



Job Number: SVGJ-120663

Company: XTO Energy, Inc.

Lease/Well: PCU T78X-12G13

Location: Rio Blanco County, CO

Rig Name: Northern Lights

RKB: 0'

G.L. or M.S.L.: GL

State/Country: Colorado/USA

Declination: 12.21°

Grid: East To Grid

File name: F:\SURVEY\2012SU~1\XTO\LORENZ\PCUT78X\12G13.SVY

Date/Time: 28-Jun-12 / 08:37

Curve Name: Surface - 13100' M.D.

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
200.00	.67	321.38	200.00	.91	-.73	.91	1.17	321.38	.33
400.00	3.03	328.78	399.88	6.35	-4.20	6.35	7.61	326.51	1.18
600.00	6.84	336.82	599.10	21.82	-11.63	21.82	24.73	331.94	1.93
800.00	10.14	335.08	796.88	48.75	-23.74	48.75	54.22	334.03	1.65
1000.00	13.26	336.41	992.70	85.74	-40.34	85.74	94.76	334.80	1.57
1200.00	14.28	337.28	1186.95	129.51	-59.05	129.51	142.34	335.49	.52
1400.00	14.66	337.25	1380.61	175.61	-78.36	175.61	192.30	335.95	.19
1600.00	14.49	336.28	1574.17	221.85	-98.21	221.85	242.62	336.12	.15
1800.00	14.19	335.65	1767.94	267.09	-118.39	267.09	292.15	336.10	.17

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
2000.00	14.53	335.54	1961.69	312.26	-138.88	312.26	341.76	336.02	.17
2200.00	13.87	334.96	2155.58	356.82	-159.42	356.82	390.81	335.93	.34
2400.00	13.26	334.90	2350.00	399.31	-179.29	399.31	437.72	335.82	.31
2600.00	13.71	335.90	2544.49	441.72	-198.70	441.72	484.35	335.78	.25
2800.00	14.54	336.80	2738.44	486.43	-218.27	486.43	533.15	335.83	.43
3000.00	14.88	336.63	2931.88	533.08	-238.34	533.08	583.93	335.91	.17
3200.00	14.41	335.87	3125.38	579.36	-258.70	579.36	634.50	335.94	.25
3400.00	13.28	335.25	3319.57	622.93	-278.50	622.93	682.35	335.91	.57
3600.00	13.79	335.08	3514.01	665.41	-298.16	665.41	729.16	335.86	.26
3800.00	14.23	335.01	3708.06	709.31	-318.59	709.31	777.57	335.81	.22
4000.00	14.19	334.15	3901.95	753.65	-339.66	753.65	826.65	335.74	.11
4200.00	14.01	335.56	4095.92	797.75	-360.36	797.75	875.37	335.69	.19
4400.00	13.84	336.51	4290.04	841.73	-379.91	841.73	923.50	335.71	.14
4600.00	12.64	334.34	4484.72	883.40	-398.93	883.40	969.29	335.70	.65
4800.00	9.75	334.61	4680.90	918.43	-415.67	918.43	1008.11	335.65	1.45
5000.00	6.98	334.02	4878.75	944.66	-428.25	944.66	1037.20	335.61	1.39
5200.00	4.25	330.71	5077.77	962.05	-437.20	962.05	1056.73	335.56	1.37
5400.00	1.18	325.12	5277.53	970.20	-442.01	970.20	1066.14	335.51	1.54
5600.00	.60	179.31	5477.51	970.84	-443.17	970.84	1067.21	335.46	.85
5800.00	.97	194.53	5677.49	968.16	-443.59	968.16	1064.94	335.38	.21
6000.00	1.28	195.38	5877.46	964.37	-444.60	964.37	1061.92	335.25	.16
6200.00	1.22	184.40	6077.41	960.09	-445.36	960.09	1058.35	335.11	.12
6400.00	2.58	179.13	6277.29	953.46	-445.45	953.46	1052.39	334.96	.68
6600.00	2.56	188.34	6477.09	944.54	-446.03	944.54	1044.56	334.72	.21
6800.00	2.44	181.18	6676.90	935.87	-446.77	935.87	1037.04	334.48	.17
7000.00	2.63	163.06	6876.71	927.22	-445.52	927.22	1028.70	334.34	.41
7200.00	2.31	157.67	7076.53	919.10	-442.65	919.10	1020.14	334.28	.20
7400.00	2.28	157.94	7276.36	911.69	-439.63	911.69	1012.15	334.26	.02
7600.00	2.43	166.03	7476.20	903.89	-437.11	903.89	1004.03	334.19	.18

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
7800.00	2.57	172.46	7676.01	895.33	-435.50	895.33	995.62	334.06	.16
8000.00	2.44	187.23	7875.82	886.66	-435.44	886.66	987.81	333.84	.33
8200.00	2.37	193.77	8075.64	878.42	-436.96	878.42	981.10	333.55	.14
8400.00	2.32	186.69	8275.47	870.38	-438.42	870.38	974.56	333.27	.15
8600.00	2.35	188.01	8475.31	862.30	-439.46	862.30	967.83	332.99	.03
8800.00	2.80	188.06	8675.11	853.40	-440.72	853.40	960.49	332.69	.23
9000.00	3.12	193.63	8874.84	843.28	-442.69	843.28	952.41	332.30	.21
9200.00	2.78	199.33	9074.57	833.41	-445.57	833.41	945.05	331.87	.22
9400.00	3.31	210.80	9274.29	823.88	-450.14	823.88	938.83	331.35	.40
9600.00	3.62	199.54	9473.93	812.97	-455.20	812.97	931.73	330.75	.37
9800.00	3.70	189.76	9673.52	800.66	-458.41	800.66	922.60	330.21	.31
10000.00	3.34	167.33	9873.16	788.61	-458.23	788.61	912.07	329.84	.71
10200.00	3.17	174.81	10072.83	777.42	-456.45	777.42	901.51	329.58	.23
10400.00	3.16	184.06	10272.53	766.41	-456.34	766.41	891.98	329.23	.26
10600.00	3.66	202.60	10472.18	755.02	-459.18	755.02	883.69	328.69	.60
10800.00	4.66	213.79	10671.65	742.38	-466.15	742.38	876.60	327.87	.64
11000.00	4.85	221.79	10870.97	729.32	-476.31	729.32	871.08	326.85	.34
11200.00	5.22	222.72	11070.20	716.33	-488.11	716.33	866.82	325.73	.19
11400.00	5.84	233.68	11269.27	703.62	-502.48	703.62	864.62	324.47	.61
11600.00	6.92	241.89	11468.03	691.92	-521.31	691.92	866.32	323.00	.71
11800.00	6.01	241.22	11666.76	681.20	-541.11	681.20	869.96	321.54	.46
12000.00	4.69	237.81	11865.88	671.80	-557.21	671.80	872.81	320.33	.68
12200.00	2.80	244.93	12065.45	665.37	-568.56	665.37	875.20	319.49	.97
12400.00	3.44	248.22	12265.15	661.08	-578.55	661.08	878.49	318.81	.33
12600.00	3.67	241.01	12464.77	655.75	-589.73	655.75	881.92	318.03	.25
12800.00	4.13	238.30	12664.30	648.86	-601.45	648.86	884.74	317.17	.25
13000.00	4.58	240.25	12863.73	641.12	-614.51	641.12	888.06	316.21	.24
Last Survey Depth Recorded									
13100.00	5.17	242.43	12963.36	637.05	-621.97	637.05	890.33	315.69	.62