



Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Tiffany Pad 4  
Well: Tiffany 4-2  
Wellbore: Lateral 1 ST1  
Design: Plan #3

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



Plan: Plan #3 (Tiffany 4-2/Lateral 1 ST1)

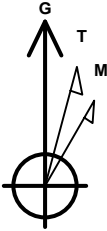
Created By: Janie Collins Date: 10:14, April 04 2017

WELL DETAILS: Tiffany 4-2

GL 6460' & RKB 11' @ 6471.00usft (Aztec 507) 6460.00				
Northing	Easting	Latitude	Longitude	Slot
1159751.08	2402837.05	37.0874222	-107.5473006	

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3564.00	89.93	241.09	3004.37	-179.51	-927.52	0.00	0.00	857.63	
4281.69	94.00	291.98	2978.00	-221.85	-1619.95	7.11	84.80	1519.81	
8543.39	89.01	291.99	2866.00	1372.39	-5569.19	0.12	179.93	5735.79	Tiff 4-2 Lat 1 ST1 PBHL



Azimuths to Grid North  
True North: 1.26°  
Magnetic North: 10.44°

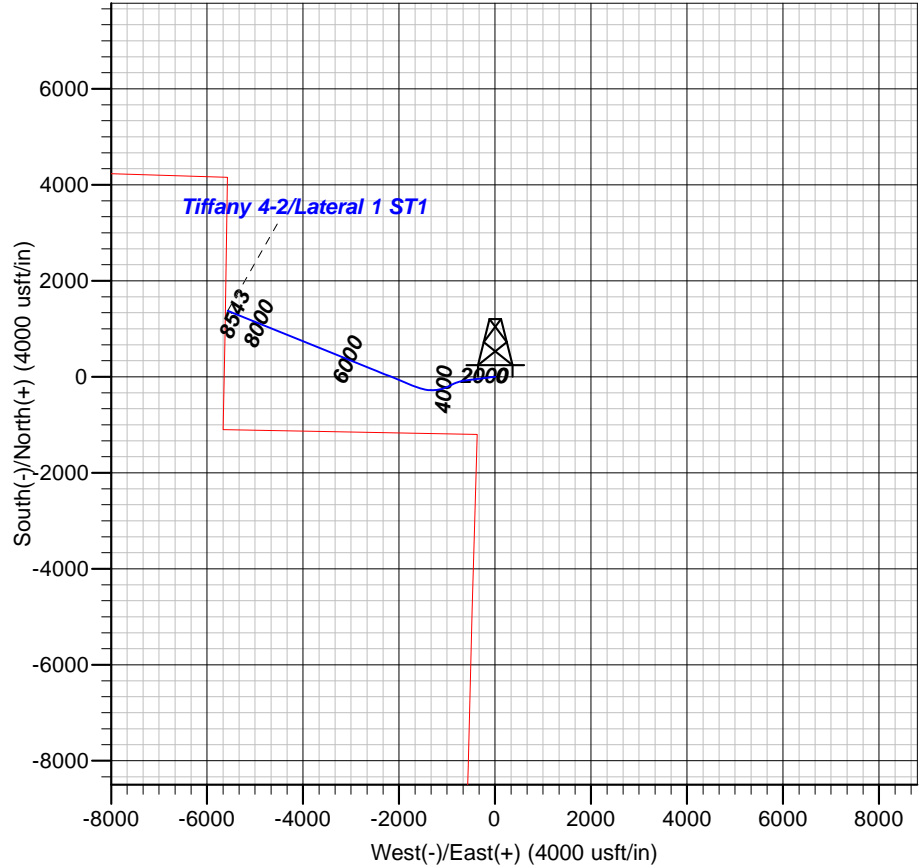
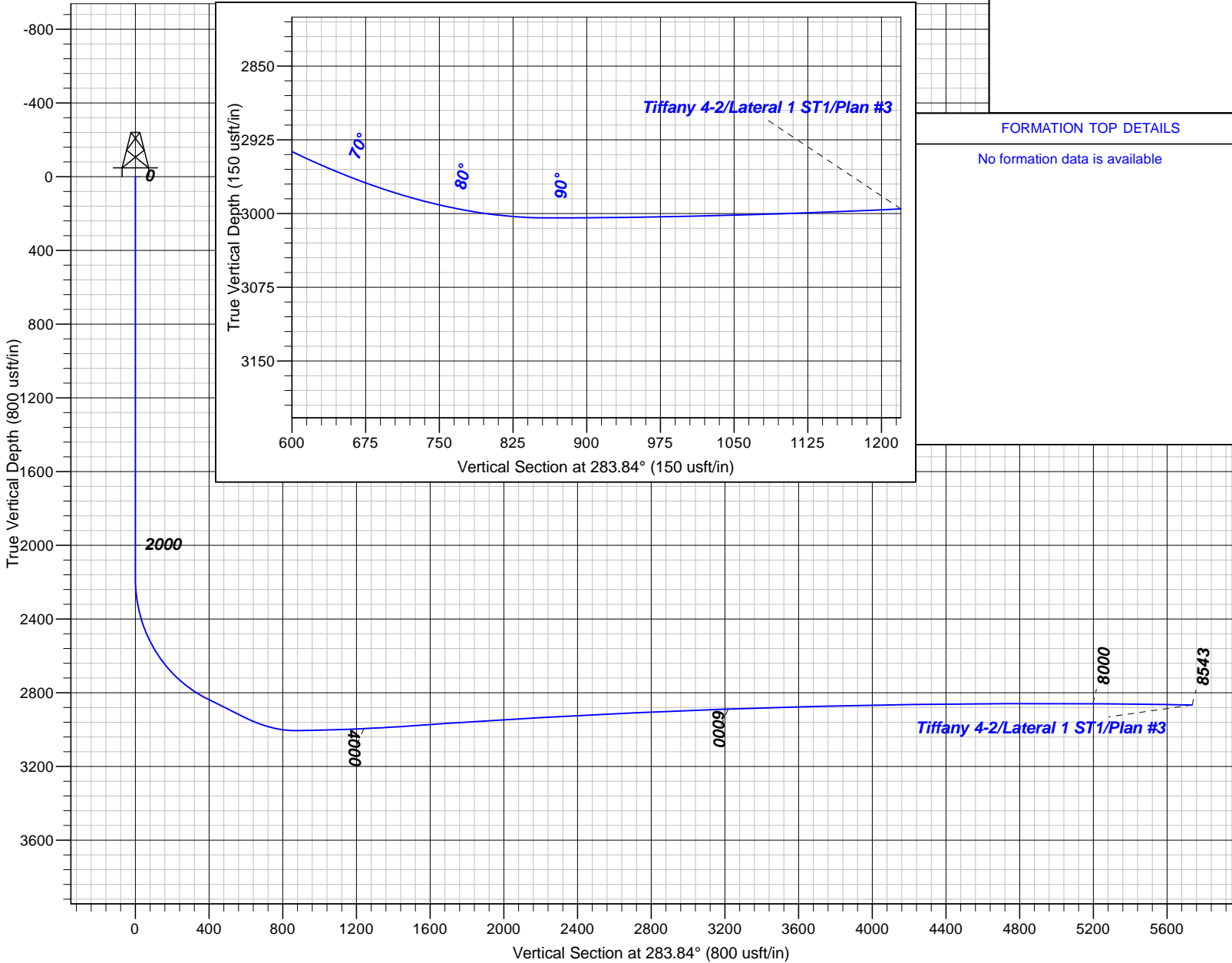
Magnetic Field  
Strength: 50146.7snT  
Dip Angle: 63.65°  
Date: 3/6/2017  
Model: HDGM

FORMATION TOP DETAILS

No formation data is available

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiff 4-2 Lat 1 ST1 PBHL	2866.00	1372.39	-5569.19	1161123.47	2397267.86	37.0908536	-107.5664917





**B.P.**

**La Plata County, CO NAD83**

**Tiffany Pad 4**

**Tiffany 4-2**

**Lateral 1 ST1**

**Plan: Plan #3**

## **Standard Planning Report**

**04 April, 2017**





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 4-2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6460' & RKB 11' @ 6471.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6460' & RKB 11' @ 6471.00usft (Aztec 507)
<b>Site:</b>	Tiffany Pad 4	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 4-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	Plan #3		

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

Site		Tiffany Pad 4			
Site Position:		Northing:	1,159,793.57 usft	Latitude:	37.0875389
From:	Map	Easting:	2,402,838.16 usft	Longitude:	-107.5473000
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.26 °

Well	Tiffany 4-2					
Well Position	+N/-S	-42.49 usft	Northing:	1,159,751.08 usft	Latitude:	37.0874221
	+E/-W	-1.11 usft	Easting:	2,402,837.05 usft	Longitude:	-107.5473006
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,460.00 usft

<b>Wellbore</b>	Lateral 1 ST1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	3/6/2017	9.18	63.65	50,147

<b>Design</b>	Plan #3			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	3,564.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	283.84

<b>Plan Sections</b>										
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
3,564.00	89.93	241.09	3,004.37	-179.51	-927.52	0.00	0.00	0.00	0.00	
4,281.69	94.00	291.98	2,978.00	-221.85	-1,619.95	7.11	0.57	7.09	84.80	
8,543.39	89.01	291.99	2,866.00	1,372.39	-5,569.19	0.12	-0.12	0.00	179.93	Tiff 4-2 Lat 1 ST1 PB†



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 4-2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6460' & RKB 11' @ 6471.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6460' & RKB 11' @ 6471.00usft (Aztec 507)
<b>Site:</b>	Tiffany Pad 4	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 4-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	Plan #3		

## 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)
3,564.00	89.93	241.09	3,004.37	-179.51	-927.52	857.63	0.00	0.00	0.00
3,600.00	90.16	243.64	3,004.34	-196.21	-959.41	884.60	7.11	0.64	7.08
3,700.00	90.81	250.72	3,003.50	-234.97	-1,051.52	964.76	7.11	0.64	7.08
3,800.00	91.44	257.80	3,001.54	-262.08	-1,147.69	1,051.64	7.11	0.63	7.08
3,900.00	92.04	264.88	2,998.50	-277.13	-1,246.44	1,143.93	7.11	0.61	7.08
4,000.00	92.62	271.97	2,994.43	-279.87	-1,346.25	1,240.19	7.11	0.58	7.09
4,100.00	93.15	279.07	2,989.38	-270.27	-1,445.60	1,338.94	7.11	0.54	7.10
4,200.00	93.64	286.17	2,983.45	-248.47	-1,542.95	1,438.68	7.11	0.49	7.10
4,281.69	94.00	291.98	2,978.00	-221.85	-1,619.95	1,519.81	7.11	0.44	7.11
4,300.00	93.98	291.98	2,976.73	-215.01	-1,636.89	1,537.90	0.12	-0.12	0.00
4,400.00	93.86	291.98	2,969.89	-177.67	-1,729.40	1,636.66	0.12	-0.12	0.00
4,500.00	93.74	291.98	2,963.26	-140.32	-1,821.93	1,735.43	0.12	-0.12	0.00
4,600.00	93.63	291.98	2,956.83	-102.97	-1,914.47	1,834.22	0.12	-0.12	0.00
4,700.00	93.51	291.98	2,950.60	-65.62	-2,007.02	1,933.02	0.12	-0.12	0.00
4,800.00	93.39	291.98	2,944.58	-28.25	-2,099.58	2,031.84	0.12	-0.12	0.00
4,900.00	93.28	291.98	2,938.76	9.11	-2,192.16	2,130.66	0.12	-0.12	0.00
5,000.00	93.16	291.98	2,933.15	46.48	-2,284.74	2,229.50	0.12	-0.12	0.00
5,100.00	93.04	291.98	2,927.74	83.86	-2,377.34	2,328.35	0.12	-0.12	0.00
5,200.00	92.93	291.98	2,922.54	121.24	-2,469.94	2,427.21	0.12	-0.12	0.00
5,300.00	92.81	291.98	2,917.53	158.62	-2,562.55	2,526.07	0.12	-0.12	0.00
5,400.00	92.69	291.98	2,912.74	196.01	-2,655.18	2,624.95	0.12	-0.12	0.00
5,500.00	92.57	291.98	2,908.14	233.40	-2,747.81	2,723.84	0.12	-0.12	0.00
5,600.00	92.46	291.98	2,903.75	270.80	-2,840.45	2,822.74	0.12	-0.12	0.00
5,700.00	92.34	291.98	2,899.57	308.19	-2,933.10	2,921.65	0.12	-0.12	0.00
5,800.00	92.22	291.98	2,895.59	345.60	-3,025.76	3,020.56	0.12	-0.12	0.00
5,900.00	92.11	291.98	2,891.81	383.00	-3,118.42	3,119.48	0.12	-0.12	0.00
6,000.00	91.99	291.98	2,888.24	420.41	-3,211.09	3,218.41	0.12	-0.12	0.00
6,100.00	91.87	291.98	2,884.87	457.82	-3,303.77	3,317.35	0.12	-0.12	0.00
6,200.00	91.76	291.98	2,881.70	495.23	-3,396.45	3,416.29	0.12	-0.12	0.00
6,300.00	91.64	291.98	2,878.74	532.65	-3,489.14	3,515.24	0.12	-0.12	0.00
6,400.00	91.52	291.98	2,875.99	570.07	-3,581.84	3,614.20	0.12	-0.12	0.00
6,500.00	91.40	291.98	2,873.43	607.49	-3,674.53	3,713.16	0.12	-0.12	0.00
6,600.00	91.29	291.98	2,871.09	644.91	-3,767.24	3,812.12	0.12	-0.12	0.00
6,700.00	91.17	291.98	2,868.94	682.34	-3,859.95	3,911.09	0.12	-0.12	0.00
6,800.00	91.05	291.98	2,867.00	719.77	-3,952.66	4,010.06	0.12	-0.12	0.00
6,900.00	90.94	291.98	2,865.27	757.19	-4,045.37	4,109.04	0.12	-0.12	0.00
7,000.00	90.82	291.98	2,863.73	794.62	-4,138.09	4,208.02	0.12	-0.12	0.00
7,100.00	90.70	291.98	2,862.41	832.06	-4,230.81	4,307.01	0.12	-0.12	0.00
7,200.00	90.58	291.98	2,861.28	869.49	-4,323.53	4,405.99	0.12	-0.12	0.00
7,300.00	90.47	291.98	2,860.37	906.92	-4,416.26	4,504.98	0.12	-0.12	0.00
7,400.00	90.35	291.98	2,859.65	944.36	-4,508.99	4,603.97	0.12	-0.12	0.00
7,500.00	90.23	291.98	2,859.14	981.79	-4,601.71	4,702.96	0.12	-0.12	0.00
7,600.00	90.12	291.98	2,858.83	1,019.23	-4,694.44	4,801.95	0.12	-0.12	0.00
7,700.00	90.00	291.98	2,858.73	1,056.66	-4,787.17	4,900.94	0.12	-0.12	0.00
7,800.00	89.88	291.99	2,858.84	1,094.10	-4,879.90	4,999.94	0.12	-0.12	0.00
7,900.00	89.77	291.99	2,859.14	1,131.54	-4,972.62	5,098.93	0.12	-0.12	0.00
8,000.00	89.65	291.99	2,859.65	1,168.97	-5,065.35	5,197.92	0.12	-0.12	0.00
8,100.00	89.53	291.99	2,860.37	1,206.41	-5,158.08	5,296.91	0.12	-0.12	0.00
8,200.00	89.41	291.99	2,861.29	1,243.84	-5,250.80	5,395.90	0.12	-0.12	0.00
8,300.00	89.30	291.99	2,862.41	1,281.28	-5,343.52	5,494.88	0.12	-0.12	0.00
8,400.00	89.18	291.99	2,863.74	1,318.71	-5,436.24	5,593.86	0.12	-0.12	0.00
8,500.00	89.06	291.99	2,865.27	1,356.15	-5,528.96	5,692.85	0.12	-0.12	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 4-2
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<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6460' & RKB 11' @ 6471.00usft (Aztec 507)
<b>Site:</b>	Tiffany Pad 4	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 4-2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	Plan #3		

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)
8,543.39	89.01	291.99	2,866.00	1,372.39	-5,569.19	5,735.79	0.12	-0.12	0.00
Tiff 4-2 Lat 1 ST1 PBHL									

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 4-2 Lat 1 ST1 PBHL	0.00	360.00	2,866.00	1,372.39	-5,569.19	1,161,123.47	2,397,267.86	37.0908536	-107.5664918
- plan hits target center									
- Point									