



Company: B.P.
Project: La Plata County, CO NAD83
Site: Tiffany Pad 3
Well: Tiffany 3-3

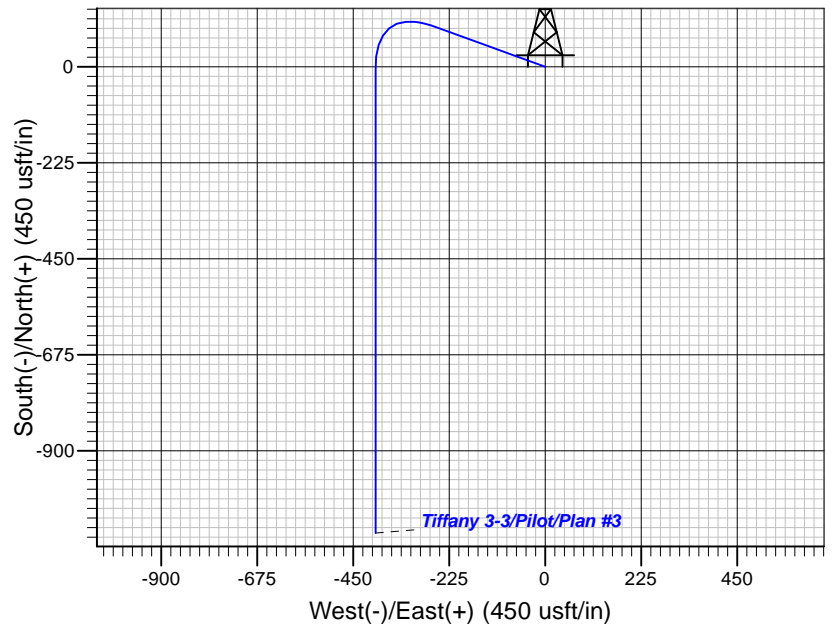
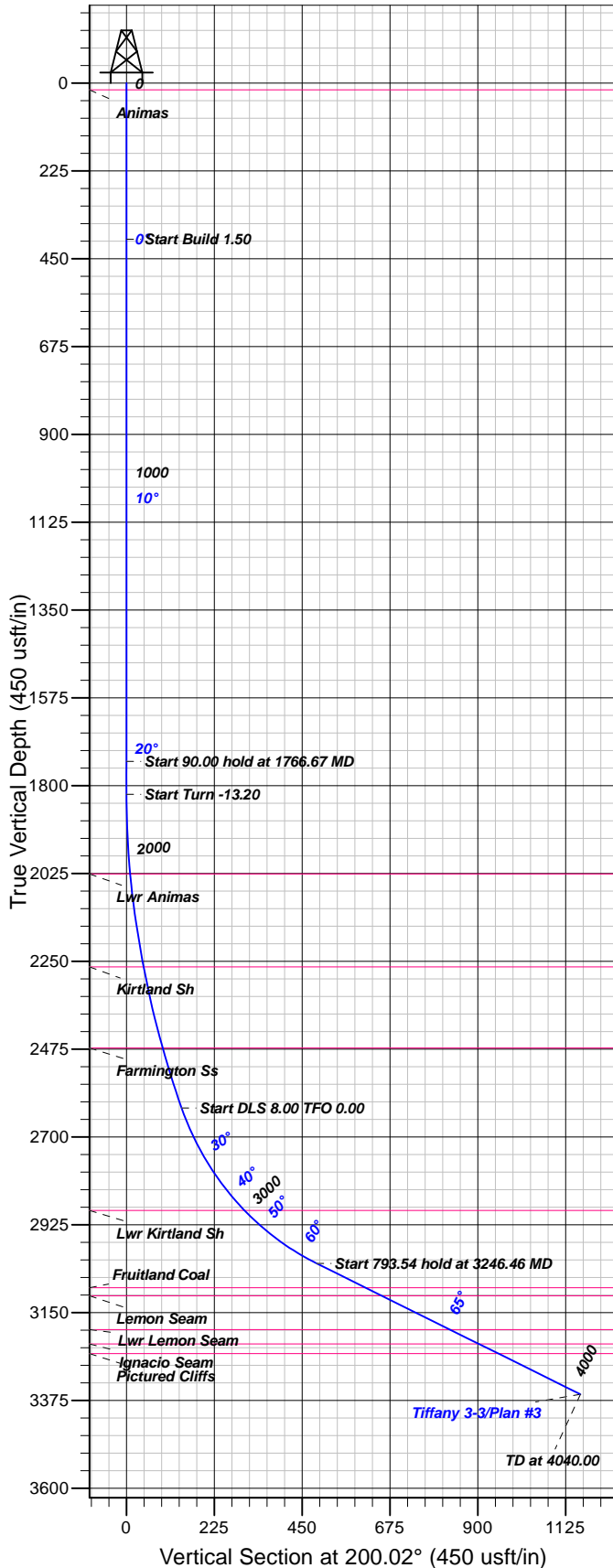


Well Details: Tiffany 3-3

GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1159206.37	2413080.52	37.0865378	-107.5121528	

Azimuths to Grid North
True North: 1.23°
Magnetic North: 10.40°
Magnetic Field
Strength: 50124.8snT
Dip Angle: 63.63°
Date: 6/9/2017
Model: HDGM



FORMATION TOP DETAILS

TVDPth	MDPath	Formation
17.00	17.00	Animas
2026.00	2070.49	Lwr Animas
2264.00	2314.58	Kirtland Sh
2472.00	2528.66	Farmington Ss
2888.00	3006.19	Lwr Kirtland Sh
3086.00	3393.56	Fruitland Coal
3107.00	3443.25	Lemon Seam
3193.00	3646.74	Lwr Lemon Seam
3230.00	3734.29	Ignacio Seam
3255.00	3793.45	Pictured Cliffs

Plan: Plan #3

10:25, August 06 2017
Created By: Mel Mireles Jr.

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

CASING DETAILS

No casing data is available

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	1766.67	20.50	290.00	1737.69	82.73	-227.31	1.50	290.00	0.07	
4	1856.67	20.50	290.00	1821.99	93.51	-256.92	0.00	0.00	0.08	
5	2690.21	20.50	180.00	2625.56	-5.33	-398.08	4.00	-143.22	141.27	
6	3246.46	65.00	180.00	3023.83	-373.49	-398.08	8.00	0.00	487.20	
7	4040.00	65.00	180.00	3359.20	-1092.69	-398.08	0.00	0.00	1162.94	

DESIGN TARGET DETAILS

No target data is available.



B.P.

La Plata County, CO NAD83

Tiffany Pad 3

Tiffany 3-3

Pilot

Plan: Plan #3

Standard Planning Report

06 August, 2017





Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 3-3
Company:	B.P.	TVD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #3		

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 3				
Site Position:		Northing:	1,159,281.94 usft	Latitude:	37.0867476	
From:	Map	Easting:	2,413,119.43 usft	Longitude:	-107.5120251	
Position Uncertainty:		0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.23 °

Well	Tiffany 3-3					
Well Position	+N/-S	-75.57 usft	Northing:	1,159,206.37 usft	Latitude:	37.0865378
	+E/-W	-38.91 usft	Easting:	2,413,080.52 usft	Longitude:	-107.5121528
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,717.01 usft

Wellbore	Pilot				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/9/2017	9.17	63.63	50,125

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	200.02

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,766.67	20.50	290.00	1,737.69	82.73	-227.31	1.50	1.50	0.00	290.00	
1,856.67	20.50	290.00	1,821.99	93.51	-256.92	0.00	0.00	0.00	0.00	
2,690.21	20.50	180.00	2,625.56	-5.33	-398.08	4.00	0.00	-13.20	-143.22	
3,246.46	65.00	180.00	3,023.83	-373.49	-398.08	8.00	8.00	0.00	0.00	
4,040.00	65.00	180.00	3,359.20	-1,092.69	-398.08	0.00	0.00	0.00	0.00	



Database:	Grand Junction District	Local Co-ordinate Reference:	Well Tiffany 3-3
Company:	B.P.	TVD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Project:	La Plata County, CO NAD83	MD Reference:	GL 6717.01' & RKB 17' @ 6734.01usft (Aztec 777)
Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #3		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17.00	0.00	0.00	17.00	0.00	0.00	0.00	0.00	0.00	0.00
Animas									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	1.50	290.00	499.99	0.45	-1.23	0.00	1.50	1.50	0.00
600.00	3.00	290.00	599.91	1.79	-4.92	0.00	1.50	1.50	0.00
700.00	4.50	290.00	699.69	4.03	-11.06	0.00	1.50	1.50	0.00
800.00	6.00	290.00	799.27	7.16	-19.66	0.01	1.50	1.50	0.00
900.00	7.50	290.00	898.57	11.18	-30.71	0.01	1.50	1.50	0.00
1,000.00	9.00	290.00	997.54	16.08	-44.19	0.01	1.50	1.50	0.00
1,100.00	10.50	290.00	1,096.09	21.88	-60.10	0.02	1.50	1.50	0.00
1,200.00	12.00	290.00	1,194.16	28.55	-78.44	0.03	1.50	1.50	0.00
1,300.00	13.50	290.00	1,291.70	36.10	-99.17	0.03	1.50	1.50	0.00
1,400.00	15.00	290.00	1,388.62	44.52	-122.30	0.04	1.50	1.50	0.00
1,500.00	16.50	290.00	1,484.86	53.80	-147.81	0.05	1.50	1.50	0.00
1,600.00	18.00	290.00	1,580.36	63.94	-175.68	0.06	1.50	1.50	0.00
1,700.00	19.50	290.00	1,675.05	74.93	-205.88	0.07	1.50	1.50	0.00
1,766.67	20.50	290.00	1,737.69	82.73	-227.31	0.07	1.50	1.50	0.00
1,800.00	20.50	290.00	1,768.92	86.73	-238.28	0.08	0.00	0.00	0.00
1,856.67	20.50	290.00	1,821.99	93.51	-256.92	0.08	0.00	0.00	0.00
1,900.00	19.14	286.83	1,862.76	98.17	-270.85	0.48	4.00	-3.14	-7.31
2,000.00	16.26	277.66	1,958.04	104.78	-300.43	4.39	4.00	-2.88	-9.17
2,070.49	14.54	269.23	2,026.00	105.98	-319.06	9.64	4.00	-2.44	-11.97
Lwr Animas									
2,100.00	13.93	265.13	2,054.61	105.63	-326.30	12.45	4.00	-2.08	-13.89
2,200.00	12.45	248.75	2,152.00	100.70	-348.35	24.63	4.00	-1.48	-16.37
2,300.00	12.15	229.95	2,249.74	90.01	-366.46	40.87	4.00	-0.30	-18.81
2,314.58	12.21	227.20	2,264.00	87.98	-368.76	43.57	4.00	0.44	-18.84
Kirtland Sh									
2,400.00	13.11	212.10	2,347.36	73.63	-380.54	61.08	4.00	1.04	-17.68
2,500.00	15.08	197.74	2,444.38	51.63	-390.53	85.17	4.00	1.97	-14.36
2,528.66	15.78	194.34	2,472.00	44.30	-392.64	92.78	4.00	2.46	-11.86
Farmington Ss									
2,600.00	17.74	187.11	2,540.32	24.11	-396.38	113.03	4.00	2.74	-10.14
2,690.21	20.50	180.00	2,625.56	-5.33	-398.08	141.27	4.00	3.06	-7.88
2,700.00	21.28	180.00	2,634.70	-8.82	-398.08	144.55	8.00	8.00	0.00
2,800.00	29.28	180.00	2,725.05	-51.49	-398.08	184.65	8.00	8.00	0.00
2,900.00	37.28	180.00	2,808.58	-106.33	-398.08	236.17	8.00	8.00	0.00
3,000.00	45.28	180.00	2,883.66	-172.25	-398.08	298.11	8.00	8.00	0.00
3,006.19	45.78	180.00	2,888.00	-176.67	-398.08	302.27	8.00	8.00	0.00
Lwr Kirtland Sh									
3,100.00	53.28	180.00	2,948.84	-247.99	-398.08	369.27	8.00	8.00	0.00
3,200.00	61.28	180.00	3,002.85	-332.05	-398.08	448.26	8.00	8.00	0.00
3,246.46	65.00	180.00	3,023.83	-373.49	-398.08	487.20	8.00	8.00	0.00
3,300.00	65.00	180.00	3,046.46	-422.02	-398.08	532.79	0.00	0.00	0.00
3,393.56	65.00	180.00	3,086.00	-506.81	-398.08	612.46	0.00	0.00	0.00
Fruitland Coal									
3,400.00	65.00	180.00	3,088.72	-512.65	-398.08	617.95	0.00	0.00	0.00



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Site:	Tiffany Pad 3	North Reference:	Grid
Well:	Tiffany 3-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
Design:	Plan #3		

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)
3,443.25	65.00	180.00	3,107.00	-551.85	-398.08	654.77	0.00	0.00	0.00
Lemon Seam									
3,500.00	65.00	180.00	3,130.98	-603.28	-398.08	703.10	0.00	0.00	0.00
3,600.00	65.00	180.00	3,173.25	-693.91	-398.08	788.26	0.00	0.00	0.00
3,646.74	65.00	180.00	3,193.00	-736.27	-398.08	828.06	0.00	0.00	0.00
Lwr Lemon Seam									
3,700.00	65.00	180.00	3,215.51	-784.54	-398.08	873.41	0.00	0.00	0.00
3,734.29	65.00	180.00	3,230.00	-815.62	-398.08	902.61	0.00	0.00	0.00
Ignacio Seam									
3,793.45	65.00	180.00	3,255.00	-869.23	-398.08	952.99	0.00	0.00	0.00
Pictured Cliffs									
3,800.00	65.00	180.00	3,257.77	-875.17	-398.08	958.57	0.00	0.00	0.00
3,900.00	65.00	180.00	3,300.03	-965.80	-398.08	1,043.72	0.00	0.00	0.00
4,000.00	65.00	180.00	3,342.29	-1,056.43	-398.08	1,128.88	0.00	0.00	0.00
4,040.00	65.00	180.00	3,359.20	-1,092.69	-398.08	1,162.94	0.00	0.00	0.00

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
17.00	-220.87	Animas		0.00	360.00
2,070.49	1,788.13	Lwr Animas		0.00	360.00
2,314.58	2,026.13	Kirtland Sh		0.00	360.00
2,528.66	2,234.13	Farmington Ss		0.00	360.00
3,006.19	2,650.13	Lwr Kirtland Sh		0.00	360.00
3,393.56	2,848.13	Fruitland Coal		0.00	360.00
3,443.25	2,869.13	Lemon Seam		0.00	360.00
3,646.74	2,955.13	Lwr Lemon Seam		0.00	360.00
3,734.29	2,992.13	Ignacio Seam		0.00	360.00
3,793.45	3,017.13	Pictured Cliffs		0.00	360.00