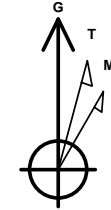




Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Tiffany Pad  
Well: Tiffany 1-1  
Wellbore: Lateral 3  
Design: Plan #1

**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: 1.26°  
Magnetic North: 10.56°

Magnetic Field  
Strength: 50285.2snT  
Dip Angle: 63.67°  
Date: 12/7/2015  
Model: HDGM

**WELL DETAILS: Tiffany 1-1**

GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1165118.91	2400363.16	37.1020115	-107.5561843

Plan: Plan #1 (Tiffany 1-1/Lateral 3)

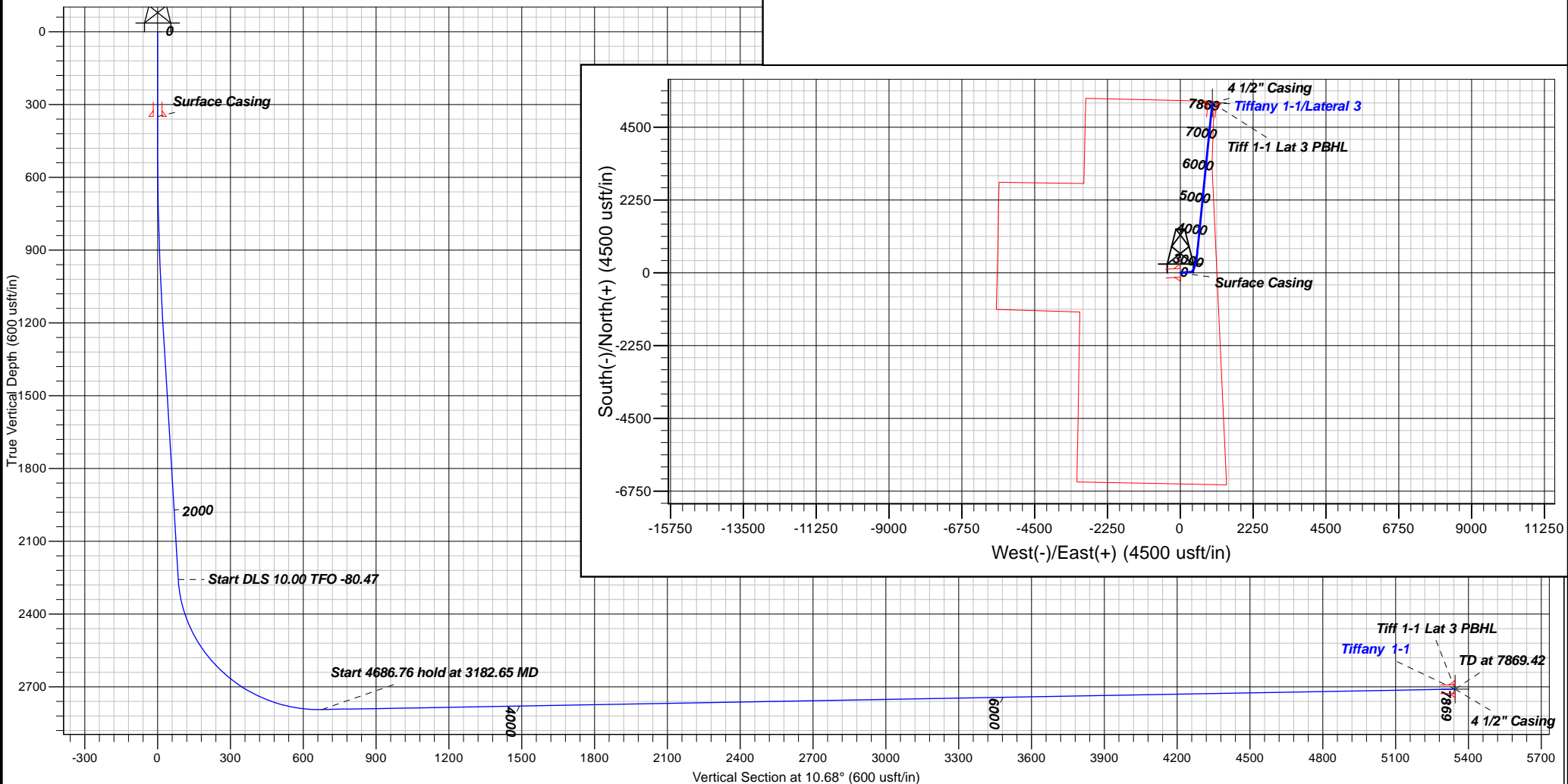
Created By: Janie Collins Date: 12:19, December 21 2015

**DESIGN TARGET DETAILS**

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiff 1-1 Lat 3 PBHL	2710.00	5251.89	990.60	1170370.80	2401353.76	37.1164916	-107.5531843

**SECTION DETAILS**

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	Target	Annotation
2294.62	13.36	86.18	2258.11	22.48	337.03	0.00	0.00	84.56		
3182.65	91.03	5.73	2794.00	589.33	522.41	10.00	-80.47	675.94		
7869.42	91.03	5.73	2710.00	5251.89	990.60	0.00	0.00	5344.50	Tiff 1-1 Lat 3 PBHL	





**B.P.**

**La Plata County, CO NAD83**

**Tiffany Pad**

**Tiffany 1-1**

**Lateral 3**

**Plan: Plan #1**

## **Standard Planning Report**

**21 December, 2015**





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 1-1
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Site:</b>	Tiffany Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 1-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 3		
<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			
Site Position:		Northing:	1,165,118.91 usft	Latitude:	37.1020115
From:	Map	Easting:	2,400,363.16 usft	Longitude:	-107.5561843
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.26 °

Well	Tiffany 1-1					
Well Position	+N/-S	0.00 usft	Northing:	1,165,118.91 usft	Latitude:	37.1020115
	+E/-W	0.00 usft	Easting:	2,400,363.16 usft	Longitude:	-107.5561843
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,479.14 usft

<b>Wellbore</b>	Lateral 3				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	12/7/2015	9.30	63.67	50,285

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN		<b>Tie On Depth:</b>	2,294.62
<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	10.68	

<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
2,294.62	13.36	86.18	2,258.11	22.48	337.03	0.00	0.00	0.00	0.00	
3,182.65	91.03	5.73	2,794.00	589.33	522.41	10.00	8.75	-9.06	-80.47	
7,869.42	91.03	5.73	2,710.00	5,251.89	990.60	0.00	0.00	0.00	0.00	Tiff 1-1 Lat 3 PBHL



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 1-1
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Site:</b>	Tiffany Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 1-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 3		
<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)
2,294.62	13.36	86.18	2,258.11	22.48	337.03	84.56	0.00	0.00	0.00
2,300.00	13.46	83.90	2,263.35	22.59	338.27	84.90	10.00	1.85	-42.39
2,400.00	18.28	51.08	2,359.70	33.71	362.10	100.24	10.00	4.82	-32.83
2,500.00	26.14	34.44	2,452.29	61.80	386.82	132.43	10.00	7.87	-16.63
2,600.00	35.06	25.45	2,538.33	106.01	411.68	180.48	10.00	8.92	-8.99
2,700.00	44.39	19.80	2,615.18	165.01	435.94	242.95	10.00	9.33	-5.65
2,800.00	53.92	15.79	2,680.51	236.99	458.84	317.93	10.00	9.53	-4.01
2,900.00	63.56	12.66	2,732.35	319.77	479.70	403.14	10.00	9.64	-3.13
3,000.00	73.26	10.01	2,769.11	410.84	497.87	496.00	10.00	9.69	-2.64
3,100.00	82.98	7.63	2,789.68	507.42	512.82	593.68	10.00	9.72	-2.39
3,182.65	91.03	5.73	2,794.00	589.33	522.41	675.94	10.00	9.74	-2.29
3,200.00	91.03	5.73	2,793.68	606.59	524.14	693.22	0.00	0.00	0.00
3,300.00	91.03	5.73	2,791.89	706.07	534.13	792.84	0.00	0.00	0.00
3,400.00	91.03	5.73	2,790.10	805.55	544.12	892.45	0.00	0.00	0.00
3,500.00	91.03	5.73	2,788.31	905.04	554.11	992.06	0.00	0.00	0.00
3,600.00	91.03	5.73	2,786.52	1,004.52	564.10	1,091.67	0.00	0.00	0.00
3,700.00	91.03	5.73	2,784.72	1,104.00	574.09	1,191.28	0.00	0.00	0.00
3,800.00	91.03	5.73	2,782.93	1,203.49	584.08	1,290.89	0.00	0.00	0.00
3,900.00	91.03	5.73	2,781.14	1,302.97	594.07	1,390.50	0.00	0.00	0.00
4,000.00	91.03	5.73	2,779.35	1,402.45	604.06	1,490.12	0.00	0.00	0.00
4,100.00	91.03	5.73	2,777.56	1,501.94	614.05	1,589.73	0.00	0.00	0.00
4,200.00	91.03	5.73	2,775.76	1,601.42	624.04	1,689.34	0.00	0.00	0.00
4,300.00	91.03	5.73	2,773.97	1,700.91	634.03	1,788.95	0.00	0.00	0.00
4,400.00	91.03	5.73	2,772.18	1,800.39	644.02	1,888.56	0.00	0.00	0.00
4,500.00	91.03	5.73	2,770.39	1,899.87	654.01	1,988.17	0.00	0.00	0.00
4,600.00	91.03	5.73	2,768.59	1,999.36	664.00	2,087.78	0.00	0.00	0.00
4,700.00	91.03	5.73	2,766.80	2,098.84	673.99	2,187.40	0.00	0.00	0.00
4,800.00	91.03	5.73	2,765.01	2,198.32	683.98	2,287.01	0.00	0.00	0.00
4,900.00	91.03	5.73	2,763.22	2,297.81	693.96	2,386.62	0.00	0.00	0.00
5,000.00	91.03	5.73	2,761.43	2,397.29	703.95	2,486.23	0.00	0.00	0.00
5,100.00	91.03	5.73	2,759.63	2,496.77	713.94	2,585.84	0.00	0.00	0.00
5,200.00	91.03	5.73	2,757.84	2,596.26	723.93	2,685.45	0.00	0.00	0.00
5,300.00	91.03	5.73	2,756.05	2,695.74	733.92	2,785.06	0.00	0.00	0.00
5,400.00	91.03	5.73	2,754.26	2,795.23	743.91	2,884.68	0.00	0.00	0.00
5,500.00	91.03	5.73	2,752.46	2,894.71	753.90	2,984.29	0.00	0.00	0.00
5,600.00	91.03	5.73	2,750.67	2,994.19	763.89	3,083.90	0.00	0.00	0.00
5,700.00	91.03	5.73	2,748.88	3,093.68	773.88	3,183.51	0.00	0.00	0.00
5,800.00	91.03	5.73	2,747.09	3,193.16	783.87	3,283.12	0.00	0.00	0.00
5,900.00	91.03	5.73	2,745.30	3,292.64	793.86	3,382.73	0.00	0.00	0.00
6,000.00	91.03	5.73	2,743.50	3,392.13	803.85	3,482.34	0.00	0.00	0.00
6,100.00	91.03	5.73	2,741.71	3,491.61	813.84	3,581.96	0.00	0.00	0.00
6,200.00	91.03	5.73	2,739.92	3,591.09	823.83	3,681.57	0.00	0.00	0.00
6,300.00	91.03	5.73	2,738.13	3,690.58	833.82	3,781.18	0.00	0.00	0.00
6,400.00	91.03	5.73	2,736.33	3,790.06	843.81	3,880.79	0.00	0.00	0.00
6,500.00	91.03	5.73	2,734.54	3,889.55	853.80	3,980.40	0.00	0.00	0.00
6,600.00	91.03	5.73	2,732.75	3,989.03	863.79	4,080.01	0.00	0.00	0.00
6,700.00	91.03	5.73	2,730.96	4,088.51	873.78	4,179.62	0.00	0.00	0.00
6,800.00	91.03	5.73	2,729.17	4,188.00	883.77	4,279.24	0.00	0.00	0.00
6,900.00	91.03	5.73	2,727.37	4,287.48	893.76	4,378.85	0.00	0.00	0.00
7,000.00	91.03	5.73	2,725.58	4,386.96	903.75	4,478.46	0.00	0.00	0.00
7,100.00	91.03	5.73	2,723.79	4,486.45	913.74	4,578.07	0.00	0.00	0.00
7,200.00	91.03	5.73	2,722.00	4,585.93	923.73	4,677.68	0.00	0.00	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Tiffany 1-1
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
<b>Site:</b>	Tiffany Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Tiffany 1-1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 3		
<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)
7,300.00	91.03	5.73	2,720.21	4,685.41	933.72	4,777.29	0.00	0.00	0.00
7,400.00	91.03	5.73	2,718.41	4,784.90	943.71	4,876.90	0.00	0.00	0.00
7,500.00	91.03	5.73	2,716.62	4,884.38	953.70	4,976.52	0.00	0.00	0.00
7,600.00	91.03	5.73	2,714.83	4,983.87	963.69	5,076.13	0.00	0.00	0.00
7,700.00	91.03	5.73	2,713.04	5,083.35	973.68	5,175.74	0.00	0.00	0.00
7,800.00	91.03	5.73	2,711.24	5,182.83	983.67	5,275.35	0.00	0.00	0.00
7,869.42	91.03	5.73	2,710.00	5,251.89	990.60	5,344.50	0.00	0.00	0.00
Tiff 1-1 Lat 3 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 1-1 Lat 3 PBHL	0.00	0.00	2,710.00	5,251.89	990.60	1,170,370.80	2,401,353.76	37.1164915	-107.5531844
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
350.00	350.00	Surface Casing	9.62	12.25	
7,869.42	2,710.00	4 1/2" Casing	4.50	6.13	