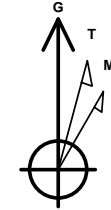




Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad
Well: Tiffany 1-1
Wellbore: Lateral 2
Design: Plan #1

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 2)

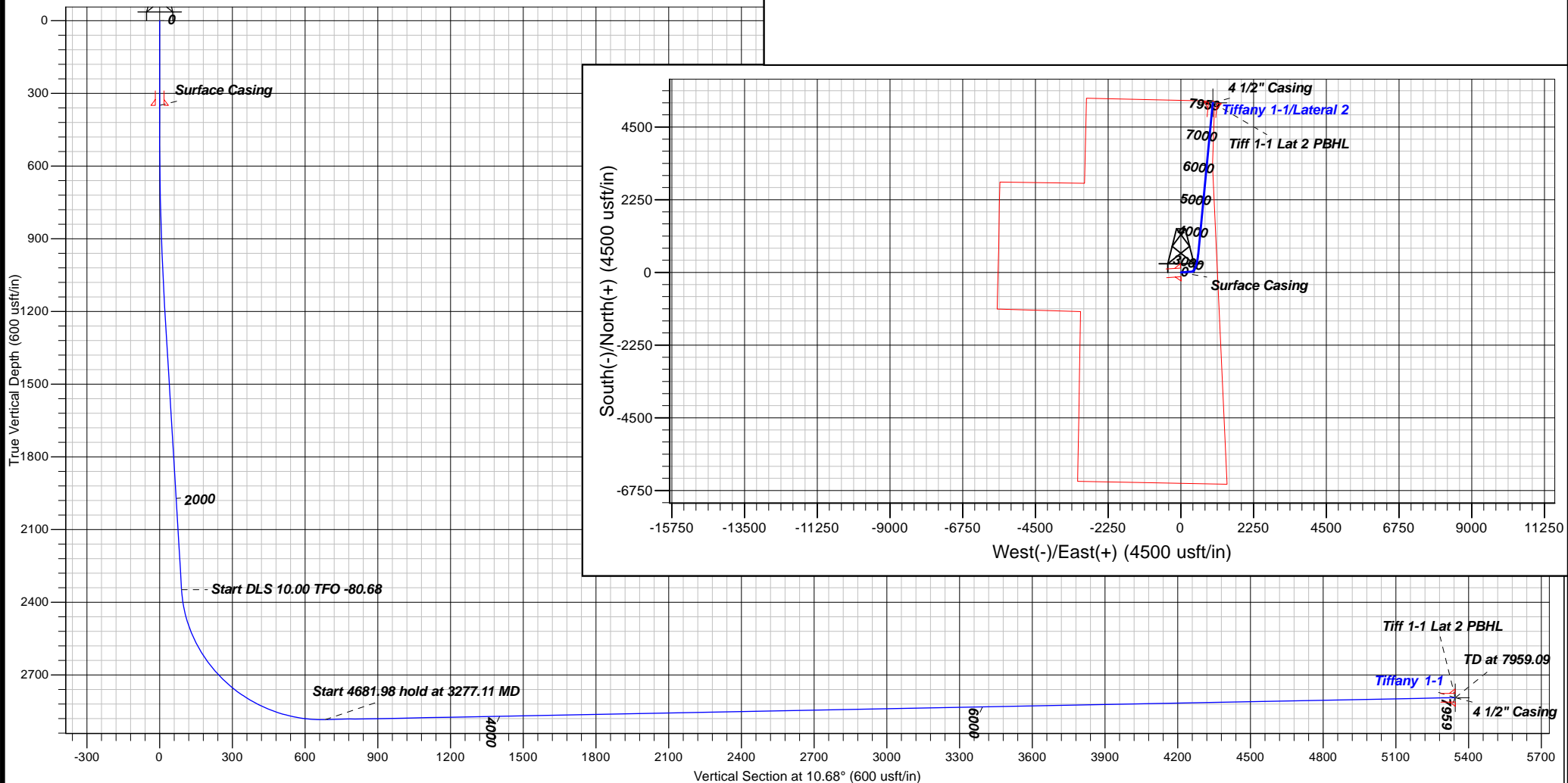
Created By: Janie Collins Date: 12:15, December 21 2015

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiff 1-1 Lat 2 PBHL	2794.00	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
2387.70	13.36	86.18	2348.68	23.91	358.48	0.00	0.00	89.94		
3277.11	91.11	5.50	2885.00	592.34	542.01	10.00	-80.68	682.53		
7959.09	91.11	5.50	2794.00	5251.89	990.60	0.00	0.00	5344.50	Tiff 1-1 Lat 2 PBHL	





B.P.

La Plata County, CO NAD83

Tiffany Pad

Tiffany 1-1

Lateral 2

Plan: Plan #1

Standard Planning Report

21 December, 2015





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 1-1
Company:	B.P.	TVD Reference:	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
Site:	Tiffany Pad	North Reference:	Grid
Well:	Tiffany 1-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2		
Design:	Plan #1		

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			
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

Wellbore	Lateral 2				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/7/2015	9.30	63.67	50,285

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	2,387.70
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	10.68	

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
2,387.70	13.36	86.18	2,348.68	23.91	358.48	0.00	0.00	0.00	0.00	
3,277.11	91.11	5.50	2,885.00	592.34	542.01	10.00	8.74	-9.07	-80.68	
7,959.10	91.11	5.50	2,794.00	5,251.89	990.60	0.00	0.00	0.00	0.00	Tiff 1-1 Lat 2 PBHL



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 1-1
Company:	B.P.	TVD Reference:	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
Site:	Tiffany Pad	North Reference:	Grid
Well:	Tiffany 1-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2		
Design:	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)
2,387.70	13.36	86.18	2,348.68	23.91	358.48	89.94	0.00	0.00	0.00
2,400.00	13.61	81.02	2,360.64	24.24	361.33	90.79	10.00	2.05	-41.99
2,500.00	18.73	49.42	2,456.83	36.55	385.20	107.31	10.00	5.12	-31.59
2,600.00	26.70	33.50	2,549.08	65.80	409.86	140.63	10.00	7.97	-15.92
2,700.00	35.65	24.81	2,634.60	111.10	434.55	189.72	10.00	8.95	-8.69
2,800.00	45.00	19.30	2,710.77	171.08	458.52	253.10	10.00	9.35	-5.51
2,900.00	54.54	15.36	2,775.30	243.91	481.05	328.84	10.00	9.54	-3.94
3,000.00	64.18	12.26	2,826.20	327.38	501.45	414.65	10.00	9.64	-3.09
3,100.00	73.88	9.64	2,861.95	418.95	519.10	507.90	10.00	9.70	-2.62
3,200.00	83.61	7.26	2,881.45	515.84	533.46	605.78	10.00	9.73	-2.38
3,277.11	91.11	5.50	2,885.00	592.34	542.01	682.54	10.00	9.74	-2.29
3,300.00	91.11	5.50	2,884.55	615.11	544.20	705.32	0.00	0.00	0.00
3,400.00	91.11	5.50	2,882.61	714.63	553.78	804.90	0.00	0.00	0.00
3,500.00	91.11	5.50	2,880.67	814.16	563.37	904.47	0.00	0.00	0.00
3,600.00	91.11	5.50	2,878.72	913.68	572.95	1,004.04	0.00	0.00	0.00
3,700.00	91.11	5.50	2,876.78	1,013.20	582.53	1,103.61	0.00	0.00	0.00
3,800.00	91.11	5.50	2,874.84	1,112.72	592.11	1,203.19	0.00	0.00	0.00
3,900.00	91.11	5.50	2,872.89	1,212.24	601.69	1,302.76	0.00	0.00	0.00
4,000.00	91.11	5.50	2,870.95	1,311.76	611.27	1,402.33	0.00	0.00	0.00
4,100.00	91.11	5.50	2,869.01	1,411.28	620.85	1,501.90	0.00	0.00	0.00
4,200.00	91.11	5.50	2,867.06	1,510.80	630.43	1,601.47	0.00	0.00	0.00
4,300.00	91.11	5.50	2,865.12	1,610.32	640.02	1,701.05	0.00	0.00	0.00
4,400.00	91.11	5.50	2,863.18	1,709.84	649.60	1,800.62	0.00	0.00	0.00
4,500.00	91.11	5.50	2,861.23	1,809.37	659.18	1,900.19	0.00	0.00	0.00
4,600.00	91.11	5.50	2,859.29	1,908.89	668.76	1,999.76	0.00	0.00	0.00
4,700.00	91.11	5.50	2,857.34	2,008.41	678.34	2,099.34	0.00	0.00	0.00
4,800.00	91.11	5.50	2,855.40	2,107.93	687.92	2,198.91	0.00	0.00	0.00
4,900.00	91.11	5.50	2,853.46	2,207.45	697.50	2,298.48	0.00	0.00	0.00
5,000.00	91.11	5.50	2,851.51	2,306.97	707.08	2,398.05	0.00	0.00	0.00
5,100.00	91.11	5.50	2,849.57	2,406.49	716.66	2,497.63	0.00	0.00	0.00
5,200.00	91.11	5.50	2,847.63	2,506.01	726.25	2,597.20	0.00	0.00	0.00
5,300.00	91.11	5.50	2,845.68	2,605.53	735.83	2,696.77	0.00	0.00	0.00
5,400.00	91.11	5.50	2,843.74	2,705.05	745.41	2,796.34	0.00	0.00	0.00
5,500.00	91.11	5.50	2,841.80	2,804.57	754.99	2,895.92	0.00	0.00	0.00
5,600.00	91.11	5.50	2,839.85	2,904.10	764.57	2,995.49	0.00	0.00	0.00
5,700.00	91.11	5.50	2,837.91	3,003.62	774.15	3,095.06	0.00	0.00	0.00
5,800.00	91.11	5.50	2,835.96	3,103.14	783.73	3,194.63	0.00	0.00	0.00
5,900.00	91.11	5.50	2,834.02	3,202.66	793.31	3,294.21	0.00	0.00	0.00
6,000.00	91.11	5.50	2,832.08	3,302.18	802.90	3,393.78	0.00	0.00	0.00
6,100.00	91.11	5.50	2,830.13	3,401.70	812.48	3,493.35	0.00	0.00	0.00
6,200.00	91.11	5.50	2,828.19	3,501.22	822.06	3,592.92	0.00	0.00	0.00
6,300.00	91.11	5.50	2,826.25	3,600.74	831.64	3,692.50	0.00	0.00	0.00
6,400.00	91.11	5.50	2,824.30	3,700.26	841.22	3,792.07	0.00	0.00	0.00
6,500.00	91.11	5.50	2,822.36	3,799.78	850.80	3,891.64	0.00	0.00	0.00
6,600.00	91.11	5.50	2,820.42	3,899.31	860.38	3,991.21	0.00	0.00	0.00
6,700.00	91.11	5.50	2,818.47	3,998.83	869.96	4,090.78	0.00	0.00	0.00
6,800.00	91.11	5.50	2,816.53	4,098.35	879.54	4,190.36	0.00	0.00	0.00
6,900.00	91.11	5.50	2,814.58	4,197.87	889.13	4,289.93	0.00	0.00	0.00
7,000.00	91.11	5.50	2,812.64	4,297.39	898.71	4,389.50	0.00	0.00	0.00
7,100.00	91.11	5.50	2,810.70	4,396.91	908.29	4,489.07	0.00	0.00	0.00
7,200.00	91.11	5.50	2,808.75	4,496.43	917.87	4,588.65	0.00	0.00	0.00
7,300.00	91.11	5.50	2,806.81	4,595.95	927.45	4,688.22	0.00	0.00	0.00



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 1-1
Company:	B.P.	TVD Reference:	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6479.14' & RKB 11' @ 6490.14usft (Aztec 507)
Site:	Tiffany Pad	North Reference:	Grid
Well:	Tiffany 1-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2		
Design:	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)
7,400.00	91.11	5.50	2,804.87	4,695.47	937.03	4,787.79	0.00	0.00	0.00
7,500.00	91.11	5.50	2,802.92	4,794.99	946.61	4,887.36	0.00	0.00	0.00
7,600.00	91.11	5.50	2,800.98	4,894.52	956.19	4,986.94	0.00	0.00	0.00
7,700.00	91.11	5.50	2,799.04	4,994.04	965.78	5,086.51	0.00	0.00	0.00
7,800.00	91.11	5.50	2,797.09	5,093.56	975.36	5,186.08	0.00	0.00	0.00
7,900.00	91.11	5.50	2,795.15	5,193.08	984.94	5,285.65	0.00	0.00	0.00
7,959.09	91.11	5.50	2,794.00	5,251.89	990.60	5,344.49	0.00	0.00	0.00
4 1/2" Casing - Tiff 1-1 Lat 2 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
Tiff 1-1 Lat 2 PBHL - plan hits target center - Point	0.00	0.00	2,794.00	5,251.89	990.60	1,170,370.80	2,401,353.76	37.1164915	-107.5531844

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
7,959.09	2,794.00	4 1/2" Casing	4.50	6.13