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Proposal



devon

THISTLE UNIT 61H

LEA COUNTY, NM

WELL FILE: **PLAN 2**

NOVEMBER 5, 2013

Weatherford International, Ltd.

P.O. Box 61028

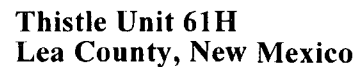
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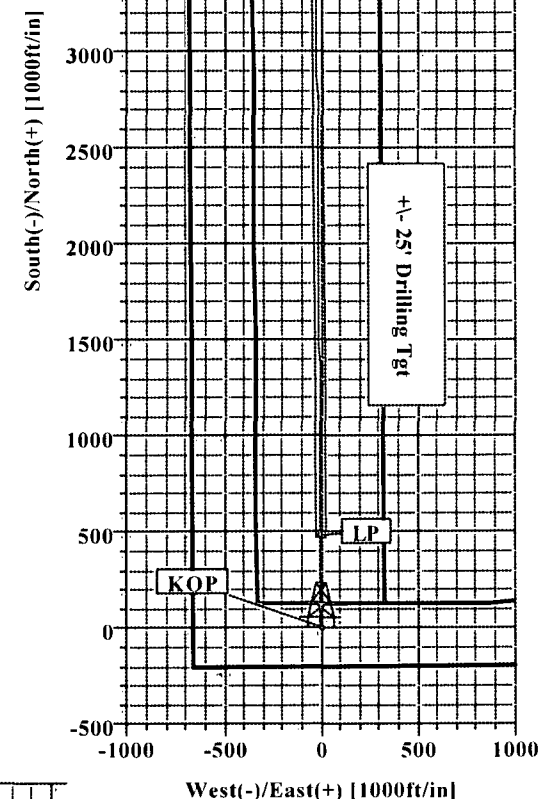
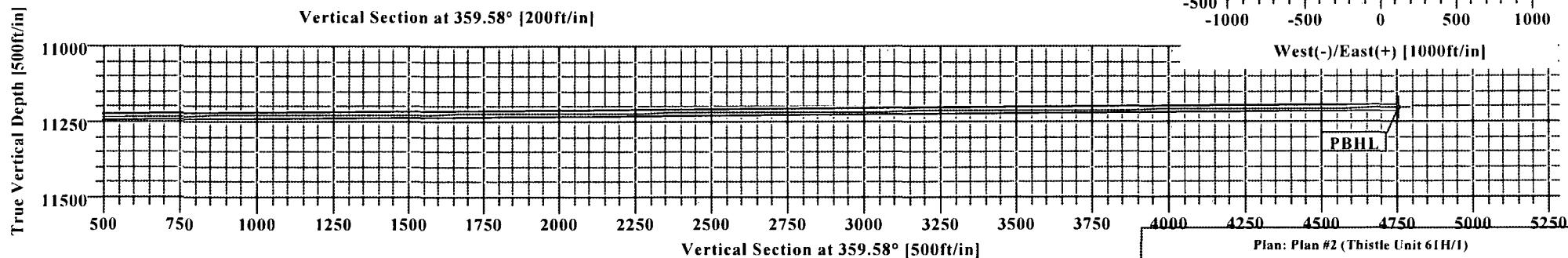
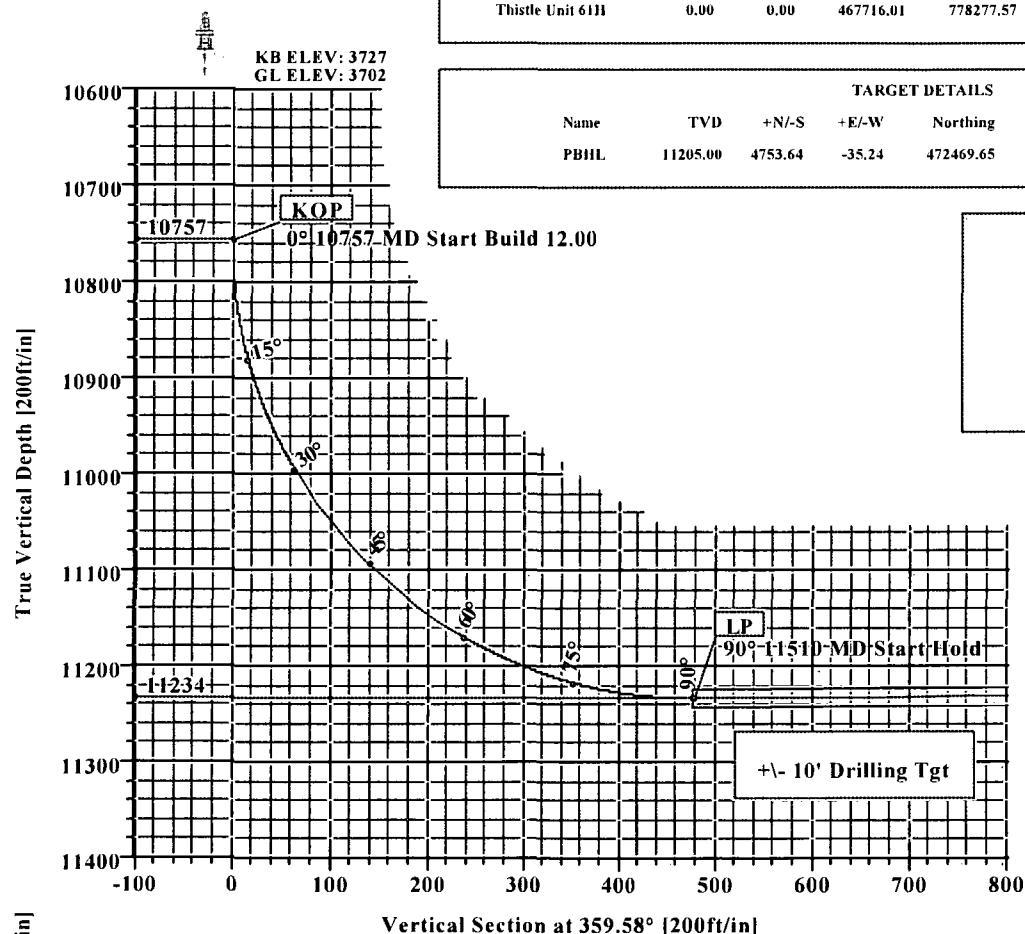
NOV 12 2013



LEGEND

 Thistle Unit 55H (1)

 Plan #2





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Wft Plan Report X Y's.

**Weatherford**

Company: Devon Energy Date: 11/5/2013 Time: 12:49:55 Page: 1
Field: Lea County, New Mexico (NAD 83) Co-ordinate(NE) Reference: Well: Thistle Unit 61H, Grid North
Site: Thistle Unit 61H Vertical (TVD) Reference: SITE 3727.0
Well: Thistle Unit 61H Section (VS) Reference: Well (0.00N,0.00E,359.58Azi)
Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Plan: Plan #2 Date Composed: 11/4/2013
Principal: Yes Version: 1
Tied-to: From Surface

Site: Thistle Unit 61H

Site Position: Northing: 467716.01 ft Latitude: 32 17 0.582 N
From: Map Easting: 778277.57 ft Longitude: 103 33 59.859 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 3702.00 ft Grid Convergence: 0.41 deg

Well: Thistle Unit 61H Slot Name:
Well Position: +N/-S 0.00 ft Northing: 467716.01 ft Latitude: 32 17 0.582 N
+E/-W 0.00 ft Easting: 778277.57 ft Longitude: 103 33 59.859 W
Position Uncertainty: 0.00 ft

Wellpath: 1
Current Datum: SITE Height 3727.00 ft
Magnetic Data: 11/30/2013
Field Strength: 48432 nT
Vertical Section: Depth From (TVD) +N/-S +E/-W Direction
ft ft ft deg
0.00 0.00 0.00 359.58

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	359.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10756.63	0.00	359.58	10756.63	0.00	0.00	0.00	0.00	0.00	0.00	
11509.88	90.39	359.58	11234.09	480.70	-3.56	12.00	12.00	0.00	359.58	
15783.04	90.39	359.58	11205.00	4753.64	-35.24	0.00	0.00	0.00	0.00	PBHL

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
10700.00	0.00	359.58	10700.00	0.00	0.00	0.00	0.00	467716.01	778277.57	
10756.63	0.00	359.58	10756.63	0.00	0.00	0.00	0.00	467716.01	778277.57	KOP
10800.00	5.20	359.58	10799.94	1.97	-0.01	1.97	12.00	467717.98	778277.56	
10900.00	17.20	359.58	10897.86	21.36	-0.16	21.36	12.00	467737.37	778277.41	
11000.00	29.20	359.58	10989.60	60.69	-0.45	60.69	12.00	467776.70	778277.12	
11100.00	41.20	359.58	11071.16	118.23	-0.88	118.24	12.00	467834.24	778276.69	
11200.00	53.20	359.58	11138.97	191.47	-1.42	191.48	12.00	467907.48	778276.15	
11300.00	65.20	359.58	11190.08	277.21	-2.06	277.22	12.00	467993.22	778275.51	
11400.00	77.20	359.58	11222.24	371.71	-2.76	371.72	12.00	468087.72	778274.81	
11500.00	89.20	359.58	11234.05	470.82	-3.49	470.83	12.00	468186.83	778274.08	
11509.88	90.39	359.58	11234.09	480.70	-3.56	480.71	12.00	468196.71	778274.01	LP
11600.00	90.39	359.58	11233.47	570.81	-4.23	570.83	0.00	468286.82	778273.34	
11700.00	90.39	359.58	11232.79	670.81	-4.97	670.83	0.00	468386.82	778272.60	
11800.00	90.39	359.58	11232.11	770.80	-5.71	770.83	0.00	468486.81	778271.86	
11900.00	90.39	359.58	11231.43	870.80	-6.46	870.82	0.00	468586.81	778271.11	
12000.00	90.39	359.58	11230.75	970.79	-7.20	970.82	0.00	468686.80	778270.37	
12100.00	90.39	359.58	11230.07	1070.79	-7.94	1070.82	0.00	468786.80	778269.63	
12200.00	90.39	359.58	11229.39	1170.78	-8.68	1170.82	0.00	468886.79	778268.89	
12300.00	90.39	359.58	11228.71	1270.78	-9.42	1270.81	0.00	468986.79	778268.15	
12400.00	90.39	359.58	11228.03	1370.77	-10.16	1370.81	0.00	469086.78	778267.41	
12500.00	90.39	359.58	11227.35	1470.77	-10.90	1470.81	0.00	469186.78	778266.67	
12600.00	90.39	359.58	11226.67	1570.76	-11.64	1570.81	0.00	469286.77	778265.93	
12700.00	90.39	359.58	11225.99	1670.76	-12.39	1670.80	0.00	469386.77	778265.18	



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Wft Plan Report X Y's.

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Thistle Unit 61H
Well: Thistle Unit 61H
Wellpath: 1

Date: 11/5/2013 Time: 12:49:55 Page: 2
Co-ordinate(NE) Reference: Well: Thistle Unit 61H, Grid North
Vertical (TVD) Reference: SITE 3727.0
Section (VS) Reference: Well (0.00N,0.00E,359.58Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comments
12800.00	90.39	359.58	11225.30	1770.75	-13.13	1770.80	0.00	469486.76	778264.44	
12900.00	90.39	359.58	11224.62	1870.75	-13.87	1870.80	0.00	469586.76	778263.70	
13000.00	90.39	359.58	11223.94	1970.74	-14.61	1970.80	0.00	469686.75	778262.96	
13100.00	90.39	359.58	11223.26	2070.74	-15.35	2070.80	0.00	469786.75	778262.22	
13200.00	90.39	359.58	11222.58	2170.73	-16.09	2170.79	0.00	469886.74	778261.48	
13300.00	90.39	359.58	11221.90	2270.73	-16.83	2270.79	0.00	469986.74	778260.74	
13400.00	90.39	359.58	11221.22	2370.72	-17.57	2370.79	0.00	470086.73	778260.00	
13500.00	90.39	359.58	11220.54	2470.72	-18.32	2470.79	0.00	470186.73	778259.25	
13600.00	90.39	359.58	11219.86	2570.71	-19.06	2570.78	0.00	470286.72	778258.51	
13700.00	90.39	359.58	11219.18	2670.71	-19.80	2670.78	0.00	470386.72	778257.77	
13800.00	90.39	359.58	11218.50	2770.70	-20.54	2770.78	0.00	470486.71	778257.03	
13900.00	90.39	359.58	11217.82	2870.70	-21.28	2870.78	0.00	470586.71	778256.29	
14000.00	90.39	359.58	11217.14	2970.69	-22.02	2970.77	0.00	470686.70	778255.55	
14100.00	90.39	359.58	11216.46	3070.69	-22.76	3070.77	0.00	470786.70	778254.81	
14200.00	90.39	359.58	11215.78	3170.68	-23.51	3170.77	0.00	470886.69	778254.06	
14300.00	90.39	359.58	11215.09	3270.68	-24.25	3270.77	0.00	470986.69	778253.32	
14400.00	90.39	359.58	11214.41	3370.67	-24.99	3370.77	0.00	471086.68	778252.58	
14500.00	90.39	359.58	11213.73	3470.67	-25.73	3470.76	0.00	471186.68	778251.84	
14600.00	90.39	359.58	11213.05	3570.66	-26.47	3570.76	0.00	471286.67	778251.10	
14700.00	90.39	359.58	11212.37	3670.66	-27.21	3670.76	0.00	471386.67	778250.36	
14800.00	90.39	359.58	11211.69	3770.65	-27.95	3770.76	0.00	471486.66	778249.62	
14900.00	90.39	359.58	11211.01	3870.65	-28.69	3870.75	0.00	471586.66	778248.88	
15000.00	90.39	359.58	11210.33	3970.64	-29.44	3970.75	0.00	471686.65	778248.13	
15100.00	90.39	359.58	11209.65	4070.64	-30.18	4070.75	0.00	471786.65	778247.39	
15200.00	90.39	359.58	11208.97	4170.63	-30.92	4170.75	0.00	471886.64	778246.65	
15300.00	90.39	359.58	11208.29	4270.63	-31.66	4270.74	0.00	471986.64	778245.91	
15400.00	90.39	359.58	11207.61	4370.62	-32.40	4370.74	0.00	472086.63	778245.17	
15500.00	90.39	359.58	11206.93	4470.62	-33.14	4470.74	0.00	472186.63	778244.43	
15600.00	90.39	359.58	11206.25	4570.61	-33.88	4570.74	0.00	472286.62	778243.69	
15700.00	90.39	359.58	11205.57	4670.61	-34.62	4670.74	0.00	472386.62	778242.95	
15783.04	90.39	359.58	11205.00	4753.64	-35.24	4753.77	0.00	472469.65	778242.33	PBHL

Targets

Name	Description Dip.	TVD Dir.	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude ---> Deg Min Sec	<--- Longitude ---> Deg Min Sec
PBHL -Rectangle (4276x50)		11205.00	4753.64	-35.24	472469.65	778242.33	32 17 47.623 N	103 33 59.874 W

Casing Points

MD	TVD	Diameter	Hole Size	Name

Formations

MD	TVD	Formations	Lithology	Dip Angle Dip Direction



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Wft Plan Report X Y's.



Weatherford

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Thistle Unit 61H
Well: Thistle Unit 61H
Wellpath: 1

Date: 11/5/2013 Time: 12:49:55 Page: 3
Co-ordinate(NE) Reference: Well: Thistle Unit 61H, Grid North
Vertical (TVD) Reference: SITE 3727.0
Section (VS) Reference: Well (0.00N,0.00E,359.58Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Annotation

MD ft	TVD ft	
10756.63	10756.63	KOP
11509.88	11234.09	LP
15783.04	0.00	PBHL



Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy Date: 11/5/2013 Time: 12:39:20 Page: 1
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 61H Co-ordinate(NE) Reference: Well: Thistle Unit 61H, Grid North
Reference Well: Thistle Unit 61H Vertical (TVD) Reference: SITE 3727.0
Reference Wellpath: Db: Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria
Interpolation Method: MD + Stations Interval: 100.00 ft
Depth Range: 0.00 to 16080.08 ft
Maximum Radius: 0000.00 ft

Reference: Plan: Plan #2
Error Model: ISCWSA Ellipse
Scan Method: Closest Approach 3D
Error Surface: Ellipse

Plan: Plan #2

Date Composed: 11/4/2013

Principal: Yes

Version: 1

Tied-to: From Surface

Summary

Site	Offset Wellpath Well	Wellpath	Reference MD ft	Offset MD ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Warning
Thistle Unit 55H	Thistle Unit 55H	1 V0 Plan: Plan #2 V1	10756.63	10755.63	49.98	1.91	Level 2

Site: Thistle Unit 55H
Well: Thistle Unit 55H
Wellpath: 1 V0 Plan: Plan #2 V1

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Warning
0.00	0.00	1.00	-1.00	0.00	0.00	179.60	-49.98	0.35	49.98	49.98	59298.67
100.00	100.00	99.00	99.00	0.08	0.08	179.60	-49.98	0.35	49.98	49.81	297.98
200.00	200.00	199.00	199.00	0.31	0.31	179.60	-49.98	0.35	49.98	49.37	81.16
300.00	300.00	299.00	299.00	0.53	0.53	179.60	-49.98	0.35	49.98	48.92	46.91
400.00	400.00	399.00	399.00	0.76	0.76	179.60	-49.98	0.35	49.98	48.47	32.99
500.00	500.00	499.00	499.00	0.98	0.98	179.60	-49.98	0.35	49.98	48.02	25.44
600.00	600.00	599.00	599.00	1.21	1.21	179.60	-49.98	0.35	49.98	47.57	20.70
700.00	700.00	699.00	699.00	1.43	1.43	179.60	-49.98	0.35	49.98	47.12	17.45
800.00	800.00	799.00	799.00	1.66	1.66	179.60	-49.98	0.35	49.98	46.67	15.09
900.00	900.00	899.00	899.00	1.88	1.88	179.60	-49.98	0.35	49.98	46.22	13.28
1000.00	1000.00	999.00	999.00	2.11	2.10	179.60	-49.98	0.35	49.98	45.77	11.87
1100.00	1100.00	1099.00	1099.00	2.33	2.33	179.60	-49.98	0.35	49.98	45.32	10.72
1200.00	1200.00	1199.00	1199.00	2.56	2.55	179.60	-49.98	0.35	49.98	44.87	9.78
1300.00	1300.00	1299.00	1299.00	2.78	2.78	179.60	-49.98	0.35	49.98	44.42	8.99
1400.00	1400.00	1399.00	1399.00	3.01	3.00	179.60	-49.98	0.35	49.98	43.97	8.32
1500.00	1500.00	1499.00	1499.00	3.23	3.23	179.60	-49.98	0.35	49.98	43.52	7.74
1600.00	1600.00	1599.00	1599.00	3.46	3.45	179.60	-49.98	0.35	49.98	43.07	7.23
1700.00	1700.00	1699.00	1699.00	3.68	3.68	179.60	-49.98	0.35	49.98	42.62	6.79
1800.00	1800.00	1799.00	1799.00	3.91	3.90	179.60	-49.98	0.35	49.98	42.17	6.40
1900.00	1900.00	1899.00	1899.00	4.13	4.13	179.60	-49.98	0.35	49.98	41.72	6.05
2000.00	2000.00	1999.00	1999.00	4.35	4.35	179.60	-49.98	0.35	49.98	41.27	5.74
2100.00	2100.00	2099.00	2099.00	4.58	4.58	179.60	-49.98	0.35	49.98	40.82	5.46
2200.00	2200.00	2199.00	2199.00	4.80	4.80	179.60	-49.98	0.35	49.98	40.37	5.20
2300.00	2300.00	2299.00	2299.00	5.03	5.03	179.60	-49.98	0.35	49.98	39.93	4.97
2400.00	2400.00	2399.00	2399.00	5.25	5.25	179.60	-49.98	0.35	49.98	39.48	4.76
2500.00	2500.00	2499.00	2499.00	5.48	5.48	179.60	-49.98	0.35	49.98	39.03	4.56
2600.00	2600.00	2599.00	2599.00	5.70	5.70	179.60	-49.98	0.35	49.98	38.58	4.38
2700.00	2700.00	2699.00	2699.00	5.93	5.93	179.60	-49.98	0.35	49.98	38.13	4.22
2800.00	2800.00	2799.00	2799.00	6.15	6.15	179.60	-49.98	0.35	49.98	37.68	4.06
2900.00	2900.00	2899.00	2899.00	6.38	6.38	179.60	-49.98	0.35	49.98	37.23	3.92
3000.00	3000.00	2999.00	2999.00	6.60	6.60	179.60	-49.98	0.35	49.98	36.78	3.79
3100.00	3100.00	3099.00	3099.00	6.83	6.83	179.60	-49.98	0.35	49.98	36.33	3.66
3200.00	3200.00	3199.00	3199.00	7.05	7.05	179.60	-49.98	0.35	49.98	35.88	3.54
3300.00	3300.00	3299.00	3299.00	7.28	7.27	179.60	-49.98	0.35	49.98	35.43	3.43
3400.00	3400.00	3399.00	3399.00	7.50	7.50	179.60	-49.98	0.35	49.98	34.98	3.33
3500.00	3500.00	3499.00	3499.00	7.73	7.72	179.60	-49.98	0.35	49.98	34.53	3.23

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Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy Date: 11/5/2013 Time: 12:39:20 Page: 2
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 61H Co-ordinate(NE) Reference: Well: Thistle Unit 61H, Grid North
Reference Well: Thistle Unit 61H Vertical (TVD) Reference: SITE 3727.0
Reference Wellpath: Db: Sybase

Site: Thistle Unit 55H
Well: Thistle Unit 55H
Wellpath: 1 V0 Plan: Plan #2 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Edge		Separation	Warning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Factor	
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
3600.00	3600.00	3599.00	3599.00	7.95	7.95	179.60	-49.98	0.35	49.98	34.08	3.14	
3700.00	3700.00	3699.00	3699.00	8.18	8.17	179.60	-49.98	0.35	49.98	33.63	3.06	
3800.00	3800.00	3799.00	3799.00	8.40	8.40	179.60	-49.98	0.35	49.98	33.18	2.98	
3900.00	3900.00	3899.00	3899.00	8.63	8.62	179.60	-49.98	0.35	49.98	32.73	2.90	
4000.00	4000.00	3999.00	3999.00	8.85	8.85	179.60	-49.98	0.35	49.98	32.28	2.82	
4100.00	4100.00	4099.00	4099.00	9.07	9.07	179.60	-49.98	0.35	49.98	31.83	2.75	
4200.00	4200.00	4199.00	4199.00	9.30	9.30	179.60	-49.98	0.35	49.98	31.38	2.69	
4300.00	4300.00	4299.00	4299.00	9.52	9.52	179.60	-49.98	0.35	49.98	30.93	2.62	
4400.00	4400.00	4399.00	4399.00	9.75	9.75	179.60	-49.98	0.35	49.98	30.49	2.56	
4500.00	4500.00	4499.00	4499.00	9.97	9.97	179.60	-49.98	0.35	49.98	30.04	2.51	
4600.00	4600.00	4599.00	4599.00	10.20	10.20	179.60	-49.98	0.35	49.98	29.59	2.45	
4700.00	4700.00	4699.00	4699.00	10.42	10.42	179.60	-49.98	0.35	49.98	29.14	2.40	
4800.00	4800.00	4799.00	4799.00	10.65	10.65	179.60	-49.98	0.35	49.98	28.69	2.35	
4900.00	4900.00	4899.00	4899.00	10.87	10.87	179.60	-49.98	0.35	49.98	28.24	2.30	
5000.00	5000.00	4999.00	4999.00	11.10	11.10	179.60	-49.98	0.35	49.98	27.79	2.25	
5100.00	5100.00	5099.00	5099.00	11.32	11.32	179.60	-49.98	0.35	49.98	27.34	2.21	
5200.00	5200.00	5199.00	5199.00	11.55	11.55	179.60	-49.98	0.35	49.98	26.89	2.16	
5300.00	5300.00	5299.00	5299.00	11.77	11.77	179.60	-49.98	0.35	49.98	26.44	2.12	
5400.00	5400.00	5399.00	5399.00	12.00	11.99	179.60	-49.98	0.35	49.98	25.99	2.08	
5500.00	5500.00	5499.00	5499.00	12.22	12.22	179.60	-49.98	0.35	49.98	25.54	2.04	
5600.00	5600.00	5599.00	5599.00	12.45	12.44	179.60	-49.98	0.35	49.98	25.09	2.01	
5700.00	5700.00	5699.00	5699.00	12.67	12.67	179.60	-49.98	0.35	49.98	24.64	1.97	
5800.00	5800.00	5799.00	5799.00	12.90	12.89	179.60	-49.98	0.35	49.98	24.19	1.94	
5900.00	5900.00	5899.00	5899.00	13.12	13.12	179.60	-49.98	0.35	49.98	23.74	1.90	
6000.00	6000.00	5999.00	5999.00	13.35	13.34	179.60	-49.98	0.35	49.98	23.29	1.87	
6100.00	6100.00	6099.00	6099.00	13.57	13.57	179.60	-49.98	0.35	49.98	22.84	1.84	
6200.00	6200.00	6199.00	6199.00	13.80	13.79	179.60	-49.98	0.35	49.98	22.39	1.81	
6300.00	6300.00	6299.00	6299.00	14.02	14.02	179.60	-49.98	0.35	49.98	21.94	1.78	
6400.00	6400.00	6399.00	6399.00	14.24	14.24	179.60	-49.98	0.35	49.98	21.49	1.75	
6500.00	6500.00	6499.00	6499.00	14.47	14.47	179.60	-49.98	0.35	49.98	21.04	1.73	
6600.00	6600.00	6599.00	6599.00	14.69	14.69	179.60	-49.98	0.35	49.98	20.60	1.70	
6700.00	6700.00	6699.00	6699.00	14.92	14.92	179.60	-49.98	0.35	49.98	20.15	1.68	
6800.00	6800.00	6799.00	6799.00	15.14	15.14	179.60	-49.98	0.35	49.98	19.70	1.65	
6900.00	6900.00	6899.00	6899.00	15.37	15.37	179.60	-49.98	0.35	49.98	19.25	1.63	
7000.00	7000.00	6999.00	6999.00	15.59	15.59	179.60	-49.98	0.35	49.98	18.80	1.60	
7100.00	7100.00	7099.00	7099.00	15.82	15.82	179.60	-49.98	0.35	49.98	18.35	1.58	
7200.00	7200.00	7199.00	7199.00	16.04	16.04	179.60	-49.98	0.35	49.98	17.90	1.56	
7300.00	7300.00	7299.00	7299.00	16.27	16.27	179.60	-49.98	0.35	49.98	17.45	1.54	
7400.00	7400.00	7399.00	7399.00	16.49	16.49	179.60	-49.98	0.35	49.98	17.00	1.52	
7500.00	7500.00	7499.00	7499.00	16.72	16.71	179.60	-49.98	0.35	49.98	16.55	1.50	Level 3
7600.00	7600.00	7599.00	7599.00	16.94	16.94	179.60	-49.98	0.35	49.98	16.10	1.48	Level 3
7700.00	7700.00	7699.00	7699.00	17.17	17.16	179.60	-49.98	0.35	49.98	15.65	1.46	Level 3
7800.00	7800.00	7799.00	7799.00	17.39	17.39	179.60	-49.98	0.35	49.98	15.20	1.44	Level 3
7900.00	7900.00	7899.00	7899.00	17.62	17.61	179.60	-49.98	0.35	49.98	14.75	1.42	Level 3
8000.00	8000.00	7999.00	7999.00	17.84	17.84	179.60	-49.98	0.35	49.98	14.30	1.40	Level 3
8100.00	8100.00	8099.00	8099.00	18.07	18.06	179.60	-49.98	0.35	49.98	13.85	1.38	Level 3
8200.00	8200.00	8199.00	8199.00	18.29	18.29	179.60	-49.98	0.35	49.98	13.40	1.37	Level 3
8300.00	8300.00	8299.00	8299.00	18.52	18.51	179.60	-49.98	0.35	49.98	12.95	1.35	Level 3
8400.00	8400.00	8399.00	8399.00	18.74	18.74	179.60	-49.98	0.35	49.98	12.50	1.33	Level 3
8500.00	8500.00	8499.00	8499.00	18.96	18.96	179.60	-49.98	0.35	49.98	12.05	1.32	Level 3
8600.00	8600.00	8599.00	8599.00	19.19	19.19	179.60	-49.98	0.35	49.98	11.60	1.30	Level 3



Weatherford

Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 61H
Reference Well: Thistle Unit 61H
Reference Wellpath:

Date: 11/5/2013

Time: 12:39:20

Page: 3

Co-ordinate(NE) Reference: Well: Thistle Unit 61H, Grid North
Vertical (TVD) Reference: SITE 3727.0

Db: Sybase

Site: Thistle Unit 55H
Well: Thistle Unit 55H
Wellpath: 1 V0 Plan: Plan #2 V1

Inter-Site Error: 0.00 ft

Reference MD ft	TVD ft	Offset MD ft	TVD ft	Semi-Major Axis Ref ft	Offset ft	TFO-HS deg	Offset Location North ft	East ft	Ctr-Ctr Edge Distance ft	Separation Distance ft	Factor	Warning
8700.00	8700.00	8699.00	8699.00	19.41	19.41	179.60	-49.98	0.35	49.98	11.16	1.29	Level 3
8800.00	8800.00	8799.00	8799.00	19.64	19.64	179.60	-49.98	0.35	49.98	10.71	1.27	Level 3
8900.00	8900.00	8899.00	8899.00	19.86	19.86	179.60	-49.98	0.35	49.98	10.26	1.26	Level 3
9000.00	9000.00	8999.00	8999.00	20.09	20.09	179.60	-49.98	0.35	49.98	9.81	1.24	Level 2
9100.00	9100.00	9099.00	9099.00	20.31	20.31	179.60	-49.98	0.35	49.98	9.36	1.23	Level 2
9200.00	9200.00	9199.00	9199.00	20.54	20.54	179.60	-49.98	0.35	49.98	8.91	1.22	Level 2
9300.00	9300.00	9299.00	9299.00	20.76	20.76	179.60	-49.98	0.35	49.98	8.46	1.20	Level 2
9400.00	9400.00	9399.00	9399.00	20.99	20.99	179.60	-49.98	0.35	49.98	8.01	1.19	Level 2
9500.00	9500.00	9499.00	9499.00	21.21	21.21	179.60	-49.98	0.35	49.98	7.56	1.18	Level 2
9600.00	9600.00	9599.00	9599.00	21.44	21.43	179.60	-49.98	0.35	49.98	7.11	1.17	Level 2
9700.00	9700.00	9699.00	9699.00	21.66	21.66	179.60	-49.98	0.35	49.98	6.66	1.15	Level 2
9800.00	9800.00	9799.00	9799.00	21.89	21.88	179.60	-49.98	0.35	49.98	6.21	1.14	Level 2
9900.00	9900.00	9899.00	9899.00	22.11	22.11	179.60	-49.98	0.35	49.98	5.76	1.13	Level 2
10000.00	10000.00	9999.00	9999.00	22.34	22.33	179.60	-49.98	0.35	49.98	5.31	1.12	Level 2
10100.00	10100.00	10099.00	10099.00	22.56	22.56	179.60	-49.98	0.35	49.98	4.86	1.11	Level 2
10200.00	10200.00	10199.00	10199.00	22.79	22.78	179.60	-49.98	0.35	49.98	4.41	1.10	Level 2
10300.00	10300.00	10299.00	10299.00	23.01	23.01	179.60	-49.98	0.35	49.98	3.96	1.09	Level 2
10400.00	10400.00	10399.00	10399.00	23.24	23.23	179.60	-49.98	0.35	49.98	3.51	1.08	Level 2
10500.00	10500.00	10499.00	10499.00	23.46	23.46	179.60	-49.98	0.35	49.98	3.06	1.07	Level 2
10600.00	10600.00	10599.00	10599.00	23.68	23.68	179.60	-49.98	0.35	49.98	2.61	1.06	Level 2
10700.00	10700.00	10699.00	10699.00	23.91	23.91	179.60	-49.98	0.35	49.98	2.16	1.05	Level 2
10756.63	10756.63	10755.63	10755.63	24.04	24.03	179.60	-49.98	0.35	49.98	1.91	1.04	Level 2
10775.00	10775.00	10773.77	10773.77	24.08	24.08	180.02	-49.98	0.35	50.34	2.20	1.05	Level 2
10800.00	10799.94	10796.24	10796.23	24.13	24.13	180.02	-50.61	0.35	52.65	4.47	1.09	Level 2
10825.00	10824.77	10818.24	10818.17	24.19	24.18	180.02	-52.25	0.37	57.42	9.25	1.19	Level 2
10850.00	10849.41	10839.49	10839.26	24.24	24.23	180.02	-54.80	0.39	64.55	16.46	1.34	Level 3
10875.00	10873.79	10859.72	10859.22	24.29	24.27	180.02	-58.09	0.41	73.94	25.99	1.54	
10900.00	10897.86	10878.74	10877.84	24.35	24.32	180.02	-61.95	0.44	85.45	37.69	1.79	
10925.00	10921.53	10896.39	10894.97	24.40	24.36	180.01	-66.19	0.47	98.93	51.40	2.08	
10950.00	10944.76	10912.57	10910.53	24.45	24.40	180.01	-70.63	0.50	114.20	66.94	2.42	
10975.00	10967.47	10927.24	10924.49	24.50	24.43	180.01	-75.11	0.54	131.09	84.13	2.79	
11000.00	10989.60	10940.37	10936.88	24.55	24.46	180.01	-79.49	0.57	149.42	102.80	3.20	
11025.00	11011.09	10952.00	10947.74	24.61	24.49	180.01	-83.65	0.60	169.03	122.76	3.65	
11050.00	11031.89	10962.17	10957.16	24.66	24.52	180.01	-87.50	0.63	189.74	143.84	4.13	
11075.00	11051.93	10970.95	10965.21	24.72	24.54	180.01	-90.99	0.65	211.41	165.90	4.64	
11100.00	11071.16	10978.40	10972.00	24.78	24.56	180.01	-94.06	0.68	233.89	188.77	5.18	
11125.00	11089.53	10984.62	10977.62	24.84	24.57	180.01	-96.71	0.70	257.05	212.32	5.75	
11150.00	11106.99	10989.67	10982.17	24.90	24.58	180.01	-98.91	0.71	280.77	236.44	6.33	
11175.00	11123.48	10993.66	10985.74	24.97	24.59	180.02	-100.68	0.73	304.93	260.98	6.94	
11200.00	11138.97	10996.64	10988.40	25.04	24.60	180.02	-102.03	0.74	329.42	285.86	7.56	
11225.00	11153.42	10998.71	10990.25	25.12	24.61	180.03	-102.97	0.74	354.17	310.98	8.20	
11250.00	11166.77	10999.94	10991.34	25.20	24.61	180.05	-103.54	0.75	379.07	336.23	8.85	
11275.00	11179.00	11000.39	10991.73	25.28	24.61	180.48	-103.74	0.75	404.05	361.55	9.51	
11300.00	11190.08	11000.00	10991.39	25.37	24.61	-0.06	-103.56	0.75	429.05	386.85	10.17	
11325.00	11199.96	11000.00	10991.39	25.47	24.61	-0.03	-103.56	0.75	453.98	412.07	10.83	
11350.00	11208.64	10997.68	10989.32	25.57	24.61	-0.02	-102.50	0.74	478.80	437.13	11.49	
11375.00	11216.07	10995.60	10987.47	25.68	24.60	-0.01	-101.56	0.73	503.44	461.97	12.14	
11400.00	11222.24	10993.01	10985.16	25.79	24.59	-0.01	-100.39	0.72	527.85	486.55	12.78	
11425.00	11227.14	10989.96	10982.43	25.91	24.59	-0.01	-99.04	0.71	551.98	510.80	13.40	
11450.00	11230.74	10986.47	10979.30	26.04	24.58	-0.01	-97.51	0.70	575.80	534.69	14.01	
11475.00	11233.05	10982.59	10975.80	26.17	24.57	-0.01	-95.84	0.69	599.25	558.16	14.58	



Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Thistle Unit 61H
Reference Well: Thistle Unit 61H
Reference Wellpath:

Date: 11/5/2013 Time: 12:39:20 Page: 4
Co-ordinate(NE) Reference: Well: Thistle Unit 61H, Grid North
Vertical (TVD) Reference: SITE 3727.0
Db: Sybase

Site: Thistle Unit 55H
Well: Thistle Unit 55H
Wellpath: 1 V0 Plan: Plan #2 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Edge		Separation	Warning
MD	TVD	MD	TVD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Factor	
ft	ft	ft	ft	ft	ft	deg	ft	ft	ft	ft		
11500.00	11234.05	10978.35	10971.95	26.30	24.56	0.00	-94.04	0.68	622.30	581.18	15.13	
11509.88	11234.09	10975.00	10968.91	26.36	24.55	0.00	-92.64	0.67	631.30	590.13	15.34	
11600.00	11233.47	10961.32	10956.37	26.91	24.51	0.00	-87.17	0.63	713.58	672.20	17.24	
11700.00	11232.79	10950.00	10945.88	27.62	24.49	0.00	-82.91	0.59	806.15	764.52	19.36	
11800.00	11232.11	10934.04	10930.92	28.43	24.45	0.00	-77.34	0.55	899.72	857.80	21.46	
11900.00	11231.43	10925.00	10922.38	29.33	24.43	0.00	-74.40	0.53	994.16	951.96	23.56	
12000.00	11230.75	10913.31	10911.23	30.32	24.40	0.00	-70.85	0.50	1089.28	1046.78	25.63	
12100.00	11230.07	10900.00	10898.46	31.38	24.37	0.00	-67.14	0.48	1185.01	1142.17	27.67	
12200.00	11229.39	10900.00	10898.46	32.51	24.37	0.00	-67.14	0.48	1281.16	1238.04	29.71	
12300.00	11228.71	10890.22	10889.00	33.71	24.34	0.00	-64.63	0.46	1377.73	1334.26	31.69	
12400.00	11228.03	10884.04	10883.01	34.95	24.33	0.00	-63.15	0.45	1474.66	1430.83	33.64	
12500.00	11227.35	10875.00	10874.19	36.25	24.31	0.00	-61.13	0.43	1571.89	1527.67	35.55	
12600.00	11226.67	10875.00	10874.19	37.59	24.31	0.00	-61.13	0.43	1669.36	1624.76	37.43	
12700.00	11225.99	10875.00	10874.19	38.97	24.31	0.00	-61.13	0.43	1767.10	1722.11	39.28	
12800.00	11225.30	10864.48	10863.89	40.39	24.28	0.00	-58.98	0.42	1864.94	1819.51	41.05	
12900.00	11224.62	10860.57	10860.05	41.83	24.27	0.00	-58.24	0.41	1963.00	1917.14	42.80	
13000.00	11223.94	10850.00	10849.65	43.31	24.25	0.00	-56.40	0.40	2061.28	2014.94	44.48	
13100.00	11223.26	10850.00	10849.65	44.81	24.25	0.00	-56.40	0.40	2159.58	2112.79	46.15	
13200.00	11222.58	10850.00	10849.65	46.34	24.25	0.00	-56.40	0.40	2258.04	2210.76	47.77	
13300.00	11221.90	10850.00	10849.65	47.88	24.25	0.00	-56.40	0.40	2356.62	2308.86	49.35	
13400.00	11221.22	10850.00	10849.65	49.45	24.25	0.00	-56.40	0.40	2455.31	2407.06	50.88	
13500.00	11220.54	10850.00	10849.65	51.03	24.25	0.00	-56.40	0.40	2554.11	2505.35	52.38	
13600.00	11219.86	10840.07	10839.84	52.63	24.23	0.00	-54.88	0.39	2652.88	2603.58	53.81	
13700.00	11219.18	10837.86	10837.65	54.25	24.22	0.00	-54.57	0.38	2751.79	2701.95	55.22	
13800.00	11218.50	10835.78	10835.59	55.88	24.22	0.00	-54.28	0.38	2850.76	2800.38	56.59	
13900.00	11217.82	10825.00	10824.89	57.51	24.19	0.00	-52.96	0.37	2949.89	2898.95	57.90	
14000.00	11217.14	10825.00	10824.89	59.16	24.19	0.00	-52.96	0.37	3048.94	2997.44	59.20	
14100.00	11216.46	10825.00	10824.89	60.82	24.19	0.00	-52.96	0.37	3148.06	3095.99	60.46	
14200.00	11215.78	10825.00	10824.89	62.49	24.19	0.00	-52.96	0.37	3247.22	3194.58	61.68	
14300.00	11215.09	10825.00	10824.89	64.17	24.19	0.00	-52.96	0.37	3346.44	3293.21	62.87	
14400.00	11214.41	10825.00	10824.89	65.86	24.19	0.00	-52.96	0.37	3445.70	3391.89	64.03	
14500.00	11213.73	10825.00	10824.89	67.55	24.19	0.00	-52.96	0.37	3545.01	3490.59	65.15	
14600.00	11213.05	10825.00	10824.89	69.25	24.19	0.00	-52.96	0.37	3644.35	3589.34	66.25	
14700.00	11212.37	10825.00	10824.89	70.96	24.19	0.00	-52.96	0.37	3743.72	3688.11	67.31	
14800.00	11211.69	10825.00	10824.89	72.67	24.19	0.00	-52.96	0.37	3843.13	3786.90	68.35	
14900.00	11211.01	10825.00	10824.89	74.39	24.19	0.00	-52.96	0.37	3942.57	3885.73	69.36	
15000.00	11210.33	10825.00	10824.89	76.12	24.19	0.00	-52.96	0.37	4042.04	3984.57	70.34	
15100.00	11209.65	10825.00	10824.89	77.84	24.19	0.00	-52.96	0.37	4141.53	4083.44	71.29	
15200.00	11208.97	10825.00	10824.89	79.58	24.19	0.00	-52.96	0.37	4241.05	4182.32	72.22	
15300.00	11208.29	10825.00	10824.89	81.31	24.19	0.00	-52.96	0.37	4340.58	4281.23	73.13	
15400.00	11207.61	10813.91	10813.86	83.05	24.17	0.00	-51.85	0.36	4440.00	4380.01	74.01	
15500.00	11206.93	10813.00	10812.95	84.80	24.16	0.00	-51.77	0.36	4539.55	4478.92	74.87	
15600.00	11206.25	10812.13	10812.08	86.55	24.16	0.00	-51.70	0.36	4639.13	4577.85	75.70	
15700.00	11205.57	10811.30	10811.25	88.30	24.16	0.00	-51.63	0.36	4738.71	4676.79	76.52	
15783.04	11205.00	10810.62	10810.58	89.75	24.16	0.00	-51.57	0.36	4821.42	4758.95	77.18	

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

Report Date: November 04, 2013

Job Number: _____

Customer: Devon Energy

Well Name: Thistle Unit 61H

API Number: _____

Rig Name: _____

Location: Lea County, NM

Block: _____

Engineer: RWJ

US State Plane 1983

Geodetic Latitude / Longitude

System: New Mexico Eastern Zone

System: Latitude / Longitude

Projection: Transverse Mercator/Gauss Kruger

Projection: Geodetic Latitude and Longitude

Datum: North American Datum 1983

Datum: North American Datum 1983

Ellipsoid: GRS 1980

Ellipsoid: GRS 1980

North/South 467716.010 USFT

Latitude 32.2834977 DEG

East/West 778277.570 USFT

Longitude -103.5666225 DEG

Grid Convergence: .41°

Total Correction: +6.99°

Geodetic Location WGS84

Elevation = 0.0 Meters

Latitude = 32.28350° N 32° 17 min .592 sec

Longitude = 103.56662° W 103° 33 min 59.841 sec

Magnetic Declination = 7.40° [True North Offset]

Local Gravity = .9988 g CheckSum = 6700

Local Field Strength = 48418 nT Magnetic Vector X = 23885 nT

Magnetic Dip = 60.17° Magnetic Vector Y = 3100 nT

Magnetic Model = bggm2013 Magnetic Vector Z = 42002 nT

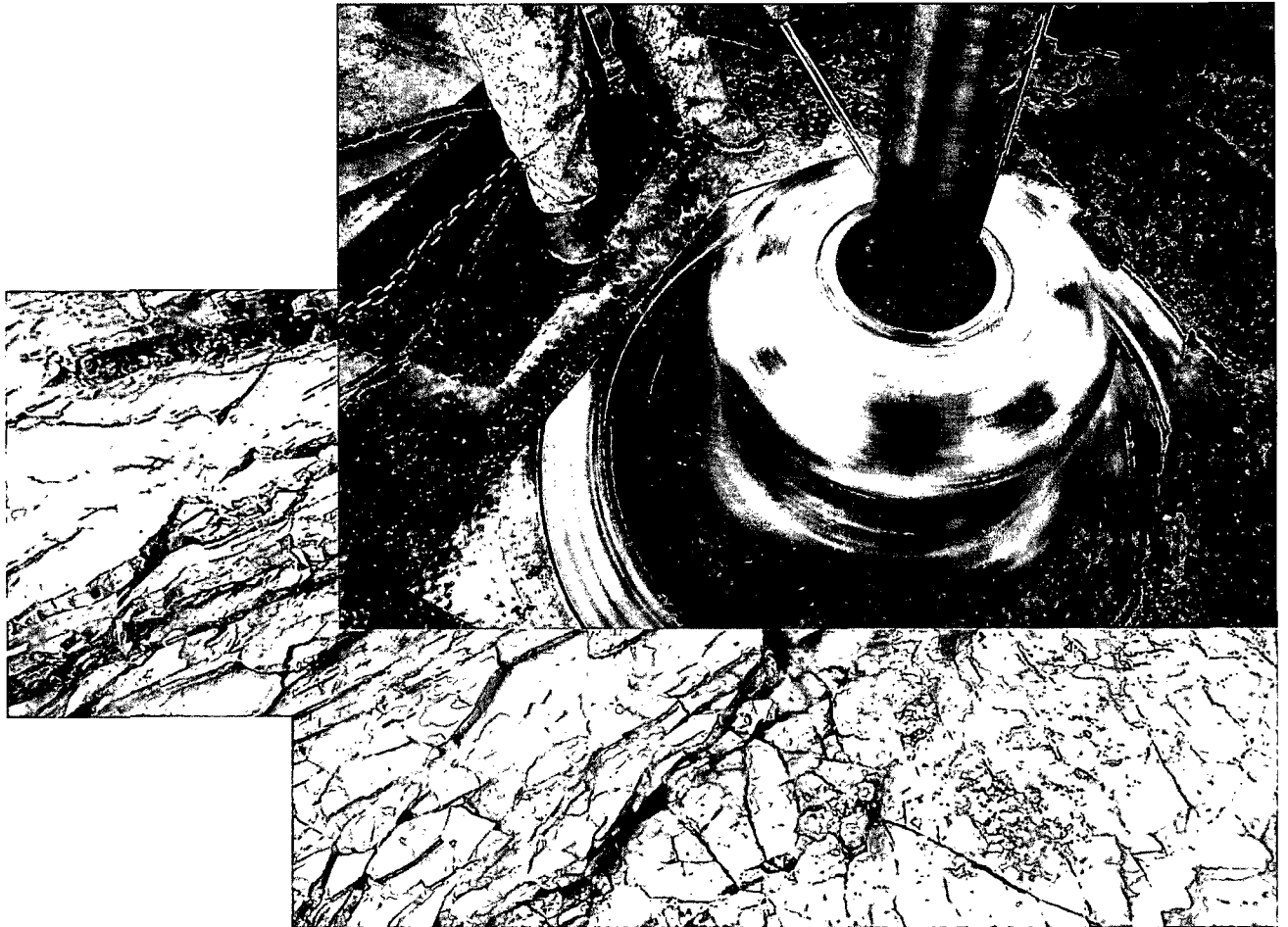
Spud Date = Nov 30, 2013 Magnetic Vector H = 24085 nT

Signed: _____

Date: _____



Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

HOBBS OCD

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SENM - Closed Loop Systems
November 2013

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.

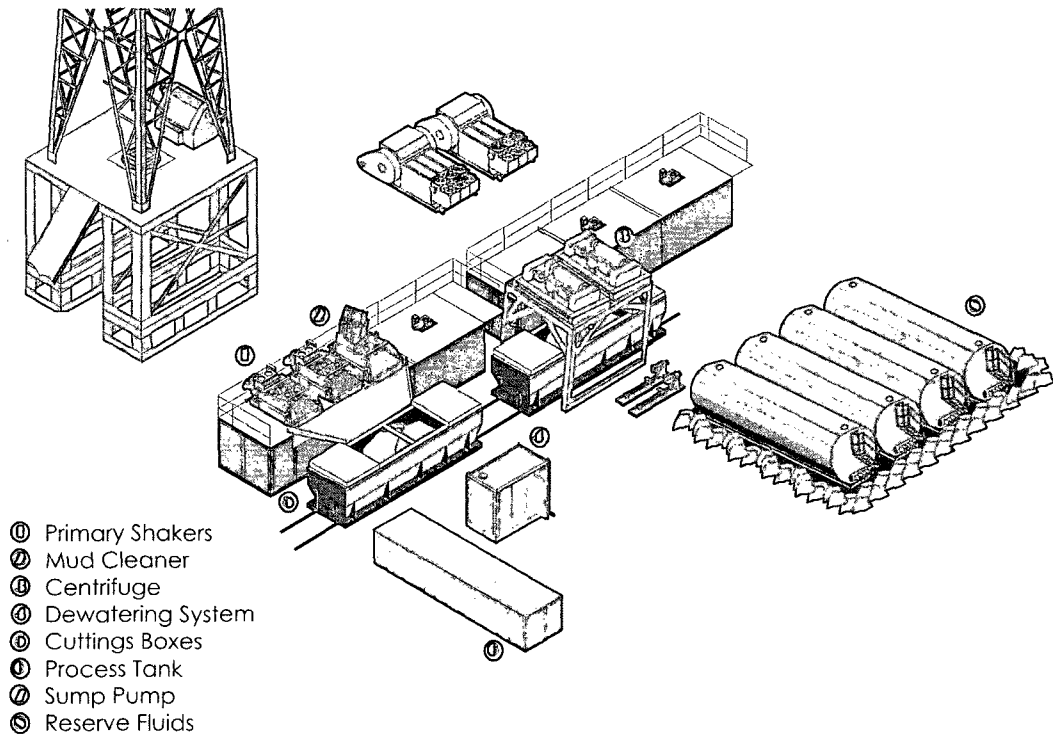
II. Operations and Maintenance Plan

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.



Closed Loop Schematic



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.