



CRESTONE PEAK
RESOURCES

SECTION DETAILS

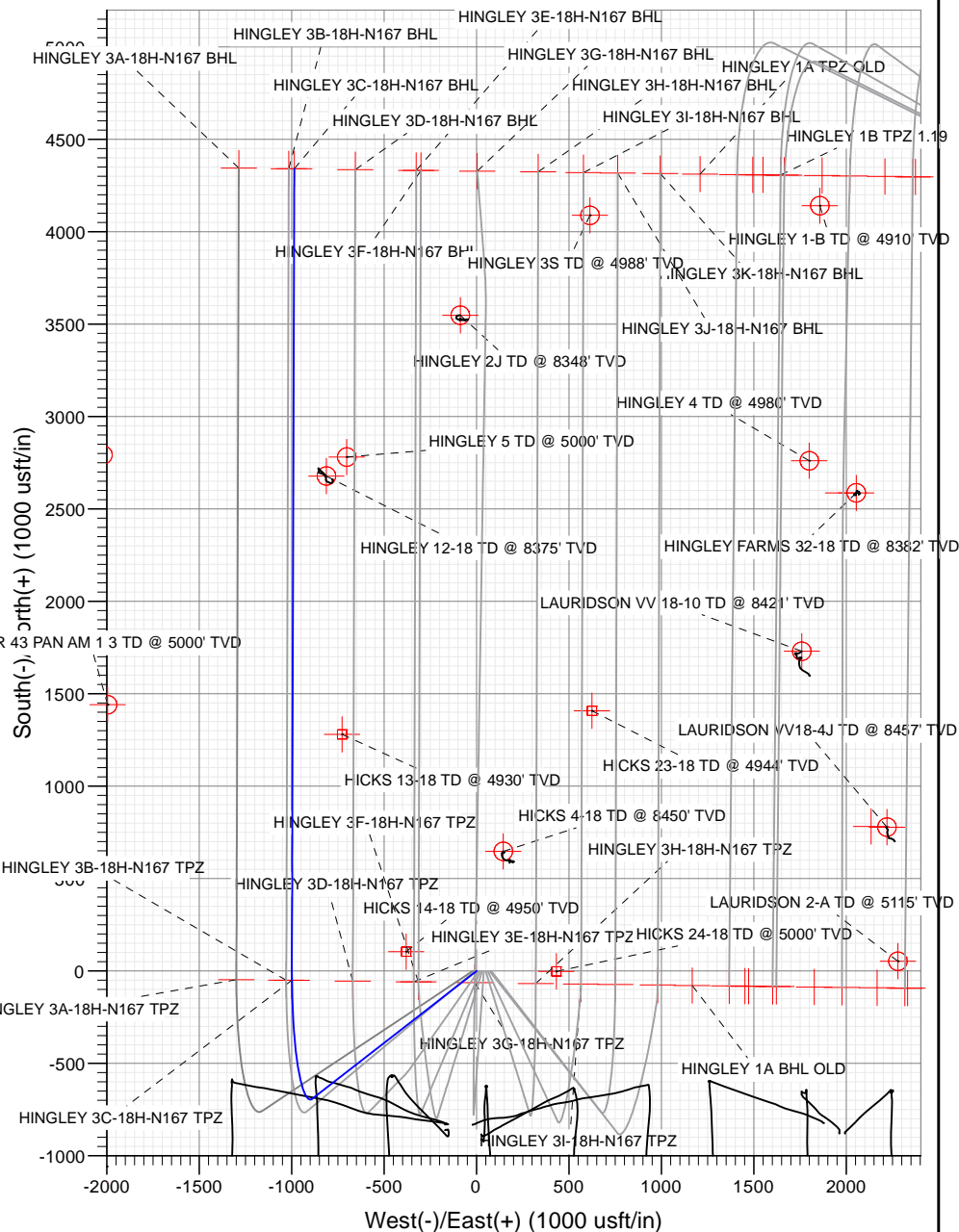
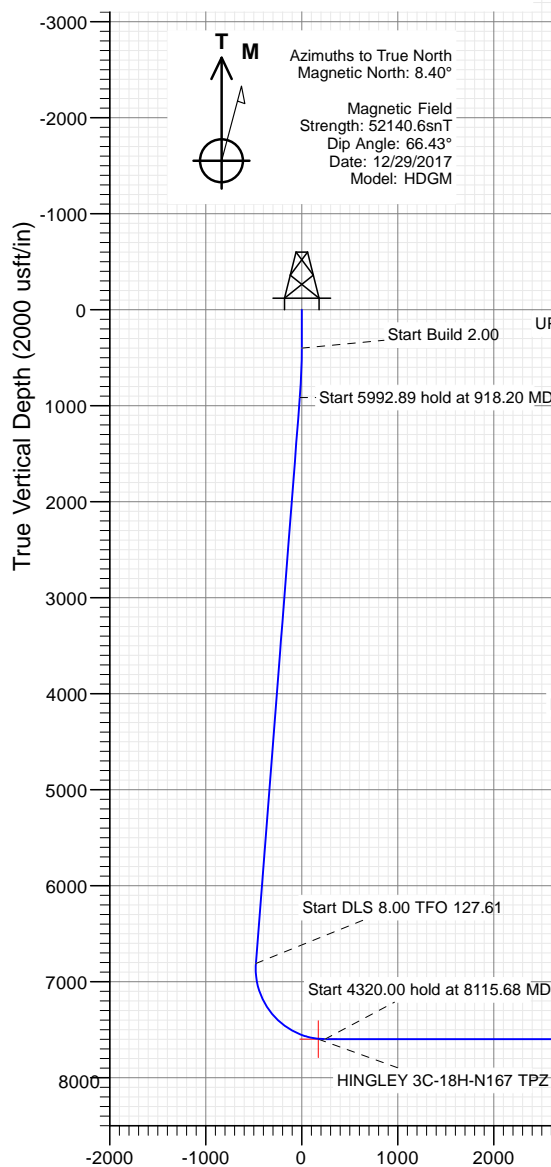
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	918.20	10.36	232.11	915.38	-28.70	-36.89	2.00	232.11	-19.82	
4	6911.09	10.36	232.11	6810.49	-690.80	-887.75	0.00	0.00	-477.05	
5	8115.68	90.00	0.17	7598.00	21.32	-998.99	8.00	127.61	242.02	
6	12435.68	90.00	0.17	7598.00	4341.30	-985.87	0.00	0.00	4451.84	HINGLEY 3C-18H-N167 BHL

PLAN #2
HINGLEY 3C-18H-N167
23' K2 @ 5153.00usf
Ground Level @ 5110.00
North American Datum 1983
Well HINGLEY 3C-18H-N167, True North

Type	Target	TD	No Target (Freehand)	TD	MD	Inc	Azi	Origin Type	Slot	N/S	E/W	From TVD
Name												
HINGLEY 3C-18H-N167 BHL				7598.00			4341.30		-985.87		40.057306	
HINGLEY 3C-18H-N167 TPZ				7598.00			-50.04		-999.20		40.045251	

Longitude
-104.941096
-104.941143

Project: DJ BASIN
Site: S18-T1N-R67W (HINGLEY)
Well: HINGLEY 3C-18H-N167
Wellbore: OH
Design: PLAN #2



Vertical Section at 347.21° (2000 usf/in)

WELL DETAILS: HINGLEY 3C-18H-N167

5110.00
+N/-S 0.00 +E/-W 0.00 Northing 1259880.04 Easting 3157459.74 Latitude 40.045388 Longitude -104.937573

CATHEDRAL



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3C-18H-N167
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3C-18H-N167	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 3C-18H-N167					
Well Position	+N/-S	0.00 usft	Northing:	1,259,880.04 usft	Latitude:	40.045388
	+E/-W	0.00 usft	Easting:	3,157,459.74 usft	Longitude:	-104.937573
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	52,140.60000000

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	347.21

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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
918.20	10.36	232.11	915.38	-28.70	-36.89	2.00	2.00	0.00	232.11	
6,911.09	10.36	232.11	6,810.49	-690.80	-887.75	0.00	0.00	0.00	0.00	
8,115.68	90.00	0.17	7,598.00	21.32	-998.99	8.00	6.61	10.63	127.61	
12,435.68	90.00	0.17	7,598.00	4,341.30	-985.87	0.00	0.00	0.00	0.00	HINGLEY 3C-18H-N1

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3C-18H-N167
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3C-18H-N167	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	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	232.11	499.98	-1.07	-1.38	-0.74	2.00	2.00	
600.00	4.00	232.11	599.84	-4.29	-5.51	-2.96	2.00	2.00	
700.00	6.00	232.11	699.45	-9.64	-12.39	-6.66	2.00	2.00	
800.00	8.00	232.11	798.70	-17.12	-22.00	-11.82	2.00	2.00	
900.00	10.00	232.11	897.46	-26.73	-34.35	-18.46	2.00	2.00	
918.20	10.36	232.11	915.38	-28.70	-36.89	-19.82	2.00	2.00	
1,000.00	10.36	232.11	995.84	-37.74	-48.50	-26.06	0.00	0.00	
1,100.00	10.36	232.11	1,094.21	-48.79	-62.70	-33.69	0.00	0.00	
1,200.00	10.36	232.11	1,192.58	-59.84	-76.90	-41.32	0.00	0.00	
1,300.00	10.36	232.11	1,290.95	-70.88	-91.10	-48.95	0.00	0.00	
1,400.00	10.36	232.11	1,389.32	-81.93	-105.29	-56.58	0.00	0.00	
1,500.00	10.36	232.11	1,487.68	-92.98	-119.49	-64.21	0.00	0.00	
1,600.00	10.36	232.11	1,586.05	-104.03	-133.69	-71.84	0.00	0.00	
1,700.00	10.36	232.11	1,684.42	-115.08	-147.89	-79.47	0.00	0.00	
1,800.00	10.36	232.11	1,782.79	-126.12	-162.08	-87.10	0.00	0.00	
1,900.00	10.36	232.11	1,881.16	-137.17	-176.28	-94.73	0.00	0.00	
2,000.00	10.36	232.11	1,979.53	-148.22	-190.48	-102.36	0.00	0.00	
2,100.00	10.36	232.11	2,077.89	-159.27	-204.68	-109.99	0.00	0.00	
2,200.00	10.36	232.11	2,176.26	-170.32	-218.88	-117.62	0.00	0.00	
2,300.00	10.36	232.11	2,274.63	-181.36	-233.07	-125.25	0.00	0.00	
2,400.00	10.36	232.11	2,373.00	-192.41	-247.27	-132.88	0.00	0.00	
2,500.00	10.36	232.11	2,471.37	-203.46	-261.47	-140.51	0.00	0.00	
2,599.99	10.36	232.11	2,569.73	-214.51	-275.67	-148.14	0.00	0.00	
2,699.99	10.36	232.11	2,668.10	-225.56	-289.87	-155.76	0.00	0.00	
2,799.99	10.36	232.11	2,766.47	-236.60	-304.06	-163.39	0.00	0.00	
2,899.99	10.36	232.11	2,864.84	-247.65	-318.26	-171.02	0.00	0.00	
2,999.99	10.36	232.11	2,963.21	-258.70	-332.46	-178.65	0.00	0.00	
3,099.99	10.36	232.11	3,061.58	-269.75	-346.66	-186.28	0.00	0.00	
3,199.99	10.36	232.11	3,159.94	-280.80	-360.86	-193.91	0.00	0.00	
3,299.99	10.36	232.11	3,258.31	-291.84	-375.05	-201.54	0.00	0.00	
3,399.99	10.36	232.11	3,356.68	-302.89	-389.25	-209.17	0.00	0.00	
3,499.99	10.36	232.11	3,455.05	-313.94	-403.45	-216.80	0.00	0.00	
3,599.99	10.36	232.11	3,553.42	-324.99	-417.65	-224.43	0.00	0.00	
3,699.99	10.36	232.11	3,651.79	-336.04	-431.85	-232.06	0.00	0.00	
3,799.99	10.36	232.11	3,750.15	-347.08	-446.04	-239.69	0.00	0.00	
3,899.99	10.36	232.11	3,848.52	-358.13	-460.24	-247.32	0.00	0.00	
3,999.99	10.36	232.11	3,946.89	-369.18	-474.44	-254.95	0.00	0.00	
4,099.99	10.36	232.11	4,045.26	-380.23	-488.64	-262.58	0.00	0.00	
4,199.99	10.36	232.11	4,143.63	-391.28	-502.83	-270.21	0.00	0.00	
4,299.99	10.36	232.11	4,242.00	-402.32	-517.03	-277.84	0.00	0.00	
4,399.99	10.36	232.11	4,340.36	-413.37	-531.23	-285.47	0.00	0.00	
4,499.99	10.36	232.11	4,438.73	-424.42	-545.43	-293.10	0.00	0.00	
4,599.99	10.36	232.11	4,537.10	-435.47	-559.63	-300.73	0.00	0.00	
4,699.99	10.36	232.11	4,635.47	-446.52	-573.82	-308.35	0.00	0.00	
4,799.99	10.36	232.11	4,733.84	-457.56	-588.02	-315.98	0.00	0.00	
4,899.99	10.36	232.11	4,832.21	-468.61	-602.22	-323.61	0.00	0.00	
4,999.99	10.36	232.11	4,930.57	-479.66	-616.42	-331.24	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3C-18H-N167
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3C-18H-N167	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
5,099.99	10.36	232.11	5,028.94	-490.71	-630.62	-338.87	0.00	0.00	
5,199.99	10.36	232.11	5,127.31	-501.76	-644.81	-346.50	0.00	0.00	
5,299.99	10.36	232.11	5,225.68	-512.80	-659.01	-354.13	0.00	0.00	
5,399.99	10.36	232.11	5,324.05	-523.85	-673.21	-361.76	0.00	0.00	
5,499.99	10.36	232.11	5,422.42	-534.90	-687.41	-369.39	0.00	0.00	
5,599.99	10.36	232.11	5,520.78	-545.95	-701.61	-377.02	0.00	0.00	
5,699.99	10.36	232.11	5,619.15	-557.00	-715.80	-384.65	0.00	0.00	
5,799.99	10.36	232.11	5,717.52	-568.04	-730.00	-392.28	0.00	0.00	
5,899.99	10.36	232.11	5,815.89	-579.09	-744.20	-399.91	0.00	0.00	
5,999.99	10.36	232.11	5,914.26	-590.14	-758.40	-407.54	0.00	0.00	
6,099.99	10.36	232.11	6,012.63	-601.19	-772.59	-415.17	0.00	0.00	
6,199.99	10.36	232.11	6,110.99	-612.24	-786.79	-422.80	0.00	0.00	
6,299.99	10.36	232.11	6,209.36	-623.28	-800.99	-430.43	0.00	0.00	
6,399.99	10.36	232.11	6,307.73	-634.33	-815.19	-438.06	0.00	0.00	
6,499.99	10.36	232.11	6,406.10	-645.38	-829.39	-445.69	0.00	0.00	
6,599.99	10.36	232.11	6,504.47	-656.43	-843.58	-453.32	0.00	0.00	
6,699.99	10.36	232.11	6,602.83	-667.48	-857.78	-460.94	0.00	0.00	
6,799.99	10.36	232.11	6,701.20	-678.52	-871.98	-468.57	0.00	0.00	
6,899.99	10.36	232.11	6,799.57	-689.57	-886.18	-476.20	0.00	0.00	
6,911.09	10.36	232.11	6,810.49	-690.80	-887.75	-477.05	0.00	0.00	
6,999.99	8.23	275.38	6,898.32	-695.12	-900.41	-478.46	8.00	-2.40	
7,099.99	11.96	317.36	6,996.88	-686.81	-914.58	-467.22	8.00	3.73	
7,199.99	18.59	334.83	7,093.34	-664.73	-928.40	-442.63	8.00	6.63	
7,299.99	25.98	342.99	7,185.83	-629.30	-941.61	-405.15	8.00	7.39	
7,399.99	33.64	347.68	7,272.54	-581.21	-953.95	-355.52	8.00	7.66	
7,499.99	41.42	350.78	7,351.79	-521.40	-965.18	-294.71	8.00	7.78	
7,599.98	49.26	353.05	7,422.03	-451.03	-975.08	-223.90	8.00	7.84	
7,699.98	57.13	354.83	7,481.90	-371.48	-983.46	-144.46	8.00	7.87	
7,799.98	65.02	356.33	7,530.24	-284.28	-990.16	-57.95	8.00	7.89	
7,899.98	72.93	357.64	7,566.09	-191.15	-995.04	33.95	8.00	7.91	
7,999.98	80.84	358.84	7,588.77	-93.88	-998.01	129.46	8.00	7.91	
8,044.52	84.37	359.36	7,594.50	-49.72	-998.70	172.68	8.00	7.92	HINGLEY 3C-18H-N167 TPZ
8,099.98	88.76	359.99	7,597.83	5.62	-999.01	226.72	8.00	7.92	
8,115.68	90.00	0.17	7,598.00	21.32	-998.99	242.02	8.00	7.92	
8,199.98	90.00	0.17	7,598.00	105.62	-998.73	324.17	0.00	0.00	
8,299.98	90.00	0.17	7,598.00	205.62	-998.43	421.62	0.00	0.00	
8,399.98	90.00	0.17	7,598.00	305.62	-998.12	519.07	0.00	0.00	
8,499.98	90.00	0.17	7,598.00	405.62	-997.82	616.52	0.00	0.00	
8,599.98	90.00	0.17	7,598.00	505.62	-997.52	713.97	0.00	0.00	
8,699.98	90.00	0.17	7,598.00	605.62	-997.21	811.42	0.00	0.00	
8,799.98	90.00	0.17	7,598.00	705.62	-996.91	908.87	0.00	0.00	
8,899.98	90.00	0.17	7,598.00	805.62	-996.61	1,006.31	0.00	0.00	
8,999.98	90.00	0.17	7,598.00	905.61	-996.30	1,103.76	0.00	0.00	
9,099.98	90.00	0.17	7,598.00	1,005.61	-996.00	1,201.21	0.00	0.00	
9,199.98	90.00	0.17	7,598.00	1,105.61	-995.70	1,298.66	0.00	0.00	
9,299.98	90.00	0.17	7,598.00	1,205.61	-995.39	1,396.11	0.00	0.00	
9,399.98	90.00	0.17	7,598.00	1,305.61	-995.09	1,493.56	0.00	0.00	
9,499.98	90.00	0.17	7,598.00	1,405.61	-994.79	1,591.01	0.00	0.00	
9,599.98	90.00	0.17	7,598.00	1,505.61	-994.48	1,688.46	0.00	0.00	
9,699.98	90.00	0.17	7,598.00	1,605.61	-994.18	1,785.91	0.00	0.00	
9,799.98	90.00	0.17	7,598.00	1,705.61	-993.87	1,883.36	0.00	0.00	
9,899.98	90.00	0.17	7,598.00	1,805.61	-993.57	1,980.81	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well HINGLEY 3C-18H-N167
Company:	Crestone Peak Resources	TVD Reference:	23' KB @ 5133.00usft
Project:	DJ BASIN	MD Reference:	23' KB @ 5133.00usft
Site:	S18-T1N-R67W (HINGLEY)	North Reference:	True
Well:	HINGLEY 3C-18H-N167	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
9,999.98	90.00	0.17	7,598.00	1,905.61	-993.27	2,078.26	0.00	0.00	
10,099.98	90.00	0.17	7,598.00	2,005.61	-992.96	2,175.71	0.00	0.00	
10,199.98	90.00	0.17	7,598.00	2,105.61	-992.66	2,273.15	0.00	0.00	
10,299.98	90.00	0.17	7,598.00	2,205.61	-992.36	2,370.60	0.00	0.00	
10,399.98	90.00	0.17	7,598.00	2,305.61	-992.05	2,468.05	0.00	0.00	
10,499.98	90.00	0.17	7,598.00	2,405.60	-991.75	2,565.50	0.00	0.00	
10,599.98	90.00	0.17	7,598.00	2,505.60	-991.45	2,662.95	0.00	0.00	
10,699.98	90.00	0.17	7,598.00	2,605.60	-991.14	2,760.40	0.00	0.00	
10,799.98	90.00	0.17	7,598.00	2,705.60	-990.84	2,857.85	0.00	0.00	
10,899.98	90.00	0.17	7,598.00	2,805.60	-990.53	2,955.30	0.00	0.00	
10,999.98	90.00	0.17	7,598.00	2,905.60	-990.23	3,052.75	0.00	0.00	
11,099.98	90.00	0.17	7,598.00	3,005.60	-989.93	3,150.20	0.00	0.00	
11,199.98	90.00	0.17	7,598.00	3,105.60	-989.62	3,247.65	0.00	0.00	
11,299.98	90.00	0.17	7,598.00	3,205.60	-989.32	3,345.10	0.00	0.00	
11,399.98	90.00	0.17	7,598.00	3,305.60	-989.02	3,442.54	0.00	0.00	
11,499.98	90.00	0.17	7,598.00	3,405.60	-988.71	3,539.99	0.00	0.00	
11,599.98	90.00	0.17	7,598.00	3,505.60	-988.41	3,637.44	0.00	0.00	
11,699.98	90.00	0.17	7,598.00	3,605.60	-988.11	3,734.89	0.00	0.00	
11,799.98	90.00	0.17	7,598.00	3,705.60	-987.80	3,832.34	0.00	0.00	
11,899.98	90.00	0.17	7,598.00	3,805.60	-987.50	3,929.79	0.00	0.00	
11,999.98	90.00	0.17	7,598.00	3,905.59	-987.19	4,027.24	0.00	0.00	
12,099.98	90.00	0.17	7,598.00	4,005.59	-986.89	4,124.69	0.00	0.00	
12,199.98	90.00	0.17	7,598.00	4,105.59	-986.59	4,222.14	0.00	0.00	
12,299.98	90.00	0.17	7,598.00	4,205.59	-986.28	4,319.59	0.00	0.00	
12,399.98	90.00	0.17	7,598.00	4,305.59	-985.98	4,417.04	0.00	0.00	
12,435.68	90.00	0.17	7,598.00	4,341.30	-985.87	4,451.84	0.00	0.00	HINGLEY 3C-18H-N167 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									
HINGLEY 3C-18H-N167	0.00	0.00	7,598.00	-50.04	-999.20	1,259,823.66	3,156,460.87	40.045251	-104.941143
- plan misses target center by 3.55usft at 8044.52usft MD (7594.50 TVD, -49.72 N, -998.70 E)									
- Point									
HINGLEY 3C-18H-N167	0.00	0.00	7,598.00	4,341.30	-985.87	1,264,215.00	3,156,446.35	40.057306	-104.941096
- plan hits target center									
- Point									