

HOBBS OCD

APR 27 2016

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5D Anti-Collision Report

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*

Site Name: *Cotton Draw Unit 280H, 281H Pad*

Well Name: *Cotton Draw Unit 280H*

29 June 2015



APR 28 2016



Weatherford®

Cotton Draw Unit 280H

Field Name Lea Co. NM Nad 83 NMEZ	Map Units : US ft		Company Name : Devon Energy	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD83 / New Mexico East (ftUS)			
	Comment :			
Site Name Cotton Draw Unit 280H / 281H Pad	Units : US ft	North Reference : Grid	Convergence Angle : 0.32	
	Position	Northing : 414087.92 US ft	Latitude : 32° 8' 12.96"	
		Easting : 730370.42 US ft	Longitude : -103° 43' 21.44"	
	Elevation above Mean Sea Level:3416.00 US ft			
Comment :				
Slot Name Cotton Draw Unit 280H	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing : 414087.92 US ft	Latitude : 32° 8' 12.96"	
	+E / -W : 0.00 US ft	Easting : 730370.42 US ft	Longitude : -103° 43' 21.44"	
	Slot TVD Reference : Ground Elevation			
Elevation above Mean Sea Level : 3416.00 US ft				
Comment :				
Well Name Cotton Draw Unit 280H	Type : Main well		UWI :	Plan : Working Plan
	Rig Height <i>Kelly Bushing</i> : 25.00 US ft		Comment :	
	Relative to Mean Sea Level: 3441.00 US ft			
	Closure Distance : 5191.19 US ft		Closure Azimuth : 3.31364°	
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US ft		+E / -W : 0.00 US ft	Az :3.31°
	Magnetic Parameters			
Model : BGGM		Field Strength : 48141.8nT	Dec : 7.31°	Dip : 60.02° Date : 15/Oct/2015

Collision / Uncertainty Analysis				
Primary Well	Start MD (US ft)	End MD (US ft)	Collision Risk Interval	No. of Std Deviations in Error Computation
Cotton Draw Unit 280H (p)	0.00	15427.12	100.00	2

Secondary Well Names
Cotton Draw Unit 281H (p)

Anti Collision Report Terminology	
S.Minor, S.Major : Radii of the ellipse of uncertainty at the current location as seen in the along hole direction.	
PHI : Angle between high-side vector and semi-minor axis	
TVD Spread : Total TVD range of the ellipsoid of uncertainty at the current location	
ES : Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr	
T.Face to Sec : Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells	

Separation factors calculated using Pedal Curve (Independent Uncertainty). Well path created using minimum curvature.

5D Anti-Collision Report

Anti Collision Proximity Summary (TVD relative to Kelly Bushing)

Secondary Well Name	Pr. MD (US ft)	Sec MD (US ft)	TVD (US ft)	CC (US ft)	IES (US ft)	SF	Risk
Cotton Draw Unit 281H (p)	5250.00	5251.55	5250.00	50.25	26.35	2.10	

Primary Well : Cotton Draw Unit 280H (p) (TVD Relative to Kelly Bushing ; All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	Nearest Well	CC (US ft)	IES (US ft)	SF	Risk
0.00	0.00	89.74	0.00	0.00	Cotton Draw Unit 281H (p)	50.02	49.44	86.15	
100.00	100.00	89.74	0.11	0.11	Cotton Draw Unit 281H (p)	50.02	49.22	62.84	
200.00	200.00	89.74	0.34	0.34	Cotton Draw Unit 281H (p)	50.02	48.78	40.25	
300.00	300.00	89.74	0.56	0.56	Cotton Draw Unit 281H (p)	50.02	48.33	29.57	
400.00	400.00	89.74	0.79	0.79	Cotton Draw Unit 281H (p)	50.02	47.88	23.36	
500.00	500.00	89.74	1.01	1.01	Cotton Draw Unit 281H (p)	50.02	47.43	19.31	
600.00	600.00	89.74	1.24	1.24	Cotton Draw Unit 281H (p)	50.02	46.98	16.45	
700.00	700.00	89.74	1.46	1.46	Cotton Draw Unit 281H (p)	50.02	46.53	14.33	
800.00	800.00	89.74	1.69	1.69	Cotton Draw Unit 281H (p)	50.02	46.08	12.70	
900.00	900.00	89.74	1.91	1.91	Cotton Draw Unit 281H (p)	50.02	45.63	11.40	
1000.00	1000.00	89.74	2.14	2.14	Cotton Draw Unit 281H (p)	50.02	45.18	10.34	
1100.00	1100.00	89.74	2.36	2.36	Cotton Draw Unit 281H (p)	50.02	44.73	9.46	
1200.00	1200.00	89.74	2.59	2.59	Cotton Draw Unit 281H (p)	50.02	44.28	8.72	
1300.00	1300.00	89.74	2.81	2.81	Cotton Draw Unit 281H (p)	50.02	43.83	8.09	
1400.00	1400.00	89.74	3.03	3.03	Cotton Draw Unit 281H (p)	50.02	43.38	7.54	
1500.00	1500.00	89.74	3.26	3.26	Cotton Draw Unit 281H (p)	50.02	42.93	7.06	
1600.00	1600.00	89.74	3.48	3.48	Cotton Draw Unit 281H (p)	50.02	42.49	6.64	
1700.00	1700.00	89.74	3.71	3.71	Cotton Draw Unit 281H (p)	50.02	42.04	6.26	
1800.00	1800.00	89.74	3.93	3.93	Cotton Draw Unit 281H (p)	50.02	41.59	5.93	
1900.00	1900.00	89.74	4.16	4.16	Cotton Draw Unit 281H (p)	50.02	41.14	5.63	
2000.00	2000.00	89.74	4.38	4.38	Cotton Draw Unit 281H (p)	50.02	40.69	5.36	
2100.00	2100.00	89.74	4.61	4.61	Cotton Draw Unit 281H (p)	50.02	40.24	5.11	
2200.00	2200.00	89.74	4.83	4.83	Cotton Draw Unit 281H (p)	50.02	39.79	4.89	
2300.00	2300.00	89.74	5.06	5.06	Cotton Draw Unit 281H (p)	50.02	39.34	4.68	
2400.00	2400.00	89.74	5.28	5.28	Cotton Draw Unit 281H (p)	50.02	38.89	4.49	
2500.00	2500.00	89.74	5.51	5.51	Cotton Draw Unit 281H (p)	50.02	38.44	4.32	
2600.00	2600.00	89.74	5.73	5.73	Cotton Draw Unit 281H (p)	50.02	37.99	4.16	
2700.00	2700.00	89.74	5.96	5.96	Cotton Draw Unit 281H (p)	50.02	37.54	4.01	
2800.00	2800.00	89.74	6.18	6.18	Cotton Draw Unit 281H (p)	50.02	37.09	3.87	
2900.00	2900.00	89.74	6.41	6.41	Cotton Draw Unit 281H (p)	50.02	36.64	3.74	
3000.00	3000.00	89.74	6.63	6.63	Cotton Draw Unit 281H (p)	50.02	36.19	3.62	
3100.00	3100.00	89.74	6.86	6.86	Cotton Draw Unit 281H (p)	50.02	35.74	3.50	

Primary Well	Cotton Draw Unit 280H (p) (TVD Relative to Kelly Bushing; All Azimuth Relative to GRID NORTH)								
MD (US.ft)	TVD (US.ft)	T Face to Sec (°)	S Major (US.ft)	S Minor (US.ft)	Nearest Well	CC (US.ft)	ES (US.ft)	SF	Risk
3200.00	3200.00	89.74	7.08	7.08	Cotton Draw Unit 281H (p)	50.02	35.29	3.40	
3300.00	3300.00	89.74	7.31	7.31	Cotton Draw Unit 281H (p)	50.02	34.84	3.30	
3400.00	3400.00	89.74	7.53	7.53	Cotton Draw Unit 281H (p)	50.02	34.39	3.20	
3500.00	3500.00	89.74	7.76	7.76	Cotton Draw Unit 281H (p)	50.02	33.94	3.11	
3600.00	3600.00	89.74	7.98	7.98	Cotton Draw Unit 281H (p)	50.02	33.49	3.03	
3700.00	3700.00	89.74	8.20	8.20	Cotton Draw Unit 281H (p)	50.02	33.04	2.95	
3800.00	3800.00	89.74	8.43	8.43	Cotton Draw Unit 281H (p)	50.02	32.59	2.87	
3900.00	3900.00	89.74	8.65	8.65	Cotton Draw Unit 281H (p)	50.02	32.15	2.80	
4000.00	4000.00	89.74	8.88	8.88	Cotton Draw Unit 281H (p)	50.02	31.70	2.73	
4100.00	4100.00	89.74	9.10	9.10	Cotton Draw Unit 281H (p)	50.02	31.25	2.66	
4200.00	4200.00	89.74	9.33	9.33	Cotton Draw Unit 281H (p)	50.02	30.80	2.60	
4300.00	4300.00	89.74	9.55	9.55	Cotton Draw Unit 281H (p)	50.02	30.35	2.54	
4400.00	4400.00	89.74	9.78	9.78	Cotton Draw Unit 281H (p)	50.02	29.90	2.49	
4500.00	4500.00	89.74	10.00	10.00	Cotton Draw Unit 281H (p)	50.02	29.45	2.43	
4600.00	4600.00	89.74	10.23	10.23	Cotton Draw Unit 281H (p)	50.02	29.00	2.38	
4700.00	4700.00	89.74	10.45	10.45	Cotton Draw Unit 281H (p)	50.02	28.55	2.33	
4800.00	4800.00	89.74	10.68	10.68	Cotton Draw Unit 281H (p)	50.02	28.10	2.28	
4900.00	4900.00	89.74	10.90	10.90	Cotton Draw Unit 281H (p)	50.02	27.65	2.24	
5000.00	5000.00	89.74	11.13	11.13	Cotton Draw Unit 281H (p)	50.02	27.20	2.19	
5100.00	5100.00	89.74	11.35	11.35	Cotton Draw Unit 281H (p)	50.02	26.75	2.15	
5200.00	5200.00	89.74	11.58	11.58	Cotton Draw Unit 281H (p)	50.02	26.33	2.11	
5300.00	5300.00	89.74	11.80	11.80	Cotton Draw Unit 281H (p)	50.92	26.80	2.11	
5400.00	5400.00	89.75	12.03	12.03	Cotton Draw Unit 281H (p)	53.55	29.03	2.18	
5500.00	5500.00	89.77	12.25	12.25	Cotton Draw Unit 281H (p)	57.91	32.99	2.32	
5600.00	5600.00	89.79	12.48	12.48	Cotton Draw Unit 281H (p)	63.98	38.67	2.53	
5700.00	5700.00	89.82	12.70	12.70	Cotton Draw Unit 281H (p)	71.78	46.08	2.79	
5800.00	5800.00	89.84	12.93	12.93	Cotton Draw Unit 281H (p)	80.49	54.37	3.08	
5900.00	5900.00	89.85	13.15	13.15	Cotton Draw Unit 281H (p)	89.21	62.66	3.36	
6000.00	6000.00	89.86	13.37	13.37	Cotton Draw Unit 281H (p)	97.93	70.95	3.63	
6100.00	6100.00	89.88	13.60	13.60	Cotton Draw Unit 281H (p)	106.64	79.23	3.89	
6200.00	6200.00	89.89	13.82	13.82	Cotton Draw Unit 281H (p)	115.36	87.52	4.14	
6300.00	6300.00	89.89	14.05	14.05	Cotton Draw Unit 281H (p)	124.07	95.81	4.39	
6400.00	6400.00	89.90	14.27	14.27	Cotton Draw Unit 281H (p)	132.79	104.10	4.63	
6500.00	6500.00	89.91	14.50	14.50	Cotton Draw Unit 281H (p)	141.50	112.38	4.86	
6600.00	6600.00	89.91	14.72	14.72	Cotton Draw Unit 281H (p)	150.22	120.67	5.08	
6700.00	6700.00	89.92	14.95	14.95	Cotton Draw Unit 281H (p)	158.93	128.95	5.30	

5D Anti-Collision Report

Primary Well : Cotton Draw Unit 280H (p) (TVD Relative to Kelly Bushing : All Azimuth Relative to GRID NORTH)									
MD (US ft)	TVD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	Nearest Well	CC (US ft)	ES (US ft)	SF	Risk
6800.00	6800.00	89.92	15.17	15.17	Cotton Draw Unit 281H (p)	167.65	137.24	5.51	
6900.00	6900.00	89.92	15.40	15.40	Cotton Draw Unit 281H (p)	176.37	145.52	5.72	
7000.00	7000.00	89.93	15.62	15.62	Cotton Draw Unit 281H (p)	185.08	153.80	5.92	
7100.00	7100.00	89.93	15.85	15.85	Cotton Draw Unit 281H (p)	193.80	162.08	6.11	
7200.00	7200.00	89.93	16.07	16.07	Cotton Draw Unit 281H (p)	202.51	170.36	6.30	
7300.00	7300.00	89.94	16.30	16.30	Cotton Draw Unit 281H (p)	211.23	178.65	6.48	
7400.00	7400.00	89.94	16.52	16.52	Cotton Draw Unit 281H (p)	219.94	186.93	6.66	
7500.00	7500.00	89.94	16.75	16.75	Cotton Draw Unit 281H (p)	228.66	195.20	6.83	
7600.00	7600.00	89.94	16.97	16.97	Cotton Draw Unit 281H (p)	237.38	203.48	7.00	
7700.00	7700.00	89.95	17.20	17.20	Cotton Draw Unit 281H (p)	246.09	211.76	7.17	
7800.00	7800.00	89.95	17.42	17.42	Cotton Draw Unit 281H (p)	254.81	220.04	7.33	
7900.00	7900.00	89.95	17.65	17.65	Cotton Draw Unit 281H (p)	263.52	228.32	7.49	
8000.00	8000.00	89.95	17.87	17.87	Cotton Draw Unit 281H (p)	272.24	236.59	7.64	
8100.00	8100.00	89.95	18.10	18.10	Cotton Draw Unit 281H (p)	280.95	244.87	7.79	
8200.00	8200.00	89.95	18.32	18.32	Cotton Draw Unit 281H (p)	289.67	253.15	7.93	
8300.00	8300.00	89.96	18.54	18.54	Cotton Draw Unit 281H (p)	298.38	261.42	8.07	
8400.00	8400.00	89.96	18.77	18.77	Cotton Draw Unit 281H (p)	307.10	269.70	8.21	
8500.00	8500.00	89.96	18.99	18.99	Cotton Draw Unit 281H (p)	315.82	277.97	8.35	
8600.00	8600.00	89.96	19.22	19.22	Cotton Draw Unit 281H (p)	324.53	286.25	8.48	
8700.00	8700.00	89.96	19.44	19.44	Cotton Draw Unit 281H (p)	333.25	294.52	8.61	
8800.00	8800.00	89.96	19.67	19.67	Cotton Draw Unit 281H (p)	341.88	302.71	8.73	
8900.00	8900.00	89.96	19.89	19.89	Cotton Draw Unit 281H (p)	349.77	310.14	8.83	
9000.00	9000.00	89.96	20.12	20.12	Cotton Draw Unit 281H (p)	356.76	316.68	8.90	
9100.00	9100.00	89.96	20.34	20.34	Cotton Draw Unit 281H (p)	362.85	322.33	8.95	
9200.00	9200.00	89.96	20.57	20.57	Cotton Draw Unit 281H (p)	368.05	327.09	8.98	
9300.00	9300.00	89.96	20.79	20.79	Cotton Draw Unit 281H (p)	372.35	330.95	8.99	
9400.00	9400.00	89.96	21.02	21.02	Cotton Draw Unit 281H (p)	375.75	333.91	8.98	
9500.00	9500.00	89.97	21.24	21.24	Cotton Draw Unit 281H (p)	378.24	335.97	8.95	
9600.00	9600.00	89.97	21.47	21.47	Cotton Draw Unit 281H (p)	379.83	337.13	8.90	
9700.00	9700.00	89.97	21.69	21.69	Cotton Draw Unit 281H (p)	380.52	337.40	8.82	
9800.00	9800.00	89.97	21.92	21.92	Cotton Draw Unit 281H (p)	380.56	337.00	8.74	
9900.00	9900.00	89.97	22.14	22.14	Cotton Draw Unit 281H (p)	380.56	336.56	8.65	
10000.00	9999.31	59.56	22.36	22.09	Cotton Draw Unit 281H (p)	375.28	330.86	8.45	
10100.00	10094.36	66.92	22.57	21.52	Cotton Draw Unit 281H (p)	363.36	318.69	8.13	
10200.00	10181.00	74.27	22.78	20.53	Cotton Draw Unit 281H (p)	356.11	311.35	7.96	
10300.00	10255.43	77.70	23.06	19.27	Cotton Draw Unit 281H (p)	364.43	319.81	8.17	

5D Anti-Collision Report

Primary Well	Cotton Draw Unit 280H (p)	(TVD Relative to Kelly Bushing)	All Azimuth Relative to GRID NORTH						
MD (US.ft)	TVD (US.ft)	T.Face to Sec (°)	S.Major (US.ft)	S.Minor (US.ft)	Nearest Well	CC (US.ft)	ES (US.ft)	SF	Risk
10400.00	10314.41	76.10	23.38	17.95	Cotton Draw Unit 281H (p)	392.61	348.50	8.90	
10500.00	10355.48	70.80	23.83	16.88	Cotton Draw Unit 281H (p)	437.85	393.70	9.92	
10600.00	10383.29	63.81	24.33	16.55	Cotton Draw Unit 281H (p)	503.62	459.36	11.38	
10700.00	10400.38	47.84	24.81	16.36	Cotton Draw Unit 281H (p)	584.98	540.46	13.14	
10800.00	10406.00	25.07	25.13	16.40	Cotton Draw Unit 281H (p)	672.85	627.93	14.98	
10900.00	10406.00	23.94	25.88	16.58	Cotton Draw Unit 281H (p)	762.74	717.55	16.88	
11000.00	10406.00	23.03	26.64	16.80	Cotton Draw Unit 281H (p)	854.18	808.81	18.83	
11100.00	10406.00	22.28	27.45	17.04	Cotton Draw Unit 281H (p)	946.84	901.13	20.71	
11200.00	10406.00	21.66	28.49	17.31	Cotton Draw Unit 281H (p)	1040.49	994.51	22.63	
11300.00	10406.00	21.13	29.57	17.61	Cotton Draw Unit 281H (p)	1134.94	1088.78	24.58	
11400.00	10406.00	20.68	30.71	17.92	Cotton Draw Unit 281H (p)	1230.06	1183.76	26.57	
11500.00	10406.00	20.29	31.90	18.27	Cotton Draw Unit 281H (p)	1325.72	1279.27	28.54	
11600.00	10406.00	19.95	33.13	18.63	Cotton Draw Unit 281H (p)	1421.85	1375.25	30.52	
11700.00	10406.00	19.65	34.41	19.01	Cotton Draw Unit 281H (p)	1518.37	1471.66	32.51	
11800.00	10406.00	19.39	35.73	19.40	Cotton Draw Unit 281H (p)	1615.22	1568.43	34.52	
11900.00	10406.00	19.16	37.08	19.81	Cotton Draw Unit 281H (p)	1712.37	1665.52	36.55	
12000.00	10406.00	18.95	38.48	20.27	Cotton Draw Unit 281H (p)	1809.77	1762.88	38.59	
12100.00	10406.00	18.76	39.93	20.76	Cotton Draw Unit 281H (p)	1907.39	1860.45	40.63	
12200.00	10406.00	18.58	41.44	21.26	Cotton Draw Unit 281H (p)	2005.21	1958.16	42.62	
12300.00	10406.00	18.43	42.96	21.75	Cotton Draw Unit 281H (p)	2103.19	2056.07	44.63	
12400.00	10406.00	18.29	44.51	22.21	Cotton Draw Unit 281H (p)	2201.33	2154.22	46.73	
12500.00	10406.00	18.16	46.08	22.74	Cotton Draw Unit 281H (p)	2299.60	2252.39	48.71	
12600.00	10406.00	18.03	47.66	23.25	Cotton Draw Unit 281H (p)	2398.00	2350.77	50.78	
12700.00	10406.00	17.92	49.26	23.83	Cotton Draw Unit 281H (p)	2496.50	2449.24	52.82	
12800.00	10406.00	17.82	50.87	24.31	Cotton Draw Unit 281H (p)	2595.10	2547.76	54.82	
12900.00	10406.00	17.73	52.50	24.94	Cotton Draw Unit 281H (p)	2693.79	2646.48	56.94	
13000.00	10406.00	17.64	54.14	25.48	Cotton Draw Unit 281H (p)	2792.57	2745.15	58.90	
13100.00	10406.00	17.55	55.79	26.10	Cotton Draw Unit 281H (p)	2891.41	2843.96	60.93	
13200.00	10406.00	17.48	57.45	26.68	Cotton Draw Unit 281H (p)	2990.32	2942.86	63.00	
13300.00	10406.00	17.40	59.12	27.26	Cotton Draw Unit 281H (p)	3089.30	3041.82	65.07	
13400.00	10406.00	17.34	60.80	27.83	Cotton Draw Unit 281H (p)	3188.33	3140.82	67.12	
13500.00	10406.00	17.27	62.49	28.41	Cotton Draw Unit 281H (p)	3287.41	3239.83	69.10	
13600.00	10406.00	17.21	64.18	29.00	Cotton Draw Unit 281H (p)	3386.54	3338.90	71.09	
13700.00	10406.00	17.15	65.88	29.60	Cotton Draw Unit 281H (p)	3485.72	3438.01	73.07	
13800.00	10406.00	17.10	67.59	30.24	Cotton Draw Unit 281H (p)	3584.93	3537.16	75.05	
13900.00	10406.00	17.05	69.30	30.88	Cotton Draw Unit 281H (p)	3684.18	3636.36	77.03	

5D Anti-Collision Report

Primary Well : Cotton Draw Unit 280H (p) (TVD Relative to Kelly Bushing : All Azimuth Relative to GRID NORTH)									
MD (US.ft)	TVD (US.ft)	T Face to Sec (°)	S Major (US.ft)	S Minor (US.ft)	Nearest Well	CC (US.ft)	ES (US.ft)	SF	Risk
14000.00	10406.00	17.00	71.02	31.52	Cotton Draw Unit 281H (p)	3783.47	3735.59	79.01	
14100.00	10406.00	16.95	72.75	32.16	Cotton Draw Unit 281H (p)	3882.79	3834.85	80.99	
14200.00	10406.00	16.91	74.47	32.81	Cotton Draw Unit 281H (p)	3982.15	3934.15	82.97	
14300.00	10406.00	16.87	76.21	33.46	Cotton Draw Unit 281H (p)	4081.53	4033.47	84.94	
14400.00	10406.00	16.83	77.94	34.11	Cotton Draw Unit 281H (p)	4180.93	4132.83	86.91	
14500.00	10406.00	16.79	79.68	34.76	Cotton Draw Unit 281H (p)	4280.37	4232.21	88.88	
14600.00	10406.00	16.75	81.43	35.42	Cotton Draw Unit 281H (p)	4379.82	4331.61	90.84	
14700.00	10406.00	16.72	83.18	36.08	Cotton Draw Unit 281H (p)	4479.30	4431.03	92.80	
14800.00	10406.00	16.69	84.93	36.74	Cotton Draw Unit 281H (p)	4578.80	4530.47	94.75	
14900.00	10406.00	16.66	86.68	37.40	Cotton Draw Unit 281H (p)	4678.32	4629.94	96.70	
15000.00	10406.00	16.63	88.44	38.07	Cotton Draw Unit 281H (p)	4777.85	4729.42	98.65	
15100.00	10406.00	16.60	90.20	38.74	Cotton Draw Unit 281H (p)	4877.41	4828.92	100.59	
15200.00	10406.00	16.57	91.96	39.41	Cotton Draw Unit 281H (p)	4976.98	4928.43	102.52	
15300.00	10406.00	16.54	93.72	40.09	Cotton Draw Unit 281H (p)	5076.57	5027.96	104.45	
15400.00	10406.00	16.52	95.49	40.76	Cotton Draw Unit 281H (p)	5176.17	5127.51	106.38	
15427.12	10406.00	16.51	95.97	40.94	Cotton Draw Unit 281H (p)	5203.18	5154.50	106.90	

Secondary Well : Cotton Draw Unit 281H (p) (TVD Relative to Kelly Bushing (Primary) : All Azimuth Relative to GRID NORTH)									
Pri MD (US.ft)	TVD (US.ft)	Sec MD (US.ft)	T Face to Sec (°)	S Major (US.ft)	S Minor (US.ft)	CC (US.ft)	ES (US.ft)	SF	Risk
0.00	0.00	2.00	89.74	0.02	0.02	50.02	49.44	86.15	
100.00	100.00	102.00	89.74	0.12	0.12	50.02	49.22	62.84	
200.00	200.00	202.00	89.74	0.34	0.34	50.02	48.78	40.25	
300.00	300.00	302.00	89.74	0.57	0.57	50.02	48.33	29.57	
400.00	400.00	402.00	89.74	0.79	0.79	50.02	47.88	23.36	
500.00	500.00	502.00	89.74	1.02	1.02	50.02	47.43	19.31	
600.00	600.00	602.00	89.74	1.24	1.24	50.02	46.98	16.45	
700.00	700.00	702.00	89.74	1.47	1.47	50.02	46.53	14.33	
800.00	800.00	802.00	89.74	1.69	1.69	50.02	46.08	12.70	
900.00	900.00	902.00	89.74	1.92	1.92	50.02	45.63	11.40	
1000.00	1000.00	1002.00	89.74	2.14	2.14	50.02	45.18	10.34	
1100.00	1100.00	1102.00	89.74	2.36	2.36	50.02	44.73	9.46	
1200.00	1200.00	1202.00	89.74	2.59	2.59	50.02	44.28	8.72	
1300.00	1300.00	1302.00	89.74	2.81	2.81	50.02	43.83	8.09	
1400.00	1400.00	1402.00	89.74	3.04	3.04	50.02	43.38	7.54	
1500.00	1500.00	1502.00	89.74	3.26	3.26	50.02	42.93	7.06	
1600.00	1600.00	1602.00	89.74	3.49	3.49	50.02	42.49	6.64	
1700.00	1700.00	1702.00	89.74	3.71	3.71	50.02	42.04	6.26	
1800.00	1800.00	1802.00	89.74	3.94	3.94	50.02	41.59	5.93	
1900.00	1900.00	1902.00	89.74	4.16	4.16	50.02	41.14	5.63	
2000.00	2000.00	2002.00	89.74	4.39	4.39	50.02	40.69	5.36	
2100.00	2100.00	2102.00	89.74	4.61	4.61	50.02	40.24	5.11	
2200.00	2200.00	2202.00	89.74	4.84	4.84	50.02	39.79	4.89	
2300.00	2300.00	2302.00	89.74	5.06	5.06	50.02	39.34	4.68	
2400.00	2400.00	2402.00	89.74	5.29	5.29	50.02	38.89	4.49	
2500.00	2500.00	2502.00	89.74	5.51	5.51	50.02	38.44	4.32	
2600.00	2600.00	2602.00	89.74	5.74	5.74	50.02	37.99	4.16	
2700.00	2700.00	2702.00	89.74	5.96	5.96	50.02	37.54	4.01	
2800.00	2800.00	2802.00	89.74	6.19	6.19	50.02	37.09	3.87	

5D Anti-Collision Report

Secondary Well : Cotton Draw Unit 281H (p) (TVD Relative to Kelly Bushing (Primary)) : All Azimuth Relative to GRID NORTH									
Prj MD (US ft)	TVD (US ft)	Sec MD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
2900.00	2900.00	2902.00	89.74	6.41	6.41	50.02	36.64	3.74	
3000.00	3000.00	3002.00	89.74	6.64	6.64	50.02	36.19	3.62	
3100.00	3100.00	3102.00	89.74	6.86	6.86	50.02	35.74	3.50	
3200.00	3200.00	3202.00	89.74	7.09	7.09	50.02	35.29	3.40	
3300.00	3300.00	3302.00	89.74	7.31	7.31	50.02	34.84	3.30	
3400.00	3400.00	3402.00	89.74	7.53	7.53	50.02	34.39	3.20	
3500.00	3500.00	3502.00	89.74	7.76	7.76	50.02	33.94	3.11	
3600.00	3600.00	3602.00	89.74	7.98	7.98	50.02	33.49	3.03	
3700.00	3700.00	3702.00	89.74	8.21	8.21	50.02	33.04	2.95	
3800.00	3800.00	3802.00	89.74	8.43	8.43	50.02	32.59	2.87	
3900.00	3900.00	3902.00	89.74	8.66	8.66	50.02	32.15	2.80	
4000.00	4000.00	4002.00	89.74	8.88	8.88	50.02	31.70	2.73	
4100.00	4100.00	4102.00	89.74	9.11	9.11	50.02	31.25	2.66	
4200.00	4200.00	4202.00	89.74	9.33	9.33	50.02	30.80	2.60	
4300.00	4300.00	4302.00	89.74	9.56	9.56	50.02	30.35	2.54	
4400.00	4400.00	4402.00	89.74	9.78	9.78	50.02	29.90	2.49	
4500.00	4500.00	4502.00	89.74	10.01	10.01	50.02	29.45	2.43	
4600.00	4600.00	4602.00	89.74	10.23	10.23	50.02	29.00	2.38	
4700.00	4700.00	4702.00	89.74	10.46	10.46	50.02	28.55	2.33	
4800.00	4800.00	4802.00	89.74	10.68	10.68	50.02	28.10	2.28	
4900.00	4900.00	4902.00	89.74	10.91	10.91	50.02	27.65	2.24	
5000.00	5000.00	5002.00	89.74	11.13	11.13	50.02	27.20	2.19	
5100.00	5100.00	5102.00	89.74	11.36	11.36	50.02	26.75	2.15	
5200.00	5199.98	5201.98	89.74	11.58	11.58	50.02	26.33	2.11	
5300.00	5299.10	5301.11	89.74	11.79	11.79	50.92	26.80	2.11	
5400.00	5398.13	5400.17	89.75	11.98	11.98	53.55	29.03	2.18	
5500.00	5496.98	5499.11	89.77	12.18	12.16	57.91	32.99	2.32	
5600.00	5595.56	5597.88	89.79	12.38	12.34	63.98	38.67	2.53	
5700.00	5693.79	5696.41	89.82	12.58	12.52	71.78	46.08	2.79	
5800.00	5792.98	5795.98	89.84	12.79	12.72	80.49	54.37	3.08	
5900.00	5892.22	5895.60	89.85	13.00	12.92	89.21	62.66	3.36	
6000.00	5991.47	5995.22	89.86	13.21	13.12	97.93	70.95	3.63	
6100.00	6090.71	6094.84	89.88	13.43	13.32	106.64	79.23	3.89	
6200.00	6189.95	6194.46	89.89	13.65	13.53	115.36	87.52	4.14	
6300.00	6289.19	6294.08	89.89	13.86	13.73	124.07	95.81	4.39	
6400.00	6388.43	6393.70	89.90	14.08	13.94	132.79	104.10	4.63	
6500.00	6487.67	6493.32	89.91	14.31	14.14	141.50	112.38	4.86	
6600.00	6586.91	6592.94	89.91	14.53	14.35	150.22	120.67	5.08	
6700.00	6686.15	6692.56	89.92	14.76	14.55	158.93	128.95	5.30	
6800.00	6785.39	6792.18	89.92	14.98	14.76	167.65	137.24	5.51	
6900.00	6884.63	6891.80	89.92	15.21	14.97	176.37	145.52	5.72	
7000.00	6983.87	6991.42	89.93	15.44	15.18	185.08	153.80	5.92	
7100.00	7083.11	7091.04	89.93	15.67	15.39	193.80	162.08	6.11	
7200.00	7182.35	7190.66	89.93	15.91	15.60	202.51	170.36	6.30	
7300.00	7281.59	7290.28	89.94	16.14	15.81	211.23	178.65	6.48	
7400.00	7380.83	7389.90	89.94	16.38	16.03	219.94	186.93	6.66	
7500.00	7480.07	7489.52	89.94	16.61	16.24	228.66	195.20	6.83	
7600.00	7579.31	7589.13	89.94	16.85	16.45	237.38	203.48	7.00	
7700.00	7678.55	7688.75	89.95	17.09	16.66	246.09	211.76	7.17	
7800.00	7777.79	7788.37	89.95	17.33	16.88	254.81	220.04	7.33	
7900.00	7877.03	7887.99	89.95	17.57	17.09	263.52	228.32	7.49	
8000.00	7976.27	7987.61	89.95	17.81	17.31	272.24	236.59	7.64	
8100.00	8075.51	8087.23	89.95	18.05	17.52	280.95	244.87	7.79	
8200.00	8174.75	8186.85	89.95	18.30	17.74	289.67	253.15	7.93	
8300.00	8273.99	8286.47	89.96	18.54	17.95	298.38	261.42	8.07	
8400.00	8373.23	8386.09	89.96	18.79	18.17	307.10	269.70	8.21	
8500.00	8472.47	8485.71	89.96	19.03	18.39	315.82	277.97	8.35	
8600.00	8571.72	8585.33	89.96	19.28	18.60	324.53	286.25	8.48	

SD Anti-Collision Report

Secondary Well : Cotton Draw Unit 281H (p) (TVD Relative to Kelly Bushing (Primary)) All Azimuth Relative to GRID NORTH									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	T Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
8700.00	8670.96	8684.95	89.96	19.53	18.82	333.25	294.52	8.61	
8800.00	8771.51	8785.88	89.96	19.77	19.04	341.88	302.71	8.73	
8900.00	8873.98	8888.67	89.96	19.99	19.25	349.77	310.14	8.83	
9000.00	8976.65	8991.60	89.96	20.20	19.46	356.76	316.68	8.90	
9100.00	9079.51	9094.65	89.96	20.41	19.67	362.85	322.33	8.95	
9200.00	9182.53	9197.80	89.96	20.62	19.88	368.05	327.09	8.98	
9300.00	9285.68	9301.05	89.96	20.83	20.08	372.35	330.95	8.99	
9400.00	9388.93	9404.36	89.96	21.04	20.28	375.75	333.91	8.98	
9500.00	9492.27	9507.73	89.97	21.24	20.49	378.24	335.97	8.95	
9600.00	9595.66	9611.14	89.97	21.44	20.69	379.83	337.13	8.90	
9700.00	9699.09	9714.57	89.97	21.63	20.88	380.52	337.40	8.82	
9800.00	9800.00	9815.48	89.97	21.84	21.09	380.56	337.00	8.74	
9900.00	9900.00	9915.48	89.97	22.05	21.31	380.56	336.56	8.65	
10000.00	9997.76	10013.50	59.56	22.05	21.51	375.28	330.86	8.45	
10100.00	10076.28	10094.33	66.92	21.75	21.59	363.36	318.69	8.13	
10200.00	10127.04	10148.93	74.27	21.75	21.36	356.11	311.35	7.96	
10300.00	10154.28	10179.42	77.70	21.81	21.09	364.43	319.81	8.17	
10400.00	10164.70	10191.36	76.10	21.83	20.96	392.61	348.50	8.90	
10500.00	10163.39	10189.85	70.80	21.83	20.98	437.85	393.70	9.92	
10600.00	10155.16	10180.42	63.81	21.81	21.08	503.62	459.36	11.38	
10700.00	10142.84	10166.50	47.84	21.79	21.21	584.98	540.46	13.14	
10800.00	10127.75	10149.72	25.07	21.75	21.35	672.85	627.93	14.98	
10900.00	10112.78	10133.34	23.94	21.72	21.46	762.74	717.55	16.88	
11000.00	10099.72	10119.25	23.03	21.70	21.58	854.18	808.81	18.83	
11100.00	10088.26	10107.01	22.28	21.71	21.65	946.84	901.13	20.71	
11200.00	10078.14	10096.30	21.66	21.74	21.63	1040.49	994.51	22.63	
11300.00	10069.16	10086.85	21.13	21.80	21.64	1134.94	1088.78	24.58	
11400.00	10061.13	10078.46	20.68	21.85	21.63	1230.06	1183.76	26.57	
11500.00	10053.93	10070.97	20.29	21.90	21.61	1325.72	1279.27	28.54	
11600.00	10047.43	10064.24	19.95	21.93	21.60	1421.85	1375.25	30.52	
11700.00	10041.54	10058.17	19.65	21.96	21.59	1518.37	1471.66	32.51	
11800.00	10036.19	10052.66	19.39	21.98	21.58	1615.22	1568.43	34.52	
11900.00	10031.30	10047.64	19.16	22.00	21.57	1712.37	1665.52	36.55	
12000.00	10026.81	10043.05	18.95	22.01	21.56	1809.77	1762.88	38.59	
12100.00	10022.69	10038.83	18.76	22.02	21.56	1907.39	1860.45	40.63	
12200.00	10018.89	10034.95	18.58	22.03	21.55	2005.21	1958.16	42.62	
12300.00	10015.37	10031.37	18.43	22.04	21.54	2103.19	2056.07	44.63	
12400.00	10012.10	10028.05	18.29	22.04	21.54	2201.33	2154.22	46.73	
12500.00	10009.07	10024.96	18.16	22.05	21.53	2299.60	2252.39	48.71	
12600.00	10006.23	10022.09	18.03	22.05	21.52	2398.00	2350.77	50.78	
12700.00	10003.59	10019.40	17.92	22.05	21.52	2496.50	2449.24	52.82	
12800.00	10001.11	10016.89	17.82	22.05	21.52	2595.10	2547.76	54.82	
12900.00	9998.78	10014.54	17.73	22.05	21.51	2693.79	2646.48	56.94	
13000.00	9996.59	10012.33	17.64	22.05	21.51	2792.57	2745.15	58.90	
13100.00	9994.53	10010.25	17.55	22.05	21.50	2891.41	2843.96	60.93	
13200.00	9992.59	10008.28	17.48	22.05	21.50	2990.32	2942.86	63.00	
13300.00	9990.75	10006.43	17.40	22.05	21.50	3089.30	3041.82	65.07	
13400.00	9989.02	10004.68	17.34	22.05	21.49	3188.33	3140.82	67.12	
13500.00	9987.37	10003.01	17.27	22.04	21.49	3287.41	3239.83	69.10	
13600.00	9985.81	10001.44	17.21	22.04	21.49	3386.54	3338.90	71.09	
13700.00	9984.32	9999.94	17.15	22.04	21.48	3485.72	3438.01	73.07	
13800.00	9982.91	9998.52	17.10	22.05	21.48	3584.93	3537.16	75.05	
13900.00	9981.56	9997.16	17.05	22.05	21.48	3684.18	3636.36	77.03	
14000.00	9980.28	9995.87	17.00	22.06	21.48	3783.47	3735.59	79.01	
14100.00	9979.05	9994.64	16.95	22.06	21.47	3882.79	3834.85	80.99	
14200.00	9977.88	9993.46	16.91	22.07	21.47	3982.15	3934.15	82.97	
14300.00	9976.76	9992.33	16.87	22.07	21.47	4081.53	4033.47	84.94	
14400.00	9975.69	9991.25	16.83	22.07	21.47	4180.93	4132.83	86.91	

5D Anti-Collision Report

Secondary Well : Cotton Draw Unit 281H (p) (TVD Relative to Kelly Bushing (Primary) : All Azimuth Relative to GRID NORTH)									
Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	IT Face to Sec (°)	S Major (US ft)	S Minor (US ft)	CC (US ft)	ES (US ft)	SF	Risk
14500.00	9974.66	9990.22	16.79	22.08	21.46	4280.37	4232.21	88.88	
14600.00	9973.67	9989.23	16.75	22.08	21.46	4379.82	4331.61	90.84	
14700.00	9972.72	9988.28	16.72	22.08	21.46	4479.30	4431.03	92.80	
14800.00	9971.81	9987.36	16.69	22.08	21.46	4578.80	4530.47	94.75	
14900.00	9970.94	9986.48	16.66	22.09	21.46	4678.32	4629.94	96.70	
15000.00	9970.10	9985.64	16.63	22.09	21.46	4777.85	4729.42	98.65	
15100.00	9969.29	9984.82	16.60	22.09	21.45	4877.41	4828.92	100.59	
15200.00	9968.51	9984.04	16.57	22.09	21.45	4976.98	4928.43	102.52	
15300.00	9967.75	9983.28	16.54	22.09	21.45	5076.57	5027.96	104.45	
15400.00	9967.03	9982.55	16.52	22.10	21.45	5176.17	5127.51	106.38	
15427.12	9966.83	9982.36	16.51	22.10	21.45	5203.18	5154.50	106.90	

**Weatherford**

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: June 26, 2015
Job Number: _____
Customer: Devon Energy
Well Name: Cotton Draw Unit 280H
API Number: _____
Rig Name: _____
Location: Lea Co, NM Nad83 NME
Block: _____
Engineer: RWJ

NAD83 / New Mexico East (ftUS)	NAD83 (1986)
Projected Coordinate System	Geodetic Coordinate System
Datum: North American Datum 1983 (1986)	Datum: North American Datum 1983 (1986)
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
EPSG: 2257	EPSG: 4269
North: 414087.92 US Survey Foot	Latitude: 32.136933 Degree
East: 730370.42 US Survey Foot	Longitude: -103.722622 Degree
Convergence: 0.32°	
Declination: 7.31°	
Total Correction: 6.99°	
Datum Transformation: none	

Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 08' 12.96" N
Longitude = 103° 43' 21.44" W

Magnetic Declination = 7.31 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6578
Local Field Strength = 48142 nT	Magnetic Vector X = 23858 nT
Magnetic Dip = 60.02 deg	Magnetic Vector Y = 3062 nT
Magnetic Model = bggm2015.dat	Magnetic Vector Z = 41702 nT
Run Date = October 15, 2015	Magnetic Vector H = 24053 nT

Signed: _____ Date: _____

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