

devon

Directional Survey

AUG 11 2014

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COTTON DRAW 10 FED COM 4H

WEST UNRESTRICTED

30-015-42/27

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location SEC10 T25S R31E	API/UWI 3001542127	Latitude (°) 32° 9' 6.09" N	Longitude (°) 103° 45' 39.362" W	Ground Elev... 3,428.20	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,453.20	Tubing Head Elevation (ft)

Wellbore Name OH	Parent Wellbore	SAP Well ID	Kick Off Depth (ftKB)	Vertical Section Direction (")
Actual Deviation Survey EXTREME, Proposed? No	Definitive? Yes	Proposed? No	Proposed Deviation Survey	

Deviation Survey					
Date 5/1/2014		Description EXTREME			
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
5/1/2014	144.00	0.22	289.00	144.00	-0.11	0.09	-0.26	0.15	MS	EXTREME
5/1/2014	215.00	0.31	191.88	215.00	0.01	-0.05	-0.43	0.57	MS	EXTREME
5/1/2014	308.00	0.31	268.57	308.00	0.23	-0.31	-0.73	0.41	MS	EXTREME
5/1/2014	400.00	0.62	259.70	400.00	0.26	-0.40	-1.47	0.34	MS	EXTREME
5/1/2014	492.00	0.79	262.60	491.99	0.32	-0.57	-2.59	0.19	MS	EXTREME
5/1/2014	531.00	1.01	242.70	530.98	0.46	-0.76	-3.16	0.97	MS	EXTREME
5/4/2014	701.00	1.13	254.69	700.95	1.30	-1.89	-6.11	0.15	MS	SPERRY-SUN DRILLING SE...
5/4/2014	792.00	1.37	245.02	791.93	1.82	-2.59	-7.96	0.35	MS	SPERRY-SUN DRILLING SE...
5/4/2014	824.00	1.31	243.12	823.92	2.08	-2.92	-8.64	0.23	MS	SPERRY-SUN DRILLING SE...
5/4/2014	971.00	0.65	262.10	970.90	2.72	-3.79	-10.96	0.49	MS	SPERRY-SUN DRILLING SE...
5/4/2014	1,062.00	0.37	357.93	1,061.90	2.45	-3.57	-11.48	0.86	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,152.00	0.40	33.01	1,151.90	1.92	-3.02	-11.32	0.26	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,241.00	0.40	16.87	1,240.89	1.39	-2.46	-11.06	0.13	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,335.00	0.46	34.16	1,334.89	0.79	-1.83	-10.75	0.15	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,430.00	0.46	40.07	1,429.89	0.23	-1.22	-10.30	0.05	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,524.00	0.44	46.46	1,523.89	-0.25	-0.69	-9.79	0.06	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,619.00	0.39	50.84	1,618.88	-0.66	-0.23	-9.28	0.06	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,713.00	0.39	36.98	1,712.88	-1.07	0.23	-8.83	0.10	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,808.00	0.58	43.55	1,807.88	-1.63	0.83	-8.31	0.21	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,902.00	0.65	54.06	1,901.87	-2.21	1.49	-7.55	0.14	MS	SPERRY-SUN DRILLING SE...
5/5/2014	1,997.00	0.62	56.22	1,996.87	-2.72	2.09	-6.69	0.04	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,091.00	0.63	37.42	2,090.86	-3.34	2.79	-5.95	0.22	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,185.00	0.65	37.62	2,184.86	-4.11	3.62	-5.31	0.02	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,280.00	1.42	52.51	2,279.84	-5.13	4.76	-4.05	0.85	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,374.00	1.86	57.16	2,373.80	-6.45	6.30	-1.84	0.49	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,469.00	1.73	60.35	2,468.75	-7.74	7.84	0.70	0.17	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,563.00	1.66	63.49	2,562.71	-8.81	9.15	3.15	0.12	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,657.00	1.55	59.29	2,656.68	-9.84	10.41	5.46	0.17	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,752.00	1.46	53.99	2,751.64	-11.00	11.78	7.55	0.17	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,846.00	1.49	54.94	2,845.61	-12.21	13.18	9.52	0.04	MS	SPERRY-SUN DRILLING SE...
5/5/2014	2,941.00	1.97	71.19	2,940.57	-13.20	14.42	12.07	0.72	MS	SPERRY-SUN DRILLING SE...
5/5/2014	3,035.00	2.48	84.48	3,034.50	-13.57	15.14	15.63	0.77	MS	SPERRY-SUN DRILLING SE...
5/5/2014	3,129.00	3.05	100.56	3,128.39	-12.88	14.87	20.11	1.02	MS	SPERRY-SUN DRILLING SE...
5/5/2014	3,224.00	3.20	96.99	3,223.25	-11.61	14.09	25.23	0.26	MS	SPERRY-SUN DRILLING SE...
5/5/2014	3,318.00	3.46	93.74	3,317.09	-10.59	13.58	30.66	0.34	MS	SPERRY-SUN DRILLING SE...
5/6/2014	3,413.00	3.11	90.81	3,411.93	-9.84	13.36	36.10	0.41	MS	SPERRY-SUN DRILLING SE...
5/6/2014	3,507.00	3.48	94.30	3,505.78	-9.08	13.11	41.49	0.45	MS	SPERRY-SUN DRILLING SE...
5/6/2014	3,601.00	3.45	95.90	3,599.61	-8.03	12.61	47.15	0.11	MS	SPERRY-SUN DRILLING SE...
5/6/2014	3,696.00	3.38	94.59	3,694.44	-6.98	12.09	52.79	0.11	MS	SPERRY-SUN DRILLING SE...
5/6/2014	3,790.00	3.59	94.57	3,788.26	-5.98	11.63	58.48	0.22	MS	SPERRY-SUN DRILLING SE...
5/6/2014	3,884.00	3.40	97.02	3,882.09	-4.86	11.06	64.18	0.26	MS	SPERRY-SUN DRILLING SE...
5/6/2014	3,979.00	3.89	107.27	3,976.90	-3.00	9.76	70.05	0.86	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,073.00	4.47	116.63	4,070.65	0.18	7.17	76.37	0.95	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,168.00	4.32	115.12	4,165.37	3.97	3.99	82.92	0.20	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,237.00	4.10	112.39	4,234.18	6.45	1.95	87.56	0.43	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,330.00	3.81	110.37	4,326.96	9.35	-0.40	93.53	0.35	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,425.00	3.74	108.31	4,421.76	11.98	-2.47	99.43	0.16	MS	SPERRY-SUN DRILLING SE...



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Survey Data

Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company
5/6/2014	4,519.00	3.51	110.07	4,515.57	14.46	-4.42	105.04	0.27	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,614.00	3.99	92.92	4,610.37	16.20	-5.58	111.07	1.28	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,708.00	3.83	90.36	4,704.15	16.99	-5.77	117.48	0.25	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,803.00	3.49	92.17	4,798.95	17.70	-5.90	123.54	0.38	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,897.00	3.44	87.24	4,892.78	18.22	-5.87	129.22	0.32	MS	SPERRY-SUN DRILLING SE...
5/6/2014	4,991.00	4.04	84.50	4,986.58	18.35	-5.42	135.33	0.67	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,086.00	4.27	83.17	5,081.33	18.27	-4.68	142.17	0.26	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,180.00	4.31	81.68	5,175.07	18.02	-3.75	149.14	0.13	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,274.00	3.76	83.83	5,268.84	17.81	-2.91	155.70	0.61	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,369.00	3.38	84.11	5,363.65	17.75	-2.29	161.58	0.40	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,463.00	4.40	78.66	5,457.43	17.36	-1.29	167.88	1.15	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,558.00	4.47	74.65	5,552.15	16.36	0.40	175.02	0.33	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,652.00	4.67	81.30	5,645.85	15.52	1.95	182.33	0.60	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,746.00	4.91	81.12	5,739.52	15.07	3.15	190.09	0.26	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,841.00	4.15	84.41	5,834.23	14.82	4.11	197.53	0.85	MS	SPERRY-SUN DRILLING SE...
5/9/2014	5,935.00	4.07	83.01	5,927.98	14.73	4.85	204.23	0.14	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,029.00	4.25	95.35	6,021.74	15.30	4.93	211.00	0.97	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,124.00	4.40	96.29	6,116.47	16.70	4.21	218.13	0.17	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,218.00	4.01	99.88	6,210.21	18.31	3.25	224.95	0.50	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,312.00	3.99	98.81	6,303.99	19.99	2.18	231.42	0.08	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,407.00	3.89	96.55	6,398.76	21.48	1.31	237.89	0.19	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,501.00	3.78	96.19	6,492.55	22.77	0.61	244.14	0.12	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,596.00	3.78	90.59	6,587.34	23.74	0.24	250.38	0.39	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,690.00	3.68	91.20	6,681.15	24.42	0.14	256.50	0.11	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,784.00	3.49	92.70	6,774.96	25.18	-0.05	262.37	0.23	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,879.00	3.29	95.45	6,869.80	26.11	-0.45	267.97	0.27	MS	SPERRY-SUN DRILLING SE...
5/9/2014	6,973.00	3.88	86.72	6,963.61	26.74	-0.52	273.83	0.85	MS	SPERRY-SUN DRILLING SE...
5/9/2014	7,068.00	3.71	88.79	7,058.40	27.10	-0.27	280.12	0.23	MS	SPERRY-SUN DRILLING SE...
5/9/2014	7,162.00	3.03	86.54	7,152.24	27.41	-0.06	285.64	0.74	MS	SPERRY-SUN DRILLING SE...
5/9/2014	7,256.00	3.91	78.60	7,246.07	27.17	0.72	291.26	1.06	MS	SPERRY-SUN DRILLING SE...
5/10/2014	7,351.00	4.32	97.39	7,340.83	27.64	0.90	297.98	1.48	MS	SPERRY-SUN DRILLING SE...
5/11/2014	7,446.00	4.82	97.39	7,435.52	29.32	-0.07	305.49	0.53	MS	SPERRY-SUN DRILLING SE...
5/11/2014	7,540.00	4.82	96.55	7,529.19	31.03	-1.03	313.33	0.08	MS	SPERRY-SUN DRILLING SE...
5/11/2014	7,634.00	4.84	98.63	7,622.86	32.82	-2.07	321.17	0.19	MS	SPERRY-SUN DRILLING SE...
5/11/2014	7,729.00	4.69	98.95	7,717.53	34.77	-3.28	328.97	0.16	MS	SPERRY-SUN DRILLING SE...
5/11/2014	7,823.00	4.46	100.29	7,811.23	36.72	-4.53	336.36	0.27	MS	SPERRY-SUN DRILLING SE...
5/11/2014	7,918.00	3.83	100.21	7,905.98	38.58	-5.75	343.12	0.66	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,012.00	3.39	104.33	7,999.79	40.38	-7.00	348.90	0.54	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,107.00	3.46	92.42	8,094.63	41.72	-7.81	354.49	0.75	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,201.00	2.90	88.97	8,188.48	42.30	-7.89	359.70	0.63	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,295.00	3.07	85.11	8,282.35	42.51	-7.63	364.59	0.28	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,390.00	3.60	73.29	8,377.19	41.96	-6.56	369.98	0.91	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,484.00	2.44	77.70	8,471.06	41.15	-5.28	374.76	1.26	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,579.00	2.40	90.06	8,565.98	41.10	-4.85	378.72	0.55	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,673.00	3.34	91.63	8,659.86	41.63	-4.93	383.43	1.00	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,769.00	2.43	103.20	8,755.74	42.63	-5.48	388.21	1.12	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,862.00	1.03	83.30	8,848.69	43.24	-5.83	390.96	1.62	MS	SPERRY-SUN DRILLING SE...
5/11/2014	8,956.00	0.92	26.58	8,942.68	42.59	-5.06	392.13	0.99	MS	SPERRY-SUN DRILLING SE...
5/11/2014	9,051.00	1.65	350.36	9,037.66	40.58	-3.03	392.24	1.11	MS	SPERRY-SUN DRILLING SE...
5/11/2014	9,145.00	1.05	353.81	9,131.63	38.36	-0.84	391.93	0.64	MS	SPERRY-SUN DRILLING SE...
5/11/2014	9,240.00	0.70	82.09	9,226.62	37.47	0.11	392.41	1.31	MS	SPERRY-SUN DRILLING SE...
5/11/2014	9,334.00	0.56	126.78	9,320.62	37.75	-0.09	393.34	0.53	MS	SPERRY-SUN DRILLING SE...
5/11/2014	9,428.00	0.83	122.92	9,414.61	38.49	-0.73	394.28	0.29	MS	SPERRY-SUN DRILLING SE...
5/11/2014	9,523.00	0.50	97.96	9,509.61	39.01	-1.16	395.27	0.45	MS	SPERRY-SUN DRILLING SE...
5/11/2014	9,617.00	0.50	138.43	9,603.60	39.44	-1.53	395.95	0.37	MS	SPERRY-SUN DRILLING SE...



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5/11/2014	9,711.00	0.96	308.24	9,697.60	39.22	-1.35	395.60	1.55	MS	SPERRY-SUN DRILLING SE...
5/15/2014	9,794.00	0.96	261.91	9,780.59	38.78	-1.01	394.37	0.91	MS	SPERRY-SUN DRILLING SE...
5/15/2014	9,826.00	3.27	194.58	9,812.57	39.64	-1.94	393.87	9.48	MS	SPERRY-SUN DRILLING SE...
5/15/2014	9,857.00	6.28	180.92	9,843.46	42.16	-4.49	393.62	10.31	MS	SPERRY-SUN DRILLING SE...
5/15/2014	9,888.00	9.11	175.33	9,874.18	46.30	-8.63	393.80	9.43	MS	SPERRY-SUN DRILLING SE...
5/15/2014	9,920.00	12.38	173.12	9,905.61	52.26	-14.56	394.41	10.30	MS	SPERRY-SUN DRILLING SE...
5/15/2014	9,951.00	15.21	169.30	9,935.71	59.64	-21.86	395.57	9.59	MS	SPERRY-SUN DRILLING SE...
5/15/2014	9,983.00	18.22	172.62	9,966.36	68.82	-30.95	396.99	9.86	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,014.00	21.48	176.86	9,995.51	79.34	-41.42	397.92	11.49	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,046.00	24.92	179.23	10,024.92	91.92	-54.02	398.33	11.14	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,077.00	28.91	182.10	10,052.56	105.86	-68.04	398.15	13.53	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,109.00	32.76	181.43	10,080.03	122.13	-84.43	397.65	12.08	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,140.00	36.04	181.46	10,105.61	139.51	-101.94	397.21	10.58	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,172.00	38.71	180.33	10,131.03	158.81	-121.36	396.91	8.61	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,203.00	41.11	179.92	10,154.81	178.60	-141.25	396.87	7.79	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,235.00	44.02	179.44	10,178.38	200.16	-162.89	396.99	9.15	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,266.00	47.26	180.74	10,200.05	222.21	-185.05	396.95	10.87	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,298.00	50.65	181.01	10,221.06	246.19	-209.18	396.58	10.61	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,329.00	53.36	181.14	10,240.14	270.46	-233.60	396.12	8.75	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,360.00	55.91	181.64	10,258.08	295.56	-258.87	395.50	8.33	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,392.00	58.37	181.77	10,275.44	322.22	-285.74	394.70	7.70	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,423.00	60.84	180.67	10,291.13	348.78	-312.47	394.14	8.54	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,455.00	63.08	179.82	10,306.17	376.88	-340.71	394.02	7.38	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,486.00	65.61	179.29	10,319.59	404.71	-368.65	394.24	8.31	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,518.00	67.84	178.69	10,332.23	434.01	-398.04	394.76	7.18	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,549.00	69.40	179.29	10,343.53	462.79	-426.90	395.27	5.35	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,581.00	70.59	177.87	10,354.48	492.78	-456.96	396.01	5.59	MS	SPERRY-SUN DRILLING SE...
5/15/2014	10,612.00	72.82	177.35	10,364.21	522.17	-486.37	397.24	7.37	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,643.00	75.41	178.15	10,372.70	551.94	-516.16	398.41	8.72	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,675.00	78.28	178.06	10,379.98	583.03	-547.30	399.44	8.97	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,707.00	81.04	178.90	10,385.72	614.43	-578.76	400.27	9.00	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,738.00	83.96	179.04	10,389.77	645.07	-609.49	400.83	9.43	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,769.00	86.89	179.87	10,392.24	675.85	-640.38	401.12	9.82	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,801.00	88.52	180.03	10,393.52	707.68	-672.36	401.15	5.12	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,832.00	89.23	180.45	10,394.13	738.52	-703.35	401.02	2.66	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,889.00	90.40	181.41	10,394.31	795.16	-760.34	400.09	2.66	MS	SPERRY-SUN DRILLING SE...
5/16/2014	10,983.00	90.06	181.45	10,393.94	888.47	-854.31	397.75	0.36	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,077.00	91.30	182.58	10,392.82	981.66	-948.24	394.44	1.78	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,172.00	90.86	181.53	10,391.03	1,075.82	-1,043.16	391.04	1.20	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,266.00	89.69	180.36	10,390.58	1,169.22	-1,137.15	389.49	1.76	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,361.00	88.52	178.40	10,392.06	1,263.86	-1,232.12	390.51	2.40	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,455.00	88.89	178.96	10,394.19	1,357.58	-1,326.07	392.68	0.71	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,549.00	88.59	176.81	10,396.26	1,451.39	-1,419.98	396.15	2.31	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,644.00	89.17	177.16	10,398.11	1,546.28	-1,514.83	401.14	0.71	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,738.00	89.81	177.90	10,398.95	1,640.15	-1,608.74	405.19	1.04	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,833.00	90.31	178.34	10,398.85	1,734.96	-1,703.69	408.31	0.70	MS	SPERRY-SUN DRILLING SE...
5/16/2014	11,927.00	89.35	177.93	10,399.13	1,828.77	-1,797.64	411.37	1.11	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,021.00	89.75	177.51	10,399.87	1,922.62	-1,891.56	415.11	0.62	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,116.00	90.03	177.90	10,400.05	2,017.47	-1,986.48	418.91	0.51	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,211.00	90.80	178.84	10,399.36	2,112.25	-2,081.44	421.61	1.28	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,305.00	89.08	177.80	10,399.46	2,206.03	-2,175.39	424.37	2.14	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,399.00	89.35	177.79	10,400.75	2,299.87	-2,269.31	427.99	0.29	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,494.00	89.97	178.51	10,401.31	2,394.68	-2,364.26	431.05	1.00	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,588.00	90.77	180.14	10,400.70	2,488.34	-2,458.25	432.16	1.93	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,683.00	89.63	178.51	10,400.37	2,583.00	-2,553.24	433.28	2.09	MS	SPERRY-SUN DRILLING SE...



COTTON DRAW 10 FED COM 4H

WEST UNRESTRICTED

Directional Survey

District DELAWARE BASIN	County EDDY	Field Name PADUCA	Project Group DELAWARE BASIN REG	State/Province NM			
Surface Legal Location SEC10 T2S R31E	API/UWI 3001542127	Latitude (") 32° 9' 6.09" N	Longitude (") 103° 45' 39.362" W	Ground Elev... 3,428.20	KB - GL (ft) 25.00	Orig KB Elev (ft) 3,453.20	Tubing Head Elevation (ft)

Survey Data

Date	MD (ftKB)	Incl. (")	Azm. (")	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS ("/100ft)	Survey Tool	Survey Company
5/16/2014	12,777.00	89.97	178.63	10,400.70	2,676.76	-2,647.21	435.63	0.38	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,872.00	90.37	179.45	10,400.42	2,771.46	-2,742.19	437.22	0.96	MS	SPERRY-SUN DRILLING SE...
5/16/2014	12,966.00	88.55	178.33	10,401.30	2,865.17	-2,836.17	439.04	2.27	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,060.00	89.04	178.52	10,403.28	2,958.93	-2,930.11	441.62	0.56	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,155.00	89.75	179.56	10,404.28	3,053.63	-3,025.09	443.21	1.33	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,249.00	88.77	178.65	10,405.50	3,147.32	-3,119.07	444.68	1.42	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,344.00	89.04	178.80	10,407.31	3,242.04	-3,214.03	446.79	0.33	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,438.00	89.07	178.08	10,408.86	3,335.81	-3,307.98	449.35	0.77	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,532.00	89.82	178.87	10,409.77	3,429.58	-3,401.94	451.85	1.16	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,627.00	90.77	180.00	10,409.29	3,524.22	-3,496.93	452.79	1.55	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,721.00	90.31	180.13	10,408.40	3,617.77	-3,590.93	452.68	0.51	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,816.00	89.17	178.84	10,408.83	3,712.41	-3,685.92	453.54	1.81	MS	SPERRY-SUN DRILLING SE...
5/16/2014	13,910.00	89.20	178.12	10,410.17	3,806.17	-3,779.87	456.03	0.77	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,005.00	90.52	180.22	10,410.40	3,900.85	-3,874.86	457.41	2.61	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,099.00	90.77	180.24	10,409.34	3,994.38	-3,968.85	457.03	0.27	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,193.00	88.83	179.02	10,409.67	4,087.99	-4,062.84	457.64	2.44	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,288.00	89.85	179.87	10,410.76	4,182.63	-4,157.83	458.56	1.40	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,382.00	88.83	178.99	10,411.85	4,276.28	-4,251.82	459.49	1.43	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,476.00	89.69	180.14	10,413.06	4,369.90	-4,345.80	460.20	1.53	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,571.00	89.01	179.41	10,414.14	4,464.49	-4,440.79	460.58	1.05	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,665.00	89.91	180.07	10,415.02	4,558.09	-4,534.79	461.00	1.19	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,759.00	90.68	180.35	10,414.54	4,651.63	-4,628.79	460.66	0.87	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,832.00	91.61	181.40	10,413.08	4,724.16	-4,701.76	459.55	1.92	MS	SPERRY-SUN DRILLING SE...
5/16/2014	14,894.00	91.61	181.40	10,411.34	4,785.69	-4,763.72	458.03	0.00	MS	SPERRY-SUN DRILLING SE...