4,168.39	448.36	207.54	-430.57	0.00	0.00	
4,300.00	7.44	24.84	4,267.55	460.12	212.98	-441.85	0.00	0.00	
4,400.00	7.44	24.84	4,366.70	471.87	218.42	-453.14	0.00	0.00	
4,500.00	7.44	24.84	4,465.86	483.63	223.86	-464.43	0.00	0.00	
4,600.00	7.44	24.84	4,565.02	495.38	229.30	-475.72	0.00	0.00	
4,700.00	7.44	24.84	4,664.18	507.14	234.74	-487.01	0.00	0.00	
4,800.00	7.44	24.84	4,763.33	518.89	240.18	-498.30	0.00	0.00	
4,900.00	7.44	24.84	4,862.49	530.65	245.62	-509.58	0.00	0.00	
5,000.00	7.44	24.84	4,961.65	542.40	251.07	-520.87	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5081.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5081.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1K-18H-A167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

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	7.44	24.84	5,060.81	554.16	256.51	-532.16	0.00	0.00	
5,200.00	7.44	24.84	5,159.96	565.91	261.95	-543.45	0.00	0.00	
5,300.00	7.44	24.84	5,259.12	577.67	267.39	-554.74	0.00	0.00	
5,400.00	7.44	24.84	5,358.28	589.42	272.83	-566.03	0.00	0.00	
5,500.00	7.44	24.84	5,457.44	601.18	278.27	-577.32	0.00	0.00	
5,600.00	7.44	24.84	5,556.59	612.93	283.71	-588.60	0.00	0.00	
5,700.00	7.44	24.84	5,655.75	624.69	289.15	-599.89	0.00	0.00	
5,800.00	7.44	24.84	5,754.91	636.44	294.59	-611.18	0.00	0.00	
5,900.00	7.44	24.84	5,854.07	648.20	300.04	-622.47	0.00	0.00	
6,000.00	7.44	24.84	5,953.22	659.96	305.48	-633.76	0.00	0.00	
6,100.00	7.44	24.84	6,052.38	671.71	310.92	-645.05	0.00	0.00	
6,200.00	7.44	24.84	6,151.54	683.47	316.36	-656.34	0.00	0.00	
6,300.00	7.44	24.84	6,250.70	695.22	321.80	-667.62	0.00	0.00	
6,400.00	7.44	24.84	6,349.85	706.98	327.24	-678.91	0.00	0.00	
6,500.00	7.44	24.84	6,449.01	718.73	332.68	-690.20	0.00	0.00	
6,600.00	7.44	24.84	6,548.17	730.49	338.12	-701.49	0.00	0.00	
6,700.00	7.44	24.84	6,647.33	742.24	343.56	-712.78	0.00	0.00	
6,800.00	7.44	24.84	6,746.49	754.00	349.01	-724.07	0.00	0.00	
6,852.34	7.44	24.84	6,798.38	760.15	351.85	-729.97	0.00	0.00	
6,900.00	4.27	46.52	6,845.79	764.17	354.44	-733.78	8.00	-6.65	
7,000.00	5.89	149.23	6,945.55	762.32	359.78	-731.51	8.00	1.62	
7,100.00	13.38	167.53	7,044.09	746.58	364.91	-715.42	8.00	7.49	
7,200.00	21.24	172.63	7,139.49	717.27	369.74	-685.82	8.00	7.86	
7,300.00	29.18	175.05	7,229.89	674.95	374.18	-643.28	8.00	7.93	
7,400.00	37.14	176.50	7,313.54	620.44	378.13	-588.63	8.00	7.96	
7,500.00	45.11	177.50	7,388.81	554.81	381.52	-522.93	8.00	7.97	
7,600.00	53.09	178.26	7,454.23	479.33	384.28	-447.47	8.00	7.98	
7,700.00	61.08	178.87	7,508.52	395.48	386.36	-363.72	8.00	7.98	
7,800.00	69.06	179.39	7,550.64	304.88	387.73	-273.29	8.00	7.99	
7,900.00	77.05	179.86	7,579.76	209.30	388.34	-177.97	8.00	7.99	
8,000.00	85.04	180.30	7,595.31	110.60	388.19	-79.58	8.00	7.99	
8,062.11	90.00	180.57	7,598.00	48.57	387.72	-17.79	8.00	7.99	
8,100.00	90.00	180.57	7,598.00	10.68	387.35	19.95	0.00	0.00	
8,200.00	90.00	180.57	7,598.00	-89.31	386.35	119.56	0.00	0.00	
8,300.00	90.00	180.57	7,598.00	-189.31	385.36	219.16	0.00	0.00	
8,400.00	90.00	180.57	7,598.00	-289.30	384.37	318.77	0.00	0.00	
8,500.00	90.00	180.57	7,598.00	-389.30	383.37	418.37	0.00	0.00	
8,600.00	90.00	180.57	7,598.00	-489.29	382.38	517.97	0.00	0.00	
8,700.00	90.00	180.57	7,598.00	-589.29	381.39	617.58	0.00	0.00	
8,800.00	90.00	180.57	7,598.00	-689.28	380.39	717.18	0.00	0.00	
8,900.00	90.00	180.57	7,598.00	-789.28	379.40	816.79	0.00	0.00	
9,000.00	90.00	180.57	7,598.00	-889.27	378.41	916.39	0.00	0.00	
9,100.00	90.00	180.57	7,598.00	-989.27	377.42	1,015.99	0.00	0.00	
9,200.00	90.00	180.57	7,598.00	-1,089.26	376.42	1,115.60	0.00	0.00	
9,300.00	90.00	180.57	7,598.00	-1,189.26	375.43	1,215.20	0.00	0.00	
9,400.00	90.00	180.57	7,598.00	-1,289.25	374.44	1,314.81	0.00	0.00	
9,500.00	90.00	180.57	7,598.00	-1,389.25	373.44	1,414.41	0.00	0.00	
9,600.00	90.00	180.57	7,598.00	-1,489.24	372.45	1,514.02	0.00	0.00	
9,700.00	90.00	180.57	7,598.00	-1,589.24	371.46	1,613.62	0.00	0.00	
9,800.00	90.00	180.57	7,598.00	-1,689.24	370.46	1,713.22	0.00	0.00	
9,900.00	90.00	180.57	7,598.00	-1,789.23	369.47	1,812.83	0.00	0.00	
10,000.00	90.00	180.57	7,598.00	-1,889.23	368.48	1,912.43	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 1K-18H-A167 - Slot Hingley 1K-1
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5081.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5081.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 1K-18H-A167	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #2		

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	180.57	7,598.00	-1,989.22	367.48	2,012.04	0.00	0.00	
10,200.00	90.00	180.57	7,598.00	-2,089.22	366.49	2,111.64	0.00	0.00	
10,300.00	90.00	180.57	7,598.00	-2,189.21	365.50	2,211.24	0.00	0.00	
10,400.00	90.00	180.57	7,598.00	-2,289.21	364.50	2,310.85	0.00	0.00	
10,500.00	90.00	180.57	7,598.00	-2,389.20	363.51	2,410.45	0.00	0.00	
10,600.00	90.00	180.57	7,598.00	-2,489.20	362.52	2,510.06	0.00	0.00	
10,700.00	90.00	180.57	7,598.00	-2,589.19	361.53	2,609.66	0.00	0.00	
10,800.00	90.00	180.57	7,598.00	-2,689.19	360.53	2,709.26	0.00	0.00	
10,900.00	90.00	180.57	7,598.00	-2,789.18	359.54	2,808.87	0.00	0.00	
11,000.00	90.00	180.57	7,598.00	-2,889.18	358.55	2,908.47	0.00	0.00	
11,100.00	90.00	180.57	7,598.00	-2,989.17	357.55	3,008.08	0.00	0.00	
11,200.00	90.00	180.57	7,598.00	-3,089.17	356.56	3,107.68	0.00	0.00	
11,300.00	90.00	180.57	7,598.00	-3,189.16	355.57	3,207.28	0.00	0.00	
11,400.00	90.00	180.57	7,598.00	-3,289.16	354.57	3,306.89	0.00	0.00	
11,500.00	90.00	180.57	7,598.00	-3,389.15	353.58	3,406.49	0.00	0.00	
11,600.00	90.00	180.57	7,598.00	-3,489.15	352.59	3,506.10	0.00	0.00	
11,700.00	90.00	180.57	7,598.00	-3,589.14	351.59	3,605.70	0.00	0.00	
11,800.00	90.00	180.57	7,598.00	-3,689.14	350.60	3,705.30	0.00	0.00	
11,900.00	90.00	180.57	7,598.00	-3,789.13	349.61	3,804.91	0.00	0.00	
12,000.00	90.00	180.57	7,598.00	-3,889.13	348.61	3,904.51	0.00	0.00	
12,100.00	90.00	180.57	7,598.00	-3,989.12	347.62	4,004.12	0.00	0.00	
12,200.00	90.00	180.57	7,598.00	-4,089.12	346.63	4,103.72	0.00	0.00	
12,300.00	90.00	180.57	7,598.00	-4,189.11	345.64	4,203.32	0.00	0.00	
12,400.00	90.00	180.57	7,598.00	-4,289.11	344.64	4,302.93	0.00	0.00	
12,452.94	90.00	180.57	7,598.00	-4,342.05	344.12	4,355.66	0.00	0.00	

Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- Shape									
HINGLEY 1K TPZ 1.19 - plan hits target center - Point	0.00	0.00	7,598.00	48.57	387.72	1,264,184.01	3,161,111.77	40.057139	-104.924430
HINGLEY 1K BHL OLD - plan misses target center by 150.07usft at 12452.61usft MD (7598.00 TVD, -4341.72 N, 344.12 E) - Point	0.00	0.00	7,598.00	-4,340.23	194.05	1,259,794.05	3,160,946.52	40.045091	-104.925122
HINGLEY 1K TPZ OLD - plan misses target center by 150.05usft at 8061.43usft MD (7598.00 TVD, 49.25 N, 387.73 E) - Point	0.00	0.00	7,598.00	50.39	237.69	1,264,184.86	3,160,961.72	40.057144	-104.924966
HINGLEY 1K BHL 1.19 - plan hits target center - Point	0.00	0.00	7,598.00	-4,342.05	344.12	1,259,793.20	3,161,096.59	40.045086	-104.924586