



A GYRO TECHNOLOGIES INC. COMPANY

P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

April 2, 2014

30-015-41887

Devon Energy Production Co., L.P.
333 West Sheridan Ave
Oklahoma City, Oklahoma 73102-5010

Attn: David Cook

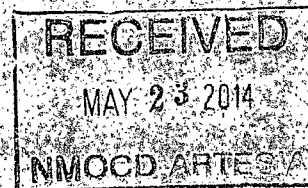
Re: Preacher 19 Federal No. 003H

Please find enclosed a copy of the survey from 0.00' to 8887.27' ran on the above referenced well.

If I can be of any further service please do not hesitate to call me at 800-606-4976.

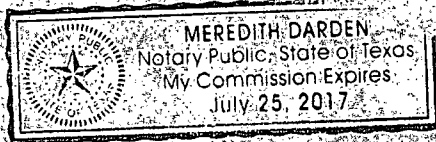
Sincerely,


Keith Havelka
Operations



STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 2nd day of April
A.D., 2014, by Keith Havelka.




Meredith Darden
Notary Public, State of Texas



Company: DEVON ENERGY
Lease/Well: PREACHER 19 FEDERAL/NO. 003H

Rig Name: CACTUS 126
State/County: NEW MEXICO/EDDY
Latitude: 32.20, Longitude: -104.23
GRID North is 0.06 Degrees East of True North
VS-Azi: 0.00 Degrees

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: drop survey.ut
Minimum Curvature Method
Report Date/Time: 4/2/2014 / 14:24

VES Survey International
West, Texas
(432) 563-5444

Surveyor: Jordan Shelleby
Preacher 19 Federal No. 003H / API 30-015-41887

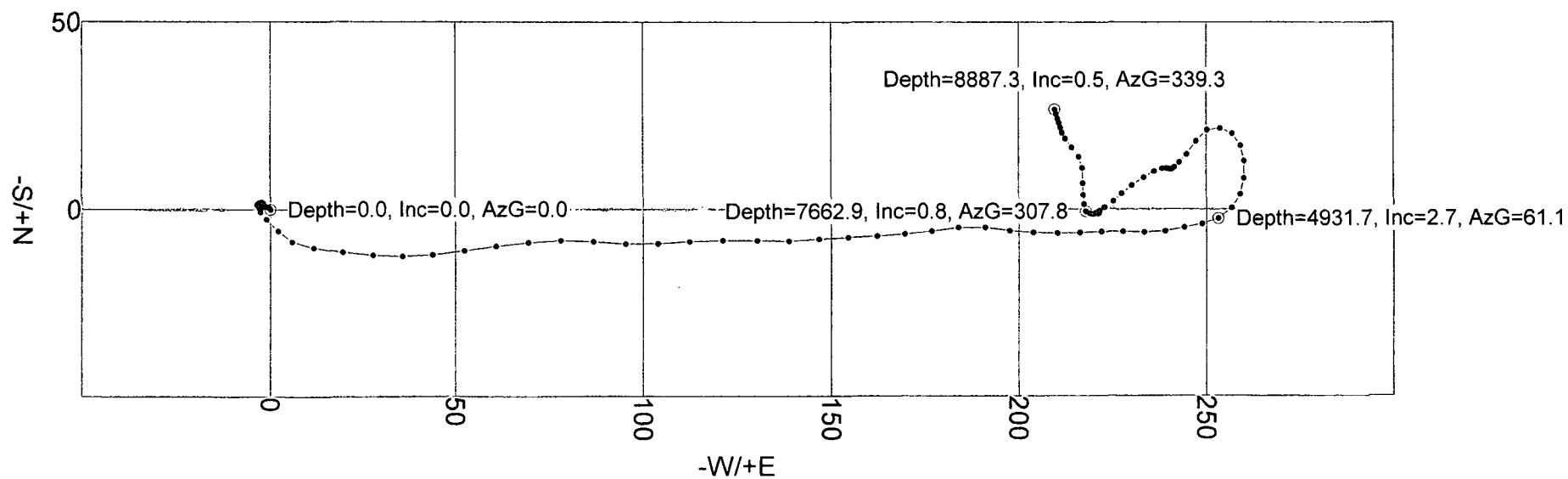
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
128.53	0.59	320.80	128.53	0.51	-0.42	0.51	0.66	320.80	0.46
222.71	0.58	242.87	222.70	0.66	-1.14	0.66	1.32	300.19	0.78
316.89	0.69	333.64	316.88	0.95	-1.82	0.95	2.05	297.66	0.96
411.07	0.05	296.62	411.06	1.47	-2.10	1.47	2.57	305.05	0.69
505.25	0.26	75.33	505.24	1.55	-1.93	1.55	2.48	308.62	0.31
599.43	0.29	299.79	599.42	1.72	-1.94	1.72	2.59	311.52	0.54
693.61	0.33	285.41	693.60	1.91	-2.41	1.91	3.07	308.40	0.09
787.79	0.31	246.08	787.77	1.88	-2.90	1.88	3.46	302.88	0.23
881.97	0.31	239.71	881.95	1.65	-3.36	1.65	3.74	296.12	0.04
976.15	0.24	192.82	976.13	1.33	-3.62	1.33	3.85	290.17	0.24
1070.33	0.05	352.42	1070.31	1.18	-3.66	1.18	3.85	287.86	0.31
1164.51	0.10	122.05	1164.49	1.18	-3.60	1.18	3.79	288.16	0.14
1258.69	0.47	129.10	1258.67	0.90	-3.24	0.90	3.36	285.49	0.40
1352.87	0.49	181.37	1352.85	0.25	-2.95	0.25	2.96	274.93	0.45
1447.05	0.71	162.60	1447.02	-0.70	-2.78	-0.70	2.87	255.92	0.31
1541.23	2.51	132.44	1541.16	-2.64	-1.09	-2.64	2.86	202.36	2.05
1635.41	2.89	136.55	1635.24	-5.76	2.07	-5.76	6.12	160.25	0.45
1729.59	2.97	118.11	1729.30	-8.63	5.85	-8.63	10.42	145.87	1.00
1823.77	4.56	97.67	1823.28	-10.28	11.71	-10.28	15.58	131.27	2.19

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1917.95	5.09	98.24	1917.12	-11.37	19.56	-11.37	22.62	120.18	0.57
2012.13	4.97	93.59	2010.94	-12.23	27.76	-12.23	30.34	113.77	0.45
2106.31	4.80	90.98	2104.78	-12.55	35.77	-12.55	37.91	109.33	0.30
2200.49	5.23	83.23	2198.60	-12.11	43.97	-12.11	45.61	105.40	0.86
2294.67	5.07	82.02	2292.40	-11.03	52.36	-11.03	53.51	101.89	0.21
2388.85	5.23	82.74	2386.20	-9.91	60.74	-9.91	61.54	99.26	0.19
2483.03	5.29	84.18	2479.98	-8.92	69.32	-8.92	69.89	97.34	0.15
2577.21	5.32	88.15	2573.76	-8.34	78.00	-8.34	78.44	96.10	0.39
2671.39	5.33	95.82	2667.53	-8.64	86.71	-8.64	87.14	95.69	0.76
2765.57	5.20	92.18	2761.31	-9.25	95.33	-9.25	95.78	95.54	0.38
2859.75	5.26	86.15	2855.10	-9.12	103.90	-9.12	104.30	95.02	0.59
2953.93	5.05	87.06	2948.90	-8.62	112.34	-8.62	112.67	94.39	0.23
3048.11	5.84	89.50	3042.66	-8.37	121.27	-8.37	121.56	93.95	0.87
3142.29	5.31	91.36	3136.39	-8.43	130.42	-8.43	130.69	93.70	0.59
3236.47	4.88	89.86	3230.20	-8.52	138.78	-8.52	139.04	93.51	0.48
3330.65	4.84	82.51	3324.04	-7.99	146.72	-7.99	146.94	93.12	0.66
3424.83	4.67	90.65	3417.90	-7.52	154.49	-7.52	154.68	92.79	0.74
3519.01	4.66	84.41	3511.77	-7.19	162.14	-7.19	162.30	92.54	0.54
3613.19	4.37	86.65	3605.66	-6.61	169.53	-6.61	169.66	92.23	0.36
3707.37	4.39	81.87	3699.56	-5.89	176.68	-5.89	176.78	91.91	0.39
3801.55	4.44	82.37	3793.46	-4.90	183.86	-4.90	183.93	91.53	0.06
3895.73	4.28	98.20	3887.37	-4.91	190.95	-4.91	191.02	91.47	1.28
3989.91	3.79	96.36	3981.32	-5.76	197.53	-5.76	197.61	91.67	0.54
4084.09	3.90	92.04	4075.29	-6.22	203.83	-6.22	203.92	91.75	0.33
4178.27	3.91	91.21	4169.25	-6.40	210.24	-6.40	210.34	91.74	0.06
4272.45	3.37	86.69	4263.24	-6.31	216.21	-6.31	216.30	91.67	0.65
4366.63	3.62	88.32	4357.24	-6.06	221.95	-6.06	222.03	91.56	0.28
4460.81	3.41	90.37	4451.24	-5.99	227.72	-5.99	227.80	91.51	0.25
4554.99	3.47	93.50	4545.25	-6.18	233.37	-6.18	233.45	91.52	0.21
4649.17	3.34	80.10	4639.27	-5.89	238.92	-5.89	238.99	91.41	0.85
4743.35	3.01	76.79	4733.31	-4.85	244.03	-4.85	244.08	91.14	0.40
4837.53	2.94	81.19	4827.36	-3.91	248.83	-3.91	248.86	90.90	0.26
4931.71	2.67	61.07	4921.43	-2.48	253.13	-2.48	253.14	90.56	1.08
5025.89	2.93	42.36	5015.50	0.35	256.67	0.35	256.67	89.92	1.00
5120.07	2.43	22.31	5109.58	3.98	259.05	3.98	259.08	89.12	1.12
5214.25	3.02	4.53	5203.65	8.30	260.00	8.30	260.13	88.17	1.08
5308.43	2.66	357.05	5297.72	12.95	260.08	12.95	260.41	87.15	0.54
5402.61	2.63	335.35	5391.80	17.10	259.07	17.10	259.63	86.22	1.06
5496.79	2.18	312.52	5485.90	20.28	256.85	20.28	257.65	85.49	1.11
5590.97	2.31	275.44	5580.01	21.67	253.63	21.67	254.56	85.12	1.52

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
5685.15	2.09	246.91	5674.12	21.18	250.16	21.18	251.06	85.16	1.17
5779.33	3.22	211.35	5768.21	18.24	247.21	18.24	247.88	85.78	2.07
5873.51	2.01	220.22	5862.29	14.72	244.76	14.72	245.21	86.56	1.35
5967.69	1.55	226.25	5956.42	12.58	242.78	12.58	243.10	87.03	0.53
6061.87	0.68	223.59	6050.58	11.29	241.47	11.29	241.74	87.32	0.93
6156.05	0.49	253.90	6144.76	10.78	240.70	10.78	240.94	87.44	0.38
6250.23	0.47	293.59	6238.93	10.82	239.96	10.82	240.20	87.42	0.35
6344.41	0.29	263.04	6333.11	10.95	239.37	10.95	239.62	87.38	0.28
6438.59	1.14	267.85	6427.28	10.88	238.20	10.88	238.45	87.38	0.90
6532.77	1.70	238.82	6521.44	10.13	236.07	10.13	236.29	87.54	0.95
6626.95	2.25	239.00	6615.56	8.45	233.29	8.45	233.45	87.93	0.59
6721.13	2.32	235.08	6709.66	6.41	230.15	6.41	230.24	88.41	0.18
6815.31	1.96	224.15	6803.78	4.16	227.46	4.16	227.50	88.95	0.57
6909.49	1.92	234.34	6897.91	2.08	225.06	2.08	225.07	89.47	0.37
7003.67	1.57	237.37	6992.04	0.46	222.68	0.46	222.68	89.88	0.38
7097.85	0.33	220.14	7086.21	-0.44	221.42	-0.44	221.42	90.11	1.34
7192.03	0.55	174.50	7180.38	-1.10	221.29	-1.10	221.29	90.28	0.42
7286.21	0.61	311.95	7274.56	-1.21	220.96	-1.21	220.96	90.31	1.15
7380.39	0.38	225.55	7368.74	-1.09	220.37	-1.09	220.37	90.28	0.74
7474.57	0.41	261.31	7462.92	-1.36	219.81	-1.36	219.81	90.35	0.26
7568.75	0.77	286.40	7557.09	-1.23	218.87	-1.23	218.87	90.32	0.45
7662.93	0.76	307.80	7651.26	-0.67	217.77	-0.67	217.77	90.18	0.30
7757.11	1.90	359.09	7745.42	1.27	217.26	1.27	217.26	89.67	1.64
7851.29	1.14	356.27	7839.57	3.77	217.17	3.77	217.20	89.01	0.81
7945.47	2.70	359.40	7933.69	6.92	217.09	6.92	217.20	88.17	1.65
8039.65	2.36	355.92	8027.78	11.07	216.92	11.07	217.21	87.08	0.39
8133.83	1.60	322.11	8121.90	14.05	215.98	14.05	216.43	86.28	1.45
8228.01	2.21	324.28	8216.03	16.57	214.10	16.57	214.74	85.58	0.65
8322.19	1.32	322.27	8310.17	18.91	212.38	18.91	213.22	84.91	0.95
8416.37	0.87	342.09	8404.33	20.45	211.49	20.45	212.48	84.48	0.62
8510.55	0.82	345.52	8498.50	21.78	211.10	21.78	212.22	84.11	0.08
8604.73	0.83	343.49	8592.67	23.08	210.74	23.08	212.00	83.75	0.03
8698.91	0.67	342.60	8686.84	24.25	210.38	24.25	211.78	83.42	0.17
8793.09	0.92	342.27	8781.01	25.50	209.99	25.50	211.53	83.08	0.27
8887.27	0.54	339.27	8875.18	26.64	209.60	26.64	211.29	82.76	0.41



VES Survey International
West, Texas
(432) 563-5444
Surveyor: Jordan Shelleby
Preacher 19 Federal No. 003H / API 30-015-41887





Directional Survey

District PERMIAN BASIN	County EDDY	Field Name CATCLAW DRAW AREA UN...	Project Group DELAWARE BASIN	State/Province NM			
Surface Legal Location SEC19 T24S R27E	API/UWI 3001541887	Latitude (°) 32° 11' 45.392" N	Longitude (°) 104° 13' 39.299" W	Ground Elev... 3,310.20	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,335.20	Tubing Head Elevation (ft)

Wellbore Name OH	Parent Wellbore	SAP Well ID 34721	Kick Off Depth (ftKB)	Vertical Section Direction (°) 0.00
Actual Deviation Survey	Definitive?	Proposed?	Proposed Deviation Survey	

Deviation Survey					
Date		Description			
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EW Tie In (ft)

Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
Wellbore Name ST01		Parent Wellbore OH		SAP Well ID 34721		Kick Off Depth (ftKB) 6,863.0		Vertical Section Direction (*) -3.73		
Actual Deviation Survey GYRO / MWD, Proposed? No				Definitive? No		Proposed? No		Proposed Deviation Survey		

Deviation Survey					
Date 3/26/2014		Description GYRO / MWD			
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EW Tie In (ft)

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
3/26/2014	128.53	0.59	320.80	128.53	11.66	0.51	-0.42	0.46	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	222.71	0.58	242.87	222.70	11.86	0.67	-1.15	0.78	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	316.89	0.69	333.64	316.88	12.20	0.96	-1.82	0.96	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	411.07	0.05	296.62	411.06	12.74	1.49	-2.11	0.69	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	505.25	0.26	75.33	505.24	12.80	1.56	-1.94	0.32	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	599.43	0.29	299.79	599.42	12.98	1.73	-1.94	0.54	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	693.61	0.33	285.41	693.60	13.20	1.92	-2.41	0.09	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	787.79	0.31	246.08	787.77	13.20	1.89	-2.91	0.23	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	881.97	0.31	239.71	881.95	13.00	1.66	-3.36	0.04	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	976.15	0.24	192.82	976.13	12.69	1.34	-3.62	0.24	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,070.33	0.05	352.42	1,070.31	12.54	1.19	-3.67	0.31	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,164.51	0.10	122.05	1,164.49	12.54	1.19	-3.61	0.15	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,258.69	0.47	129.10	1,258.67	12.23	0.90	-3.24	0.39	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,352.87	0.49	181.37	1,352.85	11.56	0.25	-2.95	0.45	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,447.05	0.71	162.60	1,447.02	10.59	-0.71	-2.78	0.31	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,541.23	2.51	132.44	1,541.16	8.54	-2.66	-1.09	2.05	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,635.41	2.89	136.55	1,635.24	5.23	-5.77	2.07	0.45	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,729.59	2.97	118.11	1,729.30	2.11	-8.64	5.85	1.00	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,823.77	4.56	97.67	1,823.27	0.09	-10.29	11.72	2.18	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	1,917.95	5.09	98.24	1,917.12	-1.52	-11.39	19.56	0.57	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,012.13	4.97	93.59	2,010.94	-2.91	-12.25	27.77	0.45	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,106.31	4.80	90.98	2,104.78	-3.75	-12.57	35.78	0.30	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,200.49	5.23	83.23	2,198.60	-3.85	-12.13	43.98	0.85	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,294.67	5.07	82.02	2,292.40	-3.31	-11.05	52.36	0.21	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,388.85	5.23	82.74	2,386.20	-2.74	-9.93	60.74	0.18	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,483.03	5.29	84.18	2,479.98	-2.32	-8.94	69.32	0.15	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,577.21	5.32	88.15	2,573.76	-2.30	-8.36	78.00	0.39	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,671.39	5.33	95.82	2,667.53	-3.17	-8.67	86.72	0.76	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,765.57	5.20	92.18	2,761.31	-4.33	-9.27	95.34	0.38	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,859.75	5.26	86.15	2,855.10	-4.76	-9.14	103.91	0.59	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	2,953.93	5.05	87.06	2,948.90	-4.81	-8.64	112.36	0.24	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,048.11	5.84	89.50	3,042.66	-5.14	-8.39	121.29	0.87	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,142.29	5.31	91.36	3,136.39	-5.80	-8.45	130.43	0.59	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,236.47	4.88	89.86	3,230.20	-6.43	-8.54	138.80	0.48	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,330.65	4.84	82.51	3,324.04	-6.42	-8.01	146.74	0.66	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,424.83	4.67	90.65	3,417.90	-6.46	-7.54	154.52	0.74	GYRO	LEAM DRILLING SYSTEMS



Directional Survey

District PERMIAN BASIN	County EDDY	Field Name CATCLAW DRAW AREA UN...				Project Group DELAWARE BASIN			State/Province NM	
Surface Legal Location SEC19 T24S R27E		API/UWI 3001541887		Latitude (") 32° 11' 45.392" N	Longitude (") 104° 13' 39.299" W	Ground Elev... 3,310.20	KB - GL (ft) 25.00	Ong KB Elev (ft) 3,335.20	Tubing Head Elevation (ft)	
Survey Data										
Date	MD (ftKB)	Ind (")	Azm (")	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS % (/100m)	Survey Tool	Survey Company
3/26/2014	3,519.01	4.66	84.41	3,511.77	-6.63	-7.21	162.16	0.54	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,613.19	4.37	86.65	3,605.65	-6.52	-6.63	169.55	0.36	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,707.37	4.39	81.87	3,699.56	-6.27	-5.91	176.70	0.39	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,801.55	4.44	82.37	3,793.46	-5.75	-4.92	183.88	0.07	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,895.73	4.28	98.20	3,887.37	-6.23	-4.93	190.97	1.28	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	3,989.91	3.79	96.36	3,981.32	-7.50	-5.78	197.54	0.54	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,084.09	3.90	92.04	4,075.28	-8.37	-6.24	203.84	0.33	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,178.27	3.91	91.21	4,169.25	-8.96	-6.42	210.25	0.06	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,272.45	3.37	86.69	4,263.24	-9.26	-6.33	216.22	0.65	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,366.63	3.62	88.32	4,357.24	-9.39	-6.08	221.96	0.29	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,460.81	3.41	90.37	4,451.24	-9.69	-6.01	227.73	0.26	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,554.99	3.47	93.50	4,545.25	-10.25	-6.20	233.38	0.21	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,649.17	3.34	80.10	4,639.27	-10.32	-5.91	238.92	0.85	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,743.35	3.01	76.79	4,733.30	-9.61	-4.87	244.03	0.40	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,837.53	2.94	81.19	4,827.36	-8.99	-3.93	248.83	0.25	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	4,931.71	2.67	61.07	4,921.43	-7.85	-2.50	253.13	1.08	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,025.89	2.93	42.36	5,015.50	-5.24	0.34	256.68	1.00	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,120.07	2.43	22.31	5,109.58	-1.78	3.96	259.06	1.12	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,214.25	3.02	4.53	5,203.65	2.47	8.28	260.01	1.09	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,308.43	2.66	357.05	5,297.71	7.11	12.94	260.09	0.55	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,402.61	2.63	335.35	5,391.80	11.31	17.09	259.08	1.06	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,496.79	2.18	312.52	5,485.90	14.63	20.26	256.86	1.11	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,590.97	2.31	275.44	5,580.01	16.22	21.65	253.65	1.52	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,685.15	2.09	246.91	5,674.12	15.96	21.16	250.18	1.17	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,779.33	3.22	211.35	5,768.20	13.22	18.22	247.22	2.07	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,873.51	2.01	220.22	5,862.29	9.87	14.70	244.78	1.35	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	5,967.69	1.55	226.25	5,956.42	7.86	12.56	242.79	0.53	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,061.87	0.68	223.59	6,050.58	6.66	11.28	241.49	0.93	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,156.05	0.49	253.90	6,144.76	6.20	10.76	240.71	0.38	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,250.23	0.47	293.59	6,238.93	6.29	10.80	239.97	0.35	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,344.41	0.29	263.04	6,333.11	6.45	10.93	239.38	0.28	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,438.59	1.14	267.85	6,427.28	6.46	10.86	238.21	0.90	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,532.77	1.70	238.82	6,521.43	5.85	10.11	236.08	0.95	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,626.95	2.25	239.00	6,615.56	4.36	8.43	233.30	0.58	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,721.13	2.32	235.08	6,709.66	2.52	6.39	230.15	0.18	GYRO	LEAM DRILLING SYSTEMS
3/26/2014	6,815.31	1.96	224.15	6,803.78	0.45	4.14	227.47	0.58	MWD	LEAM DRILLING SYSTEMS
3/26/2014	6,860.00	1.60	269.50	6,848.45	-0.02	3.59	226.31	3.16	MWD	LEAM DRILLING SYSTEMS
3/26/2014	6,892.00	2.90	340.50	6,880.43	0.78	4.35	225.59	8.81	MWD	LEAM DRILLING SYSTEMS
3/26/2014	6,924.00	4.40	344.60	6,912.36	2.76	6.29	225.00	4.75	MWD	LEAM DRILLING SYSTEMS
3/26/2014	6,955.00	7.50	345.30	6,943.19	5.91	9.40	224.17	10.00	MWD	LEAM DRILLING SYSTEMS
3/26/2014	6,987.00	11.80	349.00	6,974.73	11.21	14.63	223.01	13.57	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,018.00	16.40	352.80	7,004.79	18.73	22.09	221.86	15.13	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,050.00	21.30	356.00	7,035.07	29.06	32.37	220.89	15.64	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,082.00	25.80	357.40	7,064.39	41.84	45.14	220.16	14.17	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,113.00	29.00	357.40	7,091.91	56.10	59.39	219.52	10.32	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,144.00	32.50	355.70	7,118.55	71.94	75.20	218.55	11.63	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,176.00	36.40	355.00	7,144.93	90.04	93.24	217.08	12.25	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,207.00	40.10	355.80	7,169.27	109.23	112.37	215.55	12.04	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,239.00	43.40	356.50	7,193.14	130.53	133.62	214.12	10.41	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,270.00	47.70	356.50	7,214.85	152.66	155.71	212.77	13.87	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,302.00	51.40	356.50	7,235.61	177.00	180.01	211.28	11.56	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,334.00	56.40	356.20	7,254.45	202.85	205.80	209.64	15.64	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,365.00	60.80	356.70	7,270.60	229.30	232.21	208.00	14.26	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,397.00	65.40	356.70	7,285.08	257.83	260.69	206.36	14.38	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,428.00	70.10	356.90	7,296.81	286.51	289.33	204.76	15.17	MWD	LEAM DRILLING SYSTEMS



PREACHER 19 FED 3H

WEST UNRESTRICTED

Directional Survey

District PERMIAN BASIN	County EDDY	Field Name CATCLAW DRAW AREA UN...	Project Group DELAWARE BASIN	State/Province NM
Surface Legal Location SEC19 T24S R27E	API/UWI 3001541887	Latitude (°) 32° 11' 45.392" N	Longitude (°) 104° 13' 39.299" W	Ground Elev... 3,310.20
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,335.20
				Tubing Head Elevation (ft)

Survey Data										
Date	MD (ftKB)	Inc. (°)	± Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
3/26/2014	7,460.00	73.30	356.50	7,306.86	316.89	319.66	203.01	10.07	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,491.00	76.20	356.40	7,315.01	346.80	349.50	201.16	9.36	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,523.00	79.50	356.50	7,321.74	378.08	380.72	199.22	10.32	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,540.00	81.40	355.50	7,324.56	394.84	397.45	198.05	12.59	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,572.00	83.30	355.70	7,328.82	426.55	429.07	195.62	5.97	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,604.00	84.30	356.00	7,332.28	458.36	460.79	193.31	3.26	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,635.00	85.80	356.70	7,334.95	489.24	491.61	191.35	5.34	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,666.00	87.30	357.60	7,336.82	520.18	522.52	189.81	5.64	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,698.00	89.30	357.60	7,337.77	552.16	554.48	188.47	6.25	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,793.00	90.30	358.30	7,338.10	647.12	649.41	185.07	1.28	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,886.00	91.50	358.60	7,336.64	740.04	742.37	182.56	1.33	MWD	LEAM DRILLING SYSTEMS
3/26/2014	7,981.00	92.50	358.80	7,333.33	834.89	837.28	180.40	1.07	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,075.00	91.50	358.80	7,330.04	928.74	931.20	178.44	1.06	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,169.00	90.60	358.50	7,328.32	1,022.64	1,025.16	176.22	1.01	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,264.00	89.90	358.50	7,327.91	1,117.57	1,120.13	173.73	0.74	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,359.00	90.70	358.60	7,327.41	1,212.49	1,215.09	171.33	0.85	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,454.00	89.50	357.90	7,327.24	1,307.43	1,310.05	168.43	1.46	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,548.00	88.10	357.80	7,329.21	1,401.37	1,403.96	164.90	1.49	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,643.00	88.90	358.10	7,331.70	1,496.30	1,498.86	161.51	0.90	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,738.00	87.70	357.40	7,334.52	1,591.22	1,593.75	157.78	1.46	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,833.00	87.80	357.60	7,338.25	1,686.13	1,688.58	153.64	0.24	MWD	LEAM DRILLING SYSTEMS
3/26/2014	8,927.00	88.40	358.30	7,341.36	1,780.04	1,782.47	150.28	0.98	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,020.00	88.50	356.90	7,343.88	1,872.98	1,875.35	146.39	1.51	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,115.00	89.80	357.60	7,345.29	1,967.95	1,970.23	141.83	1.55	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,210.00	90.20	358.30	7,345.29	2,062.91	2,065.17	138.43	0.85	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,305.00	89.30	356.90	7,345.70	2,157.88	2,160.08	134.45	1.75	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,399.00	90.10	355.80	7,346.20	2,251.87	2,253.89	128.47	1.45	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,494.00	91.50	356.00	7,344.87	2,346.86	2,348.63	121.68	1.49	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,589.00	92.10	356.70	7,341.89	2,441.81	2,443.39	115.63	0.97	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,683.00	92.60	357.20	7,338.03	2,535.73	2,537.18	110.63	0.75	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,778.00	91.20	356.90	7,334.88	2,630.66	2,632.00	105.75	1.51	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,872.00	92.00	357.40	7,332.26	2,724.61	2,725.84	101.08	1.00	MWD	LEAM DRILLING SYSTEMS
3/26/2014	9,967.00	90.30	357.40	7,330.35	2,819.57	2,820.72	96.77	1.79	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,061.00	89.40	356.90	7,330.60	2,913.56	2,914.60	92.09	1.10	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,156.00	90.00	357.40	7,331.09	3,008.55	3,009.49	87.37	0.82	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,250.00	91.20	358.80	7,330.11	3,102.49	3,103.42	84.25	1.96	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,345.00	90.00	359.00	7,329.11	3,197.38	3,198.40	82.43	1.28	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,439.00	91.10	0.20	7,328.21	3,291.22	3,292.39	81.77	1.73	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,534.00	89.30	359.70	7,327.88	3,386.01	3,387.39	81.69	1.97	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,627.00	88.10	358.10	7,329.99	3,478.89	3,480.34	79.91	2.15	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,723.00	88.20	357.90	7,333.09	3,574.79	3,576.23	76.56	0.23	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,818.00	88.80	358.80	7,335.58	3,669.70	3,671.16	73.82	1.14	MWD	LEAM DRILLING SYSTEMS
3/26/2014	10,913.00	89.40	358.10	7,337.07	3,764.62	3,766.11	71.25	0.97	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,008.00	89.60	356.70	7,337.90	3,859.59	3,861.01	66.94	1.49	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,102.00	91.70	356.90	7,336.83	3,953.58	3,954.85	61.70	2.24	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,197.00	92.10	357.40	7,333.68	4,048.51	4,049.68	56.98	0.67	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,292.00	92.60	357.20	7,329.79	4,143.42	4,144.49	52.51	0.57	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,386.00	91.30	356.50	7,326.59	4,237.36	4,238.29	47.34	1.57	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,481.00	92.30	357.20	7,323.60	4,332.30	4,333.10	42.13	1.28	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,576.00	91.20	357.20	7,320.70	4,427.24	4,427.94	37.49	1.16	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,671.00	91.90	357.40	7,318.13	4,522.19	4,522.80	33.01	0.77	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,766.00	90.40	357.40	7,316.23	4,617.15	4,617.68	28.71	1.58	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,855.00	90.70	357.80	7,315.37	4,706.12	4,706.60	24.98	0.56	MWD	LEAM DRILLING SYSTEMS
3/26/2014	11,910.00	90.70	357.80	7,314.70	4,761.10	4,761.55	22.87	0.00	BIT	LEAM DRILLING SYSTEMS