



LEAM Drilling Systems, LLC. 2027A Airport Rd., Conroe, TX 77301

Survey Report

MINIMUM CURVATURE CALCULATION

Operator: Pioneer Natural Resources

Well Name: University 7-43 38H

Location: Andrews County, TX

Start Date: 4/23/2016

End Date: 6/6/2016

Direction: 159.61

Survey Number	MD ft	INC °	AZM °	TVD ft	N-S ft	E-W ft	SECT ft	DLS °/100'	A/B ft	L/R ft
TIE IN	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
1	222	0.40	72.90	222.00	0.23	0.74	0.04	0.18	OTL	OTL
2	312	0.60	68.70	311.99	0.49	1.48	0.06	0.23	OTL	0.5R
3	403	0.80	66.30	402.99	0.92	2.51	0.01	0.22	OTL	0.5R
4	493	0.70	68.60	492.98	1.37	3.59	-0.04	0.12	OTL	1.0R
5	583	0.70	90.80	582.97	1.57	4.65	0.15	0.30	OTL	1.0R
6	678	1.00	93.50	677.96	1.51	6.06	0.70	0.32	1.0A	2.0R
7	768	0.80	109.80	767.95	1.25	7.44	1.42	0.36	1.5A	2.5R
8	858	0.50	114.30	857.95	0.87	8.39	2.10	0.34	2.0A	3.0R
9	952	0.50	115.80	951.94	0.52	9.13	2.69	0.01	2.7A	4.5R
10	1046	0.70	118.90	1045.94	0.07	10.00	3.42	0.22	3.4A	5.0R
11	1140	0.60	114.50	1139.93	-0.41	10.95	4.20	0.12	4.2A	6.5R
12	1234	0.50	133.10	1233.93	-0.90	11.70	4.92	0.22	5.0A	8.0R
13	1327	0.30	129.50	1326.92	-1.33	12.18	5.49	0.22	5.5A	7.0R
14	1421	0.30	121.60	1420.92	-1.61	12.58	5.90	0.04	5.9A	7.5R
15	1514	0.10	187.10	1513.92	-1.82	12.78	6.16	0.29	6.1A	8.0R
16	1608	0.40	154.30	1607.92	-2.20	12.91	6.56	0.34	6.5A	8.3R
17	1702	0.20	183.00	1701.92	-2.66	13.05	7.04	0.26	7.0A	8.0R
18	1796	0.30	175.90	1795.92	-3.07	13.05	7.43	0.11	7.4A	9.0R
19	1890	0.20	182.70	1889.92	-3.48	13.06	7.81	0.11	7.8A	9.0R
20	1952	0.10	257.50	1951.92	-3.60	13.01	7.90	0.32	7.9A	9.0R
21	2077	0.40	283.70	2076.92	-3.52	12.48	7.64	0.25	7.5A	9.4R
22	2171	0.40	281.30	2170.92	-3.38	11.84	7.29	0.02	7.0A	9.0R
23	2265	0.20	277.50	2264.91	-3.29	11.35	7.04	0.21	7.0A	9.0R
24	2359	0.50	273.40	2358.91	-3.24	10.78	6.80	0.32	7.0A	8.5R
25	2453	0.40	262.40	2452.91	-3.26	10.04	6.56	0.14	6.5A	8.0R
26	2546	0.40	273.70	2545.91	-3.29	9.40	6.35	0.08	6.3A	8.0R
27	2641	1.10	66.60	2640.90	-2.90	9.91	6.17	1.54	6.0A	8.0R
28	2735	1.80	75.80	2734.87	-2.18	12.16	6.28	0.78	6.1A	8.2R
29	2828	2.80	55.10	2827.80	-0.52	15.44	5.87	1.38	5.8A	8.1R
30	2922	3.60	52.20	2921.65	2.60	19.66	4.41	0.87	3.0A	7.8R
31	3016	3.40	56.50	3015.47	5.95	24.31	2.90	0.35	2.8A	7.2R
32	3110	4.50	53.30	3109.25	9.69	29.60	1.23	1.19	1.5A	7.8R
33	3204	6.40	54.90	3202.82	14.91	36.84	-1.14	2.03	OTL	6.6R
34	3297	6.70	58.20	3295.21	20.74	45.69	-3.53	0.52	1.5A	6.7R
35	3391	7.80	59.20	3388.46	26.90	55.83	-5.76	1.18	2.0A	6.8R
36	3485	8.60	61.20	3481.50	33.55	67.47	-7.94	0.90	2.2A	7.3R
37	3578	10.00	60.50	3573.27	40.88	80.59	-10.24	1.51	1.6A	8.0R
38	3672	11.00	59.80	3665.70	49.41	95.45	-13.06	1.07	1.8A	8.5R

39	3766	11.30	60.30	3757.93	58.48	111.20	-16.08	0.34	1.2A	9.5R
40	3860	11.80	55.20	3850.02	68.53	127.09	-19.96	1.21	1.8A	9.3R
41	3953	12.40	53.10	3940.96	79.95	142.88	-25.16	0.80	3.0A	7.5R
42	4047	12.30	52.60	4032.78	92.09	158.91	-30.96	0.16	6.0A	5.5R
43	4141	12.70	53.30	4124.55	104.35	175.15	-36.79	0.46	6.5A	4.0R
44	4234	12.50	54.10	4215.31	116.36	191.49	-42.35	0.29	10.0A	2.0R
45	4328	12.40	53.30	4307.10	128.36	207.83	-47.91	0.21	12.0A	1.0R
46	4422	12.60	53.00	4398.88	140.56	224.11	-53.67	0.22	14.2A	1.5L
47	4515	13.00	54.10	4489.56	152.80	240.68	-59.37	0.50	16.8A	3.4L
48	4609	12.60	55.50	4581.23	164.81	257.70	-64.70	0.54	19.0A	4.2L
49	4703	12.10	55.90	4673.05	176.14	274.30	-69.53	0.54	20.0A	4.5L
50	4796	11.60	55.40	4764.07	186.91	290.07	-74.14	0.55	21.0A	5.6L
51	4890	11.10	57.20	4856.23	197.18	305.46	-78.40	0.65	21.0A	5.9L
52	4984	10.80	57.00	4948.52	206.88	320.45	-82.27	0.32	22.0A	6.4L
53	5077	10.50	55.60	5039.92	216.41	334.75	-86.22	0.43	23.0A	7.7L
54	5171	10.60	55.00	5132.33	226.21	348.90	-90.48	0.16	24.0A	8.0L
55	5265	10.60	55.60	5224.73	236.05	363.11	-94.75	0.12	25.0A	8.7L
56	5359	10.80	57.10	5317.09	245.72	377.64	-98.75	0.36	25.5A	10.0L
57	5453	10.80	57.70	5409.43	255.21	392.48	-102.48	0.12	25.7A	10.0L
58	5547	10.30	58.00	5501.84	264.37	407.05	-105.98	0.54	25.5A	10.5L
59	5640	9.90	59.20	5593.40	272.87	420.97	-109.10	0.49	25.0A	10.0L
60	5734	9.20	58.10	5686.09	280.98	434.29	-112.06	0.77	24.5A	10.0L
61	5828	9.00	59.30	5778.91	288.70	446.99	-114.88	0.29	23.7A	10.1L
62	5922	8.80	59.60	5871.78	296.09	459.51	-117.44	0.22	23.0A	9.0L
63	5985	8.90	60.50	5934.03	300.93	467.91	-119.05	0.27	22.0A	9.0L
64	6121	8.80	61.10	6068.41	311.14	486.18	-122.26	0.10	20.0A	8.0L
65	6215	10.30	61.40	6161.10	318.64	499.85	-124.52	1.60	19.0A	7.6L
66	6309	10.70	63.40	6253.53	326.57	515.03	-126.67	0.58	18.0A	6.3L
67	6402	10.60	63.90	6344.93	334.20	530.43	-128.45	0.15	16.5A	4.5L
68	6496	10.00	64.60	6437.41	341.50	545.57	-130.02	0.65	14.3A	3.3L
69	6590	11.30	59.50	6529.79	349.68	560.88	-132.35	1.71	13.5A	1.7L
70	6683	10.60	59.50	6621.10	358.64	576.10	-135.45	0.75	12.9A	1.0L
71	6777	9.90	60.50	6713.60	367.01	590.58	-138.25	0.77	12.5A	0.5L
72	6871	11.30	55.40	6805.99	376.22	605.20	-141.79	1.79	12.3A	1.0L
73	6964	11.00	56.30	6897.24	386.32	620.08	-146.07	0.37	13.2A	1.0L
74	7058	10.10	56.20	6989.65	395.88	634.39	-150.05	0.96	13.6A	1.6L
75	7152	8.90	54.90	7082.36	404.64	647.19	-153.81	1.30	14.0A	2.7L
76	7245	8.50	57.90	7174.29	412.43	658.90	-157.03	0.65	13.5A	3.4L
77	7339	9.80	60.70	7267.09	420.04	671.76	-159.68	1.46	13.0A	2.4L
78	7433	8.40	61.80	7359.91	427.20	684.79	-161.85	1.50	11.5A	2.0L
79	7527	9.10	54.00	7452.81	434.81	696.85	-164.78	1.46	0.5B	OTL
80	7621	9.90	54.00	7545.52	443.93	709.40	-168.96	0.85	1.0A	1.5L
81	7714	9.80	55.40	7637.15	453.13	722.39	-173.05	0.28	2.3A	2.5L
82	7808	11.30	58.10	7729.56	462.54	736.79	-176.85	1.68	3.0A	3.0L
83	7902	9.30	59.10	7822.04	471.31	751.13	-180.08	2.14	3.3A	3.0L
84	7995	8.30	58.80	7913.95	478.64	763.32	-182.71	1.08	3.0A	3.4L
85	8089	9.10	60.70	8006.87	485.79	775.60	-185.13	0.90	3.0A	3.0L
86	8183	11.30	60.20	8099.37	494.01	790.08	-187.79	2.34	2.5A	2.5L
87	8276	9.30	60.00	8190.87	502.30	804.50	-190.53	2.15	2.5A	2.9L
88	8370	9.10	56.20	8283.66	510.23	817.25	-193.52	0.68	2.8A	2.3L
89	8464	9.30	57.60	8376.45	518.43	829.84	-196.83	0.32	3.0A	2.8L
90	8557	10.20	60.20	8468.11	526.55	843.33	-199.74	1.08	3.3A	3.2L
91	8651	9.60	62.70	8560.71	534.28	857.52	-202.04	0.79	2.5A	2.0L
92	8745	9.20	58.80	8653.45	541.77	870.91	-204.39	0.80	2.3A	2.0L
93	8839	7.20	59.10	8746.48	548.69	882.39	-206.88	2.13	1.7A	2.0L
94	8950	8.00	79.45	8856.53	553.68	895.96	-206.83	2.51	7.6A	7.0R

95	9044	18.20	106.25	8948.03	550.76	916.55	-196.91	12.36	12.0A	14.0R
96	9137	22.70	117.49	9035.18	538.40	946.44	-174.92	6.40	21.9A	2.6R
97	9231	27.30	146.04	9120.66	512.04	974.69	-140.37	13.59	32.0A	6.0L
98	9325	33.40	158.33	9201.82	470.03	996.33	-93.45	9.23	39.5A	5.0L
99	9418	41.50	157.16	9275.59	417.76	1017.78	-36.99	8.74	42.0A	3.0L
100	9512	50.60	158.06	9340.76	355.24	1043.49	30.58	9.71	47.0A	4.0L
101	9606	56.50	164.90	9396.63	283.60	1067.31	106.03	8.58	52.0A	2.0L
102	9700	68.40	167.00	9440.03	202.88	1087.42	188.70	12.81	45.0A	3.0R
103	9793	79.30	166.75	9465.86	116.02	1107.68	277.18	11.72	21.5A	8.5R
104	9887	88.60	164.61	9475.75	25.55	1130.79	370.03	10.15	19.4A	9.1R
105	9981	89.10	166.02	9477.64	-65.36	1154.61	463.54	1.59	16.5A	8.3R
106	10091	91.10	165.73	9477.45	-172.03	1181.46	572.88	1.84	15.3A	9.8R
107	10185	91.40	166.09	9475.40	-263.18	1204.33	666.29	0.50	16.2A	9.4R
108	10279	91.30	167.25	9473.18	-354.62	1226.00	759.55	1.24	17.2A	10.3R
109	10373	91.30	167.45	9471.05	-446.31	1246.58	852.67	0.21	18.2A	12.4R
110	10466	91.30	165.86	9468.94	-536.77	1268.04	944.94	1.71	19.1A	13.2R
111	10560	91.30	165.50	9466.81	-627.83	1291.28	1038.39	0.38	20.0A	12.5R
112	10654	91.40	165.16	9464.59	-718.74	1315.08	1131.89	0.38	21.1A	13.5R
113	10747	91.10	165.38	9462.57	-808.66	1338.72	1224.42	0.40	22.0A	12.5R
114	10841	90.30	166.12	9461.42	-899.76	1361.86	1317.87	1.16	22.0A	12.0R
115	10934	90.30	167.18	9460.93	-990.24	1383.33	1410.16	1.14	21.3A	13.3R
116	11028	90.10	166.74	9460.60	-1081.82	1404.54	1503.39	0.51	20.0A	15.0R
117	11122	90.20	165.30	9460.36	-1173.03	1427.25	1596.80	1.54	19.5A	15.0R
118	11216	89.50	165.04	9460.60	-1263.90	1451.31	1690.36	0.79	18.0A	14.0R
119	11310	90.50	165.56	9460.60	-1354.82	1475.16	1783.89	1.20	17.0A	12.9R
120	11403	90.60	165.06	9459.71	-1444.78	1498.75	1876.43	0.55	16.7A	12.1R
121	11497	91.40	164.20	9458.07	-1535.40	1523.66	1970.05	1.25	17.0A	9.8R
122	11591	91.30	163.64	9455.85	-1625.70	1549.68	2063.76	0.61	18.0A	6.7R
123	11684	91.30	165.02	9453.74	-1715.22	1574.80	2156.42	1.48	19.0A	4.0R
124	11778	91.40	164.48	9451.53	-1805.88	1599.51	2250.01	0.58	20.0A	2.0R
125	11872	91.30	165.40	9449.31	-1896.63	1623.93	2343.58	0.98	21.0A	OTL
126	11966	91.30	164.92	9447.18	-1987.47	1648.00	2437.12	0.51	22.0A	0.6L
127	12060	90.90	164.75	9445.38	-2078.18	1672.59	2530.71	0.46	22.7A	2.5L
128	12153	90.40	165.13	9444.32	-2167.98	1696.75	2623.30	0.68	22.5A	4.0L
129	12247	90.20	165.07	9443.83	-2258.81	1720.92	2716.87	0.22	22.0A	5.7L
130	12341	90.20	165.39	9443.50	-2349.71	1744.88	2810.41	0.34	21.0A	6.9L
131	12434	90.30	165.62	9443.10	-2439.75	1768.16	2902.92	0.27	20.4A	7.4L
132	12528	90.20	165.60	9442.69	-2530.80	1791.52	2996.40	0.11	19.6A	8.0L
133	12622	90.90	164.90	9441.78	-2621.69	1815.45	3089.94	1.05	19.4A	9.0L
134	12716	91.30	164.65	9439.98	-2712.38	1840.13	3183.55	0.50	20.0A	10.3L
135	12809	91.60	167.39	9437.63	-2802.58	1862.59	3275.93	2.96	21.2A	10.0L
136	12903	90.20	168.53	9436.15	-2894.50	1882.20	3368.91	1.92	21.5A	6.7L
137	12997	91.20	169.16	9435.00	-2986.72	1900.38	3461.69	1.26	21.5A	1.9L
138	13090	91.10	167.55	9433.13	-3077.78	1919.15	3553.58	1.73	22.1A	2.0R
139	13184	90.90	165.96	9431.49	-3169.26	1940.68	3646.84	1.70	22.6A	3.5R
140	13278	91.60	166.57	9429.44	-3260.55	1962.99	3740.18	0.99	23.5A	4.2R
141	13371	91.20	166.67	9427.17	-3351.00	1984.51	3832.46	0.44	24.6A	5.3R
142	13465	91.50	164.24	9424.96	-3441.96	2008.11	3925.94	2.60	25.6A	4.5R
143	13559	91.30	165.85	9422.66	-3532.74	2032.36	4019.48	1.73	26.8A	3.1R
144	13653	90.70	167.86	9421.02	-3624.26	2053.73	4112.71	2.23	27.2A	4.6R
145	13747	92.10	169.06	9418.72	-3716.33	2072.53	4205.56	1.96	28.4A	8.8R
146	13840	90.20	165.29	9416.85	-3806.97	2093.16	4297.71	4.54	29.0A	10.8R
147	13934	91.60	164.40	9415.38	-3897.69	2117.73	4391.31	1.76	29.4A	8.8R
148	14028	91.80	165.20	9412.59	-3988.36	2142.37	4484.88	0.88	31.0A	7.2R
149	14122	91.40	164.99	9409.96	-4079.16	2166.54	4578.41	0.48	32.5A	5.7R
150	14215	91.40	162.70	9407.69	-4168.45	2192.40	4671.12	2.46	33.5A	2.5R

151	14309	92.20	166.48	9404.74	-4259.01	2217.37	4764.70	4.11	36.0A	OTL
152	14403	90.80	168.91	9402.28	-4350.81	2237.39	4857.73	2.98	38.0A	3.2R
153	14496	90.10	169.63	9401.55	-4442.18	2254.70	4949.41	1.08	38.7A	8.8R
154	14590	89.40	167.72	9401.96	-4534.35	2273.16	5042.23	2.16	38.0A	13.0R
155	14684	89.90	166.31	9402.53	-4625.94	2294.28	5135.44	1.59	37.3A	15.0R
156	14778	89.50	165.64	9403.02	-4717.14	2317.06	5228.86	0.83	36.7A	14.6R
157	14871	89.80	166.63	9403.59	-4807.42	2339.35	5321.25	1.11	35.9A	15.0R
158	14965	90.90	167.59	9403.02	-4899.05	2360.31	5414.44	1.55	36.30	16.6R
159	15059	90.20	165.95	9402.12	-4990.55	2381.83	5507.70	1.90	37.0A	18.0R
160	15152	89.30	164.33	9402.52	-5080.43	2405.68	5600.26	1.99	36.5A	16.6R
161	15246	89.50	163.15	9403.51	-5170.67	2431.99	5694.01	1.27	35.3A	13.4R
162	15340	89.50	163.73	9404.33	-5260.76	2458.78	5787.80	0.62	34.0A	9.0R
163	15433	89.30	163.73	9405.30	-5350.03	2484.84	5880.55	0.22	33.0A	5.8R
164	15527	90.20	166.51	9405.71	-5440.87	2508.97	5974.11	3.11	32.3A	4.2R
165	15621	90.50	167.80	9405.14	-5532.51	2529.87	6067.29	1.41	32.9A	6.7R
166	15714	90.60	169.39	9404.24	-5623.67	2548.26	6159.14	1.71	33.6A	11.7R
167	15808	91.50	171.15	9402.52	-5716.30	2564.14	6251.50	2.10	35.2A	18.9R
168	15902	91.00	168.72	9400.47	-5808.82	2580.57	6343.95	2.64	37.0A	25.4R
169	15995	90.10	166.55	9399.58	-5899.65	2600.48	6436.03	2.53	37.7A	28.2R
170	16089	89.50	163.67	9399.90	-5990.49	2624.63	6529.58	3.13	37.2A	26.7R
171	16183	91.20	160.93	9399.33	-6080.02	2653.20	6623.47	3.43	37.6A	20.6R
172	16277	91.50	162.13	9397.12	-6169.16	2682.98	6717.38	1.32	39.7A	13.5R
173	16370	91.30	163.96	9394.84	-6258.08	2710.09	6810.19	1.98	41.7A	9.0R
174	16464	91.40	165.75	9392.63	-6348.79	2734.64	6903.76	1.91	43.8A	7.0R
175	16558	91.10	165.17	9390.58	-6439.76	2758.23	6997.25	0.69	45.6A	6.5R
176	16652	90.40	164.16	9389.35	-6530.40	2783.09	7090.87	1.31	46.7A	4.6R
177	16745	90.20	161.59	9388.86	-6619.27	2810.47	7183.71	2.77	47.0A	0.5L
178	16839	90.20	162.10	9388.53	-6708.59	2839.76	7277.64	0.54	47.0A	7.4L
179	16933	90.50	165.68	9387.96	-6798.88	2865.84	7371.36	3.82	47.5A	10.5L
180	17027	90.10	167.04	9387.47	-6890.23	2888.00	7464.71	1.51	47.7A	9.8L
181	17121	90.70	166.62	9386.81	-6981.75	2909.42	7557.96	0.78	48.3A	8.3L
182	17215	90.40	167.74	9385.91	-7073.40	2930.28	7651.13	1.23	49.0A	6.3L
183	17308	90.30	167.22	9385.34	-7164.19	2950.44	7743.26	0.57	49.4A	3.7L
184	17402	90.60	166.27	9384.60	-7255.68	2971.99	7836.52	1.06	50.0A	2.2L
185	17496	89.80	165.67	9384.27	-7346.87	2994.78	7929.94	1.06	50.1A	2.0L
186	17589	89.10	165.29	9385.17	-7436.90	3018.09	8022.45	0.86	49.0A	2.7L
187	17683	89.40	166.96	9386.40	-7528.14	3040.63	8115.83	1.80	47.6A	2.3L
188	17777	89.80	164.70	9387.05	-7619.28	3063.64	8209.27	2.44	46.8A	2.6L
189	17871	89.90	160.91	9387.30	-7709.06	3091.42	8303.11	4.03	46.3A	7.6L
190	17965	90.20	161.12	9387.22	-7797.94	3122.00	8397.08	0.39	46.2A	15.7L
191	18058	91.00	164.66	9386.24	-7886.81	3149.36	8489.91	3.90	47.0A	20.6L
192	18152	90.30	163.24	9385.18	-7977.14	3175.35	8583.63	1.68	48.0A	23.8L
193	18245	90.90	166.73	9384.20	-8066.94	3199.43	8676.20	3.81	48.7A	24.9L
194	18339	90.80	169.44	9382.81	-8158.90	3218.84	8769.15	2.88	49.9A	21.8L
195	18432	89.00	169.41	9382.97	-8250.31	3235.90	8860.79	1.94	49.6A	16.5L
196	18526	89.50	166.74	9384.20	-8342.27	3255.32	8953.75	2.89	48.0A	12.6L
197	18620	89.40	165.55	9385.10	-8433.53	3277.83	9047.13	1.27	47.0A	12.4L
198	18713	90.20	166.90	9385.43	-8523.85	3299.98	9139.51	1.69	46.6A	11.8L
199	18807	90.20	168.25	9385.10	-8615.65	3320.20	9232.60	1.44	46.7A	9.0L
200	18901	90.40	170.13	9384.61	-8707.97	3337.83	9325.28	2.01	47.0A	3.5L
201	18994	89.60	168.73	9384.61	-8799.39	3354.89	9416.92	1.73	46.8A	2.0R
202	19088	91.30	167.67	9383.87	-8891.40	3374.11	9509.86	2.13	47.4A	5.3R
203	19182	90.50	168.45	9382.39	-8983.35	3393.55	9602.82	1.19	48.7A	9.4R
204	19276	90.10	167.90	9381.90	-9075.35	3412.82	9695.77	0.72	49.0A	12.7R
205	19369	90.30	166.32	9381.58	-9166.01	3433.56	9787.97	1.71	49.0A	14.7R
206	19463	90.20	166.48	9381.16	-9257.37	3455.66	9881.31	0.20	49.0A	15.0R

207	19557	90.30	166.10	9380.75	-9348.69	3477.94	9974.67	0.42	49.0A	15.7R
208	19651	90.20	166.23	9380.34	-9439.96	3500.42	10068.06	0.17	49.8A	15.9R
209	19744	89.80	165.01	9380.34	-9530.05	3523.52	10160.54	1.38	49.6A	16.0R
210	19767	89.90	164.81	9380.40	-9552.25	3529.51	10183.45	0.97	49.5A	15.4R
PTB	19795	89.90	164.81	9380.45	-9579.28	3536.84	10211.33	0.00		