

5D Plan Report

Devon Energy

Field Name: *Lea Co, NM Nad 83 NMEZ*
Site Name: *Rebel 20 Fed 3H, 7H Pad*
Well Name: *Rebel 20 Fed 3H*
Plan: *P1:V1*

21 May 2015

**Weatherford®**

Rebel 20 Fed 3H

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)			
	Comment :			
Site Name	Units : US ft	North Reference : Grid	Convergence Angle : 0.34	
	Position	Northing : 440551.05 US ft	Latitude : 32° 12' 34.33"	
		Easting : 738936.42 US ft	Longitude : -103° 41' 39.99"	
	Elevation above Mean Sea Level:3558.00 US ft			
Comment :				
Slot Name	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing :440551.05 US ft	Latitude : 32°12'34.33"	
	+E / -W : 0.00 US ft	Easting :738936.42 US ft	Longitude : -103°41'39.99"	
	Slot TVD Reference : Ground Elevation			
Rebel 20 Fed 3H	Elevation above Mean Sea Level : 3558.00 US ft			
	Comment :			
Well Name	Type : Main well	UWI :	Plan : P1:V1	
	Rig Height <i>Kelly Bushing</i> : 25.00 US ft	Comment :		
	Relative to Mean Sea Level: 3583.00 US ft			
	Rebel 20 Fed 3H	Closure Distance : 4704.15 US ft	Closure Azimuth : 180.173°	
Vertical Section (Position of Origin Relative to Slot)				
	+N / -S : 0.00 US ft	+E / -W : 0.00 US ft	Az :180.17°	
	Magnetic Parameters			
	Model : BGGM	Field Strength :	Dec : 7.32°	Dip : 60.10°
		48210.9nT		Date : 30/Jul/2015

Target Set

Name : Rebel 20 Fed 3H **Number of Targets :** 1

Comment :

Target Name: PBHL 3H Shape: Cuboid	Position (Relative to Slot centre)		
	+N / -S : -4704.13US ft	Northing : 435846.92 US ft	Latitude : 32°11'47.79"
	+E / -W : -14.20 US ft	Easting : 738922.22US ft	Longitude : -103°41'40.48"
	TVD (Kelly Bushing) : 8438.00 US ft		
	Orientation Azimuth : 180.17°	Inclination : -0.28°	
	Dimensions Length : 8268.00 US ft	Breadth : 100.00 US ft	Height : 20.00 US ft

Well path created using minimum curvature

Salient Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	B.Rate (°/100 US ft)	T.Rate (°/100 US ft)	T.Face (°)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	

SD Plan Report

Salient Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	B.Rate (°/100 US ft)	T.Rate (°/100 US ft)	T.Face (°)	Comment
7845.05	0.00	0.00	7845.05	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	KOP
8742.28	89.72	180.17	8418.00	-570.18	-1.72	570.19	10.00	10.00	0.00	180.17	LP
12876.29	89.72	180.17	8438.00	-4704.13	-14.20	4704.15	0.00	0.00	0.00	0.00	PBHL 3H

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)		Comment
7800.00	0.00	0.00	7800.00	0.00	0.00	-0.00	0.00	440551.05	738936.42		
7845.05	0.00	0.00	7845.05	0.00	0.00	-0.00	0.00	440551.05	738936.42		KOP
7900.00	5.49	180.17	7899.92	-2.63	-0.01	2.63	10.00	440548.42	738936.41		
8000.00	15.49	180.17	7998.12	-20.82	-0.06	20.82	10.00	440530.23	738936.36		
8100.00	25.49	180.17	8091.67	-55.79	-0.17	55.79	10.00	440495.26	738936.25		
8200.00	35.49	180.17	8177.73	-106.47	-0.32	106.47	10.00	440444.58	738936.10		
8300.00	45.49	180.17	8253.68	-171.33	-0.52	171.33	10.00	440379.72	738935.90		
8400.00	55.49	180.17	8317.21	-248.39	-0.75	248.39	10.00	440302.66	738935.67		
8500.00	65.49	180.17	8366.40	-335.31	-1.01	335.31	10.00	440215.74	738935.41		
8600.00	75.49	180.17	8399.75	-429.45	-1.30	429.45	10.00	440121.60	738935.12		
8700.00	85.49	180.17	8416.24	-527.95	-1.59	527.95	10.00	440023.10	738934.83		
8742.28	89.72	180.17	8418.00	-570.18	-1.72	570.19	10.00	439980.87	738934.70		LP
8800.00	89.72	180.17	8418.28	-627.90	-1.90	627.91	0.00	439923.15	738934.52		
8900.00	89.72	180.17	8418.76	-727.90	-2.20	727.91	0.00	439823.15	738934.22		
9000.00	89.72	180.17	8419.25	-827.90	-2.50	827.90	0.00	439723.15	738933.92		
9100.00	89.72	180.17	8419.73	-927.90	-2.80	927.90	0.00	439623.15	738933.62		
9200.00	89.72	180.17	8420.22	-1027.90	-3.10	1027.90	0.00	439523.15	738933.32		
9300.00	89.72	180.17	8420.70	-1127.90	-3.40	1127.90	0.00	439423.15	738933.02		
9400.00	89.72	180.17	8421.18	-1227.89	-3.71	1227.90	0.00	439323.16	738932.71		
9500.00	89.72	180.17	8421.67	-1327.89	-4.01	1327.90	0.00	439223.16	738932.41		
9600.00	89.72	180.17	8422.15	-1427.89	-4.31	1427.90	0.00	439123.16	738932.11		
9700.00	89.72	180.17	8422.63	-1527.89	-4.61	1527.90	0.00	439023.16	738931.81		
9800.00	89.72	180.17	8423.12	-1627.89	-4.91	1627.90	0.00	438923.16	738931.51		
9900.00	89.72	180.17	8423.60	-1727.89	-5.22	1727.89	0.00	438823.16	738931.20		
10000.00	89.72	180.17	8424.09	-1827.88	-5.52	1827.89	0.00	438723.17	738930.90		
10100.00	89.72	180.17	8424.57	-1927.88	-5.82	1927.89	0.00	438623.17	738930.60		
10200.00	89.72	180.17	8425.05	-2027.88	-6.12	2027.89	0.00	438523.17	738930.30		
10300.00	89.72	180.17	8425.54	-2127.88	-6.42	2127.89	0.00	438423.17	738930.00		
10400.00	89.72	180.17	8426.02	-2227.88	-6.73	2227.89	0.00	438323.17	738929.69		
10500.00	89.72	180.17	8426.50	-2327.88	-7.03	2327.89	0.00	438223.17	738929.39		
10600.00	89.72	180.17	8426.99	-2427.88	-7.33	2427.89	0.00	438123.17	738929.09		
10700.00	89.72	180.17	8427.47	-2527.87	-7.63	2527.88	0.00	438023.18	738928.79		
10800.00	89.72	180.17	8427.96	-2627.87	-7.93	2627.88	0.00	437923.18	738928.49		
10900.00	89.72	180.17	8428.44	-2727.87	-8.23	2727.88	0.00	437823.18	738928.19		
11000.00	89.72	180.17	8428.92	-2827.87	-8.54	2827.88	0.00	437723.18	738927.88		
11100.00	89.72	180.17	8429.41	-2927.87	-8.84	2927.88	0.00	437623.18	738927.58		
11200.00	89.72	180.17	8429.89	-3027.87	-9.14	3027.88	0.00	437523.18	738927.28		
11300.00	89.72	180.17	8430.37	-3127.86	-9.44	3127.88	0.00	437423.19	738926.98		
11400.00	89.72	180.17	8430.86	-3227.86	-9.74	3227.88	0.00	437323.19	738926.68		
11500.00	89.72	180.17	8431.34	-3327.86	-10.05	3327.88	0.00	437223.19	738926.37		
11600.00	89.72	180.17	8431.83	-3427.86	-10.35	3427.87	0.00	437123.19	738926.07		
11700.00	89.72	180.17	8432.31	-3527.86	-10.65	3527.87	0.00	437023.19	738925.77		
11800.00	89.72	180.17	8432.79	-3627.86	-10.95	3627.87	0.00	436923.19	738925.47		
11900.00	89.72	180.17	8433.28	-3727.85	-11.25	3727.87	0.00	436823.20	738925.17		
12000.00	89.72	180.17	8433.76	-3827.85	-11.55	3827.87	0.00	436723.20	738924.87		
12100.00	89.72	180.17	8434.24	-3927.85	-11.86	3927.87	0.00	436623.20	738924.56		
12200.00	89.72	180.17	8434.73	-4027.85	-12.16	4027.87	0.00	436523.20	738924.26		
12300.00	89.72	180.17	8435.21	-4127.85	-12.46	4127.87	0.00	436423.20	738923.96		
12400.00	89.72	180.17	8435.70	-4227.85	-12.76	4227.86	0.00	436323.20	738923.66		
12500.00	89.72	180.17	8436.18	-4327.84	-13.06	4327.86	0.00	436223.21	738923.36		
12600.00	89.72	180.17	8436.66	-4427.84	-13.37	4427.86	0.00	436123.21	738923.05		
12700.00	89.72	180.17	8437.15	-4527.84	-13.67	4527.86	0.00	436023.21	738922.75		

SD Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Kelly Bushing)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100 US ft)	Northing (US ft)	Easting (US ft)	Comment
12800.00	89.72	180.17	8437.63	-4627.84	-13.97	4627.86	0.00	435923.21	738922.45	
12876.29	89.72	180.17	8438.00	-4704.13	-14.20	4704.15	0.00	435846.92	738922.22	PBHL 3H

5D Anti-Collision Report**Devon Energy****Field Name:** *Lea Co, NM Nad 83 NMEZ***Site Name:** *Rebel 20 Fed 3H, 7H Pad***Well Name:** *Rebel 20 Fed 3H*

21 May 2015




Weatherford®

Rebel 20 Fed 3H

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 Rebel 20 Fed 3H, 7H Pad	Units : US ft	North Reference : Grid	Convergence Angle : 0.34	
	Position	Northing : 440551.05 US ft	Latitude : 32° 12' 34.33"	
		Easting : 738936.42 US ft	Longitude : -103° 41' 39.99"	
	Elevation above Mean Sea Level:3558.00 US ft			
Comment :				
Slot Name Rebel 20 Fed 3H	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing :440551.05 US ft	Latitude : 32°12'34.33"	
	+E / -W : 0.00 US ft	Easting :738936.42 US ft	Longitude : -103°41'39.99"	
	Slot TVD Reference : Ground Elevation			
Elevation above Mean Sea Level : 3558.00 US ft				
Comment :				
Well Name Rebel 20 Fed 3H	Type : Main well		UWI :	Plan : Working Plan
	Rig Height <i>Kelly Bushing</i> : 25.00 US ft		Comment :	
	Relative to Mean Sea Level: 3583.00 US ft			
	Closure Distance : 4704.15 US ft		Closure Azimuth : 180.173°	
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US ft		+E / -W : 0.00 US ft	Az :180.17°
	Magnetic Parameters			
	Model : BGGM	Field Strength : 48210.9nT	Dec : 7.32°	Dip : 60.10° Date : 30/Jul/2015

Collision / Uncertainty Analysis

Primary Well	Start MD (US ft)	End MD (US ft)	Collision Risk Interval	No. of Std Deviations in Error Computation
Rebel 20 Fed 3H (p)	0.00	12876.29	100.00	2

Secondary Well Names

Rebel 20 Fed 7H (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.

Anti Collision Proximity Summary (TVD relative to Kelly Bushing)

SF	Secondary Well Name	Pri MD (US ft)	Sec MD (US ft)	TVD (US ft)	CC (US ft)	ES (US ft)	SF	Risk
	Rebel 20 Fed 7H (p)	4437.30	4410.74	4437.30	50.58	30.36	2.50	

Primary Well : Rebel 20 Fed 3H (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
0.00	0.00	269.45	0.00	0.00	Rebel 20 Fed 7H (p)	56.32	55.76	99.40	
100.00	100.00	269.45	0.11	0.11	Rebel 20 Fed 7H (p)	49.96	49.19	64.75	
200.00	200.00	269.45	0.34	0.34	Rebel 20 Fed 7H (p)	49.96	48.77	41.80	
300.00	300.00	269.45	0.56	0.56	Rebel 20 Fed 7H (p)	49.96	48.32	30.51	
400.00	400.00	269.45	0.79	0.79	Rebel 20 Fed 7H (p)	49.96	47.88	23.97	
500.00	500.00	269.45	1.01	1.01	Rebel 20 Fed 7H (p)	49.96	47.43	19.73	
600.00	600.00	269.45	1.24	1.24	Rebel 20 Fed 7H (p)	49.96	46.98	16.76	
700.00	700.00	269.45	1.46	1.46	Rebel 20 Fed 7H (p)	49.96	46.53	14.57	
800.00	800.00	269.45	1.69	1.69	Rebel 20 Fed 7H (p)	49.96	46.08	12.88	
900.00	900.00	269.45	1.91	1.91	Rebel 20 Fed 7H (p)	49.96	45.63	11.54	
1000.00	1000.00	269.45	2.14	2.14	Rebel 20 Fed 7H (p)	49.96	45.18	10.46	
1100.00	1100.00	269.45	2.36	2.36	Rebel 20 Fed 7H (p)	49.96	44.74	9.56	
1200.00	1200.00	269.45	2.59	2.59	Rebel 20 Fed 7H (p)	49.96	44.29	8.80	
1300.00	1300.00	269.45	2.81	2.81	Rebel 20 Fed 7H (p)	49.96	43.84	8.16	
1400.00	1400.00	269.45	3.03	3.03	Rebel 20 Fed 7H (p)	49.96	43.39	7.60	
1500.00	1500.00	269.45	3.26	3.26	Rebel 20 Fed 7H (p)	49.96	42.94	7.11	
1600.00	1600.00	269.45	3.48	3.48	Rebel 20 Fed 7H (p)	49.96	42.49	6.68	
1700.00	1700.00	269.45	3.71	3.71	Rebel 20 Fed 7H (p)	49.96	42.04	6.31	
1800.00	1800.00	269.45	3.93	3.93	Rebel 20 Fed 7H (p)	49.96	41.59	5.97	
1900.00	1900.00	269.45	4.16	4.16	Rebel 20 Fed 7H (p)	49.96	41.14	5.66	
2000.00	2000.00	269.45	4.38	4.38	Rebel 20 Fed 7H (p)	49.96	40.69	5.39	
2100.00	2100.00	269.45	4.61	4.61	Rebel 20 Fed 7H (p)	49.96	40.24	5.14	
2200.00	2200.00	269.45	4.83	4.83	Rebel 20 Fed 7H (p)	49.96	39.79	4.91	
2300.00	2300.00	269.45	5.06	5.06	Rebel 20 Fed 7H (p)	49.96	39.34	4.70	
2400.00	2400.00	269.45	5.28	5.28	Rebel 20 Fed 7H (p)	49.96	38.89	4.51	
2500.00	2500.00	269.45	5.51	5.51	Rebel 20 Fed 7H (p)	49.96	38.44	4.34	
2600.00	2600.00	269.45	5.73	5.73	Rebel 20 Fed 7H (p)	49.96	37.99	4.17	
2700.00	2700.00	269.45	5.96	5.96	Rebel 20 Fed 7H (p)	49.96	37.54	4.02	
2800.00	2800.00	269.45	6.18	6.18	Rebel 20 Fed 7H (p)	49.96	37.09	3.88	
2900.00	2900.00	269.45	6.41	6.41	Rebel 20 Fed 7H (p)	49.96	36.64	3.75	
3000.00	3000.00	269.45	6.63	6.63	Rebel 20 Fed 7H (p)	49.96	36.19	3.63	
3100.00	3100.00	269.45	6.86	6.86	Rebel 20 Fed 7H (p)	49.96	35.75	3.51	

SD Anti-Collision Report

Primary Well : Rebel 20 Fed 3H (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	269.45	7.08	7.08	Rebel 20 Fed 7H (p)	49.96	35.30	3.41	
3300.00	3300.00	269.45	7.31	7.31	Rebel 20 Fed 7H (p)	49.96	34.85	3.31	
3400.00	3400.00	269.45	7.53	7.53	Rebel 20 Fed 7H (p)	49.96	34.40	3.21	
3500.00	3500.00	269.45	7.76	7.76	Rebel 20 Fed 7H (p)	49.96	33.95	3.12	
3600.00	3600.00	269.45	7.98	7.98	Rebel 20 Fed 7H (p)	49.96	33.50	3.03	
3700.00	3700.00	269.45	8.21	8.21	Rebel 20 Fed 7H (p)	49.96	33.05	2.95	
3800.00	3800.00	269.45	8.43	8.43	Rebel 20 Fed 7H (p)	49.96	32.60	2.88	
3900.00	3900.00	269.45	8.65	8.65	Rebel 20 Fed 7H (p)	49.96	32.15	2.80	
4000.00	4000.00	269.45	8.88	8.88	Rebel 20 Fed 7H (p)	49.96	31.70	2.74	
4100.00	4100.00	269.45	9.10	9.10	Rebel 20 Fed 7H (p)	49.96	31.25	2.67	
4200.00	4200.00	269.45	9.33	9.33	Rebel 20 Fed 7H (p)	49.96	30.80	2.61	
4300.00	4300.00	269.45	9.55	9.55	Rebel 20 Fed 7H (p)	49.96	30.35	2.55	
4400.00	4400.00	269.89	9.78	9.78	Rebel 20 Fed 7H (p)	50.23	30.18	2.51	
4500.00	4500.00	271.85	10.00	10.00	Rebel 20 Fed 7H (p)	51.49	31.00	2.51	
4600.00	4600.00	275.14	10.23	10.23	Rebel 20 Fed 7H (p)	53.92	33.02	2.58	
4700.00	4700.00	279.38	10.45	10.45	Rebel 20 Fed 7H (p)	57.70	36.34	2.70	
4800.00	4800.00	284.11	10.68	10.68	Rebel 20 Fed 7H (p)	63.06	41.31	2.90	
4900.00	4900.00	288.74	10.90	10.90	Rebel 20 Fed 7H (p)	69.83	47.63	3.15	
5000.00	5000.00	292.57	11.13	11.13	Rebel 20 Fed 7H (p)	77.04	54.43	3.41	
5100.00	5100.00	295.74	11.35	11.35	Rebel 20 Fed 7H (p)	84.53	61.49	3.67	
5200.00	5200.00	298.38	11.58	11.58	Rebel 20 Fed 7H (p)	92.24	68.73	3.92	
5300.00	5300.00	300.62	11.80	11.80	Rebel 20 Fed 7H (p)	100.11	76.16	4.18	
5400.00	5400.00	302.52	12.03	12.03	Rebel 20 Fed 7H (p)	108.12	83.73	4.43	
5500.00	5500.00	304.16	12.25	12.25	Rebel 20 Fed 7H (p)	116.22	91.41	4.68	
5600.00	5600.00	305.59	12.48	12.48	Rebel 20 Fed 7H (p)	124.41	99.16	4.93	
5700.00	5700.00	306.84	12.70	12.70	Rebel 20 Fed 7H (p)	132.66	106.96	5.16	
5800.00	5800.00	307.95	12.93	12.93	Rebel 20 Fed 7H (p)	140.97	114.82	5.39	
5900.00	5900.00	308.93	13.15	13.15	Rebel 20 Fed 7H (p)	149.33	122.72	5.61	
6000.00	6000.00	309.80	13.38	13.38	Rebel 20 Fed 7H (p)	157.73	130.67	5.83	
6100.00	6100.00	310.58	13.60	13.60	Rebel 20 Fed 7H (p)	165.97	138.47	6.04	
6200.00	6200.00	311.22	13.83	13.83	Rebel 20 Fed 7H (p)	173.44	145.51	6.21	
6300.00	6300.00	311.75	14.05	14.05	Rebel 20 Fed 7H (p)	180.07	151.71	6.35	
6400.00	6400.00	312.17	14.27	14.27	Rebel 20 Fed 7H (p)	185.85	157.07	6.46	
6500.00	6500.00	312.52	14.50	14.50	Rebel 20 Fed 7H (p)	190.78	161.58	6.53	
6600.00	6600.00	312.78	14.72	14.72	Rebel 20 Fed 7H (p)	194.85	165.24	6.58	
6700.00	6700.00	312.99	14.95	14.95	Rebel 20 Fed 7H (p)	198.06	168.03	6.60	

SD Anti-Collision Report

Primary Well : Rebel 20 Fed 3H (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	313.13	15.17	15.17	Rebel 20 Fed 7H (p)	200.40	169.96	6.58	
6900.00	6900.00	313.22	15.40	15.40	Rebel 20 Fed 7H (p)	201.87	171.03	6.54	
7000.00	7000.00	313.26	15.62	15.62	Rebel 20 Fed 7H (p)	202.48	171.22	6.48	
7100.00	7100.00	313.26	15.85	15.85	Rebel 20 Fed 7H (p)	202.49	170.82	6.39	
7200.00	7200.00	313.26	16.07	16.07	Rebel 20 Fed 7H (p)	202.49	170.38	6.30	
7300.00	7300.00	313.26	16.30	16.30	Rebel 20 Fed 7H (p)	202.49	169.93	6.22	
7400.00	7400.00	313.26	16.52	16.52	Rebel 20 Fed 7H (p)	202.49	169.48	6.13	
7500.00	7500.00	313.26	16.75	16.75	Rebel 20 Fed 7H (p)	202.49	169.04	6.05	
7600.00	7600.00	313.26	16.97	16.97	Rebel 20 Fed 7H (p)	202.49	168.59	5.97	
7700.00	7700.00	313.26	17.20	17.20	Rebel 20 Fed 7H (p)	202.49	168.14	5.90	
7800.00	7800.00	313.26	17.42	17.42	Rebel 20 Fed 7H (p)	202.49	167.70	5.82	
7900.00	7899.92	133.49	17.63	17.55	Rebel 20 Fed 7H (p)	204.30	169.06	5.80	
8000.00	7998.12	136.04	17.79	17.38	Rebel 20 Fed 7H (p)	217.25	181.68	6.11	
8100.00	8091.67	139.84	17.94	16.82	Rebel 20 Fed 7H (p)	244.03	208.05	6.78	
8200.00	8177.73	143.43	18.13	16.01	Rebel 20 Fed 7H (p)	286.00	249.68	7.87	
8300.00	8253.68	145.73	18.40	15.02	Rebel 20 Fed 7H (p)	343.16	306.54	9.37	
8400.00	8317.21	145.98	18.76	13.92	Rebel 20 Fed 7H (p)	414.03	377.01	11.18	
8500.00	8366.40	143.03	19.25	12.87	Rebel 20 Fed 7H (p)	496.19	458.96	13.33	
8600.00	8399.75	133.88	19.87	12.06	Rebel 20 Fed 7H (p)	586.72	549.40	15.72	
8700.00	8416.24	109.49	20.62	11.72	Rebel 20 Fed 7H (p)	682.49	645.03	18.22	
8800.00	8418.28	91.44	21.49	11.83	Rebel 20 Fed 7H (p)	780.37	742.84	20.79	
8900.00	8418.76	91.62	22.48	12.08	Rebel 20 Fed 7H (p)	878.76	841.19	23.39	
9000.00	8419.25	91.81	23.56	12.37	Rebel 20 Fed 7H (p)	977.48	939.89	26.00	
9100.00	8419.73	92.00	24.74	12.69	Rebel 20 Fed 7H (p)	1076.44	1038.83	28.62	
9200.00	8420.22	92.18	25.99	13.05	Rebel 20 Fed 7H (p)	1175.57	1137.94	31.25	
9300.00	8420.70	92.37	27.30	13.43	Rebel 20 Fed 7H (p)	1274.83	1237.20	33.87	
9400.00	8421.18	92.56	28.67	13.85	Rebel 20 Fed 7H (p)	1374.21	1336.56	36.51	
9500.00	8421.67	92.75	30.09	14.29	Rebel 20 Fed 7H (p)	1473.66	1436.01	39.14	
9600.00	8422.15	92.93	31.55	14.75	Rebel 20 Fed 7H (p)	1573.19	1535.53	41.77	
9700.00	8422.63	93.12	33.05	15.22	Rebel 20 Fed 7H (p)	1672.77	1635.10	44.40	
9800.00	8423.12	93.31	34.57	15.72	Rebel 20 Fed 7H (p)	1772.40	1734.71	47.02	
9900.00	8423.60	93.49	36.13	16.23	Rebel 20 Fed 7H (p)	1872.07	1834.36	49.64	
10000.00	8424.09	93.68	37.71	16.79	Rebel 20 Fed 7H (p)	1971.77	1934.06	52.28	
10100.00	8424.57	93.87	39.31	17.37	Rebel 20 Fed 7H (p)	2071.50	2033.73	54.84	
10200.00	8425.05	94.05	40.93	17.93	Rebel 20 Fed 7H (p)	2171.26	2133.42	57.39	
10300.00	8425.54	94.24	42.57	18.47	Rebel 20 Fed 7H (p)	2271.04	2233.21	60.04	

SD Anti-Collision Report

Primary Well : Rebel 20 Fed 3H (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	8426.02	175.54	44.22	19.08	Rebel 20 Fed 7H (p)	2358.03	2314.24	53.84	
10500.00	8426.50	175.50	45.89	19.70	Rebel 20 Fed 7H (p)	2356.70	2311.75	52.44	
10600.00	8426.99	175.46	47.56	20.28	Rebel 20 Fed 7H (p)	2355.37	2309.29	51.11	
10700.00	8427.47	175.42	49.25	20.87	Rebel 20 Fed 7H (p)	2354.04	2306.80	49.84	
10800.00	8427.96	175.38	50.95	21.52	Rebel 20 Fed 7H (p)	2352.71	2304.22	48.52	
10900.00	8428.44	175.35	52.66	22.16	Rebel 20 Fed 7H (p)	2351.38	2301.70	47.33	
11000.00	8428.92	175.31	54.37	22.80	Rebel 20 Fed 7H (p)	2350.05	2299.14	46.16	
11100.00	8429.41	175.27	56.09	23.45	Rebel 20 Fed 7H (p)	2348.73	2296.51	44.98	
11200.00	8429.89	175.23	57.82	24.09	Rebel 20 Fed 7H (p)	2347.41	2293.89	43.87	
11300.00	8430.37	175.19	59.55	24.75	Rebel 20 Fed 7H (p)	2346.08	2291.28	42.81	
11400.00	8430.86	175.15	61.29	25.40	Rebel 20 Fed 7H (p)	2344.76	2288.67	41.80	
11500.00	8431.34	175.11	63.03	26.07	Rebel 20 Fed 7H (p)	2343.44	2286.05	40.84	
11600.00	8431.83	175.07	64.78	26.73	Rebel 20 Fed 7H (p)	2342.12	2283.43	39.91	
11700.00	8432.31	175.03	66.53	27.40	Rebel 20 Fed 7H (p)	2340.80	2280.81	39.02	
11800.00	8432.79	174.99	68.29	28.07	Rebel 20 Fed 7H (p)	2339.48	2278.17	38.16	
11900.00	8433.28	174.95	70.05	28.74	Rebel 20 Fed 7H (p)	2338.17	2275.53	37.33	
12000.00	8433.76	174.91	71.81	29.42	Rebel 20 Fed 7H (p)	2336.85	2272.89	36.53	
12100.00	8434.24	174.87	73.58	30.10	Rebel 20 Fed 7H (p)	2335.54	2270.24	35.77	
12200.00	8434.73	174.84	75.35	30.78	Rebel 20 Fed 7H (p)	2334.22	2267.57	35.02	
12300.00	8435.21	174.80	77.12	31.46	Rebel 20 Fed 7H (p)	2332.91	2264.88	34.29	
12400.00	8435.70	174.76	78.90	32.15	Rebel 20 Fed 7H (p)	2331.60	2262.18	33.59	
12500.00	8436.18	174.72	80.67	32.84	Rebel 20 Fed 7H (p)	2330.29	2259.48	32.91	
12600.00	8436.66	174.68	82.45	33.53	Rebel 20 Fed 7H (p)	2328.98	2256.77	32.25	
12700.00	8437.15	174.64	84.23	34.22	Rebel 20 Fed 7H (p)	2327.67	2254.07	31.62	
12800.00	8437.63	174.60	86.01	34.91	Rebel 20 Fed 7H (p)	2326.37	2251.35	31.01	
12876.29	8438.00	174.57	87.38	35.44	Rebel 20 Fed 7H (p)	2325.43	2249.47	30.61	

Secondary Well : Rebel 20 Fed 7H (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	26.00	0.00	269.45	0.00	0.00	56.32	55.76	99.40	
100.00	100.00	74.00	269.45	0.10	0.10	49.96	49.19	64.75	
200.00	200.00	174.00	269.45	0.30	0.30	49.96	48.77	41.80	
300.00	300.00	274.00	269.45	0.51	0.51	49.96	48.32	30.51	
400.00	400.00	374.00	269.45	0.73	0.73	49.96	47.88	23.97	
500.00	500.00	474.00	269.45	0.96	0.96	49.96	47.43	19.73	
600.00	600.00	574.00	269.45	1.18	1.18	49.96	46.98	16.76	
700.00	700.00	674.00	269.45	1.41	1.41	49.96	46.53	14.57	
800.00	800.00	774.00	269.45	1.63	1.63	49.96	46.08	12.88	
900.00	900.00	874.00	269.45	1.85	1.85	49.96	45.63	11.54	
1000.00	1000.00	974.00	269.45	2.08	2.08	49.96	45.18	10.46	
1100.00	1100.00	1074.00	269.45	2.30	2.30	49.96	44.74	9.56	

Secondary Well : Rebel 20 Fed 7H (p) (TYD Relative to Kelly Bushing (Primary) ; All Azimuth Relative to GRID NORTH)									
Pri MD (US ft)	TYD (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
1200.00	1200.00	1174.00	269.45	2.53	2.53	49.96	44.29	8.80	
1300.00	1300.00	1274.00	269.45	2.75	2.75	49.96	43.84	8.16	
1400.00	1400.00	1374.00	269.45	2.98	2.98	49.96	43.39	7.60	
1500.00	1500.00	1474.00	269.45	3.20	3.20	49.96	42.94	7.11	
1600.00	1600.00	1574.00	269.45	3.43	3.43	49.96	42.49	6.68	
1700.00	1700.00	1674.00	269.45	3.65	3.65	49.96	42.04	6.31	
1800.00	1800.00	1774.00	269.45	3.88	3.88	49.96	41.59	5.97	
1900.00	1900.00	1874.00	269.45	4.10	4.10	49.96	41.14	5.66	
2000.00	2000.00	1974.00	269.45	4.33	4.33	49.96	40.69	5.39	
2100.00	2100.00	2074.00	269.45	4.55	4.55	49.96	40.24	5.14	
2200.00	2200.00	2174.00	269.45	4.78	4.78	49.96	39.79	4.91	
2300.00	2300.00	2274.00	269.45	5.00	5.00	49.96	39.34	4.70	
2400.00	2400.00	2374.00	269.45	5.23	5.23	49.96	38.89	4.51	
2500.00	2500.00	2474.00	269.45	5.45	5.45	49.96	38.44	4.34	
2600.00	2600.00	2574.00	269.45	5.67	5.67	49.96	37.99	4.17	
2700.00	2700.00	2674.00	269.45	5.90	5.90	49.96	37.54	4.02	
2800.00	2800.00	2774.00	269.45	6.12	6.12	49.96	37.09	3.88	
2900.00	2900.00	2874.00	269.45	6.35	6.35	49.96	36.64	3.75	
3000.00	3000.00	2974.00	269.45	6.57	6.57	49.96	36.19	3.63	
3100.00	3100.00	3074.00	269.45	6.80	6.80	49.96	35.75	3.51	
3200.00	3200.00	3174.00	269.45	7.02	7.02	49.96	35.30	3.41	
3300.00	3300.00	3274.00	269.45	7.25	7.25	49.96	34.85	3.31	
3400.00	3400.00	3374.00	269.45	7.47	7.47	49.96	34.40	3.21	
3500.00	3500.00	3474.00	269.45	7.70	7.70	49.96	33.95	3.12	
3600.00	3600.00	3574.00	269.45	7.92	7.92	49.96	33.50	3.03	
3700.00	3700.00	3674.00	269.45	8.15	8.15	49.96	33.05	2.95	
3800.00	3800.00	3774.00	269.45	8.37	8.37	49.96	32.60	2.88	
3900.00	3900.00	3874.00	269.45	8.60	8.60	49.96	32.15	2.80	
4000.00	4000.00	3974.00	269.45	8.82	8.82	49.96	31.70	2.74	
4100.00	4100.00	4074.00	269.45	9.05	9.05	49.96	31.25	2.67	
4200.00	4200.00	4174.00	269.45	9.27	9.27	49.96	30.80	2.61	
4300.00	4300.00	4274.00	269.45	9.50	9.50	49.96	30.35	2.55	
4400.00	4399.63	4373.63	269.89	9.72	9.72	50.23	30.18	2.51	
4500.00	4499.07	4473.09	271.85	9.94	9.93	51.49	31.00	2.51	
4600.00	4598.35	4572.45	275.14	10.16	10.14	53.92	33.02	2.58	
4700.00	4697.38	4671.64	279.38	10.37	10.35	57.70	36.34	2.70	
4800.00	4796.08	4770.61	284.11	10.60	10.56	63.06	41.31	2.90	
4900.00	4895.09	4869.99	288.74	10.82	10.77	69.83	47.63	3.15	
5000.00	4994.33	4969.61	292.57	11.04	10.99	77.04	54.43	3.41	
5100.00	5093.57	5069.23	295.74	11.27	11.21	84.53	61.49	3.67	
5200.00	5192.81	5168.85	298.38	11.50	11.43	92.24	68.73	3.92	
5300.00	5292.05	5268.46	300.62	11.73	11.65	100.11	76.16	4.18	
5400.00	5391.29	5368.08	302.52	11.97	11.87	108.12	83.73	4.43	
5500.00	5490.53	5467.70	304.16	12.20	12.10	116.22	91.41	4.68	
5600.00	5589.77	5567.32	305.59	12.44	12.32	124.41	99.16	4.93	
5700.00	5689.01	5666.94	306.84	12.68	12.54	132.66	106.96	5.16	
5800.00	5788.25	5766.56	307.95	12.92	12.77	140.97	114.82	5.39	
5900.00	5887.49	5866.18	308.93	13.16	12.99	149.33	122.72	5.61	
6000.00	5986.73	5965.80	309.80	13.40	13.21	157.73	130.67	5.83	
6100.00	6086.91	6066.35	310.58	13.62	13.43	165.97	138.47	6.04	
6200.00	6187.77	6167.51	311.22	13.82	13.62	173.44	145.51	6.21	
6300.00	6288.82	6268.80	311.75	14.02	13.81	180.07	151.71	6.35	
6400.00	6390.04	6370.20	312.17	14.21	13.99	185.85	157.07	6.46	
6500.00	6491.41	6471.70	312.52	14.40	14.17	190.78	161.58	6.53	
6600.00	6592.91	6573.28	312.78	14.59	14.36	194.85	165.24	6.58	
6700.00	6694.51	6674.93	312.99	14.78	14.54	198.06	168.03	6.60	
6800.00	6796.18	6776.63	313.13	14.97	14.73	200.40	169.96	6.58	
6900.00	6897.90	6878.37	313.22	15.15	14.91	201.87	171.03	6.54	

5D Anti-Collision Report

Secondary Well : Rebel 20 Fed 7H (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
7000.00	6999.66	6980.13	313.26	15.34	15.09	202.48	171.22	6.48	
7100.00	7100.00	7080.47	313.26	15.53	15.29	202.49	170.82	6.39	
7200.00	7200.00	7180.47	313.26	15.75	15.51	202.49	170.38	6.30	
7300.00	7300.00	7280.47	313.26	15.97	15.73	202.49	169.93	6.22	
7400.00	7400.00	7380.47	313.26	16.19	15.96	202.49	169.48	6.13	
7500.00	7500.00	7480.47	313.26	16.41	16.18	202.49	169.04	6.05	
7600.00	7600.00	7580.47	313.26	16.63	16.40	202.49	168.59	5.97	
7700.00	7700.00	7680.47	313.26	16.85	16.63	202.49	168.14	5.90	
7800.00	7800.00	7780.47	313.26	17.07	16.85	202.49	167.70	5.82	
7900.00	7899.92	7880.39	133.49	17.29	17.07	204.30	169.06	5.80	
8000.00	7998.12	7978.59	136.04	17.50	17.29	217.25	181.68	6.11	
8100.00	8091.67	8072.14	139.84	17.71	17.50	244.03	208.05	6.78	
8200.00	8177.73	8158.20	143.43	17.90	17.69	286.00	249.68	7.87	
8300.00	8253.68	8234.15	145.73	18.07	17.86	343.16	306.54	9.37	
8400.00	8317.21	8297.68	145.98	18.21	18.00	414.03	377.01	11.18	
8500.00	8366.40	8346.87	143.03	18.32	18.11	496.19	458.96	13.33	
8600.00	8399.75	8380.21	133.88	18.39	18.19	586.72	549.40	15.72	
8700.00	8416.24	8396.71	109.49	18.43	18.22	682.49	645.03	18.22	
8800.00	8418.28	8398.75	91.44	18.43	18.23	780.37	742.84	20.79	
8900.00	8418.76	8399.23	91.62	18.43	18.23	878.76	841.19	23.39	
9000.00	8419.25	8399.72	91.81	18.43	18.23	977.48	939.89	26.00	
9100.00	8419.73	8400.20	92.00	18.43	18.23	1076.44	1038.83	28.62	
9200.00	8420.22	8400.68	92.18	18.44	18.23	1175.57	1137.94	31.25	
9300.00	8420.70	8401.17	92.37	18.44	18.23	1274.83	1237.20	33.87	
9400.00	8421.18	8401.65	92.56	18.44	18.23	1374.21	1336.56	36.51	
9500.00	8421.67	8402.14	92.75	18.44	18.24	1473.66	1436.01	39.14	
9600.00	8422.15	8402.62	92.93	18.44	18.24	1573.19	1535.53	41.77	
9700.00	8422.63	8403.10	93.12	18.44	18.24	1672.77	1635.10	44.40	
9800.00	8423.12	8403.59	93.31	18.44	18.24	1772.40	1734.71	47.02	
9900.00	8423.60	8404.07	93.49	18.44	18.24	1872.07	1834.36	49.64	
10000.00	8424.09	8404.56	93.68	18.44	18.24	1971.77	1934.06	52.28	
10100.00	8424.57	8405.04	93.87	18.45	18.24	2071.50	2033.73	54.84	
10200.00	8425.05	8405.52	94.05	18.45	18.24	2171.26	2133.42	57.39	
10300.00	8425.54	8406.01	94.24	18.45	18.24	2271.04	2233.21	60.04	
10400.00	10776.82	12938.39	175.54	47.04	23.74	2358.03	2314.24	53.84	
10500.00	10775.86	13038.37	175.50	48.63	24.23	2356.70	2311.75	52.44	
10600.00	10774.89	13138.35	175.46	50.24	24.77	2355.37	2309.29	51.11	
10700.00	10773.92	13238.33	175.42	51.86	25.31	2354.04	2306.80	49.84	
10800.00	10772.95	13338.31	175.38	53.50	25.89	2352.71	2304.22	48.52	
10900.00	10771.98	13438.28	175.35	55.14	26.41	2351.38	2301.70	47.33	
11000.00	10771.01	13538.26	175.31	56.80	26.94	2350.05	2299.14	46.16	
11100.00	10770.05	13638.24	175.27	58.47	27.57	2348.73	2296.51	44.98	
11200.00	10769.08	13738.22	175.23	60.14	28.18	2347.41	2293.89	43.87	
11300.00	10768.11	13838.20	175.19	61.83	28.78	2346.08	2291.28	42.81	
11400.00	10767.14	13938.18	175.15	63.52	29.38	2344.76	2288.67	41.80	
11500.00	10766.17	14038.15	175.11	65.22	29.98	2343.44	2286.05	40.84	
11600.00	10765.20	14138.13	175.07	66.92	30.57	2342.12	2283.43	39.91	
11700.00	10764.24	14238.11	175.03	68.64	31.17	2340.80	2280.81	39.02	
11800.00	10763.27	14338.09	174.99	70.35	31.78	2339.48	2278.17	38.16	
11900.00	10762.30	14438.07	174.95	72.07	32.39	2338.17	2275.53	37.33	
12000.00	10761.33	14538.05	174.91	73.80	33.00	2336.85	2272.89	36.53	
12100.00	10760.36	14638.03	174.87	75.53	33.61	2335.54	2270.24	35.77	
12200.00	10759.39	14738.00	174.84	77.27	34.23	2334.22	2267.57	35.02	
12300.00	10758.43	14837.98	174.80	79.01	34.87	2332.91	2264.88	34.29	
12400.00	10757.46	14937.96	174.76	80.75	35.53	2331.60	2262.18	33.59	
12500.00	10756.49	15037.94	174.72	82.50	36.19	2330.29	2259.48	32.91	
12600.00	10755.52	15137.92	174.68	84.25	36.85	2328.98	2256.77	32.25	
12700.00	10754.55	15237.90	174.64	86.00	37.51	2327.67	2254.07	31.62	

SD Anti-Collision Report

Secondary Well : Rebel 20 Fed 7H (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
12800.00	10753.58	15337.87	174.60	87.75	38.18	2326.37	2251.35	31.01	
12876.29	10753.00	15398.22	174.57	88.81	38.58	2325.43	2249.47	30.61	



Weatherford

Weatherford Drilling Services

GeoDec4 v2.1.0.0

Report Date: May 20, 2015
Job Number: _____
Customer: Devon Energy
Well Name: Rebel 20 Fed 3H
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: 440551.05 US Survey Foot	Latitude: 32.209537 Degree
East: 738936.42 US Survey Foot	Longitude: -103.694441 Degree
Convergence: 0.34°	
Declination: 7.32°	
Total Correction: 6.98°	
Datum Transformation: none	

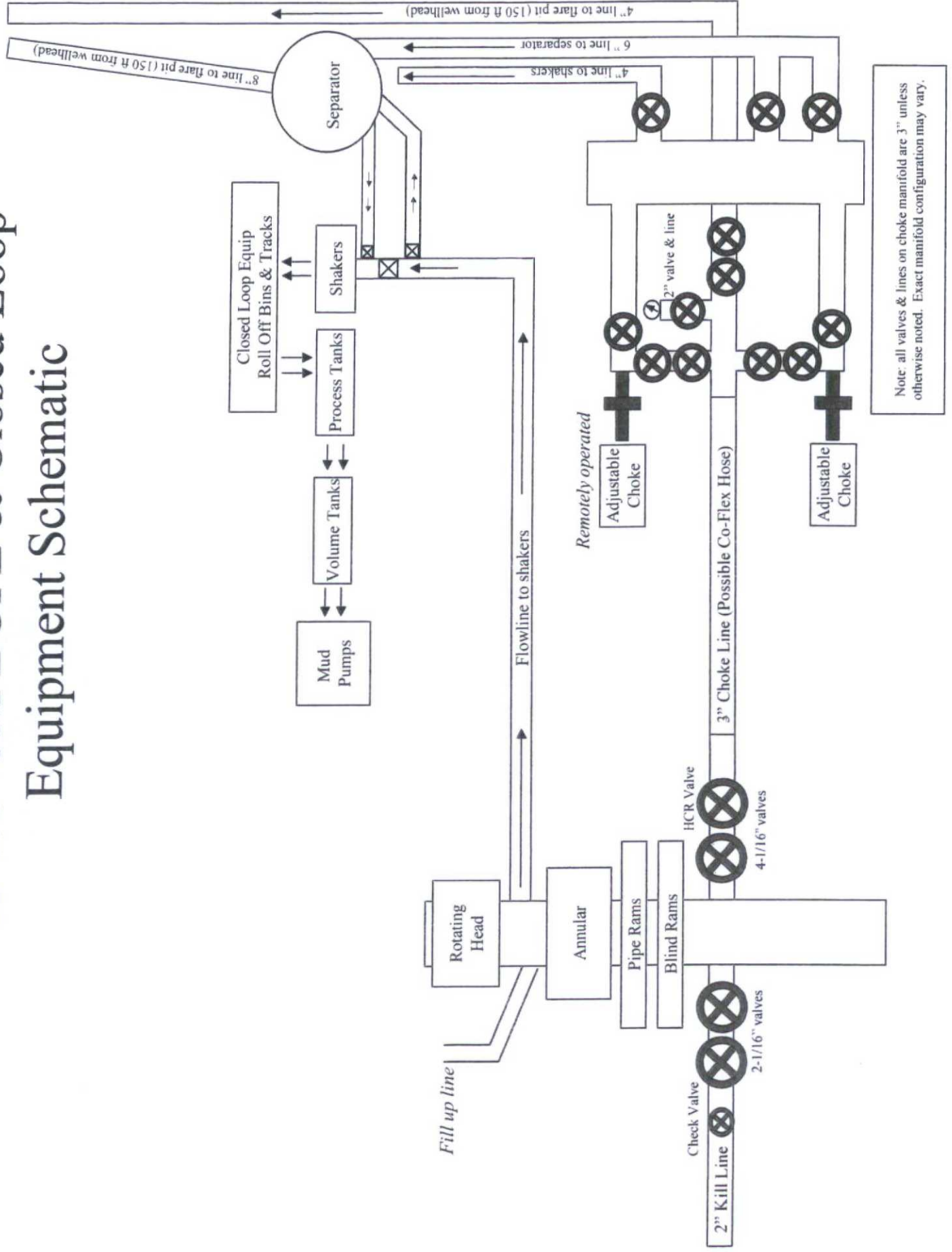
Geodetic Location WGS84

MSL Elevation = 0 m
Latitude = 32° 12' 34.33" N
Longitude = 103° 41' 39.99" W

Magnetic Declination = 7.32 deg	[True North Offset]
Local Gravity = .9988 g	Checksum = 6537
Local Field Strength = 48211 nT	Magnetic Vector X = 23835 nT
Magnetic Dip = 60.10 deg	Magnetic Vector Y = 3063 nT
Magnetic Model = bggm2015.dat	Magnetic Vector Z = 41795 nT
Run Date = July 30, 2015	Magnetic Vector H = 24031 nT

Signed: _____ Date: _____

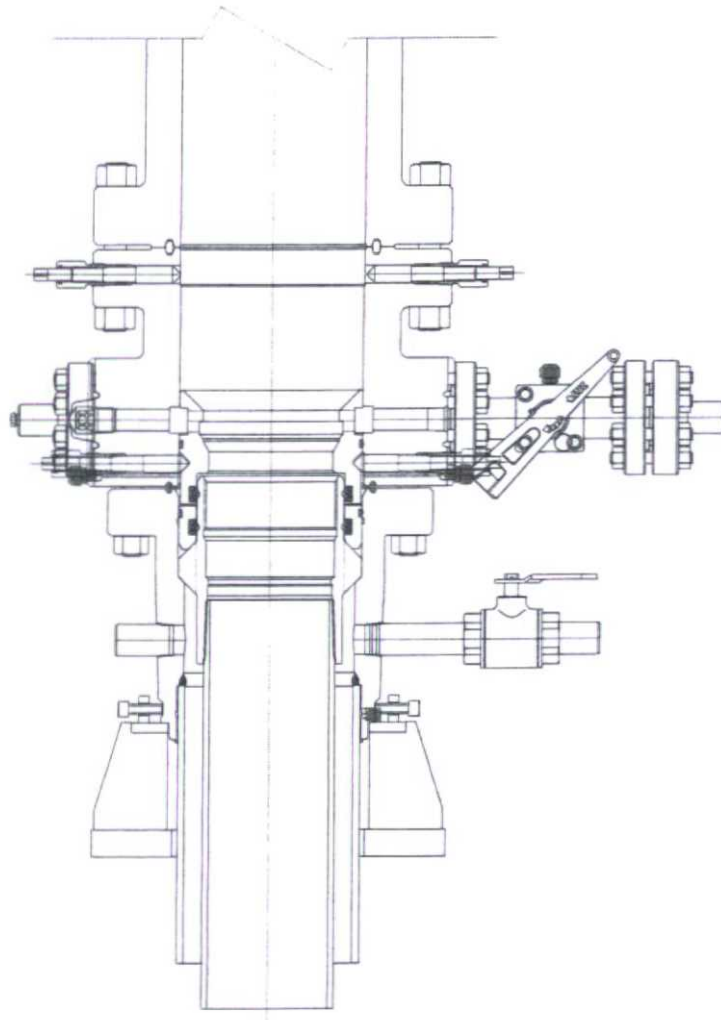
13-5/8" 3M BOPE & Closed Loop Equipment Schematic



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, L.P.
REBEL 20 FED 3H

1. Drilling Nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventer and all associated filings will be in operable condition to withstand a minimum of 3000psi working pressure.
4. All fittings will be flanged.
5. A fill bore safety valve tested to a minimum of 3000psi WP with proper thread connections will be available on the rotary rig floor at all times.
6. All choke lines will be anchored to prevent movement.
7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
8. Will maintain a kelly cock attached to the kelly.
9. Hand wheels and wrenches will be properly installed and tested for safe operation.
10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.



PRIMARY MODE

DEVON ENERGY

ARTESIA

S.E.N.M

13 3/8 X 9 5/8

QUOTE LAYOUT
F18648
REF: DM100161737
DM100151315

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REVISIONS

A	05-08-13
B	1-22-14
C	5-13-14

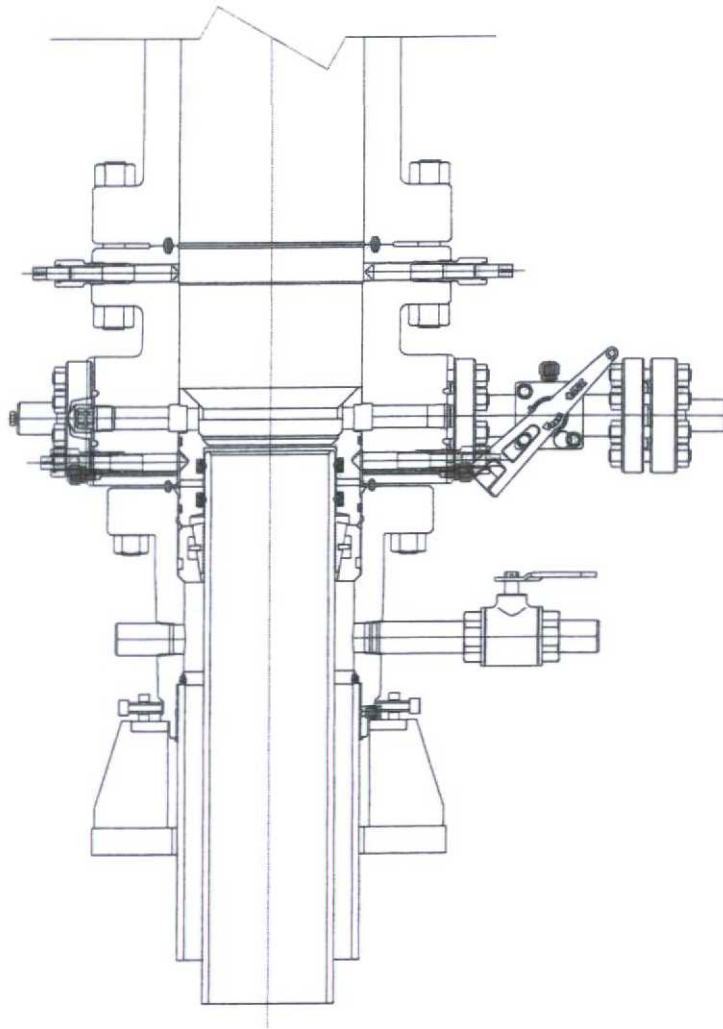
DESCRIPTION

SURFACE WELLHEAD LAYOUT
UNIHEAD, UH-1, SOW,
DEVON ENERGY, ODESSA

DRAWN BY	K. VU	05-08-13
DRAWING REVIEW	Z. MARQUEZ	05-08-13
DESIGN REVIEW	K. TAHA	05-08-13
APPROVED BY	R. HAMILTON	05-08-13

FMC Technologies

DRAWING NUMBER
DM100161771-2A



CONTINGENCY MODE

DEVON ENERGY

ARTESIA

S.E.N.M

13 3/8 X 9 5/8

QUOTE LAYOUT
F18648
REF: DM100161737
DM100151315

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REVISIONS

A	05-08-13
B	1-22-14
C	5-13-14

DESCRIPTION

SURFACE WELLHEAD LAYOUT
UNIHEAD, UH-1, SOW,
DEVON ENERGY, ODESSA

DRAWN BY

K. VIJ 05-08-13

STUFFING REVIEW

Z. MARQUEZ 05-08-13

DESIGN REVIEW

K. TAHA 05-08-13

APPROVED BY

R. HAMILTON 05-08-13

FMC Technologies

DRAWING NUMBER

DM100161771-2B



Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
11535 Brittmoore Park Drive,
Houston, TX 77041
Phone: +1 (832) 327-0141
Fax: +1 (832) 327-0148
www.contitechbeattie.com



RIG 212



QUALITY DOCUMENT

**PHOENIX RUBBER
INDUSTRIAL LTD.**

 5728 Szeged, Budapest út 10, Hungary • H-6701 Szeged, P. O. Box 152
 Phone: (3632) 556-737 • Fax: (3632) 556-738

 SALES & MARKETING: H-1082 Budapest, Ráday u. 42-44, Hungary • H-1440 Budapest, P. O. Box 26
 Phone: (361) 456-4200 • Fax: (361) 217-2872, 456-4273 • www.bakrusomerga.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552	
PURCHASER: Phoenix Beattie Co.			P.O. N°: 1519FA-871		
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID Choke and Kill Hose			
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH: 11,43 m			
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.	
Pressure test with water at ambient temperature See attachment. (1 page)					
↑ 10 mm = 10 Min. → 10 mm = 25 MPa					
COUPLINGS					
Type	Serial N°		Quality	Heat N°	
3" coupling with 4 1/16" Flange end	720	719	AISI 4130	C7626	
			AISI 4130	47357	
API Spec 16 C Temperature rate: "B"					
All metal parts are flawless					
WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.					
Date: 29. April. 2002.		Inspector		Quality Control PHOENIX RUBBER Industrial Ltd. Hose Inspection and Pressure Testing PHOENIX RUBBER Q.C.	

14094-66

40920-0-00015 NB000

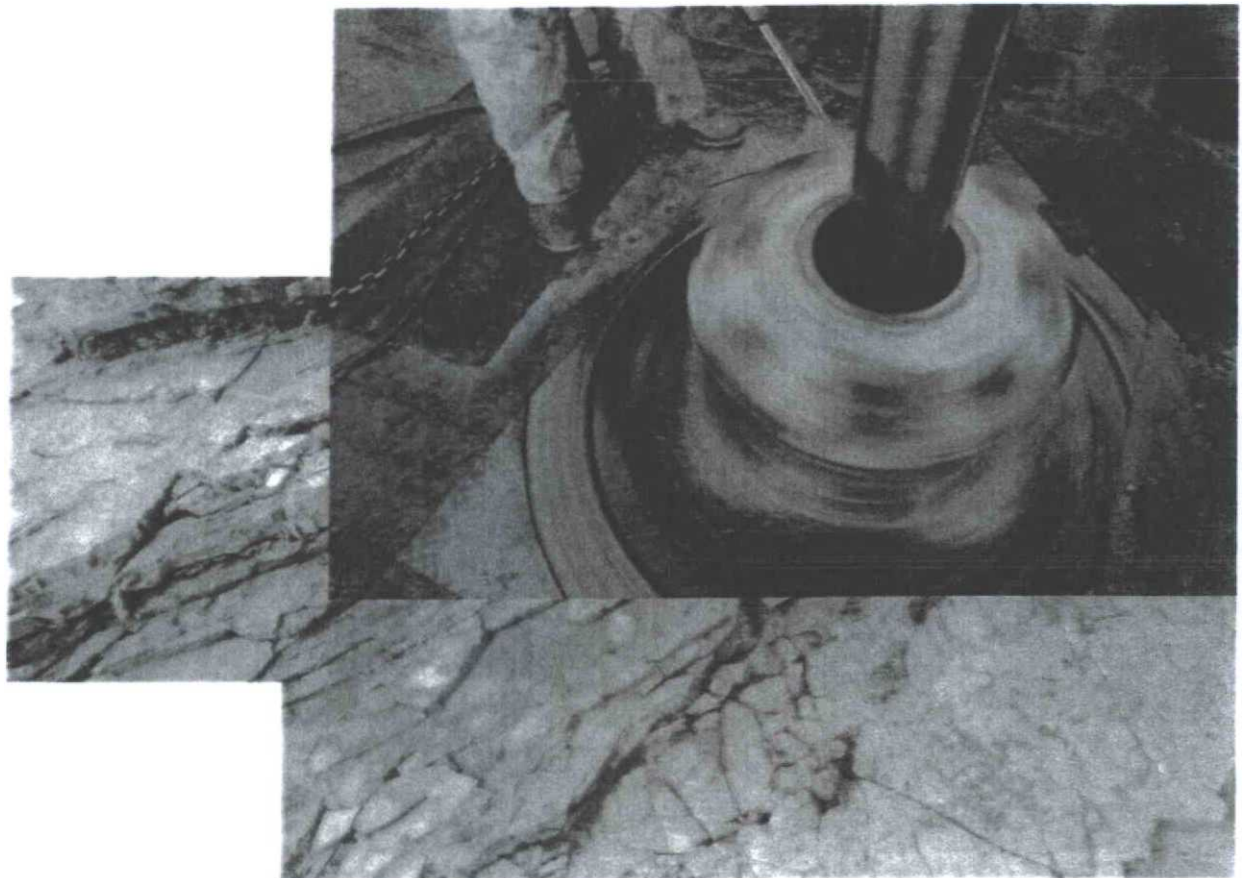
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	RDH	+0.0000	0.0000	1.4.00
	BL	+0.0000	0.0000	1.4.00
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	RDH	+0.0000	0.0000	1.3.40
	BL	+0.0000	0.0000	1.3.40
6	GNL	+0.0000	0.0000	1.3.20
	RDH	+0.0000	0.0000	1.3.20
	BL	+0.0000	0.0000	1.3.20
5	GNL	+0.0000	0.0000	1.3.00
	RDH	+0.0000	0.0000	1.3.00
	BL	+0.0000	0.0000	1.3.00
4	GNL	+0.0000	0.0000	1.3.00
	RDH	+0.0000	0.0000	1.3.00
	BL	+0.0000	0.0000	1.3.00
3	GNL	+0.0000	0.0000	1.3.00
	RDH	+0.0000	0.0000	1.3.00
	BL	+0.0000	0.0000	1.3.00
2	GNL	+0.0000	0.0000	1.3.00
	RDH	+0.0000	0.0000	1.3.00
	BL	+0.0000	0.0000	1.3.00

[Signature]
PHOENIX RUBBER
 Industrial Ltd.
 Hose Inspection and
 Certification Dept.

VERIFIED TRUE CO.
 PHOENIX RUBBER CO.



Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems
June 2010

I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

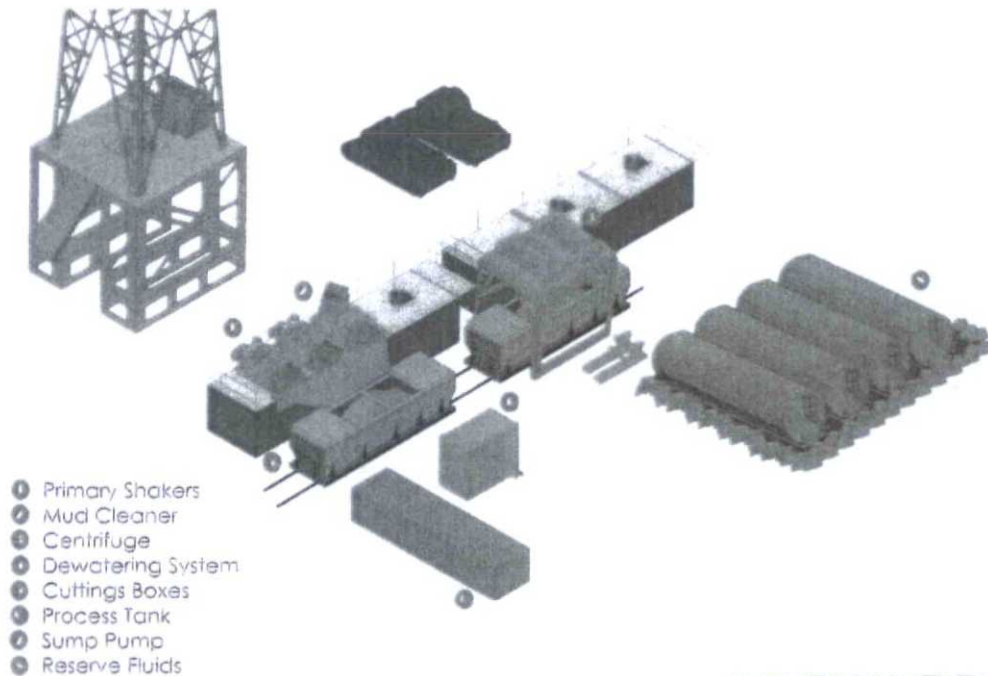
II. Operations and Maintenance Plan

Primary Shakers: The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

Mud Cleaner: The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.

devon

Closed Loop Schematic



MI SWACO

Centrifuges: The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

Dewatering System: The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

Cuttings Boxes: Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

Process Tank: (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

Sump and Sump Pump: The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

Reserve Fluids (Tank Farm): A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

III. Closure Plan

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.