

**HOBBS OCD****5D Survey Report**

JUL 05 2018

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30-025-43416

XTO Energy

Field Name: *XTO Lea Co, NM (NAD 27 NME)*
Site Name: *Severus 31 Federal Com 8 Well Pad*
Well Name: *Severus 31 Federal Com 2H*
Survey: *Definitive survey*

29 December 2017

**Weatherford®**



Severus 31 Federal Com 2H

Field Name:	Map Units: US ft		Company Name: XTO Energy
XTO Lea Co, NM (NAD 27-NME)	Vertical Reference Datum (VRD): Mean Sea Level		
	Projected Coordinate System: NAD27 / New Mexico East		
	Comment:		
Site:	Units: US ft	North Reference: Grid	Convergence Angle: 0.40
	Position:	Northing: 559895.40 US ft	Latitude: 32° 32' 13.59"
		Easting: 726703.50 US ft	Longitude: -103° 35' 51.75"
	Severus 31 Federal Com 8 Well Pad	Elevation above MSL: 3699.00 US ft	
Slot:	Position (Relative to Site Centre)		
	+N/-S: -0.40 US ft	Northing: 559895.00 US ft	Latitude: 32°32'13.59"
	+E/-W: -50.00 US ft	Easting: 726653.50 US ft	Longitude: -103°35'52.33"
	Elevation above MSL: 3699.00 US ft		
Well:	Comment:		
	Type: Main well	UWI:	
	File Number:	Comment:	
	Closure Distance: 7825.07 US ft	Closure Azimuth: 178.33°	
Severus 31 Federal Com 2H	Vertical Section: Position of Origin (Relative to Slot centre)		
	+N/-S: -0.00 US ft	+E/-W: 0.00 US ft	Az: 179.58°

Drill floor: Survey Name: Definitive Survey			
Rig Height (Well TVD Reference): 30.00 US ft	Elevation above MSL: 3729.00 US ft	Inclination: 0.00°	Azimuth: 0.00°

Survey Name: Definitive Survey			
Date: 03/Aug/2017	Survey Tool: See Survey Tool Ranges below.	Comment:	Company:

Magnetic Model:				
Model Name: bggm2017	Date: 15/Oct/2017	Field Strength: 48173.9 nT	Declination: 7.00°	Dip: 60.34°
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	1610.00	MWD_SVY_1
MWD	1610.00	5416.00	MWD_SVY_2
MWD	5416.00	10663.00	MWD_SVY_4

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Survey Tool Ranges:			
Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	10663.00	11452.00	MWD_SVY_5
MWD	11452.00	16455.00	MWD_SVY_6
MWD	16455.00	18935.00	MWD_SVY_7

Wellpath created using minimum curvature.

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										Comment
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	
0.00	0.00	0.00	0.00	-0.00	-0.00	0.00	559895.00	726653.50	0.00	
144.00	0.50	190.77	144.00	0.62	-0.62	-0.12	559894.38	726653.38	0.35	
204.00	0.29	176.06	204.00	1.02	-1.03	-0.16	559893.97	726653.34	0.39	
238.00	0.25	154.01	238.00	1.18	-1.18	-0.12	559893.82	726653.38	0.32	
330.00	0.53	206.98	329.99	1.74	-1.74	-0.22	559893.26	726653.28	0.47	
419.00	0.63	191.31	418.99	2.58	-2.58	-0.51	559892.42	726652.99	0.21	
508.00	0.56	187.02	507.99	3.49	-3.50	-0.65	559891.50	726652.85	0.09	
601.00	0.38	171.47	600.98	4.25	-4.25	-0.66	559890.75	726652.84	0.24	
693.00	0.30	174.42	692.98	4.79	-4.79	-0.60	559890.21	726652.90	0.09	
787.00	0.16	189.95	786.98	5.16	-5.17	-0.59	559889.83	726652.91	0.16	
881.00	0.25	177.49	880.98	5.50	-5.50	-0.61	559889.50	726652.89	0.11	
974.00	0.63	172.15	973.98	6.21	-6.21	-0.53	559888.79	726652.97	0.41	
1069.00	0.50	160.11	1068.97	7.12	-7.12	-0.32	559887.88	726653.18	0.18	
1162.00	0.94	152.14	1161.96	8.18	-8.17	0.18	559886.83	726653.68	0.48	
1256.00	1.04	149.41	1255.95	9.60	-9.59	0.97	559885.41	726654.47	0.12	
1350.00	1.24	150.96	1349.93	11.23	-11.21	1.90	559883.79	726655.40	0.22	
1444.00	1.19	151.89	1443.91	12.98	-12.96	2.85	559882.04	726656.35	0.06	
1538.00	0.94	139.51	1537.89	14.44	-14.41	3.81	559880.59	726657.31	0.36	
1610.00	0.77	137.03	1609.89	15.25	-15.21	4.53	559879.79	726658.03	0.24	
1724.00	0.66	108.71	1723.88	16.03	-15.99	5.67	559879.01	726659.17	0.32	
1817.00	0.94	100.76	1816.87	16.35	-16.30	6.93	559878.70	726660.43	0.32	
1911.00	0.72	129.41	1910.86	16.88	-16.82	8.14	559878.18	726661.64	0.49	
2005.00	0.70	142.30	2004.85	17.71	-17.65	8.95	559877.35	726662.45	0.17	
2099.00	0.78	135.73	2098.84	18.63	-18.56	9.75	559876.44	726663.25	0.12	
2193.00	0.63	108.05	2192.84	19.26	-19.18	10.69	559875.82	726664.19	0.39	
2286.00	1.03	49.32	2285.83	18.88	-18.79	11.81	559876.21	726665.31	0.95	
2380.00	0.91	12.30	2379.82	17.60	-17.51	12.60	559877.49	726666.10	0.67	
2474.00	1.07	26.00	2473.80	16.09	-15.99	13.15	559879.01	726666.65	0.30	
2568.00	1.26	12.36	2567.78	14.30	-14.20	13.75	559880.80	726667.25	0.36	
2662.00	1.15	44.83	2661.76	12.62	-12.52	14.64	559882.48	726668.14	0.73	
2756.00	0.53	46.09	2755.75	11.66	-11.55	15.62	559883.45	726669.12	0.66	
2849.00	1.20	7.21	2848.74	10.40	-10.28	16.05	559884.72	726669.55	0.92	
2943.00	1.35	357.68	2942.72	8.32	-8.20	16.13	559886.80	726669.63	0.28	
3037.00	1.35	5.14	3036.69	6.11	-5.99	16.18	559889.01	726669.68	0.19	
3131.00	1.84	27.41	3130.66	3.67	-3.55	16.98	559891.45	726670.48	0.83	
3225.00	1.70	59.67	3224.61	1.64	-1.50	18.88	559893.50	726672.38	1.06	
3319.00	1.03	44.51	3318.59	0.35	-0.20	20.67	559894.80	726674.17	0.80	
3413.00	0.98	36.47	3412.57	-0.89	1.05	21.74	559896.05	726675.24	0.16	
3506.00	1.05	35.20	3505.56	-2.22	2.39	22.71	559897.39	726676.21	0.08	
3600.00	0.91	43.04	3599.54	-3.46	3.64	23.71	559898.64	726677.21	0.21	
3694.00	1.16	54.86	3693.53	-4.55	4.73	25.00	559899.73	726678.50	0.35	
3787.00	0.70	52.19	3786.52	-5.43	5.62	26.22	559900.62	726679.72	0.50	
3881.00	0.85	49.33	3880.51	-6.23	6.43	27.20	559901.43	726680.70	0.16	
3975.00	0.51	84.23	3974.50	-6.72	6.92	28.15	559901.92	726681.65	0.55	
4069.00	0.63	49.60	4068.50	-7.09	7.30	28.96	559902.30	726682.46	0.38	
4163.00	0.91	60.43	4162.49	-7.78	8.00	30.00	559903.00	726683.50	0.33	
4257.00	1.00	59.51	4256.48	-8.56	8.79	31.35	559903.79	726684.85	0.10	
4350.00	0.91	53.55	4349.46	-9.40	9.64	32.65	559904.64	726686.15	0.14	
4444.00	0.94	26.39	4443.45	-10.53	10.77	33.59	559905.77	726687.09	0.46	
4538.00	0.58	31.77	4537.44	-11.62	11.87	34.18	559906.87	726687.68	0.39	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
4632.00	0.85	45.27	4631.44	-12.51	12.76	34.93	559907.76	726688.43	0.34	
4726.00	1.00	50.37	4725.42	-13.51	13.78	36.06	559908.78	726689.56	0.18	
4820.00	1.25	70.66	4819.41	-14.36	14.64	37.66	559909.64	726691.16	0.50	
4914.00	1.00	71.24	4913.39	-14.95	15.24	39.40	559910.24	726692.90	0.27	
5007.00	1.07	64.40	5006.37	-15.58	15.88	40.95	559910.88	726694.45	0.15	
5101.00	1.09	51.09	5100.36	-16.51	16.82	42.44	559911.82	726695.94	0.27	
5195.00	0.94	65.42	5194.34	-17.38	17.70	43.84	559912.70	726697.34	0.31	
5289.00	0.85	58.33	5288.33	-18.06	18.39	45.13	559913.39	726698.63	0.15	
5383.00	0.78	39.51	5382.32	-18.91	19.25	46.13	559914.25	726699.63	0.29	
5416.00	0.91	42.95	5415.32	-19.27	19.61	46.45	559914.61	726699.95	0.42	
5571.00	0.91	46.00	5570.30	-21.02	21.37	48.18	559916.37	726701.68	0.03	
5665.00	1.72	75.78	5664.27	-21.87	22.23	50.08	559917.23	726703.58	1.10	
5758.00	1.44	84.26	5757.24	-22.31	22.69	52.60	559917.69	726706.10	0.39	
5852.00	1.19	89.25	5851.21	-22.42	22.83	54.75	559917.83	726708.25	0.29	
5946.00	1.07	87.29	5945.19	-22.46	22.88	56.60	559917.88	726710.10	0.13	
6040.00	0.63	77.27	6039.18	-22.61	23.04	57.98	559918.04	726711.48	0.49	
6134.00	0.66	72.61	6133.18	-22.88	23.31	59.00	559918.31	726712.50	0.06	
6227.00	0.63	66.75	6226.17	-23.23	23.67	59.98	559918.67	726713.48	0.08	
6321.00	0.63	63.75	6320.17	-23.66	24.11	60.92	559919.11	726714.42	0.04	
6415.00	1.09	57.28	6414.15	-24.36	24.82	62.14	559919.82	726715.64	0.50	
6509.00	1.14	45.53	6508.14	-25.49	25.96	63.56	559920.96	726717.06	0.25	
6603.00	1.70	64.75	6602.11	-26.72	27.21	65.49	559922.21	726718.99	0.77	
6697.00	1.76	104.47	6696.07	-26.94	27.44	68.14	559922.44	726721.64	1.25	
6791.00	1.40	127.43	6790.03	-25.86	26.38	70.45	559921.38	726723.95	0.77	
6885.00	0.66	151.20	6884.02	-24.68	25.21	71.63	559920.21	726725.13	0.89	
6979.00	0.49	286.16	6978.02	-24.32	24.85	71.50	559919.85	726725.00	1.13	
7073.00	1.50	349.29	7072.00	-25.65	26.17	70.89	559921.17	726724.39	1.44	
7166.00	2.04	24.77	7164.96	-28.34	28.87	71.35	559923.87	726724.85	1.28	
7260.00	2.59	52.07	7258.89	-31.15	31.69	73.73	559926.69	726727.23	1.29	
7354.00	1.99	78.68	7352.81	-32.75	33.32	77.01	559928.32	726730.51	1.28	
7448.00	1.94	95.11	7446.76	-32.91	33.50	80.19	559928.50	726733.69	0.60	
7542.00	1.70	62.10	7540.71	-33.40	34.01	83.01	559929.01	726736.51	1.13	
7635.00	1.68	59.76	7633.67	-34.71	35.34	85.40	559930.34	726738.90	0.08	
7730.00	1.65	70.77	7728.63	-35.84	36.49	87.90	559931.49	726741.40	0.34	
7824.00	1.61	72.33	7822.60	-36.67	37.34	90.44	559932.34	726743.94	0.06	
7917.00	1.53	76.72	7915.56	-37.34	38.02	92.89	559933.02	726746.39	0.16	
8011.00	1.38	76.01	8009.53	-37.88	38.58	95.21	559933.58	726748.71	0.16	
8105.00	1.29	80.21	8103.51	-38.32	39.03	97.35	559934.03	726750.85	0.14	
8199.00	1.26	78.80	8197.48	-38.68	39.41	99.41	559934.41	726752.91	0.05	
8293.00	1.14	77.53	8291.46	-39.07	39.82	101.33	559934.82	726754.83	0.13	
8387.00	1.04	77.20	8385.44	-39.45	40.21	103.08	559935.21	726756.58	0.11	
8480.00	1.00	75.43	8478.43	-39.83	40.60	104.69	559935.60	726758.19	0.05	
8574.00	0.84	78.03	8572.42	-40.17	40.95	106.15	559935.95	726759.65	0.18	
8668.00	0.82	63.06	8666.41	-40.61	41.40	107.43	559936.40	726760.93	0.23	
8761.00	0.64	66.09	8759.40	-41.11	41.91	108.50	559936.91	726762.00	0.20	
8855.00	0.63	54.82	8853.39	-41.62	42.42	109.40	559937.42	726762.90	0.13	
8949.00	1.13	76.21	8947.38	-42.12	42.94	110.72	559937.94	726764.22	0.63	
9043.00	0.90	78.34	9041.37	-42.48	43.31	112.34	559938.31	726765.84	0.25	
9137.00	0.30	87.09	9135.36	-42.64	43.47	113.31	559938.47	726766.81	0.64	
9231.00	0.29	106.25	9229.36	-42.58	43.41	113.79	559938.41	726767.29	0.10	
9325.00	1.54	58.54	9323.35	-43.16	44.01	115.09	559939.01	726768.59	1.45	
9418.00	1.83	72.62	9416.31	-44.24	45.10	117.58	559940.10	726771.08	0.54	
9512.00	1.42	59.14	9510.27	-45.27	46.15	120.01	559941.15	726773.51	0.59	
9606.00	1.46	48.76	9604.24	-46.64	47.54	121.91	559942.54	726775.41	0.28	
9700.00	1.92	55.92	9698.20	-48.30	49.21	124.11	559944.21	726777.61	0.54	
9794.00	2.49	64.20	9792.13	-50.04	50.98	127.26	559945.98	726780.76	0.69	
9888.00	2.21	67.48	9886.05	-51.60	52.56	130.77	559947.56	726784.27	0.33	
9982.00	2.00	60.34	9979.99	-53.08	54.07	133.87	559949.07	726787.37	0.36	
10075.00	1.68	57.95	10072.94	-54.59	55.59	136.43	559950.59	726789.93	0.35	

SD Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference):										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
10169.00	1.13	42.35	10166.91	-56.00	57.01	138.23	559952.01	726791.73	0.71	
10263.00	1.06	55.23	10260.89	-57.17	58.19	139.56	559953.19	726793.06	0.27	
10356.00	1.27	78.78	10353.88	-57.85	58.88	141.28	559953.88	726794.78	0.56	
10450.00	1.27	82.11	10447.85	-58.18	59.23	143.34	559954.23	726796.84	0.08	
10543.00	1.20	79.02	10540.83	-58.49	59.55	145.31	559954.55	726798.81	0.10	
10637.00	1.61	86.06	10634.80	-58.75	59.83	147.60	559954.83	726801.10	0.47	
10663.00	1.68	83.32	10660.79	-58.81	59.90	148.34	559954.90	726801.84	0.40	
10733.00	2.82	90.35	10730.74	-58.90	60.01	151.08	559955.01	726804.58	1.67	
10764.00	7.49	116.15	10761.61	-57.99	59.12	153.66	559954.12	726807.16	16.45	
10796.00	11.35	127.37	10793.17	-55.12	56.28	158.03	559951.28	726811.53	13.30	
10827.00	15.04	136.69	10823.35	-50.31	51.50	163.22	559946.50	726816.72	13.70	
10858.00	17.98	149.93	10853.08	-43.20	44.43	168.38	559939.43	726821.88	15.35	
10890.00	18.94	163.71	10883.45	-33.90	35.17	172.31	559930.17	726825.81	13.93	
10921.00	19.96	176.33	10912.69	-23.78	25.05	174.06	559920.05	726827.56	13.92	
10952.00	21.61	183.50	10941.68	-12.80	14.07	174.05	559909.07	726827.55	9.77	
10984.00	23.28	183.88	10971.25	-0.61	1.88	173.27	559896.88	726826.77	5.24	
11015.00	25.56	178.41	10999.48	12.19	-10.92	173.04	559884.08	726826.54	10.35	
11046.00	28.91	177.59	11027.04	26.37	-25.09	173.54	559869.91	726827.04	10.87	
11077.00	32.91	178.48	11053.63	42.28	-41.01	174.08	559853.99	726827.58	12.99	
11109.00	37.04	178.83	11079.85	60.62	-59.34	174.50	559835.66	726828.00	12.92	
11140.00	41.97	180.02	11103.76	80.33	-79.05	174.69	559815.95	726828.19	16.09	
11171.00	46.82	180.59	11125.90	102.01	-100.73	174.57	559794.27	726828.07	15.70	
11202.00	50.61	179.81	11146.35	125.30	-124.02	174.49	559770.98	726827.99	12.37	
11234.00	53.22	177.94	11166.09	150.48	-149.20	175.00	559745.80	726828.50	9.36	
11265.00	54.85	179.91	11184.30	175.57	-174.28	175.46	559720.72	726828.96	7.36	
11296.00	57.54	183.30	11201.55	201.30	-200.02	174.73	559694.98	726828.23	12.56	
11327.00	61.97	184.23	11217.16	228.00	-226.74	172.97	559668.26	726826.47	14.52	
11359.00	66.50	183.06	11231.07	256.74	-255.49	171.14	559639.51	726824.64	14.53	
11390.00	71.21	182.98	11242.24	285.59	-284.36	169.62	559610.64	726823.12	15.20	
11421.00	76.64	182.48	11250.83	315.32	-314.10	168.20	559580.90	726821.70	17.58	
11452.00	80.58	181.65	11256.95	345.68	-344.46	167.11	559550.54	726820.61	12.98	
11482.00	81.79	181.14	11261.54	375.31	-374.10	166.39	559520.90	726819.89	4.37	
11514.00	82.49	180.99	11265.92	407.00	-405.79	165.80	559489.21	726819.30	2.24	
11545.00	84.33	180.77	11269.48	437.78	-436.58	165.32	559458.42	726818.82	5.98	
11576.00	86.64	180.68	11271.92	468.68	-467.48	164.93	559427.52	726818.43	7.46	
11608.00	87.06	179.76	11273.68	500.63	-499.43	164.81	559395.57	726818.31	3.16	
11639.00	87.13	179.87	11275.25	531.59	-530.39	164.91	559364.61	726818.41	0.42	
11670.00	87.41	180.12	11276.72	562.55	-561.36	164.91	559333.64	726818.41	1.21	
11701.00	87.69	180.35	11278.05	593.52	-592.33	164.79	559302.67	726818.29	1.17	
11732.00	88.25	180.01	11279.15	624.50	-623.31	164.69	559271.69	726818.19	2.11	
11764.00	88.81	179.99	11279.97	656.49	-655.30	164.69	559239.70	726818.19	1.75	
11795.00	89.37	179.97	11280.46	687.48	-686.29	164.70	559208.71	726818.20	1.81	
11857.00	90.49	179.65	11280.54	749.48	-748.29	164.91	559146.71	726818.41	1.88	
11951.00	89.02	179.64	11280.94	843.48	-842.29	165.49	559052.71	726818.99	1.56	
12045.00	87.55	180.23	11283.75	937.43	-936.24	165.60	558958.76	726819.10	1.68	
12139.00	88.39	179.75	11287.08	1031.37	-1030.18	165.61	558864.82	726819.11	1.03	
12233.00	88.95	178.94	11289.26	1125.34	-1124.15	166.69	558770.85	726820.19	1.05	
12327.00	90.14	178.32	11290.01	1219.32	-1218.12	168.93	558676.88	726822.43	1.43	
12420.00	89.72	180.16	11290.12	1312.32	-1311.11	170.17	558583.89	726823.67	2.03	
12514.00	88.04	181.01	11291.96	1406.28	-1405.08	169.21	558489.92	726822.71	2.00	
12608.00	88.88	180.85	11294.49	1500.22	-1499.03	167.68	558395.97	726821.18	0.91	
12702.00	87.20	180.99	11297.70	1594.14	-1592.96	166.17	558302.04	726819.67	1.79	
12795.00	87.83	181.34	11301.73	1687.01	-1685.85	164.28	558209.15	726817.78	0.77	
12889.00	89.65	181.11	11303.80	1780.95	-1779.81	162.28	558115.19	726815.78	1.95	
12983.00	87.97	179.60	11305.75	1874.91	-1873.78	161.69	558021.22	726815.19	2.40	
13077.00	88.81	179.03	11308.39	1968.87	-1967.73	162.82	557927.27	726816.32	1.08	
13171.00	90.63	179.26	11308.85	2062.87	-2061.72	164.22	557833.28	726817.72	1.95	
13266.00	89.16	179.05	11309.03	2157.86	-2156.70	165.62	557738.30	726819.12	1.56	
13359.00	88.53	179.65	11310.90	2250.84	-2249.68	166.68	557645.32	726820.18	0.94	

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Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (%/100US ft)	Comment
13453.00	86.92	180.62	11314.63	2344.76	-2343.60	166.45	557551.40	726819.95	2.00	
13546.00	88.04	180.42	11318.72	2437.65	-2436.50	165.61	557458.50	726819.11	1.22	
13640.00	87.76	179.02	11322.17	2531.59	-2530.44	166.07	557364.56	726819.57	1.52	
13734.00	89.16	178.79	11324.69	2625.54	-2624.38	167.87	557270.62	726821.37	1.51	
13828.00	88.32	180.34	11326.76	2719.52	-2718.35	168.58	557176.65	726822.08	1.88	
13922.00	87.13	180.89	11330.49	2813.43	-2812.27	167.57	557082.73	726821.07	1.39	
14015.00	87.97	180.58	11334.47	2906.32	-2905.18	166.38	556989.82	726819.88	0.96	
14109.00	89.30	180.73	11336.71	3000.28	-2999.14	165.31	556895.86	726818.81	1.42	
14203.00	88.46	180.99	11338.54	3094.23	-3093.11	163.89	556801.89	726817.39	0.94	
14297.00	87.20	180.00	11342.10	3188.15	-3187.04	163.08	556707.96	726816.58	1.70	
14391.00	88.11	180.07	11345.95	3282.07	-3280.96	163.03	556614.04	726816.53	0.97	
14485.00	89.44	180.06	11347.96	3376.04	-3374.94	162.92	556520.06	726816.42	1.41	
14578.00	88.39	179.54	11349.72	3469.02	-3467.92	163.24	556427.08	726816.74	1.26	
14672.00	89.16	179.99	11351.73	3563.00	-3561.90	163.63	556333.10	726817.13	0.95	
14766.00	87.13	179.34	11354.77	3656.94	-3655.84	164.18	556239.16	726817.68	2.27	
14860.00	87.83	178.68	11358.90	3750.85	-3749.73	165.80	556145.27	726819.30	1.02	
14954.00	88.95	179.47	11361.55	3844.80	-3843.68	167.32	556051.32	726820.82	1.46	
15048.00	88.18	178.23	11363.90	3938.77	-3937.63	169.20	555957.37	726822.70	1.55	
15142.00	89.09	177.98	11366.14	4032.71	-4031.55	172.31	555863.45	726825.81	1.00	
15235.00	89.09	177.62	11367.62	4125.65	-4124.47	175.88	555770.53	726829.38	0.39	
15329.00	89.44	177.72	11368.82	4219.59	-4218.39	179.70	555676.61	726833.20	0.39	
15423.00	89.58	177.64	11369.63	4313.53	-4312.30	183.51	555582.70	726837.01	0.17	
15517.00	89.09	178.86	11370.72	4407.50	-4406.25	186.38	555488.75	726839.88	1.40	
15613.00	90.14	178.42	11371.36	4503.48	-4502.22	188.66	555392.78	726842.16	1.19	
15705.00	90.63	179.17	11370.74	4595.47	-4594.20	190.59	555300.80	726844.09	0.97	
15799.00	89.93	181.08	11370.28	4689.46	-4688.19	190.38	555206.81	726843.88	2.16	
15893.00	88.53	181.18	11371.55	4783.42	-4782.16	188.53	555112.84	726842.03	1.49	
15986.00	89.02	180.59	11373.54	4876.37	-4875.13	187.10	555019.87	726840.60	0.82	
16080.00	87.13	180.23	11376.69	4970.30	-4969.07	186.42	554925.93	726839.92	2.05	
16174.00	87.41	179.94	11381.17	5064.19	-5062.96	186.28	554832.04	726839.78	0.43	
16268.00	89.02	179.40	11384.10	5158.14	-5156.91	186.82	554738.09	726840.32	1.81	
16362.00	90.14	178.79	11384.79	5252.14	-5250.90	188.31	554644.10	726841.81	1.36	
16455.00	89.72	179.22	11384.90	5345.13	-5343.88	189.92	554551.12	726843.42	0.65	
16576.00	91.40	179.37	11383.72	5466.12	-5464.86	191.41	554430.14	726844.91	1.39	
16669.00	87.13	178.90	11384.91	5559.09	-5557.82	192.82	554337.18	726846.32	4.62	
16763.00	87.14	178.57	11389.61	5652.96	-5651.68	194.89	554243.32	726848.39	0.35	
16857.00	87.62	177.68	11393.91	5746.83	-5745.53	197.96	554149.47	726851.46	1.07	
16951.00	89.30	180.08	11396.43	5840.78	-5839.47	199.80	554055.53	726853.30	3.12	
17046.00	89.93	179.62	11397.07	5935.77	-5934.47	200.05	553960.53	726853.55	0.82	
17140.00	88.88	181.49	11398.05	6029.75	-6028.45	199.14	553866.55	726852.64	2.28	
17233.00	86.16	180.49	11402.07	6122.62	-6121.34	197.53	553773.66	726851.03	3.12	
17328.00	87.48	178.71	11407.34	6217.47	-6216.19	198.19	553678.81	726851.69	2.33	
17422.00	87.83	178.47	11411.19	6311.38	-6310.08	200.50	553584.92	726854.00	0.45	
17516.00	88.18	177.99	11414.46	6405.30	-6403.98	203.41	553491.02	726856.91	0.63	
17610.00	88.46	177.35	11417.22	6499.20	-6497.86	207.23	553397.14	726860.73	0.74	
17704.00	89.79	177.87	11418.65	6593.13	-6591.76	211.15	553303.24	726864.65	1.52	
17797.00	90.49	179.32	11418.42	6686.12	-6684.73	213.43	553210.27	726866.93	1.73	
17891.00	91.54	179.24	11416.76	6780.10	-6778.71	214.61	553116.29	726868.11	1.12	
17985.00	92.10	177.97	11413.77	6874.04	-6872.63	216.89	553022.37	726870.39	1.48	
18079.00	92.66	178.72	11409.87	6967.93	-6966.51	219.61	552928.49	726873.11	1.00	
18173.00	91.26	178.86	11406.65	7061.87	-7060.43	221.59	552834.57	726875.09	1.50	
18267.00	92.02	179.01	11403.96	7155.82	-7154.38	223.34	552740.62	726876.84	0.82	
18361.00	90.84	178.44	11401.62	7249.78	-7248.32	225.43	552646.68	726878.93	1.39	
18455.00	91.05	179.11	11400.07	7343.76	-7342.29	227.44	552552.71	726880.94	0.75	
18549.00	92.17	179.82	11397.43	7437.72	-7436.24	228.31	552458.76	726881.81	1.41	
18643.00	91.40	179.97	11394.50	7531.67	-7530.20	228.49	552364.80	726881.99	0.83	
18736.00	92.66	180.26	11391.21	7624.60	-7623.14	228.30	552271.86	726881.80	1.39	
18830.00	93.63	179.85	11386.05	7718.46	-7716.99	228.21	552178.01	726881.71	1.12	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
18873.00	94.20	179.72	11383.11	7761.36	-7759.89	228.37	552135.11	726881.87	1.36	Last WFT SVY
18935.00	94.20	179.72	11378.57	7823.19	-7821.73	228.67	552073.27	726882.17	0.00	PTP

Formation Points: (Relative to Slot centre)(TVD relative to Well TVD Reference)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	Name	Comment	
1573.11	0.86	138.42	1573.00	-14.83	4.18	559880.17	726657.68	Rustler		
1940.14	0.71	133.32	1940.00	-17.06	8.41	559877.94	726661.91	Salado		
3184.37	1.69	45.14	3184.00	-2.23	17.93	559892.77	726671.43	Base Salt		
3360.42	1.01	41.07	3360.00	0.34	21.17	559895.34	726674.67	Yates		
3587.45	0.93	41.86	3587.00	3.49	23.58	559898.49	726677.08	Seven Rivers		
3736.48	0.95	53.96	3736.00	5.18	25.64	559900.18	726679.14	Capitan Reef		
5564.70	0.91	45.88	5564.00	21.30	48.10	559916.30	726701.60	Base Capitan Reef (Delaware)		
5766.76	1.42	84.65	5766.00	22.72	52.81	559917.72	726706.31	Base Manzanita (U Cherry Canyon)		
7008.98	0.70	323.97	7008.00	25.03	71.27	559920.03	726724.77	Brushy Canyon		
8666.59	0.82	63.29	8665.00	41.39	107.41	559936.39	726760.91	Bone Spring		
8830.60	0.63	57.77	8829.00	42.27	109.17	559937.27	726762.67	Upper Avalon Shale		
9149.64	0.30	89.56	9148.00	43.47	113.38	559938.47	726766.88	Lower Avalon Shale		
9670.78	1.77	54.09	9669.00	48.67	123.34	559943.67	726776.84	1st Bone Spring Sand		
9839.91	2.35	65.70	9838.00	51.80	129.01	559946.80	726782.51	1st Bone Spring Lower		
9957.00	2.05	62.38	9955.00	53.64	133.09	559948.64	726786.59	2nd Bone Spring A Lime		
10192.09	1.11	45.35	10190.00	57.34	138.54	559952.34	726792.04	Second Bone Spring		
10506.16	1.23	80.29	10504.00	59.41	144.54	559954.41	726798.04	2nd Bone Spring B Sand		
10658.21	1.67	83.81	10656.00	59.89	148.20	559954.89	726801.70	Base 2nd Bone Spring B Sand		
10744.29	4.41	105.94	10742.00	59.89	151.78	559954.89	726805.28	3rd Bone Spring Lime		
11076.24	32.81	178.46	11053.00	-40.60	174.07	559854.40	726827.57	3rd Bone Spring Sand		
11409.59	74.64	182.66	11248.00	-303.06	168.70	559591.94	726822.20	Red Hills Sand		