



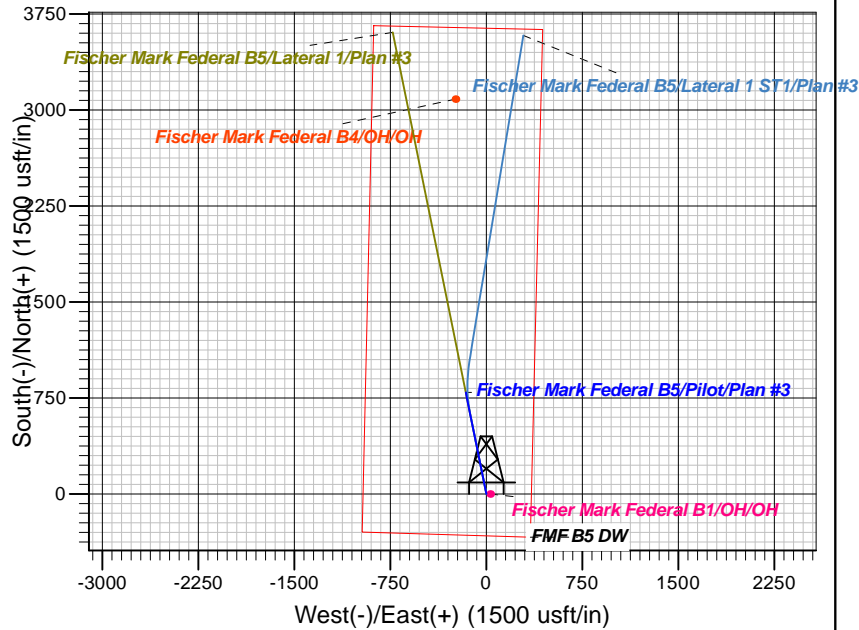
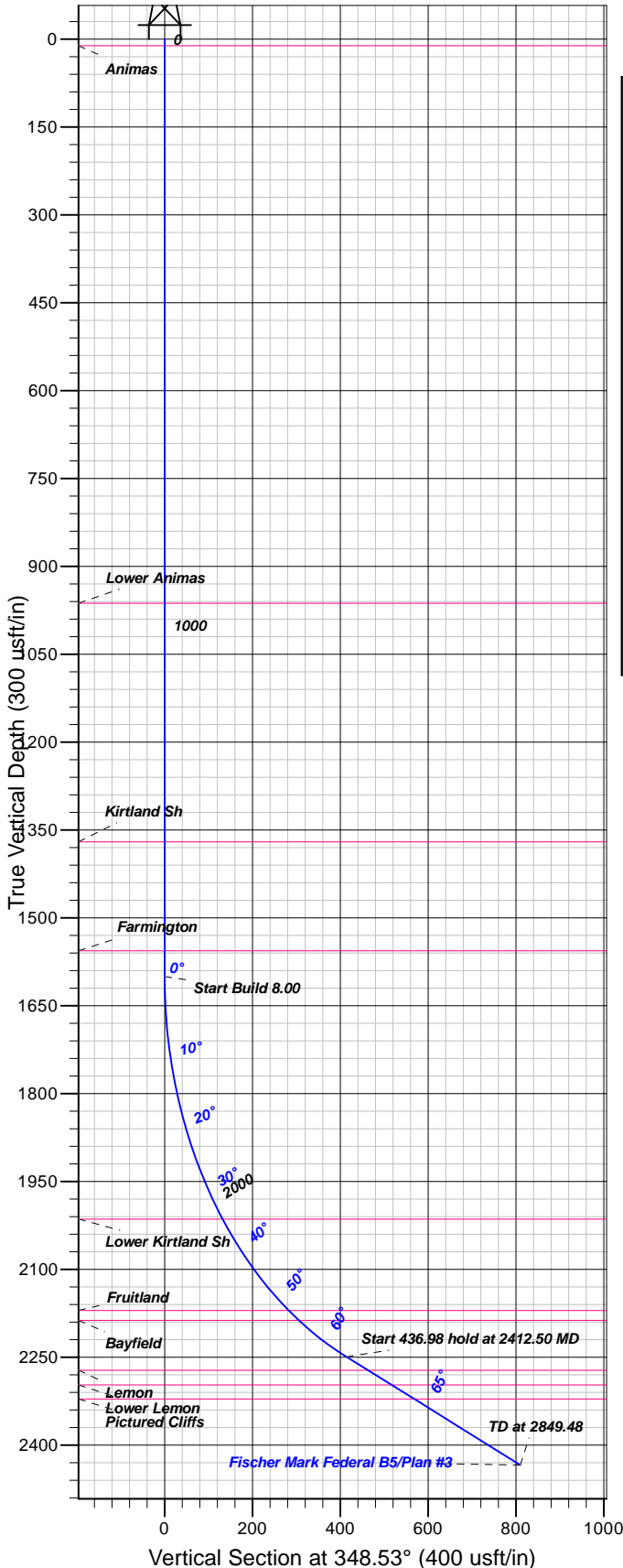
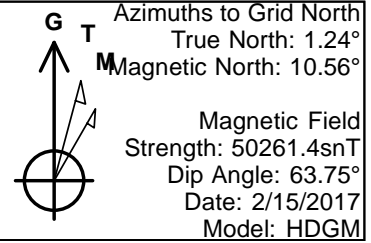
Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Fischer Mark Federal B5  
Well: Fischer Mark Federal B5



### Well Details: Fischer Mark Federal B5

GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1214702.34	2409773.11	37.2387194	-107.5276174	



### FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
11.00	11.00	Animas
963.00	963.00	Lower Animas
1370.00	1370.00	Kirtland Sh
1556.00	1556.00	Farmington
2014.00	2041.42	Lower Kirtland Sh
2170.00	2259.22	Fruitland
2187.00	2288.07	Bayfield
2272.00	2466.70	Lemon
2297.00	2525.85	Lower Lemon
2321.00	2582.64	Pictured Cliffs

### Plan: Plan #3

11:14, February 28 2017  
Created By: Janie Collins

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	VFace	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1600.00	0.00	0.00	1600.00	0.00	0.00	0.00	0.00	0.00	
3	2412.50	65.00	348.53	2249.10	405.26	-82.23	8.00	348.53	413.52	
4	2849.48	65.00	348.53	2433.77	793.39	-160.98	0.00	0.00	809.56	

### DESIGN TARGET DETAILS

No target data is available.



**B.P.**

**La Plata County, CO NAD83**

**Fischer Mark Federal B5**

**Fischer Mark Federal B5**

**Pilot**

**Plan: Plan #3**

## **Standard Planning Report**

**28 February, 2017**



[www.scientificdrilling.com](http://www.scientificdrilling.com)





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Fischer Mark Federal B5
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)
<b>Site:</b>	Fischer Mark Federal B5	<b>North Reference:</b>	Grid
<b>Well:</b>	Fischer Mark Federal B5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Pilot		
<b>Design:</b>	Plan #3		

<b>Project</b>	La Plata County, CO NAD83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Southern Zone		

Site		Fischer Mark Federal B5			
Site Position:		Northing:	1,214,702.34 usft	Latitude:	37.2387194
From:	Map	Easting:	2,409,773.11 usft	Longitude:	-107.5276174
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.24 °

Well	Fischer Mark Federal B5					
Well Position	+N/-S	0.00 usft	Northing:	1,214,702.34 usft	Latitude:	37.2387194
	+E/-W	0.00 usft	Easting:	2,409,773.11 usft	Longitude:	-107.5276174
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,185.00 usft

<b>Wellbore</b>	Pilot				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	2/15/2017	9.32	63.75	50,261

<b>Design</b>	Plan #3			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	348.53

<b>Plan Sections</b>										
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	
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,412.50	65.00	348.53	2,249.10	405.26	-82.23	8.00	8.00	0.00	348.53	
2,849.48	65.00	348.53	2,433.77	793.39	-160.98	0.00	0.00	0.00	0.00	



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Fischer Mark Federal B5
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)
<b>Site:</b>	Fischer Mark Federal B5	<b>North Reference:</b>	Grid
<b>Well:</b>	Fischer Mark Federal B5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Pilot		
<b>Design:</b>	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
11.00	0.00	0.00	11.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Animas</b>									
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	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
963.00	0.00	0.00	963.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Lower Animas</b>									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,370.00	0.00	0.00	1,370.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Kirtland Sh</b>									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,556.00	0.00	0.00	1,556.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Farmington</b>									
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	8.00	348.53	1,699.68	6.83	-1.39	6.97	8.00	8.00	0.00
1,800.00	16.00	348.53	1,797.41	27.19	-5.52	27.74	8.00	8.00	0.00
1,900.00	24.00	348.53	1,891.30	60.68	-12.31	61.92	8.00	8.00	0.00
2,000.00	32.00	348.53	1,979.53	106.65	-21.64	108.83	8.00	8.00	0.00
2,025.98	34.08	348.53	2,001.31	120.54	-24.46	122.99	8.00	8.00	0.00
<b>FMF B5 FC Target</b>									
2,041.42	35.31	348.53	2,014.00	129.15	-26.21	131.78	8.00	8.00	0.00
<b>Lower Kirtland Sh</b>									
2,100.00	40.00	348.53	2,060.36	164.21	-33.32	167.56	8.00	8.00	0.00
2,200.00	48.00	348.53	2,132.24	232.24	-47.12	236.97	8.00	8.00	0.00
2,259.22	52.74	348.53	2,170.00	276.92	-56.19	282.56	8.00	8.00	0.00
<b>Fruitland</b>									
2,288.07	55.05	348.53	2,187.00	299.76	-60.82	305.87	8.00	8.00	0.00
<b>Bayfield</b>									
2,300.00	56.00	348.53	2,193.75	309.40	-62.78	315.70	8.00	8.00	0.00
2,400.00	64.00	348.53	2,243.71	394.20	-79.99	402.24	8.00	8.00	0.00
2,412.50	65.00	348.53	2,249.10	405.26	-82.23	413.52	8.00	8.00	0.00
2,466.70	65.00	348.53	2,272.00	453.40	-92.00	462.64	0.00	0.00	0.00
<b>Lemon</b>									
2,500.00	65.00	348.53	2,286.07	482.98	-98.00	492.82	0.00	0.00	0.00
2,525.85	65.00	348.53	2,297.00	505.94	-102.66	516.25	0.00	0.00	0.00
<b>Lower Lemon</b>									
2,582.64	65.00	348.53	2,321.00	556.38	-112.89	567.72	0.00	0.00	0.00
<b>Pictured Cliffs</b>									
2,600.00	65.00	348.53	2,328.34	571.80	-116.02	583.45	0.00	0.00	0.00
2,700.00	65.00	348.53	2,370.60	660.62	-134.04	674.08	0.00	0.00	0.00



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Fischer Mark Federal B5
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<b>Site:</b>	Fischer Mark Federal B5	<b>North Reference:</b>	Grid
<b>Well:</b>	Fischer Mark Federal B5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Pilot		
<b>Design:</b>	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)
2,800.00	65.00	348.53	2,412.86	749.44	-152.07	764.71	0.00	0.00	0.00
2,849.48	65.00	348.53	2,433.77	793.39	-160.98	809.56	0.00	0.00	0.00

## Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
11.00	11.00	Animas		0.00	359.99
963.00	963.00	Lower Animas		0.00	359.99
1,370.00	1,370.00	Kirtland Sh		0.00	359.99
1,556.00	1,556.00	Farmington		0.00	359.99
2,041.42	2,014.00	Lower Kirtland Sh		0.00	359.99
2,259.22	2,170.00	Fruitland		0.00	359.99
2,288.07	2,187.00	Bayfield		0.00	359.99
2,466.70	2,272.00	Lemon		0.00	359.99
2,525.85	2,297.00	Lower Lemon		0.00	359.99
2,582.64	2,321.00	Pictured Cliffs		0.00	359.99