



James Ranch Unit DI 1A #206H

Field Name: XTO NAD 27 NME	Map Units: US ft Vertical Reference Datum (VRD): Mean Sea Level Projected Coordinate System: NAD27 / New Mexico East Comment:	Company Name: XTO Energy
Site: James Ranch Unit DI 1A #203H,204H,20 6H Pad	Units: US ft North Reference: Grid Convergence Angle: 0.24 Position: Northing: 502646.10 US ft Latitude: 32° 22' 51.95" Easting: 638042.90 US ft Longitude: -103° 53' 10.21" Elevation above MSL: 3155.00 US ft Comment: Eddy Co., NM	
Slot: James Ranch Unit DI 1A #206H	Position (Relative to Site Centre) +N/-S: -80.00 US ft Northing: 502566.10 US ft Latitude: 32° 22' 51.15" +E/-W: 0.20 US ft Easting: 638043.10 US ft Longitude: -103° 53' 10.21" Elevation above MSL: 3157.00 US ft Comment:	
Well: James Ranch Unit DI 1A #206H	Type: Main well UWI: File Number: 13610312 Comment: Closure Distance: 10881.1 US ft Closure Azimuth: 97.92° Vertical Section: Position of Origin (Relative to Slot centre) +N/-S: 0.00 US ft +E/-W: -0.00 US ft Az: 89.89°	

Drill floor: Survey Name: Definitive Survey

Rig Height (Drill Floor): 25.00 US ft **Elevation above MSL:** 3182.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00°

Survey Name: Definitive Survey

Date: 05/Oct/2018 **Survey Tool:** See Survey Tool Ranges below. **Comment:** **Company:**

Magnetic Model:

Model Name: bggm2018 **Date:** 10/Feb/2019 **Field Strength:** 47881.3 nT **Declination:** 6.99° **Dip:** 60.08°

Tie Point:

MD: 0.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00° **TVD:** 0.00 US ft **North Offset:** 0.00 US ft **East Offset:** -0.00 US ft

Survey Tool Ranges:

Name	Start MD(usft)	End MD(usft)	Source Survey
MWD	0.00	500.00	MWD

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Survey Tool Ranges:			
Name	Start MD(usft)	End MD(usft)	Source Survey
MWD	500.00	3298.00	WFT MWD_1
MWD	3298.00	4914.00	WFT MWD_2
MWD	4914.00	9879.00	WFT MWD_3
MWD	9879.00	11031.00	WFT MWD_4
MWD	11031.00	13874.00	WFT MWD_5
MWD	13874.00	18348.00	WFT MWD_6
MWD	18348.00	21495.00	WFT MWD_7

Casing Points: (Relative to Slot centre)(TVD relative to Drill Floor)									
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	Name
3377.00	1.39	176.40	-3376.37	194.37	5.25	49.55	502571.35	638092.65	11 3/4 in
8255.00	6.87	181.57	8203.59	5021.59	-670.86	-67.34	501895.24	637975.76	8 5/8 in

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	-3182.00	0.00	0.00	-0.00	502566.10	638043.10	0.00	
94.00	1.10	1.66	93.99	-3088.01	0.03	0.90	0.03	502567.00	638043.13	1.17	
123.00	1.10	84.00	122.99	-3059.01	0.31	1.21	0.31	502567.31	638043.41	4.99	
301.00	1.20	54.00	300.96	-2881.04	3.52	2.48	3.52	502568.58	638046.62	0.34	
500.00	0.70	53.00	499.93	-2682.07	6.18	4.44	6.17	502570.54	638049.27	0.25	Tie On Invictus
596.00	0.84	71.82	595.92	-2586.08	7.32	5.01	7.31	502571.11	638050.41	0.30	First WFT SVY
691.00	0.94	75.32	690.91	-2491.09	8.74	5.43	8.73	502571.53	638051.83	0.12	
785.00	0.82	77.12	784.90	-2397.10	10.14	5.77	10.13	502571.87	638053.23	0.13	
880.00	1.26	73.03	879.88	-2302.12	11.80	6.23	11.79	502572.33	638054.89	0.47	
951.00	1.34	76.58	950.86	-2231.14	13.36	6.65	13.34	502572.75	638056.44	0.16	
1045.00	1.44	76.89	1044.84	-2137.16	15.58	7.17	15.56	502573.27	638058.66	0.11	
1140.00	1.40	95.67	1139.81	-2042.19	17.90	7.33	17.88	502573.43	638060.98	0.49	
1234.00	1.62	76.84	1233.77	-1948.23	20.33	7.52	20.32	502573.62	638063.42	0.57	
1329.00	1.71	80.16	1328.73	-1853.27	23.04	8.07	23.02	502574.17	638066.12	0.14	
1423.00	1.83	85.23	1422.69	-1759.31	25.92	8.43	25.90	502574.53	638069.00	0.21	
1517.00	1.97	108.28	1516.64	-1665.36	28.95	8.05	28.93	502574.15	638072.03	0.82	
1612.00	2.00	86.90	1611.58	-1570.42	32.15	7.63	32.14	502573.73	638075.24	0.78	
1706.00	1.54	85.44	1705.54	-1476.46	35.05	7.81	35.03	502573.91	638078.13	0.49	
1802.00	1.00	85.54	1801.51	-1380.49	37.17	7.98	37.15	502574.08	638080.25	0.56	
1896.00	1.05	89.60	1895.50	-1286.50	38.85	8.05	38.83	502574.15	638081.93	0.09	
1990.00	0.59	74.71	1989.49	-1192.51	40.18	8.19	40.16	502574.29	638083.26	0.54	
2085.00	0.43	23.00	2084.49	-1097.51	40.79	8.64	40.77	502574.74	638083.87	0.49	
2180.00	0.47	28.02	2179.48	-1002.52	41.11	9.31	41.09	502575.41	638084.19	0.06	
2274.00	0.44	1.50	2273.48	-908.52	41.30	10.02	41.28	502576.12	638084.38	0.22	
2369.00	0.41	26.72	2368.48	-813.52	41.47	10.68	41.45	502576.78	638084.55	0.20	
2464.00	0.51	27.43	2463.47	-718.53	41.82	11.36	41.79	502577.46	638084.89	0.11	
2559.00	0.50	28.52	2558.47	-623.53	42.21	12.10	42.19	502578.20	638085.29	0.01	
2654.00	0.38	61.34	2653.47	-528.53	42.69	12.62	42.66	502578.72	638085.76	0.29	
2749.00	0.66	96.99	2748.46	-433.54	43.51	12.70	43.48	502578.80	638086.58	0.44	
2844.00	0.98	102.36	2843.45	-338.55	44.84	12.46	44.82	502578.56	638087.92	0.35	
2938.00	0.75	117.65	2937.44	-244.56	46.17	12.00	46.15	502578.10	638089.25	0.34	
3032.00	0.66	168.19	3031.44	-150.56	46.83	11.19	46.80	502577.29	638089.90	0.65	
3127.00	0.95	147.84	3126.43	-55.57	47.35	9.99	47.34	502576.09	638090.44	0.42	
3221.00	1.25	144.59	3220.41	38.41	48.36	8.49	48.34	502574.59	638091.44	0.33	
3298.00	1.27	157.46	3297.39	115.39	49.17	7.02	49.16	502573.12	638092.26	0.37	
3377.00	1.39	176.40	3376.37	194.37	49.56	5.25	49.55	502571.35	638092.65	0.58	11 3/4 in
3402.00	1.46	181.52	3401.36	219.36	49.57	4.63	49.56	502570.73	638092.66	0.58	
3496.00	2.12	193.14	3495.32	313.32	49.14	1.74	49.14	502567.84	638092.24	0.80	
3590.00	3.85	201.69	3589.19	407.19	47.57	-2.89	47.58	502563.21	638090.68	1.90	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
3684.00	5.15	204.53	3682.90	500.90	44.64	-9.66	44.66	502556.44	638087.76	1.40	
3778.00	6.21	203.52	3776.43	594.43	40.84	-18.16	40.88	502547.94	638083.98	1.13	
3872.00	7.95	200.01	3869.71	687.71	36.57	-28.93	36.62	502537.17	638079.72	1.91	
3966.00	8.61	198.50	3962.73	780.73	32.09	-41.71	32.17	502524.39	638075.27	0.74	
4061.00	9.38	196.07	4056.56	874.56	27.66	-55.89	27.77	502510.21	638070.87	0.90	
4156.00	9.79	192.28	4150.24	968.24	23.77	-71.22	23.91	502494.88	638067.01	0.79	
4251.00	9.69	192.34	4243.87	1061.87	20.31	-86.93	20.48	502479.17	638063.58	0.11	
4346.00	9.28	193.27	4337.57	1155.57	16.82	-102.19	17.01	502463.91	638060.11	0.46	
4440.00	8.92	193.60	4430.39	1248.39	13.34	-116.65	13.56	502449.45	638056.66	0.39	
4534.00	8.60	192.95	4523.29	1341.29	10.02	-130.58	10.27	502435.52	638053.37	0.36	
4629.00	8.40	193.01	4617.25	1435.25	6.84	-144.27	7.12	502421.83	638050.22	0.21	
4725.00	8.43	193.70	4712.21	1530.21	3.57	-157.94	3.87	502408.16	638046.97	0.11	
4819.00	8.52	192.48	4805.19	1623.19	0.41	-171.43	0.73	502394.67	638043.83	0.21	
4914.00	8.68	193.99	4899.12	1717.12	-2.87	-185.26	-2.52	502380.84	638040.58	0.29	
5009.00	8.98	196.85	4992.99	1810.99	-6.78	-199.31	-6.40	502366.79	638036.70	0.56	
5103.00	9.05	194.00	5085.83	1903.83	-10.73	-213.50	-10.32	502352.60	638032.78	0.48	
5198.00	9.15	193.17	5179.64	1997.64	-14.28	-228.11	-13.84	502337.99	638029.26	0.17	
5293.00	8.99	190.31	5273.45	2091.45	-17.36	-242.76	-16.89	502323.34	638026.21	0.50	
5386.00	8.99	189.94	5365.31	2183.31	-19.94	-257.07	-19.45	502309.03	638023.65	0.06	
5481.00	9.05	184.24	5459.13	2277.13	-21.80	-271.83	-21.28	502294.27	638021.82	0.94	
5575.00	9.43	180.62	5551.92	2369.92	-22.46	-286.91	-21.91	502279.19	638021.19	0.74	
5670.00	9.84	181.69	5645.58	2463.58	-22.82	-302.80	-22.24	502263.30	638020.86	0.47	
5765.00	8.95	179.89	5739.30	2557.30	-23.07	-318.31	-22.46	502247.79	638020.64	0.99	
5859.00	9.22	189.38	5832.13	2650.13	-24.31	-333.05	-23.67	502233.05	638019.43	1.62	
5953.00	9.31	194.85	5924.90	2742.90	-27.52	-347.83	-26.85	502218.27	638016.25	0.94	
6048.00	8.59	194.09	6018.74	2836.74	-31.24	-362.14	-30.55	502203.96	638012.55	0.77	
6143.00	8.08	195.86	6112.74	2930.74	-34.82	-375.44	-34.10	502190.66	638009.00	0.60	
6237.00	8.23	189.92	6205.79	3023.79	-37.81	-388.42	-37.06	502177.68	638006.04	0.91	
6331.00	8.48	187.27	6298.79	3116.79	-39.87	-401.93	-39.10	502164.17	638004.00	0.49	
6426.00	7.71	187.90	6392.85	3210.85	-41.66	-415.19	-40.86	502150.91	638002.24	0.82	
6520.00	8.13	186.09	6485.95	3303.95	-43.26	-428.04	-42.43	502138.06	638000.67	0.52	
6615.00	8.66	184.43	6579.93	3397.93	-44.55	-441.85	-43.70	502124.25	637999.40	0.61	
6710.00	8.33	185.49	6673.89	3491.89	-45.78	-455.83	-44.91	502110.27	637998.19	0.38	
6805.00	8.44	185.63	6767.87	3585.87	-47.15	-469.62	-46.25	502096.48	637996.85	0.12	
6900.00	8.50	184.58	6861.84	3679.84	-48.42	-483.56	-47.50	502082.54	637995.60	0.17	
6993.00	7.95	179.16	6953.88	3771.88	-48.91	-496.84	-47.95	502069.26	637995.15	1.02	
7088.00	7.79	185.48	7047.99	3865.99	-49.45	-509.82	-48.47	502056.28	637994.63	0.93	
7181.00	7.44	185.19	7140.17	3958.17	-50.62	-522.09	-49.62	502044.01	637993.48	0.38	
7276.00	6.99	187.30	7234.42	4052.42	-51.93	-533.95	-50.91	502032.15	637992.19	0.55	
7370.00	7.33	188.71	7327.68	4145.68	-53.59	-545.55	-52.54	502020.55	637990.56	0.41	
7464.00	8.36	190.05	7420.80	4238.80	-55.71	-558.20	-54.64	502007.90	637988.46	1.11	
7559.00	8.59	190.06	7514.77	4332.77	-58.19	-571.99	-57.09	501994.11	637986.01	0.24	
7653.00	8.22	187.95	7607.76	4425.76	-60.37	-585.56	-59.24	501980.54	637983.86	0.51	
7748.00	8.01	189.10	7701.80	4519.80	-62.38	-598.82	-61.23	501967.28	637981.87	0.28	
7843.00	7.98	186.26	7795.88	4613.88	-64.17	-611.91	-62.99	501954.19	637980.11	0.42	
7938.00	9.07	184.35	7889.83	4707.83	-65.48	-625.93	-64.28	501940.17	637978.82	1.19	
8033.00	8.83	184.03	7983.67	4801.67	-66.59	-640.67	-65.36	501925.43	637977.74	0.26	
8127.00	8.05	184.99	8076.66	4894.66	-67.70	-654.43	-66.44	501911.67	637976.66	0.84	
8178.00	7.44	183.18	8127.19	4945.19	-68.21	-661.28	-66.94	501904.82	637976.16	1.29	
8255.00	6.87	181.57	8203.59	5021.59	-68.63	-670.86	-67.34	501895.24	637975.76	0.79	8 5/8 in
8332.00	6.30	179.68	8280.08	5098.08	-68.75	-679.68	-67.44	501886.42	637975.66	0.79	
8428.00	9.07	176.63	8375.21	5193.21	-68.30	-692.51	-66.97	501873.59	637976.13	2.92	
8522.00	10.30	177.15	8467.87	5285.87	-67.47	-708.30	-66.11	501857.80	637976.99	1.31	
8617.00	11.38	183.01	8561.18	5379.18	-67.58	-726.14	-66.18	501839.96	637976.92	1.62	
8711.00	12.62	186.28	8653.12	5471.12	-69.23	-745.61	-67.79	501820.49	637975.31	1.50	
8806.00	11.35	187.10	8746.05	5564.05	-71.55	-765.20	-70.08	501800.90	637973.02	1.35	
8900.00	10.14	184.76	8838.40	5656.40	-73.42	-782.63	-71.91	501783.47	637971.19	1.37	
8995.00	11.22	179.97	8931.75	5749.75	-74.14	-800.21	-72.60	501765.89	637970.50	1.47	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
9090.00	11.47	179.26	9024.90	5842.90	-74.05	-818.89	-72.48	501747.21	637970.62	0.30	
9185.00	10.55	178.94	9118.15	5936.15	-73.80	-837.03	-72.19	501729.07	637970.91	0.97	
9279.00	10.61	177.07	9210.55	6028.55	-73.23	-854.28	-71.59	501711.82	637971.51	0.37	
9374.00	11.08	181.80	9303.86	6121.86	-73.11	-872.14	-71.43	501693.96	637971.67	1.06	
9468.00	9.26	185.49	9396.38	6214.38	-74.15	-888.70	-72.44	501677.40	637970.66	2.06	
9563.00	10.05	192.34	9490.03	6308.03	-76.68	-904.40	-74.94	501661.70	637968.16	1.47	
9658.00	13.07	180.04	9583.11	6401.11	-78.49	-923.25	-76.72	501642.85	637966.38	4.09	
9752.00	11.46	183.70	9674.96	6492.96	-79.14	-943.20	-77.33	501622.90	637965.77	1.90	
9847.00	9.92	187.13	9768.31	6586.31	-80.80	-960.74	-78.96	501605.36	637964.14	1.75	
9879.00	9.86	186.31	9799.84	6617.84	-81.46	-966.20	-79.60	501599.90	637963.50	0.48	
9902.00	9.67	186.87	9822.50	6640.50	-81.91	-970.07	-80.05	501596.03	637963.05	0.92	
9949.00	10.30	188.42	9868.79	6686.79	-83.01	-978.15	-81.14	501587.95	637961.96	1.46	
9997.00	16.73	186.99	9915.44	6733.44	-84.51	-989.26	-82.61	501576.84	637960.49	13.41	
10044.00	21.58	181.56	9959.82	6777.82	-85.59	-1004.63	-83.67	501561.47	637959.43	10.98	
10091.00	26.28	179.04	10002.77	6820.77	-85.69	-1023.68	-83.73	501542.42	637959.37	10.23	
10138.00	30.16	173.57	10044.19	6862.19	-84.24	-1045.83	-82.23	501520.27	637960.87	9.91	
10186.00	32.20	171.38	10085.25	6903.25	-81.02	-1070.46	-78.96	501495.64	637964.14	4.86	
10233.00	33.13	174.27	10124.82	6942.82	-77.91	-1095.62	-75.80	501470.48	637967.30	3.86	
10280.00	36.99	176.81	10163.29	6981.29	-75.89	-1122.53	-73.73	501443.57	637969.37	8.78	
10327.00	40.71	173.26	10199.89	7017.89	-73.36	-1151.88	-71.14	501414.22	637971.96	9.22	
10374.00	42.42	165.22	10235.08	7053.08	-67.57	-1182.46	-65.30	501383.64	637977.80	11.91	
10421.00	43.28	157.27	10269.56	7087.56	-57.35	-1212.67	-55.02	501353.43	637988.08	11.64	
10469.00	45.42	151.49	10303.90	7121.90	-42.88	-1242.88	-40.50	501323.22	638002.60	9.52	
10516.00	45.58	144.64	10336.86	7154.86	-25.22	-1271.29	-22.78	501294.81	638020.32	10.40	
10563.00	45.20	137.91	10369.89	7187.89	-4.37	-1297.37	-1.88	501268.73	638041.22	10.22	
10610.00	46.57	132.82	10402.61	7220.61	19.29	-1321.36	21.82	501244.74	638064.92	8.30	
10658.00	47.62	127.95	10435.30	7253.30	46.02	-1344.11	48.60	501221.99	638091.70	7.75	
10705.00	50.38	122.99	10466.14	7284.14	74.87	-1364.66	77.49	501201.44	638120.59	9.89	
10754.00	54.52	118.48	10496.01	7314.01	108.22	-1384.46	110.88	501181.64	638153.98	11.16	
10801.00	56.09	113.81	10522.77	7340.77	142.86	-1401.47	145.56	501164.63	638188.66	8.82	
10848.00	58.34	112.07	10548.22	7366.22	179.22	-1416.86	181.94	501149.24	638225.04	5.71	
10895.00	61.48	112.30	10571.78	7389.78	216.84	-1432.21	219.59	501133.89	638262.69	6.69	
10943.00	66.54	110.97	10592.81	7410.81	256.91	-1448.10	259.69	501118.00	638302.79	10.83	
10990.00	69.42	107.82	10610.43	7428.43	297.97	-1462.56	300.78	501103.54	638343.88	8.73	
11031.00	72.60	105.45	10623.78	7441.78	335.09	-1473.65	337.92	501092.45	638381.02	9.49	
11082.00	75.56	101.46	10637.77	7455.77	382.75	-1485.04	385.61	501081.06	638428.71	9.50	
11129.00	78.30	99.14	10648.40	7466.40	427.78	-1493.22	430.64	501072.88	638473.74	7.56	
11176.00	80.86	96.59	10656.90	7474.90	473.55	-1499.54	476.43	501066.56	638519.53	7.62	
11224.00	84.54	96.66	10663.00	7481.00	520.82	-1505.03	523.71	501061.07	638566.81	7.67	
11318.00	87.27	92.68	10669.71	7487.71	614.23	-1512.66	617.13	501053.44	638660.23	5.13	
11413.00	87.69	89.94	10673.89	7491.89	709.10	-1514.83	712.01	501051.27	638755.11	2.92	
11508.00	92.24	92.77	10673.95	7491.95	804.03	-1517.08	806.94	501049.02	638850.04	5.64	
11603.00	88.53	90.19	10673.31	7491.31	898.97	-1519.53	901.89	501046.57	638944.99	4.76	
11697.00	86.57	88.25	10677.33	7495.33	992.87	-1518.25	995.78	501047.85	639038.88	2.93	
11792.00	86.85	88.57	10682.78	7500.78	1087.68	-1515.62	1090.59	501050.48	639133.69	0.45	
11887.00	90.70	92.28	10684.81	7502.81	1182.62	-1516.33	1185.53	501049.77	639228.63	5.63	
11981.00	89.72	85.83	10684.47	7502.47	1276.56	-1514.78	1279.47	501051.32	639322.57	6.94	
12013.00	91.33	84.26	10684.17	7502.17	1308.44	-1512.01	1311.34	501054.09	639354.44	7.03	
12077.00	90.56	82.46	10683.12	7501.12	1372.01	-1504.61	1374.90	501061.49	639418.00	3.06	
12171.00	90.49	79.90	10682.26	7500.26	1464.92	-1490.20	1467.78	501075.90	639510.88	2.72	
12265.00	88.88	81.76	10682.77	7500.77	1557.73	-1475.22	1560.57	501090.88	639603.67	2.62	
12360.00	89.51	83.53	10684.11	7502.11	1651.96	-1463.06	1654.77	501103.04	639697.87	1.98	
12456.00	91.61	87.50	10683.17	7501.17	1747.65	-1455.56	1750.45	501110.54	639793.55	4.68	
12550.00	90.70	90.44	10681.27	7499.27	1841.61	-1453.87	1844.41	501112.23	639887.51	3.27	
12644.00	89.16	89.59	10681.39	7499.39	1935.61	-1453.89	1938.40	501112.21	639981.50	1.87	
12739.00	88.39	89.89	10683.42	7501.42	2030.58	-1453.46	2033.38	501112.64	640076.48	0.87	
12833.00	91.61	92.02	10683.42	7501.42	2124.55	-1455.03	2127.35	501111.07	640170.45	4.11	
12927.00	93.85	97.16	10678.94	7496.94	2218.09	-1462.54	2220.90	501103.56	640264.00	5.96	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											
MD (US-ft)	Inc (°)	Az (°)	TVD (US-ft)	TVD (MSL) (US-ft)	VS (US-ft)	N.Offset (US-ft)	E.Offset (US-ft)	Northing (US-ft)	Easting (US-ft)	DLS (°/100US-ft)	Comment
13022.00	94.55	96.63	10671.98	7489.98	2312.13	-1473.91	2314.96	501092.19	640358.06	0.92	
13117.00	93.71	97.74	10665.14	7483.14	2406.11	-1485.76	2408.97	501080.34	640452.07	1.46	
13211.00	93.70	97.90	10659.07	7477.07	2499.02	-1498.52	2501.90	501067.58	640545.00	0.17	
13305.00	92.80	96.99	10653.74	7471.74	2592.05	-1510.68	2594.96	501055.42	640638.06	1.36	
13400.00	90.91	95.92	10650.66	7468.66	2686.37	-1521.36	2689.30	501044.74	640732.40	2.29	
13495.00	88.67	94.13	10651.01	7469.01	2780.98	-1529.68	2783.92	501036.42	640827.02	3.02	
13590.00	89.72	94.14	10652.34	7470.34	2875.71	-1536.53	2878.66	501029.57	640921.76	1.11	
13685.00	90.35	94.20	10652.29	7470.29	2970.44	-1543.44	2973.41	501022.66	641016.51	0.67	
13779.00	88.60	92.05	10653.15	7471.15	3064.28	-1548.56	3067.26	501017.54	641110.36	2.95	
13874.00	89.30	90.85	10654.89	7472.89	3159.23	-1550.96	3162.21	501015.14	641205.31	1.46	
13995.00	90.42	90.57	10655.18	7473.18	3280.21	-1552.46	3283.20	501013.64	641326.30	0.95	
14090.00	89.30	88.50	10655.42	7473.42	3375.20	-1551.69	3378.19	501014.41	641421.29	2.48	
14185.00	89.79	87.65	10656.17	7474.17	3470.15	-1548.50	3473.13	501017.60	641516.23	1.03	
14279.00	89.86	87.01	10656.46	7474.46	3564.06	-1544.12	3567.03	501021.98	641610.13	0.68	
14374.00	88.67	87.75	10657.68	7475.68	3658.96	-1539.78	3661.92	501026.32	641705.02	1.48	
14469.00	88.74	88.31	10659.82	7477.82	3753.88	-1536.51	3756.84	501029.59	641799.94	0.59	
14564.00	87.83	88.21	10662.67	7480.67	3848.80	-1533.63	3851.75	501032.47	641894.85	0.96	
14659.00	87.20	88.14	10666.79	7484.79	3943.67	-1530.61	3946.61	501035.49	641989.71	0.67	
14753.00	87.55	87.52	10671.09	7489.09	4037.51	-1527.05	4040.45	501039.05	642083.55	0.76	
14848.00	88.67	87.24	10674.22	7492.22	4132.36	-1522.71	4135.29	501043.39	642178.39	1.22	
14943.00	89.79	88.84	10675.50	7493.50	4227.30	-1519.46	4230.22	501046.64	642273.32	2.06	
15036.00	90.14	90.25	10675.56	7493.56	4320.30	-1518.73	4323.22	501047.37	642366.32	1.56	
15131.00	89.37	89.25	10675.96	7493.96	4415.29	-1518.31	4418.22	501047.79	642461.32	1.33	
15226.00	89.37	89.06	10677.01	7495.01	4510.28	-1516.91	4513.20	501049.19	642556.30	0.20	
15321.00	89.30	88.69	10678.11	7496.11	4605.26	-1515.05	4608.17	501051.05	642651.27	0.40	
15416.00	89.44	88.60	10679.16	7497.16	4700.23	-1512.80	4703.14	501053.30	642746.24	0.18	
15511.00	89.02	88.52	10680.43	7498.43	4795.19	-1510.41	4798.10	501055.69	642841.20	0.45	
15605.00	88.88	88.40	10682.15	7500.15	4889.15	-1507.89	4892.05	501058.21	642935.15	0.20	
15700.00	89.30	89.52	10683.66	7501.66	4984.12	-1506.16	4987.02	501059.94	643030.12	1.26	
15795.00	89.23	89.12	10684.88	7502.88	5079.11	-1505.03	5082.01	501061.07	643125.11	0.43	
15889.00	89.86	89.56	10685.63	7503.63	5173.10	-1503.95	5176.00	501062.15	643219.10	0.82	
15983.00	89.86	90.06	10685.86	7503.86	5267.10	-1503.64	5270.00	501062.46	643313.10	0.53	
16078.00	89.79	90.34	10686.15	7504.15	5362.10	-1503.97	5365.00	501062.13	643408.10	0.30	
16172.00	90.84	91.19	10685.63	7503.63	5456.09	-1505.23	5458.99	501060.87	643502.09	1.44	
16267.00	90.63	90.55	10684.41	7502.41	5551.06	-1506.67	5553.97	501059.43	643597.07	0.71	
16361.00	90.00	90.65	10683.90	7501.90	5645.05	-1507.65	5647.96	501058.45	643691.06	0.68	
16456.00	91.40	90.53	10682.74	7500.74	5740.04	-1508.63	5742.94	501057.47	643786.04	1.48	
16550.00	92.03	89.97	10679.92	7497.92	5833.99	-1509.04	5836.90	501057.06	643880.00	0.90	
16644.00	91.40	89.55	10677.11	7495.11	5927.95	-1508.65	5930.86	501057.45	643973.96	0.81	
16739.00	91.05	89.65	10675.08	7493.08	6022.93	-1507.98	6025.83	501058.12	644068.93	0.38	
16834.00	91.05	89.68	10673.34	7491.34	6117.91	-1507.43	6120.82	501058.67	644163.92	0.03	
16928.00	91.68	89.71	10671.10	7489.10	6211.88	-1506.93	6214.79	501059.17	644257.89	0.67	
17023.00	91.89	89.51	10668.14	7486.14	6306.83	-1506.28	6309.74	501059.82	644352.84	0.31	
17118.00	90.63	90.07	10666.05	7484.05	6401.81	-1505.93	6404.71	501060.17	644447.81	1.45	
17212.00	88.53	90.18	10666.74	7484.74	6495.80	-1506.14	6498.70	501059.96	644541.80	2.24	
17307.00	86.43	88.97	10670.92	7488.92	6590.70	-1505.44	6593.60	501060.66	644636.70	2.55	
17401.00	86.85	89.23	10676.42	7494.42	6684.53	-1503.96	6687.43	501062.14	644730.53	0.53	
17495.00	87.83	89.22	10680.79	7498.79	6778.42	-1502.69	6781.32	501063.41	644824.42	1.04	
17590.00	88.60	89.57	10683.75	7501.75	6873.37	-1501.69	6876.27	501064.41	644919.37	0.89	
17685.00	89.30	88.50	10685.49	7503.49	6968.34	-1500.09	6971.23	501066.01	645014.33	1.35	
17779.00	89.51	87.49	10686.46	7504.46	7062.28	-1496.80	7065.17	501069.30	645108.27	1.10	
17874.00	89.93	86.72	10686.93	7504.93	7157.17	-1492.00	7160.05	501074.10	645203.15	0.92	
17969.00	89.30	87.01	10687.57	7505.57	7252.03	-1486.81	7254.90	501079.29	645298.00	0.73	
18064.00	89.44	86.27	10688.61	7506.61	7346.88	-1481.24	7349.73	501084.86	645392.83	0.79	
18158.00	90.14	87.23	10688.96	7506.96	7440.73	-1475.91	7443.58	501090.19	645486.68	1.26	
18253.00	90.28	86.78	10688.61	7506.61	7535.61	-1470.95	7538.45	501095.15	645581.55	0.50	
18348.00	88.74	90.33	10689.42	7507.42	7630.56	-1468.55	7633.40	501097.55	645676.50	4.07	
18443.00	88.18	90.62	10691.97	7509.97	7725.52	-1469.34	7728.36	501096.76	645771.46	0.66	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	TVD (MSL) (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
18538.00	90.00	91.66	10693.48	7511.48	7820.48	-1471.23	7823.32	501094.87	645866.42	2.21	
18632.00	91.12	91.53	10692.56	7510.56	7914.44	-1473.85	7917.28	501092.25	645960.38	1.20	
18728.00	91.12	90.84	10690.69	7508.69	8010.39	-1475.83	8013.24	501090.27	646056.34	0.72	
18822.00	92.17	90.85	10687.99	7505.99	8104.34	-1477.22	8107.19	501088.88	646150.29	1.12	
18917.00	92.17	91.71	10684.39	7502.39	8199.24	-1479.34	8202.10	501086.76	646245.20	0.90	
19012.00	91.61	92.19	10681.26	7499.26	8294.13	-1482.57	8296.99	501083.53	646340.09	0.78	
19106.00	91.47	92.24	10678.73	7496.73	8388.02	-1486.20	8390.89	501079.90	646433.99	0.16	
19201.00	92.10	91.99	10675.77	7493.77	8482.90	-1489.70	8485.78	501076.40	646528.88	0.71	
19296.00	90.00	93.14	10674.03	7492.03	8577.77	-1493.96	8580.66	501072.14	646623.76	2.52	
19391.00	89.23	93.14	10674.67	7492.67	8672.62	-1499.16	8675.51	501066.94	646718.61	0.81	
19486.00	88.88	93.42	10676.24	7494.24	8767.44	-1504.59	8770.34	501061.51	646813.44	0.47	
19581.00	88.88	93.08	10678.09	7496.09	8862.26	-1509.98	8865.17	501056.12	646908.27	0.36	
19676.00	89.23	92.66	10679.66	7497.66	8957.11	-1514.73	8960.04	501051.37	647003.14	0.58	
19771.00	89.58	92.54	10680.65	7498.65	9052.00	-1519.04	9054.94	501047.06	647098.04	0.39	
19865.00	90.21	92.29	10680.82	7498.82	9145.91	-1523.00	9148.85	501043.10	647191.95	0.72	
19960.00	90.63	92.56	10680.12	7498.12	9240.82	-1527.02	9243.76	501039.08	647286.86	0.53	
20055.00	89.44	91.44	10680.06	7498.06	9335.75	-1530.34	9338.70	501035.76	647381.80	1.72	
20150.00	89.51	90.99	10680.94	7498.94	9430.72	-1532.35	9433.68	501033.75	647476.78	0.48	
20244.00	89.44	90.78	10681.80	7499.80	9524.70	-1533.81	9527.66	501032.29	647570.76	0.24	
20339.00	89.16	90.73	10682.96	7500.96	9619.68	-1535.06	9622.65	501031.04	647665.75	0.30	
20433.00	88.32	90.86	10685.02	7503.02	9713.65	-1536.36	9716.61	501029.74	647759.71	0.90	
20528.00	89.02	89.65	10687.23	7505.23	9808.62	-1536.78	9811.59	501029.32	647854.69	1.47	
20623.00	89.02	89.34	10688.85	7506.85	9903.60	-1535.95	9906.57	501030.15	647949.67	0.33	
20717.00	89.02	89.18	10690.46	7508.46	9997.58	-1534.73	10000.55	501031.37	648043.65	0.17	
20812.00	88.81	88.69	10692.26	7510.26	10092.55	-1532.97	10095.51	501033.13	648138.61	0.56	
20906.00	89.09	88.50	10693.98	7511.98	10186.51	-1530.66	10189.47	501035.44	648232.57	0.36	
21001.00	88.46	87.75	10696.01	7514.01	10281.44	-1527.56	10284.39	501038.54	648327.49	1.03	
21095.00	87.69	86.78	10699.17	7517.17	10375.29	-1523.07	10378.23	501043.03	648421.33	1.32	
21190.00	89.02	86.58	10701.90	7519.90	10470.10	-1517.57	10473.03	501048.53	648516.13	1.42	
21284.00	89.44	86.89	10703.16	7521.16	10563.95	-1512.22	10566.87	501053.88	648609.97	0.56	
21378.00	89.23	86.26	10704.25	7522.25	10657.78	-1506.61	10660.70	501059.49	648703.80	0.71	
21418.00	89.23	86.07	10704.79	7522.79	10697.70	-1503.93	10700.60	501062.17	648743.70	0.47	Last WFT SVY
21495.00	89.23	86.07	10705.83	7523.83	10774.52	-1498.65	10777.41	501067.45	648820.51	0.00	PTB