



5D Anti-Collision Report

Devon Energy

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

Site Name: *Cotton Draw Unit 288H*

Well Name: *Cotton Draw Unit 288H*

23 August 2016



Weatherford®



Weatherford®

Cotton Draw Unit 288H

Field Name:	Map Units: US ft		Company Name: Devon Energy				
	Vertical Reference Datum (VRD): Mean Sea Level						
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)						
Lea Co, NM Nad 83 NMEZ							
Site:	Units: US ft		North Reference: Grid		Convergence Angle: 0.33		
	Position:	Northing: 414166.75 US ft		Latitude: 32° 8' 13.54"			
		Easting: 733887.43 US ft		Longitude: -103° 42' 40.53"			
Cotton Draw Unit 288H							
Elevation above MSL:3423.00 US ft							
Comment:							
Slot:	Position (Relative to Site Centre)						
	+N/-S: 0.00 US ft	Northing: 414166.75 US ft		Latitude: 32°8'13.54"			
	+E/-W: 0.00 US ft	Easting: 733887.43 US ft		Longitude: -103°42'40.53"			
Cotton Draw Unit 288H							
Slot TVD Reference: Ground Elevation							
Elevation above MSL: 3423.00 US ft							
Comment:							
Well:	Type:Main well		UWI:		Plan:Working Plan		
	File Number:	Comment:					
	Closure Distance:5162.05US ft		Closure Azimuth:359.84°				
	Vertical Section: Position of Origin (Relative to Slot centre)						
	+N/-S: 0.00 US ft		+E/-W: -0.00 US ft		Az: 359.84°		
	Magnetic Parameters:						
	Model: bggm2016	Field Strength: 48029.9nT		Declination: 7.14°		Dip: 59.97°	Date: 31/Oct/2016

Drill floor: Plan: Working Plan			
Rig Height (Drill Floor): 23.00us ft	Elevation above MSL: 3446.00us ft	Inclination: 0.00°	Azimuth: 0.00°

Collision / Uncertainty Analysis				
Primary Well	Start MD (USFt)	End MD (USFt)	Collision Risk Interval	No. of Std. Deviations in Error Computation
Cotton Draw Unit 288H (p)	0.00	15365.14	100.00	2

Secondary Well Names: Cotton Draw Unit 252H (s)

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.

AC Filter Info: No filter has been applied.

Separation factors calculated using Pedal Curve (Independent Uncertainty). Surface Uncertainty (S.U.) Not Applied. Wellpath created using minimum curvature.

Anti-Collision Summary (TVD relative to Drill Floor)

SF	Secondary Well Name	Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	ES (US ft)	CC (US ft)	SF	Risk
	Cotton Draw Unit 252H (s)	8176.37	8176.37	13024.00	525.70	591.08	9.04	

CC	Secondary Well Name	Pri MD (US ft)	TVD (US ft)	Sec MD (US ft)	ES (US ft)	CC (US ft)	SF	Risk
	Cotton Draw Unit 252H (s)	8170.51	8170.51	13024.00	525.68	591.05	9.04	

Primary Well: Cotton Draw Unit 288H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Nearest Well	Survey Tool	Risk
0.00	0.00	0.00	0.00	0.00	0.00	358.77	5352.48	5351.81	7880.91	Cotton Draw Unit 252H (s)	MWD	
100.00	0.00	0.00	100.00	0.11	0.11	358.76	5352.16	5351.21	5661.41	Cotton Draw Unit 252H (s)	MWD	
200.00	0.00	0.00	200.00	0.34	0.34	358.74	5351.63	5350.24	3840.28	Cotton Draw Unit 252H (s)	MWD	
300.00	0.00	0.00	300.00	0.56	0.56	358.73	5351.24	5349.45	2977.62	Cotton Draw Unit 252H (s)	MWD	
400.00	0.00	0.00	400.00	0.79	0.79	358.71	5350.86	5348.59	2363.68	Cotton Draw Unit 252H (s)	MWD	
500.00	0.00	0.00	500.00	1.01	1.01	358.69	5350.10	5347.38	1965.39	Cotton Draw Unit 252H (s)	MWD	
600.00	0.00	0.00	600.00	1.24	1.24	358.67	5349.44	5346.31	1710.38	Cotton Draw Unit 252H (s)	MWD	
700.00	0.00	0.00	700.00	1.46	1.46	358.66	5348.95	5345.41	1509.20	Cotton Draw Unit 252H (s)	MWD	
800.00	0.00	0.00	800.00	1.69	1.69	358.65	5348.56	5344.59	1347.14	Cotton Draw Unit 252H (s)	MWD	
900.00	0.00	0.00	900.00	1.91	1.91	358.64	5348.23	5343.83	1215.86	Cotton Draw Unit 252H (s)	MWD	
1000.00	0.00	0.00	1000.00	2.14	2.14	358.64	5347.91	5343.08	1105.44	Cotton Draw Unit 252H (s)	MWD	
1100.00	0.00	0.00	1100.00	2.36	2.36	358.64	5347.56	5342.28	1012.82	Cotton Draw Unit 252H (s)	MWD	
1200.00	0.00	0.00	1200.00	2.59	2.59	358.64	5347.14	5341.41	933.79	Cotton Draw Unit 252H (s)	MWD	
1300.00	0.00	0.00	1300.00	2.81	2.81	358.64	5346.63	5340.47	867.11	Cotton Draw Unit 252H (s)	MWD	
1400.00	0.00	0.00	1400.00	3.03	3.03	358.64	5346.24	5339.66	812.08	Cotton Draw Unit 252H (s)	MWD	
1500.00	0.00	0.00	1500.00	3.26	3.26	358.64	5346.04	5339.04	763.79	Cotton Draw Unit 252H (s)	MWD	
1600.00	0.00	0.00	1600.00	3.48	3.48	358.64	5345.94	5338.52	719.80	Cotton Draw Unit 252H (s)	MWD	
1700.00	0.00	0.00	1700.00	3.71	3.71	358.64	5345.93	5338.08	681.23	Cotton Draw Unit 252H (s)	MWD	
1800.00	0.00	0.00	1800.00	3.93	3.93	358.64	5346.22	5337.98	649.15	Cotton Draw Unit 252H (s)	MWD	
1900.00	0.00	0.00	1900.00	4.16	4.16	358.65	5346.92	5338.31	620.48	Cotton Draw Unit 252H (s)	MWD	

SD Anti-Collision Report

Primary Well: Cotton Draw Unit 288H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Nearest Well	Survey Tool	Risk
2000.00	0.00	0.00	2000.00	4.38	4.38	358.66	5347.87	5338.81	589.76	Cotton Draw Unit 252H (s)	MWD	
2100.00	0.00	0.00	2100.00	4.61	4.61	358.66	5348.63	5339.12	562.43	Cotton Draw Unit 252H (s)	MWD	
2200.00	0.00	0.00	2200.00	4.83	4.83	358.67	5349.52	5339.62	540.10	Cotton Draw Unit 252H (s)	MWD	
2300.00	0.00	0.00	2300.00	5.06	5.06	358.68	5350.85	5340.57	520.16	Cotton Draw Unit 252H (s)	MWD	
2400.00	0.00	0.00	2400.00	5.28	5.28	358.69	5352.64	5341.98	502.15	Cotton Draw Unit 252H (s)	MWD	
2500.00	0.00	0.00	2500.00	5.51	5.51	358.71	5354.99	5343.96	485.42	Cotton Draw Unit 252H (s)	MWD	
2600.00	0.00	0.00	2600.00	5.73	5.73	358.74	5357.92	5346.51	469.60	Cotton Draw Unit 252H (s)	MWD	
2700.00	0.00	0.00	2700.00	5.96	5.96	358.78	5361.41	5349.63	454.92	Cotton Draw Unit 252H (s)	MWD	
2800.00	0.00	0.00	2800.00	6.18	6.18	358.82	5365.46	5353.30	441.39	Cotton Draw Unit 252H (s)	MWD	
2900.00	0.00	0.00	2900.00	6.41	6.41	331.59	5303.56	5261.42	125.85	Cotton Draw Unit 252H (s)	MWD	
3000.00	0.00	0.00	3000.00	6.63	6.63	331.59	5204.20	5161.95	123.20	Cotton Draw Unit 252H (s)	MWD	
3100.00	0.00	0.00	3100.00	6.86	6.86	331.59	5104.86	5062.51	120.56	Cotton Draw Unit 252H (s)	MWD	
3200.00	0.00	0.00	3200.00	7.08	7.08	331.59	5005.54	4963.09	117.92	Cotton Draw Unit 252H (s)	MWD	
3300.00	0.00	0.00	3300.00	7.31	7.31	331.59	4906.25	4863.70	115.30	Cotton Draw Unit 252H (s)	MWD	
3400.00	0.00	0.00	3400.00	7.53	7.53	331.59	4807.00	4764.34	112.69	Cotton Draw Unit 252H (s)	MWD	
3500.00	0.00	0.00	3500.00	7.76	7.76	331.59	4707.77	4665.01	110.09	Cotton Draw Unit 252H (s)	MWD	
3600.00	0.00	0.00	3600.00	7.98	7.98	331.59	4608.58	4565.71	107.49	Cotton Draw Unit 252H (s)	MWD	
3700.00	0.00	0.00	3700.00	8.20	8.20	331.59	4509.43	4466.44	104.91	Cotton Draw Unit 252H (s)	MWD	
3800.00	0.00	0.00	3800.00	8.43	8.43	331.59	4410.31	4367.21	102.34	Cotton Draw Unit 252H (s)	MWD	
3900.00	0.00	0.00	3900.00	8.65	8.65	331.59	4311.23	4268.02	99.78	Cotton Draw Unit 252H (s)	MWD	
4000.00	0.00	0.00	4000.00	8.88	8.88	331.59	4212.20	4168.87	97.22	Cotton Draw Unit 252H (s)	MWD	
4100.00	0.00	0.00	4100.00	9.10	9.10	331.59	4113.21	4069.77	94.69	Cotton Draw Unit 252H (s)	MWD	
4200.00	0.00	0.00	4200.00	9.33	9.33	331.59	4014.27	3970.71	92.16	Cotton Draw Unit 252H (s)	MWD	
4300.00	0.00	0.00	4300.00	9.55	9.55	331.59	3915.39	3871.71	89.63	Cotton Draw Unit 252H (s)	MWD	
4400.00	0.00	0.00	4400.00	9.78	9.78	331.59	3816.57	3772.76	87.11	Cotton Draw Unit 252H (s)	MWD	
4500.00	0.00	0.00	4500.00	10.00	10.00	331.59	3717.81	3673.86	84.61	Cotton Draw Unit 252H (s)	MWD	

5D Anti-Collision Report

Primary Well: Cotton Draw Unit 288H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Nearest Well	Survey Tool	Risk
4600.00	0.00	0.00	4600.00	10.23	10.23	331.59	3619.11	3575.04	82.11	Cotton Draw Unit 252H (s)	MWD	
4700.00	0.00	0.00	4700.00	10.45	10.45	331.59	3520.49	3476.28	79.63	Cotton Draw Unit 252H (s)	MWD	
4800.00	0.00	0.00	4800.00	10.68	10.68	331.59	3421.95	3377.61	77.16	Cotton Draw Unit 252H (s)	MWD	
4900.00	0.00	0.00	4900.00	10.90	10.90	331.59	3323.50	3279.02	74.71	Cotton Draw Unit 252H (s)	MWD	
5000.00	0.00	0.00	5000.00	11.13	11.13	331.59	3225.14	3180.52	72.27	Cotton Draw Unit 252H (s)	MWD	
5100.00	0.00	0.00	5100.00	11.35	11.35	331.59	3126.89	3082.12	69.84	Cotton Draw Unit 252H (s)	MWD	
5200.00	0.00	0.00	5200.00	11.58	11.58	331.59	3028.75	2983.84	67.43	Cotton Draw Unit 252H (s)	MWD	
5300.00	0.00	0.00	5300.00	11.80	11.80	331.59	2930.74	2885.67	65.02	Cotton Draw Unit 252H (s)	MWD	
5400.00	0.00	0.00	5400.00	12.03	12.03	331.59	2832.87	2787.63	62.62	Cotton Draw Unit 252H (s)	MWD	
5500.00	0.00	0.00	5500.00	12.25	12.25	331.59	2735.15	2689.74	60.23	Cotton Draw Unit 252H (s)	MWD	
5600.00	0.00	0.00	5600.00	12.48	12.48	331.59	2637.60	2592.02	57.86	Cotton Draw Unit 252H (s)	MWD	
5700.00	0.00	0.00	5700.00	12.70	12.70	331.59	2540.24	2494.42	55.44	Cotton Draw Unit 252H (s)	MWD	
5800.00	0.00	0.00	5800.00	12.93	12.93	331.59	2443.10	2397.03	53.03	Cotton Draw Unit 252H (s)	MWD	
5900.00	0.00	0.00	5900.00	13.15	13.15	331.59	2346.19	2299.87	50.65	Cotton Draw Unit 252H (s)	MWD	
6000.00	0.00	0.00	6000.00	13.37	13.37	331.59	2249.56	2202.95	48.27	Cotton Draw Unit 252H (s)	MWD	
6100.00	0.00	0.00	6100.00	13.60	13.60	331.59	2153.23	2106.34	45.92	Cotton Draw Unit 252H (s)	MWD	
6200.00	0.00	0.00	6200.00	13.82	13.82	331.59	2057.26	2010.06	43.59	Cotton Draw Unit 252H (s)	MWD	
6300.00	0.00	0.00	6300.00	14.05	14.05	331.59	1961.68	1914.18	41.29	Cotton Draw Unit 252H (s)	MWD	
6400.00	0.00	0.00	6400.00	14.27	14.27	331.59	1866.57	1818.75	39.03	Cotton Draw Unit 252H (s)	MWD	
6500.00	0.00	0.00	6500.00	14.50	14.50	331.59	1772.00	1723.85	36.80	Cotton Draw Unit 252H (s)	MWD	
6600.00	0.00	0.00	6600.00	14.72	14.72	331.59	1678.06	1629.58	34.61	Cotton Draw Unit 252H (s)	MWD	
6700.00	0.00	0.00	6700.00	14.95	14.95	331.59	1584.86	1536.01	32.44	Cotton Draw Unit 252H (s)	MWD	
6800.00	0.00	0.00	6800.00	15.17	15.17	331.59	1492.54	1443.12	30.20	Cotton Draw Unit 252H (s)	MWD	
6900.00	0.00	0.00	6900.00	15.40	15.40	331.59	1401.27	1351.26	28.02	Cotton Draw Unit 252H (s)	MWD	
7000.00	0.00	0.00	7000.00	15.62	15.62	331.59	1311.28	1260.66	25.90		MWD	

5D Anti-Collision Report

Primary Well: Cotton Draw Unit 288H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Nearest Well	Survey Tool	Risk
7100.00	0.00	0.00	7100.00	15.85	15.85	331.59	1222.85	1171.62	23.87	Cotton Draw Unit 252H (s)	MWD	
7200.00	0.00	0.00	7200.00	16.07	16.07	331.59	1136.33	1084.37	21.87	Cotton Draw Unit 252H (s)	MWD	
7300.00	0.00	0.00	7300.00	16.30	16.30	331.59	1052.21	999.22	19.85	Cotton Draw Unit 252H (s)	MWD	
7400.00	0.00	0.00	7400.00	16.52	16.52	331.59	971.11	917.09	17.98	Cotton Draw Unit 252H (s)	MWD	
7500.00	0.00	0.00	7500.00	16.75	16.75	331.59	893.84	838.67	16.20	Cotton Draw Unit 252H (s)	MWD	
7600.00	0.00	0.00	7600.00	16.97	16.97	331.59	821.49	764.77	14.48	Cotton Draw Unit 252H (s)	MWD	
7700.00	0.00	0.00	7700.00	17.20	17.20	331.59	755.47	697.16	12.96	Cotton Draw Unit 252H (s)	MWD	
7800.00	0.00	0.00	7800.00	17.42	17.42	331.59	697.59	637.33	11.58	Cotton Draw Unit 252H (s)	MWD	
7900.00	0.00	0.00	7900.00	17.65	17.65	331.59	650.02	587.93	10.47	Cotton Draw Unit 252H (s)	MWD	
8000.00	0.00	0.00	8000.00	17.87	17.87	331.59	615.16	551.42	9.65	Cotton Draw Unit 252H (s)	MWD	
8100.00	0.00	0.00	8100.00	18.10	18.10	331.59	595.24	530.47	9.19	Cotton Draw Unit 252H (s)	MWD	
8200.00	0.00	0.00	8200.00	18.32	18.32	331.59	591.79	526.44	9.06	Cotton Draw Unit 252H (s)	MWD	
8300.00	0.00	0.00	8300.00	18.54	18.54	331.59	605.07	539.99	9.30	Cotton Draw Unit 252H (s)	MWD	
8400.00	0.00	0.00	8400.00	18.77	18.77	331.59	634.04	569.93	9.89	Cotton Draw Unit 252H (s)	MWD	
8500.00	0.00	0.00	8500.00	18.99	18.99	331.59	676.68	613.95	10.79	Cotton Draw Unit 252H (s)	MWD	
8600.00	0.00	0.00	8600.00	19.22	19.22	331.59	730.61	669.29	11.92	Cotton Draw Unit 252H (s)	MWD	
8700.00	0.00	0.00	8700.00	19.44	19.44	331.59	793.53	733.53	13.23	Cotton Draw Unit 252H (s)	MWD	
8800.00	0.00	0.00	8800.00	19.67	19.67	331.59	863.47	804.61	14.67	Cotton Draw Unit 252H (s)	MWD	
8900.00	0.00	0.00	8900.00	19.89	19.89	331.59	938.87	880.93	16.20	Cotton Draw Unit 252H (s)	MWD	
9000.00	0.00	0.00	9000.00	20.12	20.12	331.59	1018.52	961.27	17.79	Cotton Draw Unit 252H (s)	MWD	
9100.00	0.00	0.00	9100.00	20.34	20.34	331.59	1101.49	1044.96	19.49	Cotton Draw Unit 252H (s)	MWD	
9200.00	0.00	0.00	9200.00	20.57	20.57	331.59	1187.08	1131.00	21.17	Cotton Draw Unit 252H (s)	MWD	
9300.00	0.00	0.00	9300.00	20.79	20.79	331.59	1274.78	1218.98	22.85	Cotton Draw Unit 252H (s)	MWD	
9400.00	0.00	0.00	9400.00	21.02	21.02	331.59	1364.17	1308.66	24.58	Cotton Draw Unit 252H (s)	MWD	
9500.00	0.00	0.00	9500.00	21.24	21.24	331.59	1454.94	1399.67	26.32	Cotton Draw Unit 252H (s)	MWD	

Primary Well: Cotton Draw Unit 288H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Nearest Well	Survey Tool	Risk
9600.00	0.00	0.00	9600.00	21.47	21.47	331.59	1546.85	1491.75	28.07	Cotton Draw Unit 252H (s)	MWD	
9700.00	0.00	0.00	9700.00	21.69	21.69	331.59	1639.71	1584.68	29.80	Cotton Draw Unit 252H (s)	MWD	
9800.00	0.00	0.00	9800.00	21.92	21.92	331.59	1733.36	1678.31	31.49	Cotton Draw Unit 252H (s)	MWD	
9900.00	2.40	359.84	9899.99	22.14	22.13	334.71	1827.54	1772.47	33.19	Cotton Draw Unit 252H (s)	MWD	
10000.00	12.40	359.84	9999.04	22.36	22.08	342.52	1918.09	1863.01	34.82	Cotton Draw Unit 252H (s)	MWD	
10100.00	22.40	359.84	10094.34	22.57	21.67	346.61	2001.82	1946.65	36.28	Cotton Draw Unit 252H (s)	MWD	
10200.00	32.40	359.84	10183.01	22.79	20.95	349.03	2077.15	2021.90	37.60	Cotton Draw Unit 252H (s)	MWD	
10300.00	42.40	359.84	10262.36	23.04	19.99	350.57	2142.79	2087.43	38.71	Cotton Draw Unit 252H (s)	MWD	
10400.00	52.40	359.84	10329.96	23.34	18.90	351.59	2197.69	2142.27	39.66	Cotton Draw Unit 252H (s)	MWD	
10500.00	62.40	359.84	10383.78	23.73	17.84	352.27	2241.02	2185.50	40.36	Cotton Draw Unit 252H (s)	MWD	
10600.00	72.40	359.84	10422.17	24.22	16.97	352.70	2272.17	2216.57	40.87	Cotton Draw Unit 252H (s)	MWD	
10700.00	82.40	359.84	10443.96	24.81	16.46	352.93	2290.70	2235.04	41.16	Cotton Draw Unit 252H (s)	MWD	
10800.00	89.90	359.84	10449.04	25.49	16.44	353.08	2295.56	2240.43	41.64	Cotton Draw Unit 252H (s)	MWD	
10900.00	89.90	359.84	10449.21	26.27	16.61	353.32	2292.76	2238.88	42.55	Cotton Draw Unit 252H (s)	MWD	
11000.00	89.90	359.84	10449.38	27.16	16.81	353.42	2288.96	2235.49	42.81	Cotton Draw Unit 252H (s)	MWD	
11100.00	89.90	359.84	10449.56	28.13	17.04	353.55	2285.60	2232.61	43.14	Cotton Draw Unit 252H (s)	MWD	
11200.00	89.90	359.84	10449.73	29.19	17.30	353.68	2282.45	2229.87	43.41	Cotton Draw Unit 252H (s)	MWD	
11300.00	89.90	359.84	10449.90	30.32	17.58	353.77	2280.35	2227.95	43.51	Cotton Draw Unit 252H (s)	MWD	
11400.00	89.90	359.84	10450.07	31.52	17.89	353.86	2279.61	2227.52	43.76	Cotton Draw Unit 252H (s)	MWD	
11500.00	89.90	359.84	10450.25	32.77	18.23	353.94	2279.20	2227.33	43.94	Cotton Draw Unit 252H (s)	MWD	
11600.00	89.90	359.84	10450.42	34.08	18.59	353.99	2280.36	2228.64	44.09	Cotton Draw Unit 252H (s)	MWD	
11700.00	89.90	359.84	10450.59	35.43	18.97	354.02	2280.99	2229.79	44.56	Cotton Draw Unit 252H (s)	MWD	
11800.00	89.90	359.84	10450.76	36.82	19.37	354.08	2280.58	2229.97	45.06	Cotton Draw Unit 252H (s)	MWD	
11900.00	89.90	359.84	10450.93	38.25	19.78	354.12	2278.98	2228.61	45.24	Cotton Draw Unit 252H (s)	MWD	
12000.00	89.90	359.84	10451.11	39.72	20.22	354.14	2278.18	2227.86	45.27		MWD	

5D Anti-Collision Report

Primary Well: Cotton Draw Unit 288H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Nearest Well	Survey Tool	Risk
12100.00	89.90	359.84	10451.28	41.21	20.68	354.14	2278.62	2228.37	45.35	Cotton Draw Unit 252H (s)	MWD	
12200.00	89.90	359.84	10451.45	42.72	21.14	354.26	2278.09	2228.65	46.08	Cotton Draw Unit 252H (s)	MWD	
12300.00	89.90	359.84	10451.62	44.27	21.63	354.41	2274.93	2225.73	46.23	Cotton Draw Unit 252H (s)	MWD	
12400.00	89.90	359.84	10451.79	45.83	22.13	354.53	2272.31	2223.20	46.27	Cotton Draw Unit 252H (s)	MWD	
12500.00	89.90	359.84	10451.97	47.41	22.64	354.65	2270.88	2221.72	46.20	Cotton Draw Unit 252H (s)	MWD	
12600.00	89.90	359.84	10452.14	49.01	23.16	354.78	2270.38	2221.31	46.27	Cotton Draw Unit 252H (s)	MWD	
12700.00	89.90	359.84	10452.31	50.62	23.69	354.92	2270.28	2221.39	46.43	Cotton Draw Unit 252H (s)	MWD	
12800.00	89.90	359.84	10452.48	52.25	24.24	355.02	2270.79	2221.89	46.44	Cotton Draw Unit 252H (s)	MWD	
12900.00	89.90	359.84	10452.66	53.89	24.79	355.26	2269.11	2220.69	46.87	Cotton Draw Unit 252H (s)	MWD	
13000.00	89.90	359.84	10452.83	55.54	25.35	355.40	2267.98	2219.51	46.80	Cotton Draw Unit 252H (s)	MWD	
13100.00	89.90	359.84	10453.00	57.20	25.93	355.61	2267.52	2219.14	46.87	Cotton Draw Unit 252H (s)	MWD	
13200.00	89.90	359.84	10453.17	58.88	26.51	355.92	2266.60	2218.49	47.11	Cotton Draw Unit 252H (s)	MWD	
13300.00	89.90	359.84	10453.34	60.56	27.09	356.15	2265.35	2217.30	47.14	Cotton Draw Unit 252H (s)	MWD	
13400.00	89.90	359.84	10453.52	62.25	27.69	356.40	2264.96	2217.00	47.22	Cotton Draw Unit 252H (s)	MWD	
13500.00	89.90	359.84	10453.69	63.94	28.29	356.69	2264.62	2216.68	47.24	Cotton Draw Unit 252H (s)	MWD	
13600.00	89.90	359.84	10453.86	65.65	28.89	356.98	2264.46	2216.60	47.31	Cotton Draw Unit 252H (s)	MWD	
13700.00	89.90	359.84	10454.03	67.36	29.51	357.28	2263.36	2215.72	47.51	Cotton Draw Unit 252H (s)	MWD	
13800.00	89.90	359.84	10454.21	69.08	30.12	357.43	2262.65	2214.71	47.20	Cotton Draw Unit 252H (s)	MWD	
13900.00	89.90	359.84	10454.38	70.80	30.75	357.67	2262.67	2214.89	47.36	Cotton Draw Unit 252H (s)	MWD	
14000.00	89.90	359.84	10454.55	72.53	31.37	357.87	2261.62	2213.78	47.28	Cotton Draw Unit 252H (s)	MWD	
14100.00	89.90	359.84	10454.72	74.26	32.01	358.08	2260.11	2212.21	47.18	Cotton Draw Unit 252H (s)	MWD	
14200.00	89.90	359.84	10454.89	75.99	32.64	358.29	2258.45	2210.37	46.97	Cotton Draw Unit 252H (s)	MWD	
14300.00	89.90	359.84	10455.07	77.74	33.28	358.49	2257.25	2208.94	46.73	Cotton Draw Unit 252H (s)	MWD	
14400.00	89.90	359.84	10455.24	79.48	33.93	358.67	2256.20	2207.69	46.51	Cotton Draw Unit 252H (s)	MWD	
14500.00	89.90	359.84	10455.41	81.23	34.58	358.77	2256.07	2207.16	46.13	Cotton Draw Unit 252H (s)	MWD	

5D Anti-Collision Report

Primary Well: Cotton Draw Unit 288H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Nearest Well	Survey Tool	Risk
14600.00	89.90	359.84	10455.58	82.98	35.23	358.82	2258.43	2209.06	45.75	Cotton Draw Unit 252H (s)	MWD	
14700.00	89.90	359.84	10455.75	84.73	35.88	358.87	2263.27	2213.46	45.44	Cotton Draw Unit 252H (s)	MWD	
14800.00	89.90	359.84	10455.93	86.49	36.54	358.79	2265.55	2216.72	46.40	Cotton Draw Unit 252H (s)	MWD	
14900.00	89.90	359.84	10456.10	88.25	37.20	358.97	2258.02	2208.66	45.75	Cotton Draw Unit 252H (s)	MWD	
15000.00	89.90	359.84	10456.27	90.02	37.86	359.10	2252.38	2202.40	45.07	Cotton Draw Unit 252H (s)	MWD	
15100.00	89.90	359.84	10456.44	91.78	38.53	359.27	2249.22	2198.64	44.47	Cotton Draw Unit 252H (s)	MWD	
15200.00	89.90	359.84	10456.62	93.55	39.19	359.47	2248.54	2197.37	43.94	Cotton Draw Unit 252H (s)	MWD	
15300.00	89.90	359.84	10456.79	95.32	39.86	359.62	2250.97	2199.15	43.43	Cotton Draw Unit 252H (s)	MWD	
15365.14	89.90	359.84	10456.90	96.47	40.30	359.71	2254.48	2202.26	43.17	Cotton Draw Unit 252H (s)	MWD	

Secondary Well: Cotton Draw Unit 252H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Survey Tool	Risk
0.00	35.52	0.18	246.50	6.52	0.04	0.04	358.77	5352.48	5351.81	7880.91	MWD (Extreme Svy)	
100.00	154.82	0.74	246.69	125.82	0.20	0.20	358.76	5352.16	5351.21	5661.41	MWD (Extreme Svy)	
200.00	256.11	0.85	248.73	227.09	0.42	0.42	358.74	5351.63	5350.24	3840.28	MWD (Extreme Svy)	
300.00	343.77	0.72	256.05	314.74	0.60	0.60	358.73	5351.24	5349.45	2977.62	MWD (Extreme Svy)	
400.00	460.22	1.03	249.82	431.19	0.84	0.84	358.71	5350.86	5348.59	2363.68	MWD (Extreme Svy)	
500.00	571.56	1.24	247.11	542.50	1.08	1.07	358.69	5350.10	5347.38	1965.39	MWD (Extreme Svy)	
600.00	658.06	0.96	249.90	628.98	1.26	1.25	358.67	5349.44	5346.31	1710.38	MWD (Extreme Svy)	
700.00	752.10	0.74	249.27	723.01	1.45	1.44	358.66	5348.95	5345.41	1509.20	MWD (Extreme Svy)	
800.00	848.56	0.49	243.51	819.47	1.65	1.64	358.65	5348.56	5344.59	1347.14	MWD (Extreme Svy)	
900.00	945.60	0.25	223.97	916.51	1.85	1.84	358.64	5348.23	5343.83	1215.86	MWD (Extreme Svy)	
1000.00	1046.72	0.21	205.52	1017.63	2.07	2.06	358.64	5347.91	5343.08	1105.44	MWD (Extreme Svy)	
1100.00	1149.19	0.22	194.57	1120.09	2.29	2.28	358.64	5347.56	5342.28	1012.82	MWD (Extreme Svy)	
1200.00	1254.32	0.27	184.95	1225.22	2.51	2.50	358.64	5347.14	5341.41	933.79	MWD (Extreme Svy)	
1300.00	1355.16	0.28	178.75	1326.07	2.73	2.72	358.64	5346.63	5340.47	867.11		

SD Anti-Collision Report

Secondary Well: Cotton Draw Unit 252H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Survey Tool	Risk
1400.00	1444.98	0.17	170.86	1415.88	2.92	2.91	358.64	5346.24	5339.66	812.08	MWD (Extreme Svy)	
1500.00	1535.85	0.09	145.61	1506.75	3.11	3.10	358.64	5346.04	5339.04	763.79	MWD (Extreme Svy)	
1600.00	1632.11	0.08	113.12	1603.01	3.31	3.30	358.64	5345.94	5338.52	719.80	MWD (Extreme Svy)	
1700.00	1724.82	0.13	68.41	1695.72	3.51	3.50	358.64	5345.93	5338.08	681.23	MWD (Extreme Svy)	
1800.00	1802.51	0.42	45.57	1773.41	3.67	3.67	358.64	5346.22	5337.98	649.15	MWD (Extreme Svy)	
1900.00	1880.20	0.71	41.44	1851.10	3.84	3.84	358.65	5346.92	5338.31	620.48	MWD (Extreme Svy)	
2000.00	1982.90	0.66	39.55	1953.78	4.05	4.05	358.66	5347.87	5338.81	589.76	MWD (Extreme Svy)	
2100.00	2093.17	0.49	36.79	2064.05	4.28	4.28	358.66	5348.63	5339.12	562.43	MWD (Extreme Svy)	
2200.00	2169.70	0.83	38.42	2140.58	4.44	4.44	358.67	5349.52	5339.62	540.10	MWD (Extreme Svy)	
2300.00	2246.23	1.17	39.10	2217.09	4.60	4.59	358.68	5350.85	5340.57	520.16	MWD (Extreme Svy)	
2400.00	2318.77	1.69	44.19	2289.62	4.75	4.75	358.69	5352.64	5341.98	502.15	MWD (Extreme Svy)	
2500.00	2387.98	2.37	49.17	2358.78	4.90	4.90	358.71	5354.99	5343.96	485.42	MWD (Extreme Svy)	
2600.00	2457.12	3.07	51.90	2427.84	5.05	5.05	358.74	5357.92	5346.51	469.60	MWD (Extreme Svy)	
2700.00	2527.27	3.68	52.83	2497.87	5.20	5.20	358.78	5361.41	5349.63	454.92	MWD (Extreme Svy)	
2800.00	2597.62	4.26	53.33	2568.05	5.36	5.35	358.82	5365.46	5353.30	441.39	MWD (Extreme Svy)	
2900.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	5303.56	5261.42	125.85	MWD (Wft MWD Svy)	
3000.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	5204.20	5161.95	123.20	MWD (Wft MWD Svy)	
3100.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	5104.86	5062.51	120.56	MWD (Wft MWD Svy)	
3200.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	5005.54	4963.09	117.92	MWD (Wft MWD Svy)	
3300.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4906.25	4863.70	115.30	MWD (Wft MWD Svy)	
3400.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4807.00	4764.34	112.69	MWD (Wft MWD Svy)	
3500.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4707.77	4665.01	110.09	MWD (Wft MWD Svy)	
3600.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4608.58	4565.71	107.49	MWD (Wft MWD Svy)	
3700.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4509.43	4466.44	104.91	MWD (Wft MWD Svy)	
3800.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4410.31	4367.21	102.34	MWD (Wft MWD Svy)	
3900.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4311.23	4268.02	99.78	MWD (Wft MWD Svy)	
4000.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4212.20	4168.87	97.22	MWD (Wft MWD Svy)	
4100.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4113.21	4069.77	94.69	MWD (Wft MWD Svy)	

5D Anti-Collision Report

Secondary Well: Cotton Draw Unit 252H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Survey Tool	Risk
4200.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	4014.27	3970.71	92.16	MWD (Wft MWD Svy)	
4300.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3915.39	3871.71	89.63	MWD (Wft MWD Svy)	
4400.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3816.57	3772.76	87.11	MWD (Wft MWD Svy)	
4500.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3717.81	3673.86	84.61	MWD (Wft MWD Svy)	
4600.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3619.11	3575.04	82.11	MWD (Wft MWD Svy)	
4700.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3520.49	3476.28	79.63	MWD (Wft MWD Svy)	
4800.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3421.95	3377.61	77.16	MWD (Wft MWD Svy)	
4900.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3323.50	3279.02	74.71	MWD (Wft MWD Svy)	
5000.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3225.14	3180.52	72.27	MWD (Wft MWD Svy)	
5100.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3126.89	3082.12	69.84	MWD (Wft MWD Svy)	
5200.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	3028.75	2983.84	67.43	MWD (Wft MWD Svy)	
5300.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2930.74	2885.67	65.02	MWD (Wft MWD Svy)	
5400.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2832.87	2787.63	62.62	MWD (Wft MWD Svy)	
5500.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2735.15	2689.74	60.23	MWD (Wft MWD Svy)	
5600.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2637.60	2592.02	57.86	MWD (Wft MWD Svy)	
5700.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2540.24	2494.42	55.44	MWD (Wft MWD Svy)	
5800.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2443.10	2397.03	53.03	MWD (Wft MWD Svy)	
5900.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2346.19	2299.87	50.65	MWD (Wft MWD Svy)	
6000.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2249.56	2202.95	48.27	MWD (Wft MWD Svy)	
6100.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2153.23	2106.34	45.92	MWD (Wft MWD Svy)	
6200.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	2057.26	2010.06	43.59	MWD (Wft MWD Svy)	
6300.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1961.68	1914.18	41.29	MWD (Wft MWD Svy)	
6400.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1866.57	1818.75	39.03	MWD (Wft MWD Svy)	
6500.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1772.00	1723.85	36.80	MWD (Wft MWD Svy)	
6600.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1678.06	1629.58	34.61	MWD (Wft MWD Svy)	
6700.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1584.86	1536.01	32.44	MWD (Wft MWD Svy)	
6800.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1492.54	1443.12	30.20	MWD (Wft MWD Svy)	
6900.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1401.27	1351.26	28.02	MWD (Wft MWD Svy)	
7000.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1311.28	1260.66	25.90	MWD (Wft MWD Svy)	
7100.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1222.85	1171.62	23.87	MWD (Wft MWD Svy)	
7200.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1136.33	1084.37	21.87	MWD (Wft MWD Svy)	
7300.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1052.21	999.22	19.85	MWD (Wft MWD Svy)	
7400.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	971.11	917.09	17.98	MWD (Wft MWD Svy)	
7500.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	893.84	838.67	16.20	MWD (Wft MWD Svy)	
7600.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	821.49	764.77	14.48	MWD (Wft MWD Svy)	

Secondary Well: Cotton Draw Unit 252H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Survey Tool	Risk
7700.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	755.47	697.16	12.96	MWD (Wft MWD Svy)	
7800.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	697.59	637.33	11.58	MWD (Wft MWD Svy)	
7900.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	650.02	587.93	10.47	MWD (Wft MWD Svy)	
8000.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	615.16	551.42	9.65	MWD (Wft MWD Svy)	
8100.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	595.24	530.47	9.19	MWD (Wft MWD Svy)	
8200.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	591.79	526.44	9.06	MWD (Wft MWD Svy)	
8300.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	605.07	539.99	9.30	MWD (Wft MWD Svy)	
8400.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	634.04	569.93	9.89	MWD (Wft MWD Svy)	
8500.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	676.68	613.95	10.79	MWD (Wft MWD Svy)	
8600.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	730.61	669.29	11.92	MWD (Wft MWD Svy)	
8700.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	793.53	733.53	13.23	MWD (Wft MWD Svy)	
8800.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	863.47	804.61	14.67	MWD (Wft MWD Svy)	
8900.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	938.87	880.93	16.20	MWD (Wft MWD Svy)	
9000.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1018.52	961.27	17.79	MWD (Wft MWD Svy)	
9100.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1101.49	1044.96	19.49	MWD (Wft MWD Svy)	
9200.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1187.08	1131.00	21.17	MWD (Wft MWD Svy)	
9300.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1274.78	1218.98	22.85	MWD (Wft MWD Svy)	
9400.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1364.17	1308.66	24.58	MWD (Wft MWD Svy)	
9500.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1454.94	1399.67	26.32	MWD (Wft MWD Svy)	
9600.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1546.85	1491.75	28.07	MWD (Wft MWD Svy)	
9700.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1639.71	1584.68	29.80	MWD (Wft MWD Svy)	
9800.00	13024.00	89.79	181.82	8170.52	85.08	37.50	331.59	1733.36	1678.31	31.49	MWD (Wft MWD Svy)	
9900.00	13024.00	89.79	181.82	8170.52	85.08	37.50	334.71	1827.54	1772.47	33.19	MWD (Wft MWD Svy)	
10000.00	13024.00	89.79	181.82	8170.52	85.08	37.50	342.52	1918.09	1863.01	34.82	MWD (Wft MWD Svy)	
10100.00	13024.00	89.79	181.82	8170.52	85.08	37.50	346.61	2001.82	1946.65	36.28	MWD (Wft MWD Svy)	
10200.00	13024.00	89.79	181.82	8170.52	85.08	37.50	349.03	2077.15	2021.90	37.60	MWD (Wft MWD Svy)	
10300.00	13024.00	89.79	181.82	8170.52	85.08	37.50	350.57	2142.79	2087.43	38.71	MWD (Wft MWD Svy)	
10400.00	13024.00	89.79	181.82	8170.52	85.08	37.50	351.59	2197.69	2142.27	39.66	MWD (Wft MWD Svy)	
10500.00	13024.00	89.79	181.82	8170.52	85.08	37.50	352.27	2241.02	2185.50	40.36	MWD (Wft MWD Svy)	
10600.00	13024.00	89.79	181.82	8170.52	85.08	37.50	352.70	2272.17	2216.57	40.87	MWD (Wft MWD Svy)	
10700.00	13024.00	89.79	181.82	8170.52	85.08	37.50	352.93	2290.70	2235.04	41.16	MWD (Wft MWD Svy)	
10800.00	12937.62	89.99	182.05	8170.23	83.63	36.90	353.08	2295.56	2240.43	41.64	MWD (Wft MWD Svy)	
10900.00	12745.91	92.18	182.98	8174.26	80.44	35.56	353.32	2292.76	2238.88	42.55	MWD (Wft MWD Svy)	
11000.00	12665.84	91.68	183.03	8176.94	79.09	35.01	353.42	2288.96	2235.49	42.81	MWD (Wft MWD Svy)	
11100.00	12567.39	91.66	182.93	8179.82	77.44	34.33	353.55	2285.60	2232.61	43.14	MWD (Wft MWD Svy)	

Secondary Well: Cotton Draw Unit 252H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Survey Tool	Risk
11200.00	12476.41	91.35	183.66	8182.24	75.90	33.70	353.68	2282.45	2229.87	43.41	MWD (Wft MWD Svy)	
11300.00	12413.66	90.52	182.72	8183.27	74.85	33.26	353.77	2280.35	2227.95	43.51	MWD (Wft MWD Svy)	
11400.00	12327.03	90.23	182.34	8183.62	73.39	32.66	353.86	2279.61	2227.52	43.76	MWD (Wft MWD Svy)	
11500.00	12250.06	89.70	181.86	8183.77	72.09	32.12	353.94	2279.20	2227.33	43.94	MWD (Wft MWD Svy)	
11600.00	12180.40	89.03	180.92	8182.83	70.91	31.64	353.99	2280.36	2228.64	44.09	MWD (Wft MWD Svy)	
11700.00	12047.52	89.93	180.27	8182.03	68.68	30.73	354.02	2280.99	2229.79	44.56	MWD (Wft MWD Svy)	
11800.00	11905.14	90.91	181.13	8182.73	66.37	29.77	354.08	2280.58	2229.97	45.06	MWD (Wft MWD Svy)	
11900.00	11808.97	90.86	180.71	8184.26	64.73	29.11	354.12	2278.98	2228.61	45.24	MWD (Wft MWD Svy)	
12000.00	11739.36	90.14	180.22	8184.86	63.53	28.64	354.14	2278.18	2227.86	45.27	MWD (Wft MWD Svy)	
12100.00	11664.38	89.53	180.03	8184.62	62.26	28.12	354.14	2278.62	2228.37	45.35	MWD (Wft MWD Svy)	
12200.00	11475.28	91.50	182.79	8185.88	59.22	26.86	354.26	2278.09	2228.65	46.08	MWD (Wft MWD Svy)	
12300.00	11373.92	91.46	183.57	8188.67	57.55	26.19	354.41	2274.93	2225.73	46.23	MWD (Wft MWD Svy)	
12400.00	11295.51	90.91	183.62	8190.37	56.24	25.67	354.53	2272.31	2223.20	46.27	MWD (Wft MWD Svy)	
12500.00	11221.20	90.29	183.43	8191.11	55.00	25.17	354.65	2270.88	2221.72	46.20	MWD (Wft MWD Svy)	
12600.00	11138.20	89.86	183.43	8191.17	53.64	24.62	354.78	2270.38	2221.31	46.27	MWD (Wft MWD Svy)	
12700.00	11042.91	89.79	182.87	8190.93	52.07	24.00	354.92	2270.28	2221.39	46.43	MWD (Wft MWD Svy)	
12800.00	10963.02	89.32	182.47	8190.32	50.76	23.47	355.02	2270.79	2221.89	46.44	MWD (Wft MWD Svy)	
12900.00	10804.37	90.71	183.72	8191.66	48.18	22.46	355.26	2269.11	2220.69	46.87	MWD (Wft MWD Svy)	
13000.00	10724.54	90.16	184.26	8192.24	46.89	21.95	355.40	2267.98	2219.51	46.80	MWD (Wft MWD Svy)	
13100.00	10628.71	89.99	185.12	8192.19	45.36	21.34	355.61	2267.52	2219.14	46.87	MWD (Wft MWD Svy)	
13200.00	10507.79	90.45	186.21	8192.61	43.40	20.59	355.92	2266.60	2218.49	47.11	MWD (Wft MWD Svy)	
13300.00	10422.76	90.11	185.95	8193.18	42.06	20.06	356.15	2265.35	2217.30	47.14	MWD (Wft MWD Svy)	
13400.00	10330.30	89.90	186.41	8193.05	40.58	19.50	356.40	2264.96	2217.00	47.22	MWD (Wft MWD Svy)	
13500.00	10235.26	89.80	186.30	8192.86	39.10	18.92	356.69	2264.62	2216.68	47.24	MWD (Wft MWD Svy)	
13600.00	10125.25	90.10	185.80	8192.59	37.45	18.27	356.98	2264.46	2216.60	47.31	MWD (Wft MWD Svy)	
13700.00	10003.26	90.71	184.99	8193.52	35.60	17.57	357.28	2263.36	2215.72	47.51	MWD (Wft MWD Svy)	
13800.00	9938.37	89.85	184.57	8193.84	34.63	17.20	357.43	2262.65	2214.71	47.20	MWD (Wft MWD Svy)	
13900.00	9813.88	90.49	184.15	8193.73	32.83	16.51	357.67	2262.67	2214.89	47.36	MWD (Wft MWD Svy)	
14000.00	9709.64	90.61	184.11	8194.70	31.35	15.95	357.87	2261.62	2213.78	47.28	MWD (Wft MWD Svy)	
14100.00	9597.56	90.91	184.48	8196.27	29.75	15.37	358.08	2260.11	2212.21	47.18	MWD (Wft MWD Svy)	
14200.00	9501.98	90.80	184.82	8197.75	28.37	14.88	358.29	2258.45	2210.37	46.97	MWD (Wft MWD Svy)	
14300.00	9411.17	90.58	184.53	8198.78	27.10	14.44	358.49	2257.25	2208.94	46.73	MWD (Wft MWD Svy)	
14400.00	9316.01	90.48	183.93	8199.76	25.82	14.00	358.67	2256.20	2207.69	46.51	MWD (Wft MWD Svy)	
14500.00	9257.68	89.45	182.86	8199.95	25.04	13.72	358.77	2256.07	2207.16	46.13	MWD (Wft MWD Svy)	
14600.00	9218.27	87.92	182.70	8199.05	24.51	13.53	358.82	2258.43	2209.06	45.75	MWD (Wft MWD Svy)	

SD Ant-Collision Report

Secondary Well: Cotton Draw Unit 252H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	CC (US ft)	ES (US ft)	SF	Survey Tool	Risk
14700.00	9165.86	86.74	181.57	8196.51	23.84	13.30	358.87	2263.27	2213.46	45.44	MWD (Wft MWD Svy)	
14800.00	8747.22	94.68	185.08	8198.86	19.43	11.95	358.79	2265.55	2216.72	46.40	MWD (Wft MWD Svy)	
14900.00	8678.61	93.87	186.47	8203.98	18.78	11.75	358.97	2258.02	2208.66	45.75	MWD (Wft MWD Svy)	
15000.00	8633.17	92.49	186.96	8206.53	18.38	11.61	359.10	2252.38	2202.40	45.07	MWD (Wft MWD Svy)	
15100.00	8587.05	91.09	189.78	8207.93	18.01	11.49	359.27	2249.22	2198.64	44.47	MWD (Wft MWD Svy)	
15200.00	8547.45	89.56	193.40	8208.21	17.69	11.38	359.47	2248.54	2197.37	43.94	MWD (Wft MWD Svy)	
15300.00	8525.27	87.66	195.60	8207.71	17.51	11.32	359.62	2250.97	2199.15	43.43	MWD (Wft MWD Svy)	
15365.14	8512.32	86.42	196.91	8207.04	17.41	11.29	359.71	2254.48	2202.26	43.17	MWD (Wft MWD Svy)	