

# **XTO Energy - Western Div. (NM, CO, UT)**

**LaPlata County (NAD83)**

**Smith 2H**

**Smith 2H**

**Smith 2H -- Upper Lat.**

**Plan: Smith 2H -- Upper Lat.**

## **Standard Planning Report**

**08 July, 2013**

# XTO Energy, Inc.

## Planning Report

<b>Database:</b>	LMRKPROD	<b>Local Co-ordinate Reference:</b>	Site Smith 2H
<b>Company:</b>	XTO Energy - Western Div. (NM, CO, UT)	<b>TVD Reference:</b>	WELL @ 6329.00ft (AWS 507)
<b>Project:</b>	LaPlata County (NAD83)	<b>MD Reference:</b>	WELL @ 6329.00ft (AWS 507)
<b>Site:</b>	Smith 2H	<b>North Reference:</b>	True
<b>Well:</b>	Smith 2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Smith 2H -- Upper Lat.		
<b>Design:</b>	Smith 2H -- Upper Lat.		

<b>Project</b>	LaPlata County (NAD83), LaPlata County, Colorado, Directional Fruitland Coal Wells		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Southern Zone		

<b>Site</b>	Smith 2H, Sec 2, T32N, R7W		
<b>Site Position:</b>		<b>Northing:</b>	1,142,587.11 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,392,049.57 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16"
		<b>Latitude:</b>	37° 2' 22.704000 N
		<b>Longitude:</b>	107° 34' 58.656000 W
		<b>Grid Convergence:</b>	-1.28 °

<b>Well</b>	Smith 2H, Horizontal FC		
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>
			6,317.00 ft
			<b>Latitude:</b>
			37° 2' 22.703948 N
			<b>Longitude:</b>
			107° 34' 58.656000 W
			<b>Ground Level:</b>
			6,317.00 ft

<b>Wellbore</b>	Smith 2H -- Upper Lat.		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>
			(°)
			<b>Dip Angle</b>
			(°)
			<b>Field Strength</b>
			(nT)
	IGRF200510	3/13/2013	9.62
			63.73
			50,800

<b>Design</b>	Smith 2H -- Upper Lat.		
<b>Audit Notes:</b>			
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>
			2,488.52
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			<b>Direction</b>
			(°)
			9.59

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
2,488.52	18.61	54.73	2,395.70	346.62	490.04	0.00	0.00	0.00	0.00	
2,503.52	20.50	52.77	2,409.83	349.59	494.09	13.33	12.60	-13.02	-20.00	
2,540.51	20.50	52.77	2,444.48	357.43	504.40	0.00	0.00	0.00	0.00	
3,055.04	90.00	2.10	2,730.00	726.61	600.53	15.00	13.51	-9.85	-52.50	
6,665.31	90.00	2.10	2,730.00	4,334.46	732.54	0.00	0.00	0.00	0.00	Smith 2H -- Upper Lat

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<b>Project:</b>	LaPlata County (NAD83)	<b>MD Reference:</b>	WELL @ 6329.00ft (AWS 507)
<b>Site:</b>	Smith 2H	<b>North Reference:</b>	True
<b>Well:</b>	Smith 2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Smith 2H -- Upper Lat.		
<b>Design:</b>	Smith 2H -- Upper Lat.		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
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	3.00	54.73	399.95	1.51	2.14	1.85	3.00	3.00	0.00	
500.00	6.00	54.73	499.63	6.04	8.54	7.38	3.00	3.00	0.00	
600.00	9.00	54.73	598.77	13.58	19.20	16.59	3.00	3.00	0.00	
700.00	12.00	54.73	697.08	24.10	34.07	29.44	3.00	3.00	0.00	
800.00	15.00	54.73	794.31	37.58	53.13	45.91	3.00	3.00	0.00	
900.00	18.00	54.73	890.18	53.98	76.31	65.94	3.00	3.00	0.00	
920.24	18.61	54.73	909.40	57.65	81.50	70.43	3.00	3.00	0.00	
1,000.00	18.61	54.73	984.99	72.35	102.28	88.38	0.00	0.00	0.00	
1,100.00	18.61	54.73	1,079.76	90.77	128.33	110.89	0.00	0.00	0.00	
1,200.00	18.61	54.73	1,174.53	109.20	154.38	133.40	0.00	0.00	0.00	
1,300.00	18.61	54.73	1,269.30	127.62	180.43	155.91	0.00	0.00	0.00	
1,400.00	18.61	54.73	1,364.08	146.05	206.48	178.42	0.00	0.00	0.00	
1,500.00	18.61	54.73	1,458.85	164.48	232.53	200.93	0.00	0.00	0.00	
1,600.00	18.61	54.73	1,553.62	182.90	258.58	223.43	0.00	0.00	0.00	
1,700.00	18.61	54.73	1,648.39	201.33	284.63	245.94	0.00	0.00	0.00	
1,800.00	18.61	54.73	1,743.17	219.75	310.68	268.45	0.00	0.00	0.00	
1,900.00	18.61	54.73	1,837.94	238.18	336.73	290.96	0.00	0.00	0.00	
2,000.00	18.61	54.73	1,932.71	256.61	362.78	313.47	0.00	0.00	0.00	
2,100.00	18.61	54.73	2,027.49	275.03	388.83	335.98	0.00	0.00	0.00	
2,200.00	18.61	54.73	2,122.26	293.46	414.88	358.49	0.00	0.00	0.00	
2,300.00	18.61	54.73	2,217.03	311.88	440.93	381.00	0.00	0.00	0.00	
2,400.00	18.61	54.73	2,311.80	330.31	466.98	403.51	0.00	0.00	0.00	
2,488.52	18.61	54.73	2,395.70	346.62	490.04	423.43	0.00	0.00	0.00	
2,500.00	20.05	53.20	2,406.53	348.86	493.11	426.15	13.33	12.58	-13.30	
2,503.52	20.50	52.77	2,409.83	349.59	494.09	427.04	13.33	12.65	-12.12	
2,540.51	20.50	52.77	2,444.48	357.43	504.40	436.48	0.00	0.00	0.00	
2,550.00	21.39	49.68	2,453.34	359.55	507.04	439.02	15.00	9.43	-32.64	
2,575.00	23.98	42.64	2,476.41	366.24	513.96	446.77	15.00	10.37	-28.16	
2,600.00	26.84	36.96	2,498.99	374.49	520.80	456.04	15.00	11.41	-22.73	
2,625.00	29.88	32.32	2,520.99	384.27	527.53	466.80	15.00	12.15	-18.54	
2,650.00	33.05	28.49	2,542.32	395.53	534.11	479.00	15.00	12.69	-15.34	
2,675.00	36.32	25.26	2,562.87	408.22	540.52	492.58	15.00	13.09	-12.90	
2,700.00	39.67	22.51	2,582.57	422.29	546.74	507.49	15.00	13.38	-11.02	
2,725.00	43.07	20.12	2,601.33	437.68	552.73	523.67	15.00	13.61	-9.56	
2,750.00	46.51	18.02	2,619.08	454.33	558.47	541.04	15.00	13.78	-8.41	
2,775.00	49.99	16.14	2,635.72	472.16	563.94	559.53	15.00	13.92	-7.49	
2,781.72	50.93	15.67	2,640.00	477.14	565.36	564.68	15.00	13.99	-7.01	
<b>Upper Fruitland Coal</b>										
2,800.00	53.50	14.45	2,651.20	491.09	569.11	579.06	15.00	14.04	-6.67	
2,825.00	57.03	12.91	2,665.44	511.05	573.97	599.55	15.00	14.12	-6.18	
2,839.29	59.05	12.08	2,673.00	522.88	576.59	611.65	15.00	14.17	-5.79	
<b>Middle Fruitland Coal</b>										
2,850.00	60.58	11.48	2,678.39	531.95	578.48	620.91	15.00	14.20	-5.58	
2,875.00	64.14	10.15	2,689.98	553.70	582.63	643.05	15.00	14.24	-5.31	
2,900.00	67.71	8.90	2,700.18	576.20	586.40	665.87	15.00	14.29	-5.00	
2,925.00	71.29	7.72	2,708.94	599.37	589.78	689.27	15.00	14.32	-4.75	
2,950.00	74.88	6.58	2,716.21	623.10	592.76	713.16	15.00	14.35	-4.55	
2,975.00	78.47	5.48	2,721.97	647.29	595.31	737.44	15.00	14.38	-4.40	
3,000.00	82.07	4.40	2,726.19	671.83	597.43	761.99	15.00	14.39	-4.29	
3,025.00	85.67	3.35	2,728.86	696.63	599.11	786.72	15.00	14.40	-4.22	

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<b>Site:</b>	Smith 2H	<b>North Reference:</b>	True
<b>Well:</b>	Smith 2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Smith 2H -- Upper Lat.		
<b>Design:</b>	Smith 2H -- Upper Lat.		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
3,050.00	89.27	2.31	2,729.97	721.57	600.34	811.52	15.00	14.41	-4.18
3,055.04	90.00	2.10	2,730.00	726.61	600.53	816.52	15.00	14.41	-4.17
3,100.00	90.00	2.10	2,730.00	771.54	602.18	861.09	0.00	0.00	0.00
3,200.00	90.00	2.10	2,730.00	871.47	605.83	960.24	0.00	0.00	0.00
3,300.00	90.00	2.10	2,730.00	971.40	609.49	1,059.38	0.00	0.00	0.00
3,400.00	90.00	2.10	2,730.00	1,071.33	613.15	1,158.53	0.00	0.00	0.00
3,500.00	90.00	2.10	2,730.00	1,171.27	616.80	1,257.68	0.00	0.00	0.00
3,600.00	90.00	2.10	2,730.00	1,271.20	620.46	1,356.82	0.00	0.00	0.00
3,700.00	90.00	2.10	2,730.00	1,371.13	624.12	1,455.97	0.00	0.00	0.00
3,800.00	90.00	2.10	2,730.00	1,471.07	627.77	1,555.11	0.00	0.00	0.00
3,900.00	90.00	2.10	2,730.00	1,571.00	631.43	1,654.26	0.00	0.00	0.00
4,000.00	90.00	2.10	2,730.00	1,670.93	635.08	1,753.40	0.00	0.00	0.00
4,100.00	90.00	2.10	2,730.00	1,770.87	638.74	1,852.55	0.00	0.00	0.00
4,200.00	90.00	2.10	2,730.00	1,870.80	642.40	1,951.69	0.00	0.00	0.00
4,300.00	90.00	2.10	2,730.00	1,970.73	646.05	2,050.84	0.00	0.00	0.00
4,400.00	90.00	2.10	2,730.00	2,070.67	649.71	2,149.98	0.00	0.00	0.00
4,500.00	90.00	2.10	2,730.00	2,170.60	653.37	2,249.13	0.00	0.00	0.00
4,600.00	90.00	2.10	2,730.00	2,270.53	657.02	2,348.27	0.00	0.00	0.00
4,700.00	90.00	2.10	2,730.00	2,370.47	660.68	2,447.42	0.00	0.00	0.00
4,800.00	90.00	2.10	2,730.00	2,470.40	664.34	2,546.56	0.00	0.00	0.00
4,900.00	90.00	2.10	2,730.00	2,570.33	667.99	2,645.71	0.00	0.00	0.00
5,000.00	90.00	2.10	2,730.00	2,670.26	671.65	2,744.85	0.00	0.00	0.00
5,100.00	90.00	2.10	2,730.00	2,770.20	675.30	2,844.00	0.00	0.00	0.00
5,200.00	90.00	2.10	2,730.00	2,870.13	678.96	2,943.14	0.00	0.00	0.00
5,300.00	90.00	2.10	2,730.00	2,970.06	682.62	3,042.29	0.00	0.00	0.00
5,400.00	90.00	2.10	2,730.00	3,070.00	686.27	3,141.43	0.00	0.00	0.00
5,500.00	90.00	2.10	2,730.00	3,169.93	689.93	3,240.58	0.00	0.00	0.00
5,600.00	90.00	2.10	2,730.00	3,269.86	693.59	3,339.72	0.00	0.00	0.00
5,700.00	90.00	2.10	2,730.00	3,369.80	697.24	3,438.87	0.00	0.00	0.00
5,800.00	90.00	2.10	2,730.00	3,469.73	700.90	3,538.01	0.00	0.00	0.00
5,900.00	90.00	2.10	2,730.00	3,569.66	704.55	3,637.16	0.00	0.00	0.00
6,000.00	90.00	2.10	2,730.00	3,669.60	708.21	3,736.30	0.00	0.00	0.00
6,100.00	90.00	2.10	2,730.00	3,769.53	711.87	3,835.45	0.00	0.00	0.00
6,200.00	90.00	2.10	2,730.00	3,869.46	715.52	3,934.59	0.00	0.00	0.00
6,300.00	90.00	2.10	2,730.00	3,969.40	719.18	4,033.74	0.00	0.00	0.00
6,400.00	90.00	2.10	2,730.00	4,069.33	722.84	4,132.88	0.00	0.00	0.00
6,500.00	90.00	2.10	2,730.00	4,169.26	726.49	4,232.03	0.00	0.00	0.00
6,600.00	90.00	2.10	2,730.00	4,269.20	730.15	4,331.17	0.00	0.00	0.00
6,665.00	90.00	2.10	2,730.00	4,334.15	732.52	4,395.62	0.00	0.00	0.00
<b>4 1/2"</b>									
6,665.31	90.00	2.10	2,730.00	4,334.46	732.54	4,395.92	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Smith 2H -- Upper Lat. E - hit/miss target - Shape - Point	0.00	0.00	2,730.00	4,334.46	732.54	1,146,904.15	2,392,878.57	37° 3' 5.558348 N 107° 34' 49.620000 W	

# XTO Energy, Inc.

## Planning Report

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<b>Company:</b>	XTO Energy - Western Div. (NM, CO, UT)	<b>TVD Reference:</b>	WELL @ 6329.00ft (AWS 507)
<b>Project:</b>	LaPlata County (NAD83)	<b>MD Reference:</b>	WELL @ 6329.00ft (AWS 507)
<b>Site:</b>	Smith 2H	<b>North Reference:</b>	True
<b>Well:</b>	Smith 2H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Smith 2H -- Upper Lat.		
<b>Design:</b>	Smith 2H -- Upper Lat.		

Casing Points					
	Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
	6,665.00	2,730.00	4 1/2"	4-1/2	6-1/8

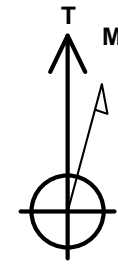
Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,572.96	1,528.00	Ojo Alamo		0.00	
	1,621.50	1,574.00	Kitland Shale		0.00	
	2,473.01	2,381.00	Fruitland Formation		0.00	
	2,781.72	2,640.00	Upper Fruitland Coal		0.00	
	2,839.29	2,673.00	Middle Fruitland Coal		0.00	



# Well Name: Smith 2H

San Juan Division  
Drilling Department

Calculation Method: Minimum Curvature  
Geodetic Datum: North American Datum 1983  
Lat: 37° 2' 22.704000 N  
Long: 107° 34' 58.656000 W



Azimuths to True North  
Magnetic North: 9.62°

Magnetic Field  
Strength: 50800.4snT  
Dip Angle: 63.73°  
Date: 3/13/2013  
Model: IGRF200510

### FORMATION TOP DETAILS

TVDPPath	MDPath	Formation
1528.00	1572.96	Ojo Alamo
1574.00	1621.50	Kirtland Shale
2381.00	2473.01	Fruitland Formation
2640.00	2746.30	Upper Fruitland Coal
2673.00	2781.12	Middle Fruitland Coal
2754.00	2866.59	Lower Fruitland Coal
2766.00	2879.25	Upper Pictured Cliffs

