



Company: B.P.
Project: La Plata County, CO NAD83
Site: East Sauls Creek Pad
Well: East Sauls Creek 35 4-1



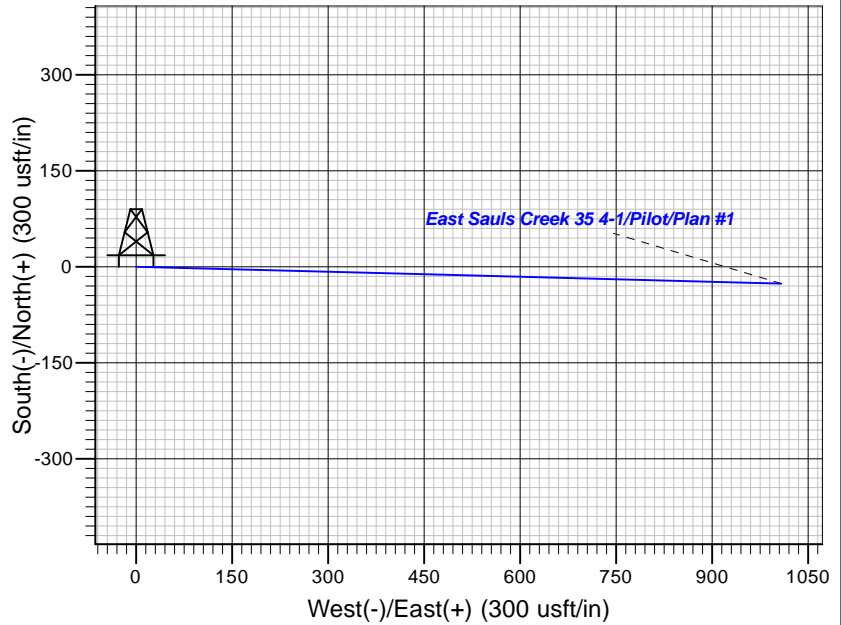
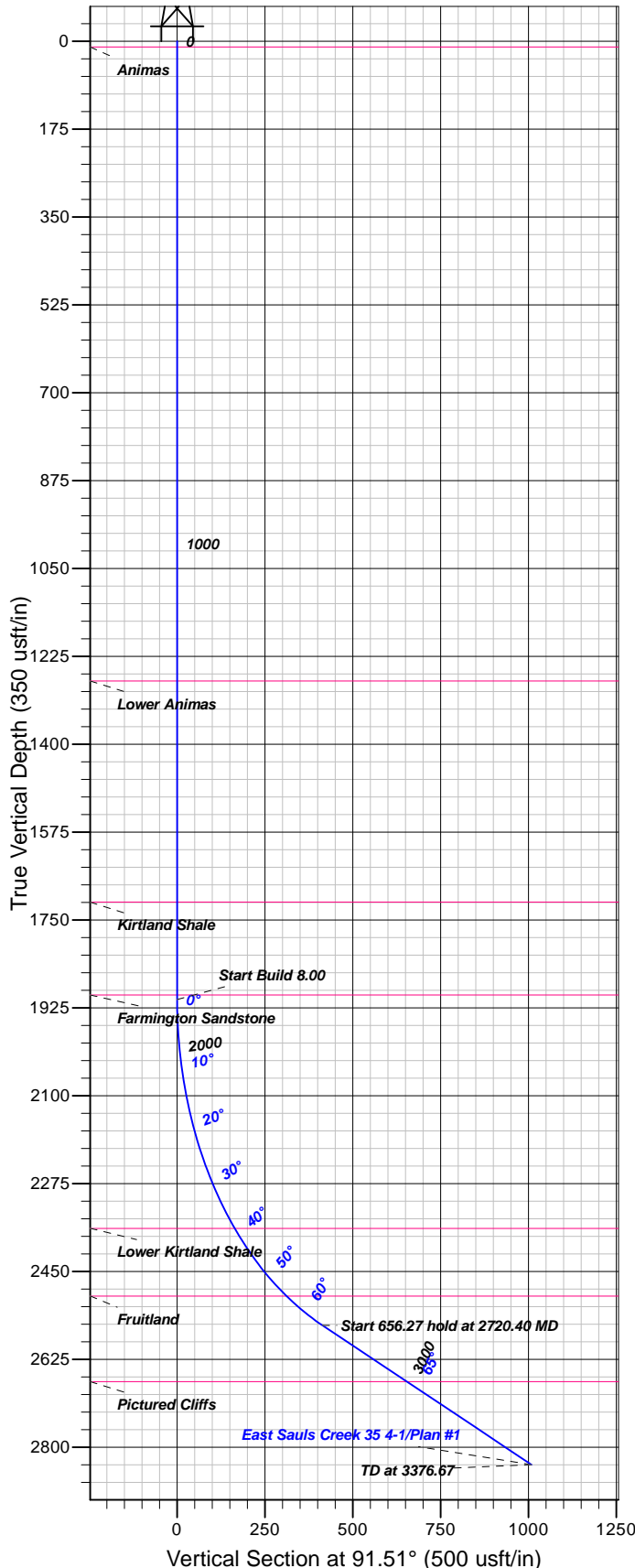
Well Details: East Sauls Creek 35 4-1

GL 7398' & RKB 11' @ 7409.00usft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1220252.87	2415225.83	37.2542834	-107.5093014	

Azimuths to Grid North
True North: 1.23°
Magnetic North: 10.60°

Magnetic Field
Strength: 50304.6snT
Dip Angle: 63.78°
Date: 11/29/2016
Model: HDGM



FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
11.00	11.00	Animas
1274.00	1274.00	Lower Animas
1714.00	1714.00	Kirtland Shale
1899.00	1899.00	Farmington Sandstone
2364.00	2402.35	Lower Kirtland Shale
2499.00	2603.18	Fruitland
2669.00	2985.43	Pictured Cliffs

Plan: Plan #1

15:48, December 14 2016
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	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1907.90	0.00	0.00	1907.90	0.00	0.00	0.00	0.00	0.00	
3	2720.40	65.00	91.51	2557.00	-10.90	413.38	8.00	91.51	413.52	
4	3376.67	65.00	91.51	2834.35	-26.57	1007.95	0.00	0.00	1008.30	

DESIGN TARGET DETAILS

No target data is available.



B.P.

**La Plata County, CO NAD83
East Sauls Creek Pad
East Sauls Creek 35 4-1**

Pilot

Plan: Plan #1

Standard Planning Report

14 December, 2016



www.scientificdrilling.com





Database:	Grand Junction District	Local Co-ordinate Reference:	Well East Sauls Creek 35 4-1
Company:	B.P.	TVD Reference:	GL 7398' & RKB 11' @ 7409.00usft (Aztec 507)
Project:	La Plata County, CO NAD83	MD Reference:	GL 7398' & RKB 11' @ 7409.00usft (Aztec 507)
Site:	East Sauls Creek Pad	North Reference:	Grid
Well:	East Sauls Creek 35 4-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot		
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		East Sauls Creek Pad			
Site Position:		Northing:	1,227,806.45 usft	Latitude:	37.2749933
From:	Map	Easting:	2,414,712.24 usft	Longitude:	-107.5116245
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.23 °

Well	East Sauls Creek 35 4-1					
Well Position	+N/-S	-7,553.58 usft	Northing:	1,220,252.87 usft	Latitude:	37.2542833
	+E/-W	513.59 usft	Easting:	2,415,225.83 usft	Longitude:	-107.5093015
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,398.00 usft

Wellbore	Pilot				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/29/2016	9.37	63.78	50,305

Design	Plan #1			
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	91.51

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	
1,907.90	0.00	0.00	1,907.90	0.00	0.00	0.00	0.00	0.00	0.00	
2,720.40	65.00	91.51	2,557.00	-10.90	413.38	8.00	8.00	0.00	91.51	
3,376.67	65.00	91.51	2,834.35	-26.57	1,007.95	0.00	0.00	0.00	0.00	



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Wellbore:	Pilot		
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)
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
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	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
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
1,274.00	0.00	0.00	1,274.00	0.00	0.00	0.00	0.00	0.00	0.00
Lower Animas									
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
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
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,714.00	0.00	0.00	1,714.00	0.00	0.00	0.00	0.00	0.00	0.00
Kirtland Shale									
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,899.00	0.00	0.00	1,899.00	0.00	0.00	0.00	0.00	0.00	0.00
Farmington Sandstone									
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,907.90	0.00	0.00	1,907.90	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	7.37	91.51	1,999.75	-0.16	5.91	5.91	8.00	8.00	0.00
2,100.00	15.37	91.51	2,097.70	-0.67	25.60	25.61	8.00	8.00	0.00
2,200.00	23.37	91.51	2,191.97	-1.55	58.72	58.75	8.00	8.00	0.00
2,300.00	31.37	91.51	2,280.70	-2.76	104.64	104.68	8.00	8.00	0.00
2,400.00	39.37	91.51	2,362.18	-4.28	162.46	162.51	8.00	8.00	0.00
2,402.35	39.56	91.51	2,364.00	-4.32	163.95	164.01	8.00	8.00	0.00
Lower Kirtland Shale									
2,500.00	47.37	91.51	2,434.82	-6.09	231.05	231.13	8.00	8.00	0.00
2,600.00	55.37	91.51	2,497.20	-8.15	309.07	309.18	8.00	8.00	0.00
2,603.18	55.62	91.51	2,499.00	-8.22	311.69	311.80	8.00	8.00	0.00
Fruitland									
2,700.00	63.37	91.51	2,548.11	-10.41	395.02	395.16	8.00	8.00	0.00
2,720.40	65.00	91.51	2,557.00	-10.90	413.38	413.52	8.00	8.00	0.00
2,800.00	65.00	91.51	2,590.64	-12.80	485.49	485.66	0.00	0.00	0.00
2,900.00	65.00	91.51	2,632.90	-15.19	576.09	576.29	0.00	0.00	0.00
2,985.43	65.00	91.51	2,669.00	-17.23	653.49	653.71	0.00	0.00	0.00
Pictured Cliffs									
3,000.00	65.00	91.51	2,675.16	-17.57	666.69	666.92	0.00	0.00	0.00
3,100.00	65.00	91.51	2,717.42	-19.96	757.29	757.55	0.00	0.00	0.00
3,200.00	65.00	91.51	2,759.68	-22.35	847.89	848.18	0.00	0.00	0.00
3,300.00	65.00	91.51	2,801.94	-24.74	938.49	938.82	0.00	0.00	0.00
3,376.67	65.00	91.51	2,834.35	-26.57	1,007.95	1,008.30	0.00	0.00	0.00



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Wellbore:	Pilot		
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Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
11.00	11.00	Animas		0.00	0.00	
1,274.00	1,274.00	Lower Animas		0.00	0.00	
1,714.00	1,714.00	Kirtland Shale		0.00	0.00	
1,899.00	1,899.00	Farmington Sandstone		0.00	0.00	
2,402.35	2,364.00	Lower Kirtland Shale		0.00	0.00	
2,603.18	2,499.00	Fruitland		0.00	0.00	
2,985.43	2,669.00	Pictured Cliffs		0.00	0.00	