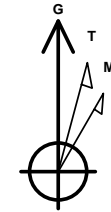




Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Southern Ute Tribal E2 Pad  
Well: Southern Ute Tribal E2  
Wellbore: Lateral 1 ST1  
Design: Plan #2

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



Azimuths to Grid North  
True North: 1.29°  
Magnetic North: 10.58°

Magnetic Field  
Strength: 50287.6snT  
Dip Angle: 63.68°  
Date: 11/30/2015  
Model: HDGM

WELL DETAILS: Southern Ute Tribal E2

GL 6443' & RKB 11' @ 6454.00usft (Aztec 507)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1164754.12	2384252.12	37.1000229	-107.6113830

Plan: Plan #2 (Southern Ute Tribal E2/Lateral 1 ST1)

Created By: Janie Collins Date: 14:08, August 09 2016

DESIGN TARGET DETAILS

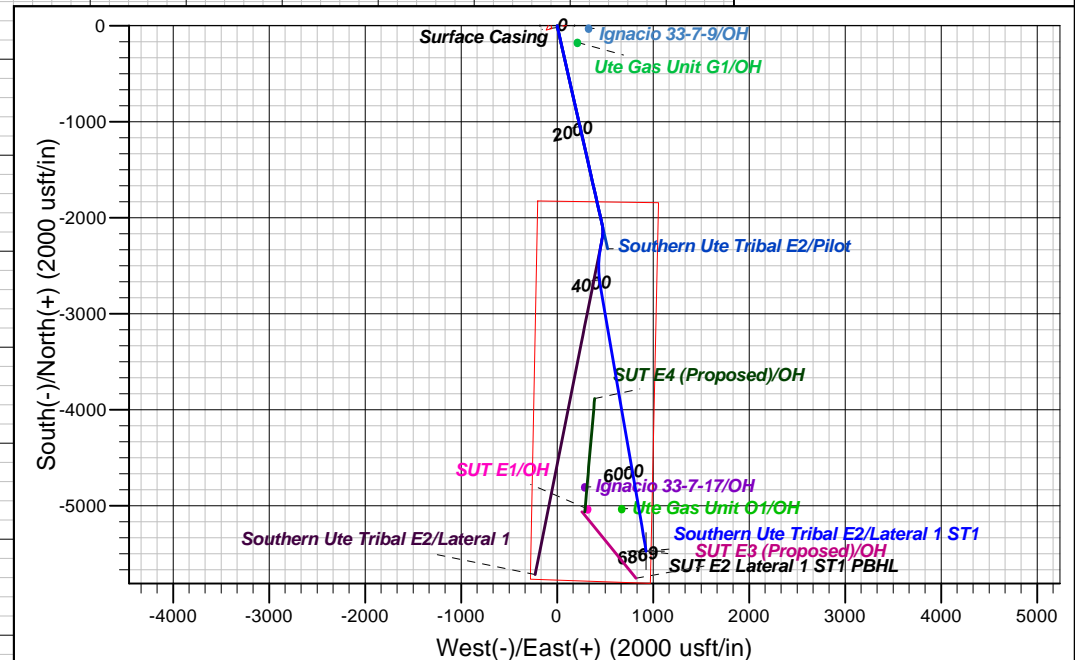
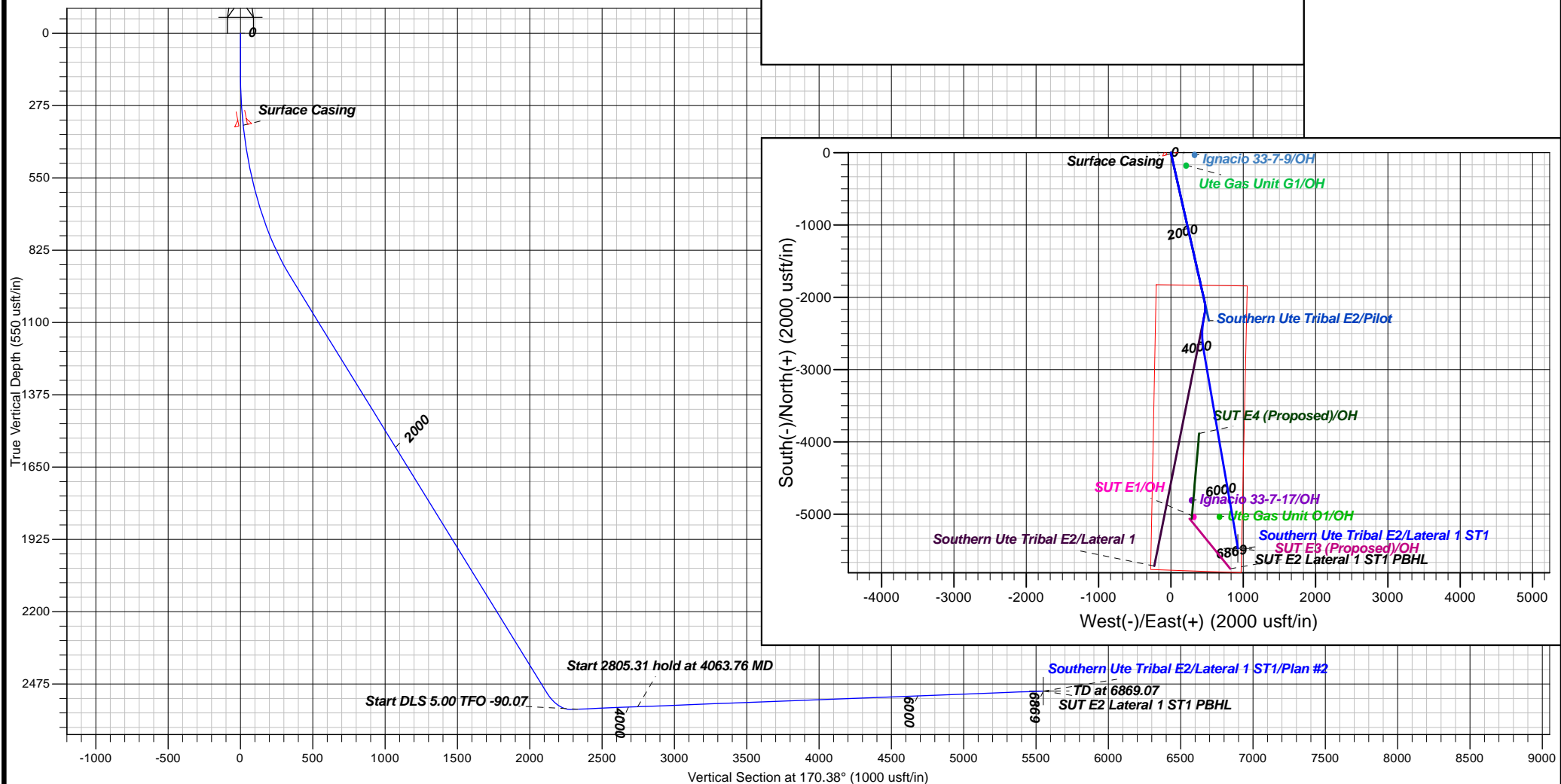
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SUT E2 Lateral 1 ST1 PBHL	2502.00	-5472.89	927.66	1159281.23	2385179.78	37.0850536	-107.6077798

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
3642.00	91.33	191.29	2570.85	-2289.88	455.83	0.00	0.00	2333.86	
4063.76	91.21	170.20	2561.40	-2709.12	450.36	5.00	-90.07	2746.29	
6869.07	91.21	170.20	2502.00	-5472.89	927.66	0.00	0.00	5550.00	SUT E2 Lateral 1 ST1 PBHL

FORMATION TOP DETAILS

No formation data is available





**B.P.**

La Plata County, CO NAD83  
Southern Ute Tribal E2 Pad  
Southern Ute Tribal E2

Lateral 1 ST1

Plan: Plan #2

## **Standard Planning Report**

09 August, 2016





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Southern Ute Tribal E2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6443' & RKB 11' @ 6454.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6443' & RKB 11' @ 6454.00usft (Aztec 507)
<b>Site:</b>	Southern Ute Tribal E2 Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Southern Ute Tribal E2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	Plan #2		

<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		Southern Ute Tribal E2 Pad			
Site Position:		Northing:	1,164,754.12 usft	Latitude:	37.1000229
From:	Map	Easting:	2,384,252.12 usft	Longitude:	-107.6113830
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.30 °

Well	Southern Ute Tribal E2					
Well Position	+N/-S	0.00 usft	Northing:	1,164,754.12 usft	Latitude:	37.1000229
	+E/-W	0.00 usft	Easting:	2,384,252.12 usft	Longitude:	-107.6113830
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,443.00 usft

<b>Wellbore</b>	Lateral 1 ST1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	11/30/2015	9.28	63.68	50,288

<b>Design</b>	Plan #2				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN		<b>Tie On Depth:</b>	3,642.00
<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	170.38	

<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
3,642.00	91.33	191.29	2,570.85	-2,289.88	455.83	0.00	0.00	0.00	0.00	
4,063.76	91.21	170.20	2,561.40	-2,709.12	450.36	5.00	-0.03	-5.00	-90.07	
6,869.07	91.21	170.20	2,502.00	-5,472.89	927.66	0.00	0.00	0.00	0.00	SUT E2 Lateral 1 ST1



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Southern Ute Tribal E2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6443' & RKB 11' @ 6454.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6443' & RKB 11' @ 6454.00usft (Aztec 507)
<b>Site:</b>	Southern Ute Tribal E2 Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Southern Ute Tribal E2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	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)
3,642.00	91.33	191.29	2,570.85	-2,289.88	455.83	2,333.86	0.00	0.00	0.00
3,700.00	91.32	188.39	2,569.51	-2,347.01	445.92	2,388.52	5.00	-0.01	-5.00
3,800.00	91.30	183.39	2,567.22	-2,446.42	435.65	2,484.82	5.00	-0.02	-5.00
3,900.00	91.28	178.39	2,564.97	-2,546.35	434.10	2,583.09	5.00	-0.03	-5.00
4,000.00	91.24	173.39	2,562.77	-2,646.04	441.26	2,682.57	5.00	-0.04	-5.00
4,063.76	91.21	170.20	2,561.40	-2,709.12	450.36	2,746.29	5.00	-0.04	-5.00
4,100.00	91.21	170.20	2,560.63	-2,744.83	456.52	2,782.52	0.00	0.00	0.00
4,200.00	91.21	170.20	2,558.52	-2,843.34	473.54	2,882.49	0.00	0.00	0.00
4,300.00	91.21	170.20	2,556.40	-2,941.86	490.55	2,982.47	0.00	0.00	0.00
4,400.00	91.21	170.20	2,554.28	-3,040.38	507.56	3,082.45	0.00	0.00	0.00
4,500.00	91.21	170.20	2,552.16	-3,138.90	524.58	3,182.43	0.00	0.00	0.00
4,600.00	91.21	170.20	2,550.05	-3,237.42	541.59	3,282.40	0.00	0.00	0.00
4,700.00	91.21	170.20	2,547.93	-3,335.94	558.61	3,382.38	0.00	0.00	0.00
4,800.00	91.21	170.20	2,545.81	-3,434.46	575.62	3,482.36	0.00	0.00	0.00
4,900.00	91.21	170.20	2,543.69	-3,532.98	592.64	3,582.33	0.00	0.00	0.00
5,000.00	91.21	170.20	2,541.58	-3,631.50	609.65	3,682.31	0.00	0.00	0.00
5,100.00	91.21	170.20	2,539.46	-3,730.02	626.66	3,782.29	0.00	0.00	0.00
5,200.00	91.21	170.20	2,537.34	-3,828.54	643.68	3,882.27	0.00	0.00	0.00
5,300.00	91.21	170.20	2,535.22	-3,927.06	660.69	3,982.24	0.00	0.00	0.00
5,400.00	91.21	170.20	2,533.11	-4,025.57	677.71	4,082.22	0.00	0.00	0.00
5,500.00	91.21	170.20	2,530.99	-4,124.09	694.72	4,182.20	0.00	0.00	0.00
5,600.00	91.21	170.20	2,528.87	-4,222.61	711.74	4,282.17	0.00	0.00	0.00
5,700.00	91.21	170.20	2,526.75	-4,321.13	728.75	4,382.15	0.00	0.00	0.00
5,800.00	91.21	170.20	2,524.64	-4,419.65	745.77	4,482.13	0.00	0.00	0.00
5,900.00	91.21	170.20	2,522.52	-4,518.17	762.78	4,582.11	0.00	0.00	0.00
6,000.00	91.21	170.20	2,520.40	-4,616.69	779.79	4,682.08	0.00	0.00	0.00
6,100.00	91.21	170.20	2,518.29	-4,715.21	796.81	4,782.06	0.00	0.00	0.00
6,200.00	91.21	170.20	2,516.17	-4,813.73	813.82	4,882.04	0.00	0.00	0.00
6,300.00	91.21	170.20	2,514.05	-4,912.25	830.84	4,982.01	0.00	0.00	0.00
6,400.00	91.21	170.20	2,511.93	-5,010.77	847.85	5,081.99	0.00	0.00	0.00
6,500.00	91.21	170.20	2,509.82	-5,109.29	864.87	5,181.97	0.00	0.00	0.00
6,600.00	91.21	170.20	2,507.70	-5,207.80	881.88	5,281.94	0.00	0.00	0.00
6,700.00	91.21	170.20	2,505.58	-5,306.32	898.89	5,381.92	0.00	0.00	0.00
6,800.00	91.21	170.20	2,503.46	-5,404.84	915.91	5,481.90	0.00	0.00	0.00
6,869.07	91.21	170.20	2,502.00	-5,472.89	927.66	5,550.95	0.00	0.00	0.00
SUT E2 Lateral 1 ST1 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									
SUT E2 Lateral 1 ST1 P	0.00	360.00	2,502.00	-5,472.89	927.66	1,159,281.23	2,385,179.78	37.0850536	-107.6077798
- plan hits target center									
- Point									



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Southern Ute Tribal E2
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 6443' & RKB 11' @ 6454.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 6443' & RKB 11' @ 6454.00usft (Aztec 507)
<b>Site:</b>	Southern Ute Tribal E2 Pad	<b>North Reference:</b>	Grid
<b>Well:</b>	Southern Ute Tribal E2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1 ST1		
<b>Design:</b>	Plan #2		

Casing Points					
	Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
	351.25	350.00	Surface Casing	9.62	12.25