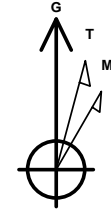




Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad 2
Well: Tiffany 2-4
Wellbore: Lateral 2 ST1
Design: Plan #1

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 2 ST1)

Created By: Janie Collins Date: 14:50, April 07 2016

DESIGN TARGET DETAILS

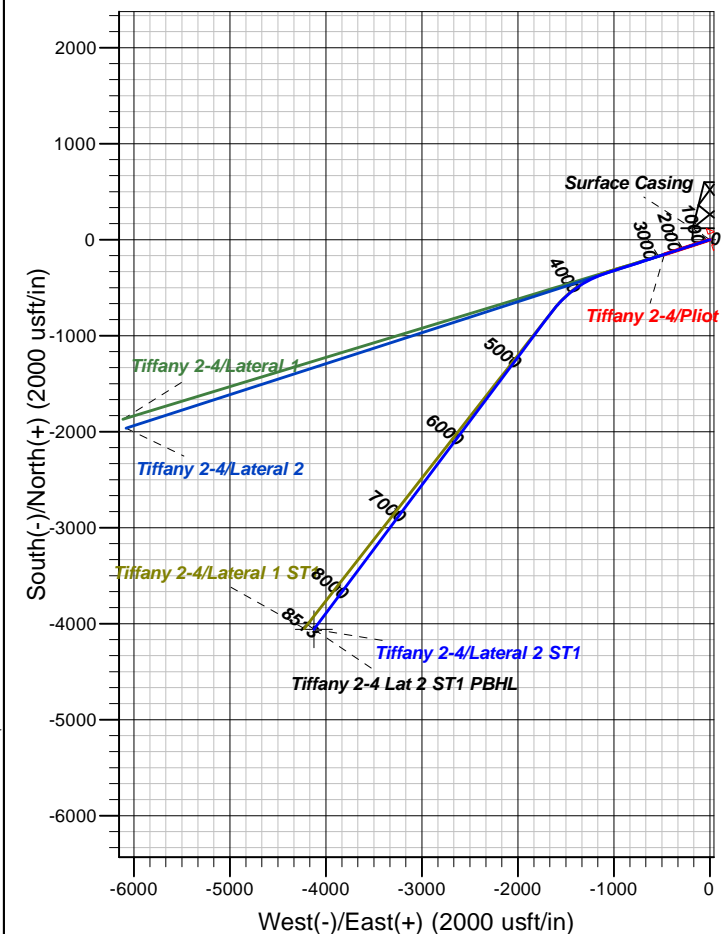
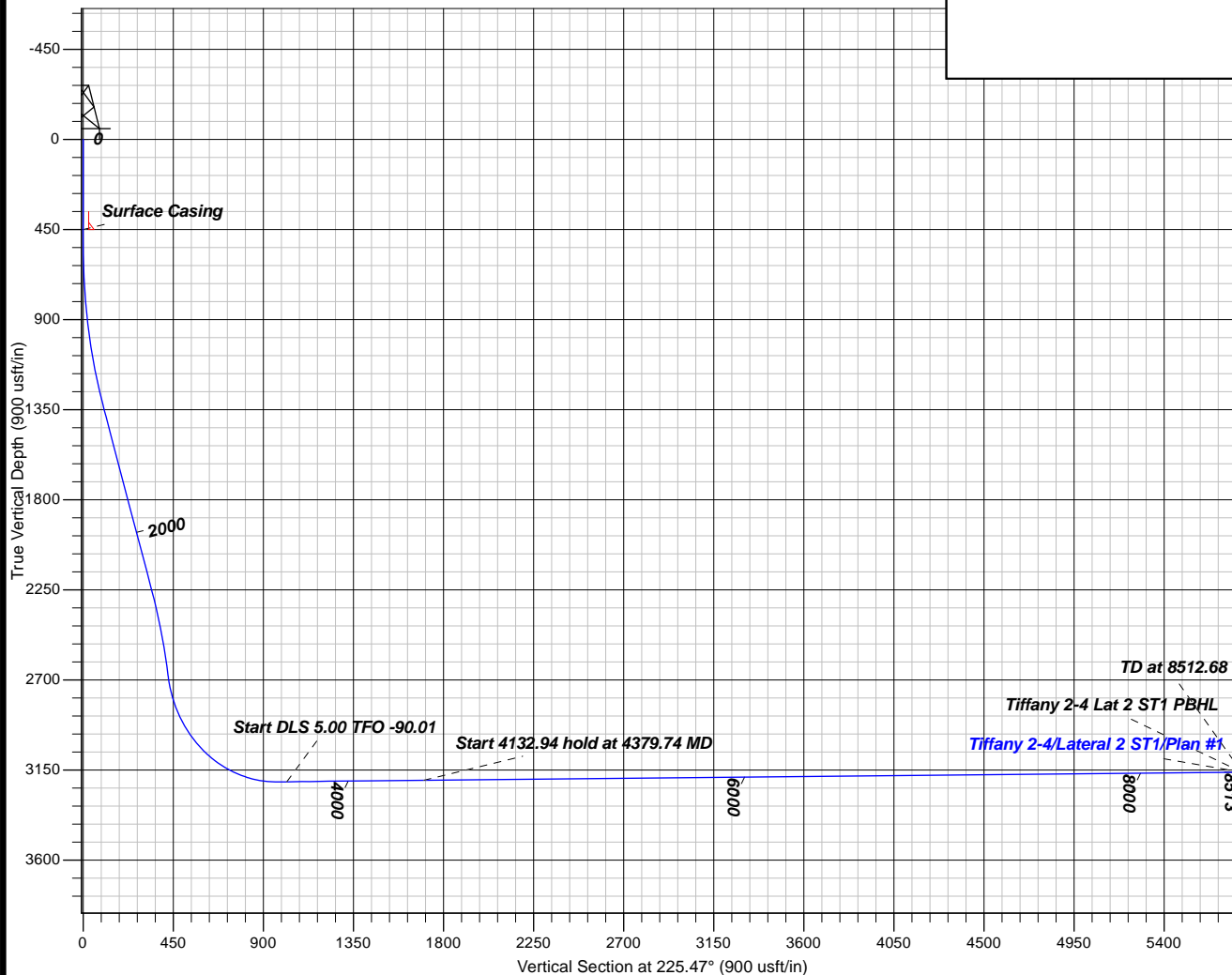
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiffany 2-4 Lat 2 ST1 PBHL	3161.00	-4059.22	-4126.10	1159143.99	2404589.44	37.0858606	-107.5412491

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
3675.00	90.69	252.10	3208.86	-349.62	-1082.43	0.00	0.00	1016.81	
4379.74	90.55	216.86	3200.98	-752.62	-1646.99	5.00	-90.01	1701.89	
8512.68	90.55	216.86	3161.00	-4059.22	-4126.10	0.00	0.00	5788.00	Tiffany 2-4 Lat 2 ST1 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 2 ST1

Plan: Plan #1

Standard Planning Report

07 April, 2016





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 2-4 - Slot Tiffany 2-4
Company:	B.P.	TVD Reference:	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
Site:	Tiffany Pad 2	North Reference:	Grid
Well:	Tiffany 2-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2 ST1		
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 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

Wellbore	Lateral 2 ST1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/6/2016	9.28	63.65	50,251

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	3,675.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	225.47	

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
3,675.00	90.69	252.10	3,208.86	-349.62	-1,082.43	0.00	0.00	0.00	0.00	
4,379.74	90.55	216.86	3,200.98	-752.62	-1,646.99	5.00	-0.02	-5.00	-90.01	
8,512.68	90.55	216.86	3,161.00	-4,059.22	-4,126.10	0.00	0.00	0.00	0.00	Tiffany 2-4 Lat 2 ST1



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 2-4 - Slot Tiffany 2-4
Company:	B.P.	TVD Reference:	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
Site:	Tiffany Pad 2	North Reference:	Grid
Well:	Tiffany 2-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2 ST1		
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)
3,675.00	90.69	252.10	3,208.86	-349.62	-1,082.43	1,016.81	0.00	0.00	0.00
3,700.00	90.69	250.85	3,208.56	-357.57	-1,106.13	1,039.28	5.00	0.00	-5.00
3,800.00	90.68	245.85	3,207.36	-394.45	-1,199.04	1,131.38	5.00	0.00	-5.00
3,900.00	90.67	240.85	3,206.18	-439.29	-1,288.38	1,226.51	5.00	-0.01	-5.00
4,000.00	90.66	235.85	3,205.03	-491.74	-1,373.47	1,323.95	5.00	-0.02	-5.00
4,100.00	90.64	230.85	3,203.90	-551.41	-1,453.67	1,422.97	5.00	-0.02	-5.00
4,200.00	90.61	225.85	3,202.81	-617.85	-1,528.36	1,522.81	5.00	-0.02	-5.00
4,300.00	90.58	220.85	3,201.77	-690.54	-1,596.98	1,622.70	5.00	-0.03	-5.00
4,379.74	90.55	216.86	3,200.98	-752.62	-1,646.99	1,701.89	5.00	-0.03	-5.00
4,400.00	90.55	216.86	3,200.79	-768.83	-1,659.14	1,721.92	0.00	0.00	0.00
4,500.00	90.55	216.86	3,199.82	-848.84	-1,719.13	1,820.79	0.00	0.00	0.00
4,600.00	90.55	216.86	3,198.85	-928.84	-1,779.11	1,919.66	0.00	0.00	0.00
4,700.00	90.55	216.86	3,197.88	-1,008.85	-1,839.10	2,018.53	0.00	0.00	0.00
4,800.00	90.55	216.86	3,196.92	-1,088.86	-1,899.08	2,117.40	0.00	0.00	0.00
4,900.00	90.55	216.86	3,195.95	-1,168.86	-1,959.06	2,216.27	0.00	0.00	0.00
5,000.00	90.55	216.86	3,194.98	-1,248.87	-2,019.05	2,315.14	0.00	0.00	0.00
5,100.00	90.55	216.86	3,194.01	-1,328.87	-2,079.03	2,414.01	0.00	0.00	0.00
5,200.00	90.55	216.86	3,193.05	-1,408.88	-2,139.02	2,512.88	0.00	0.00	0.00
5,300.00	90.55	216.86	3,192.08	-1,488.89	-2,199.00	2,611.74	0.00	0.00	0.00
5,400.00	90.55	216.86	3,191.11	-1,568.89	-2,258.98	2,710.61	0.00	0.00	0.00
5,500.00	90.55	216.86	3,190.14	-1,648.90	-2,318.97	2,809.48	0.00	0.00	0.00
5,600.00	90.55	216.86	3,189.18	-1,728.90	-2,378.95	2,908.35	0.00	0.00	0.00
5,700.00	90.55	216.86	3,188.21	-1,808.91	-2,438.94	3,007.22	0.00	0.00	0.00
5,800.00	90.55	216.86	3,187.24	-1,888.92	-2,498.92	3,106.09	0.00	0.00	0.00
5,900.00	90.55	216.86	3,186.27	-1,968.92	-2,558.91	3,204.96	0.00	0.00	0.00
6,000.00	90.55	216.86	3,185.31	-2,048.93	-2,618.89	3,303.83	0.00	0.00	0.00
6,100.00	90.55	216.86	3,184.34	-2,128.93	-2,678.87	3,402.70	0.00	0.00	0.00
6,200.00	90.55	216.86	3,183.37	-2,208.94	-2,738.86	3,501.57	0.00	0.00	0.00
6,300.00	90.55	216.86	3,182.40	-2,288.95	-2,798.84	3,600.44	0.00	0.00	0.00
6,400.00	90.55	216.86	3,181.44	-2,368.95	-2,858.83	3,699.30	0.00	0.00	0.00
6,500.00	90.55	216.86	3,180.47	-2,448.96	-2,918.81	3,798.17	0.00	0.00	0.00
6,600.00	90.55	216.86	3,179.50	-2,528.96	-2,978.80	3,897.04	0.00	0.00	0.00
6,700.00	90.55	216.86	3,178.54	-2,608.97	-3,038.78	3,995.91	0.00	0.00	0.00
6,800.00	90.55	216.86	3,177.57	-2,688.98	-3,098.76	4,094.78	0.00	0.00	0.00
6,900.00	90.55	216.86	3,176.60	-2,768.98	-3,158.75	4,193.65	0.00	0.00	0.00
7,000.00	90.55	216.86	3,175.63	-2,848.99	-3,218.73	4,292.52	0.00	0.00	0.00
7,100.00	90.55	216.86	3,174.67	-2,928.99	-3,278.72	4,391.39	0.00	0.00	0.00
7,200.00	90.55	216.86	3,173.70	-3,009.00	-3,338.70	4,490.26	0.00	0.00	0.00
7,300.00	90.55	216.86	3,172.73	-3,089.01	-3,398.68	4,589.13	0.00	0.00	0.00
7,400.00	90.55	216.86	3,171.76	-3,169.01	-3,458.67	4,687.99	0.00	0.00	0.00
7,500.00	90.55	216.86	3,170.80	-3,249.02	-3,518.65	4,786.86	0.00	0.00	0.00
7,600.00	90.55	216.86	3,169.83	-3,329.02	-3,578.64	4,885.73	0.00	0.00	0.00
7,700.00	90.55	216.86	3,168.86	-3,409.03	-3,638.62	4,984.60	0.00	0.00	0.00
7,800.00	90.55	216.86	3,167.89	-3,489.04	-3,698.61	5,083.47	0.00	0.00	0.00
7,900.00	90.55	216.86	3,166.93	-3,569.04	-3,758.59	5,182.34	0.00	0.00	0.00
8,000.00	90.55	216.86	3,165.96	-3,649.05	-3,818.57	5,281.21	0.00	0.00	0.00
8,100.00	90.55	216.86	3,164.99	-3,729.05	-3,878.56	5,380.08	0.00	0.00	0.00
8,200.00	90.55	216.86	3,164.02	-3,809.06	-3,938.54	5,478.95	0.00	0.00	0.00
8,300.00	90.55	216.86	3,163.06	-3,889.07	-3,998.53	5,577.82	0.00	0.00	0.00
8,400.00	90.55	216.86	3,162.09	-3,969.07	-4,058.51	5,676.69	0.00	0.00	0.00
8,500.00	90.55	216.86	3,161.12	-4,049.08	-4,118.50	5,775.55	0.00	0.00	0.00
8,512.68	90.55	216.86	3,161.00	-4,059.22	-4,126.10	5,788.09	0.00	0.00	0.00



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 2-4 - Slot Tiffany 2-4
Company:	B.P.	TVD Reference:	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6669.66' & RKB 11' @ 6680.66usft (Aztec 507)
Site:	Tiffany Pad 2	North Reference:	Grid
Well:	Tiffany 2-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2 ST1		
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)
Tiffany 2-4 Lat 2 ST1 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									
Tiffany 2-4 Lat 2 ST1 PB	0.00	360.00	3,161.00	-4,059.22	-4,126.10	1,159,143.99	2,404,589.44	37.0858605	-107.5412492
- plan hits target center									
- Point									

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