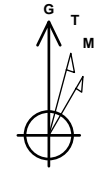




Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad 3
Well: Tiffany 3-2
Wellbore: Lateral 2 ST1
Design: Plan #5

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

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

Plan: Plan #5 (Tiffany 3-2/Lateral 2 ST1)

Created By: Janie Collins Date: 12:12, October 26 2017

DESIGN TARGET DETAILS

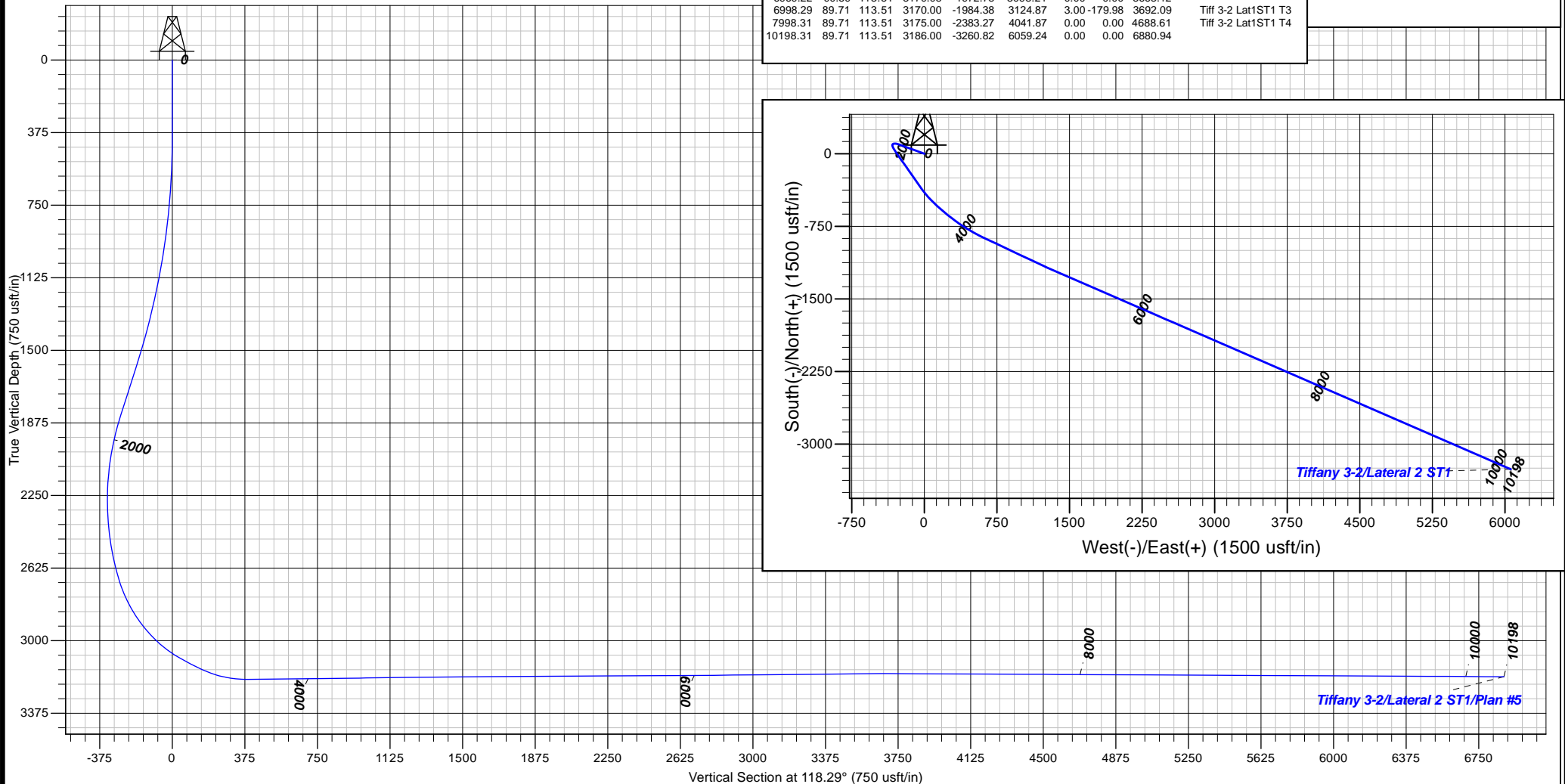
Name	TVD	+N/-S	+E/-W	Northing	Easting
Tiff 3-2 Lat1ST1 T1	3185.00	-1186.59	1290.89	1158057.56	2414390.86
Tiff 3-2 Lat1ST1 T2	3180.00	-1585.49	2207.88	1157658.66	2415307.85
Tiff 3-2 Lat1ST1 T3	3170.00	-1984.38	3124.87	1157259.77	2416224.84
Tiff 3-2 Lat1ST1 T4	3175.00	-2383.27	4041.87	1156860.88	2417141.84
Hardline Corner	3191.00	-2258.56	3755.17	1156985.59	2416855.14

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3735.00	90.66	131.10	3199.55	-586.46	184.76	0.00	0.00	440.62	
4265.33	90.67	115.19	3193.36	-875.47	627.36	3.00	-89.87	967.31	
4940.84	90.67	115.19	3185.48	-1162.92	1238.59	0.00	0.00	1641.78	
4998.24	90.29	113.51	3185.00	-1186.59	1290.89	3.00	-102.83	1699.05	Tiff 3-2 Lat1ST1 T1
4998.29	90.29	113.51	3185.00	-1186.61	1290.93	3.00	179.89	1699.10	
5988.66	90.29	113.51	3180.07	-1581.66	2199.08	0.00	0.00	2686.01	
5988.25	90.57	113.51	3180.00	-1585.49	2207.88	3.00	-0.11	2695.57	Tiff 3-2 Lat1ST1 T2
5998.67	90.59	113.51	3180.00	-1585.66	2208.27	3.00	0.02	2695.99	
6969.22	90.59	113.51	3170.08	-1972.78	3098.21	0.00	0.00	3663.12	
6998.29	89.71	113.51	3170.00	-1984.38	3124.87	3.00	-179.98	3692.09	Tiff 3-2 Lat1ST1 T3
7998.31	89.71	113.51	3175.00	-2383.27	4041.87	0.00	0.00	4688.61	Tiff 3-2 Lat1ST1 T4
10198.31	89.71	113.51	3186.00	-3260.82	6059.24	0.00	0.00	6880.94	

FORMATION TOP DETAILS

No formation data is available





B.P.

La Plata County, CO NAD83

Tiffany Pad 3

Tiffany 3-2

Lateral 2 ST1

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 ST1		
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	Latitude:	37.0866426
	+E/-W	-19.46 usft	Easting:	2,413,099.97 usft	Longitude:	-107.5120890
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,717.01 usft

Wellbore	Lateral 2 ST1				
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:	3,735.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	118.29	

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
3,735.00	90.66	131.10	3,199.55	-586.46	184.76	0.00	0.00	0.00	0.00	
4,265.33	90.67	115.19	3,193.36	-875.47	627.36	3.00	0.00	-3.00	-89.87	
4,940.84	90.67	115.19	3,185.48	-1,162.92	1,238.59	0.00	0.00	0.00	0.00	
4,998.24	90.29	113.51	3,185.00	-1,186.59	1,290.89	3.00	-0.67	-2.92	-102.83	Tiff 3-2 Lat1ST1 T1
4,998.29	90.29	113.51	3,185.00	-1,186.61	1,290.93	3.00	-3.00	0.01	179.89	
5,988.66	90.29	113.51	3,180.07	-1,581.66	2,199.08	0.00	0.00	0.00	0.00	
5,998.25	90.57	113.51	3,180.00	-1,585.49	2,207.88	3.00	3.00	-0.01	-0.11	Tiff 3-2 Lat1ST1 T2
5,998.67	90.59	113.51	3,180.00	-1,585.66	2,208.27	3.00	3.00	0.00	0.02	
6,969.22	90.59	113.51	3,170.08	-1,972.78	3,098.21	0.00	0.00	0.00	0.00	
6,998.29	89.71	113.51	3,170.00	-1,984.38	3,124.87	3.00	-3.00	0.00	-179.98	Tiff 3-2 Lat1ST1 T3
7,998.31	89.71	113.51	3,175.00	-2,383.27	4,041.87	0.00	0.00	0.00	0.00	Tiff 3-2 Lat1ST1 T4
10,198.31	89.71	113.51	3,186.00	-3,260.82	6,059.24	0.00	0.00	0.00	0.00	



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 ST1		
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)
3,735.00	90.66	131.10	3,199.55	-586.46	184.76	440.62	0.00	0.00	0.00
3,800.00	90.66	129.15	3,198.80	-628.35	234.46	504.23	3.00	0.01	-3.00
3,900.00	90.67	126.15	3,197.64	-689.42	313.62	602.88	3.00	0.00	-3.00
4,000.00	90.67	123.15	3,196.47	-746.27	395.87	702.25	3.00	0.00	-3.00
4,100.00	90.67	120.15	3,195.30	-798.73	480.98	802.06	3.00	0.00	-3.00
4,200.00	90.67	117.15	3,194.13	-846.66	568.72	902.04	3.00	0.00	-3.00
4,265.33	90.67	115.19	3,193.36	-875.47	627.36	967.31	3.00	0.00	-3.00
4,300.00	90.67	115.19	3,192.96	-890.22	658.73	1,001.93	0.00	0.00	0.00
4,400.00	90.67	115.19	3,191.79	-932.77	749.21	1,101.78	0.00	0.00	0.00
4,500.00	90.67	115.19	3,190.62	-975.33	839.70	1,201.62	0.00	0.00	0.00
4,600.00	90.67	115.19	3,189.46	-1,017.88	930.18	1,301.47	0.00	0.00	0.00
4,700.00	90.67	115.19	3,188.29	-1,060.44	1,020.67	1,401.32	0.00	0.00	0.00
4,800.00	90.67	115.19	3,187.12	-1,102.99	1,111.16	1,501.16	0.00	0.00	0.00
4,900.00	90.67	115.19	3,185.96	-1,145.55	1,201.64	1,601.01	0.00	0.00	0.00
4,940.84	90.67	115.19	3,185.48	-1,162.92	1,238.59	1,641.78	0.00	0.00	0.00
4,998.24	90.29	113.51	3,185.00	-1,186.59	1,290.89	1,699.05	3.00	-0.67	-2.92
4,998.29	90.29	113.51	3,185.00	-1,186.61	1,290.93	1,699.10	3.00	-3.00	0.01
5,000.00	90.29	113.51	3,184.99	-1,187.29	1,292.50	1,700.80	0.00	0.00	0.00
5,100.00	90.29	113.51	3,184.49	-1,227.18	1,384.20	1,800.45	0.00	0.00	0.00
5,200.00	90.29	113.51	3,184.00	-1,267.07	1,475.90	1,900.10	0.00	0.00	0.00
5,300.00	90.29	113.51	3,183.50	-1,306.96	1,567.60	1,999.76	0.00	0.00	0.00
5,400.00	90.29	113.51	3,183.00	-1,346.85	1,659.29	2,099.41	0.00	0.00	0.00
5,500.00	90.29	113.51	3,182.50	-1,386.74	1,750.99	2,199.06	0.00	0.00	0.00
5,600.00	90.29	113.51	3,182.01	-1,426.63	1,842.69	2,298.71	0.00	0.00	0.00
5,700.00	90.29	113.51	3,181.51	-1,466.52	1,934.39	2,398.36	0.00	0.00	0.00
5,800.00	90.29	113.51	3,181.01	-1,506.41	2,026.09	2,498.01	0.00	0.00	0.00
5,900.00	90.29	113.51	3,180.51	-1,546.30	2,117.79	2,597.66	0.00	0.00	0.00
5,988.66	90.29	113.51	3,180.07	-1,581.66	2,199.08	2,686.01	0.00	0.00	0.00
5,998.25	90.57	113.51	3,180.00	-1,585.49	2,207.88	2,695.57	3.00	3.00	-0.01
5,998.67	90.59	113.51	3,180.00	-1,585.66	2,208.27	2,695.99	3.00	3.00	0.00
6,000.00	90.59	113.51	3,179.98	-1,586.19	2,209.48	2,697.31	0.00	0.00	0.00
6,100.00	90.59	113.51	3,178.96	-1,626.07	2,301.18	2,796.96	0.00	0.00	0.00
6,200.00	90.59	113.51	3,177.94	-1,665.96	2,392.87	2,896.61	0.00	0.00	0.00
6,300.00	90.59	113.51	3,176.92	-1,705.85	2,484.57	2,996.26	0.00	0.00	0.00
6,400.00	90.59	113.51	3,175.89	-1,745.74	2,576.26	3,095.90	0.00	0.00	0.00
6,500.00	90.59	113.51	3,174.87	-1,785.62	2,667.96	3,195.55	0.00	0.00	0.00
6,600.00	90.59	113.51	3,173.85	-1,825.51	2,759.65	3,295.20	0.00	0.00	0.00
6,700.00	90.59	113.51	3,172.83	-1,865.40	2,851.35	3,394.85	0.00	0.00	0.00
6,800.00	90.59	113.51	3,171.81	-1,905.29	2,943.04	3,494.49	0.00	0.00	0.00
6,900.00	90.59	113.51	3,170.78	-1,945.17	3,034.74	3,594.14	0.00	0.00	0.00
6,969.22	90.59	113.51	3,170.08	-1,972.78	3,098.21	3,663.12	0.00	0.00	0.00
6,998.29	89.71	113.51	3,170.00	-1,984.38	3,124.87	3,692.09	3.00	-3.00	0.00
7,000.00	89.71	113.51	3,170.01	-1,985.06	3,126.43	3,693.79	0.00	0.00	0.00
7,100.00	89.71	113.51	3,170.51	-2,024.95	3,218.13	3,793.44	0.00	0.00	0.00
7,200.00	89.71	113.51	3,171.01	-2,064.84	3,309.83	3,893.09	0.00	0.00	0.00
7,300.00	89.71	113.51	3,171.51	-2,104.73	3,401.53	3,992.74	0.00	0.00	0.00
7,400.00	89.71	113.51	3,172.01	-2,144.61	3,493.23	4,092.39	0.00	0.00	0.00
7,500.00	89.71	113.51	3,172.51	-2,184.50	3,584.93	4,192.04	0.00	0.00	0.00
7,600.00	89.71	113.51	3,173.01	-2,224.39	3,676.63	4,291.70	0.00	0.00	0.00
7,700.00	89.71	113.51	3,173.51	-2,264.28	3,768.33	4,391.35	0.00	0.00	0.00
7,800.00	89.71	113.51	3,174.01	-2,304.17	3,860.02	4,491.00	0.00	0.00	0.00
7,900.00	89.71	113.51	3,174.51	-2,344.06	3,951.72	4,590.65	0.00	0.00	0.00



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 ST1		
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)	
7,998.31	89.71	113.51	3,175.00	-2,383.27	4,041.87	4,688.61	0.00	0.00	0.00	
8,000.00	89.71	113.51	3,175.01	-2,383.94	4,043.42	4,690.30	0.00	0.00	0.00	
8,100.00	89.71	113.51	3,175.51	-2,423.83	4,135.12	4,789.95	0.00	0.00	0.00	
8,200.00	89.71	113.51	3,176.01	-2,463.72	4,226.82	4,889.60	0.00	0.00	0.00	
8,300.00	89.71	113.51	3,176.51	-2,503.61	4,318.52	4,989.25	0.00	0.00	0.00	
8,400.00	89.71	113.51	3,177.01	-2,543.50	4,410.22	5,088.91	0.00	0.00	0.00	
8,500.00	89.71	113.51	3,177.51	-2,583.39	4,501.92	5,188.56	0.00	0.00	0.00	
8,600.00	89.71	113.51	3,178.01	-2,623.28	4,593.61	5,288.21	0.00	0.00	0.00	
8,700.00	89.71	113.51	3,178.51	-2,663.16	4,685.31	5,387.86	0.00	0.00	0.00	
8,800.00	89.71	113.51	3,179.01	-2,703.05	4,777.01	5,487.51	0.00	0.00	0.00	
8,900.00	89.71	113.51	3,179.51	-2,742.94	4,868.71	5,587.16	0.00	0.00	0.00	
9,000.00	89.71	113.51	3,180.01	-2,782.83	4,960.41	5,686.81	0.00	0.00	0.00	
9,100.00	89.71	113.51	3,180.51	-2,822.72	5,052.11	5,786.46	0.00	0.00	0.00	
9,200.00	89.71	113.51	3,181.01	-2,862.61	5,143.81	5,886.11	0.00	0.00	0.00	
9,300.00	89.71	113.51	3,181.51	-2,902.49	5,235.51	5,985.77	0.00	0.00	0.00	
9,400.00	89.71	113.51	3,182.01	-2,942.38	5,327.20	6,085.42	0.00	0.00	0.00	
9,500.00	89.71	113.51	3,182.51	-2,982.27	5,418.90	6,185.07	0.00	0.00	0.00	
9,600.00	89.71	113.51	3,183.01	-3,022.16	5,510.60	6,284.72	0.00	0.00	0.00	
9,700.00	89.71	113.51	3,183.51	-3,062.05	5,602.30	6,384.37	0.00	0.00	0.00	
9,800.00	89.71	113.51	3,184.01	-3,101.94	5,694.00	6,484.02	0.00	0.00	0.00	
9,900.00	89.71	113.51	3,184.51	-3,141.83	5,785.70	6,583.67	0.00	0.00	0.00	
10,000.00	89.71	113.51	3,185.01	-3,181.71	5,877.40	6,683.32	0.00	0.00	0.00	
10,100.00	89.71	113.51	3,185.51	-3,221.60	5,969.10	6,782.98	0.00	0.00	0.00	
10,198.31	89.71	113.51	3,186.00	-3,260.82	6,059.24	6,880.94	0.00	0.00	0.00	

Design 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									
Tiff 3-2 Lat1ST1 T3 - plan hits target center - Point	0.00	360.00	3,170.00	-1,984.38	3,124.87	1,157,259.77	2,416,224.84	37.0813784	-107.5012334
Tiff 3-2 Lat1ST1 T4 - plan hits target center - Point	0.00	360.00	3,175.00	-2,383.27	4,041.87	1,156,860.88	2,417,141.84	37.0803370	-107.4980616
Tiff 3-2 Lat1ST1 T2 - plan hits target center - Point	0.00	360.00	3,180.00	-1,585.49	2,207.88	1,157,658.66	2,415,307.85	37.0824196	-107.5044053
Tiff 3-2 Lat1ST1 T1 - plan hits target center - Point	0.00	0.00	3,185.00	-1,186.59	1,290.89	1,158,057.56	2,414,390.86	37.0834608	-107.5075773
Hardline Corner - plan misses target center by 17.56usft at 7685.74usft MD (3173.44 TVD, -2258.59 N, 3755.25 E) - Point	0.00	360.00	3,191.00	-2,258.56	3,755.17	1,156,985.59	2,416,855.14	37.0806626	-107.4990533