



Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad 4
Well: Tiffany 4-3
Wellbore: Lateral 1 ST1
Design: Plan #7

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



Plan: Plan #7 (Tiffany 4-3/Lateral 1 ST1)

Created By: Janie Collins Date: 18:09, May 04 2017

WELL DETAILS: Tiffany 4-3

+N/-S +E/-W GL 6460' & RKB 11' @ 6471.00usft (Aztec 507) 6460.00
0.00 0.00 Northing Easting Latitude Longitude Slot
1159708.59 2402835.93 37.0873054 -107.5473012

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
3590.00	90.46	158.63	2990.81	-731.84	-113.43	0.00	0.00	724.90	
4044.69	90.00	195.00	2988.90	-1178.23	-88.58	8.00	90.63	1171.98	
4466.26	90.96	173.94	2985.33	-1596.15	-121.26	5.00	-87.33	1587.61	
8302.65	90.96	173.94	2921.00	-5410.57	283.56	0.00	0.00	5418.00	Tiff 4-3 Lat 1 ST1 PBHL



Azimuths to Grid North
True North: 1.26°
Magnetic North: 10.44°

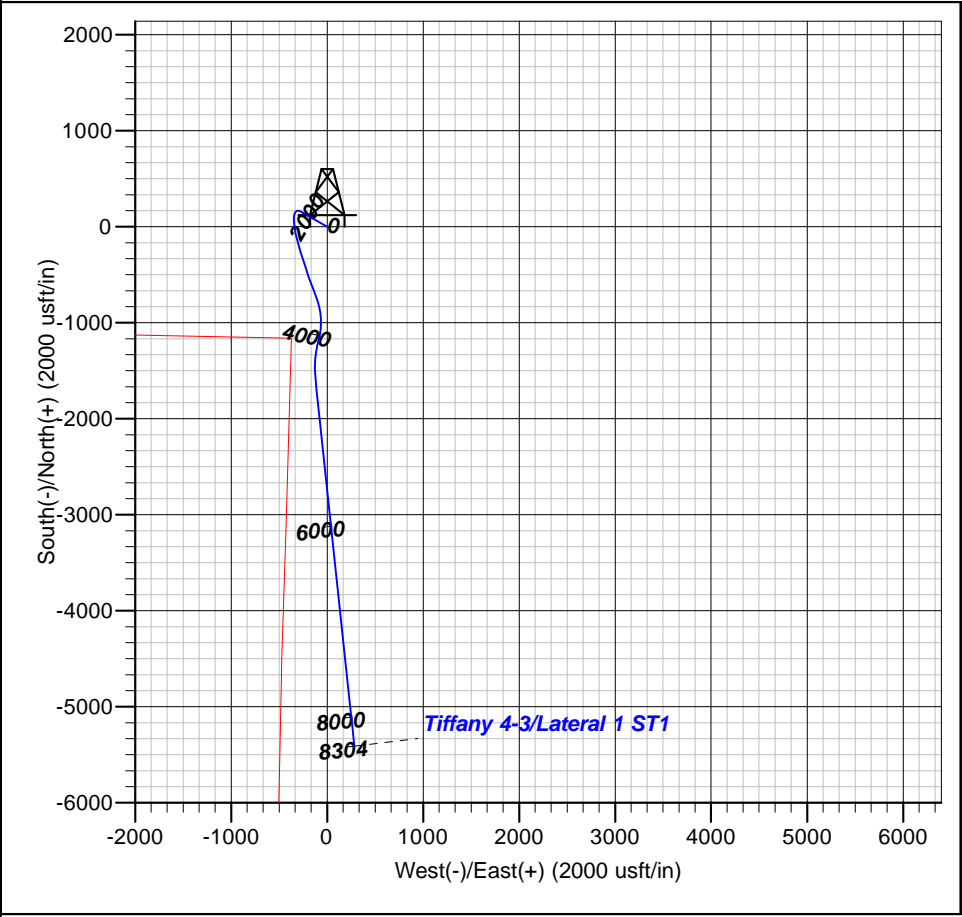
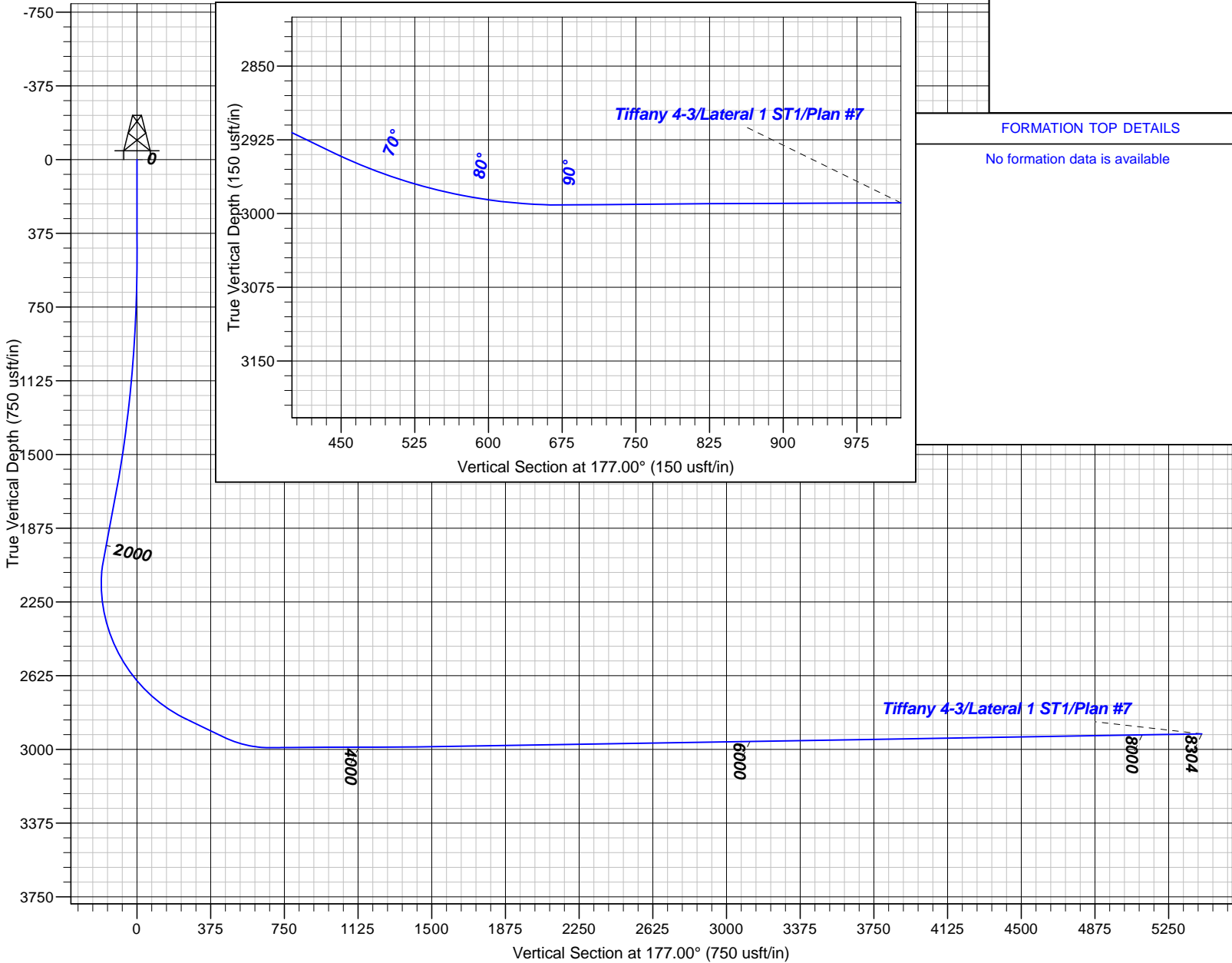
Magnetic Field
Strength: 50146.7snT
Dip Angle: 63.65°
Date: 3/6/2017
Model: HDGM

FORMATION TOP DETAILS

No formation data is available

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Tiff 4-3 Lat 1 ST1 PBHL	2921.00	-5410.57	283.56	1154298.02	2403119.49	37.0724666	-107.5459232





B.P.

La Plata County, CO NAD83

Tiffany Pad 4

Tiffany 4-3

Lateral 1 ST1

Plan: Plan #7

Standard Planning Report

04 May, 2017





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 4-3
Company:	B.P.	TVD Reference:	GL 6460' & RKB 11' @ 6471.00usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6460' & RKB 11' @ 6471.00usft (Aztec 507)
Site:	Tiffany Pad 4	North Reference:	Grid
Well:	Tiffany 4-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 ST1		
Design:	Plan #7		

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 4			
Site Position:		Northing:	1,159,793.57 usft	Latitude:	37.0875389
From:	Map	Easting:	2,402,838.16 usft	Longitude:	-107.5473000
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.26 °

Well	Tiffany 4-3					
Well Position	+N/-S	-84.98 usft	Northing:	1,159,708.59 usft	Latitude:	37.0873054
	+E/-W	-2.23 usft	Easting:	2,402,835.93 usft	Longitude:	-107.5473012
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,460.00 usft

Wellbore	Lateral 1 ST1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/6/2017	9.18	63.65	50,147

Design	Plan #7			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	3,590.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	177.00

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
3,590.00	90.46	158.63	2,990.81	-731.84	-113.43	0.00	0.00	0.00	0.00	
4,044.69	90.00	195.00	2,988.90	-1,178.23	-88.58	8.00	-0.10	8.00	90.63	
4,466.26	90.96	173.94	2,985.33	-1,596.15	-121.26	5.00	0.23	-5.00	-87.33	
8,302.65	90.96	173.94	2,921.00	-5,410.57	283.56	0.00	0.00	0.00	0.00	Tiff 4-3 Lat 1 ST1 PBI



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 4-3
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Project:	La Plata County, CO NAD83	MD Reference:	GL 6460' & RKB 11' @ 6471.00usft (Aztec 507)
Site:	Tiffany Pad 4	North Reference:	Grid
Well:	Tiffany 4-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 ST1		
Design:	Plan #7		

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)
3,590.00	90.46	158.63	2,990.81	-731.84	-113.43	724.90	0.00	0.00	0.00
3,600.00	90.45	159.43	2,990.73	-741.18	-109.85	734.41	8.00	-0.09	8.00
3,700.00	90.36	167.43	2,990.01	-836.94	-81.35	831.54	8.00	-0.09	8.00
3,800.00	90.26	175.43	2,989.47	-935.74	-66.45	930.98	8.00	-0.10	8.00
3,900.00	90.16	183.43	2,989.10	-1,035.66	-65.45	1,030.81	8.00	-0.10	8.00
4,000.00	90.05	191.43	2,988.92	-1,134.74	-78.37	1,129.08	8.00	-0.11	8.00
4,044.69	90.00	195.00	2,988.90	-1,178.23	-88.58	1,171.98	8.00	-0.11	8.00
4,100.00	90.13	192.24	2,988.84	-1,231.99	-101.60	1,224.98	5.00	0.23	-4.99
4,200.00	90.36	187.24	2,988.41	-1,330.51	-118.51	1,322.49	5.00	0.23	-4.99
4,300.00	90.59	182.25	2,987.58	-1,430.14	-126.78	1,421.54	5.00	0.23	-4.99
4,400.00	90.82	177.25	2,986.36	-1,530.10	-126.35	1,521.38	5.00	0.22	-5.00
4,466.26	90.96	173.94	2,985.33	-1,596.15	-121.26	1,587.61	5.00	0.22	-5.00
4,500.00	90.96	173.94	2,984.76	-1,629.69	-117.70	1,621.30	0.00	0.00	0.00
4,600.00	90.96	173.94	2,983.09	-1,729.12	-107.15	1,721.14	0.00	0.00	0.00
4,700.00	90.96	173.94	2,981.41	-1,828.55	-96.60	1,820.98	0.00	0.00	0.00
4,800.00	90.96	173.94	2,979.73	-1,927.97	-86.05	1,920.83	0.00	0.00	0.00
4,900.00	90.96	173.94	2,978.06	-2,027.40	-75.49	2,020.67	0.00	0.00	0.00
5,000.00	90.96	173.94	2,976.38	-2,126.83	-64.94	2,120.51	0.00	0.00	0.00
5,100.00	90.96	173.94	2,974.70	-2,226.26	-54.39	2,220.36	0.00	0.00	0.00
5,200.00	90.96	173.94	2,973.03	-2,325.68	-43.84	2,320.20	0.00	0.00	0.00
5,300.00	90.96	173.94	2,971.35	-2,425.11	-33.29	2,420.04	0.00	0.00	0.00
5,400.00	90.96	173.94	2,969.67	-2,524.54	-22.73	2,519.89	0.00	0.00	0.00
5,500.00	90.96	173.94	2,968.00	-2,623.97	-12.18	2,619.73	0.00	0.00	0.00
5,600.00	90.96	173.94	2,966.32	-2,723.39	-1.63	2,719.57	0.00	0.00	0.00
5,700.00	90.96	173.94	2,964.64	-2,822.82	8.92	2,819.42	0.00	0.00	0.00
5,800.00	90.96	173.94	2,962.97	-2,922.25	19.47	2,919.26	0.00	0.00	0.00
5,900.00	90.96	173.94	2,961.29	-3,021.68	30.03	3,019.11	0.00	0.00	0.00
6,000.00	90.96	173.94	2,959.61	-3,121.10	40.58	3,118.95	0.00	0.00	0.00
6,100.00	90.96	173.94	2,957.93	-3,220.53	51.13	3,218.79	0.00	0.00	0.00
6,200.00	90.96	173.94	2,956.26	-3,319.96	61.68	3,318.64	0.00	0.00	0.00
6,300.00	90.96	173.94	2,954.58	-3,419.39	72.24	3,418.48	0.00	0.00	0.00
6,400.00	90.96	173.94	2,952.90	-3,518.81	82.79	3,518.32	0.00	0.00	0.00
6,500.00	90.96	173.94	2,951.23	-3,618.24	93.34	3,618.17	0.00	0.00	0.00
6,600.00	90.96	173.94	2,949.55	-3,717.67	103.89	3,718.01	0.00	0.00	0.00
6,700.00	90.96	173.94	2,947.87	-3,817.10	114.44	3,817.85	0.00	0.00	0.00
6,800.00	90.96	173.94	2,946.20	-3,916.52	125.00	3,917.70	0.00	0.00	0.00
6,900.00	90.96	173.94	2,944.52	-4,015.95	135.55	4,017.54	0.00	0.00	0.00
7,000.00	90.96	173.94	2,942.84	-4,115.38	146.10	4,117.39	0.00	0.00	0.00
7,100.00	90.96	173.94	2,941.17	-4,214.81	156.65	4,217.23	0.00	0.00	0.00
7,200.00	90.96	173.94	2,939.49	-4,314.23	167.20	4,317.07	0.00	0.00	0.00
7,300.00	90.96	173.94	2,937.81	-4,413.66	177.76	4,416.92	0.00	0.00	0.00
7,400.00	90.96	173.94	2,936.14	-4,513.09	188.31	4,516.76	0.00	0.00	0.00
7,500.00	90.96	173.94	2,934.46	-4,612.52	198.86	4,616.60	0.00	0.00	0.00
7,600.00	90.96	173.94	2,932.78	-4,711.95	209.41	4,716.45	0.00	0.00	0.00
7,700.00	90.96	173.94	2,931.11	-4,811.37	219.96	4,816.29	0.00	0.00	0.00
7,800.00	90.96	173.94	2,929.43	-4,910.80	230.52	4,916.13	0.00	0.00	0.00
7,900.00	90.96	173.94	2,927.75	-5,010.23	241.07	5,015.98	0.00	0.00	0.00
8,000.00	90.96	173.94	2,926.08	-5,109.66	251.62	5,115.82	0.00	0.00	0.00
8,100.00	90.96	173.94	2,924.40	-5,209.08	262.17	5,215.67	0.00	0.00	0.00
8,200.00	90.96	173.94	2,922.72	-5,308.51	272.72	5,315.51	0.00	0.00	0.00
8,300.00	90.96	173.94	2,921.04	-5,407.94	283.28	5,415.35	0.00	0.00	0.00
8,302.65	90.96	173.94	2,921.00	-5,410.57	283.56	5,418.00	0.00	0.00	0.00



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Wellbore:	Lateral 1 ST1		
Design:	Plan #7		

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)
Tiff 4-3 Lat 1 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									
Tiff 4-3 Lat 1 ST1 PBHL	0.00	360.00	2,921.00	-5,410.57	283.56	1,154,298.01	2,403,119.49	37.0724665	-107.5459232
- plan hits target center									
- Point									