

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

LaPlata County (NAD83)

Smith 2H

Smith 2H

Smith 2H -- Lower Lat.

Plan: Smith 2H -- Lower Lat.

Standard Planning Report

08 July, 2013

XTO Energy, Inc.

Planning Report

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

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

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

Well	Smith 2H, Horizontal FC		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	1,142,587.11 usft
			Latitude:
			37° 2' 22.703948 N
			Longitude:
			107° 34' 58.656000 W
Position Uncertainty		0.00 ft	Wellhead Elevation:
			6,317.00 ft
			Ground Level:
			6,317.00 ft

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

Design	Smith 2H -- Lower Lat.		
Audit Notes:			
Version:	Phase:	PROTOTYPE	Tie On Depth:
			2,546.52
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			10.12

Plan Sections										
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
2,546.52	18.61	54.73	2,450.67	357.31	505.15	0.00	0.00	0.00	0.00	
2,561.52	20.36	57.60	2,464.81	360.09	509.31	13.33	11.70	19.16	30.00	
2,566.52	20.36	57.60	2,469.49	361.02	510.78	0.00	0.00	0.00	0.00	
3,089.98	90.00	2.50	2,762.16	731.12	616.11	15.00	13.30	-10.53	-56.82	
6,696.75	90.00	2.50	2,762.00	4,334.46	773.39	0.00	0.00	0.00	0.00	Smith 2H -- Lower Lat

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Well:	Smith 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Smith 2H -- Lower Lat.		
Design:	Smith 2H -- Lower 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	1.86	3.00	3.00	0.00	
500.00	6.00	54.73	499.63	6.04	8.54	7.45	3.00	3.00	0.00	
600.00	9.00	54.73	598.77	13.58	19.20	16.74	3.00	3.00	0.00	
700.00	12.00	54.73	697.08	24.10	34.07	29.71	3.00	3.00	0.00	
800.00	15.00	54.73	794.31	37.58	53.13	46.33	3.00	3.00	0.00	
900.00	18.00	54.73	890.18	53.98	76.31	66.54	3.00	3.00	0.00	
920.24	18.61	54.73	909.40	57.65	81.50	71.07	3.00	3.00	0.00	
1,000.00	18.61	54.73	984.99	72.35	102.28	89.19	0.00	0.00	0.00	
1,100.00	18.61	54.73	1,079.76	90.77	128.33	111.90	0.00	0.00	0.00	
1,200.00	18.61	54.73	1,174.53	109.20	154.38	134.62	0.00	0.00	0.00	
1,300.00	18.61	54.73	1,269.30	127.62	180.43	157.33	0.00	0.00	0.00	
1,400.00	18.61	54.73	1,364.08	146.05	206.48	180.05	0.00	0.00	0.00	
1,500.00	18.61	54.73	1,458.85	164.48	232.53	202.76	0.00	0.00	0.00	
1,600.00	18.61	54.73	1,553.62	182.90	258.58	225.48	0.00	0.00	0.00	
1,700.00	18.61	54.73	1,648.39	201.33	284.63	248.19	0.00	0.00	0.00	
1,800.00	18.61	54.73	1,743.17	219.75	310.68	270.91	0.00	0.00	0.00	
1,900.00	18.61	54.73	1,837.94	238.18	336.73	293.63	0.00	0.00	0.00	
2,000.00	18.61	54.73	1,932.71	256.61	362.78	316.34	0.00	0.00	0.00	
2,100.00	18.61	54.73	2,027.49	275.03	388.83	339.06	0.00	0.00	0.00	
2,200.00	18.61	54.73	2,122.26	293.46	414.88	361.77	0.00	0.00	0.00	
2,300.00	18.61	54.73	2,217.03	311.88	440.93	384.49	0.00	0.00	0.00	
2,400.00	18.61	54.73	2,311.80	330.31	466.98	407.20	0.00	0.00	0.00	
2,500.00	18.61	54.73	2,406.58	348.74	493.03	429.92	0.00	0.00	0.00	
2,546.52	18.61	54.73	2,450.67	357.31	505.15	440.48	0.00	0.00	0.00	
2,550.00	19.01	55.44	2,453.96	357.95	506.07	441.28	13.33	11.58	20.46	
2,561.52	20.36	57.60	2,464.81	360.09	509.31	443.95	13.33	11.74	18.77	
2,566.52	20.36	57.60	2,469.49	361.02	510.78	445.13	0.00	0.00	0.00	
2,575.00	21.08	54.64	2,477.42	362.69	513.27	447.21	15.00	8.51	-34.91	
2,600.00	23.47	47.00	2,500.56	368.69	520.58	454.40	15.00	9.56	-30.55	
2,625.00	26.17	40.78	2,523.25	376.27	527.82	463.13	15.00	10.78	-24.90	
2,650.00	29.08	35.68	2,545.40	385.38	534.97	473.36	15.00	11.66	-20.39	
2,675.00	32.16	31.46	2,566.92	395.99	541.99	485.04	15.00	12.30	-16.89	
2,700.00	35.35	27.91	2,587.70	408.06	548.85	498.13	15.00	12.77	-14.18	
2,725.00	38.63	24.89	2,607.67	421.54	555.52	512.56	15.00	13.12	-12.09	
2,750.00	41.98	22.28	2,626.74	436.36	561.98	528.29	15.00	13.39	-10.46	
2,768.20	44.45	20.58	2,640.00	447.96	566.53	540.51	15.00	13.57	-9.32	
Upper Fruitland Coal										
2,775.00	45.38	19.98	2,644.82	452.46	568.19	545.23	15.00	13.66	-8.76	
2,800.00	48.82	17.95	2,661.83	469.78	574.13	563.32	15.00	13.76	-8.15	
2,817.38	51.23	16.65	2,673.00	482.50	578.09	576.54	15.00	13.87	-7.44	
Middle Fruitland Coal										
2,825.00	52.29	16.11	2,677.71	488.24	579.78	582.49	15.00	13.93	-7.08	
2,850.00	55.79	14.44	2,692.39	507.75	585.10	602.64	15.00	13.99	-6.67	
2,875.00	59.31	12.91	2,705.81	528.25	590.08	623.69	15.00	14.08	-6.14	
2,900.00	62.84	11.48	2,717.90	549.63	594.70	645.55	15.00	14.14	-5.71	
2,925.00	66.39	10.14	2,728.61	571.82	598.93	668.13	15.00	14.20	-5.35	
2,950.00	69.96	8.88	2,737.90	594.70	602.77	691.33	15.00	14.24	-5.07	
2,975.00	73.52	7.67	2,745.74	618.19	606.18	715.06	15.00	14.28	-4.85	
3,000.00	77.10	6.50	2,752.07	642.19	609.16	739.20	15.00	14.30	-4.67	
3,025.00	80.68	5.36	2,756.89	666.58	611.69	763.66	15.00	14.32	-4.54	

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Well:	Smith 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Smith 2H -- Lower Lat.		
Design:	Smith 2H -- Lower 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	84.27	4.25	2,760.16	691.28	613.76	788.34	15.00	14.34	-4.45	
3,075.00	87.85	3.15	2,761.88	716.16	615.37	813.12	15.00	14.35	-4.39	
3,089.98	90.00	2.50	2,762.16	731.12	616.11	827.98	15.00	14.35	-4.37	
3,100.00	90.00	2.50	2,762.16	741.13	616.55	837.91	0.00	0.00	0.00	
3,200.00	90.00	2.50	2,762.16	841.03	620.91	937.02	0.00	0.00	0.00	
3,300.00	90.00	2.50	2,762.15	940.94	625.27	1,036.14	0.00	0.00	0.00	
3,400.00	90.00	2.50	2,762.15	1,040.84	629.63	1,135.26	0.00	0.00	0.00	
3,500.00	90.00	2.50	2,762.14	1,140.75	633.99	1,234.38	0.00	0.00	0.00	
3,600.00	90.00	2.50	2,762.14	1,240.65	638.35	1,333.49	0.00	0.00	0.00	
3,700.00	90.00	2.50	2,762.14	1,340.56	642.71	1,432.61	0.00	0.00	0.00	
3,800.00	90.00	2.50	2,762.13	1,440.46	647.07	1,531.73	0.00	0.00	0.00	
3,900.00	90.00	2.50	2,762.13	1,540.37	651.44	1,630.85	0.00	0.00	0.00	
4,000.00	90.00	2.50	2,762.12	1,640.27	655.80	1,729.96	0.00	0.00	0.00	
4,100.00	90.00	2.50	2,762.12	1,740.18	660.16	1,829.08	0.00	0.00	0.00	
4,200.00	90.00	2.50	2,762.11	1,840.08	664.52	1,928.20	0.00	0.00	0.00	
4,300.00	90.00	2.50	2,762.11	1,939.99	668.88	2,027.32	0.00	0.00	0.00	
4,400.00	90.00	2.50	2,762.10	2,039.89	673.24	2,126.43	0.00	0.00	0.00	
4,500.00	90.00	2.50	2,762.10	2,139.80	677.60	2,225.55	0.00	0.00	0.00	
4,600.00	90.00	2.50	2,762.09	2,239.70	681.96	2,324.67	0.00	0.00	0.00	
4,700.00	90.00	2.50	2,762.09	2,339.61	686.32	2,423.79	0.00	0.00	0.00	
4,800.00	90.00	2.50	2,762.09	2,439.51	690.68	2,522.90	0.00	0.00	0.00	
4,900.00	90.00	2.50	2,762.08	2,539.42	695.04	2,622.02	0.00	0.00	0.00	
5,000.00	90.00	2.50	2,762.08	2,639.32	699.40	2,721.14	0.00	0.00	0.00	
5,100.00	90.00	2.50	2,762.07	2,739.23	703.76	2,820.26	0.00	0.00	0.00	
5,200.00	90.00	2.50	2,762.07	2,839.13	708.13	2,919.37	0.00	0.00	0.00	
5,300.00	90.00	2.50	2,762.06	2,939.04	712.49	3,018.49	0.00	0.00	0.00	
5,400.00	90.00	2.50	2,762.06	3,038.94	716.85	3,117.61	0.00	0.00	0.00	
5,500.00	90.00	2.50	2,762.05	3,138.85	721.21	3,216.73	0.00	0.00	0.00	
5,600.00	90.00	2.50	2,762.05	3,238.75	725.57	3,315.84	0.00	0.00	0.00	
5,700.00	90.00	2.50	2,762.04	3,338.66	729.93	3,414.96	0.00	0.00	0.00	
5,800.00	90.00	2.50	2,762.04	3,438.56	734.29	3,514.08	0.00	0.00	0.00	
5,900.00	90.00	2.50	2,762.04	3,538.47	738.65	3,613.20	0.00	0.00	0.00	
6,000.00	90.00	2.50	2,762.03	3,638.37	743.01	3,712.31	0.00	0.00	0.00	
6,100.00	90.00	2.50	2,762.03	3,738.28	747.37	3,811.43	0.00	0.00	0.00	
6,200.00	90.00	2.50	2,762.02	3,838.18	751.73	3,910.55	0.00	0.00	0.00	
6,300.00	90.00	2.50	2,762.02	3,938.08	756.09	4,009.67	0.00	0.00	0.00	
6,400.00	90.00	2.50	2,762.01	4,037.99	760.45	4,108.78	0.00	0.00	0.00	
6,500.00	90.00	2.50	2,762.01	4,137.89	764.81	4,207.90	0.00	0.00	0.00	
6,600.00	90.00	2.50	2,762.00	4,237.80	769.18	4,307.02	0.00	0.00	0.00	
6,696.00	90.00	2.50	2,762.00	4,333.71	773.36	4,402.17	0.00	0.00	0.00	
4 1/2"										
6,696.75	90.00	2.50	2,762.00	4,334.46	773.39	4,402.92	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 -- Lower Lat. E	0.00	0.00	2,762.00	4,334.46	773.39	1,146,903.24	2,392,919.42	37° 3' 5.558348 N	107° 34' 49.116000 W	
- hit/miss target										
- Shape										
- plan hits target center										
- Point										

XTO Energy, Inc.

Planning Report

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

Casing Points					
	Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
	6,696.00	2,762.00	4 1/2"	4-1/2	6-1/8

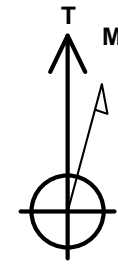
Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,572.96	1,528.00	Ojo Alamo		0.00	
	1,621.50	1,574.00	Kirtland Shale		0.00	
	2,473.01	2,381.00	Fruitland Formation		0.00	
	2,768.20	2,640.00	Upper Fruitland Coal		0.00	
	2,817.38	2,673.00	Middle Fruitland 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

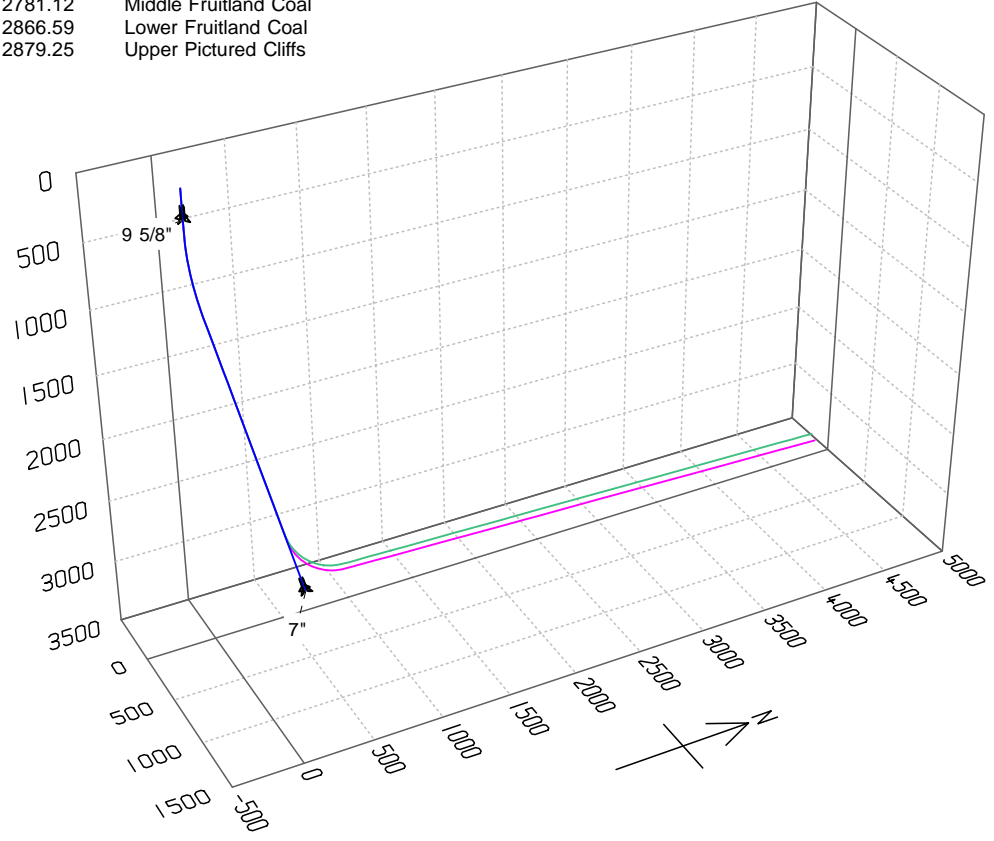
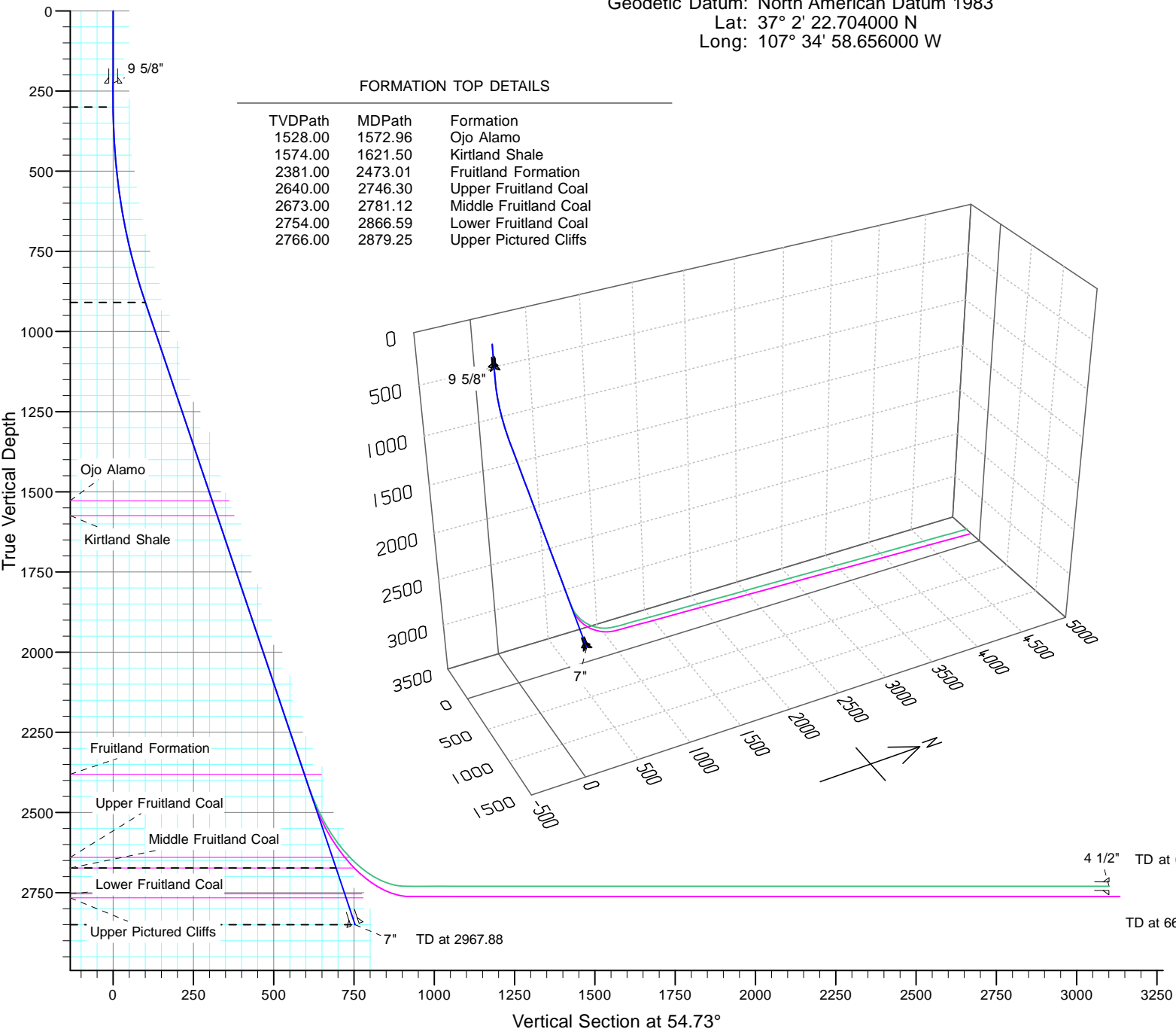
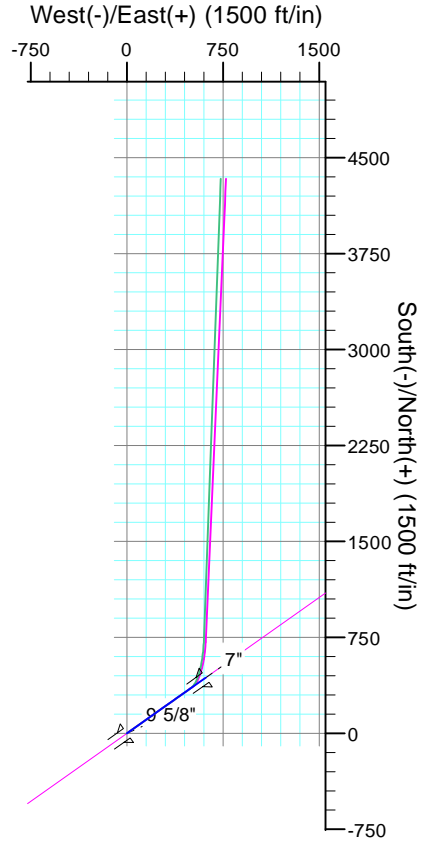


Azimuths to True North
Magnetic North: 9.62°

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



4 1/2" TD at 6665.31
TD at 6696.75