



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

Created By: Janie Collins Date: 12:42, December 05 2016

WELL DETAILS: East Sauls Creek 35 4-1

+N/-S +E/-W GL 7398' & RKB 11' @ 7409.00usft (Aztec 507) 7398.00
0.00 0.00 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
2603.89	55.68	91.51	2499.40	-8.23	312.28	0.00	0.00	312.39	
2956.72	81.25	71.00	2629.04	46.09	630.99	9.00	-41.15	629.56	
3006.72	81.25	71.00	2636.65	62.18	677.72	0.00	0.00	675.85	
3336.13	81.25	91.00	2687.26	112.84	997.58	6.00	91.54	994.27	
6636.13	81.25	91.00	3189.27	55.92	4258.68	0.00	0.00	4255.74	
7064.34	81.25	117.00	3255.52	-45.55	4665.64	6.00	92.01	4665.23	
7366.32	81.24	92.55	3302.19	-121.06	4951.94	8.00	-91.92	4953.42	
7870.61	81.24	92.55	3379.00	-143.26	5449.86	0.00	0.00	5451.74	ESC 35 4-1 Lat 2 PBHL



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

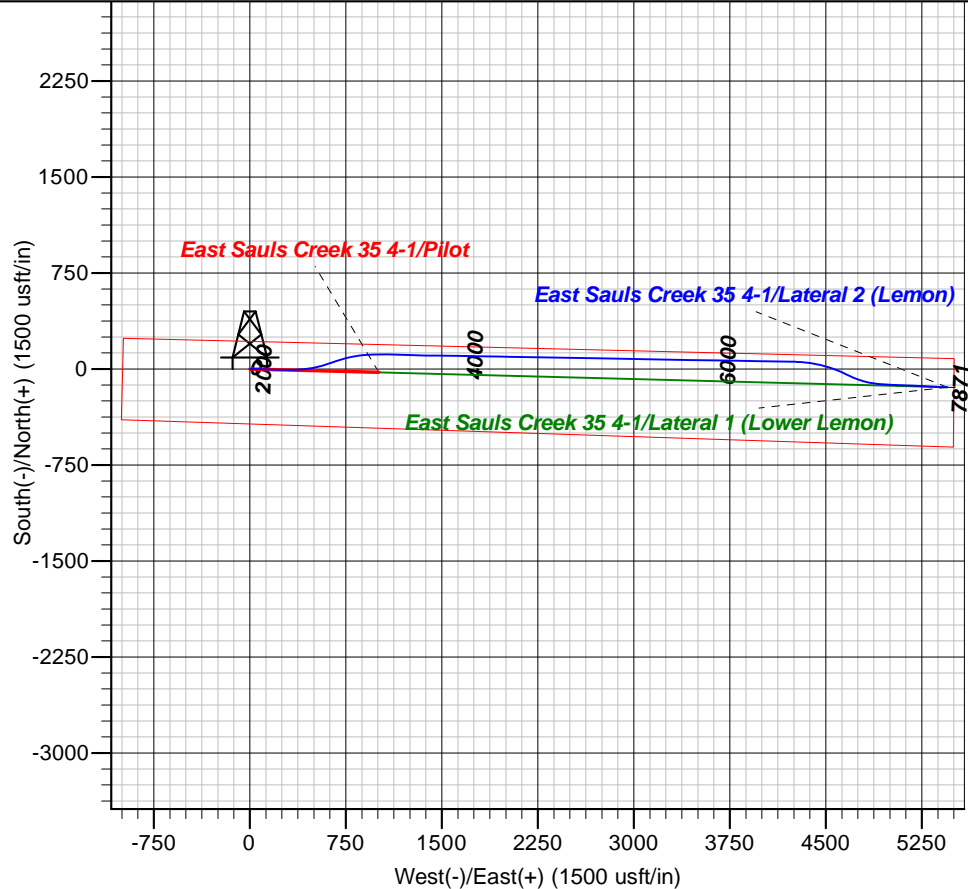
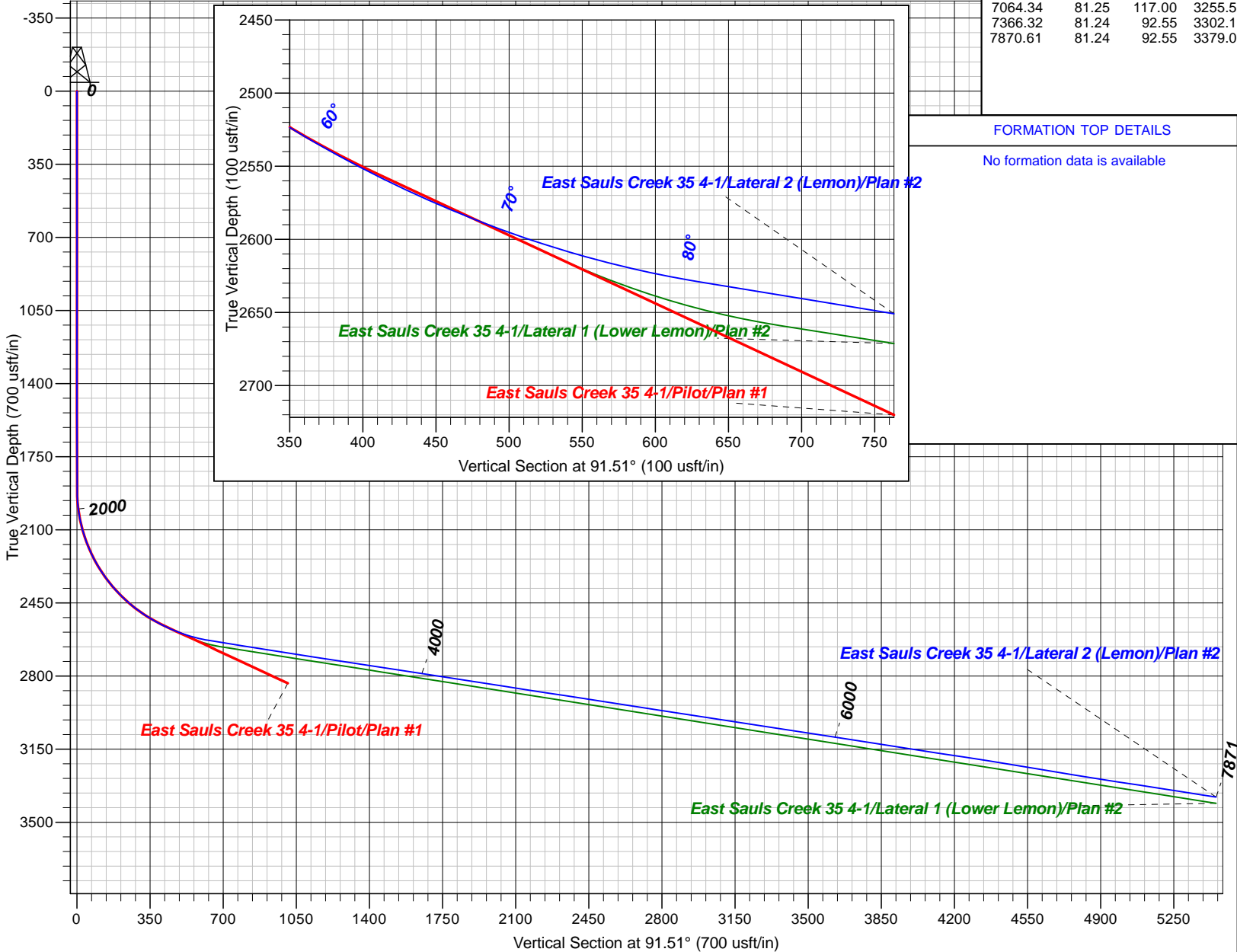
Magnetic Field
Strength: 50304.6snT
Dip Angle: 63.78°
Date: 11/29/2016
Model: HDGM

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 2 PBHL	3379.00	-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 2 (Lemon)

Plan: Plan #2

Standard Planning Report

05 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:	Lateral 2 (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 2 (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:	2,603.89	
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
2,603.89	55.68	91.51	2,499.40	-8.23	312.28	0.00	0.00	0.00	0.00	
2,956.72	81.25	71.00	2,629.04	46.09	630.99	9.00	7.25	-5.81	-41.15	
3,006.72	81.25	71.00	2,636.65	62.18	677.72	0.00	0.00	0.00	0.00	
3,336.13	81.25	91.00	2,687.26	112.84	997.58	6.00	0.00	6.07	91.54	
6,636.13	81.25	91.00	3,189.27	55.92	4,258.68	0.00	0.00	0.00	0.00	
7,064.34	81.25	117.00	3,255.52	-45.55	4,665.64	6.00	0.00	6.07	92.01	
7,366.32	81.24	92.55	3,302.19	-121.06	4,951.94	8.00	0.00	-8.10	-91.92	
7,870.61	81.24	92.55	3,379.00	-143.26	5,449.86	0.00	0.00	0.00	0.00	ESC 35 4-1 Lat 2 PBI



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 2 (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)
2,603.89	55.68	91.51	2,499.40	-8.23	312.28	312.39	0.00	0.00	0.00
2,700.00	62.36	85.10	2,548.88	-5.63	394.53	394.54	9.00	6.95	-6.67
2,800.00	69.59	79.22	2,589.60	6.94	484.88	484.53	9.00	7.23	-5.88
2,900.00	77.00	73.88	2,618.34	29.28	577.91	576.94	9.00	7.41	-5.34
2,956.72	81.25	71.00	2,629.04	46.09	630.99	629.56	9.00	7.50	-5.07
3,000.00	81.25	71.00	2,635.63	60.02	671.44	669.63	0.00	0.00	0.00
3,006.72	81.25	71.00	2,636.65	62.18	677.72	675.85	0.00	0.00	0.00
3,100.00	81.14	76.66	2,650.94	87.84	766.21	763.64	6.00	-0.12	6.07
3,200.00	81.12	82.74	2,666.37	105.50	863.38	860.31	6.00	-0.02	6.07
3,300.00	81.20	88.81	2,681.75	112.78	961.87	958.58	6.00	0.08	6.07
3,336.13	81.25	91.00	2,687.26	112.84	997.58	994.27	6.00	0.14	6.07
3,400.00	81.25	91.00	2,696.98	111.74	1,060.69	1,057.39	0.00	0.00	0.00
3,500.00	81.25	91.00	2,712.19	110.02	1,159.51	1,156.22	0.00	0.00	0.00
3,600.00	81.25	91.00	2,727.40	108.29	1,258.34	1,255.06	0.00	0.00	0.00
3,700.00	81.25	91.00	2,742.62	106.57	1,357.16	1,353.89	0.00	0.00	0.00
3,800.00	81.25	91.00	2,757.83	104.84	1,455.98	1,452.72	0.00	0.00	0.00
3,900.00	81.25	91.00	2,773.04	103.12	1,554.80	1,551.55	0.00	0.00	0.00
4,000.00	81.25	91.00	2,788.25	101.39	1,653.62	1,650.38	0.00	0.00	0.00
4,100.00	81.25	91.00	2,803.46	99.67	1,752.44	1,749.22	0.00	0.00	0.00
4,200.00	81.25	91.00	2,818.68	97.94	1,851.26	1,848.05	0.00	0.00	0.00
4,300.00	81.25	91.00	2,833.89	96.22	1,950.08	1,946.88	0.00	0.00	0.00
4,400.00	81.25	91.00	2,849.10	94.49	2,048.90	2,045.71	0.00	0.00	0.00
4,500.00	81.25	91.00	2,864.31	92.77	2,147.73	2,144.55	0.00	0.00	0.00
4,600.00	81.25	91.00	2,879.53	91.04	2,246.55	2,243.38	0.00	0.00	0.00
4,700.00	81.25	91.00	2,894.74	89.32	2,345.37	2,342.21	0.00	0.00	0.00
4,800.00	81.25	91.00	2,909.95	87.59	2,444.19	2,441.04	0.00	0.00	0.00
4,900.00	81.25	91.00	2,925.16	85.87	2,543.01	2,539.88	0.00	0.00	0.00
5,000.00	81.25	91.00	2,940.38	84.14	2,641.83	2,638.71	0.00	0.00	0.00
5,100.00	81.25	91.00	2,955.59	82.42	2,740.65	2,737.54	0.00	0.00	0.00
5,200.00	81.25	91.00	2,970.80	80.69	2,839.47	2,836.37	0.00	0.00	0.00
5,300.00	81.25	91.00	2,986.01	78.97	2,938.29	2,935.20	0.00	0.00	0.00
5,400.00	81.25	91.00	3,001.23	77.24	3,037.12	3,034.04	0.00	0.00	0.00
5,500.00	81.25	91.00	3,016.44	75.52	3,135.94	3,132.87	0.00	0.00	0.00
5,600.00	81.25	91.00	3,031.65	73.79	3,234.76	3,231.70	0.00	0.00	0.00
5,700.00	81.25	91.00	3,046.86	72.07	3,333.58	3,330.53	0.00	0.00	0.00
5,800.00	81.25	91.00	3,062.07	70.34	3,432.40	3,429.37	0.00	0.00	0.00
5,900.00	81.25	91.00	3,077.29	68.62	3,531.22	3,528.20	0.00	0.00	0.00
6,000.00	81.25	91.00	3,092.50	66.89	3,630.04	3,627.03	0.00	0.00	0.00
6,100.00	81.25	91.00	3,107.71	65.17	3,728.86	3,725.86	0.00	0.00	0.00
6,200.00	81.25	91.00	3,122.92	63.44	3,827.68	3,824.70	0.00	0.00	0.00
6,300.00	81.25	91.00	3,138.14	61.72	3,926.51	3,923.53	0.00	0.00	0.00
6,400.00	81.25	91.00	3,153.35	59.99	4,025.33	4,022.36	0.00	0.00	0.00
6,500.00	81.25	91.00	3,168.56	58.27	4,124.15	4,121.19	0.00	0.00	0.00
6,600.00	81.25	91.00	3,183.77	56.54	4,222.97	4,220.02	0.00	0.00	0.00
6,636.13	81.25	91.00	3,189.27	55.92	4,258.68	4,255.74	0.00	0.00	0.00
6,700.00	81.14	94.88	3,199.05	52.69	4,321.69	4,318.82	6.00	-0.18	6.07
6,800.00	81.04	100.95	3,214.56	39.10	4,419.50	4,416.94	6.00	-0.10	6.07
6,900.00	81.04	107.02	3,230.16	15.23	4,515.30	4,513.34	6.00	0.00	6.07
7,000.00	81.13	113.10	3,245.67	-18.63	4,608.05	4,606.95	6.00	0.10	6.07
7,064.34	81.25	117.00	3,255.52	-45.55	4,665.64	4,665.23	6.00	0.18	6.07
7,100.00	81.17	114.11	3,260.98	-60.75	4,697.43	4,697.41	8.00	-0.24	-8.09
7,200.00	81.05	106.02	3,276.46	-94.62	4,790.15	4,790.99	8.00	-0.12	-8.10



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Site:	East Sauls Creek Pad	North Reference:	Grid
Well:	East Sauls Creek 35 4-1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Lateral 2 (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)
7,300.00	81.10	97.92	3,292.00	-115.09	4,886.71	4,888.05	8.00	0.06	-8.10
7,366.32	81.24	92.55	3,302.19	-121.06	4,951.94	4,953.42	8.00	0.20	-8.09
7,400.00	81.24	92.55	3,307.32	-122.55	4,985.20	4,986.70	0.00	0.00	0.00
7,500.00	81.24	92.55	3,322.55	-126.95	5,083.94	5,085.52	0.00	0.00	0.00
7,600.00	81.24	92.55	3,337.78	-131.35	5,182.67	5,184.33	0.00	0.00	0.00
7,700.00	81.24	92.55	3,353.01	-135.75	5,281.41	5,283.15	0.00	0.00	0.00
7,800.00	81.24	92.55	3,368.24	-140.15	5,380.14	5,381.97	0.00	0.00	0.00
7,870.61	81.24	92.55	3,379.00	-143.26	5,449.86	5,451.74	0.00	0.00	0.00
ESC 35 4-1 Lat 2 PBHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
ESC 35 4-1 Lat 2 PBHL - plan hits target center - Point	0.00	360.00	3,379.00	-143.26	5,449.86	1,220,109.61	2,420,675.69	37.2542104	-107.4905708