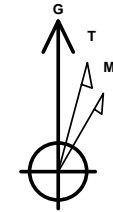




Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Tiffany Pad 2  
Well: Tiffany 2-4  
Wellbore: Lateral 1  
Design: Plan #1

# 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: 1.24°  
Magnetic North: 10.53°

Magnetic Field  
Strength: 50251.2snT  
Dip Angle: 63.65°  
Date: 4/6/2016  
Model: HDGM

## WELL DETAILS: Tiffany 2-4

GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	1163203.21	2408715.54	37.0972529	-107.5274101	Tiffany 2-4

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

Created By: Janie Collins Date: 14:28, April 07 2016

## DESIGN TARGET DETAILS

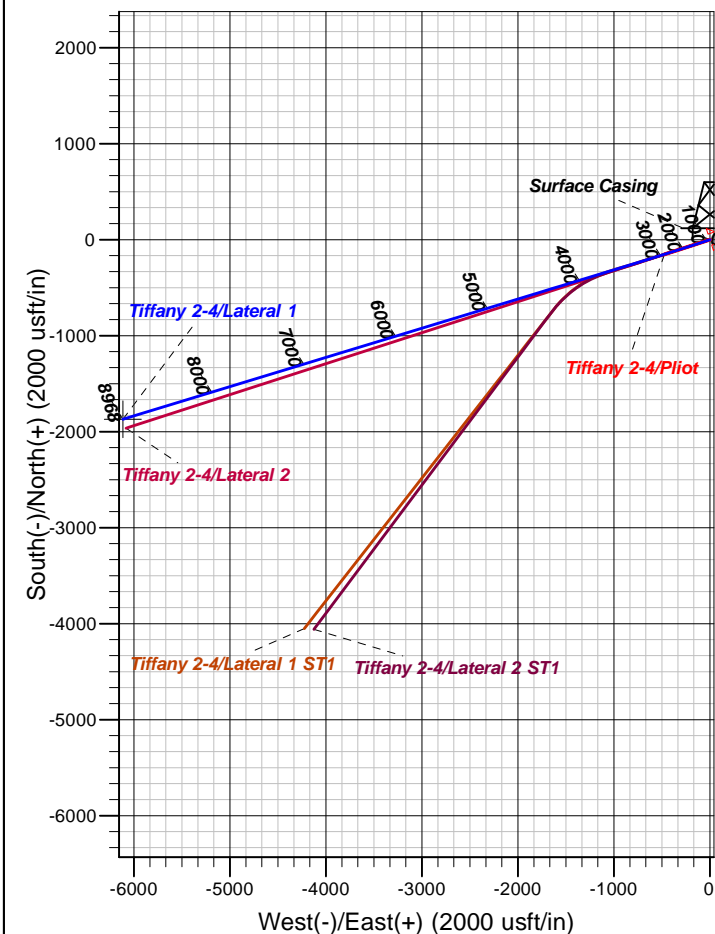
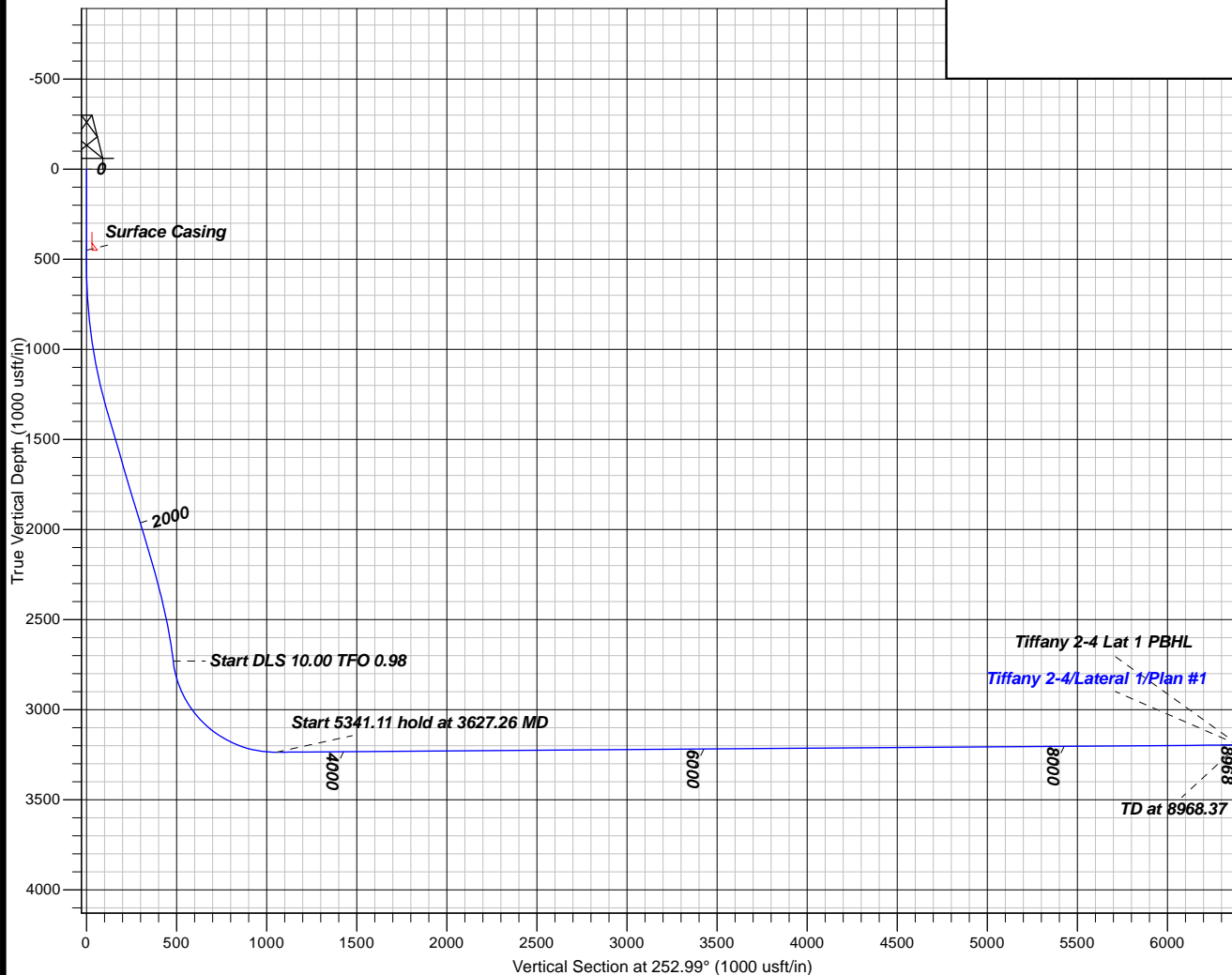
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiffany 2-4 Lat 1 PBHL	3196.00	-1870.20	-6115.21	1161333.01	2402600.33	37.0917515	-107.5482308

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
2789.77	6.68	252.10	2729.71	-147.70	-457.28	0.00	0.00	480.48	
3627.26	90.43	253.08	3236.00	-315.57	-1005.51	10.00	0.98	1053.84	
8968.37	90.43	253.08	3196.00	-1870.20	-6115.21	0.00	0.00	6394.80	Tiffany 2-4 Lat 1 PBHL

## FORMATION TOP DETAILS

No formation data is available





**B.P.**

La Plata County, CO NAD83

Tiffany Pad 2

Tiffany 2-4 - Slot Tiffany 2-4

Lateral 1

Plan: Plan #1

## **Standard Planning Report**

07 April, 2016





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 2-4 - Slot Tiffany 2-4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
<b>Site:</b>	Tiffany Pad 2	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 2-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1		
<b>Design:</b>	Plan #1		

<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 2			
Site Position:		Northing:	1,163,257.22 usft	Latitude:	37.0973972
From:	Map	Easting:	2,408,649.91 usft	Longitude:	-107.5276391
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.24 °

Well	Tiffany 2-4 - Slot Tiffany 2-4					
Well Position	+N/-S	-54.01 usft	Northing:	1,163,203.21 usft	Latitude:	37.0972528
	+E/-W	65.63 usft	Easting:	2,408,715.54 usft	Longitude:	-107.5274101
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,669.66 usft

<b>Wellbore</b>	Lateral 1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	4/6/2016	9.28	63.65	50,251

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN		<b>Tie On Depth:</b>	2,789.77
<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	252.99	

<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
2,789.77	6.68	252.10	2,729.71	-147.70	-457.28	0.00	0.00	0.00	0.00	
3,627.26	90.43	253.08	3,236.00	-315.57	-1,005.51	10.00	10.00	0.12	0.98	
8,968.37	90.43	253.08	3,196.00	-1,870.20	-6,115.21	0.00	0.00	0.00	0.00	Tiffany 2-4 Lat 1 PBH



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 2-4 - Slot Tiffany 2-4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
<b>Site:</b>	Tiffany Pad 2	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 2-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1		
<b>Design:</b>	Plan #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)
2,789.77	6.68	252.10	2,729.71	-147.70	-457.28	480.48	0.00	0.00	0.00
2,800.00	7.70	252.23	2,739.86	-148.09	-458.50	481.76	10.00	10.00	1.28
2,900.00	17.70	252.72	2,837.28	-154.67	-479.45	503.72	10.00	10.00	0.49
3,000.00	27.70	252.86	2,929.42	-166.07	-516.27	542.27	10.00	10.00	0.14
3,100.00	37.70	252.93	3,013.46	-181.94	-567.85	596.23	10.00	10.00	0.07
3,200.00	47.70	252.97	3,086.85	-201.79	-632.61	663.96	10.00	10.00	0.04
3,300.00	57.70	253.00	3,147.37	-225.04	-708.58	743.41	10.00	10.00	0.03
3,400.00	67.70	253.03	3,193.17	-250.96	-793.46	832.17	10.00	10.00	0.03
3,500.00	77.70	253.05	3,222.87	-278.77	-884.67	927.52	10.00	10.00	0.02
3,600.00	87.70	253.07	3,235.55	-307.63	-979.44	1,026.59	10.00	10.00	0.02
3,627.26	90.43	253.08	3,236.00	-315.57	-1,005.51	1,053.84	10.00	10.00	0.02
3,700.00	90.43	253.08	3,235.45	-336.74	-1,075.10	1,126.58	0.00	0.00	0.00
3,800.00	90.43	253.08	3,234.70	-365.85	-1,170.77	1,226.58	0.00	0.00	0.00
3,900.00	90.43	253.08	3,233.95	-394.95	-1,266.44	1,326.57	0.00	0.00	0.00
4,000.00	90.43	253.08	3,233.21	-424.06	-1,362.10	1,426.57	0.00	0.00	0.00
4,100.00	90.43	253.08	3,232.46	-453.17	-1,457.77	1,526.57	0.00	0.00	0.00
4,200.00	90.43	253.08	3,231.71	-482.27	-1,553.44	1,626.56	0.00	0.00	0.00
4,300.00	90.43	253.08	3,230.96	-511.38	-1,649.10	1,726.56	0.00	0.00	0.00
4,400.00	90.43	253.08	3,230.21	-540.49	-1,744.77	1,826.56	0.00	0.00	0.00
4,500.00	90.43	253.08	3,229.46	-569.60	-1,840.44	1,926.55	0.00	0.00	0.00
4,600.00	90.43	253.08	3,228.71	-598.70	-1,936.11	2,026.55	0.00	0.00	0.00
4,700.00	90.43	253.08	3,227.96	-627.81	-2,031.77	2,126.55	0.00	0.00	0.00
4,800.00	90.43	253.08	3,227.22	-656.92	-2,127.44	2,226.55	0.00	0.00	0.00
4,900.00	90.43	253.08	3,226.47	-686.02	-2,223.11	2,326.54	0.00	0.00	0.00
5,000.00	90.43	253.08	3,225.72	-715.13	-2,318.78	2,426.54	0.00	0.00	0.00
5,100.00	90.43	253.08	3,224.97	-744.24	-2,414.44	2,526.54	0.00	0.00	0.00
5,200.00	90.43	253.08	3,224.22	-773.34	-2,510.11	2,626.53	0.00	0.00	0.00
5,300.00	90.43	253.08	3,223.47	-802.45	-2,605.78	2,726.53	0.00	0.00	0.00
5,400.00	90.43	253.08	3,222.72	-831.56	-2,701.44	2,826.53	0.00	0.00	0.00
5,500.00	90.43	253.08	3,221.97	-860.66	-2,797.11	2,926.53	0.00	0.00	0.00
5,600.00	90.43	253.08	3,221.22	-889.77	-2,892.78	3,026.52	0.00	0.00	0.00
5,700.00	90.43	253.08	3,220.48	-918.88	-2,988.45	3,126.52	0.00	0.00	0.00
5,800.00	90.43	253.08	3,219.73	-947.98	-3,084.11	3,226.52	0.00	0.00	0.00
5,900.00	90.43	253.08	3,218.98	-977.09	-3,179.78	3,326.51	0.00	0.00	0.00
6,000.00	90.43	253.08	3,218.23	-1,006.20	-3,275.45	3,426.51	0.00	0.00	0.00
6,100.00	90.43	253.08	3,217.48	-1,035.31	-3,371.12	3,526.51	0.00	0.00	0.00
6,200.00	90.43	253.08	3,216.73	-1,064.41	-3,466.78	3,626.51	0.00	0.00	0.00
6,300.00	90.43	253.08	3,215.98	-1,093.52	-3,562.45	3,726.50	0.00	0.00	0.00
6,400.00	90.43	253.08	3,215.23	-1,122.63	-3,658.12	3,826.50	0.00	0.00	0.00
6,500.00	90.43	253.08	3,214.48	-1,151.73	-3,753.78	3,926.50	0.00	0.00	0.00
6,600.00	90.43	253.08	3,213.74	-1,180.84	-3,849.45	4,026.49	0.00	0.00	0.00
6,700.00	90.43	253.08	3,212.99	-1,209.95	-3,945.12	4,126.49	0.00	0.00	0.00
6,800.00	90.43	253.08	3,212.24	-1,239.05	-4,040.79	4,226.49	0.00	0.00	0.00
6,900.00	90.43	253.08	3,211.49	-1,268.16	-4,136.45	4,326.49	0.00	0.00	0.00
7,000.00	90.43	253.08	3,210.74	-1,297.27	-4,232.12	4,426.48	0.00	0.00	0.00
7,100.00	90.43	253.08	3,209.99	-1,326.37	-4,327.79	4,526.48	0.00	0.00	0.00
7,200.00	90.43	253.08	3,209.24	-1,355.48	-4,423.46	4,626.48	0.00	0.00	0.00
7,300.00	90.43	253.08	3,208.49	-1,384.59	-4,519.12	4,726.47	0.00	0.00	0.00
7,400.00	90.43	253.08	3,207.74	-1,413.70	-4,614.79	4,826.47	0.00	0.00	0.00
7,500.00	90.43	253.08	3,207.00	-1,442.80	-4,710.46	4,926.47	0.00	0.00	0.00
7,600.00	90.43	253.08	3,206.25	-1,471.91	-4,806.12	5,026.46	0.00	0.00	0.00
7,700.00	90.43	253.08	3,205.50	-1,501.02	-4,901.79	5,126.46	0.00	0.00	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 2-4 - Slot Tiffany 2-4
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
<b>Site:</b>	Tiffany Pad 2	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 2-4	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1		
<b>Design:</b>	Plan #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)
7,800.00	90.43	253.08	3,204.75	-1,530.12	-4,997.46	5,226.46	0.00	0.00	0.00
7,900.00	90.43	253.08	3,204.00	-1,559.23	-5,093.13	5,326.46	0.00	0.00	0.00
8,000.00	90.43	253.08	3,203.25	-1,588.34	-5,188.79	5,426.45	0.00	0.00	0.00
8,100.00	90.43	253.08	3,202.50	-1,617.44	-5,284.46	5,526.45	0.00	0.00	0.00
8,200.00	90.43	253.08	3,201.75	-1,646.55	-5,380.13	5,626.45	0.00	0.00	0.00
8,300.00	90.43	253.08	3,201.01	-1,675.66	-5,475.80	5,726.44	0.00	0.00	0.00
8,400.00	90.43	253.08	3,200.26	-1,704.76	-5,571.46	5,826.44	0.00	0.00	0.00
8,500.00	90.43	253.08	3,199.51	-1,733.87	-5,667.13	5,926.44	0.00	0.00	0.00
8,600.00	90.43	253.08	3,198.76	-1,762.98	-5,762.80	6,026.44	0.00	0.00	0.00
8,700.00	90.43	253.08	3,198.01	-1,792.08	-5,858.46	6,126.43	0.00	0.00	0.00
8,800.00	90.43	253.08	3,197.26	-1,821.19	-5,954.13	6,226.43	0.00	0.00	0.00
8,900.00	90.43	253.08	3,196.51	-1,850.30	-6,049.80	6,326.43	0.00	0.00	0.00
8,968.37	90.43	253.08	3,196.00	-1,870.20	-6,115.21	6,394.80	0.00	0.00	0.00
Tiffany 2-4 Lat 1 PBHL									

**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
Tiffany 2-4 Lat 1 PBHL - plan hits target center - Point	0.00	360.00	3,196.00	-1,870.20	-6,115.21	1,161,333.01	2,402,600.33	37.0917514	-107.5482308

**Casing Points**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
450.00	450.00	Surface Casing	8.62	12.25