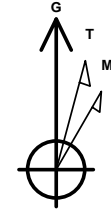




Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad
Well: Tiffany 1-1
Wellbore: Lateral 1
Design: Plan #1

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: 1.26°
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 1)

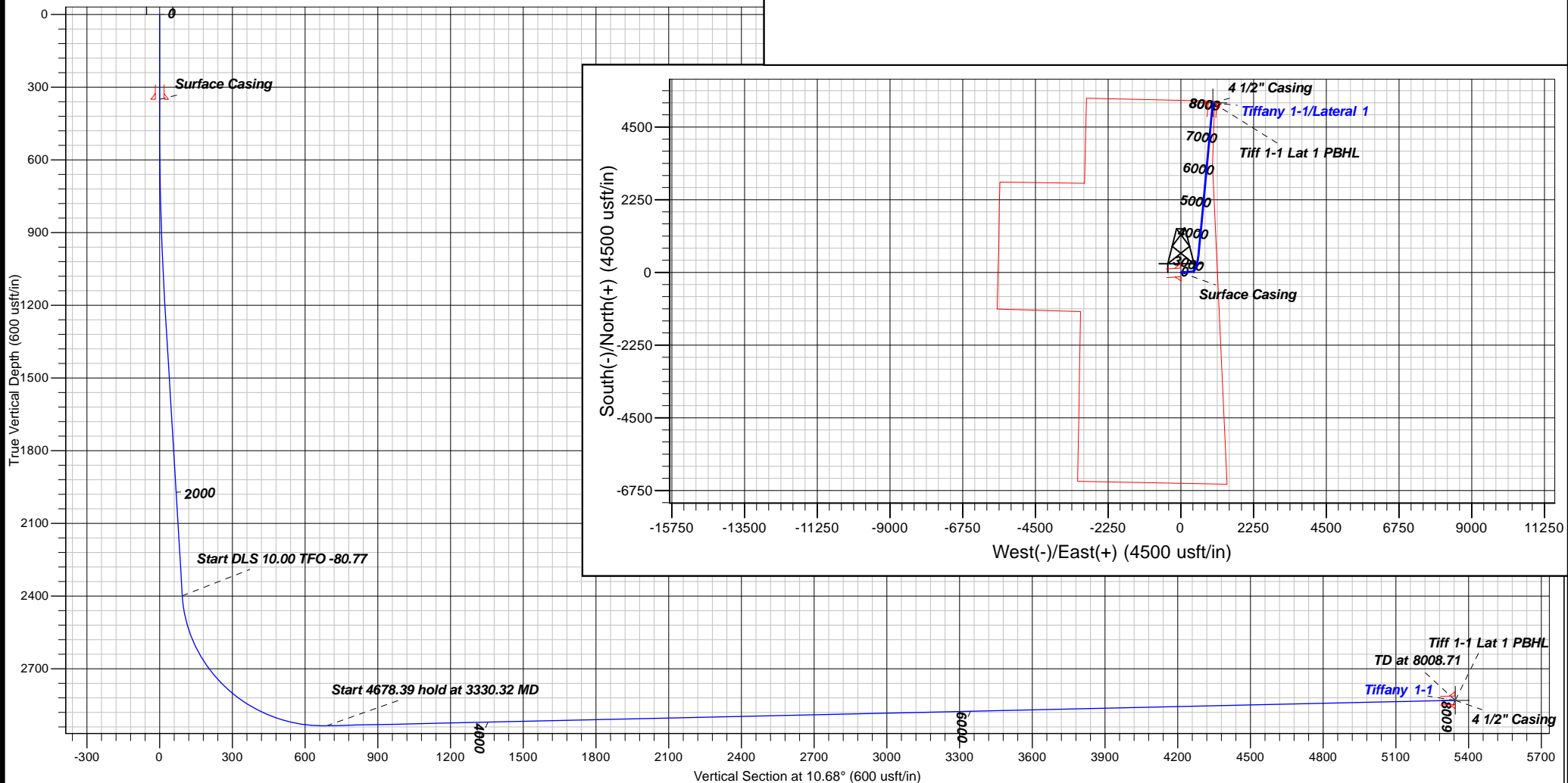
Created By: Janie Collins Date: 12:09, December 21 2015

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiff 1-1 Lat 1 PBHL	2830.00	5251.89	990.60	1170370.80	2401353.76	37.1164916	-107.5531843

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target	Annotation
2438.93	13.36	86.18	2398.52	24.70	370.29	0.00	0.00	92.91		
3330.32	91.29	5.37	2935.00	595.18	553.15	10.00	-80.77	687.40		
8008.71	91.29	5.37	2830.00	5251.89	990.60	0.00	0.00	5344.50	Tiff 1-1 Lat 1 PBHL	





B.P.

La Plata County, CO NAD83

Tiffany Pad

Tiffany 1-1

Lateral 1

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 1		
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 1				
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:	2,438.93
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
2,438.93	13.36	86.18	2,398.52	24.70	370.29	0.00	0.00	0.00	0.00	
3,330.32	91.29	5.37	2,935.00	595.18	553.15	10.00	8.74	-9.07	-80.77	
8,008.71	91.29	5.37	2,830.00	5,251.89	990.60	0.00	0.00	0.00	0.00	Tiff 1-1 Lat 1 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 1		
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)
2,438.93	13.36	86.18	2,398.52	24.70	370.29	92.91	0.00	0.00	0.00
2,500.00	15.53	63.09	2,457.71	28.88	384.63	99.67	10.00	3.56	-37.81
2,600.00	22.41	40.27	2,552.34	49.53	408.95	124.47	10.00	6.88	-22.82
2,700.00	30.98	28.63	2,641.66	86.76	433.66	165.63	10.00	8.57	-11.64
2,800.00	40.16	21.78	2,722.95	139.43	458.02	221.90	10.00	9.19	-6.85
2,900.00	49.62	17.16	2,793.73	205.93	481.28	291.57	10.00	9.46	-4.62
3,000.00	59.22	13.69	2,851.87	284.26	502.73	372.52	10.00	9.60	-3.47
3,100.00	68.89	10.86	2,895.58	372.03	521.73	462.29	10.00	9.67	-2.83
3,200.00	78.60	8.37	2,923.54	466.57	537.69	558.15	10.00	9.71	-2.48
3,300.00	88.33	6.06	2,934.90	565.01	550.13	657.19	10.00	9.73	-2.32
3,330.32	91.29	5.37	2,935.00	595.18	553.15	687.40	10.00	9.74	-2.28
3,400.00	91.29	5.37	2,933.44	664.53	559.67	756.75	0.00	0.00	0.00
3,500.00	91.29	5.37	2,931.20	764.07	569.02	856.30	0.00	0.00	0.00
3,600.00	91.29	5.37	2,928.95	863.61	578.37	955.84	0.00	0.00	0.00
3,700.00	91.29	5.37	2,926.71	963.14	587.72	1,055.39	0.00	0.00	0.00
3,800.00	91.29	5.37	2,924.46	1,062.68	597.07	1,154.93	0.00	0.00	0.00
3,900.00	91.29	5.37	2,922.22	1,162.22	606.42	1,254.48	0.00	0.00	0.00
4,000.00	91.29	5.37	2,919.97	1,261.75	615.77	1,354.02	0.00	0.00	0.00
4,100.00	91.29	5.37	2,917.73	1,361.29	625.12	1,453.57	0.00	0.00	0.00
4,200.00	91.29	5.37	2,915.48	1,460.83	634.47	1,553.11	0.00	0.00	0.00
4,300.00	91.29	5.37	2,913.24	1,560.36	643.82	1,652.66	0.00	0.00	0.00
4,400.00	91.29	5.37	2,911.00	1,659.90	653.17	1,752.20	0.00	0.00	0.00
4,500.00	91.29	5.37	2,908.75	1,759.44	662.52	1,851.75	0.00	0.00	0.00
4,600.00	91.29	5.37	2,906.51	1,858.97	671.87	1,951.29	0.00	0.00	0.00
4,700.00	91.29	5.37	2,904.26	1,958.51	681.22	2,050.84	0.00	0.00	0.00
4,800.00	91.29	5.37	2,902.02	2,058.05	690.57	2,150.38	0.00	0.00	0.00
4,900.00	91.29	5.37	2,899.77	2,157.58	699.92	2,249.93	0.00	0.00	0.00
5,000.00	91.29	5.37	2,897.53	2,257.12	709.27	2,349.47	0.00	0.00	0.00
5,100.00	91.29	5.37	2,895.28	2,356.66	718.62	2,449.02	0.00	0.00	0.00
5,200.00	91.29	5.37	2,893.04	2,456.19	727.97	2,548.56	0.00	0.00	0.00
5,300.00	91.29	5.37	2,890.80	2,555.73	737.32	2,648.11	0.00	0.00	0.00
5,400.00	91.29	5.37	2,888.55	2,655.27	746.67	2,747.65	0.00	0.00	0.00
5,500.00	91.29	5.37	2,886.31	2,754.80	756.03	2,847.20	0.00	0.00	0.00
5,600.00	91.29	5.37	2,884.06	2,854.34	765.38	2,946.74	0.00	0.00	0.00
5,700.00	91.29	5.37	2,881.82	2,953.88	774.73	3,046.29	0.00	0.00	0.00
5,800.00	91.29	5.37	2,879.57	3,053.41	784.08	3,145.83	0.00	0.00	0.00
5,900.00	91.29	5.37	2,877.33	3,152.95	793.43	3,245.38	0.00	0.00	0.00
6,000.00	91.29	5.37	2,875.08	3,252.49	802.78	3,344.92	0.00	0.00	0.00
6,100.00	91.29	5.37	2,872.84	3,352.02	812.13	3,444.47	0.00	0.00	0.00
6,200.00	91.29	5.37	2,870.60	3,451.56	821.48	3,544.01	0.00	0.00	0.00
6,300.00	91.29	5.37	2,868.35	3,551.10	830.83	3,643.56	0.00	0.00	0.00
6,400.00	91.29	5.37	2,866.11	3,650.63	840.18	3,743.10	0.00	0.00	0.00
6,500.00	91.29	5.37	2,863.86	3,750.17	849.53	3,842.65	0.00	0.00	0.00
6,600.00	91.29	5.37	2,861.62	3,849.71	858.88	3,942.19	0.00	0.00	0.00
6,700.00	91.29	5.37	2,859.37	3,949.24	868.23	4,041.74	0.00	0.00	0.00
6,800.00	91.29	5.37	2,857.13	4,048.78	877.58	4,141.28	0.00	0.00	0.00
6,900.00	91.29	5.37	2,854.88	4,148.31	886.93	4,240.83	0.00	0.00	0.00
7,000.00	91.29	5.37	2,852.64	4,247.85	896.28	4,340.37	0.00	0.00	0.00
7,100.00	91.29	5.37	2,850.40	4,347.39	905.63	4,439.92	0.00	0.00	0.00
7,200.00	91.29	5.37	2,848.15	4,446.92	914.98	4,539.46	0.00	0.00	0.00
7,300.00	91.29	5.37	2,845.91	4,546.46	924.33	4,639.01	0.00	0.00	0.00
7,400.00	91.29	5.37	2,843.66	4,646.00	933.68	4,738.55	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 1		
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)
7,500.00	91.29	5.37	2,841.42	4,745.53	943.03	4,838.10	0.00	0.00	0.00
7,600.00	91.29	5.37	2,839.17	4,845.07	952.38	4,937.64	0.00	0.00	0.00
7,700.00	91.29	5.37	2,836.93	4,944.61	961.73	5,037.19	0.00	0.00	0.00
7,800.00	91.29	5.37	2,834.68	5,044.14	971.08	5,136.73	0.00	0.00	0.00
7,900.00	91.29	5.37	2,832.44	5,143.68	980.43	5,236.28	0.00	0.00	0.00
8,000.00	91.29	5.37	2,830.20	5,243.22	989.79	5,335.82	0.00	0.00	0.00
8,008.71	91.29	5.37	2,830.00	5,251.89	990.60	5,344.49	0.00	0.00	0.00

4 1/2" Casing - Tiff 1-1 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
Tiff 1-1 Lat 1 PBHL - plan hits target center - Point	0.00	0.00	2,830.00	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
8,008.71	2,830.00	4 1/2" Casing	4.50	6.13