



Madera 17 Fed 2H
Lea County, New Mexico
Northing: 383039.20
Easting: 794826.00
Design #1

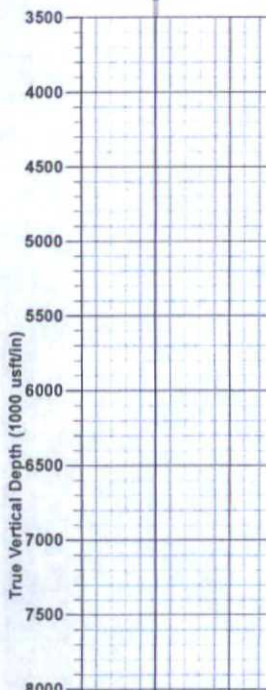


To convert a Magnetic Direction to a Grid Direction, Add 6.74°
 To convert a True Direction to a Grid Direction, Subtract 0.51°

Azimuths to Grid
 True North: -C
 Magnetic North: E

Magnetic I
 Strength: 48336.1
 Dip Angle: 6C
 Date: 5/31/12
 Model: IGRF12

KB: 3248.00'
 Gr: 3223.60

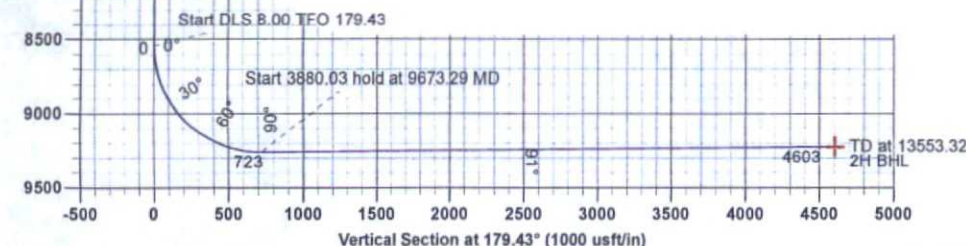
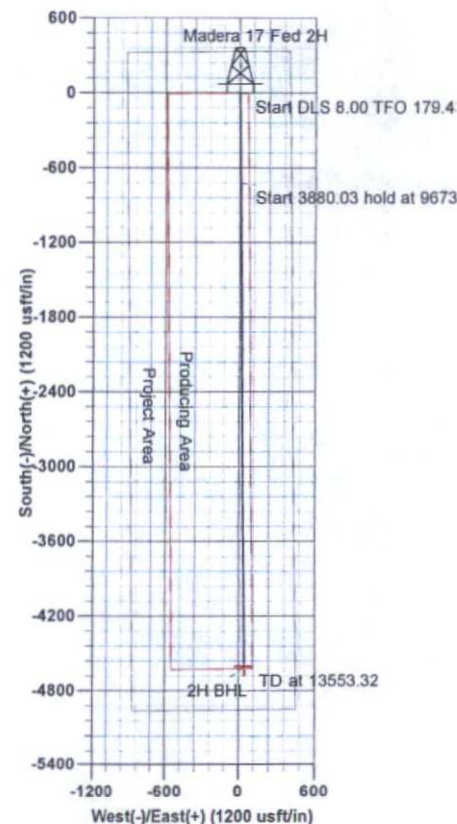


WELL DETAILS Madera 17 Fed 2H					
Ground Level: 3223.60					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	383039.20	794826.00	32.050	-103.382

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8541.83	0.00	0.00	8541.83	0.00	0.00	0.00	0.00	0.00	
9673.29	90.52	179.43	9258.00	-722.62	7.19	8.00	179.43	722.66	
13553.32	90.52	179.43	9223.00	-4602.30	45.80	0.00	0.00	4602.53	2H BHL

SITE DETAILS:	
Madera 17 Federal 2H	
Site Centre Northing:	383039.20
Easting:	794826.00
Positional Uncertainty:	0.00
Convergence:	0.51
Local North:	Grid

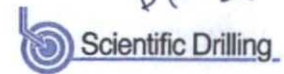
PROJECT DETAILS:	
Lea County, New Mexico	
Geodetic System:	US State Plane 1927
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone:	New Mexico East 3001
System Datum:	Mean Sea Level



Jody Barclay
 9:07, June 04 2013
 Scientific Drilling
 2740 N. Highway 287
 Decatur, TX 76234



Scientific Drilling Planning Report



DP-2

Database:	CompassC	Local Co-ordinate Reference:	Well Madera 17 Fed 2H
Company:	OXY	TVD Reference:	KB @ 3248.00usft (24' RKB)
Project:	Lea County, New Mexico	MD Reference:	KB @ 3248.00usft (24' RKB)
Site:	Madera 17 Federal 2H	North Reference:	Grid
Well:	Madera 17 Fed 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Project	Lea County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Madera 17 Federal 2H			
Site Position:		Northing:	383,039.20 usft	Latitude:	32.050
From:	Map	Easting:	794,826.00 usft	Longitude:	-103.382
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.51 °

Well	Madera 17 Fed 2H					
Well Position	+N/-S	0.00 usft	Northing:	383,039.20 usft	Latitude:	32.050
	+E/-W	0.00 usft	Easting:	794,826.00 usft	Longitude:	-103.382
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,223.60 usft

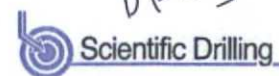
Wellbore	Original Wellbore				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/31/2013	7.24	60.01	48,337

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.43

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	
8,541.83	0.00	0.00	8,541.83	0.00	0.00	0.00	0.00	0.00	0.00	
9,673.29	90.52	179.43	9,258.00	-722.62	7.19	8.00	8.00	15.86	179.43	
13,553.32	90.52	179.43	9,223.00	-4,602.30	45.80	0.00	0.00	0.00	0.00	2H BHL



Scientific Drilling Planning Report



DP-3

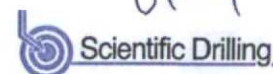
Database:	CompassC	Local Co-ordinate Reference:	Well Madera 17 Fed 2H
Company:	OXY	TVD Reference:	KB @ 3248.00usft (24' RKB)
Project:	Lea County, New Mexico	MD Reference:	KB @ 3248.00usft (24' RKB)
Site:	Madera 17 Federal 2H	North Reference:	Grid
Well:	Madera 17 Fed 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #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 (°/100usft)	Turn Rate (°/100usft)
0.00	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	0.00
200.00	0.00	0.00	200.00	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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



Scientific Drilling
Planning Report



DP-4

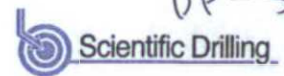
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Site:	Madera 17 Federal 2H	North Reference:	Grid
Well:	Madera 17 Fed 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,541.83	0.00	0.00	8,541.83	0.00	0.00	0.00	0.00	0.00	0.00
8,550.00	0.65	179.43	8,550.00	-0.05	0.00	0.05	8.00	8.00	0.00
8,600.00	4.65	179.43	8,599.94	-2.36	0.02	2.36	8.00	8.00	0.00
8,650.00	8.65	179.43	8,649.59	-8.15	0.08	8.15	8.00	8.00	0.00
8,700.00	12.65	179.43	8,698.72	-17.39	0.17	17.39	8.00	8.00	0.00
8,750.00	16.65	179.43	8,747.08	-30.04	0.30	30.04	8.00	8.00	0.00
8,800.00	20.65	179.43	8,794.45	-46.03	0.46	46.03	8.00	8.00	0.00
8,850.00	24.65	179.43	8,840.58	-65.28	0.65	65.28	8.00	8.00	0.00
8,900.00	28.65	179.43	8,885.26	-87.70	0.87	87.71	8.00	8.00	0.00
8,950.00	32.65	179.43	8,928.26	-113.19	1.13	113.20	8.00	8.00	0.00
9,000.00	36.65	179.43	8,969.38	-141.61	1.41	141.62	8.00	8.00	0.00
9,050.00	40.65	179.43	9,008.42	-172.84	1.72	172.85	8.00	8.00	0.00
9,100.00	44.65	179.43	9,045.19	-206.71	2.06	206.72	8.00	8.00	0.00
9,150.00	48.65	179.43	9,079.50	-243.06	2.42	243.07	8.00	8.00	0.00
9,200.00	52.65	179.43	9,111.19	-281.71	2.80	281.73	8.00	8.00	0.00
9,250.00	56.65	179.43	9,140.11	-322.49	3.21	322.50	8.00	8.00	0.00
9,300.00	60.65	179.43	9,166.12	-365.18	3.63	365.20	8.00	8.00	0.00
9,350.00	64.65	179.43	9,189.08	-409.58	4.08	409.60	8.00	8.00	0.00
9,400.00	68.65	179.43	9,208.89	-455.47	4.53	455.50	8.00	8.00	0.00
9,450.00	72.65	179.43	9,225.45	-502.64	5.00	502.66	8.00	8.00	0.00
9,500.00	76.65	179.43	9,238.68	-550.84	5.48	550.87	8.00	8.00	0.00
9,550.00	80.65	179.43	9,248.52	-599.86	5.97	599.88	8.00	8.00	0.00



Scientific Drilling Planning Report



DP-5

Database:	CompassC	Local Co-ordinate Reference:	Well Madera 17 Fed 2H
Company:	OXY	TVD Reference:	KB @ 3248.00usft (24' RKB)
Project:	Lea County, New Mexico	MD Reference:	KB @ 3248.00usft (24' RKB)
Site:	Madera 17 Federal 2H	North Reference:	Grid
Well:	Madera 17 Fed 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellbore		
Design:	Design #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 (°/100usft)	Turn Rate (°/100usft)
9,600.00	84.65	179.43	9,254.91	-649.43	6.46	649.46	8.00	8.00	0.00
9,650.00	88.65	179.43	9,257.83	-699.33	6.96	699.37	8.00	8.00	0.00
9,673.29	90.52	179.43	9,258.00	-722.62	7.19	722.66	8.00	8.00	0.00
9,700.00	90.52	179.43	9,257.76	-749.33	7.46	749.37	0.00	0.00	0.00
9,800.00	90.52	179.43	9,256.86	-849.32	8.45	849.36	0.00	0.00	0.00
9,900.00	90.52	179.43	9,255.95	-949.31	9.45	949.36	0.00	0.00	0.00
10,000.00	90.52	179.43	9,255.05	-1,049.30	10.44	1,049.35	0.00	0.00	0.00
10,100.00	90.52	179.43	9,254.15	-1,149.29	11.44	1,149.35	0.00	0.00	0.00
10,200.00	90.52	179.43	9,253.25	-1,249.28	12.43	1,249.35	0.00	0.00	0.00
10,300.00	90.52	179.43	9,252.35	-1,349.27	13.43	1,349.34	0.00	0.00	0.00
10,400.00	90.52	179.43	9,251.44	-1,449.27	14.42	1,449.34	0.00	0.00	0.00
10,500.00	90.52	179.43	9,250.54	-1,549.26	15.42	1,549.33	0.00	0.00	0.00
10,600.00	90.52	179.43	9,249.64	-1,649.25	16.41	1,649.33	0.00	0.00	0.00
10,700.00	90.52	179.43	9,248.74	-1,749.24	17.41	1,749.33	0.00	0.00	0.00
10,800.00	90.52	179.43	9,247.84	-1,849.23	18.40	1,849.32	0.00	0.00	0.00
10,900.00	90.52	179.43	9,246.93	-1,949.22	19.40	1,949.32	0.00	0.00	0.00
11,000.00	90.52	179.43	9,246.03	-2,049.21	20.39	2,049.31	0.00	0.00	0.00
11,100.00	90.52	179.43	9,245.13	-2,149.20	21.39	2,149.31	0.00	0.00	0.00
11,200.00	90.52	179.43	9,244.23	-2,249.19	22.38	2,249.31	0.00	0.00	0.00
11,300.00	90.52	179.43	9,243.33	-2,349.18	23.38	2,349.30	0.00	0.00	0.00
11,400.00	90.52	179.43	9,242.42	-2,449.18	24.37	2,449.30	0.00	0.00	0.00
11,500.00	90.52	179.43	9,241.52	-2,549.17	25.37	2,549.29	0.00	0.00	0.00
11,600.00	90.52	179.43	9,240.62	-2,649.16	26.36	2,649.29	0.00	0.00	0.00
11,700.00	90.52	179.43	9,239.72	-2,749.15	27.36	2,749.28	0.00	0.00	0.00
11,800.00	90.52	179.43	9,238.82	-2,849.14	28.35	2,849.28	0.00	0.00	0.00
11,900.00	90.52	179.43	9,237.91	-2,949.13	29.35	2,949.28	0.00	0.00	0.00
12,000.00	90.52	179.43	9,237.01	-3,049.12	30.34	3,049.27	0.00	0.00	0.00
12,100.00	90.52	179.43	9,236.11	-3,149.11	31.34	3,149.27	0.00	0.00	0.00
12,200.00	90.52	179.43	9,235.21	-3,249.10	32.33	3,249.26	0.00	0.00	0.00
12,300.00	90.52	179.43	9,234.31	-3,349.09	33.33	3,349.26	0.00	0.00	0.00
12,400.00	90.52	179.43	9,233.40	-3,449.09	34.32	3,449.26	0.00	0.00	0.00
12,500.00	90.52	179.43	9,232.50	-3,549.08	35.32	3,549.25	0.00	0.00	0.00
12,600.00	90.52	179.43	9,231.60	-3,649.07	36.31	3,649.25	0.00	0.00	0.00
12,700.00	90.52	179.43	9,230.70	-3,749.06	37.31	3,749.24	0.00	0.00	0.00
12,800.00	90.52	179.43	9,229.80	-3,849.05	38.30	3,849.24	0.00	0.00	0.00
12,900.00	90.52	179.43	9,228.89	-3,949.04	39.30	3,949.24	0.00	0.00	0.00
13,000.00	90.52	179.43	9,227.99	-4,049.03	40.29	4,049.23	0.00	0.00	0.00
13,100.00	90.52	179.43	9,227.09	-4,149.02	41.29	4,149.23	0.00	0.00	0.00
13,200.00	90.52	179.43	9,226.19	-4,249.01	42.28	4,249.22	0.00	0.00	0.00
13,300.00	90.52	179.43	9,225.29	-4,349.00	43.28	4,349.22	0.00	0.00	0.00
13,400.00	90.52	179.43	9,224.38	-4,449.00	44.27	4,449.22	0.00	0.00	0.00
13,500.00	90.52	179.43	9,223.48	-4,548.99	45.27	4,549.21	0.00	0.00	0.00
13,553.32	90.52	179.43	9,223.00	-4,602.30	45.80	4,602.53	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
2H BHL - plan hits target center - Point	0.00	0.00	9,223.00	-4,602.30	45.80	378,436.90	794,871.80	32.037	-103.382