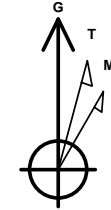




Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad
Well: Tiffany 1-3
Wellbore: Lateral 2
Design: Plan #1

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 1-3

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

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1165033.91	2400363.16	37.1017781	-107.5561779

C

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

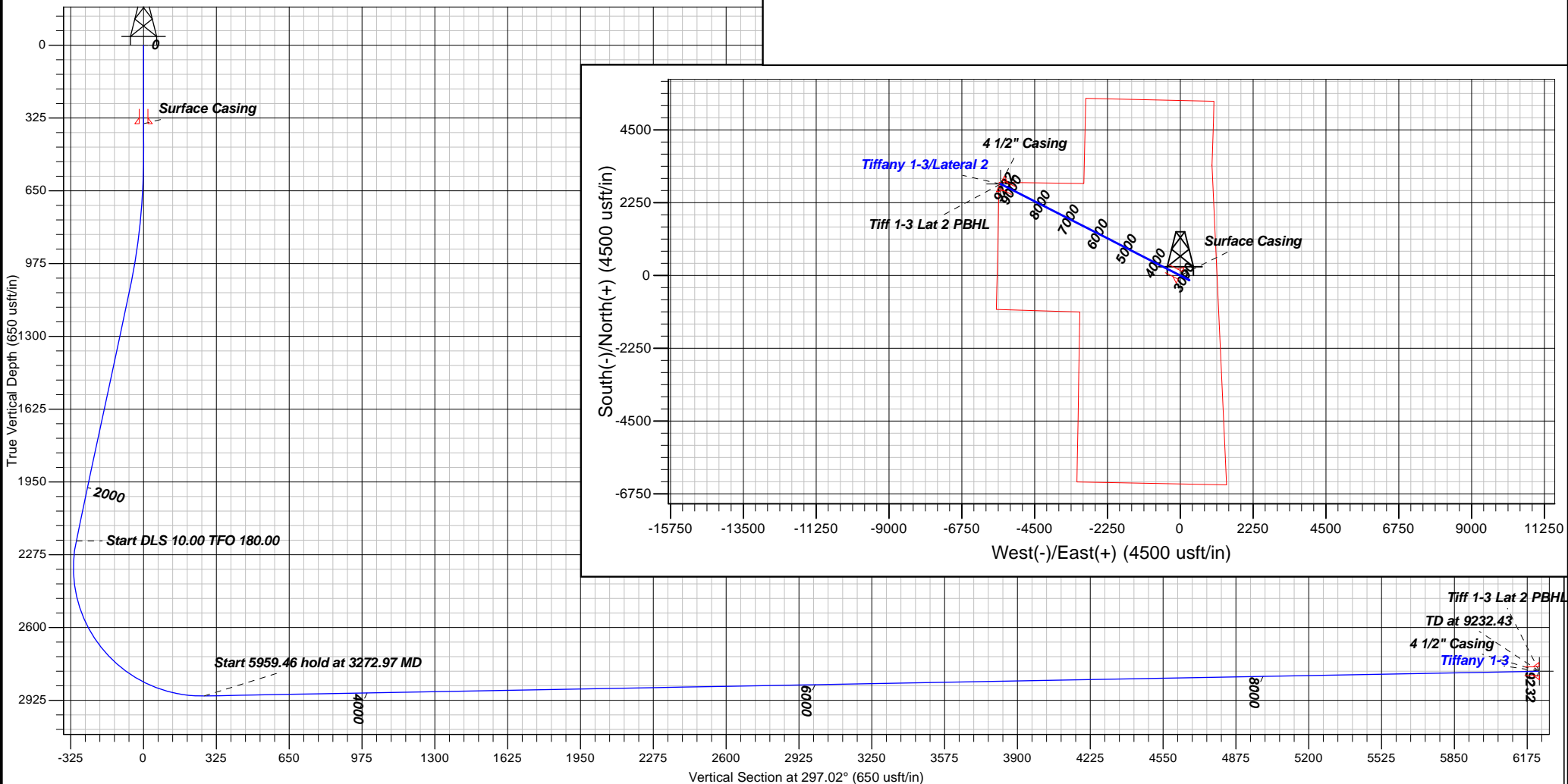
Created By: Janie Collins Date: 15:55, December 21 2015

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiff 1-3 Lat 2 PBHL	2795.00	2829.87	-5549.28	1167863.78	2394813.88	37.1092111	-107.5754159

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
2242.31	12.01	117.02	2212.94	-136.41	267.49	0.00	0.00	-300.26		
3272.97	91.06	297.02	2905.00	122.99	-241.19	10.00	180.00	270.73		
9232.43	91.06	297.02	2795.00	2829.87	-5549.28	0.00	0.00	6229.18	Tiff 1-3 Lat 2 PBHL	





B.P.

La Plata County, CO NAD83

Tiffany Pad

Tiffany 1-3 - Slot C

Lateral 2

Plan: Plan #1

Standard Planning Report

21 December, 2015





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 1-3 - Slot C
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 1-3	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 1-3 - Slot C					
Well Position	+N/-S	-85.00 usft	Northing:	1,165,033.91 usft	Latitude:	37.1017781
	+E/-W	0.00 usft	Easting:	2,400,363.16 usft	Longitude:	-107.5561779
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:	2,242.31
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	297.02	

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
2,242.31	12.01	117.02	2,212.94	-136.41	267.49	0.00	0.00	0.00	0.00	
3,272.97	91.06	297.02	2,905.00	122.99	-241.19	10.00	7.67	17.46	180.00	
9,232.43	91.06	297.02	2,795.00	2,829.87	-5,549.28	0.00	0.00	0.00	0.00	Tiff 1-3 Lat 2 PBHL



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 1-3 - Slot C
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 1-3	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)
2,242.31	12.01	117.02	2,212.94	-136.41	267.49	-300.26	0.00	0.00	0.00
2,300.00	6.24	117.02	2,269.87	-140.56	275.63	-309.41	10.00	-10.00	0.00
2,400.00	3.76	297.02	2,369.72	-141.54	277.56	-311.56	10.00	-2.48	180.00
2,500.00	13.76	297.02	2,468.43	-134.63	264.01	-296.35	10.00	10.00	0.00
2,600.00	23.76	297.02	2,563.00	-120.04	235.39	-264.23	10.00	10.00	0.00
2,700.00	33.76	297.02	2,650.55	-98.21	192.58	-216.18	10.00	10.00	0.00
2,800.00	43.76	297.02	2,728.43	-69.80	136.88	-153.65	10.00	10.00	0.00
2,900.00	53.76	297.02	2,794.26	-35.69	69.97	-78.55	10.00	10.00	0.00
3,000.00	63.76	297.02	2,846.06	3.11	-6.10	6.84	10.00	10.00	0.00
3,100.00	73.76	297.02	2,882.24	45.40	-89.03	99.93	10.00	10.00	0.00
3,200.00	83.76	297.02	2,901.71	89.90	-176.29	197.89	10.00	10.00	0.00
3,272.97	91.06	297.02	2,905.00	122.99	-241.19	270.73	10.00	10.00	0.00
3,300.00	91.06	297.02	2,904.50	135.27	-265.26	297.76	0.00	0.00	0.00
3,400.00	91.06	297.02	2,902.66	180.69	-354.33	397.75	0.00	0.00	0.00
3,500.00	91.06	297.02	2,900.81	226.11	-443.40	497.73	0.00	0.00	0.00
3,600.00	91.06	297.02	2,898.97	271.53	-532.47	597.71	0.00	0.00	0.00
3,700.00	91.06	297.02	2,897.12	316.96	-621.54	697.69	0.00	0.00	0.00
3,800.00	91.06	297.02	2,895.27	362.38	-710.61	797.68	0.00	0.00	0.00
3,900.00	91.06	297.02	2,893.43	407.80	-799.68	897.66	0.00	0.00	0.00
4,000.00	91.06	297.02	2,891.58	453.22	-888.75	997.64	0.00	0.00	0.00
4,100.00	91.06	297.02	2,889.74	498.64	-977.82	1,097.63	0.00	0.00	0.00
4,200.00	91.06	297.02	2,887.89	544.06	-1,066.89	1,197.61	0.00	0.00	0.00
4,300.00	91.06	297.02	2,886.04	589.49	-1,155.96	1,297.59	0.00	0.00	0.00
4,400.00	91.06	297.02	2,884.20	634.91	-1,245.03	1,397.57	0.00	0.00	0.00
4,500.00	91.06	297.02	2,882.35	680.33	-1,334.10	1,497.56	0.00	0.00	0.00
4,600.00	91.06	297.02	2,880.51	725.75	-1,423.17	1,597.54	0.00	0.00	0.00
4,700.00	91.06	297.02	2,878.66	771.17	-1,512.24	1,697.52	0.00	0.00	0.00
4,800.00	91.06	297.02	2,876.82	816.59	-1,601.31	1,797.51	0.00	0.00	0.00
4,900.00	91.06	297.02	2,874.97	862.01	-1,690.38	1,897.49	0.00	0.00	0.00
5,000.00	91.06	297.02	2,873.12	907.44	-1,779.45	1,997.47	0.00	0.00	0.00
5,100.00	91.06	297.02	2,871.28	952.86	-1,868.52	2,097.46	0.00	0.00	0.00
5,200.00	91.06	297.02	2,869.43	998.28	-1,957.59	2,197.44	0.00	0.00	0.00
5,300.00	91.06	297.02	2,867.59	1,043.70	-2,046.66	2,297.42	0.00	0.00	0.00
5,400.00	91.06	297.02	2,865.74	1,089.12	-2,135.73	2,397.40	0.00	0.00	0.00
5,500.00	91.06	297.02	2,863.89	1,134.54	-2,224.80	2,497.39	0.00	0.00	0.00
5,600.00	91.06	297.02	2,862.05	1,179.97	-2,313.87	2,597.37	0.00	0.00	0.00
5,700.00	91.06	297.02	2,860.20	1,225.39	-2,402.94	2,697.35	0.00	0.00	0.00
5,800.00	91.06	297.02	2,858.36	1,270.81	-2,492.01	2,797.34	0.00	0.00	0.00
5,900.00	91.06	297.02	2,856.51	1,316.23	-2,581.08	2,897.32	0.00	0.00	0.00
6,000.00	91.06	297.02	2,854.67	1,361.65	-2,670.15	2,997.30	0.00	0.00	0.00
6,100.00	91.06	297.02	2,852.82	1,407.07	-2,759.22	3,097.29	0.00	0.00	0.00
6,200.00	91.06	297.02	2,850.97	1,452.49	-2,848.29	3,197.27	0.00	0.00	0.00
6,300.00	91.06	297.02	2,849.13	1,497.92	-2,937.36	3,297.25	0.00	0.00	0.00
6,400.00	91.06	297.02	2,847.28	1,543.34	-3,026.43	3,397.23	0.00	0.00	0.00
6,500.00	91.06	297.02	2,845.44	1,588.76	-3,115.51	3,497.22	0.00	0.00	0.00
6,600.00	91.06	297.02	2,843.59	1,634.18	-3,204.58	3,597.20	0.00	0.00	0.00
6,700.00	91.06	297.02	2,841.74	1,679.60	-3,293.65	3,697.18	0.00	0.00	0.00
6,800.00	91.06	297.02	2,839.90	1,725.02	-3,382.72	3,797.17	0.00	0.00	0.00
6,900.00	91.06	297.02	2,838.05	1,770.45	-3,471.79	3,897.15	0.00	0.00	0.00
7,000.00	91.06	297.02	2,836.21	1,815.87	-3,560.86	3,997.13	0.00	0.00	0.00
7,100.00	91.06	297.02	2,834.36	1,861.29	-3,649.93	4,097.11	0.00	0.00	0.00
7,200.00	91.06	297.02	2,832.52	1,906.71	-3,739.00	4,197.10	0.00	0.00	0.00



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 1-3 - Slot C
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 1-3	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)
7,300.00	91.06	297.02	2,830.67	1,952.13	-3,828.07	4,297.08	0.00	0.00	0.00
7,400.00	91.06	297.02	2,828.82	1,997.55	-3,917.14	4,397.06	0.00	0.00	0.00
7,500.00	91.06	297.02	2,826.98	2,042.97	-4,006.21	4,497.05	0.00	0.00	0.00
7,600.00	91.06	297.02	2,825.13	2,088.40	-4,095.28	4,597.03	0.00	0.00	0.00
7,700.00	91.06	297.02	2,823.29	2,133.82	-4,184.35	4,697.01	0.00	0.00	0.00
7,800.00	91.06	297.02	2,821.44	2,179.24	-4,273.42	4,797.00	0.00	0.00	0.00
7,900.00	91.06	297.02	2,819.59	2,224.66	-4,362.49	4,896.98	0.00	0.00	0.00
8,000.00	91.06	297.02	2,817.75	2,270.08	-4,451.56	4,996.96	0.00	0.00	0.00
8,100.00	91.06	297.02	2,815.90	2,315.50	-4,540.63	5,096.94	0.00	0.00	0.00
8,200.00	91.06	297.02	2,814.06	2,360.93	-4,629.70	5,196.93	0.00	0.00	0.00
8,300.00	91.06	297.02	2,812.21	2,406.35	-4,718.77	5,296.91	0.00	0.00	0.00
8,400.00	91.06	297.02	2,810.37	2,451.77	-4,807.84	5,396.89	0.00	0.00	0.00
8,500.00	91.06	297.02	2,808.52	2,497.19	-4,896.91	5,496.88	0.00	0.00	0.00
8,600.00	91.06	297.02	2,806.67	2,542.61	-4,985.98	5,596.86	0.00	0.00	0.00
8,700.00	91.06	297.02	2,804.83	2,588.03	-5,075.05	5,696.84	0.00	0.00	0.00
8,800.00	91.06	297.02	2,802.98	2,633.45	-5,164.12	5,796.83	0.00	0.00	0.00
8,900.00	91.06	297.02	2,801.14	2,678.88	-5,253.19	5,896.81	0.00	0.00	0.00
9,000.00	91.06	297.02	2,799.29	2,724.30	-5,342.26	5,996.79	0.00	0.00	0.00
9,100.00	91.06	297.02	2,797.44	2,769.72	-5,431.33	6,096.77	0.00	0.00	0.00
9,200.00	91.06	297.02	2,795.60	2,815.14	-5,520.40	6,196.76	0.00	0.00	0.00
9,232.43	91.06	297.02	2,795.00	2,829.87	-5,549.28	6,229.18	0.00	0.00	0.00
Tiff 1-3 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 1-3 Lat 2 PBHL - plan hits target center - Point	0.00	0.00	2,795.00	2,829.87	-5,549.28	1,167,863.78	2,394,813.88	37.1092111	-107.5754159

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
9,232.43	2,795.00	4 1/2" Casing	4.50	6.13