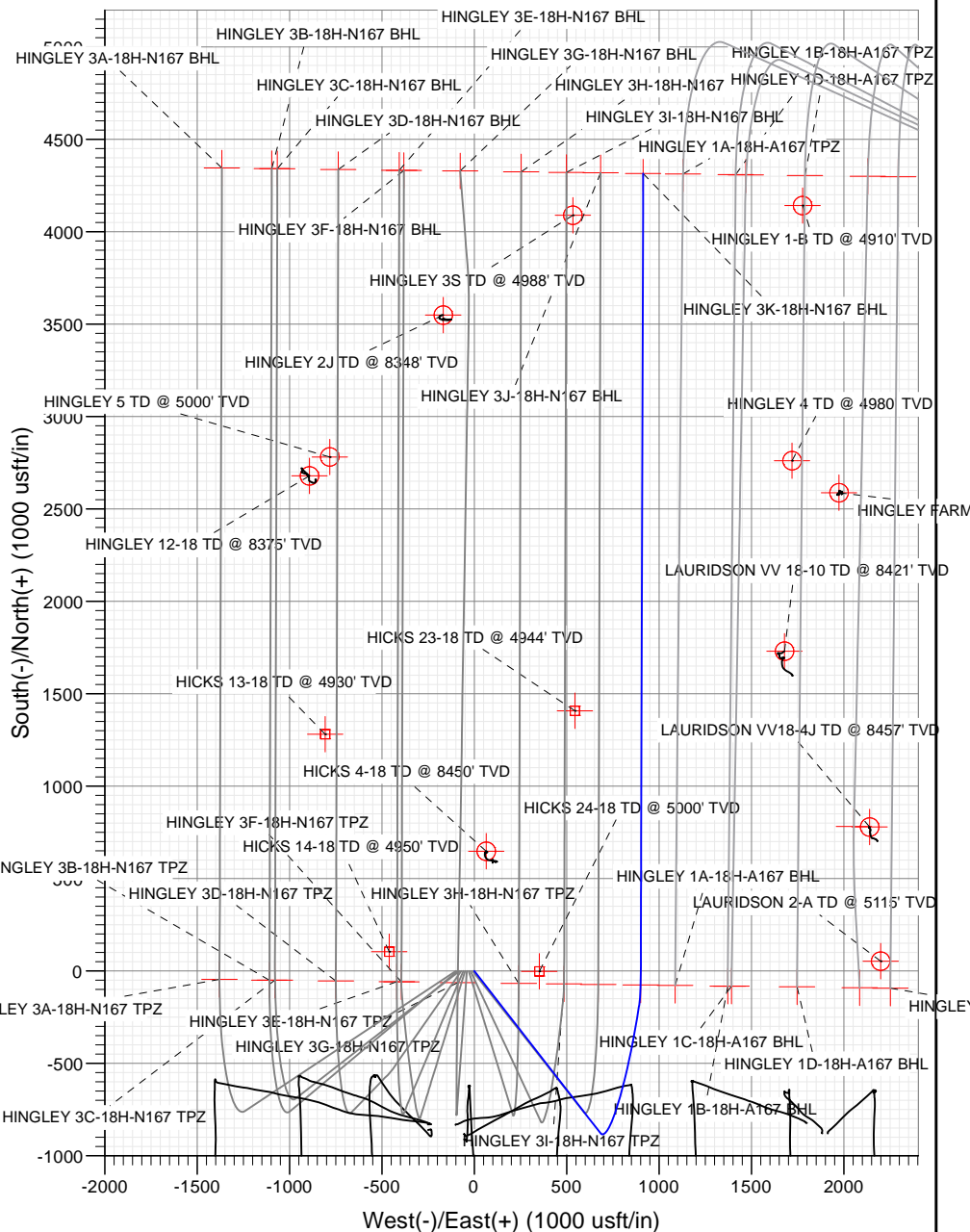




Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
3	642.50	9.85	142.10	640.08	-33.32	25.94	2.00	142.10	-27.23	
4	6891.50	9.85	142.10	6796.96	-876.86	682.62	0.00	0.00	-716.45	
5	8111.58	90.00	8.77	7598.00	-183.07	892.07	7.93	-132.90	5.68	
6	8220.04	90.00	0.17	7598.00	-75.05	900.52	7.93	-90.01	113.11	HINGLEY 3K-18H-N167 TPZ
7	12611.04	90.00	0.17	7598.00	4315.93	913.80	0.00	0.00	4411.61	HINGLEY 3K-18H-N167 BHL

Project: DJ BASIN
Site: S18-T1N-R67W (HINGLEY)
Well: HINGLEY 3K-18H-N167
Wellbore: OH
Design: PLAN #1



Vertical Section at 11.95° (2000 usft/in)



WELL DETAILS: HINGLEY 3K-18H-N167

5110.00					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1259880.05	3157539.95	40.045387	-104.887288



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3K-18H-N167 - Slot Hingley 3K-
Company:	Crestone Peak Resources	TVD Reference:	KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3K-18H-N167	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		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 3K-18H-N167 - Slot Hingley 3K-18H-N167 SHL					
Well Position	+N/-S	0.00 usft	Northing:	1,259,880.05 usft	Latitude:	40.045387
	+E/-W	0.00 usft	Easting:	3,157,539.95 usft	Longitude:	-104.937287
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	5,110.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/29/2017	8.40	66.43	52,141.00000000

Design	PLAN #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	11.95

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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	0.00	
642.50	9.85	142.10	640.08	-33.32	25.94	2.00	2.00	0.00	142.10	
6,891.50	9.85	142.10	6,796.96	-876.86	682.62	0.00	0.00	0.00	0.00	
8,111.58	90.00	8.77	7,598.00	-183.07	892.07	7.93	6.57	-10.93	-132.90	
8,220.04	90.00	0.17	7,598.00	-75.05	900.52	7.93	0.00	-7.93	-90.01	HINGLEY 3K-18H-N1
12,611.04	90.00	0.17	7,598.00	4,315.93	913.80	0.00	0.00	0.00	0.00	HINGLEY 3K-18H-N1

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3K-18H-N167 - Slot Hingley 3K-
Company:	Crestone Peak Resources	TVD Reference:	KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3K-18H-N167	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	
150.00	0.00	0.00	150.00	0.00	0.00	0.00	0.00	0.00	
200.00	1.00	142.10	200.00	-0.34	0.27	-0.28	2.00	2.00	
300.00	3.00	142.10	299.93	-3.10	2.41	-2.53	2.00	2.00	
400.00	5.00	142.10	399.68	-8.60	6.70	-7.03	2.00	2.00	
500.00	7.00	142.10	499.13	-16.85	13.12	-13.77	2.00	2.00	
600.00	9.00	142.10	598.15	-27.83	21.67	-22.74	2.00	2.00	
642.50	9.85	142.10	640.08	-33.32	25.94	-27.23	2.00	2.00	
700.00	9.85	142.10	696.73	-41.08	31.98	-33.57	0.00	0.00	
800.00	9.85	142.10	795.26	-54.58	42.49	-44.60	0.00	0.00	
900.00	9.85	142.10	893.78	-68.08	53.00	-55.63	0.00	0.00	
1,000.00	9.85	142.10	992.31	-81.58	63.51	-66.66	0.00	0.00	
1,100.00	9.85	142.10	1,090.83	-95.08	74.02	-77.69	0.00	0.00	
1,200.00	9.85	142.10	1,189.36	-108.58	84.53	-88.72	0.00	0.00	
1,300.00	9.85	142.10	1,287.89	-122.08	95.03	-99.75	0.00	0.00	
1,400.00	9.85	142.10	1,386.41	-135.58	105.54	-110.77	0.00	0.00	
1,500.00	9.85	142.10	1,484.94	-149.08	116.05	-121.80	0.00	0.00	
1,600.00	9.85	142.10	1,583.46	-162.57	126.56	-132.83	0.00	0.00	
1,700.00	9.85	142.10	1,681.99	-176.07	137.07	-143.86	0.00	0.00	
1,800.00	9.85	142.10	1,780.51	-189.57	147.58	-154.89	0.00	0.00	
1,900.00	9.85	142.10	1,879.04	-203.07	158.09	-165.92	0.00	0.00	
2,000.00	9.85	142.10	1,977.57	-216.57	168.59	-176.95	0.00	0.00	
2,100.00	9.85	142.10	2,076.09	-230.07	179.10	-187.98	0.00	0.00	
2,200.00	9.85	142.10	2,174.62	-243.57	189.61	-199.01	0.00	0.00	
2,300.00	9.85	142.10	2,273.14	-257.07	200.12	-210.04	0.00	0.00	
2,400.00	9.85	142.10	2,371.67	-270.56	210.63	-221.07	0.00	0.00	
2,500.00	9.85	142.10	2,470.20	-284.06	221.14	-232.10	0.00	0.00	
2,600.00	9.85	142.10	2,568.72	-297.56	231.65	-243.13	0.00	0.00	
2,700.00	9.85	142.10	2,667.25	-311.06	242.15	-254.16	0.00	0.00	
2,800.00	9.85	142.10	2,765.77	-324.56	252.66	-265.19	0.00	0.00	
2,900.00	9.85	142.10	2,864.30	-338.06	263.17	-276.22	0.00	0.00	
3,000.00	9.85	142.10	2,962.83	-351.56	273.68	-287.24	0.00	0.00	
3,100.00	9.85	142.10	3,061.35	-365.06	284.19	-298.27	0.00	0.00	
3,200.00	9.85	142.10	3,159.88	-378.56	294.70	-309.30	0.00	0.00	
3,300.00	9.85	142.10	3,258.40	-392.05	305.21	-320.33	0.00	0.00	
3,400.00	9.85	142.10	3,356.93	-405.55	315.71	-331.36	0.00	0.00	
3,500.00	9.85	142.10	3,455.46	-419.05	326.22	-342.39	0.00	0.00	
3,600.00	9.85	142.10	3,553.98	-432.55	336.73	-353.42	0.00	0.00	
3,700.00	9.85	142.10	3,652.51	-446.05	347.24	-364.45	0.00	0.00	
3,800.00	9.85	142.10	3,751.03	-459.55	357.75	-375.48	0.00	0.00	
3,900.00	9.85	142.10	3,849.56	-473.05	368.26	-386.51	0.00	0.00	
4,000.00	9.85	142.10	3,948.08	-486.55	378.77	-397.54	0.00	0.00	
4,100.00	9.85	142.10	4,046.61	-500.04	389.27	-408.57	0.00	0.00	
4,200.00	9.85	142.10	4,145.14	-513.54	399.78	-419.60	0.00	0.00	
4,300.00	9.85	142.10	4,243.66	-527.04	410.29	-430.63	0.00	0.00	
4,400.00	9.85	142.10	4,342.19	-540.54	420.80	-441.66	0.00	0.00	
4,500.00	9.85	142.10	4,440.71	-554.04	431.31	-452.69	0.00	0.00	
4,600.00	9.85	142.10	4,539.24	-567.54	441.82	-463.71	0.00	0.00	
4,700.00	9.85	142.10	4,637.77	-581.04	452.33	-474.74	0.00	0.00	
4,800.00	9.85	142.10	4,736.29	-594.54	462.83	-485.77	0.00	0.00	
4,900.00	9.85	142.10	4,834.82	-608.03	473.34	-496.80	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3K-18H-N167 - Slot Hingley 3K-
Company:	Crestone Peak Resources	TVD Reference:	KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3K-18H-N167	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
5,000.00	9.85	142.10	4,933.34	-621.53	483.85	-507.83	0.00	0.00	
5,100.00	9.85	142.10	5,031.87	-635.03	494.36	-518.86	0.00	0.00	
5,200.00	9.85	142.10	5,130.40	-648.53	504.87	-529.89	0.00	0.00	
5,300.00	9.85	142.10	5,228.92	-662.03	515.38	-540.92	0.00	0.00	
5,400.00	9.85	142.10	5,327.45	-675.53	525.88	-551.95	0.00	0.00	
5,500.00	9.85	142.10	5,425.97	-689.03	536.39	-562.98	0.00	0.00	
5,600.00	9.85	142.10	5,524.50	-702.53	546.90	-574.01	0.00	0.00	
5,700.00	9.85	142.10	5,623.02	-716.03	557.41	-585.04	0.00	0.00	
5,800.00	9.85	142.10	5,721.55	-729.52	567.92	-596.07	0.00	0.00	
5,900.00	9.85	142.10	5,820.08	-743.02	578.43	-607.10	0.00	0.00	
6,000.00	9.85	142.10	5,918.60	-756.52	588.94	-618.13	0.00	0.00	
6,100.00	9.85	142.10	6,017.13	-770.02	599.44	-629.16	0.00	0.00	
6,200.00	9.85	142.10	6,115.65	-783.52	609.95	-640.18	0.00	0.00	
6,300.00	9.85	142.10	6,214.18	-797.02	620.46	-651.21	0.00	0.00	
6,400.00	9.85	142.10	6,312.71	-810.52	630.97	-662.24	0.00	0.00	
6,500.00	9.85	142.10	6,411.23	-824.02	641.48	-673.27	0.00	0.00	
6,600.00	9.85	142.10	6,509.76	-837.51	651.99	-684.30	0.00	0.00	
6,700.00	9.85	142.10	6,608.28	-851.01	662.50	-695.33	0.00	0.00	
6,800.00	9.85	142.10	6,706.81	-864.51	673.00	-706.36	0.00	0.00	
6,891.50	9.85	142.10	6,796.96	-876.86	682.62	-716.45	0.00	0.00	
6,900.00	9.40	139.08	6,805.34	-877.96	683.52	-717.34	7.93	-5.25	
7,000.00	7.43	84.23	6,904.41	-883.49	695.33	-720.31	7.93	-1.97	
7,100.00	12.13	44.76	7,003.03	-875.37	709.19	-709.49	7.93	4.70	
7,200.00	19.08	30.19	7,099.32	-853.74	724.83	-685.09	7.93	6.95	
7,300.00	26.58	23.40	7,191.43	-819.03	741.96	-647.58	7.93	7.49	
7,400.00	34.25	19.46	7,277.62	-771.89	760.25	-597.67	7.93	7.68	
7,500.00	42.02	16.83	7,356.22	-713.23	779.35	-536.33	7.93	7.76	
7,600.00	49.82	14.90	7,425.73	-644.16	798.89	-464.71	7.93	7.81	
7,700.00	57.66	13.36	7,484.84	-566.02	818.51	-384.20	7.93	7.83	
7,800.00	65.50	12.07	7,532.39	-480.29	837.81	-296.33	7.93	7.85	
7,900.00	73.36	10.94	7,567.50	-388.61	856.45	-202.79	7.93	7.86	
8,000.00	81.23	9.89	7,589.48	-292.74	874.05	-105.35	7.93	7.86	
8,100.00	89.09	8.89	7,597.91	-194.51	890.29	-5.89	7.93	7.87	
8,111.58	90.00	8.77	7,598.00	-183.07	892.07	5.68	7.93	7.87	
8,200.00	90.00	1.76	7,598.00	-95.08	900.18	93.44	7.93	0.00	
8,220.04	90.00	0.17	7,598.00	-75.05	900.52	113.11	7.93	0.00	
8,300.00	90.00	0.17	7,598.00	4.92	900.76	191.39	0.00	0.00	
8,400.00	90.00	0.17	7,598.00	104.92	901.06	289.28	0.00	0.00	
8,500.00	90.00	0.17	7,598.00	204.92	901.37	387.18	0.00	0.00	
8,600.00	90.00	0.17	7,598.00	304.91	901.67	485.07	0.00	0.00	
8,700.00	90.00	0.17	7,598.00	404.91	901.97	582.96	0.00	0.00	
8,800.00	90.00	0.17	7,598.00	504.91	902.27	680.86	0.00	0.00	
8,900.00	90.00	0.17	7,598.00	604.91	902.58	778.75	0.00	0.00	
9,000.00	90.00	0.17	7,598.00	704.91	902.88	876.64	0.00	0.00	
9,100.00	90.00	0.17	7,598.00	804.91	903.18	974.54	0.00	0.00	
9,200.00	90.00	0.17	7,598.00	904.91	903.48	1,072.43	0.00	0.00	
9,300.00	90.00	0.17	7,598.00	1,004.91	903.79	1,170.32	0.00	0.00	
9,400.00	90.00	0.17	7,598.00	1,104.91	904.09	1,268.22	0.00	0.00	
9,500.00	90.00	0.17	7,598.00	1,204.91	904.39	1,366.11	0.00	0.00	
9,600.00	90.00	0.17	7,598.00	1,304.91	904.69	1,464.00	0.00	0.00	
9,700.00	90.00	0.17	7,598.00	1,404.91	905.00	1,561.90	0.00	0.00	
9,800.00	90.00	0.17	7,598.00	1,504.91	905.30	1,659.79	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3K-18H-N167 - Slot Hingley 3K-
Company:	Crestone Peak Resources	TVD Reference:	KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3K-18H-N167	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
9,900.00	90.00	0.17	7,598.00	1,604.91	905.60	1,757.68	0.00	0.00	
10,000.00	90.00	0.17	7,598.00	1,704.91	905.90	1,855.58	0.00	0.00	
10,100.00	90.00	0.17	7,598.00	1,804.91	906.20	1,953.47	0.00	0.00	
10,200.00	90.00	0.17	7,598.00	1,904.91	906.51	2,051.36	0.00	0.00	
10,300.00	90.00	0.17	7,598.00	2,004.91	906.81	2,149.26	0.00	0.00	
10,400.00	90.00	0.17	7,598.00	2,104.91	907.11	2,247.15	0.00	0.00	
10,500.00	90.00	0.17	7,598.00	2,204.91	907.41	2,345.04	0.00	0.00	
10,600.00	90.00	0.17	7,598.00	2,304.91	907.72	2,442.94	0.00	0.00	
10,700.00	90.00	0.17	7,598.00	2,404.91	908.02	2,540.83	0.00	0.00	
10,800.00	90.00	0.17	7,598.00	2,504.90	908.32	2,638.72	0.00	0.00	
10,900.00	90.00	0.17	7,598.00	2,604.90	908.62	2,736.62	0.00	0.00	
11,000.00	90.00	0.17	7,598.00	2,704.90	908.93	2,834.51	0.00	0.00	
11,100.00	90.00	0.17	7,598.00	2,804.90	909.23	2,932.40	0.00	0.00	
11,200.00	90.00	0.17	7,598.00	2,904.90	909.53	3,030.30	0.00	0.00	
11,300.00	90.00	0.17	7,598.00	3,004.90	909.83	3,128.19	0.00	0.00	
11,400.00	90.00	0.17	7,598.00	3,104.90	910.14	3,226.08	0.00	0.00	
11,500.00	90.00	0.17	7,598.00	3,204.90	910.44	3,323.98	0.00	0.00	
11,600.00	90.00	0.17	7,598.00	3,304.90	910.74	3,421.87	0.00	0.00	
11,700.00	90.00	0.17	7,598.00	3,404.90	911.04	3,519.76	0.00	0.00	
11,800.00	90.00	0.17	7,598.00	3,504.90	911.34	3,617.66	0.00	0.00	
11,900.00	90.00	0.17	7,598.00	3,604.90	911.65	3,715.55	0.00	0.00	
12,000.00	90.00	0.17	7,598.00	3,704.90	911.95	3,813.45	0.00	0.00	
12,100.00	90.00	0.17	7,598.00	3,804.90	912.25	3,911.34	0.00	0.00	
12,200.00	90.00	0.17	7,598.00	3,904.90	912.55	4,009.23	0.00	0.00	
12,300.00	90.00	0.17	7,598.00	4,004.90	912.86	4,107.13	0.00	0.00	
12,400.00	90.00	0.17	7,598.00	4,104.90	913.16	4,205.02	0.00	0.00	
12,500.00	90.00	0.17	7,598.00	4,204.90	913.46	4,302.91	0.00	0.00	
12,600.00	90.00	0.17	7,598.00	4,304.90	913.76	4,400.81	0.00	0.00	
12,611.04	90.00	0.17	7,598.00	4,315.93	913.80	4,411.61	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									
HINGLEY 3K-18H-N167	0.00	0.00	7,598.00	-75.05	900.52	1,259,810.72	3,158,440.93	40.045181	-104.934071
- plan hits target center									
- Point									
HINGLEY 3K-18H-N167	0.00	0.00	7,598.00	4,315.93	913.80	1,264,201.70	3,158,426.34	40.057235	-104.934023
- plan hits target center									
- Point									