

SURVEY REPORT



Job #: **160047**
 Well: **University JV 14-3H**
 Target Formation:
 County & State: **Andrews County, TX**

North Type: *Grid*
 Total Correction: *8.89°*
 Target TVD: *4476.00 ft*
 Vertical Section Azm: *166.56°*

SURVEY DATA

Date	No.	MD	INC	AZM	C.L	TVD	VS	N/-S	E/-W	DLS	BHA
8/23/16	0	0	0.00	0.00	0	0.00	0.00	0.00	0.00	0.00	Surface
8/23/16	1	169	0.20	208.30	169	169.00	0.22	-0.26	-0.14	0.12	Gyro
8/23/16	2	324	0.10	62.50	155	324.00	0.39	-0.44	-0.15	0.19	Gyro
8/23/16	3	476	0.20	156.70	152	476.00	0.62	-0.62	0.07	0.15	Gyro
8/23/16	4	573	0.60	120.60	97	573.00	1.14	-1.03	0.58	0.47	Gyro
8/23/16	5	760	0.90	137.20	187	759.98	3.10	-2.61	2.42	0.20	Gyro
8/23/16	6	949	0.80	165.90	189	948.96	5.71	-4.98	3.75	0.23	Gyro
8/23/16	7	1138	0.90	153.80	189	1137.94	8.48	-7.59	4.73	0.11	Gyro
8/23/16	8	1327	1.10	128.20	189	1326.91	11.35	-10.04	6.81	0.26	Gyro
8/23/16	9	1516	0.80	152.20	189	1515.89	14.05	-12.33	8.85	0.26	Gyro
8/23/16	10	1656	1.50	175.80	140	1655.86	16.81	-15.02	9.44	0.59	Gyro
8/23/16	11	1739	1.14	181.68	83	1738.84	18.67	-16.93	9.49	0.46	1
8/23/16	12	1834	1.49	184.14	95	1833.81	20.76	-19.11	9.38	0.37	1
8/23/16	13	1928	1.06	174.04	94	1927.79	22.79	-21.19	9.38	0.51	1
8/23/16	14	2023	0.97	173.16	95	2022.77	24.46	-22.86	9.57	0.10	1
8/23/16	15	2117	1.06	169.91	94	2116.76	26.12	-24.51	9.81	0.11	1
8/23/16	16	2212	0.88	161.38	95	2211.74	27.72	-26.07	10.20	0.24	1
8/23/16	17	2306	0.79	156.37	94	2305.73	29.08	-27.34	10.69	0.12	1
8/23/16	18	2496	0.88	138.88	190	2495.71	31.66	-29.64	12.17	0.14	1
8/23/16	19	2590	0.97	132.02	94	2589.70	32.96	-30.72	13.24	0.15	1
8/23/16	20	2684	0.97	138.88	94	2683.69	34.32	-31.85	14.35	0.12	1
8/23/16	21	2779	1.06	127.98	95	2778.67	35.72	-33.00	15.58	0.22	1
8/23/16	22	2873	0.62	121.21	94	2872.66	36.75	-33.80	16.70	0.48	1
8/24/16	23	2968	0.44	107.06	95	2967.66	37.30	-34.17	17.48	0.23	1
8/24/16	24	3062	0.26	107.15	94	3061.66	37.59	-34.34	18.03	0.19	1
8/24/16	25	3156	0.44	0.28	94	3155.66	37.35	-34.04	18.24	0.61	1
8/24/16	26	3250	0.79	355.62	94	3249.65	36.36	-33.03	18.19	0.38	1
8/24/16	27	3345	0.70	353.86	95	3344.64	35.14	-31.80	18.08	0.10	1
8/24/16	28	3439	0.88	354.83	94	3438.63	33.85	-30.51	17.95	0.19	1
8/24/16	29	3533	0.88	343.40	94	3532.62	32.42	-29.10	17.68	0.19	1
8/24/16	30	3627	0.88	346.04	94	3626.61	30.97	-27.71	17.30	0.04	1
8/24/16	31	3721	0.70	359.05	94	3720.60	29.69	-26.44	17.12	0.27	1
8/24/16	32	3815	0.26	160.85	94	3814.60	29.34	-26.06	17.18	1.01	1
8/24/16	33	3846	4.04	169.12	31	3845.57	30.50	-27.20	17.41	12.20	1
8/24/16	34	3878	8.88	167.36	32	3877.36	34.10	-30.72	18.16	15.14	1
8/24/16	35	3909	13.10	166.21	31	3907.79	40.01	-36.47	19.52	13.63	1
8/24/16	36	3941	16.00	164.19	32	3938.76	48.04	-44.24	21.59	9.20	1
8/24/16	37	3972	18.73	164.37	31	3968.34	57.29	-53.14	24.09	8.81	1
8/24/16	38	4003	21.54	164.10	31	3997.44	67.95	-63.41	26.99	9.07	1
8/24/16	39	4035	24.53	163.05	32	4026.89	80.45	-75.42	30.54	9.43	1
8/24/16	40	4066	25.41	161.91	31	4054.99	93.50	-87.90	34.48	3.24	1
8/24/16	41	4097	25.50	161.03	31	4082.98	106.78	-100.53	38.72	1.25	1
8/24/16	42	4129	26.29	163.05	32	4111.77	120.71	-113.82	43.02	3.70	1
8/24/16	43	4161	29.11	165.51	32	4140.10	135.57	-128.14	47.04	9.51	1
8/24/16	44	4192	32.10	165.60	31	4166.78	151.34	-143.42	50.97	9.65	1
8/24/16	45	4223	36.32	164.98	31	4192.41	168.76	-160.28	55.40	13.66	1
8/24/16	46	4255	39.48	165.07	32	4217.66	188.41	-179.26	60.48	9.88	1
8/25/16	47	4286	41.59	164.90	31	4241.22	208.55	-198.72	65.70	6.82	1
8/25/16	48	4318	43.79	164.72	32	4264.74	230.24	-219.66	71.39	6.89	1
8/25/16	49	4349	45.99	164.81	31	4286.70	252.10	-240.77	77.13	7.10	1
8/25/16	50	4381	48.01	164.81	32	4308.52	275.49	-263.35	83.27	6.31	1
8/25/16	51	4412	50.65	166.30	31	4328.72	299.00	-286.12	89.13	9.26	1
8/25/16	52	4443	53.64	167.36	31	4347.74	323.47	-309.95	94.70	10.02	1
8/25/16	53	4475	56.81	168.41	32	4365.99	349.75	-335.65	100.21	10.27	1
8/25/16	54	4507	60.94	168.15	32	4382.53	377.12	-362.46	105.77	12.92	1
8/25/16	55	4538	64.72	167.53	31	4396.68	404.69	-389.42	111.58	12.32	1
8/25/16	56	4569	67.80	168.24	31	4409.16	433.05	-417.16	117.54	10.15	1
8/25/16	57	4601	69.82	168.06	32	4420.73	462.88	-446.36	123.66	6.33	1
8/25/16	58	4633	72.98	168.15	32	4430.93	493.19	-476.03	129.91	9.88	1
8/25/16	59	4664	77.38	168.24	31	4438.86	523.14	-505.36	136.04	14.20	1
8/25/16	60	4696	81.69	167.80	32	4444.67	554.59	-536.13	142.57	13.54	1

SURVEY DATA											
Date	No.	MD	INC	AZM	C.L	TVD	VS	N/-S	E/-W	DLS	BHA
8/25/16	61	4727	84.33	167.88	31	4448.44	585.35	-566.21	149.05	8.52	1
8/25/16	62	4759	87.67	168.06	32	4450.68	617.26	-597.43	155.71	10.45	1
8/25/16	63	4790	90.57	168.68	31	4451.15	648.23	-627.78	161.95	9.57	1
8/25/16	64	4853	92.51	168.24	63	4449.46	711.17	-689.49	174.55	3.16	1
8/26/16	65	4947	92.42	168.50	94	4445.42	805.04	-781.47	193.48	0.29	1
8/26/16	66	5041	91.10	166.83	94	4442.53	898.97	-873.25	213.56	2.26	1
8/26/16	67	5136	89.96	166.13	95	4441.65	993.97	-965.61	235.76	1.41	1
8/26/16	68	5230	90.84	165.86	94	4440.99	1087.96	-1056.82	258.51	0.98	1
8/26/16	69	5324	90.04	166.48	94	4440.27	1181.95	-1148.09	280.98	1.08	1
8/26/16	70	5419	89.16	166.48	95	4440.93	1276.95	-1240.45	303.19	0.93	1
8/26/16	71	5513	89.43	166.04	94	4442.09	1370.94	-1331.75	325.51	0.55	1
8/26/16	72	5607	89.69	166.30	94	4442.81	1464.93	-1423.03	347.98	0.39	1
8/26/16	73	5702	90.40	166.39	95	4442.74	1559.93	-1515.34	370.41	0.75	1
8/26/16	74	5796	88.72	166.39	94	4443.46	1653.93	-1606.69	392.53	1.79	1
8/26/16	75	5891	88.99	166.83	95	4445.36	1748.91	-1699.09	414.52	0.54	1
8/26/16	76	5985	89.52	166.48	94	4446.58	1842.90	-1790.55	436.22	0.68	1
8/26/16	77	6079	90.13	166.65	94	4446.87	1936.90	-1881.97	458.06	0.67	1
8/26/16	78	6174	90.66	167.18	95	4446.21	2031.89	-1974.50	479.56	0.79	1
8/26/16	79	6268	91.10	166.92	94	4444.77	2125.88	-2066.10	500.63	0.54	1
8/26/16	80	6362	89.25	166.65	94	4444.48	2219.87	-2157.61	522.12	1.99	1
8/26/16	81	6456	89.52	166.21	94	4445.49	2313.87	-2248.98	544.17	0.55	1
8/26/16	82	6551	90.04	166.30	95	4445.86	2408.86	-2341.26	566.74	0.56	1
8/26/16	83	6646	90.40	166.30	95	4445.49	2503.86	-2433.55	589.24	0.38	1
8/26/16	84	6740	90.57	165.34	94	4444.70	2597.85	-2524.68	612.27	1.04	1
8/26/16	85	6835	91.10	165.07	95	4443.31	2692.81	-2616.52	636.52	0.63	1
8/26/16	86	6929	89.08	165.77	94	4443.16	2786.79	-2707.49	660.18	2.27	1
8/27/16	87	7023	89.52	165.60	94	4444.31	2880.77	-2798.57	683.42	0.50	1
8/27/16	88	7117	89.96	165.77	94	4444.74	2974.76	-2889.65	706.67	0.50	1
8/27/16	89	7212	90.48	165.77	95	4444.37	3069.75	-2981.73	730.02	0.55	1
8/27/16	90	7305	89.52	166.74	93	4444.37	3162.75	-3072.07	752.11	1.47	1
8/27/16	91	7400	89.69	166.83	95	4445.03	3257.74	-3164.55	773.83	0.20	1
8/27/16	92	7495	90.22	167.01	95	4445.10	3352.74	-3257.08	795.33	0.59	1
8/27/16	93	7589	90.84	167.45	94	4444.23	3446.73	-3348.75	816.11	0.81	1
8/27/16	94	7682	89.96	166.57	93	4443.58	3539.72	-3439.37	837.01	1.34	1
8/27/16	95	7777	90.31	166.74	95	4443.36	3634.72	-3531.80	858.94	0.41	1
8/27/16	96	7871	90.75	166.48	94	4442.49	3728.72	-3623.24	880.71	0.54	1
8/27/16	97	7965	89.08	167.09	94	4442.63	3822.71	-3714.75	902.19	1.89	1
8/27/16	98	8059	89.43	167.53	94	4443.85	3916.70	-3806.45	922.84	0.60	1
8/27/16	99	8154	89.60	166.83	95	4444.66	4011.69	-3899.07	943.92	0.76	1
8/27/16	100	8248	90.04	167.01	94	4444.95	4105.68	-3990.64	965.19	0.51	1
8/27/16	101	8343	90.48	167.36	95	4444.52	4200.68	-4083.27	986.26	0.59	1
8/27/16	102	8437	90.84	167.45	94	4443.44	4294.66	-4175.00	1006.76	0.39	1
8/27/16	103	8532	91.36	167.53	95	4441.61	4389.63	-4267.73	1027.33	0.55	1
8/27/16	104	8626	89.96	167.01	94	4440.53	4483.61	-4359.41	1048.05	1.59	1
8/27/16	105	8719	90.13	167.36	93	4440.46	4576.61	-4450.09	1068.67	0.42	1
8/27/16	106	8814	90.66	167.53	95	4439.80	4671.59	-4542.82	1089.32	0.59	1
8/27/16	107	8908	89.34	166.30	94	4439.80	4765.59	-4634.37	1110.60	1.92	1
8/27/16	108	9000	89.69	166.39	92	4440.58	4857.58	-4723.77	1132.32	0.39	1
8/27/16	109	9091	90.13	166.21	91	4440.73	4948.58	-4812.18	1153.87	0.52	1
8/27/16	110	9183	90.75	166.13	92	4440.02	5040.58	-4901.51	1175.87	0.68	1
8/27/16	111	9275	89.25	165.95	92	4440.02	5132.57	-4990.79	1198.06	1.64	1
8/27/16	112	9367	89.34	165.86	92	4441.15	5224.56	-5080.01	1220.46	0.14	1
8/27/16	113	9459	89.87	165.86	92	4441.79	5316.55	-5169.22	1242.94	0.58	1
8/27/16	114	9549	90.31	165.77	90	4441.64	5406.54	-5256.48	1264.99	0.50	1
8/27/16	115	9642	91.10	166.04	93	4440.50	5499.53	-5346.67	1287.64	0.90	1
8/27/16	116	9734	89.43	166.13	92	4440.07	5591.52	-5435.97	1309.76	1.82	1
8/28/16	117	9826	89.87	166.74	92	4440.64	5683.52	-5525.40	1331.34	0.82	1
8/28/16	118	9918	90.40	166.74	92	4440.42	5775.52	-5614.94	1352.44	0.58	1
8/28/16	119	10010	90.84	166.83	92	4439.42	5867.51	-5704.50	1373.47	0.49	1
8/28/16	120	10102	89.52	167.01	92	4439.13	5959.51	-5794.11	1394.29	1.45	1
8/28/16	121	10196	89.78	167.18	94	4439.71	6053.50	-5885.74	1415.29	0.33	1
8/28/16	122	10291	90.13	166.92	95	4439.78	6148.50	-5978.32	1436.57	0.46	1
8/28/16	123	10385	90.48	166.83	94	4439.28	6242.49	-6069.86	1457.92	0.38	1
8/28/16	124	10479	90.57	166.21	94	4438.42	6336.49	-6161.27	1479.83	0.67	1
8/28/16	125	10573	91.01	166.21	94	4437.13	6430.48	-6252.55	1502.23	0.47	1
8/28/16	126	10668	91.10	165.42	95	4435.38	6525.45	-6344.64	1525.51	0.84	1
8/28/16	127	10762	91.28	165.34	94	4433.42	6619.41	-6435.57	1549.23	0.21	1
8/28/16	128	10857	91.71	164.98	95	4430.95	6714.35	-6527.37	1573.55	0.59	1

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Date	No.	MD	INC	AZM	C.L	TVD	VS	N/-S	E/-W	DLS	BHA
8/28/16	129	10951	90.57	166.13	94	4429.08	6808.31	-6618.38	1597.00	1.72	1
8/28/16	130	11046	91.19	166.13	95	4427.62	6903.30	-6710.60	1619.77	0.65	1
8/28/16	131	11140	89.34	166.39	94	4427.18	6997.29	-6801.91	1642.09	1.99	1
8/28/16	132	11234	89.60	166.30	94	4428.05	7091.29	-6893.24	1664.28	0.29	1
8/28/16	133	11329	90.22	166.74	95	4428.20	7186.29	-6985.63	1686.43	0.80	1
8/28/16	134	11423	90.57	166.74	94	4427.55	7280.29	-7077.12	1707.99	0.37	1
8/28/16	135	11517	91.01	166.30	94	4426.26	7374.28	-7168.52	1729.90	0.66	1
8/28/16	136	11612	89.25	167.53	95	4426.04	7469.27	-7261.05	1751.40	2.26	1
8/28/16	137	11706	89.52	167.80	94	4427.05	7563.25	-7352.87	1771.48	0.41	1
8/28/16	138	11800	89.87	167.80	94	4427.55	7657.22	-7444.75	1791.35	0.37	1
8/28/16	139	11895	90.04	167.09	95	4427.62	7752.21	-7537.48	1812.00	0.77	1
8/28/16	140	11989	90.57	167.09	94	4427.12	7846.20	-7629.10	1833.00	0.56	1
8/28/16	141	12084	90.92	166.48	95	4425.89	7941.20	-7721.57	1854.72	0.74	1
8/29/16	142	12178	91.54	167.01	94	4423.87	8035.17	-7813.05	1876.26	0.87	1
8/29/16	143	12272	89.60	166.04	94	4422.94	8129.16	-7904.45	1898.17	2.31	1
8/29/16	144	12366	89.96	166.21	94	4423.30	8223.16	-7995.71	1920.71	0.42	1
8/29/16	145	12460	90.48	165.51	94	4422.94	8317.15	-8086.86	1943.67	0.93	1
8/29/16	146	12555	91.01	165.16	95	4421.70	8412.12	-8178.75	1967.72	0.67	1
8/29/16	147	12649	90.22	165.95	94	4420.69	8506.10	-8269.77	1991.16	1.19	1
8/29/16	148	12744	90.92	166.21	95	4419.75	8601.09	-8361.98	2014.02	0.79	1
8/29/16	149	12838	89.25	166.21	94	4419.61	8695.08	-8453.27	2036.42	1.78	1
8/29/16	150	12932	89.52	166.30	94	4420.62	8789.08	-8544.57	2058.76	0.30	1
8/29/16	151	13026	89.96	166.48	94	4421.04	8883.08	-8635.93	2080.88	0.51	1
8/29/16	152	13121	90.40	166.48	95	4420.74	8978.07	-8728.30	2103.08	0.46	1
8/29/16	153	13215	90.92	166.57	94	4419.66	9072.07	-8819.70	2124.99	0.56	1
8/29/16	154	13309	91.28	166.57	94	4417.86	9166.05	-8911.11	2146.82	0.38	1
8/29/16	155	13403	91.54	166.30	94	4415.54	9260.02	-9002.46	2168.86	0.40	1
8/29/16	156	13497	91.10	167.45	94	4413.38	9353.99	-9093.98	2190.19	1.31	1
8/29/16	157	13592	91.63	167.45	95	4411.12	9448.95	-9186.69	2210.83	0.56	1
8/29/16	158	13686	90.22	167.18	94	4409.60	9542.93	-9278.38	2231.47	1.53	1
8/30/16	159	13781	90.31	166.92	95	4409.16	9637.93	-9370.96	2252.76	0.29	1
8/30/16	160	13875	90.66	166.30	94	4408.36	9731.92	-9462.40	2274.53	0.76	1