

**5D Survey Report****XTO Energy**

Field Name: *Eddy Co., NM (NAD 27 NME)*
Site Name: *James Ranch Unit DI 1A #203H,204H,206H Pad*
Well Name: *James Ranch Unit DI 1A #203H*
File number: *13454654*
Survey: *Definitive survey*

10 December 2018





James Ranch Unit DI 1A #203H

Field Name: Eddy Co., NM (NAD 27 NME)	Map Units: US ft		Company Name: XTO Energy	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD27 / New Mexico East			
	Comment:			
Site: James Ranch Unit DI 1A #203H,204H,206H 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:			
Slot: James Ranch Unit DI 1A #203H	Position (Relative to Site Centre)			
	+N/-S: 0.00 US ft	Northing: 502646.10 US ft	Latitude: 32° 22' 51.95"	
	+E/-W: 0.00 US ft	Easting: 638042.90 US ft	Longitude: -103° 53' 10.21"	
	Elevation above MSL: 3155.00 US ft			
	Comment:			
Well: James Ranch Unit DI 1A #203H	Type:Main well		UWI:	
	File Number:	Comment:		
	13454654			
	Closure Distance:10098US ft		Closure Azimuth:84.38°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: -0.00 US ft		+E/-W: -0.00 US ft	Az: 89.87°

Drill floor: Survey Name: Definitive Survey
Rig Height (Drill Floor): 25.00 US ft **Elevation above MSL:** 3180.00 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: 25/Oct/2018		Field Strength: 47913.4nT		Declination: 7.03°		Dip: 60.09°	
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			8177.00			MWD	

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Survey Tool Ranges:			
Name	Start MD(USft)	End MD(USft)	Source Survey
MWD	8177.00	9663.00	WFT MWD SVY_1
MWD	9663.00	10377.00	WFT MWD SVY_2
MWD	10377.00	16710.00	WFT MWD SVY_3
MWD	16710.00	18638.00	WFT MWD SVY_4
MWD	18638.00	20246.00	WFT MWD SVY_5
MWD	20246.00	20719.00	WFT MWD SVY_6
MWD	20719.00	21076.00	WFT MWD SVY_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
8231.00	1.07	258.43	8227.12	5047.12	48.56	-133.76	502694.66	637909.14	9 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	-3180.00	0.00	-0.00	-0.00	502646.10	638042.90	0.00	
148.00	1.10	2.76	147.99	-3032.01	0.07	1.42	0.07	502647.52	638042.97	0.74	
246.00	0.40	243.76	245.99	-2934.01	-0.19	2.21	-0.19	502648.31	638042.71	1.37	
336.00	1.30	337.76	335.98	-2844.02	-0.85	3.01	-0.86	502649.11	638042.04	1.54	
425.00	0.90	350.76	424.96	-2755.04	-1.35	4.64	-1.36	502650.74	638041.54	0.53	
457.00	1.40	334.76	456.95	-2723.05	-1.55	5.24	-1.56	502651.34	638041.34	1.84	
568.00	1.71	312.61	567.91	-2612.09	-3.34	7.59	-3.36	502653.69	638039.54	0.60	
647.00	1.80	303.21	646.88	-2533.12	-5.24	9.06	-5.27	502655.16	638037.63	0.38	
743.00	1.58	304.26	742.84	-2437.16	-7.60	10.64	-7.62	502656.74	638035.28	0.23	
838.00	1.58	308.92	837.80	-2342.20	-9.69	12.20	-9.72	502658.30	638033.18	0.14	
933.00	1.71	307.25	932.76	-2247.24	-11.84	13.88	-11.87	502659.98	638031.03	0.15	
1028.00	1.58	306.72	1027.72	-2152.28	-14.01	15.52	-14.05	502661.62	638028.85	0.14	
1123.00	1.71	309.45	1122.68	-2057.32	-16.15	17.20	-16.19	502663.30	638026.71	0.16	
1217.00	1.71	301.71	1216.64	-1963.36	-18.43	18.83	-18.47	502664.93	638024.43	0.25	
1312.00	1.71	302.33	1311.60	-1868.40	-20.83	20.33	-20.87	502666.43	638022.03	0.02	
1407.00	1.58	293.98	1406.56	-1773.44	-23.22	21.62	-23.27	502667.72	638019.63	0.29	
1502.00	1.71	291.08	1501.52	-1678.48	-25.73	22.67	-25.79	502668.77	638017.11	0.16	
1597.00	1.80	283.61	1596.47	-1583.53	-28.50	23.53	-28.56	502669.63	638014.34	0.26	
1692.00	2.02	285.45	1691.42	-1488.58	-31.57	24.32	-31.62	502670.42	638011.28	0.24	
1786.00	2.11	291.96	1785.36	-1394.64	-34.77	25.41	-34.82	502671.51	638008.08	0.27	
1881.00	2.51	288.00	1880.28	-1299.72	-38.36	26.71	-38.42	502672.81	638004.48	0.45	
1976.00	2.59	283.96	1975.19	-1204.81	-42.42	27.87	-42.49	502673.97	638000.41	0.21	
2071.00	2.99	281.76	2070.08	-1109.92	-46.93	28.89	-46.99	502674.99	637995.91	0.44	
2166.00	3.21	280.80	2164.94	-1015.06	-51.96	29.90	-52.03	502676.00	637990.87	0.24	
2260.00	2.68	299.17	2258.82	-921.18	-56.47	31.46	-56.54	502677.56	637986.36	1.14	
2354.00	2.99	296.97	2352.70	-827.30	-60.56	33.64	-60.64	502679.74	637982.26	0.35	
2449.00	2.90	295.83	2447.58	-732.42	-64.93	35.81	-65.01	502681.91	637977.89	0.11	
2543.00	2.99	304.09	2541.45	-638.55	-69.10	38.22	-69.18	502684.32	637973.72	0.46	
2637.00	2.81	301.89	2635.33	-544.67	-73.08	40.81	-73.17	502686.91	637969.73	0.23	
2732.00	1.80	293.63	2730.25	-449.75	-76.42	42.64	-76.51	502688.74	637966.39	1.12	
2826.00	1.01	286.16	2824.22	-355.78	-78.56	43.47	-78.66	502689.57	637964.24	0.86	
2921.00	0.88	290.29	2919.21	-260.79	-80.05	43.95	-80.15	502690.05	637962.75	0.15	
3015.00	0.40	266.29	3013.21	-166.79	-81.05	44.18	-81.15	502690.28	637961.75	0.57	
3111.00	0.40	194.22	3109.20	-70.80	-81.47	43.83	-81.57	502689.93	637961.33	0.49	
3200.00	0.62	183.33	3198.20	18.20	-81.58	43.05	-81.68	502689.15	637961.22	0.27	
3282.00	0.48	161.35	3280.20	100.20	-81.50	42.28	-81.59	502688.38	637961.31	0.31	
3389.00	0.70	159.68	3387.19	207.19	-81.13	41.25	-81.22	502687.35	637961.68	0.21	
3483.00	1.41	237.82	3481.18	301.18	-81.91	40.09	-82.00	502686.19	637960.90	1.53	
3578.00	1.41	239.66	3576.15	396.15	-83.91	38.88	-84.00	502684.98	637958.90	0.05	
3673.00	2.02	243.00	3671.11	491.11	-86.41	37.53	-86.50	502683.63	637956.40	0.65	
3769.00	2.90	255.66	3767.02	587.02	-90.28	36.16	-90.36	502682.26	637952.54	1.07	

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Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											Comment
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)	
3862.00	3.21	270.69	3859.89	679.89	-95.16	35.61	-95.24	502681.71	637947.66	0.92	
3956.00	3.91	287.30	3953.71	773.71	-100.85	36.59	-100.93	502682.69	637941.97	1.32	
4051.00	4.31	303.56	4048.47	868.47	-106.91	39.53	-107.00	502685.63	637935.90	1.29	
4145.00	4.88	324.48	4142.17	962.17	-112.17	44.74	-112.27	502690.84	637930.63	1.87	
4240.00	4.70	344.17	4236.84	1056.84	-115.56	51.77	-115.68	502697.87	637927.22	1.73	
4334.00	3.78	13.78	4330.60	1150.60	-115.86	58.49	-115.99	502704.59	637926.91	2.49	
4428.00	2.29	24.77	4424.46	1244.46	-114.32	63.20	-114.47	502709.30	637928.43	1.69	
4522.00	1.19	69.95	4518.42	1338.42	-112.61	65.24	-112.76	502711.34	637930.14	1.79	
4617.00	0.88	99.13	4613.41	1433.41	-110.97	65.46	-111.11	502711.56	637931.79	0.63	
4712.00	0.31	83.92	4708.40	1528.40	-109.99	65.37	-110.14	502711.47	637932.76	0.62	
4807.00	0.31	76.10	4803.40	1623.40	-109.49	65.46	-109.63	502711.56	637933.27	0.04	
4900.00	0.40	30.75	4896.40	1716.40	-109.07	65.80	-109.22	502711.90	637933.68	0.31	
4996.00	0.40	350.58	4992.40	1812.40	-108.96	66.42	-109.11	502712.52	637933.79	0.29	
5091.00	0.40	337.66	5087.39	1907.39	-109.14	67.05	-109.29	502713.15	637933.61	0.09	
5184.00	0.48	336.96	5180.39	2000.39	-109.41	67.71	-109.56	502713.81	637933.34	0.09	
5279.00	0.40	325.80	5275.39	2095.39	-109.75	68.35	-109.91	502714.45	637932.99	0.12	
5374.00	0.22	322.63	5370.39	2190.39	-110.05	68.77	-110.20	502714.87	637932.70	0.19	
5468.00	0.22	315.78	5464.39	2284.39	-110.28	69.05	-110.44	502715.15	637932.46	0.03	
5563.00	0.22	315.43	5559.39	2379.39	-110.54	69.31	-110.69	502715.41	637932.21	0.00	
5658.00	0.22	297.50	5654.39	2474.39	-110.82	69.52	-110.98	502715.62	637931.92	0.07	
5752.00	0.22	288.09	5748.38	2568.38	-111.16	69.66	-111.31	502715.76	637931.59	0.04	
5848.00	0.22	229.91	5844.38	2664.38	-111.47	69.60	-111.63	502715.70	637931.27	0.22	
5942.00	0.22	218.13	5938.38	2758.38	-111.72	69.34	-111.88	502715.44	637931.02	0.05	
6038.00	0.09	208.11	6034.38	2854.38	-111.87	69.13	-112.03	502715.23	637930.87	0.14	
6132.00	0.31	259.09	6128.38	2948.38	-112.16	69.02	-112.31	502715.12	637930.59	0.28	
6227.00	0.31	253.90	6223.38	3043.38	-112.66	68.90	-112.81	502715.00	637930.09	0.03	
6322.00	0.40	240.02	6318.38	3138.38	-113.19	68.66	-113.35	502714.76	637929.55	0.13	
6416.00	0.31	241.95	6412.38	3232.38	-113.70	68.38	-113.86	502714.48	637929.04	0.10	
6511.00	0.31	225.16	6507.38	3327.38	-114.11	68.07	-114.27	502714.17	637928.63	0.10	
6607.00	0.48	229.56	6603.37	3423.37	-114.60	67.63	-114.76	502713.73	637928.14	0.18	
6700.00	0.48	229.82	6696.37	3516.37	-115.20	67.13	-115.35	502713.23	637927.55	0.00	
6795.00	0.48	229.73	6791.37	3611.37	-115.81	66.61	-115.96	502712.71	637926.94	0.00	
6890.00	0.70	219.36	6886.36	3706.36	-116.48	65.91	-116.63	502712.01	637926.27	0.26	
6984.00	0.79	224.20	6980.35	3800.35	-117.30	65.00	-117.44	502711.10	637925.46	0.12	
7079.00	1.01	216.11	7075.34	3895.34	-118.25	63.85	-118.39	502709.95	637924.51	0.27	
7173.00	1.10	204.60	7169.33	3989.33	-119.12	62.36	-119.26	502708.46	637923.64	0.24	
7268.00	1.32	210.92	7264.31	4084.31	-120.06	60.59	-120.20	502706.69	637922.70	0.27	
7362.00	1.32	214.09	7358.28	4178.28	-121.23	58.77	-121.36	502704.87	637921.54	0.08	
7457.00	1.41	220.15	7453.25	4273.25	-122.60	56.97	-122.73	502703.07	637920.17	0.18	
7552.00	1.19	234.21	7548.23	4368.23	-124.16	55.50	-124.28	502701.60	637918.62	0.41	
7647.00	1.01	248.19	7643.21	4463.21	-125.74	54.61	-125.86	502700.71	637917.04	0.34	
7741.00	0.88	231.67	7737.20	4557.20	-127.07	53.85	-127.20	502699.95	637915.70	0.32	
7835.00	1.01	225.86	7831.19	4651.19	-128.24	52.83	-128.36	502698.93	637914.54	0.17	
7931.00	0.79	222.53	7927.17	4747.17	-129.30	51.75	-129.41	502697.85	637913.49	0.24	
8025.00	1.01	218.31	8021.16	4841.16	-130.25	50.63	-130.36	502696.73	637912.54	0.24	
8120.00	1.19	237.03	8116.15	4936.15	-131.60	49.43	-131.71	502695.53	637911.19	0.42	
8177.00	1.19	246.96	8173.13	4993.13	-132.64	48.88	-132.75	502694.98	637910.15	0.36	
8231.00	1.07	258.43	8227.12	5047.12	-133.65	48.56	-133.76	502694.66	637909.14	0.48	Tie On Wellbenders 9 5/8 in First WFT SVY
8341.00	0.99	287.55	8337.11	5157.11	-135.56	48.64	-135.67	502694.74	637907.23	0.48	
8435.00	1.07	299.96	8431.09	5251.09	-137.09	49.32	-137.20	502695.42	637905.70	0.25	
8529.00	0.91	299.11	8525.08	5345.08	-138.50	50.12	-138.62	502696.22	637904.28	0.17	
8624.00	0.99	302.64	8620.06	5440.06	-139.85	50.93	-139.97	502697.03	637902.93	0.10	
8718.00	0.91	307.02	8714.05	5534.05	-141.13	51.82	-141.25	502697.92	637901.65	0.11	
8812.00	0.21	293.20	8808.05	5628.05	-141.88	52.34	-142.00	502698.44	637900.90	0.75	
8906.00	0.41	246.91	8902.04	5722.04	-142.35	52.27	-142.47	502698.37	637900.43	0.32	
9000.00	1.39	269.04	8996.03	5816.03	-143.80	52.12	-143.92	502698.22	637898.98	1.09	
9095.00	1.79	240.82	9091.00	5911.00	-146.25	51.38	-146.37	502697.48	637896.53	0.91	

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
9189.00	1.99	236.96	9184.95	6004.95	-148.90	49.77	-149.02	502695.87	637893.88	0.25	
9284.00	0.99	222.92	9279.91	6099.91	-150.85	48.27	-150.96	502694.37	637891.94	1.11	
9379.00	1.25	233.09	9374.89	6194.89	-152.24	47.05	-152.35	502693.15	637890.55	0.34	
9473.00	1.29	223.53	9468.87	6288.87	-153.79	45.67	-153.89	502691.77	637889.01	0.23	
9568.00	0.99	213.78	9563.85	6383.85	-154.99	44.21	-155.09	502690.31	637887.81	0.37	
9663.00	1.30	185.07	9658.83	6478.83	-155.54	42.45	-155.64	502688.55	637887.26	0.68	
9739.00	1.44	146.61	9734.81	6554.81	-155.10	40.80	-155.19	502686.90	637887.71	1.20	
9811.00	2.10	156.15	9806.78	6626.78	-154.07	38.84	-154.16	502684.94	637888.74	1.00	
9858.00	3.35	53.23	9853.75	6673.75	-152.62	38.87	-152.71	502684.97	637890.19	9.22	
9905.00	8.60	12.50	9900.49	6720.49	-150.75	43.13	-150.85	502689.23	637892.05	13.70	
9952.00	16.14	356.54	9946.38	6766.38	-150.36	53.10	-150.48	502699.20	637892.42	17.47	
9999.00	21.70	355.13	9990.82	6810.82	-151.46	68.29	-151.61	502714.39	637891.29	11.87	
10046.00	24.16	355.26	10034.11	6854.11	-152.95	86.53	-153.14	502732.63	637889.76	5.24	
10094.00	26.93	357.16	10077.41	6897.41	-154.25	107.18	-154.50	502753.28	637888.40	6.02	
10140.00	31.97	358.59	10117.45	6937.45	-155.02	129.78	-155.31	502775.88	637887.59	11.06	
10188.00	33.50	4.36	10157.84	6977.84	-154.26	155.70	-154.62	502801.80	637888.28	7.24	
10235.00	34.15	9.80	10196.89	7016.89	-150.97	181.63	-151.38	502827.73	637891.52	6.59	
10283.00	34.72	13.63	10236.49	7056.49	-145.40	208.20	-145.87	502854.30	637897.03	4.66	
10329.00	40.93	14.03	10272.80	7092.80	-138.59	235.58	-139.12	502881.68	637903.78	13.51	
10377.00	48.30	12.91	10306.95	7126.95	-130.69	268.34	-131.30	502914.44	637911.60	15.44	
10425.00	56.65	13.17	10336.16	7156.16	-122.02	305.39	-122.71	502951.49	637920.19	17.40	
10472.00	58.41	12.96	10361.39	7181.39	-112.97	344.02	-113.75	502990.12	637929.15	3.76	
10519.00	61.40	12.91	10384.96	7204.96	-103.78	383.65	-104.65	503029.75	637938.25	6.36	
10566.00	67.09	11.78	10405.37	7225.37	-94.65	424.98	-95.61	503071.08	637947.29	12.30	
10597.00	71.79	11.51	10416.25	7236.25	-88.72	453.40	-89.75	503099.50	637953.15	15.18	
10629.00	75.44	12.09	10425.28	7245.28	-82.38	483.45	-83.48	503129.55	637959.42	11.54	
10660.00	75.72	15.45	10433.00	7253.00	-75.17	512.61	-76.33	503158.71	637966.57	10.54	
10692.00	75.44	18.38	10440.97	7260.97	-66.08	542.25	-67.31	503188.35	637975.59	8.91	
10723.00	75.21	20.86	10448.83	7268.83	-55.95	570.50	-57.25	503216.60	637985.65	7.77	
10755.00	75.66	23.80	10456.88	7276.88	-44.12	599.14	-45.48	503245.24	637997.42	9.00	
10787.00	75.59	26.73	10464.82	7284.82	-30.83	627.17	-32.25	503273.27	638010.65	8.87	
10818.00	75.73	29.24	10472.50	7292.50	-16.68	653.69	-18.16	503299.79	638024.74	7.86	
10850.00	75.59	30.38	10480.43	7300.43	-1.20	680.59	-2.75	503326.69	638040.15	3.48	
10882.00	75.80	31.82	10488.33	7308.33	14.87	707.14	13.27	503353.24	638056.17	4.41	
10913.00	75.50	34.15	10496.02	7316.02	31.28	732.33	29.62	503378.43	638072.52	7.35	
10945.00	75.21	36.70	10504.11	7324.11	49.28	757.56	47.56	503403.66	638090.46	7.76	
10976.00	75.28	37.91	10512.01	7332.01	67.50	781.40	65.73	503427.50	638108.63	3.78	
11008.00	75.80	39.41	10520.00	7340.00	86.91	805.60	85.09	503451.70	638127.99	4.82	
11039.00	76.94	41.01	10527.30	7347.30	106.42	828.60	104.54	503474.70	638147.44	6.22	
11071.00	77.73	43.58	10534.32	7354.32	127.48	851.70	125.55	503497.80	638168.45	8.22	
11102.00	78.53	45.50	10540.70	7360.70	148.80	873.32	146.82	503519.42	638189.72	6.59	
11134.00	78.67	48.21	10547.02	7367.02	171.74	894.77	169.71	503540.87	638212.61	8.31	
11166.00	78.09	51.23	10553.47	7373.47	195.69	915.03	193.62	503561.13	638236.52	9.42	
11198.00	78.02	55.32	10560.09	7380.09	220.82	933.75	218.70	503579.85	638261.60	12.51	
11229.00	77.72	58.71	10566.61	7386.61	246.28	950.24	244.12	503596.34	638287.02	10.73	
11260.00	77.52	61.41	10573.26	7393.26	272.55	965.35	270.36	503611.45	638313.26	8.53	
11292.00	77.02	65.11	10580.31	7400.31	300.45	979.40	298.23	503625.50	638341.13	11.39	
11324.00	77.67	68.62	10587.32	7407.32	329.18	991.66	326.93	503637.76	638369.83	10.89	
11356.00	79.51	72.54	10593.66	7413.66	358.78	1002.08	356.51	503648.18	638399.41	13.31	
11387.00	81.30	76.19	10598.83	7418.83	388.23	1010.32	385.94	503656.42	638428.84	12.97	
11419.00	83.90	78.80	10602.95	7422.95	419.22	1017.19	416.92	503663.29	638459.82	11.46	
11450.00	85.52	81.35	10605.81	7425.81	449.64	1022.50	447.32	503668.60	638490.22	9.72	
11481.00	86.85	83.66	10607.87	7427.87	480.31	1026.54	477.98	503672.64	638520.88	8.58	
11512.00	88.39	86.39	10609.16	7429.16	511.17	1029.22	508.84	503675.32	638551.74	10.10	
11608.00	88.67	86.40	10611.62	7431.62	606.96	1035.26	604.61	503681.36	638647.51	0.29	
11703.00	88.04	88.69	10614.35	7434.35	701.84	1039.33	699.48	503685.43	638742.38	2.50	
11798.00	89.44	90.13	10616.44	7436.44	796.81	1040.30	794.45	503686.40	638837.35	2.11	
11892.00	89.86	90.06	10617.01	7437.01	890.80	1040.15	888.45	503686.25	638931.35	0.45	

5D Survey Report

Survey Points: (Relative to Slot centre)(TVD relative to Drill Floor)											Comment
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)	
11986.00	89.16	89.60	10617.81	7437.81	984.80	1040.43	982.44	503686.53	639025.34	0.89	
12080.00	87.27	89.19	10620.74	7440.74	1078.75	1041.42	1076.39	503687.52	639119.29	2.06	
12174.00	87.76	89.04	10624.82	7444.82	1172.65	1042.87	1170.29	503688.97	639213.19	0.55	
12268.00	88.53	88.73	10627.86	7447.86	1266.59	1044.70	1264.22	503690.80	639307.12	0.88	
12362.00	89.02	90.53	10629.87	7449.87	1360.56	1045.30	1358.19	503691.40	639401.09	1.98	
12457.00	89.86	90.91	10630.80	7450.80	1455.54	1044.11	1453.18	503690.21	639496.08	0.97	
12552.00	90.84	90.69	10630.22	7450.22	1550.53	1042.78	1548.17	503688.88	639591.07	1.06	
12646.00	89.65	90.42	10629.82	7449.82	1644.52	1041.87	1642.16	503687.97	639685.06	1.30	
12740.00	90.07	89.70	10630.05	7450.05	1738.52	1041.77	1736.16	503687.87	639779.06	0.89	
12835.00	91.19	89.26	10629.00	7449.00	1833.51	1042.64	1831.15	503688.74	639874.05	1.27	
12930.00	90.63	90.41	10627.49	7447.49	1928.49	1042.91	1926.13	503689.01	639969.03	1.35	
13024.00	89.37	91.75	10627.49	7447.49	2022.47	1041.14	2020.11	503687.24	640063.01	1.96	
13118.00	89.51	91.18	10628.41	7448.41	2116.43	1038.74	2114.08	503684.84	640156.98	0.62	
13213.00	90.77	90.50	10628.18	7448.18	2211.41	1037.34	2209.06	503683.44	640251.96	1.51	
13309.00	91.26	89.79	10626.48	7446.48	2307.39	1037.10	2305.05	503683.20	640347.95	0.90	
13404.00	90.91	89.08	10624.68	7444.68	2402.37	1038.04	2400.02	503684.14	640442.92	0.83	
13499.00	89.93	89.95	10623.98	7443.98	2497.37	1038.84	2495.02	503684.94	640537.92	1.38	
13593.00	90.49	90.15	10623.64	7443.64	2591.37	1038.76	2589.01	503684.86	640631.91	0.63	
13688.00	89.65	90.10	10623.52	7443.52	2686.36	1038.55	2684.01	503684.65	640726.91	0.89	
13782.00	88.81	91.90	10624.79	7444.79	2780.33	1036.91	2777.99	503683.01	640820.89	2.11	
13877.00	89.79	92.22	10625.95	7445.95	2875.25	1033.50	2872.92	503679.60	640915.82	1.09	
13972.00	91.19	91.62	10625.13	7445.13	2970.19	1030.31	2967.86	503676.41	641010.76	1.60	
14066.00	91.75	91.46	10622.72	7442.72	3064.12	1027.79	3061.79	503673.89	641104.69	0.62	
14161.00	89.79	91.87	10621.45	7441.45	3159.06	1025.03	3156.74	503671.13	641199.64	2.11	
14256.00	89.37	91.09	10622.14	7442.14	3254.01	1022.57	3251.70	503668.67	641294.60	0.93	
14350.00	87.48	91.21	10624.73	7444.73	3347.95	1020.69	3345.64	503666.79	641388.54	2.01	
14444.00	87.48	90.55	10628.86	7448.86	3441.85	1019.25	3439.54	503665.35	641482.44	0.70	
14539.00	86.08	90.62	10634.19	7454.19	3536.69	1018.28	3534.38	503664.38	641577.28	1.48	
14633.00	86.01	89.90	10640.68	7460.68	3630.46	1017.85	3628.16	503663.95	641671.06	0.77	
14728.00	88.67	89.14	10645.09	7465.09	3725.35	1018.65	3723.04	503664.75	641765.94	2.91	
14822.00	89.23	88.48	10646.81	7466.81	3819.31	1020.60	3817.01	503666.70	641859.91	0.92	
14917.00	90.14	87.73	10647.33	7467.33	3914.26	1023.74	3911.95	503669.84	641954.85	1.24	
15011.00	89.58	86.87	10647.56	7467.56	4008.17	1028.17	4005.85	503674.27	642048.75	1.09	
15106.00	90.35	85.51	10647.62	7467.62	4102.97	1034.48	4100.63	503680.58	642143.53	1.65	
15201.00	92.66	86.31	10645.12	7465.12	4197.70	1041.26	4195.35	503687.36	642238.25	2.57	
15296.00	92.94	88.02	10640.48	7460.48	4292.48	1045.95	4290.12	503692.05	642333.02	1.82	
15390.00	91.05	89.68	10637.21	7457.21	4386.40	1047.83	4384.03	503693.93	642426.93	2.68	
15485.00	90.21	91.14	10636.17	7456.17	4481.39	1047.15	4479.02	503693.25	642521.92	1.77	
15579.00	90.21	90.65	10635.82	7455.82	4575.37	1045.68	4573.01	503691.78	642615.91	0.52	
15673.00	90.42	90.44	10635.31	7455.31	4669.36	1044.79	4667.01	503690.89	642709.91	0.32	
15768.00	90.56	90.35	10634.49	7454.49	4764.36	1044.14	4762.00	503690.24	642804.90	0.18	
15863.00	90.42	90.12	10633.68	7453.68	4859.35	1043.75	4856.99	503689.85	642899.89	0.28	
15957.00	89.93	89.44	10633.39	7453.39	4953.35	1044.11	4950.99	503690.21	642993.89	0.89	
16051.00	90.56	88.63	10632.99	7452.99	5047.34	1045.69	5044.98	503691.79	643087.88	1.09	
16146.00	91.47	87.25	10631.31	7451.31	5142.27	1049.10	5139.90	503695.20	643182.80	1.74	
16240.00	91.05	87.83	10629.24	7449.24	5236.16	1053.14	5233.79	503699.24	643276.69	0.76	
16335.00	91.40	89.21	10627.21	7447.21	5331.11	1055.59	5328.73	503701.69	643371.63	1.50	
16429.00	89.44	90.66	10626.52	7446.52	5425.10	1055.70	5422.72	503701.80	643465.62	2.59	
16523.00	88.39	90.63	10628.30	7448.30	5519.08	1054.64	5516.70	503700.74	643559.60	1.12	
16617.00	89.30	89.88	10630.20	7450.20	5613.05	1054.22	5610.68	503700.32	643653.58	1.25	
16710.00	88.32	90.41	10632.13	7452.13	5706.03	1053.99	5703.65	503700.09	643746.55	1.20	
16840.00	87.34	89.26	10637.05	7457.05	5835.93	1054.36	5833.56	503700.46	643876.46	1.16	
16935.00	86.08	88.78	10642.50	7462.50	5930.77	1055.98	5928.38	503702.08	643971.28	1.42	
17029.00	86.85	89.64	10648.30	7468.30	6024.58	1057.27	6022.20	503703.37	644065.10	1.23	
17123.00	87.13	90.31	10653.23	7473.23	6118.45	1057.32	6116.06	503703.42	644158.96	0.77	
17217.00	88.32	90.25	10656.96	7476.96	6212.37	1056.86	6209.99	503702.96	644252.89	1.27	
17312.00	91.26	90.82	10657.31	7477.31	6307.35	1055.97	6304.97	503702.07	644347.87	3.15	
17407.00	90.21	91.15	10656.09	7476.09	6402.32	1054.34	6399.95	503700.44	644442.85	1.16	

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
17501.00	89.72	91.50	10656.15	7476.15	6496.29	1052.16	6493.92	503698.26	644536.82	0.64	
17596.00	88.88	90.79	10657.31	7477.31	6591.26	1050.26	6588.90	503696.36	644631.80	1.16	
17691.00	90.07	90.39	10658.18	7478.18	6686.25	1049.29	6683.89	503695.39	644726.79	1.32	
17786.00	89.72	90.34	10658.36	7478.36	6781.24	1048.68	6778.88	503694.78	644821.78	0.37	
17881.00	89.51	90.85	10659.00	7479.00	6876.23	1047.69	6873.88	503693.79	644916.78	0.58	
17976.00	89.65	91.29	10659.69	7479.69	6971.21	1045.92	6968.86	503692.02	645011.76	0.49	
18070.00	87.90	90.31	10661.70	7481.70	7065.17	1044.61	7062.82	503690.71	645105.72	2.13	
18165.00	90.14	90.25	10663.33	7483.33	7160.15	1044.14	7157.80	503690.24	645200.70	2.36	
18260.00	90.91	90.42	10662.46	7482.46	7255.14	1043.59	7252.79	503689.69	645295.69	0.83	
18354.00	91.26	90.67	10660.68	7480.68	7349.12	1042.70	7346.77	503688.80	645389.67	0.46	
18449.00	90.98	90.97	10658.82	7478.82	7444.09	1041.34	7441.74	503687.44	645484.64	0.43	
18544.00	91.05	91.18	10657.14	7477.14	7539.05	1039.55	7536.71	503685.65	645579.61	0.23	
18638.00	91.33	91.88	10655.18	7475.18	7632.99	1037.04	7630.66	503683.14	645673.56	0.80	
18732.00	92.59	93.03	10651.97	7471.97	7726.84	1033.02	7724.51	503679.12	645767.41	1.81	
18827.00	91.12	91.40	10648.89	7468.89	7821.70	1029.35	7819.39	503675.45	645862.29	2.31	
18922.00	89.86	90.25	10648.08	7468.08	7916.68	1027.98	7914.37	503674.08	645957.27	1.80	
19016.00	89.58	90.07	10648.54	7468.54	8010.68	1027.72	8008.37	503673.82	646051.27	0.35	
19110.00	88.53	88.39	10650.09	7470.09	8104.66	1028.98	8102.34	503675.08	646145.24	2.11	
19205.00	90.56	87.53	10650.85	7470.85	8199.59	1032.37	8197.27	503678.47	646240.17	2.32	
19300.00	89.79	88.86	10650.55	7470.55	8294.55	1035.36	8292.22	503681.46	646335.12	1.62	
19394.00	89.58	88.89	10651.07	7471.07	8388.53	1037.20	8386.20	503683.30	646429.10	0.23	
19489.00	89.09	88.91	10652.17	7472.17	8483.51	1039.03	8481.18	503685.13	646524.08	0.52	
19584.00	90.00	88.66	10652.93	7472.93	8578.49	1041.04	8576.15	503687.14	646619.05	0.99	
19678.00	88.81	88.75	10653.90	7473.90	8672.47	1043.17	8670.12	503689.27	646713.02	1.27	
19773.00	89.58	89.23	10655.24	7475.24	8767.45	1044.84	8765.10	503690.94	646808.00	0.96	
19868.00	92.31	91.17	10653.67	7473.67	8862.42	1044.51	8860.07	503690.61	646902.97	3.53	
19962.00	92.80	91.64	10649.48	7469.48	8956.29	1042.21	8953.95	503688.31	646996.85	0.72	
20057.00	92.45	91.25	10645.13	7465.13	9051.15	1039.81	9048.82	503685.91	647091.72	0.55	
20152.00	90.98	90.47	10642.29	7462.29	9146.09	1038.39	9143.76	503684.49	647186.66	1.75	
20246.00	91.12	90.57	10640.57	7460.57	9240.07	1037.54	9237.74	503683.64	647280.64	0.18	
20341.00	89.09	90.76	10640.39	7460.39	9335.06	1036.43	9332.73	503682.53	647375.63	2.15	
20435.00	89.93	91.30	10641.20	7461.20	9429.03	1034.74	9426.71	503680.84	647469.61	1.06	
20530.00	89.30	92.57	10641.83	7461.83	9523.97	1031.54	9521.65	503677.64	647564.55	1.49	
20624.00	88.11	94.64	10643.96	7463.96	9617.74	1025.63	9615.43	503671.73	647658.33	2.54	
20719.00	85.65	96.26	10649.13	7469.13	9712.14	1016.62	9709.85	503662.72	647752.75	3.10	
20813.00	80.57	97.54	10660.40	7480.40	9804.72	1005.42	9802.47	503651.52	647845.37	5.57	
20907.00	73.97	95.48	10681.11	7501.11	9895.74	995.01	9893.51	503641.11	647936.41	7.34	
21001.00	65.14	90.67	10713.93	7533.93	9983.56	990.18	9981.34	503636.28	648024.24	10.54	Last WFT SVY
21076.00	65.14	90.67	10745.46	7565.46	10051.60	989.39	10049.38	503635.49	648092.28	0.00	PTB

Formation Points: (Relative to Slot centre)(TVD relative to Drill Floor)									
Name	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)
Rustler	180.01	0.69	353.18	180.00	-3000.00	1.92	0.06	502648.02	638042.96
Salado	545.08	1.63	316.45	545.00	-2635.00	7.12	-2.88	502653.22	638040.02
Base Salt	3261.80	0.51	167.83	3260.00	80.00	42.45	-81.64	502688.55	637961.26
Delaware/Lamar	3526.84	1.41	238.67	3525.00	345.00	39.52	-82.92	502685.62	637959.98
Bell Canyon	3571.85	1.41	239.54	3570.00	390.00	38.96	-83.87	502685.06	637959.03
Cherry Canyon	4451.55	1.94	31.04	4448.00	1268.00	63.97	-114.06	502710.07	637928.84
Base Manzanita	4639.59	0.74	97.64	4636.00	1456.00	65.42	-110.80	502711.52	637932.10
Brushy Canyon	6008.62	0.13	213.31	6005.00	2825.00	69.18	-112.00	502715.28	637930.90
Basal Brushy Canyon	7084.66	1.01	215.36	7081.00	3901.00	63.77	-118.45	502709.87	637924.45
Base Brushy Canyon Sands	7340.71	1.32	213.37	7337.00	4157.00	59.18	-121.09	502705.28	637921.81
Bone Spring	7366.72	1.32	214.41	7363.00	4183.00	58.68	-121.42	502704.78	637921.48
Avalon Sand	7470.75	1.37	221.90	7467.00	4287.00	56.72	-122.95	502702.82	637919.95

5D Survey Report

Formation Points: (Relative to Slot centre)(TVD relative to Drill Floor)									
Name	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)
Lower Avalon Shale	7959.83	0.86	221.01	7956.00	4776.00	51.44	-129.69	502697.54	637913.21
First Bone Spring Sand	8380.90	1.02	293.05	8377.00	5197.00	48.88	-136.33	502694.98	637906.57
Second Bone Spring Limestone	8848.95	0.27	267.19	8845.00	5665.00	52.36	-142.15	502698.46	637900.75
Second Bone Spring Sand	9116.01	1.83	239.88	9112.00	5932.00	51.05	-146.94	502697.15	637895.96
Third Bone Spring Limestone	9537.14	1.08	217.53	9533.00	6353.00	44.66	-154.76	502690.76	637888.14
Third Bone Spring Sand	10383.16	49.37	12.95	10311.00	7131.00	272.86	-130.26	502918.96	637912.64
Third Bone Spring RH Sand	11381.64	80.99	75.56	10598.00	7418.00	1009.02	380.80	503655.12	638423.70
Wolfcamp	20968.36	68.19	92.40	10701.00	7521.00	990.99	9951.39	503637.09	647994.29