



February 2, 2016

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

HOBBS OCD

APR 21 2016

RECEIVED

Attn: Megan Moravec

Re: **Cotton Draw 32 State SWD No 002**

Please find enclosed a copy of the survey from 0' to 18,499' 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.

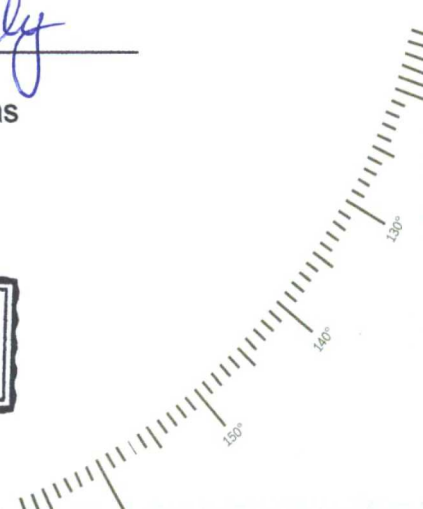
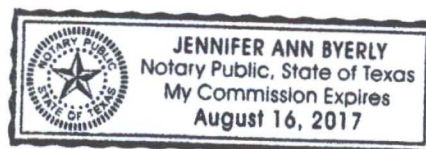
Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 2 day of February A.D., 2016, by Keith Havelka.

Jennifer Ann Byerly
Notary Public, State of Texas





Company: Devon Energy
Lease/Well: Cotton Draw 32 State SWD No/002

Rig Name: Precision 601
State/County: New Mexico/Lea
VS-Azi: 250.10 Degrees
Latitude: 32.16992, Longitude: -103.69136
Grid North = True North -0.34 degs (NAD 27)
Grid Correction Applied = -0.34 degs



Depth Reference : RKB = 25 feet

DRILLOG MS GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 2/2/2016 / 11:13

VES Survey International
Midland, TX
432-563-5444

Surveyor: Adam Askew

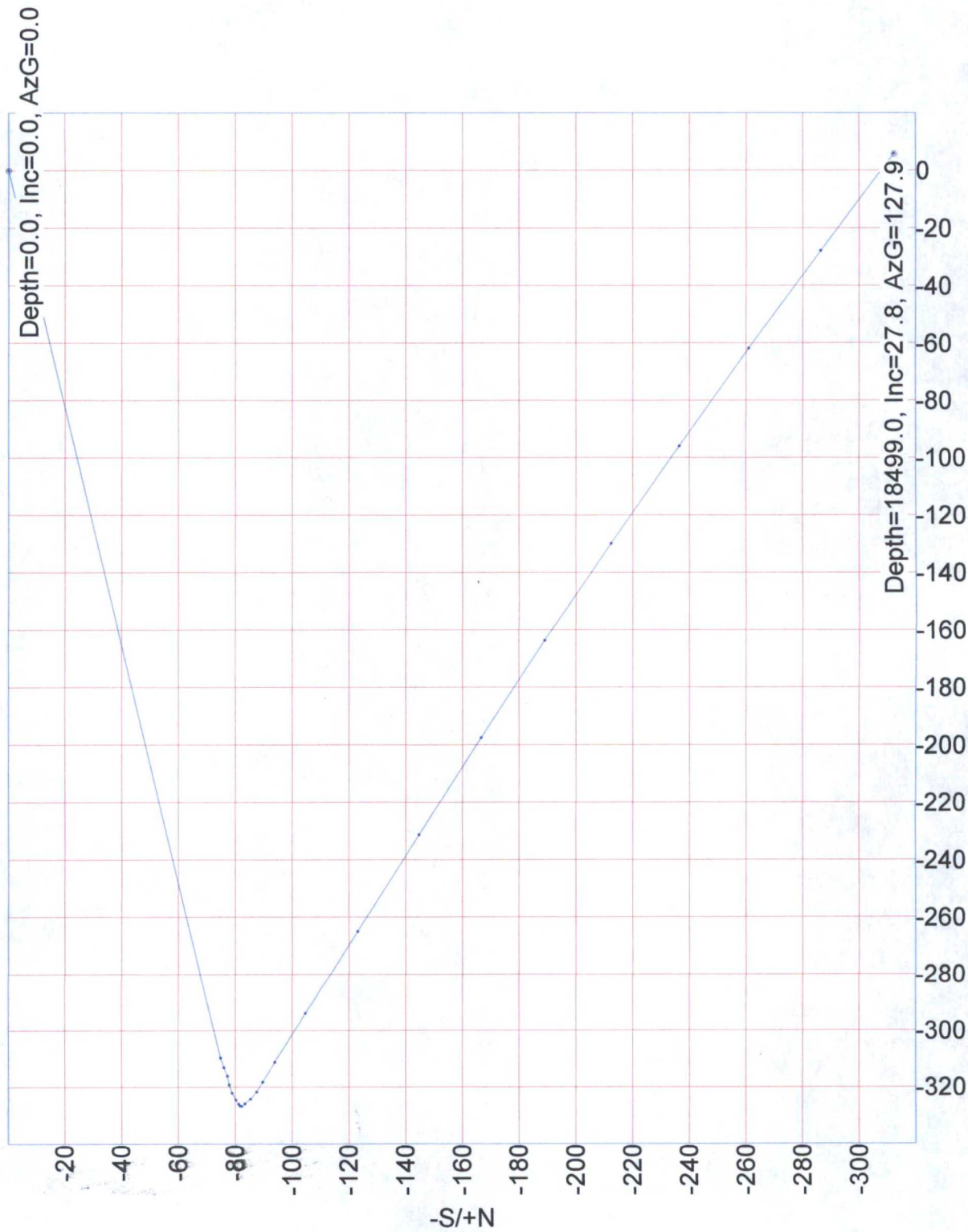
Cotton Draw 32 State SWD No 002 / API 30-025-41524

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	****
16401.63	2.23	256.43	16397.50	-74.78	-309.77	316.72	318.66	256.43	0.01
16492.82	2.20	243.05	16488.62	-75.98	-313.04	320.22	322.13	256.36	0.57
16584.01	1.98	255.15	16579.75	-77.18	-316.13	323.52	325.41	256.28	0.54
16675.20	1.99	259.43	16670.89	-77.87	-319.21	326.66	328.57	256.29	0.16
16766.39	1.81	243.19	16762.03	-78.81	-322.05	329.65	331.55	256.25	0.62
16857.58	1.74	239.36	16853.18	-80.17	-324.52	332.43	334.28	256.12	0.15
16948.77	0.51	226.24	16944.35	-81.15	-326.01	334.16	335.96	256.02	1.36
17039.96	0.49	236.18	17035.53	-81.65	-326.62	334.91	336.67	255.96	0.10
17131.15	0.53	148.37	17126.72	-82.23	-326.72	335.20	336.91	255.87	0.78
17222.34	1.27	140.62	17217.90	-83.38	-325.85	334.78	336.35	255.65	0.82
17313.53	1.92	140.61	17309.05	-85.34	-324.24	333.93	335.29	255.25	0.71
17404.72	2.30	122.23	17400.18	-87.49	-321.73	332.30	333.41	254.79	0.85
17495.91	2.79	120.64	17491.28	-89.60	-318.27	329.76	330.64	254.28	0.55
17587.10	7.59	121.47	17582.07	-93.88	-311.21	324.59	325.07	253.21	5.26
17678.29	18.19	122.41	17670.84	-104.68	-294.01	312.09	312.09	250.40	11.63
17769.48	26.08	122.48	17755.24	-123.11	-265.04	291.12	292.24	245.09	8.65

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
17860.67	26.08	122.71	17837.14	-144.70	-231.27	266.71	272.81	237.97	0.11
17951.86	26.29	123.21	17918.98	-166.59	-197.51	242.42	258.38	229.85	0.33
18043.05	26.53	123.87	18000.65	-189.00	-163.71	218.26	250.04	220.90	0.42
18134.24	27.10	125.24	18082.04	-212.34	-129.83	194.36	248.88	211.44	0.92
18225.43	27.13	125.36	18163.21	-236.36	-95.91	170.64	255.07	202.09	0.07
18316.62	27.66	126.13	18244.17	-260.87	-61.86	146.96	268.10	193.34	0.70
18407.81	27.82	127.49	18324.88	-286.30	-27.88	123.67	287.65	185.56	0.72
18499.00	27.83	127.86	18405.52	-312.32	5.81	100.84	312.37	178.93	0.19



VES Survey International
Midland, TX
432-563-5444
Surveyor: Adam Askew
Cotton Draw 32 State SWD No 002 / API 30-025-41524



V.E.S. Survey Date: 1/22/2016



HOBBS OCD

APR 21 2016

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I Adam Askew certify that I am employed by VES Survey International. That I did on the day(s) of 01/24/16 through 01/24/16 conduct or supervise the taking of a Rate Gyro survey from a depth of 16,401.00 feet to a depth of 18,499.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy for the Cotton Draw 32 State SWD No Well # 002 API # 30-025-41524 in Lea, County / Parish New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services

A handwritten signature in blue ink, appearing to read "Adam Askew", is written over a horizontal line.

Adam Askew
Service Technician
Vaughn Energy Services



HOBBS OCD

APR 21 2016

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I Adam Askew certify that I am employed by VES Survey International. That I did on the day(s) of 01/24/16 through 01/24/16 conduct or supervise the taking of a Rate Gyro survey from a depth of 16,401.00 feet to a depth of 18,499.00 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy for the Cotton Draw 32 State SWD No Well # 002 API # 30-025-41524 in Lea, County / Parish New Mexico ; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services

A handwritten signature in blue ink, appearing to read "Adam Askew", is written over a horizontal line.

Adam Askew
Service Technician
Vaughn Energy Services



RECEIVED

Well Name: COTTON DRAW 32 STATE SWD 2

Sub-Division DELAWARE BASIN WEST		Region BASIN WEST		Field Name PADUCA SOUTH		County LEA		State/Province NM					
Surface Legal Location SEC32 T24S R32E		API/UWI 3002541524		Latitude (°) 32° 10' 11.703" N		Longitude (°) 103° 41' 28.902" W		Orig KB Elevation (ft) 3,502.70		Ground Elev MSL (ft) 3,477.70		KB - GL (ft) 25.00	
Wellbores Wellbore Name OH		Parent Wellbore		SAP Well ID 39155		Vertical Section Direction (°) 0.00							
Kick Offs & Key Depths													
Date				Type				Top Depth (ftKB)					
Actual Deviation Survey TELEDRIFT/MWD SURVEY, Proposed? No				Definitive? No		Proposed? No		Proposed Deviation Survey					
Deviation Survey													
Date 11/19/2015				Description TELEDRIFT/MWD SURVEY									
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)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company			
12/26/2...									BIT				
11/19/2...	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	MWD				
11/19/2...	207.00	0.10	317.00	207.00	0.13	0.13	-0.12	0.05	MWD				
11/19/2...	223.00	0.20	115.00	223.00	0.13	0.13	-0.11	1.84	MWD				
11/19/2...	253.00	0.20	152.00	253.00	0.06	0.06	-0.04	0.42	MWD				
11/19/2...	418.00	0.40	84.00	418.00	-0.13	-0.13	0.67	0.23	MWD				
11/19/2...	503.00	0.50	131.00	503.00	-0.34	-0.34	1.25	0.44	MWD				
11/19/2...	603.00	0.60	132.00	602.99	-0.98	-0.98	1.97	0.10	MWD				
11/19/2...	690.00	0.60	128.00	689.99	-1.57	-1.57	2.66	0.05	MWD				
11/22/2...	843.00	0.70	112.66	842.98	-2.42	-2.42	4.16	0.13	MWD				
11/22/2...	906.00	0.70	109.53	905.97	-2.70	-2.70	4.88	0.06	MWD				
11/22/2...	1,001.00	0.79	105.68	1,000.96	-3.07	-3.07	6.05	0.11	MWD				
11/22/2...	1,096.00	0.88	115.52	1,095.95	-3.56	-3.56	7.34	0.18	MWD				
11/22/2...	1,190.00	0.97	111.50	1,189.94	-4.16	-4.16	8.73	0.12	MWD				
11/22/2...	1,285.00	0.88	105.17	1,284.93	-4.65	-4.65	10.19	0.14	MWD				
11/22/2...	1,379.00	0.35	75.84	1,378.92	-4.77	-4.77	11.16	0.64	MWD				
11/22/2...	1,468.00	0.18	280.71	1,467.92	-4.67	-4.67	11.29	0.58	MWD				
11/22/2...	1,558.00	0.18	197.19	1,557.92	-4.78	-4.78	11.11	0.27	MWD				
11/22/2...	1,647.00	0.26	11.34	1,646.92	-4.72	-4.72	11.10	0.49	MWD				
11/22/2...	1,736.00	0.26	332.16	1,735.92	-4.34	-4.34	11.05	0.20	MWD				
11/22/2...	1,826.00	0.18	148.25	1,825.92	-4.28	-4.28	11.03	0.49	MWD				
11/22/2...	1,915.00	0.26	278.18	1,914.92	-4.37	-4.37	10.90	0.45	MWD				
11/22/2...	2,004.00	0.26	246.60	2,003.92	-4.42	-4.42	10.52	0.16	MWD				
11/22/2...	2,094.00	0.26	29.54	2,093.92	-4.33	-4.33	10.43	0.55	MWD				
11/22/2...	2,183.00	0.26	25.75	2,182.92	-3.97	-3.97	10.62	0.02	MWD				
11/23/2...	2,273.00	0.26	78.58	2,272.92	-3.74	-3.74	10.91	0.26	MWD				
11/23/2...	2,362.00	0.26	164.13	2,361.92	-3.90	-3.90	11.16	0.40	MWD				
11/23/2...	2,451.00	0.35	167.09	2,450.92	-4.36	-4.36	11.28	0.10	MWD				
11/23/2...	2,541.00	0.26	12.36	2,540.92	-4.43	-4.43	11.38	0.66	MWD				
11/24/2...	2,630.00	0.35	85.78	2,629.91	-4.21	-4.21	11.70	0.42	MWD				
11/24/2...	2,720.00	0.35	94.28	2,719.91	-4.21	-4.21	12.24	0.06	MWD				
11/24/2...	2,809.00	0.18	253.45	2,808.91	-4.27	-4.27	12.38	0.59	MWD				
11/24/2...	2,898.00	0.09	263.15	2,897.91	-4.32	-4.32	12.18	0.10	MWD				
11/24/2...	2,988.00	0.44	62.44	2,987.91	-4.17	-4.17	12.41	0.58	MWD				
11/24/2...	3,077.00	0.53	104.72	3,076.91	-4.11	-4.11	13.11	0.40	MWD				
11/24/2...	3,167.00	0.26	117.50	3,166.91	-4.31	-4.31	13.70	0.31	MWD				
11/24/2...	3,256.00	0.70	88.32	3,255.90	-4.39	-4.39	14.42	0.55	MWD				
11/24/2...	3,346.00	0.44	124.90	3,345.90	-4.57	-4.57	15.25	0.48	MWD				
11/24/2...	3,435.00	0.88	136.38	3,434.89	-5.26	-5.26	16.01	0.51	MWD				
11/24/2...	3,524.00	0.88	144.20	3,523.88	-6.31	-6.31	16.88	0.13	MWD				
11/24/2...	3,614.00	0.97	131.46	3,613.87	-7.38	-7.38	17.85	0.25	MWD				
11/25/2...	3,703.00	0.53	130.78	3,702.86	-8.14	-8.14	18.73	0.49	MWD				
11/25/2...	3,793.00	0.79	161.28	3,792.86	-9.00	-9.00	19.24	0.48	MWD				
11/25/2...	3,882.00	0.88	142.78	3,881.85	-10.13	-10.13	19.85	0.32	MWD				
11/25/2...	3,971.00	0.79	155.96	3,970.84	-11.23	-11.23	20.52	0.24	MWD				
11/25/2...	4,060.00	1.32	145.96	4,059.82	-12.64	-12.64	21.34	0.63	MWD				
11/25/2...	4,150.00	1.41	159.33	4,149.80	-14.54	-14.54	22.31	0.37	MWD				
11/25/2...	4,239.00	0.97	159.02	4,238.78	-16.26	-16.26	22.97	0.49	MWD				
11/25/2...	4,329.00	0.79	165.59	4,328.77	-17.58	-17.58	23.39	0.23	MWD				
12/1/2015	4,579.00	0.62	190.67	4,578.75	-20.58	-20.58	23.57	0.14	MWD				
12/1/2015	4,668.00	0.70	209.68	4,667.74	-21.52	-21.52	23.21	0.26	MWD				
12/1/2015	4,758.00	0.44	240.85	4,757.74	-22.17	-22.17	22.64	0.44	MWD				
12/1/2015	4,847.00	0.70	257.29	4,846.73	-22.45	-22.45	21.81	0.34	MWD				
12/1/2015	4,937.00	1.41	264.23	4,936.72	-22.69	-22.69	20.17	0.80	MWD				
12/1/2015	5,026.00	2.02	272.29	5,025.68	-22.73	-22.73	17.52	0.74	MWD				
12/1/2015	5,115.00	2.64	278.25	5,114.60	-22.38	-22.38	13.92	0.75	MWD				
12/1/2015	5,204.00	3.17	277.10	5,203.49	-21.78	-21.78	9.45	0.60	MWD				
12/1/2015	5,294.00	3.25	279.74	5,293.35	-21.04	-21.04	4.47	0.19	MWD				
12/1/2015	5,383.00	3.25	279.52	5,382.21	-20.19	-20.19	-0.51	0.01	MWD				
12/1/2015	5,473.00	3.25	281.02	5,472.06	-19.28	-19.28	-5.53	0.09	MWD				
12/1/2015	5,562.00	3.17	278.20	5,560.92	-18.45	-18.45	-10.44	0.20	MWD				
12/1/2015	5,651.00	3.25	279.39	5,649.78	-17.69	-17.69	-15.36	0.12	MWD				
12/1/2015	5,740.00	3.08	279.86	5,738.65	-16.87	-16.87	-20.21	0.19	MWD				



Well Name: COTTON DRAW 32 STATE SWD 2

Sub-Division DELAWARE BASIN WEST		Region BASIN WEST		Field Name PADUCA SOUTH		County LEA		State/Province NM			
Surface Legal Location SEC32 T24S R32E		API/UWI 3002541524	Latitude (°) 32° 10' 11.703" N		Longitude (°) 103° 41' 28.902" W		Orig KB Elevation (ft) 3,502.70		Ground Elev MSL (ft) 3,477.70		KB - GL (ft) 25.00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
12/1/2015	5,830.00	3.08	278.23	5,828.52	-16.11	-16.11	-24.98	0.10	MWD	
12/1/2015	5,919.00	3.08	277.86	5,917.39	-15.44	-15.44	-29.72	0.02	MWD	
12/1/2015	6,008.00	2.90	279.71	6,006.27	-14.73	-14.73	-34.31	0.23	MWD	
12/1/2015	6,098.00	2.90	277.11	6,096.15	-14.07	-14.07	-38.81	0.15	MWD	
12/1/2015	6,187.00	2.90	277.50	6,185.04	-13.49	-13.49	-43.28	0.02	MWD	
12/1/2015	6,276.00	2.55	279.61	6,273.94	-12.87	-12.87	-47.46	0.41	MWD	
12/1/2015	6,366.00	2.73	277.38	6,363.84	-12.26	-12.26	-51.56	0.23	MWD	
12/1/2015	6,455.00	2.73	282.23	6,452.74	-11.54	-11.54	-55.73	0.26	MWD	
12/1/2015	6,544.00	2.81	280.50	6,541.64	-10.69	-10.69	-59.95	0.13	MWD	
12/1/2015	6,634.00	2.55	278.85	6,631.54	-9.98	-9.98	-64.10	0.30	MWD	
12/1/2015	6,723.00	2.64	276.43	6,720.45	-9.45	-9.45	-68.09	0.16	MWD	
12/1/2015	6,813.00	2.64	280.11	6,810.35	-8.85	-8.85	-72.19	0.19	MWD	
12/1/2015	6,902.00	2.55	273.60	6,899.26	-8.37	-8.37	-76.18	0.35	MWD	
12/1/2015	6,991.00	2.46	273.80	6,988.17	-8.12	-8.12	-80.07	0.10	MWD	
12/1/2015	7,081.00	2.55	270.55	7,078.09	-7.97	-7.97	-84.00	0.19	MWD	
12/1/2015	7,170.00	2.46	269.26	7,167.00	-7.98	-7.98	-87.89	0.12	MWD	
12/1/2015	7,259.00	2.64	266.15	7,255.92	-8.14	-8.14	-91.84	0.26	MWD	
12/1/2015	7,349.00	2.20	269.91	7,345.84	-8.28	-8.28	-95.64	0.52	MWD	
12/1/2015	7,438.00	2.29	271.84	7,434.77	-8.22	-8.22	-99.12	0.13	MWD	
12/6/2015	7,527.00	2.73	269.23	7,523.68	-8.20	-8.20	-103.02	0.51	MWD	
12/6/2015	7,617.00	2.55	266.51	7,613.59	-8.35	-8.35	-107.16	0.24	MWD	
12/6/2015	7,706.00	2.46	266.74	7,702.50	-8.58	-8.58	-111.04	0.10	MWD	
12/6/2015	7,796.00	2.20	266.34	7,792.43	-8.80	-8.80	-114.69	0.29	MWD	
12/6/2015	7,885.00	1.76	264.97	7,881.37	-9.03	-9.03	-117.76	0.50	MWD	
12/6/2015	7,975.00	1.67	258.69	7,971.33	-9.40	-9.40	-120.42	0.23	MWD	
12/6/2015	8,064.00	1.67	254.29	8,060.29	-10.01	-10.01	-122.94	0.14	MWD	
12/6/2015	8,154.00	1.58	251.73	8,150.26	-10.75	-10.75	-125.38	0.13	MWD	
12/6/2015	8,243.00	1.49	243.68	8,239.23	-11.65	-11.65	-127.59	0.26	MWD	
12/8/2015	8,330.00	1.67	226.78	8,326.19	-13.02	-13.02	-129.52	0.57	MWD	
12/8/2015	8,420.00	1.76	222.29	8,416.15	-14.94	-14.94	-131.41	0.18	MWD	
12/8/2015	8,509.00	1.85	219.87	8,505.11	-17.05	-17.05	-133.25	0.13	MWD	
12/8/2015	8,598.00	1.76	220.88	8,594.07	-19.19	-19.19	-135.07	0.11	MWD	
12/8/2015	8,688.00	1.67	225.11	8,684.03	-21.16	-21.16	-136.90	0.17	MWD	
12/8/2015	8,777.00	1.67	238.07	8,772.99	-22.76	-22.76	-138.92	0.42	MWD	
12/8/2015	8,867.00	1.32	241.79	8,862.96	-23.95	-23.95	-140.95	0.40	MWD	
12/8/2015	8,956.00	0.88	236.96	8,951.94	-24.80	-24.80	-142.42	0.50	MWD	
12/8/2015	9,045.00	1.06	232.93	9,040.93	-25.67	-25.67	-143.65	0.22	MWD	
12/8/2015	9,135.00	1.14	213.56	9,130.91	-26.92	-26.92	-144.81	0.42	MWD	
12/8/2015	9,224.00	0.97	199.04	9,219.90	-28.37	-28.37	-145.55	0.35	MWD	
12/9/2015	9,314.00	1.14	211.14	9,309.88	-29.86	-29.86	-146.26	0.31	MWD	
12/9/2015	9,403.00	0.88	235.59	9,398.87	-31.00	-31.00	-147.28	0.56	MWD	
12/9/2015	9,492.00	0.79	216.21	9,487.86	-31.88	-31.88	-148.21	0.33	MWD	
12/9/2015	9,582.00	0.97	220.43	9,577.85	-32.96	-32.96	-149.07	0.21	MWD	
12/9/2015	9,671.00	1.06	216.56	9,666.83	-34.20	-34.20	-150.04	0.13	MWD	
12/9/2015	9,760.00	0.88	211.51	9,755.82	-35.44	-35.44	-150.89	0.22	MWD	
12/9/2015	9,850.00	0.79	214.59	9,845.81	-36.54	-36.54	-151.61	0.11	MWD	
12/9/2015	9,939.00	0.79	211.53	9,934.80	-37.57	-37.57	-152.27	0.05	MWD	
12/9/2015	10,029.00	0.97	208.30	10,024.79	-38.77	-38.77	-152.96	0.21	MWD	
12/9/2015	10,118.00	1.06	209.35	10,113.78	-40.15	-40.15	-153.72	0.10	MWD	
12/9/2015	10,207.00	0.88	209.73	10,202.77	-41.46	-41.46	-154.46	0.20	MWD	
12/10/2...	10,297.00	1.06	196.21	10,292.75	-42.86	-42.86	-155.04	0.32	MWD	
12/10/2...	10,386.00	0.97	185.71	10,381.74	-44.40	-44.40	-155.34	0.23	MWD	
12/10/2...	10,476.00	0.79	195.29	10,471.73	-45.76	-45.76	-155.58	0.26	MWD	
12/10/2...	10,565.00	1.06	184.95	10,560.72	-47.17	-47.17	-155.82	0.36	MWD	
12/10/2...	10,654.00	1.23	192.44	10,649.70	-48.92	-48.92	-156.09	0.25	MWD	
12/10/2...	10,744.00	1.49	185.82	10,739.67	-51.03	-51.03	-156.42	0.34	MWD	
12/10/2...	10,833.00	1.49	173.78	10,828.64	-53.33	-53.33	-156.41	0.35	MWD	
12/11/2...	10,923.00	1.67	153.95	10,918.61	-55.67	-55.67	-155.71	0.64	MWD	
12/11/2...	11,012.00	1.67	165.92	11,007.57	-58.09	-58.09	-154.82	0.39	MWD	
12/11/2...	11,102.00	1.67	150.86	11,097.53	-60.51	-60.51	-153.87	0.49	MWD	
12/12/2...	11,190.00	2.20	137.06	11,185.48	-62.87	-62.87	-152.09	0.80	MWD	
12/12/2...	11,280.00	1.32	148.73	11,275.44	-65.02	-65.02	-150.38	1.05	MWD	
12/12/2...	11,370.00	1.32	166.76	11,365.42	-66.91	-66.91	-149.60	0.46	MWD	
12/12/2...	11,460.00	0.97	169.18	11,455.40	-68.67	-68.67	-149.22	0.39	MWD	
12/12/2...	11,549.00	0.79	163.54	11,544.39	-70.00	-70.00	-148.90	0.22	MWD	
12/12/2...	11,638.00	0.88	158.57	11,633.38	-71.22	-71.22	-148.48	0.13	MWD	
12/12/2...	11,728.00	1.06	127.11	11,723.37	-72.37	-72.37	-147.56	0.62	MWD	
12/12/2...	11,817.00	1.23	130.80	11,812.35	-73.49	-73.49	-146.19	0.21	MWD	
12/12/2...	11,906.00	0.97	144.09	11,901.33	-74.73	-74.73	-145.02	0.41	MWD	
12/12/2...	11,995.00	1.14	130.50	11,990.32	-75.91	-75.91	-143.91	0.34	MWD	
12/12/2...	12,040.00	1.06	130.88	12,035.31	-76.47	-76.47	-143.25	0.18	MWD	
12/21/2...	12,168.00	0.88	170.35	12,163.29	-78.22	-78.22	-142.19	0.53	MWD	
12/21/2...	12,257.00	0.88	194.77	12,252.28	-79.55	-79.55	-142.25	0.42	MWD	
12/21/2...	12,347.00	0.79	167.89	12,342.27	-80.83	-80.83	-142.30	0.44	MWD	
12/21/2...	12,436.00	0.62	151.77	12,431.27	-81.85	-81.85	-141.94	0.29	MWD	
12/21/2...	12,525.00	0.35	151.26	12,520.26	-82.51	-82.51	-141.58	0.30	MWD	



Well Name: COTTON DRAW 32 STATE SWD 2

Sub-Division DELAWARE BASIN WEST		Region BASIN WEST		Field Name PADUCA SOUTH		County LEA		State/Province NM	
Surface Legal Location SEC32 T24S R32E		API/UWI 3002541524	Latitude (°) 32° 10' 11.703" N		Longitude (°) 103° 41' 28.902" W		Orig KB Elevation (ft) 3,502.70	Ground Elev MSL (ft) 3,477.70	KB - GL (ft) 25.00

Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
12/21/2...	12,615.00	0.18	114.94	12,610.26	-82.81	-82.81	-141.32	0.26	MWD	
12/21/2...	12,704.00	0.35	5.02	12,699.26	-82.60	-82.60	-141.17	0.50	MWD	
12/21/2...	12,793.00	0.35	353.73	12,788.26	-82.06	-82.06	-141.18	0.08	MWD	
12/21/2...	12,883.00	0.70	312.67	12,878.26	-81.42	-81.42	-141.61	0.55	MWD	
12/21/2...	12,972.00	0.62	13.20	12,967.25	-80.58	-80.58	-141.90	0.75	MWD	
12/21/2...	13,061.00	0.62	358.71	13,056.25	-79.63	-79.63	-141.80	0.18	MWD	
12/21/2...	13,153.00	0.53	343.40	13,148.24	-78.72	-78.72	-141.93	0.19	MWD	
12/21/2...	13,245.00	0.79	33.60	13,240.24	-77.79	-77.79	-141.70	0.66	MWD	
12/21/2...	13,338.00	1.06	60.57	13,333.23	-76.83	-76.83	-140.60	0.54	MWD	
12/21/2...	13,431.00	0.97	46.25	13,426.21	-75.86	-75.86	-139.28	0.29	MWD	
12/21/2...	13,524.00	0.88	33.15	13,519.20	-74.72	-74.72	-138.32	0.25	MWD	
12/22/2...	13,616.00	0.62	23.49	13,611.19	-73.67	-73.67	-137.74	0.31	MWD	
12/22/2...	13,709.00	0.53	25.59	13,704.19	-72.82	-72.82	-137.35	0.10	MWD	
12/22/2...	13,801.00	0.70	0.26	13,796.18	-71.88	-71.88	-137.17	0.34	MWD	
12/22/2...	13,893.00	0.53	319.80	13,888.18	-70.99	-70.99	-137.44	0.49	MWD	
12/22/2...	13,924.00	0.79	319.31	13,919.17	-70.72	-70.72	-137.67	0.84	MWD	
12/22/2...	13,985.00	0.70	315.40	13,980.17	-70.13	-70.13	-138.21	0.17	MWD	
12/22/2...	14,079.00	0.88	309.22	14,074.16	-69.27	-69.27	-139.17	0.21	MWD	
12/22/2...	14,171.00	0.79	308.64	14,166.15	-68.43	-68.43	-140.21	0.10	MWD	
12/26/2...	14,264.00	0.62	310.10	14,259.14	-67.70	-67.70	-141.10	0.18	MWD	
12/26/2...	14,356.00	0.79	298.03	14,351.14	-67.08	-67.08	-142.04	0.24	MWD	
12/26/2...	14,434.00	0.88	289.31	14,429.13	-66.63	-66.63	-143.08	0.20	MWD	
12/26/2...	14,448.00	0.88	289.43	14,443.13	-66.56	-66.56	-143.28	0.01	MWD	
12/26/2...	14,540.00	1.14	298.14	14,535.11	-65.89	-65.89	-144.75	0.33	MWD	
12/26/2...	14,632.00	1.32	299.36	14,627.09	-64.94	-64.94	-146.48	0.20	MWD	
12/26/2...	14,724.00	1.32	293.88	14,719.07	-64.00	-64.00	-148.38	0.14	MWD	
12/26/2...	14,817.00	1.14	292.80	14,812.04	-63.20	-63.20	-150.21	0.20	MWD	
12/26/2...	14,910.00	1.14	284.35	14,905.03	-62.62	-62.62	-151.96	0.18	MWD	
12/26/2...	15,008.00	1.23	267.33	15,003.01	-62.42	-62.42	-153.95	0.37	MWD	
12/26/2...	15,100.00	1.41	267.52	15,094.98	-62.52	-62.52	-156.07	0.20	MWD	
12/26/2...	15,192.00	1.50	270.12	15,186.95	-62.56	-62.56	-158.40	0.12	MWD	
12/26/2...	15,285.00	1.67	269.07	15,279.92	-62.58	-62.58	-160.97	0.19	MWD	
12/26/2...	15,376.00	2.11	268.22	15,370.87	-62.66	-62.66	-163.97	0.48	MWD	
12/26/2...	15,468.00	2.29	269.58	15,462.80	-62.72	-62.72	-167.50	0.20	MWD	
12/26/2...	15,560.00	2.73	257.80	15,554.71	-63.20	-63.20	-171.48	0.73	MWD	
12/26/2...	15,652.00	2.11	256.90	15,646.63	-64.05	-64.05	-175.28	0.68	MWD	
12/26/2...	15,744.00	1.76	253.10	15,738.58	-64.84	-64.84	-178.28	0.40	MWD	
12/26/2...	15,837.00	1.76	244.67	15,831.53	-65.87	-65.87	-180.93	0.28	MWD	
12/26/2...	15,930.00	1.67	237.35	15,924.49	-67.21	-67.21	-183.37	0.25	MWD	
12/26/2...	16,023.00	1.67	244.47	16,017.45	-68.52	-68.52	-185.73	0.22	MWD	
12/26/2...	16,113.00	2.02	248.38	16,107.40	-69.67	-69.67	-188.39	0.41	MWD	
12/26/2...	16,205.00	2.11	251.22	16,199.34	-70.82	-70.82	-191.50	0.15	MWD	
12/26/2...	16,299.00	2.11	255.19	16,293.28	-71.82	-71.82	-194.81	0.16	MWD	
12/26/2...	16,391.00	2.20	255.15	16,385.22	-72.70	-72.70	-198.15	0.10	MWD	
12/26/2...	16,478.00	2.20	252.71	16,472.15	-73.63	-73.63	-201.36	0.11	MWD	
12/26/2...	16,571.00	2.02	258.80	16,565.09	-74.47	-74.47	-204.67	0.31	MWD	
12/26/2...	16,664.00	2.02	258.80	16,658.03	-75.11	-75.11	-207.89	0.00	MWD	
12/26/2...	16,756.00	1.85	251.03	16,749.98	-75.91	-75.91	-210.89	0.34	MWD	
12/26/2...	16,801.00	1.93	246.29	16,794.95	-76.45	-76.45	-212.27	0.39	MWD	
12/26/2...	16,830.00	1.76	251.15	16,823.94	-76.79	-76.79	-213.13	0.80	MWD	
12/26/2...	16,835.00	1.76	250.11	16,828.94	-76.84	-76.84	-213.28	0.64	MWD	
12/26/2...	16,842.00	1.85	249.42	16,835.93	-76.92	-76.92	-213.49	1.32	MWD	
12/26/2...	16,849.00	1.76	250.42	16,842.93	-76.99	-76.99	-213.69	1.36	MWD	
12/26/2...	16,857.00	1.67	250.10	16,850.93	-77.07	-77.07	-213.92	1.13	MWD	
12/26/2...	16,948.77	0.51	226.24	16,942.68	-77.81	-77.81	-215.47	1.33	MWD	
12/26/2...	17,039.96	0.49	236.18	17,033.86	-78.31	-78.31	-216.09	0.10	MWD	
12/26/2...	17,131.15	0.53	148.37	17,125.05	-78.89	-78.89	-216.19	0.78	MWD	
12/26/2...	17,222.34	1.27	140.62	17,216.23	-80.03	-80.03	-215.33	0.82	MWD	
12/26/2...	17,313.53	1.92	140.61	17,307.38	-81.99	-81.99	-213.72	0.71	MWD	
12/26/2...	17,404.72	2.30	122.23	17,398.51	-84.14	-84.14	-211.20	0.85	MWD	
12/26/2...	17,495.91	2.79	120.64	17,489.61	-86.25	-86.25	-207.74	0.54	MWD	
12/26/2...	17,587.10	7.59	121.47	17,580.40	-90.53	-90.53	-200.69	5.26	MWD	
12/26/2...	17,678.29	18.19	122.41	17,669.17	-101.33	-101.33	-183.49	11.63	MWD	
12/26/2...	17,769.48	26.08	122.48	17,753.57	-119.75	-119.75	-154.52	8.65	MWD	
12/26/2...	17,860.67	26.08	122.71	17,835.48	-141.35	-141.35	-120.74	0.11	MWD	
12/26/2...	17,951.86	26.29	123.21	17,917.31	-163.24	-163.24	-86.98	0.33	MWD	
12/26/2...	18,043.05	26.53	123.87	17,998.98	-185.65	-185.65	-53.18	0.42	MWD	
12/26/2...	18,134.24	27.10	125.24	18,080.37	-208.99	-208.99	-19.30	0.92	MWD	
12/26/2...	18,225.43	27.13	125.36	18,161.53	-233.01	-233.01	14.62	0.07	MWD	
12/26/2...	18,316.62	27.66	126.13	18,242.50	-257.52	-257.52	48.67	0.70	MWD	
12/26/2...	18,407.81	27.82	127.49	18,323.21	-282.95	-282.95	82.65	0.72	MWD	
12/26/2...	18,499.00	27.83	127.86	18,403.85	-308.97	-308.97	116.34	0.19	MWD	
12/26/2...	18,550.00	27.83	127.86	18,448.95	-323.58	-323.58	135.14	0.00	BIT	