

HOBBS OCD

OCT 19 2015

RECEIVED



April 20, 2015

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

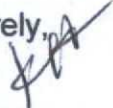
Attn: Megan Moravec

30-025-41172

Re: Cotton Draw 32 State Federal Com 4H

Please find enclosed a copy of the survey from 0' to 4350' ran on the above referenced well.

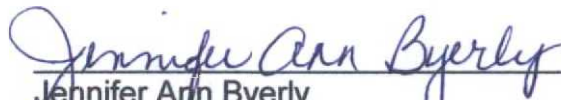
If I can be of any further service please do not hesitate to call me at 800-606-4976.

Sincerely, 

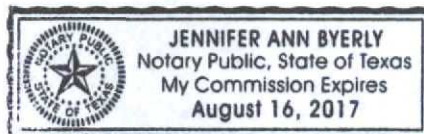
Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 20 day of April, A.D., 2015, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas

VES Survey International
P.O. Box 261021 Corpus Christi, TX 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com



NOV 05 2015



Company: Devon Energy
Lease/Well: Cotton Draw 32 State Federal Com/4H

Rig Name: ICD 207
State/County: New Mexico /Lea
Latitude: 32.17, Longitude: -103.70
GRID North is 0.34 Degrees East of True North
VS-Azi: 186.34 Degrees



Depth Reference : R.K.B=27FT

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: survey.ut
Minimum Curvature Method
Report Date/Time: 4/20/2015 / 09:36

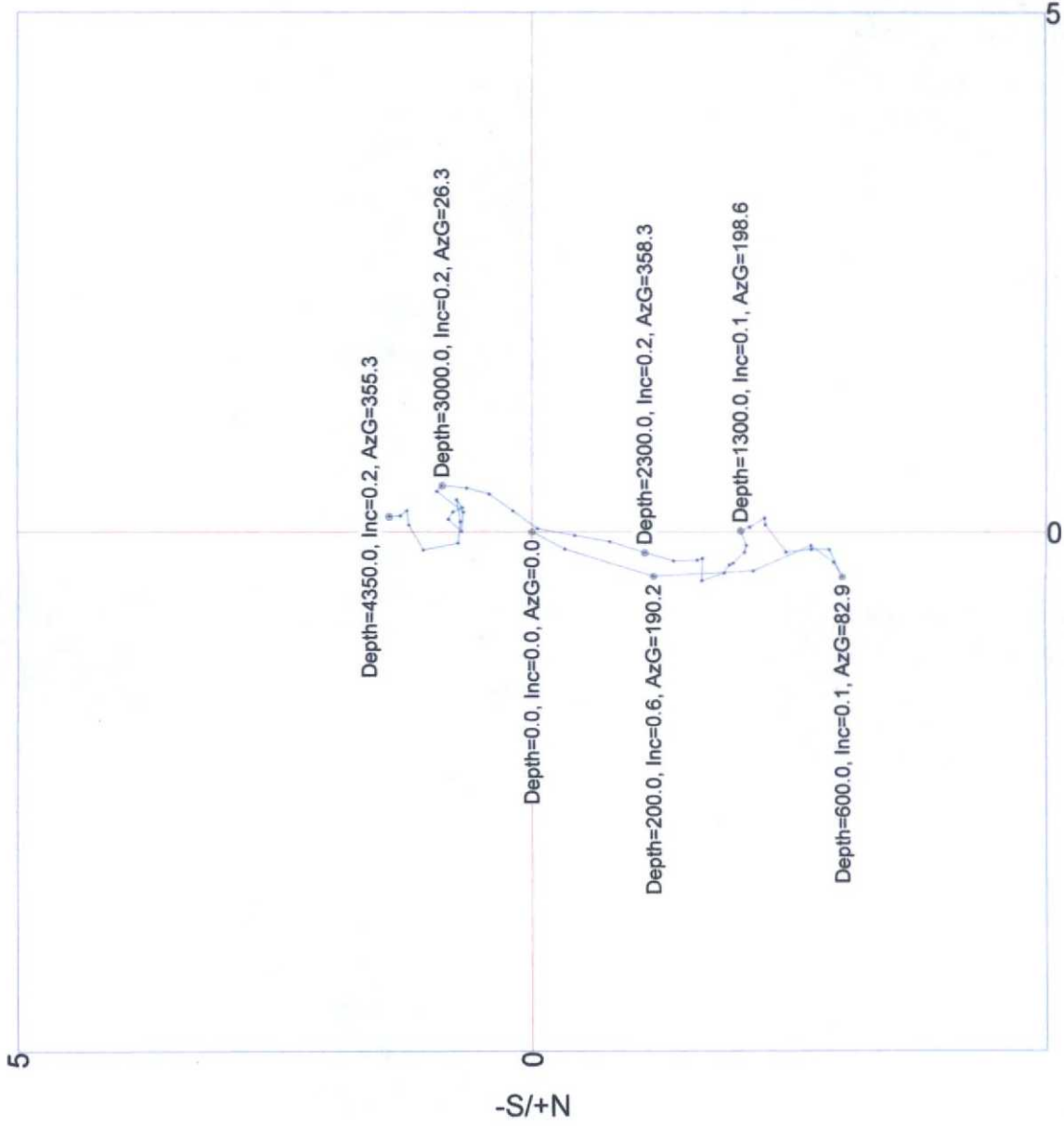
VES Survey International
(432) 563-5444
West Texas

Surveyor: Javier Estrada
Cotton Draw 32 Federal Com 4H / API 30-025-41172

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	****
100.00	0.41	207.34	100.00	-0.32	-0.16	0.34	0.36	207.34	0.41
200.00	0.63	190.22	199.99	-1.18	-0.43	1.22	1.25	199.91	0.27
300.00	0.52	160.78	299.99	-2.15	-0.38	2.18	2.18	189.89	0.31
400.00	0.18	143.60	399.99	-2.71	-0.13	2.71	2.71	182.76	0.35
500.00	0.31	248.35	499.99	-2.94	-0.29	2.95	2.95	185.61	0.40
600.00	0.13	82.93	599.99	-3.02	-0.43	3.05	3.06	188.11	0.44
700.00	0.22	53.37	699.99	-2.90	-0.17	2.90	2.90	183.30	0.13
800.00	0.19	293.61	799.99	-2.72	-0.17	2.72	2.72	183.49	0.36
900.00	0.25	35.03	899.99	-2.47	-0.19	2.47	2.48	184.46	0.34
1000.00	0.16	80.80	999.99	-2.27	0.07	2.25	2.27	178.25	0.18
1100.00	0.09	258.83	1099.99	-2.26	0.13	2.23	2.26	176.65	0.24
1200.00	0.18	356.12	1199.99	-2.11	0.05	2.10	2.12	178.69	0.21
1300.00	0.08	198.63	1299.98	-2.02	0.01	2.01	2.02	179.59	0.26
1400.00	0.14	274.60	1399.98	-2.08	-0.13	2.08	2.09	183.53	0.14
1500.00	0.06	79.99	1499.98	-2.06	-0.19	2.07	2.07	185.38	0.20
1600.00	0.22	302.62	1599.98	-1.95	-0.30	1.97	1.98	188.72	0.27
1700.00	0.18	114.60	1699.98	-1.92	-0.32	1.94	1.94	189.34	0.40
1800.00	0.29	296.71	1799.98	-1.87	-0.40	1.90	1.91	191.93	0.47

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
1900.00	0.21	53.70	1899.98	-1.65	-0.47	1.69	1.72	195.95	0.42
2000.00	0.15	147.44	1999.98	-1.65	-0.25	1.67	1.67	188.69	0.27
2100.00	0.21	331.01	2099.98	-1.60	-0.27	1.62	1.63	189.59	0.36
2200.00	0.12	51.39	2199.98	-1.37	-0.28	1.40	1.40	191.38	0.23
2300.00	0.25	358.29	2299.98	-1.09	-0.20	1.11	1.11	190.32	0.20
2400.00	0.19	41.37	2399.98	-0.75	-0.09	0.76	0.76	187.08	0.17
2500.00	0.25	345.78	2499.98	-0.42	-0.03	0.42	0.42	184.70	0.21
2600.00	0.22	38.09	2599.98	-0.05	0.03	0.05	0.06	150.38	0.21
2700.00	0.12	29.85	2699.98	0.18	0.20	-0.21	0.27	47.38	0.11
2800.00	0.21	38.78	2799.98	0.41	0.36	-0.45	0.55	41.37	0.09
2900.00	0.11	323.90	2899.98	0.63	0.42	-0.68	0.76	33.56	0.21
3000.00	0.21	26.33	2999.98	0.87	0.44	-0.92	0.98	26.87	0.19
3100.00	0.20	230.20	3099.98	0.92	0.39	-0.96	1.00	22.78	0.40
3200.00	0.18	203.89	3199.98	0.67	0.19	-0.68	0.69	15.80	0.09
3300.00	0.23	324.70	3299.98	0.69	0.01	-0.68	0.69	0.67	0.36
3400.00	0.27	99.71	3399.98	0.81	0.12	-0.82	0.82	8.54	0.46
3500.00	0.19	267.73	3499.98	0.77	0.19	-0.78	0.79	13.75	0.46
3600.00	0.26	111.35	3599.98	0.68	0.23	-0.70	0.72	18.77	0.44
3700.00	0.21	316.16	3699.98	0.73	0.31	-0.76	0.79	22.97	0.46
3800.00	0.22	205.34	3799.98	0.69	0.10	-0.70	0.70	8.19	0.35
3900.00	0.27	326.70	3899.98	0.72	-0.11	-0.70	0.73	351.40	0.42
4000.00	0.18	23.09	3999.97	1.06	-0.18	-1.03	1.07	350.58	0.22
4100.00	0.21	91.19	4099.97	1.19	0.07	-1.19	1.20	3.28	0.22
4200.00	0.06	296.99	4199.97	1.22	0.20	-1.23	1.23	9.43	0.27
4300.00	0.04	0.20	4299.97	1.28	0.15	-1.29	1.29	6.82	0.06
4350.00	0.21	355.26	4349.97	1.39	0.15	-1.40	1.40	5.98	0.33

VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Cotton Draw 32 Federal Com 4H / API 30-025-41172



-W/+E
VES Survey Date: 4/10/2015



Directional Survey

Well Name: COTTON DRAW 32 STATE FED COM 4H

Sub-Division DELAWARE BASIN WEST		Region BASIN WEST		Field Name PADUCA		County LEA		State/Province NM					
Surface Legal Location SEC32 T24S R32E		APN/UWI 3002541172		Latitude (°) 32° 10' 22.761" N		Longitude (°) 103° 42' 3.241" W		Orig KB Elevation (ft) 3,496.50		Ground Elev MSL (ft) 3,469.50		KB - GL (ft) 27.00	
Wellbores													
Wellbore Name OH		Parent Wellbore OH				SAP Well ID 38213				Vertical Section Direction (°) 186.34			
Kick Offs & Key Depths													
Date 4/15/2015				Type Kick Off				Top Depth (ftKB) 7,737.0					
Actual Deviation Survey VAUGHN ENERGY SERVICE, Proposed? No				Definitive? No		Proposed? No		Proposed Deviation Survey					
Deviation Survey													
Date 4/10/2015		Description VAUGHN ENERGY SERVICE											
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			
4/10/2015	100.00	0.41	207.34	100.00	0.33	-0.32	-0.16	0.41	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	200.00	0.63	190.22	200.00	1.22	-1.18	-0.43	0.27	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	300.00	0.52	160.78	299.99	2.17	-2.15	-0.37	0.31	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	400.00	0.18	143.60	399.99	2.70	-2.70	-0.13	0.35	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	500.00	0.31	248.35	499.99	2.94	-2.93	-0.29	0.40	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	600.00	0.13	82.93	599.99	3.04	-3.01	-0.43	0.44	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	700.00	0.22	53.37	699.99	2.88	-2.88	-0.16	0.12	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	800.00	0.19	293.61	799.99	2.70	-2.70	-0.16	0.35	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	900.00	0.25	35.03	899.99	2.46	-2.46	-0.19	0.34	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,000.00	0.16	80.80	999.99	2.24	-2.26	0.08	0.18	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,100.00	0.09	258.83	1,099.99	2.22	-2.25	0.14	0.25	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,200.00	0.18	356.12	1,199.99	2.09	-2.11	0.05	0.21	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,300.00	0.08	198.63	1,299.98	2.00	-2.02	0.02	0.26	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,400.00	0.14	274.60	1,399.98	2.08	-2.07	-0.13	0.14	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,500.00	0.06	79.99	1,499.98	2.07	-2.06	-0.20	0.20	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,600.00	0.22	302.62	1,599.98	1.97	-1.94	-0.31	0.27	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,700.00	0.18	114.60	1,699.98	1.93	-1.91	-0.33	0.40	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,800.00	0.29	296.71	1,799.98	1.89	-1.86	-0.41	0.47	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	1,900.00	0.21	53.70	1,899.98	1.68	-1.63	-0.49	0.43	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,000.00	0.15	147.44	1,999.98	1.66	-1.64	-0.27	0.27	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,100.00	0.21	331.01	2,099.98	1.61	-1.59	-0.29	0.36	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,200.00	0.12	51.39	2,199.98	1.39	-1.36	-0.30	0.22	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,300.00	0.25	358.29	2,299.98	1.10	-1.08	-0.22	0.20	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,400.00	0.19	41.37	2,399.98	0.74	-0.74	-0.12	0.17	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,500.00	0.25	345.78	2,499.98	0.40	-0.40	-0.06	0.21	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,600.00	0.22	38.09	2,599.98	0.04	-0.04	0.00	0.21	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,700.00	0.12	29.85	2,699.98	-0.22	0.21	0.17	0.10	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,800.00	0.21	38.78	2,799.98	-0.47	0.44	0.34	0.09	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	2,900.00	0.11	323.90	2,899.98	-0.70	0.66	0.40	0.21	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,000.00	0.21	26.33	2,999.98	-0.94	0.90	0.42	0.19	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,100.00	0.20	230.20	3,099.98	-0.99	0.95	0.37	0.40	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,200.00	0.18	203.89	3,199.98	-0.71	0.70	0.17	0.09	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,300.00	0.23	324.70	3,299.98	-0.71	0.72	-0.01	0.36	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,400.00	0.27	99.71	3,399.98	-0.85	0.84	0.11	0.46	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,500.00	0.19	267.73	3,499.98	-0.81	0.80	0.18	0.46	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,600.00	0.26	111.35	3,599.98	-0.73	0.71	0.22	0.44	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,700.00	0.21	316.16	3,699.98	-0.79	0.76	0.31	0.46	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,800.00	0.22	205.34	3,799.98	-0.72	0.72	0.10	0.35	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	3,900.00	0.27	326.70	3,899.98	-0.72	0.74	-0.11	0.43	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	4,000.00	0.18	23.09	3,999.97	-1.05	1.08	-0.18	0.23	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	4,100.00	0.21	91.19	4,099.97	-1.22	1.22	0.06	0.22	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	4,200.00	0.06	296.99	4,199.97	-1.26	1.24	0.20	0.27	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	4,300.00	0.04	0.20	4,299.97	-1.31	1.30	0.15	0.06	GYRO	VAUHGN ENERGY SERVICES			
4/10/2015	4,350.00	0.21	355.26	4,349.97	-1.42	1.41	0.15	0.34	GYRO	VAUHGN ENERGY SERVICES			
4/13/2015	4,585.00	0.16	61.16	4,584.97	-2.03	2.00	0.40	0.09	MWD	WEATHERFORD			
4/13/2015	4,680.00	1.19	275.61	4,679.97	-2.09	2.16	-0.47	1.39	MWD	WEATHERFORD			
4/13/2015	4,776.00	3.18	273.91	4,775.89	-1.97	2.44	-4.12	2.07	MWD	WEATHERFORD			
4/13/2015	4,871.00	5.21	271.72	4,870.63	-1.51	2.74	-11.06	2.14	MWD	WEATHERFORD			
4/13/2015	4,966.00	7.53	269.79	4,965.04	-0.45	2.85	-21.60	2.45	MWD	WEATHERFORD			
4/13/2015	5,061.00	9.23	265.98	5,059.02	1.63	2.29	-35.42	1.88	MWD	WEATHERFORD			
4/13/2015	5,156.00	10.25	266.25	5,152.65	4.48	1.21	-51.46	1.07	MWD	WEATHERFORD			
4/13/2015	5,251.00	10.48	266.57	5,246.10	7.43	0.14	-68.51	0.25	MWD	WEATHERFORD			
4/13/2015	5,346.00	10.51	266.27	5,339.51	10.41	-0.94	-85.79	0.07	MWD	WEATHERFORD			
4/13/2015	5,441.00	10.34	266.46	5,432.94	13.39	-2.03	-102.94	0.18	MWD	WEATHERFORD			
4/13/2015	5,536.00	10.24	265.76	5,526.42	16.40	-3.18	-119.87	0.17	MWD	WEATHERFORD			
4/13/2015	5,631.00	10.17	272.46	5,619.92	18.52	-3.45	-136.67	1.25	MWD	WEATHERFORD			
4/13/2015	5,726.00	10.29	273.24	5,713.41	19.55	-2.61	-153.52	0.19	MWD	WEATHERFORD			
4/13/2015	5,821.00	10.27	272.81	5,806.88	20.53	-1.71	-170.45	0.08	MWD	WEATHERFORD			
4/13/2015	5,916.00	10.41	272.82	5,900.34	21.57	-0.88	-187.48	0.15	MWD	WEATHERFORD			
4/14/2015	6,011.00	10.35	273.02	5,993.78	22.60	0.00	-204.58	0.07	MWD	WEATHERFORD			
4/14/2015	6,106.00	10.04	273.37	6,087.28	23.52	0.93	-221.37	0.33	MWD	WEATHERFORD			
4/14/2015	6,201.00	9.76	273.88	6,180.87	24.29	1.96	-237.67	0.31	MWD	WEATHERFORD			
4/14/2015	6,296.00	9.17	275.35	6,274.58	24.77	3.21	-253.24	0.67	MWD	WEATHERFORD			
4/14/2015	6,391.00	10.05	270.73	6,368.24	25.71	4.03	-269.06	1.23	MWD	WEATHERFORD			
4/14/2015	6,487.00	9.71	270.40	6,462.82	27.37	4.19	-285.54	0.36	MWD	WEATHERFORD			
4/14/2015	6,581.00	9.69	270.62	6,555.48	28.98	4.33	-301.37	0.04	MWD	WEATHERFORD			



Directional Survey

Well Name: COTTON DRAW 32 STATE FED COM 4H

Division		Region		Field Name		County		State/Province					
DELAWARE BASIN WEST		BASIN WEST		PADUCA		LEA		NM					
Surface Legal Location		API/UWI		Latitude (°)		Longitude (°)		Orig KB Elevation (ft)		Ground Elev MSL (ft)		KB - GL (ft)	
SEC32 T24S R32E		3002541172		32° 10' 22.761" N		103° 42' 3.241" W		3,496.50		3,469.50		27.00	
Survey Data													
Date	MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS (°/100ft)	Survey Tool	Survey Company			
4/14/2015	6,676.00	9.67	270.90	6,649.12	30.53	4.54	-317.34	0.05	MWD	WEATHERFORD			
4/14/2015	6,771.00	9.47	271.73	6,742.80	31.91	4.90	-333.13	0.26	MWD	WEATHERFORD			
4/14/2015	6,866.00	9.30	272.79	6,836.53	33.02	5.51	-348.61	0.26	MWD	WEATHERFORD			
4/14/2015	6,961.00	9.16	273.61	6,930.30	33.85	6.36	-363.83	0.20	MWD	WEATHERFORD			
4/14/2015	7,057.00	7.89	270.35	7,025.24	34.91	6.88	-378.04	1.41	MWD	WEATHERFORD			
4/14/2015	7,152.00	7.55	269.43	7,119.38	36.34	6.86	-390.80	0.38	MWD	WEATHERFORD			
4/14/2015	7,247.00	6.99	270.03	7,213.61	37.72	6.80	-402.82	0.59	MWD	WEATHERFORD			
4/14/2015	7,341.00	5.32	269.39	7,307.07	38.88	6.76	-412.90	1.78	MWD	WEATHERFORD			
4/14/2015	7,436.00	4.12	267.27	7,401.74	39.95	6.55	-420.72	1.28	MWD	WEATHERFORD			
4/14/2015	7,530.00	2.73	272.59	7,495.57	40.63	6.49	-426.33	1.52	MWD	WEATHERFORD			
4/14/2015	7,625.00	1.16	268.99	7,590.52	40.90	6.58	-429.55	1.66	MWD	WEATHERFORD			
4/14/2015	7,666.00	0.82	252.96	7,631.51	41.07	6.48	-430.24	1.06	MWD	WEATHERFORD			
4/14/2015	7,716.00	0.77	255.41	7,681.50	41.33	6.29	-430.91	0.12	MWD	WEATHERFORD			
4/14/2015	7,748.00	3.10	195.52	7,713.49	42.26	5.40	-431.35	8.73	MWD	WEATHERFORD			
4/14/2015	7,780.00	6.81	185.46	7,745.36	45.01	2.68	-431.76	11.86	MWD	WEATHERFORD			
4/14/2015	7,811.00	10.72	182.07	7,775.99	49.73	-2.03	-432.04	12.72	MWD	WEATHERFORD			
4/14/2015	7,843.00	15.32	177.54	7,807.16	56.88	-9.23	-431.97	14.71	MWD	WEATHERFORD			
4/14/2015	7,875.00	19.95	175.35	7,837.65	66.42	-18.90	-431.34	14.61	MWD	WEATHERFORD			
4/14/2015	7,906.00	24.06	174.90	7,866.39	77.81	-30.47	-430.35	13.27	MWD	WEATHERFORD			
4/14/2015	7,938.00	28.58	176.65	7,895.06	91.76	-44.62	-429.32	14.33	MWD	WEATHERFORD			
4/14/2015	7,969.00	31.84	178.24	7,921.85	107.17	-60.20	-428.64	10.83	MWD	WEATHERFORD			
4/14/2015	8,001.00	34.10	179.84	7,948.69	124.44	-77.61	-428.35	7.57	MWD	WEATHERFORD			
4/14/2015	8,032.00	36.00	182.67	7,974.07	142.17	-95.40	-428.75	8.06	MWD	WEATHERFORD			
4/14/2015	8,064.00	38.48	183.78	7,999.55	161.50	-114.73	-429.85	8.03	MWD	WEATHERFORD			
4/14/2015	8,095.00	40.50	184.45	8,023.47	181.20	-134.40	-431.27	6.66	MWD	WEATHERFORD			
4/14/2015	8,127.00	42.18	185.46	8,047.49	202.33	-155.45	-433.10	5.65	MWD	WEATHERFORD			
4/14/2015	8,159.00	44.62	186.78	8,070.74	224.31	-177.31	-435.44	8.13	MWD	WEATHERFORD			
4/14/2015	8,190.00	46.52	187.87	8,092.44	246.44	-199.27	-438.27	6.62	MWD	WEATHERFORD			
4/14/2015	8,222.00	48.93	188.25	8,113.97	270.11	-222.71	-441.59	7.58	MWD	WEATHERFORD			
4/14/2015	8,253.00	51.29	187.50	8,133.85	293.88	-246.27	-444.85	7.84	MWD	WEATHERFORD			
4/14/2015	8,285.00	53.16	186.20	8,153.45	319.18	-271.38	-447.86	6.67	MWD	WEATHERFORD			
4/14/2015	8,317.00	55.14	185.26	8,172.19	345.11	-297.18	-450.45	6.63	MWD	WEATHERFORD			
4/14/2015	8,348.00	57.19	184.79	8,189.45	370.85	-322.83	-452.70	6.73	MWD	WEATHERFORD			
4/14/2015	8,380.00	60.05	184.63	8,206.11	398.16	-350.06	-454.94	8.95	MWD	WEATHERFORD			
4/14/2015	8,412.00	62.93	183.86	8,221.38	426.25	-378.10	-457.02	9.24	MWD	WEATHERFORD			
4/14/2015	8,444.00	66.24	183.63	8,235.12	455.12	-406.94	-458.91	10.36	MWD	WEATHERFORD			
4/14/2015	8,475.00	69.63	183.26	8,246.76	483.81	-435.61	-460.63	10.99	MWD	WEATHERFORD			
4/14/2015	8,507.00	74.11	183.15	8,256.71	514.17	-465.97	-462.33	14.00	MWD	WEATHERFORD			
4/14/2015	8,538.00	78.22	182.74	8,264.13	544.21	-496.02	-463.88	13.32	MWD	WEATHERFORD			
4/14/2015	8,568.00	81.85	182.52	8,269.32	573.69	-525.53	-465.23	12.12	MWD	WEATHERFORD			
4/17/2015	8,584.00	82.63	182.60	8,271.48	589.51	-541.37	-465.94	4.90	MWD	WEATHERFORD			
4/17/2015	8,616.00	85.03	182.45	8,274.92	621.25	-573.15	-467.34	7.51	MWD	WEATHERFORD			
4/17/2015	8,647.00	85.87	182.30	8,277.38	652.08	-604.03	-468.62	2.75	MWD	WEATHERFORD			
4/17/2015	8,679.00	86.36	182.09	8,279.54	683.92	-635.93	-469.85	1.67	MWD	WEATHERFORD			
4/17/2015	8,774.00	87.76	181.95	8,284.42	778.53	-730.74	-473.19	1.48	MWD	WEATHERFORD			
4/17/2015	8,869.00	89.23	181.91	8,286.91	873.21	-825.65	-476.39	1.55	MWD	WEATHERFORD			
4/17/2015	8,964.00	89.16	181.87	8,288.25	967.91	-920.59	-479.52	0.08	MWD	WEATHERFORD			
4/17/2015	9,059.00	89.72	183.02	8,289.17	1,062.69	-1,015.50	-483.57	1.35	MWD	WEATHERFORD			
4/17/2015	9,154.00	91.12	183.53	8,288.48	1,157.55	-1,110.34	-489.00	1.57	MWD	WEATHERFORD			
4/18/2015	9,249.00	89.09	182.65	8,288.30	1,252.39	-1,205.19	-494.12	2.33	MWD	WEATHERFORD			
4/18/2015	9,344.00	88.25	183.20	8,290.51	1,347.19	-1,300.04	-498.97	1.06	MWD	WEATHERFORD			
4/18/2015	9,439.00	91.47	184.12	8,290.74	1,442.07	-1,394.84	-505.03	3.53	MWD	WEATHERFORD			
4/18/2015	9,535.00	90.70	184.08	8,288.92	1,537.98	-1,490.57	-511.89	0.80	MWD	WEATHERFORD			
4/18/2015	9,630.00	88.81	183.91	8,289.33	1,632.90	-1,585.34	-518.51	2.00	MWD	WEATHERFORD			
4/18/2015	9,725.00	88.60	182.46	8,291.48	1,727.73	-1,680.16	-523.79	1.54	MWD	WEATHERFORD			
4/18/2015	9,820.00	89.44	182.72	8,293.10	1,822.51	-1,775.05	-528.08	0.93	MWD	WEATHERFORD			
4/18/2015	9,915.00	90.70	182.95	8,292.99	1,917.33	-1,869.93	-532.78	1.35	MWD	WEATHERFORD			
4/18/2015	10,010.00	91.26	183.73	8,291.36	2,012.19	-1,964.76	-538.31	1.01	MWD	WEATHERFORD			
4/18/2015	10,105.00	88.39	180.89	8,291.65	2,106.93	-2,059.66	-542.14	4.25	MWD	WEATHERFORD			
4/18/2015	10,200.00	91.82	182.80	8,291.48	2,201.62	-2,154.59	-545.20	4.13	MWD	WEATHERFORD			
4/18/2015	10,295.00	90.21	181.83	8,289.79	2,296.37	-2,249.49	-549.04	1.98	MWD	WEATHERFORD			
4/18/2015	10,390.00	91.12	182.57	8,288.69	2,391.11	-2,344.42	-552.68	1.23	MWD	WEATHERFORD			
4/18/2015	10,485.00	89.37	183.36	8,288.28	2,485.94	-2,439.28	-557.60	2.02	MWD	WEATHERFORD			
4/18/2015	10,580.00	88.74	182.79	8,289.85	2,580.77	-2,534.13	-562.69	0.89	MWD	WEATHERFORD			
4/18/2015	10,675.00	89.02	183.64	8,291.71	2,675.61	-2,628.96	-568.02	0.94	MWD	WEATHERFORD			
4/18/2015	10,770.00	88.04	183.48	8,294.15	2,770.47	-2,723.75	-573.92	1.05	MWD	WEATHERFORD			
4/18/2015	10,865.00	89.23	183.72	8,296.41	2,865.33	-2,818.53	-579.88	1.28	MWD	WEATHERFORD			
4/18/2015	10,960.00	88.04	183.26	8,298.67	2,960.18	-2,913.33	-585.66	1.34	MWD	WEATHERFORD			
4/18/2015	11,047.00	87.48	182.83	8,302.07	3,046.97	-3,000.14	-590.28	0.81	MWD	WEATHERFORD			
4/18/2015	11,142.00	87.83	182.67	8,305.96	3,141.71	-3,094.95	-594.83	0.41	MWD	WEATHERFORD			
4/18/2015	11,237.00	89.44	182.64	8,308.22	3,236.48	-3,189.82	-599.23	1.70	MWD	WEATHERFORD			
4/18/2015	11,332.00	91.47	182.73	8,307.47	3,331.28	-3,284.70	-603.68	2.14	MWD	WEATHERFORD			
4/18/2015	11,427.00	90.00	182.82	8,306.25	3,426.08	-3,379.58	-608.28	1.55	MWD	WEATHERFORD			
4/18/2015	11,523.00	90.84	183.35	8,305.55	3,521.93	-3,475.44	-613.45	1.03	MWD	WEATHERFORD			
4/18/2015	11,618.00	90.63	182.84	8,304.33	3,616.77	-3,570.29	-618.58	0.58	MWD	WEATHERFORD			
4/18/2015	11,713.00	92.17	183.03	8,302.01	3,711.57	-3,665.14	-623.44	1.63	MWD	WEATHERFORD			
4/18/2015	11,808.00	92.17	182.98	8,298.41	3,806.34	-3,759.94	-628.41	0.05	MWD	WEATHERFORD			
Page 2/3 Report Printed: 10/16/2015													



Directional Survey

Well Name: COTTON DRAW 32 STATE FED COM 4H

Sub-Division DELAWARE BASIN WEST		Region BASIN WEST		Field Name PADUCA		County LEA		State/Province NM					
Surface Legal Location SEC32 T24S R32E		API/UVI 3002541172		Latitude (") 32° 10' 22.761" N		Longitude (") 103° 42' 3.241" W		Orig KB Elevation (ft) 3,496.50		Ground Elev MSL (ft) 3,469.50		KB - GL (ft) 27.00	
Survey Data													
Date	MD (ftKB)	Incl (")	Azm (")	TVD (ftKB)	VS (ft)	N/S (ft)	E/W (ft)	DLS ("/100ft)	Survey Tool	Survey Company			
4/18/2015	11,903.00	93.15	183.55	8,294.00	3,901.10	-3,854.68	-633.82	1.19	MWD	WEATHERFORD			
4/18/2015	11,998.00	90.98	183.43	8,290.58	3,995.91	-3,949.44	-639.60	2.29	MWD	WEATHERFORD			
4/18/2015	12,093.00	89.37	183.72	8,290.29	4,090.80	-4,044.25	-645.52	1.72	MWD	WEATHERFORD			
4/18/2015	12,188.00	90.35	184.41	8,290.52	4,185.72	-4,139.01	-652.26	1.26	MWD	WEATHERFORD			
4/18/2015	12,283.00	90.70	184.98	8,289.65	4,280.68	-4,233.68	-660.03	0.70	MWD	WEATHERFORD			
4/18/2015	12,378.00	88.11	183.58	8,290.63	4,375.60	-4,328.40	-667.12	3.10	MWD	WEATHERFORD			
4/18/2015	12,473.00	88.25	183.28	8,293.65	4,470.43	-4,423.19	-672.80	0.35	MWD	WEATHERFORD			
4/18/2015	12,568.00	89.09	183.43	8,295.86	4,565.27	-4,518.00	-678.36	0.90	MWD	WEATHERFORD			
4/18/2015	12,663.00	90.35	183.95	8,296.32	4,660.17	-4,612.80	-684.47	1.43	MWD	WEATHERFORD			
4/18/2015	12,758.00	90.91	184.73	8,295.28	4,755.11	-4,707.52	-691.66	1.01	MWD	WEATHERFORD			
4/18/2015	12,853.00	88.11	183.74	8,296.09	4,850.03	-4,802.24	-698.68	3.13	MWD	WEATHERFORD			
4/18/2015	12,948.00	87.83	182.74	8,299.45	4,944.83	-4,897.03	-704.04	1.09	MWD	WEATHERFORD			
4/18/2015	13,043.00	88.39	182.29	8,302.59	5,039.56	-4,991.89	-708.21	0.76	MWD	WEATHERFORD			
4/18/2015	13,138.00	90.14	181.34	8,303.81	5,134.25	-5,086.83	-711.22	2.10	MWD	WEATHERFORD			
4/18/2015	13,233.00	89.58	181.10	8,304.04	5,228.87	-5,181.80	-713.24	0.64	MWD	WEATHERFORD			
4/18/2015	13,328.00	91.26	181.15	8,303.34	5,323.48	-5,276.78	-715.10	1.77	MWD	WEATHERFORD			
4/18/2015	13,423.00	91.19	180.83	8,301.31	5,418.04	-5,371.74	-716.75	0.34	MWD	WEATHERFORD			
4/18/2015	13,518.00	92.52	182.09	8,298.24	5,512.64	-5,466.66	-719.16	1.93	MWD	WEATHERFORD			
4/18/2015	13,613.00	91.96	182.47	8,294.52	5,607.33	-5,561.51	-722.94	0.71	MWD	WEATHERFORD			
4/18/2015	13,707.00	91.47	182.25	8,291.71	5,701.06	-5,655.39	-726.81	0.57	MWD	WEATHERFORD			
4/18/2015	13,802.00	89.93	181.96	8,290.55	5,795.79	-5,750.32	-730.30	1.65	MWD	WEATHERFORD			
4/18/2015	13,897.00	89.86	181.95	8,290.72	5,890.51	-5,845.26	-733.54	0.07	MWD	WEATHERFORD			
4/18/2015	13,992.00	90.49	182.36	8,290.43	5,985.26	-5,940.19	-737.11	0.79	MWD	WEATHERFORD			
4/18/2015	14,087.00	92.31	182.35	8,288.11	6,080.00	-6,035.08	-741.01	1.92	MWD	WEATHERFORD			
4/18/2015	14,182.00	92.10	183.02	8,284.46	6,174.73	-6,129.90	-745.46	0.74	MWD	WEATHERFORD			
4/18/2015	14,277.00	90.14	182.31	8,282.60	6,269.51	-6,224.78	-749.88	2.19	MWD	WEATHERFORD			
4/18/2015	14,372.00	91.61	183.72	8,281.15	6,364.34	-6,319.63	-754.87	2.14	MWD	WEATHERFORD			
4/18/2015	14,467.00	88.32	181.86	8,281.21	6,459.14	-6,414.50	-759.50	3.98	MWD	WEATHERFORD			
4/18/2015	14,562.00	87.83	182.03	8,284.40	6,553.81	-6,509.39	-762.72	0.55	MWD	WEATHERFORD			
4/18/2015	14,657.00	91.33	184.17	8,285.09	6,648.63	-6,604.23	-767.86	4.32	MWD	WEATHERFORD			
4/18/2015	14,752.00	89.72	184.12	8,284.22	6,743.55	-6,698.97	-774.72	1.70	MWD	WEATHERFORD			
4/18/2015	14,847.00	89.30	184.84	8,285.04	6,838.50	-6,793.68	-782.14	0.88	MWD	WEATHERFORD			
4/18/2015	14,943.00	90.91	186.33	8,284.86	6,934.49	-6,889.22	-791.48	2.29	MWD	WEATHERFORD			
4/18/2015	15,038.00	90.14	186.38	8,283.99	7,029.48	-6,983.63	-802.00	0.81	MWD	WEATHERFORD			
4/18/2015	15,133.00	88.95	183.73	8,284.74	7,124.44	-7,078.25	-810.37	3.06	MWD	WEATHERFORD			
4/18/2015	15,227.00	88.25	183.49	8,287.04	7,218.31	-7,172.03	-816.29	0.79	MWD	WEATHERFORD			
4/18/2015	15,260.00	88.74	184.06	8,287.91	7,251.26	-7,204.95	-818.46	2.28	MWD	WEATHERFORD			
4/18/2015	15,330.00	88.74	184.06	8,289.45	7,321.19	-7,274.76	-823.41	0.00	BIT	WEATHERFORD			

Page 3/3

Report Printed: 10/16/2015