



Company: B.P.
Project: La Plata County, CO NAD83
Site: East Sauls Creek Pad
Well: East Sauls Creek 35 4-1
Wellbore: Lateral 1 (Lower Lemon)
Design: Plan #2

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 #2 (East Sauls Creek 35 4-1/Lateral 1 (Lower Lemon))

Created By: Janie Collins Date: 12:18, December 05 2016

WELL DETAILS: East Sauls Creek 35 4-1

GL 7398' & RKB 11' @ 7409.00usft (Aztec 507) 7398.00				
Northing	Easting	Latitude	Longitude	Slot
1220252.87	2415225.83	37.2542834	-107.5093014	

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
2851.23	65.00	91.51	2612.29	-14.02	531.91	0.00	0.00	532.09	
3011.81	81.06	91.51	2659.00	-18.05	684.94	10.00	-0.02	685.18	
7837.02	81.06	91.51	3409.00	-143.26	5449.86	0.00	0.00	5451.74	

ESC 35 4-1 Lat 1 PBHL



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

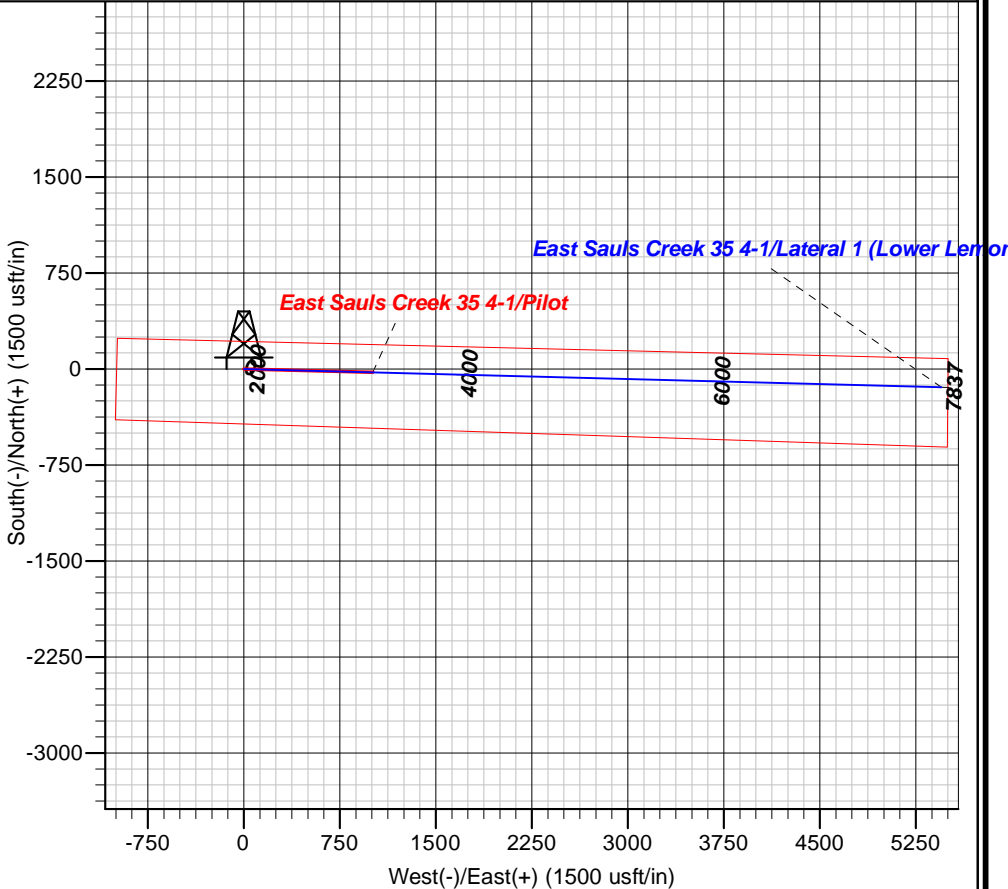
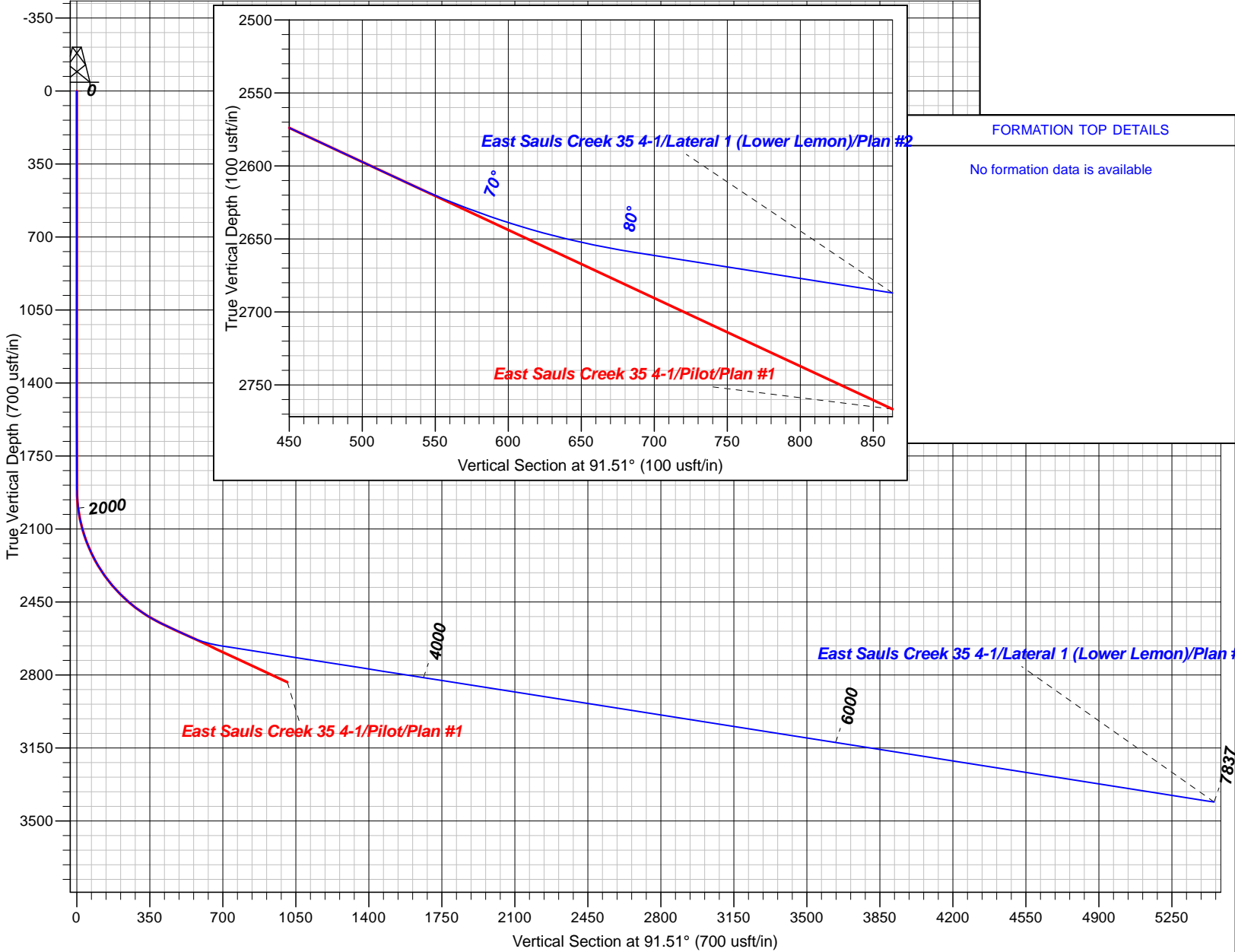
Magnetic Field
Strength: 50304.6snT
Dip Angle: 63.78°
Date: 11/29/2016
Model: HDGM

FORMATION TOP DETAILS

No formation data is available

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
ESC 35 4-1 Lat 1 PBHL	3409.00	-143.26	5449.86	1220109.61	2420675.69	37.2542104	-107.4905708





B.P.

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

Lateral 1 (Lower Lemon)

Plan: Plan #2

Standard Planning Report

05 December, 2016





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:	Lateral 1 (Lower Lemon)		
Design:	Plan #2		

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	Lateral 1 (Lower Lemon)				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	11/29/2016	9.37	63.78	50,305

Design	Plan #2				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	2,851.23	
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
2,851.23	65.00	91.51	2,612.29	-14.02	531.91	0.00	0.00	0.00	0.00	
3,011.81	81.06	91.51	2,659.00	-18.05	684.94	10.00	10.00	0.00	-0.02	
7,837.02	81.06	91.51	3,409.00	-143.26	5,449.86	0.00	0.00	0.00	0.00	ESC 35 4-1 Lat 1 PB†



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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:	Lateral 1 (Lower Lemon)		
Design:	Plan #2		

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)
2,851.23	65.00	91.51	2,612.29	-14.02	531.91	532.09	0.00	0.00	0.00
2,900.00	69.88	91.51	2,630.99	-15.21	576.92	577.12	10.00	10.00	0.00
3,000.00	79.88	91.51	2,657.05	-17.74	673.30	673.53	10.00	10.00	0.00
3,011.81	81.06	91.51	2,659.00	-18.05	684.94	685.18	10.00	10.00	0.00
3,100.00	81.06	91.51	2,672.71	-20.34	772.03	772.29	0.00	0.00	0.00
3,200.00	81.06	91.51	2,688.26	-22.93	870.78	871.08	0.00	0.00	0.00
3,300.00	81.06	91.51	2,703.80	-25.53	969.53	969.86	0.00	0.00	0.00
3,400.00	81.06	91.51	2,719.34	-28.12	1,068.28	1,068.65	0.00	0.00	0.00
3,500.00	81.06	91.51	2,734.89	-30.72	1,167.03	1,167.43	0.00	0.00	0.00
3,600.00	81.06	91.51	2,750.43	-33.31	1,265.78	1,266.22	0.00	0.00	0.00
3,700.00	81.06	91.51	2,765.97	-35.91	1,364.53	1,365.00	0.00	0.00	0.00
3,800.00	81.06	91.51	2,781.51	-38.50	1,463.28	1,463.79	0.00	0.00	0.00
3,900.00	81.06	91.51	2,797.06	-41.10	1,562.03	1,562.57	0.00	0.00	0.00
4,000.00	81.06	91.51	2,812.60	-43.69	1,660.78	1,661.36	0.00	0.00	0.00
4,100.00	81.06	91.51	2,828.14	-46.29	1,759.53	1,760.14	0.00	0.00	0.00
4,200.00	81.06	91.51	2,843.69	-48.88	1,858.28	1,858.93	0.00	0.00	0.00
4,300.00	81.06	91.51	2,859.23	-51.48	1,957.03	1,957.71	0.00	0.00	0.00
4,400.00	81.06	91.51	2,874.77	-54.07	2,055.78	2,056.50	0.00	0.00	0.00
4,500.00	81.06	91.51	2,890.32	-56.67	2,154.53	2,155.28	0.00	0.00	0.00
4,600.00	81.06	91.51	2,905.86	-59.26	2,253.29	2,254.06	0.00	0.00	0.00
4,700.00	81.06	91.51	2,921.40	-61.86	2,352.04	2,352.85	0.00	0.00	0.00
4,800.00	81.06	91.51	2,936.95	-64.45	2,450.79	2,451.63	0.00	0.00	0.00
4,900.00	81.06	91.51	2,952.49	-67.05	2,549.54	2,550.42	0.00	0.00	0.00
5,000.00	81.06	91.51	2,968.03	-69.64	2,648.29	2,649.20	0.00	0.00	0.00
5,100.00	81.06	91.51	2,983.58	-72.24	2,747.04	2,747.99	0.00	0.00	0.00
5,200.00	81.06	91.51	2,999.12	-74.83	2,845.79	2,846.77	0.00	0.00	0.00
5,300.00	81.06	91.51	3,014.66	-77.43	2,944.54	2,945.56	0.00	0.00	0.00
5,400.00	81.06	91.51	3,030.21	-80.02	3,043.29	3,044.34	0.00	0.00	0.00
5,500.00	81.06	91.51	3,045.75	-82.62	3,142.04	3,143.13	0.00	0.00	0.00
5,600.00	81.06	91.51	3,061.29	-85.21	3,240.79	3,241.91	0.00	0.00	0.00
5,700.00	81.06	91.51	3,076.84	-87.81	3,339.54	3,340.70	0.00	0.00	0.00
5,800.00	81.06	91.51	3,092.38	-90.40	3,438.29	3,439.48	0.00	0.00	0.00
5,900.00	81.06	91.51	3,107.92	-93.00	3,537.04	3,538.26	0.00	0.00	0.00
6,000.00	81.06	91.51	3,123.47	-95.59	3,635.79	3,637.05	0.00	0.00	0.00
6,100.00	81.06	91.51	3,139.01	-98.19	3,734.54	3,735.83	0.00	0.00	0.00
6,200.00	81.06	91.51	3,154.55	-100.78	3,833.29	3,834.62	0.00	0.00	0.00
6,300.00	81.06	91.51	3,170.10	-103.38	3,932.04	3,933.40	0.00	0.00	0.00
6,400.00	81.06	91.51	3,185.64	-105.97	4,030.80	4,032.19	0.00	0.00	0.00
6,500.00	81.06	91.51	3,201.18	-108.57	4,129.55	4,130.97	0.00	0.00	0.00
6,600.00	81.06	91.51	3,216.73	-111.16	4,228.30	4,229.76	0.00	0.00	0.00
6,700.00	81.06	91.51	3,232.27	-113.76	4,327.05	4,328.54	0.00	0.00	0.00
6,800.00	81.06	91.51	3,247.81	-116.35	4,425.80	4,427.33	0.00	0.00	0.00
6,900.00	81.06	91.51	3,263.36	-118.94	4,524.55	4,526.11	0.00	0.00	0.00
7,000.00	81.06	91.51	3,278.90	-121.54	4,623.30	4,624.90	0.00	0.00	0.00
7,100.00	81.06	91.51	3,294.44	-124.13	4,722.05	4,723.68	0.00	0.00	0.00
7,200.00	81.06	91.51	3,309.99	-126.73	4,820.80	4,822.47	0.00	0.00	0.00
7,300.00	81.06	91.51	3,325.53	-129.32	4,919.55	4,921.25	0.00	0.00	0.00
7,400.00	81.06	91.51	3,341.07	-131.92	5,018.30	5,020.03	0.00	0.00	0.00
7,500.00	81.06	91.51	3,356.62	-134.51	5,117.05	5,118.82	0.00	0.00	0.00
7,600.00	81.06	91.51	3,372.16	-137.11	5,215.80	5,217.60	0.00	0.00	0.00
7,700.00	81.06	91.51	3,387.70	-139.70	5,314.55	5,316.39	0.00	0.00	0.00
7,800.00	81.06	91.51	3,403.25	-142.30	5,413.30	5,415.17	0.00	0.00	0.00



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Well:	East Sauls Creek 35 4-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 1 (Lower Lemon)		
Design:	Plan #2		

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)
7,837.02	81.06	91.51	3,409.00	-143.26	5,449.86	5,451.74	0.00	0.00	0.00
ESC 35 4-1 Lat 1 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									
ESC 35 4-1 Lat 1 PBHL	0.00	360.00	3,409.00	-143.26	5,449.86	1,220,109.61	2,420,675.69	37.2542104	-107.4905708
- plan hits target center									
- Point									