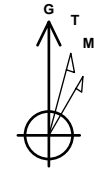




Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad 3
Well: Tiffany 3-2
Wellbore: Lateral 2
Design: Plan #5

PROJECT DETAILS: La Plata County, CO NAD83

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Southern Zone
System Datum: Mean Sea Level
Local North: Grid



Azimuths to Grid North
True North: 1.23°
Magnetic North: 10.40°

Magnetic Field
Strength: 50124.8snT
Dip Angle: 63.63°
Date: 6/9/2017
Model: HDGM

WELL DETAILS: Tiffany 3-2

Plan: Plan #5 (Tiffany 3-2/Lateral 2)

Created By: Janie Collins Date: 11:50, October 26 2017

GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
+N/-S +E/-W Northing Easting Latitude Longitude
0.00 0.00 1159244.15 2413099.97 37.0866427 -107.5120889

DESIGN TARGET DETAILS

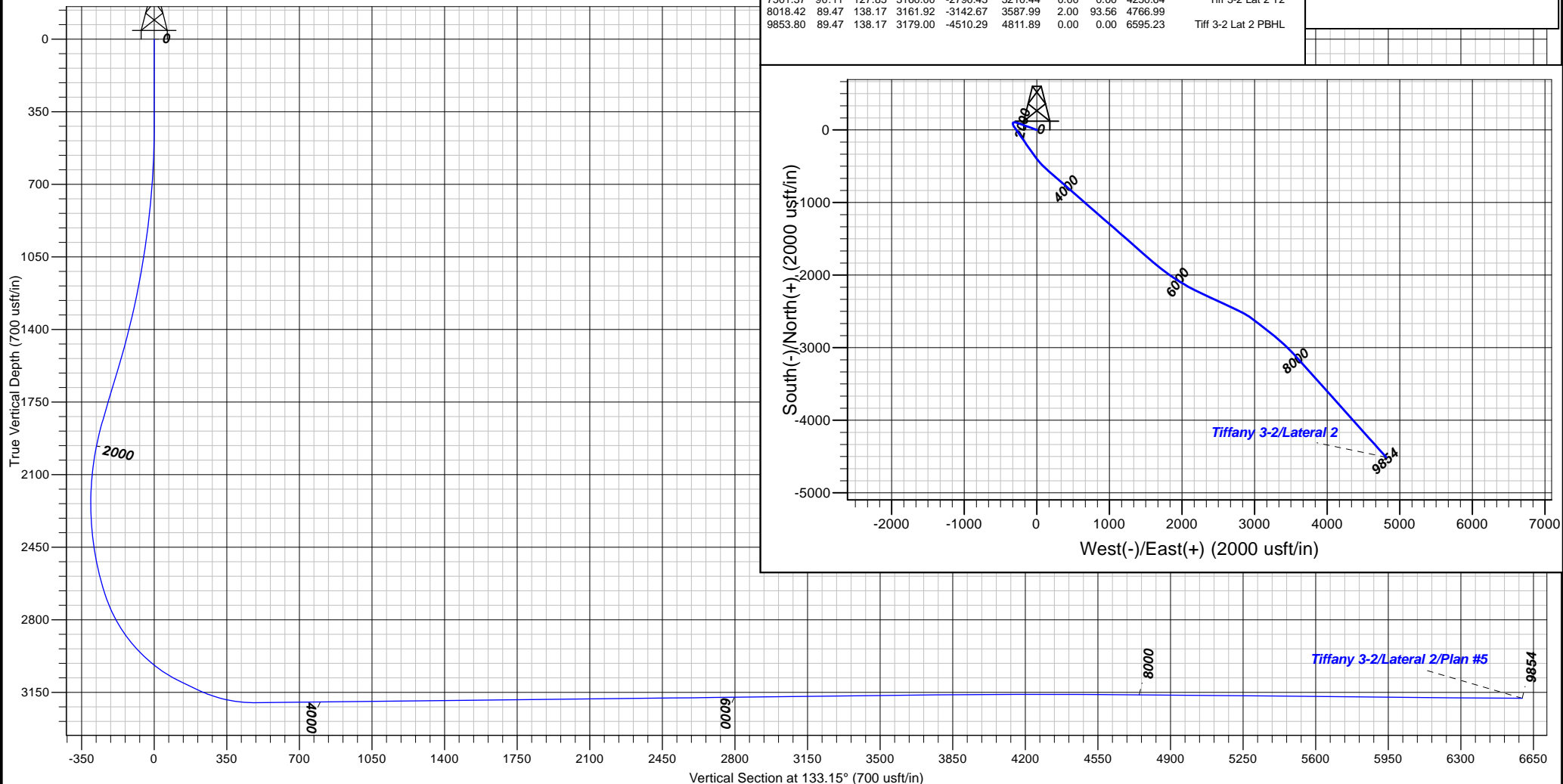
Name	TVD	+N/-S	+E/-W	Northing	Easting
Tiff 3-2 Lat 2 T1	3185.00	-1418.04	1138.02	1157826.11	2414237.99
Tiff 3-2 Lat 2 T2	3160.00	-2790.43	3210.44	1156453.72	2416310.41
Tiff 3-2 Lat 2 PBHL	3179.00	-4510.29	4811.89	1154733.86	2417911.86
Tiff 3-2 Lat 2 T3	3160.00	-4510.29	4811.89	1154733.86	2417911.86
Tiff 3-2 Lat 2 T3a	3160.00	-3088.13	3611.37	1156156.02	2416711.34

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3400.10	65.00	145.00	3138.85	-349.96	-38.12	0.00	0.00	211.52	
3685.29	90.15	131.10	3200.00	-553.79	147.31	10.00	-30.21	486.19	
3710.73	90.66	131.10	3199.82	-570.51	166.48	2.00	-0.01	511.62	
5000.08	90.66	131.10	3185.00	-1418.04	1138.02	0.00	0.00	1800.06	Tiff 3-2 Lat 2 T1
5600.08	90.66	131.10	3178.10	-1812.44	1590.13	0.00	0.00	2399.64	
6405.02	90.66	115.00	3168.78	-2249.96	2262.56	2.00	-89.90	3189.45	
6955.02	90.66	115.00	3162.44	-2482.38	2761.00	0.00	0.00	3712.06	
7246.56	90.11	127.85	3160.48	-2634.07	3009.24	4.41	92.41	3996.91	
7501.37	90.11	127.85	3160.00	-2790.43	3210.44	0.00	0.00	4250.64	Tiff 3-2 Lat 2 T2
8018.42	89.47	138.17	3161.92	-3142.67	3587.99	2.00	93.56	4766.99	
9853.80	89.47	138.17	3179.00	-4510.29	4811.89	0.00	0.00	6595.23	Tiff 3-2 Lat 2 PBHL

FORMATION TOP DETAILS

No formation data is available





B.P.

La Plata County, CO NAD83

Tiffany Pad 3

Tiffany 3-2

Lateral 2

Plan: Plan #5

Standard Planning Report

26 October, 2017





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 3-2
Company:	B.P.	TVD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2		
Design:	Plan #5		

Project	La Plata County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Southern Zone		

Site	Tiffany Pad 3			
Site Position:		Northing:	1,159,281.94 usft	Latitude: 37.0867476
From: Map		Easting:	2,413,119.43 usft	Longitude: -107.5120251
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: -1.23 °

Well	Tiffany 3-2			
Well Position	+N/-S	-37.79 usft	Northing:	1,159,244.15 usft
	+E/-W	-19.46 usft	Easting:	2,413,099.97 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	6,717.01 usft

Wellbore	Lateral 2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/9/2017	9.17	63.63	50,125

Design	Plan #5			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	3,400.10
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	133.15

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
3,400.10	65.00	145.00	3,138.85	-349.96	-38.12	0.00	0.00	0.00	0.00	
3,685.29	90.15	131.10	3,200.00	-553.79	147.31	10.00	8.82	-4.87	-30.21	
3,710.73	90.66	131.10	3,199.82	-570.51	166.48	2.00	2.00	0.00	-0.01	
5,000.08	90.66	131.10	3,185.00	-1,418.04	1,138.02	0.00	0.00	0.00	0.00	Tiff 3-2 Lat 2 T1
5,600.08	90.66	131.10	3,178.10	-1,812.44	1,590.13	0.00	0.00	0.00	0.00	
6,405.02	90.66	115.00	3,168.78	-2,249.96	2,262.56	2.00	0.00	-2.00	-89.90	
6,955.02	90.66	115.00	3,162.44	-2,482.38	2,761.00	0.00	0.00	0.00	0.00	
7,246.56	90.11	127.85	3,160.48	-2,634.07	3,009.24	4.41	-0.19	4.41	92.41	
7,501.37	90.11	127.85	3,160.00	-2,790.43	3,210.44	0.00	0.00	0.00	0.00	Tiff 3-2 Lat 2 T2
8,018.42	89.47	138.17	3,161.92	-3,142.67	3,587.99	2.00	-0.12	2.00	93.56	
9,853.80	89.47	138.17	3,179.00	-4,510.29	4,811.89	0.00	0.00	0.00	0.00	Tiff 3-2 Lat 2 PBHL



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 3-2
Company:	B.P.	TVD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2		
Design:	Plan #5		

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)
3,400.10	65.00	145.00	3,138.85	-349.96	-38.12	211.52	0.00	0.00	0.00
3,500.00	73.72	139.78	3,174.05	-423.84	18.95	303.68	10.00	8.73	-5.22
3,600.00	82.56	135.01	3,194.59	-495.74	85.16	401.16	10.00	8.85	-4.77
3,685.29	90.15	131.10	3,200.00	-553.79	147.31	486.19	10.00	8.89	-4.59
3,700.00	90.44	131.10	3,199.93	-563.46	158.39	500.89	2.00	2.00	0.00
3,710.73	90.66	131.10	3,199.82	-570.51	166.48	511.62	2.00	2.00	0.00
3,800.00	90.66	131.10	3,198.80	-629.19	233.74	600.82	0.00	0.00	0.00
3,900.00	90.66	131.10	3,197.65	-694.92	309.09	700.75	0.00	0.00	0.00
4,000.00	90.66	131.10	3,196.50	-760.66	384.44	800.68	0.00	0.00	0.00
4,100.00	90.66	131.10	3,195.35	-826.39	459.80	900.61	0.00	0.00	0.00
4,200.00	90.66	131.10	3,194.20	-892.12	535.15	1,000.54	0.00	0.00	0.00
4,300.00	90.66	131.10	3,193.05	-957.86	610.50	1,100.47	0.00	0.00	0.00
4,400.00	90.66	131.10	3,191.90	-1,023.59	685.85	1,200.40	0.00	0.00	0.00
4,500.00	90.66	131.10	3,190.75	-1,089.32	761.20	1,300.33	0.00	0.00	0.00
4,600.00	90.66	131.10	3,189.60	-1,155.06	836.55	1,400.26	0.00	0.00	0.00
4,700.00	90.66	131.10	3,188.45	-1,220.79	911.90	1,500.19	0.00	0.00	0.00
4,800.00	90.66	131.10	3,187.30	-1,286.52	987.26	1,600.12	0.00	0.00	0.00
4,900.00	90.66	131.10	3,186.15	-1,352.25	1,062.61	1,700.05	0.00	0.00	0.00
5,000.00	90.66	131.10	3,185.00	-1,417.99	1,137.96	1,799.98	0.00	0.00	0.00
5,000.08	90.66	131.10	3,185.00	-1,418.04	1,138.02	1,800.06	0.00	0.00	0.00
5,100.00	90.66	131.10	3,183.85	-1,483.72	1,213.31	1,899.91	0.00	0.00	0.00
5,200.00	90.66	131.10	3,182.70	-1,549.45	1,288.66	1,999.84	0.00	0.00	0.00
5,300.00	90.66	131.10	3,181.55	-1,615.19	1,364.01	2,099.77	0.00	0.00	0.00
5,400.00	90.66	131.10	3,180.40	-1,680.92	1,439.37	2,199.70	0.00	0.00	0.00
5,500.00	90.66	131.10	3,179.25	-1,746.65	1,514.72	2,299.63	0.00	0.00	0.00
5,600.00	90.66	131.10	3,178.10	-1,812.39	1,590.07	2,399.56	0.00	0.00	0.00
5,600.08	90.66	131.10	3,178.10	-1,812.44	1,590.13	2,399.64	0.00	0.00	0.00
5,700.00	90.66	129.10	3,176.95	-1,876.79	1,666.55	2,499.40	2.00	0.00	-2.00
5,800.00	90.66	127.10	3,175.79	-1,938.49	1,745.23	2,599.00	2.00	0.00	-2.00
5,900.00	90.67	125.10	3,174.63	-1,997.40	1,826.02	2,698.24	2.00	0.00	-2.00
6,000.00	90.67	123.10	3,173.47	-2,053.46	1,908.82	2,796.98	2.00	0.00	-2.00
6,100.00	90.67	121.10	3,172.31	-2,106.60	1,993.52	2,895.12	2.00	0.00	-2.00
6,200.00	90.66	119.10	3,171.15	-2,156.74	2,080.02	2,992.53	2.00	0.00	-2.00
6,300.00	90.66	117.10	3,169.99	-2,203.84	2,168.22	3,089.09	2.00	0.00	-2.00
6,400.00	90.66	115.10	3,168.83	-2,247.83	2,258.02	3,184.68	2.00	0.00	-2.00
6,405.02	90.66	115.00	3,168.78	-2,249.96	2,262.56	3,189.45	2.00	0.00	-2.00
6,500.00	90.66	115.00	3,167.68	-2,290.09	2,348.64	3,279.70	0.00	0.00	0.00
6,600.00	90.66	115.00	3,166.53	-2,332.35	2,439.26	3,374.72	0.00	0.00	0.00
6,700.00	90.66	115.00	3,165.38	-2,374.61	2,529.89	3,469.74	0.00	0.00	0.00
6,800.00	90.66	115.00	3,164.23	-2,416.87	2,620.51	3,564.76	0.00	0.00	0.00
6,900.00	90.66	115.00	3,163.07	-2,459.13	2,711.14	3,659.78	0.00	0.00	0.00
6,955.02	90.66	115.00	3,162.44	-2,482.38	2,761.00	3,712.06	0.00	0.00	0.00
7,000.00	90.58	116.98	3,161.96	-2,502.09	2,801.43	3,755.04	4.41	-0.19	4.41
7,100.00	90.39	121.39	3,161.11	-2,550.84	2,888.70	3,852.05	4.41	-0.19	4.41
7,200.00	90.20	125.80	3,160.60	-2,606.16	2,971.98	3,950.64	4.41	-0.19	4.41
7,246.56	90.11	127.85	3,160.48	-2,634.07	3,009.24	3,996.91	4.41	-0.19	4.41
7,300.00	90.11	127.85	3,160.38	-2,666.86	3,051.44	4,050.13	0.00	0.00	0.00
7,400.00	90.11	127.85	3,160.19	-2,728.23	3,130.40	4,149.70	0.00	0.00	0.00
7,500.00	90.11	127.85	3,160.00	-2,789.59	3,209.36	4,249.28	0.00	0.00	0.00
7,501.37	90.11	127.85	3,160.00	-2,790.43	3,210.44	4,250.64	0.00	0.00	0.00
7,600.00	89.99	129.82	3,159.92	-2,852.28	3,287.26	4,348.99	2.00	-0.12	2.00
7,700.00	89.86	131.82	3,160.05	-2,917.64	3,362.93	4,448.90	2.00	-0.12	2.00



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 3-2
Company:	B.P.	TVD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2		
Design:	Plan #5		

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)
7,800.00	89.74	133.81	3,160.41	-2,985.60	3,436.28	4,548.89	2.00	-0.12	2.00
7,900.00	89.61	135.81	3,160.97	-3,056.08	3,507.22	4,648.84	2.00	-0.12	2.00
8,000.00	89.49	137.81	3,161.76	-3,128.98	3,575.66	4,748.63	2.00	-0.12	2.00
8,018.42	89.47	138.17	3,161.92	-3,142.67	3,587.99	4,766.99	2.00	-0.12	2.00
8,100.00	89.47	138.17	3,162.68	-3,203.45	3,642.39	4,848.25	0.00	0.00	0.00
8,200.00	89.47	138.17	3,163.61	-3,277.97	3,709.07	4,947.86	0.00	0.00	0.00
8,300.00	89.47	138.17	3,164.54	-3,352.48	3,775.76	5,047.47	0.00	0.00	0.00
8,400.00	89.47	138.17	3,165.47	-3,427.00	3,842.44	5,147.08	0.00	0.00	0.00
8,500.00	89.47	138.17	3,166.40	-3,501.51	3,909.12	5,246.69	0.00	0.00	0.00
8,600.00	89.47	138.17	3,167.34	-3,576.03	3,975.81	5,346.30	0.00	0.00	0.00
8,700.00	89.47	138.17	3,168.27	-3,650.54	4,042.49	5,445.91	0.00	0.00	0.00
8,800.00	89.47	138.17	3,169.20	-3,725.05	4,109.18	5,545.52	0.00	0.00	0.00
8,900.00	89.47	138.17	3,170.13	-3,799.57	4,175.86	5,645.13	0.00	0.00	0.00
9,000.00	89.47	138.17	3,171.06	-3,874.08	4,242.54	5,744.75	0.00	0.00	0.00
9,100.00	89.47	138.17	3,171.99	-3,948.60	4,309.23	5,844.36	0.00	0.00	0.00
9,200.00	89.47	138.17	3,172.92	-4,023.11	4,375.91	5,943.97	0.00	0.00	0.00
9,300.00	89.47	138.17	3,173.85	-4,097.63	4,442.60	6,043.58	0.00	0.00	0.00
9,400.00	89.47	138.17	3,174.78	-4,172.14	4,509.28	6,143.19	0.00	0.00	0.00
9,500.00	89.47	138.17	3,175.71	-4,246.65	4,575.96	6,242.80	0.00	0.00	0.00
9,600.00	89.47	138.17	3,176.64	-4,321.17	4,642.65	6,342.41	0.00	0.00	0.00
9,700.00	89.47	138.17	3,177.57	-4,395.68	4,709.33	6,442.02	0.00	0.00	0.00
9,800.00	89.47	138.17	3,178.50	-4,470.20	4,776.01	6,541.63	0.00	0.00	0.00
9,853.80	89.47	138.17	3,179.00	-4,510.29	4,811.89	6,595.23	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
Tiff 3-2 Lat 2 T2 - plan hits target center - Point	0.00	360.00	3,160.00	-2,790.43	3,210.44	1,156,453.72	2,416,310.41	37.0791702	-107.5008810
Tiff 3-2 Lat 2 T3a - plan misses target center by 53.93usft at 7994.65usft MD (3161.71 TVD, -3125.02 N, 3572.06 E) - Point	0.00	0.00	3,160.00	-3,088.13	3,611.37	1,156,156.02	2,416,711.34	37.0783764	-107.4994852
Tiff 3-2 Lat 2 T3 - plan misses target center by 19.00usft at 9853.63usft MD (3179.00 TVD, -4510.16 N, 4811.78 E) - Point	0.00	360.00	3,160.00	-4,510.29	4,811.89	1,154,733.86	2,417,911.87	37.0745420	-107.4952670
Tiff 3-2 Lat 2 PBHL - plan hits target center - Point	0.00	360.00	3,179.00	-4,510.29	4,811.89	1,154,733.86	2,417,911.87	37.0745420	-107.4952670
Tiff 3-2 Lat 2 T1 - plan hits target center - Point	0.00	360.00	3,185.00	-1,418.04	1,138.02	1,157,826.11	2,414,237.99	37.0828163	-107.5080842