



August 12, 2014

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

Attn: David Cook

30-025-41171

Re: **Cotton Draw 32 State Federal Com 3H**

Please find enclosed a copy of the survey from 0.00' to 7601.00' 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.

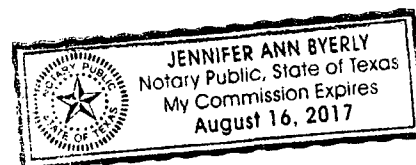
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 12 day of August A.D., 2014, by Keith Havelka.

Jennifer Ann Byerly
Notary Public, State of Texas



FEB 24 2015



Company: DEVON ENERGY
Lease/Well: COTTON DRAW 32 STATE FEDERAL COM/3H

Rig Name: H&P 214
State/County: NEW MEXICO /LEA
Latitude: 30.17, Longitude: -103.70
GRID North is 0.32 Degrees East of True North
VS-Azi: 181.09 Degrees



Depth Reference : RKB = 25 FT

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename:n draw 32 state fed com 3h.ut

Minimum Curvature Method

Report Date/Time: 8/12/2014 / 14:58

VES Survey International

Midland, TX

432-563-5444

Surveyor: Andrew Askew

Cotton Draw 32 State Federal Com 3H / API 30-025-41171

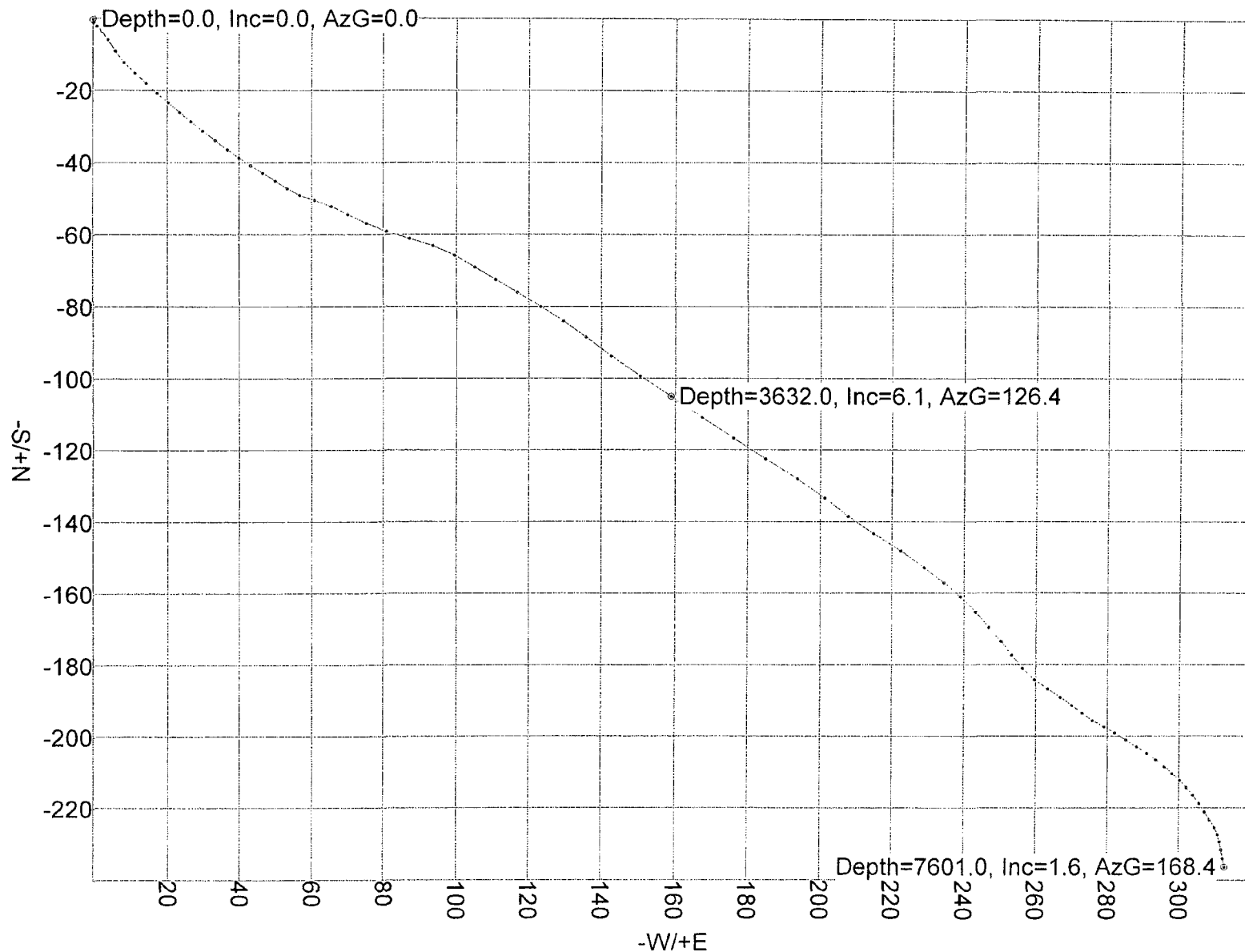
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
135.50	0.82	171.10	135.50	-0.96	0.15	0.95	0.97	171.10	0.60
230.00	1.10	125.04	229.98	-2.14	1.00	2.12	2.36	155.10	0.84
324.50	1.30	145.55	324.46	-3.54	2.34	3.50	4.25	146.57	0.50
419.00	2.17	145.84	418.92	-5.91	3.95	5.83	7.11	146.23	0.93
513.50	2.39	149.36	513.34	-9.09	5.96	8.97	10.87	146.73	0.28
608.00	2.45	138.31	607.76	-12.30	8.31	12.14	14.84	145.94	0.50
702.50	2.52	131.29	702.17	-15.18	11.22	14.96	18.87	143.53	0.33
797.00	2.53	135.24	796.58	-18.02	14.24	17.75	22.97	141.69	0.18
891.50	2.45	131.15	890.99	-20.83	17.23	20.50	27.04	140.41	0.20
986.00	2.47	131.73	985.40	-23.52	20.28	23.13	31.05	139.24	0.03
1080.50	2.45	127.19	1079.82	-26.10	23.40	25.65	35.05	138.12	0.21
1175.00	2.57	129.94	1174.23	-28.67	26.63	28.16	39.13	137.12	0.18
1269.50	2.52	128.49	1268.63	-31.32	29.88	30.75	43.29	136.35	0.09
1364.00	2.79	125.51	1363.03	-33.95	33.37	33.31	47.60	135.49	0.32
1458.50	2.40	127.47	1457.44	-36.48	36.81	35.78	51.83	134.75	0.42
1553.00	2.32	123.69	1551.86	-38.74	39.96	37.98	55.66	134.11	0.19
1647.50	2.33	122.50	1646.28	-40.84	43.17	40.01	59.43	133.41	0.05
1742.00	2.47	121.73	1740.69	-42.94	46.53	42.05	63.31	132.70	0.16

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
1836.50	2.44	123.31	1835.11	-45.11	49.94	44.16	67.30	132.09	0.08
1931.00	2.39	122.35	1929.52	-47.27	53.28	46.25	71.23	131.58	0.07
2025.50	2.33	112.17	2023.94	-49.05	56.72	47.96	74.98	130.85	0.45
2120.00	2.96	106.87	2118.34	-50.48	60.83	49.31	79.05	129.69	0.71
2214.50	3.03	113.70	2212.72	-52.19	65.45	50.94	83.71	128.57	0.38
2309.00	3.25	118.05	2307.07	-54.46	70.11	53.11	88.77	127.84	0.35
2403.50	3.57	113.33	2401.41	-56.88	75.17	55.44	94.27	127.11	0.44
2498.00	3.90	110.33	2495.71	-59.16	80.88	57.61	100.21	126.18	0.41
2592.50	4.02	105.68	2589.98	-61.17	87.08	59.51	106.42	125.09	0.36
2687.00	4.09	109.11	2684.24	-63.17	93.46	61.38	112.81	124.06	0.27
2781.50	3.91	117.97	2778.51	-65.79	99.49	63.88	119.27	123.48	0.68
2876.00	4.05	123.21	2872.79	-69.12	105.12	67.11	125.81	123.33	0.41
2970.50	4.13	118.05	2967.05	-72.55	110.92	70.43	132.54	123.19	0.40
3065.00	4.40	123.02	3061.29	-76.13	116.96	73.89	139.55	123.06	0.48
3159.50	4.51	121.49	3155.50	-80.05	123.17	77.69	146.90	123.02	0.18
3254.00	4.47	123.92	3249.71	-84.04	129.40	81.57	154.29	123.00	0.21
3348.50	4.97	127.47	3343.89	-88.58	135.70	85.99	162.05	123.14	0.61
3443.00	5.62	126.84	3437.99	-93.84	142.64	91.11	170.75	123.34	0.69
3537.50	6.10	123.11	3531.99	-99.36	150.55	96.48	180.39	123.42	0.65
3632.00	6.14	126.37	3625.95	-105.11	158.83	102.07	190.46	123.49	0.37
3726.50	6.35	122.81	3719.89	-110.94	167.30	107.73	200.74	123.55	0.46
3821.00	6.34	124.76	3813.81	-116.74	175.98	113.37	211.18	123.56	0.23
3915.50	6.44	122.54	3907.73	-122.57	184.73	119.03	221.70	123.56	0.28
4010.00	6.26	121.88	4001.65	-128.14	193.57	124.44	232.15	123.50	0.21
4104.50	5.11	128.29	4095.68	-133.47	201.25	129.62	241.49	123.55	1.39
4199.00	4.95	127.34	4189.82	-138.54	207.79	134.57	249.74	123.69	0.19
4293.50	5.53	120.50	4283.92	-143.33	214.95	139.21	258.35	123.69	0.90
4388.00	5.31	125.42	4378.00	-148.17	222.44	143.91	267.27	123.67	0.54
4482.50	4.47	126.33	4472.16	-152.89	228.97	148.50	275.32	123.73	0.89
4577.00	3.83	129.41	4566.41	-157.07	234.38	152.59	282.14	123.83	0.71
4671.50	3.51	131.56	4660.72	-161.00	238.98	156.42	288.15	123.97	0.37
4766.00	3.68	138.94	4755.03	-165.21	243.14	160.55	293.95	124.20	0.52
4860.50	3.37	140.73	4849.35	-169.65	246.89	164.92	299.56	124.49	0.35
4955.00	2.90	136.61	4943.71	-173.54	250.29	168.74	304.57	124.73	0.55
5049.50	3.07	146.59	5038.08	-177.39	253.33	172.54	309.27	125.00	0.58
5144.00	2.75	134.48	5132.46	-181.10	256.35	176.19	313.86	125.24	0.73
5238.50	2.72	132.53	5226.85	-184.20	259.62	179.23	318.32	125.36	0.11
5333.00	2.73	117.96	5321.25	-186.77	263.25	181.73	322.77	125.35	0.73
5427.50	2.46	127.97	5415.65	-189.07	266.83	183.96	327.03	125.32	0.56

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
5522.00	2.23	122.66	5510.07	-191.30	269.98	186.13	330.89	125.32	0.33
5616.50	2.19	130.54	5604.50	-193.47	272.90	188.24	334.52	125.33	0.32
5711.00	2.20	119.60	5698.93	-195.54	275.85	190.26	338.12	125.33	0.44
5805.50	2.20	118.25	5793.36	-197.29	279.02	191.95	341.73	125.26	0.06
5900.00	2.13	122.77	5887.80	-199.10	282.09	193.70	345.28	125.21	0.20
5994.50	2.26	121.98	5982.23	-201.04	285.15	195.58	348.89	125.18	0.15
6089.00	2.08	121.88	6076.66	-202.93	288.19	197.41	352.47	125.15	0.19
6183.50	2.00	124.74	6171.10	-204.78	291.00	199.21	355.83	125.13	0.14
6278.00	1.79	126.05	6265.55	-206.59	293.55	200.97	358.96	125.14	0.22
6372.50	1.89	131.77	6360.00	-208.50	295.91	202.83	361.98	125.17	0.22
6467.00	1.71	129.37	6454.45	-210.42	298.16	204.71	364.93	125.21	0.21
6561.50	1.73	136.05	6548.91	-212.34	300.23	206.59	367.73	125.27	0.21
6656.00	1.54	139.93	6643.37	-214.34	302.04	208.56	370.37	125.36	0.23
6750.50	1.84	140.08	6737.83	-216.48	303.83	210.66	373.06	125.47	0.31
6845.00	1.72	144.68	6832.28	-218.79	305.62	212.94	375.87	125.60	0.19
6939.50	1.66	151.08	6926.74	-221.15	307.11	215.27	378.45	125.76	0.21
7034.00	1.50	143.38	7021.21	-223.34	308.50	217.43	380.86	125.90	0.29
7128.50	1.51	150.72	7115.67	-225.42	309.85	219.49	383.17	126.04	0.20
7223.00	1.23	162.00	7210.15	-227.47	310.77	221.52	385.13	126.20	0.42
7317.50	1.25	167.87	7304.63	-229.44	311.30	223.47	386.72	126.39	0.14
7412.00	1.53	169.98	7399.10	-231.69	311.74	225.71	388.40	126.62	0.30
7506.50	1.38	167.92	7493.57	-234.04	312.19	228.05	390.18	126.86	0.17
7601.00	1.58	168.41	7588.04	-236.42	312.69	230.43	392.01	127.09	0.21



VES Survey International
Midland, TX
432-563-5444
Surveyor: Andrew Askew
Cotton Draw 32 State Federal Com 3H / API 30-025-41171





COTTON DRAW 32 STATE FED COM 3H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County LEA	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 32 T24S R32E	API/UWI 3002541171	Latitude (°) 32° 10' 22.786" N	Longitude (°) 103° 41' 55.681" W	Ground Elev. (ft) 3,472.80
			KB - GL (ft) 25.00	Orig KB Elev (ft) 3,497.80
				Tubing Head Elevation (ft)

Wellbores

Wellbore Name OH	Parent Wellbore OH	SAP Well ID	Kick Off Depth (ftKB)	Vertical Section Direction (°) 1.88
Actual Deviation Survey GYRO/MWD, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey

Date 8/4/2014		Description GYRO/MWD			
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)	NSTie In (ft)	EWtie In (ft)

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	EW (ft)	DLS (°/100ft)	Survey Tool	Survey Company
8/4/2014	135.50	0.82	171.10	135.50	-0.95	-0.96	0.15	0.61	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	230.00	1.10	125.04	229.98	-2.11	-2.15	1.00	0.84	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	324.50	1.30	145.55	324.46	-3.47	-3.55	2.35	0.50	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	419.00	2.17	145.84	418.92	-5.78	-5.92	3.96	0.92	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	513.50	2.39	149.36	513.34	-8.89	-9.09	5.97	0.28	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	608.00	2.45	138.31	607.76	-12.02	-12.30	8.31	0.50	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	702.50	2.52	131.29	702.17	-14.80	-15.17	11.22	0.33	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	797.00	2.53	135.24	796.58	-17.55	-18.03	14.25	0.18	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	891.50	2.45	131.15	890.99	-20.26	-20.84	17.24	0.21	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	986.00	2.47	131.73	985.40	-22.84	-23.52	20.28	0.03	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,080.50	2.45	127.19	1,079.82	-25.32	-26.10	23.41	0.21	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,175.00	2.57	129.94	1,174.23	-27.79	-28.68	26.64	0.18	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,269.50	2.52	128.49	1,268.63	-30.33	-31.33	29.89	0.09	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,364.00	2.79	125.51	1,363.03	-32.85	-33.96	33.39	0.32	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,458.50	2.40	127.47	1,457.43	-35.27	-36.50	36.83	0.42	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,553.00	2.32	123.69	1,551.85	-37.43	-38.76	39.99	0.19	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,647.50	2.33	122.50	1,646.28	-39.42	-40.86	43.20	0.05	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,742.00	2.47	121.73	1,740.69	-41.41	-42.96	46.56	0.15	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,836.50	2.44	123.31	1,835.11	-43.47	-45.14	49.97	0.08	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	1,931.00	2.39	122.35	1,929.52	-45.52	-47.30	53.32	0.07	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,025.50	2.33	112.17	2,023.94	-47.19	-49.07	56.76	0.45	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,120.00	2.96	106.87	2,118.34	-48.48	-50.51	60.87	0.71	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,214.50	3.03	113.70	2,212.71	-50.04	-52.22	65.50	0.38	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,309.00	3.25	118.05	2,307.07	-52.15	-54.48	70.15	0.34	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,403.50	3.57	113.33	2,401.40	-54.41	-56.91	75.21	0.45	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,498.00	3.90	110.33	2,495.70	-56.50	-59.19	80.93	0.41	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,592.50	4.02	105.68	2,589.98	-58.31	-61.20	87.13	0.36	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,687.00	4.09	109.11	2,684.24	-60.10	-63.20	93.50	0.27	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,781.50	3.91	117.97	2,778.51	-62.51	-65.81	99.53	0.68	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,876.00	4.05	123.21	2,872.78	-65.67	-69.15	105.17	0.41	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	2,970.50	4.13	118.05	2,967.04	-68.90	-72.58	110.97	0.40	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,065.00	4.40	123.02	3,061.28	-72.28	-76.16	117.01	0.48	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,159.50	4.51	121.49	3,155.50	-75.99	-80.07	123.22	0.17	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,254.00	4.47	123.92	3,249.71	-79.78	-84.07	129.44	0.21	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,348.50	4.97	127.47	3,343.89	-84.11	-88.61	135.75	0.61	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,443.00	5.62	126.84	3,437.98	-89.15	-93.88	142.70	0.69	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,537.50	6.10	123.11	3,531.99	-94.40	-99.40	150.61	0.65	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,632.00	6.14	126.37	3,625.95	-99.87	-105.14	158.88	0.37	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,726.50	6.35	122.81	3,719.89	-105.41	-110.96	167.34	0.47	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,821.00	6.34	124.76	3,813.81	-110.93	-116.77	176.02	0.23	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	3,915.50	6.44	122.54	3,907.72	-116.47	-122.60	184.78	0.28	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	4,010.00	6.26	121.88	4,001.65	-121.75	-128.17	193.62	0.21	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	4,104.50	5.11	128.29	4,095.68	-126.82	-133.50	201.30	1.39	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	4,199.00	4.95	127.34	4,189.82	-131.68	-138.58	207.84	0.19	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	4,293.50	5.53	120.50	4,283.92	-136.23	-143.36	215.01	0.90	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	4,388.00	5.31	125.42	4,378.00	-140.83	-148.21	222.49	0.54	GYRO	VAUHG N ENERGY SERVICES
8/4/2014	4,482.50	4.47	126.33	4,472.15	-145.33	-152.92	229.02	0.89	GYRO	VAUHG N ENERGY SERVICES



COTTON DRAW 32 STATE FED COM 3H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County LEA	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 32 T24S R32E	API/UWI 3002541171	Latitude (") 32° 10' 22.786" N	Longitude (") 103° 41' 55.681" W	Ground Elev... 3,472.80
				KB - GL (ft) 25.00
				Orig KB Elev (ft) 3,497.80
				Tubing Head Elevation (ft)

Survey Data										
Date	MD (ftKB)	Incl (°)	Azm (°)	IND (ftKB)	VS (ft)	N/S (ft)	EW (ft)	OLS ("/100ft)	Survey Tool	Survey Company
8/4/2014	4,577.00	3.83	129.41	4,566.41	-149.33	-157.11	234.43	0.72	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	4,671.50	3.51	131.56	4,660.71	-153.10	-161.03	239.03	0.37	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	4,766.00	3.68	138.94	4,755.03	-157.17	-165.24	243.19	0.52	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	4,860.50	3.37	140.73	4,849.35	-161.48	-169.67	246.94	0.35	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	4,955.00	2.90	136.61	4,943.71	-165.26	-173.56	250.34	0.55	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,049.50	3.07	146.59	5,038.08	-169.00	-177.41	253.38	0.58	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,144.00	2.75	134.48	5,132.46	-172.60	-181.11	256.39	0.73	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,238.50	2.72	132.53	5,226.85	-175.60	-184.22	259.66	0.10	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,333.00	2.73	117.96	5,321.24	-178.05	-186.79	263.30	0.73	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,427.50	2.46	127.97	5,415.65	-180.23	-189.09	266.88	0.56	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,522.00	2.23	122.66	5,510.07	-182.37	-191.33	270.03	0.33	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,616.50	2.19	130.54	5,604.50	-184.44	-193.50	272.95	0.32	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,711.00	2.20	119.60	5,698.93	-186.41	-195.56	275.90	0.44	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,805.50	2.20	118.25	5,793.36	-188.06	-197.32	279.07	0.05	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,900.00	2.13	122.77	5,887.79	-189.77	-199.13	282.15	0.20	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	5,994.50	2.26	121.98	5,982.22	-191.60	-201.07	285.21	0.14	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,089.00	2.08	121.88	6,076.66	-193.39	-202.96	288.24	0.19	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,183.50	2.00	124.74	6,171.10	-195.15	-204.80	291.05	0.14	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,278.00	1.79	126.05	6,265.54	-196.87	-206.61	293.60	0.23	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,372.50	1.89	131.77	6,360.00	-198.70	-208.52	295.96	0.22	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,467.00	1.71	129.37	6,454.45	-200.55	-210.45	298.21	0.21	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,561.50	1.73	136.05	6,548.91	-202.41	-212.37	300.29	0.21	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,656.00	1.54	139.93	6,643.37	-204.35	-214.37	302.10	0.23	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,750.50	1.84	140.08	6,737.83	-206.42	-216.51	303.89	0.32	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,845.00	1.72	144.68	6,832.28	-208.68	-218.83	305.68	0.20	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	6,939.50	1.66	151.08	6,926.74	-210.99	-221.18	307.16	0.21	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	7,034.00	1.50	143.38	7,021.20	-213.13	-223.37	308.56	0.28	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	7,128.50	1.51	150.72	7,115.67	-215.16	-225.45	309.91	0.20	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	7,223.00	1.23	162.00	7,210.14	-217.18	-227.50	310.83	0.41	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	7,317.50	1.25	167.87	7,304.62	-219.14	-229.48	311.36	0.14	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	7,412.00	1.53	169.98	7,399.09	-221.37	-231.73	311.80	0.30	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	7,506.50	1.38	167.92	7,493.56	-223.71	-234.08	312.26	0.17	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	7,601.00	1.58	168.41	7,588.03	-226.08	-236.47	312.76	0.21	GYRO	VAUHGN ENERGY SERVICES
8/4/2014	7,720.00	1.83	182.26	7,706.98	-229.58	-239.98	313.01	0.40	MWD	WEATHERFORD MWD
8/4/2014	7,751.00	3.90	201.51	7,737.94	-231.07	-241.45	312.60	7.27	MWD	WEATHERFORD MWD
8/4/2014	7,783.00	7.22	206.05	7,769.79	-233.93	-244.27	311.32	10.46	MWD	WEATHERFORD MWD
8/4/2014	7,814.00	10.36	203.90	7,800.42	-238.29	-248.57	309.34	10.18	MWD	WEATHERFORD MWD
8/4/2014	7,846.00	12.88	204.67	7,831.76	-244.24	-254.44	306.68	7.89	MWD	WEATHERFORD MWD
8/4/2014	7,877.00	16.19	204.45	7,861.76	-251.42	-261.52	303.45	10.68	MWD	WEATHERFORD MWD
8/4/2014	7,909.00	19.52	207.77	7,892.22	-260.35	-270.31	299.11	10.88	MWD	WEATHERFORD MWD
8/4/2014	7,940.00	22.79	211.91	7,921.13	-270.22	-280.00	293.52	11.59	MWD	WEATHERFORD MWD
8/4/2014	7,972.00	26.02	213.78	7,950.26	-281.54	-291.09	286.34	10.38	MWD	WEATHERFORD MWD
8/4/2014	8,003.00	29.11	212.28	7,977.74	-293.82	-303.12	278.53	10.22	MWD	WEATHERFORD MWD
8/4/2014	8,035.00	32.36	210.16	8,005.24	-308.08	-317.11	270.07	10.70	MWD	WEATHERFORD MWD
8/4/2014	8,066.00	35.24	209.87	8,031.00	-323.29	-332.04	261.45	9.30	MWD	WEATHERFORD MWD
8/4/2014	8,098.00	37.85	209.78	8,056.71	-340.12	-348.57	251.97	8.16	MWD	WEATHERFORD MWD
8/4/2014	8,130.00	39.68	208.44	8,081.66	-357.94	-366.08	242.23	6.29	MWD	WEATHERFORD MWD
8/4/2014	8,161.00	41.67	205.24	8,105.17	-376.25	-384.11	233.12	9.30	MWD	WEATHERFORD MWD
8/4/2014	8,192.00	44.06	202.21	8,127.89	-395.83	-403.41	224.65	10.18	MWD	WEATHERFORD MWD
8/4/2014	8,224.00	47.35	200.88	8,150.24	-417.39	-424.72	216.25	10.70	MWD	WEATHERFORD MWD
8/4/2014	8,255.00	50.90	199.35	8,170.52	-439.65	-446.72	208.19	12.04	MWD	WEATHERFORD MWD
8/4/2014	8,287.00	54.21	198.71	8,189.98	-463.93	-470.74	199.91	10.46	MWD	WEATHERFORD MWD
8/4/2014	8,318.00	56.20	196.02	8,207.67	-488.46	-495.03	192.32	9.59	MWD	WEATHERFORD MWD
8/4/2014	8,350.00	57.69	191.89	8,225.13	-514.68	-521.05	185.87	11.78	MWD	WEATHERFORD MWD
8/4/2014	8,381.00	59.22	190.48	8,241.35	-540.75	-546.97	180.74	6.28	MWD	WEATHERFORD MWD



COTTON DRAW 32 STATE FED COM 3H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County LEA	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 32 T24S R32E	API/UWI 3002541171	Latitude (°) 32° 10' 22.786" N	Longitude (°) 103° 41' 55.681" W	Ground Elev. 3,472.80
				KB - GL (ft) 25.00
				Orig KB Elev (ft) 3,497.80
				Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Inc (°)	Azm (°)	IVD (ftKB)	VS (ft)	N/S (ft)	FW (ft)	DLS (ft/100ft)	Survey Tool	Survey Company
8/4/2014	8,413.00	62.28	189.13	8,256.98	-568.40	-574.48	176.00	10.25	MWD	WEATHERFORD MWD
8/4/2014	8,444.00	66.43	188.30	8,270.39	-596.14	-602.10	171.77	13.60	MWD	WEATHERFORD MWD
8/4/2014	8,476.00	70.74	187.53	8,282.07	-625.76	-631.60	167.67	13.65	MWD	WEATHERFORD MWD
8/4/2014	8,507.00	73.33	185.68	8,291.64	-655.14	-660.89	164.28	10.10	MWD	WEATHERFORD MWD
8/4/2014	8,539.00	75.07	185.47	8,300.35	-685.87	-691.53	161.29	5.47	MWD	WEATHERFORD MWD
8/4/2014	8,570.00	77.58	186.87	8,307.68	-715.90	-721.47	158.05	9.21	MWD	WEATHERFORD MWD
8/4/2014	8,602.00	79.87	187.26	8,313.93	-747.15	-752.62	154.19	7.26	MWD	WEATHERFORD MWD
8/4/2014	8,633.00	82.84	187.76	8,318.59	-777.65	-783.00	150.18	9.71	MWD	WEATHERFORD MWD
8/4/2014	8,664.00	85.80	187.09	8,321.66	-808.35	-813.58	146.20	9.79	MWD	WEATHERFORD MWD
8/4/2014	8,695.00	88.04	186.42	8,323.33	-839.19	-844.32	142.56	7.54	MWD	WEATHERFORD MWD
8/4/2014	8,718.00	88.18	185.45	8,324.08	-862.12	-867.18	140.18	4.26	MWD	WEATHERFORD MWD
8/4/2014	8,813.00	88.95	186.53	8,326.46	-956.84	-961.63	130.27	1.40	MWD	WEATHERFORD MWD
8/4/2014	8,907.00	88.95	187.44	8,328.19	-1,050.45	-1,054.92	118.84	0.97	MWD	WEATHERFORD MWD
8/4/2014	9,002.00	89.09	187.86	8,329.81	-1,144.96	-1,149.06	106.20	0.47	MWD	WEATHERFORD MWD
8/4/2014	9,096.00	90.91	187.34	8,329.81	-1,238.49	-1,242.23	93.76	2.01	MWD	WEATHERFORD MWD
8/4/2014	9,190.00	91.19	187.49	8,328.09	-1,332.03	-1,335.43	81.64	0.34	MWD	WEATHERFORD MWD
8/4/2014	9,285.00	91.26	188.19	8,326.06	-1,426.50	-1,429.52	68.68	0.74	MWD	WEATHERFORD MWD
8/4/2014	9,379.00	90.42	188.70	8,324.68	-1,519.87	-1,522.49	54.88	1.05	MWD	WEATHERFORD MWD
8/4/2014	9,474.00	91.40	187.37	8,323.17	-1,614.31	-1,616.54	41.60	1.74	MWD	WEATHERFORD MWD
8/4/2014	9,568.00	90.98	188.04	8,321.22	-1,707.80	-1,709.67	29.00	0.84	MWD	WEATHERFORD MWD
8/4/2014	9,663.00	91.89	186.26	8,318.84	-1,802.36	-1,803.90	17.18	2.10	MWD	WEATHERFORD MWD
8/4/2014	9,757.00	91.68	184.05	8,315.91	-1,896.16	-1,897.47	8.74	2.36	MWD	WEATHERFORD MWD
8/4/2014	9,852.00	92.31	181.54	8,312.60	-1,991.08	-1,992.29	4.11	2.72	MWD	WEATHERFORD MWD
8/4/2014	9,946.00	92.10	180.90	8,308.99	-2,085.00	-2,086.20	2.11	0.72	MWD	WEATHERFORD MWD
8/4/2014	10,041.00	91.89	181.42	8,305.68	-2,179.94	-2,181.12	0.19	0.59	MWD	WEATHERFORD MWD
8/4/2014	10,136.00	90.84	181.17	8,303.42	-2,274.91	-2,276.07	-1.96	1.14	MWD	WEATHERFORD MWD
8/4/2014	10,230.00	89.72	181.20	8,302.96	-2,368.90	-2,370.04	-3.90	1.19	MWD	WEATHERFORD MWD
8/4/2014	10,325.00	91.40	181.81	8,302.03	-2,463.89	-2,465.00	-6.40	1.88	MWD	WEATHERFORD MWD
8/4/2014	10,419.00	92.03	182.60	8,299.22	-2,557.84	-2,558.89	-10.01	1.07	MWD	WEATHERFORD MWD
8/4/2014	10,514.00	90.91	182.18	8,296.78	-2,652.80	-2,653.77	-13.97	1.26	MWD	WEATHERFORD MWD
8/4/2014	10,608.00	89.44	179.86	8,296.49	-2,746.78	-2,747.75	-15.65	2.92	MWD	WEATHERFORD MWD
8/4/2014	10,703.00	89.16	179.24	8,297.65	-2,841.70	-2,842.74	-14.90	0.72	MWD	WEATHERFORD MWD
8/4/2014	10,797.00	90.70	182.61	8,297.77	-2,935.67	-2,936.71	-16.42	3.94	MWD	WEATHERFORD MWD
8/4/2014	10,892.00	89.16	181.20	8,297.88	-3,030.66	-3,031.65	-19.58	2.20	MWD	WEATHERFORD MWD
8/4/2014	10,986.00	89.09	182.15	8,299.32	-3,124.65	-3,125.60	-22.32	1.01	MWD	WEATHERFORD MWD
8/4/2014	11,081.00	90.56	182.49	8,299.61	-3,219.64	-3,220.52	-26.17	1.59	MWD	WEATHERFORD MWD
8/4/2014	11,175.00	89.72	181.61	8,299.38	-3,313.64	-3,314.46	-29.53	1.29	MWD	WEATHERFORD MWD
8/4/2014	11,270.00	90.14	180.72	8,299.49	-3,408.63	-3,409.44	-31.46	1.04	MWD	WEATHERFORD MWD
8/4/2014	11,365.00	91.75	181.66	8,297.93	-3,503.61	-3,504.40	-33.43	1.96	MWD	WEATHERFORD MWD
8/4/2014	11,459.00	91.82	181.80	8,295.00	-3,597.56	-3,598.31	-36.27	0.17	MWD	WEATHERFORD MWD
8/4/2014	11,554.00	91.68	182.01	8,292.10	-3,692.52	-3,693.21	-39.43	0.27	MWD	WEATHERFORD MWD
8/4/2014	11,649.00	91.54	182.13	8,289.43	-3,787.48	-3,788.11	-42.86	0.19	MWD	WEATHERFORD MWD
8/4/2014	11,743.00	89.79	181.38	8,288.34	-3,881.47	-3,882.06	-45.74	2.03	MWD	WEATHERFORD MWD
8/4/2014	11,838.00	89.51	181.86	8,288.92	-3,976.47	-3,977.02	-48.42	0.58	MWD	WEATHERFORD MWD
8/4/2014	11,932.00	89.16	181.89	8,290.01	-4,070.46	-4,070.96	-51.50	0.37	MWD	WEATHERFORD MWD
8/4/2014	12,027.00	89.51	180.86	8,291.11	-4,165.45	-4,165.93	-53.78	1.15	MWD	WEATHERFORD MWD
8/4/2014	12,121.00	89.44	180.71	8,291.97	-4,259.43	-4,259.91	-55.06	0.18	MWD	WEATHERFORD MWD
8/4/2014	12,215.00	89.72	180.53	8,292.66	-4,353.40	-4,353.91	-56.08	0.35	MWD	WEATHERFORD MWD
8/4/2014	12,310.00	89.79	179.89	8,293.07	-4,448.36	-4,448.90	-56.43	0.68	MWD	WEATHERFORD MWD
8/4/2014	12,405.00	90.35	180.54	8,292.95	-4,543.32	-4,543.90	-56.79	0.90	MWD	WEATHERFORD MWD
8/4/2014	12,499.00	89.86	180.06	8,292.78	-4,637.28	-4,637.90	-57.28	0.73	MWD	WEATHERFORD MWD
8/4/2014	12,594.00	89.44	179.03	8,293.36	-4,732.20	-4,732.89	-56.52	1.17	MWD	WEATHERFORD MWD
8/4/2014	12,689.00	89.86	181.61	8,293.94	-4,827.16	-4,827.88	-57.05	2.75	MWD	WEATHERFORD MWD
8/4/2014	12,783.00	89.93	181.61	8,294.11	-4,921.15	-4,921.85	-59.70	0.07	MWD	WEATHERFORD MWD
8/4/2014	12,878.00	90.07	181.57	8,294.11	-5,016.15	-5,016.81	-62.33	0.15	MWD	WEATHERFORD MWD



COTTON DRAW 32 STATE FED COM 3H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County LEA	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM
Surface Legal Location Sec. 32 T24S R32E	API/UWI 3002541171	Latitude (°) 32° 10' 22.786" N	Longitude (°) 103° 41' 55.681" W	Ground Elev... 3,472.80
				KB - GL (ft) 25.00
				Orig KB Elev (ft) 3,497.80
				Tubing Head Elevation (ft)

Survey Data										
Date	MD (ftKB)	Ind. (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	D.S. (°/100ft)	Survey Tool	Survey Company
8/4/2014	12,972.00	89.79	181.19	8,294.23	-5,110.15	-5,110.78	-64.60	0.50	MWD	WEATHERFORD MWD
8/4/2014	13,067.00	90.07	181.08	8,294.34	-5,205.14	-5,205.76	-66.48	0.32	MWD	WEATHERFORD MWD
8/4/2014	13,162.00	91.61	182.84	8,292.95	-5,300.12	-5,300.69	-69.73	2.46	MWD	WEATHERFORD MWD
8/13/2014	13,257.00	89.23	181.54	8,292.26	-5,395.11	-5,395.61	-73.36	2.85	MWD	WEATHERFORD MWD
8/13/2014	13,352.00	89.16	181.63	8,293.59	-5,490.10	-5,490.56	-75.98	0.12	MWD	WEATHERFORD MWD
8/13/2014	13,447.00	89.51	181.09	8,294.69	-5,585.09	-5,585.53	-78.24	0.68	MWD	WEATHERFORD MWD
8/14/2014	13,541.00	89.79	181.38	8,295.27	-5,679.08	-5,679.51	-80.26	0.43	MWD	WEATHERFORD MWD
8/14/2014	13,636.00	90.07	181.34	8,295.38	-5,774.08	-5,774.48	-82.52	0.30	MWD	WEATHERFORD MWD
8/14/2014	13,730.00	89.86	181.57	8,295.44	-5,868.08	-5,868.45	-84.90	0.33	MWD	WEATHERFORD MWD
8/14/2014	13,825.00	89.51	181.61	8,295.96	-5,963.07	-5,963.41	-87.54	0.37	MWD	WEATHERFORD MWD
8/14/2014	13,919.00	90.56	182.61	8,295.91	-6,057.07	-6,057.34	-91.00	1.54	MWD	WEATHERFORD MWD
8/14/2014	14,014.00	90.21	182.91	8,295.27	-6,152.06	-6,152.23	-95.58	0.49	MWD	WEATHERFORD MWD
8/14/2014	14,108.00	89.79	183.01	8,295.27	-6,246.04	-6,246.11	-100.43	0.46	MWD	WEATHERFORD MWD
8/14/2014	14,202.00	90.70	181.97	8,294.87	-6,340.03	-6,340.01	-104.51	1.47	MWD	WEATHERFORD MWD
8/14/2014	14,297.00	90.70	181.66	8,293.70	-6,435.02	-6,434.96	-107.52	0.33	MWD	WEATHERFORD MWD
8/14/2014	14,391.00	90.56	181.54	8,292.67	-6,529.02	-6,528.92	-110.15	0.20	MWD	WEATHERFORD MWD
8/14/2014	14,485.00	90.63	181.30	8,291.69	-6,623.01	-6,622.88	-112.48	0.27	MWD	WEATHERFORD MWD
8/14/2014	14,580.00	90.91	181.47	8,290.42	-6,718.00	-6,717.85	-114.77	0.34	MWD	WEATHERFORD MWD
8/14/2014	14,674.00	88.04	180.34	8,291.28	-6,811.97	-6,811.82	-116.26	3.28	MWD	WEATHERFORD MWD
8/15/2014	14,769.00	87.76	180.02	8,294.76	-6,906.86	-6,906.75	-116.55	0.45	MWD	WEATHERFORD MWD
8/15/2014	14,863.00	88.67	180.76	8,297.69	-7,000.78	-7,000.71	-117.19	1.25	MWD	WEATHERFORD MWD
8/15/2014	14,958.00	89.02	181.65	8,299.60	-7,095.75	-7,095.66	-119.19	1.01	MWD	WEATHERFORD MWD
8/15/2014	15,053.00	89.44	182.92	8,300.88	-7,190.74	-7,190.58	-122.98	1.41	MWD	WEATHERFORD MWD
8/15/2014	15,065.00	89.58	183.24	8,300.98	-7,202.74	-7,202.56	-123.62	2.91	MWD	WEATHERFORD MWD
8/15/2014	15,135.00	89.58	183.24	8,301.50	-7,272.72	-7,272.45	-127.58	0.00	BIT	WEATHERFORD MWD