

Form 3160-3
(March 2012)

MAY 13 2013

OCD Hobbs

OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

RECEIVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		7. If Unit or CA Agreement, Name and No.	
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		8. Lease Name and Well No. <39237> Cotton Draw 32 State Fed Com 2H	
2. Name of Operator Devon Energy Production Company, L.P.		9. API Well No. 30-025-41170	
3a. Address 333 W. Sheridan Ave. Oklahoma City, OK 73102	3b. Phone No. (include area code) 405-228-4248	10. Field and Pool, or Exploratory Paduca South, Delaware <49490> NORTH	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface 2310' FSL & 2030' FWL, Sec 32, T24S-R32E, Unit K At proposed prod. zone 330' FSL & 1980' FEL, Sec 5, T25S-R32E, Unit O		11. Sec., T. R. M. or Blk. and Survey or Area Sec 32, T24S-R32E	
14. Distance in miles and direction from nearest town or post office* Approximately 22 miles east of Malaga, NM		12. County or Parish Lea County	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'	16. No. of acres in lease VB11720 - 320 acres 0061863-A - 1882.60	17. Spacing Unit dedicated to this well W/2 of SE/4 of Sec 32, 24S-32E & W/2 E/2 of Sec 5, 25S-32E = 240 acres	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map	19. Proposed Depth MD: 15,710' TVD: 8450'	20. BLM/BIA Bond No. on file CO-1104 & NMB-000801	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3472.3' GL	22. Approximate date work will start* 08/01/2013	23. Estimated duration 45 days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM. |

25. Signature <i>Patti Riechers</i>	Name (Printed/Typed) Patti Riechers	Date 04/04/2013
Title Regulatory Specialist		
Approved by (Signature) <i>/s/George MacDonell</i>	Name (Printed/Typed)	Date MAY - 8 2013
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

K2
04/14/13Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

MAY 20 2013

DRILLING PROGRAM

Devon Energy Production Company, LP
Cotton Draw 32 State Fed Com 2H

Surface Location: 2310' FSL & 2030' FWL, Unit K, Sec 32 T24S R32E, Lea, NM
Bottom Hole Location: 330' FSL & 1980' FEL, Unit O, Sec 5 T25S R32E, Lea, NM

1. Geologic Name of Surface Formation

a. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

a. Fresh Water	390'	
b. Rustler	726'	
c. Salado	1,115'	
d. Top of Salt	1,144'	
e. Base of Salt	4,350'	
f. Delaware	4,587'	Oil
g. Bell Canyon	4,634'	Oil
h. Cherry Canyon	5,522'	Oil
i. Brushy Canyon	6,848'	Oil
j. Bone Spring Top	8,530'	(not penetrated)
Total Depth	15,710' MD	8,450' TVD

3. Casing Program: (All casing is new and API approved.)

See
COP

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0 - 875' 810	13-3/8"	0 - 875'	48#	STC	H-40
12-1/4"	875' - 4,500'	9-5/8"	0 - 4,500'	40#	BTC	HCK-55
8-3/4"	4,500' - 5,600'	5-1/2"	0 - 5,600'	17#	LTC	HCP-110
8-3/4"	5,600' - 15,710'	5-1/2"	5,600' - 15,710'	17#	BTC	HCP-110

MAXIMUM LATERAL TVD **8,450'**

Design Parameter Factors:

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8" 48# H-40 STC	1.69	3.81	7.67
9-5/8" 40# HCK-55 BTC	1.81	1.69	21.94
5-1/2" 17# HCP-110 LTC	2.13	3.03	4.28
5-1/2" 17# HCP-110 BTC	1.89	2.69	1.76

4. Cement Program: (cement volumes Surface 100%/ Intermediate 50% Production based on at least 25% excess):

13 3/8" Surface Lead: 300 sx Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water, 13.5 ppg, Yield: 1.75 cf/sk. **TOC @ surface**

Tail: 515 sx Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 63.1% Fresh Water, 14.8 ppg, Yield: 1.35 cf/sk.

9-5/8" Intermed. Lead: 900 sx (65:35) Class C Cement:Poz (Fly Ash): + 5% bwow Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 6% bwoc Bentonite + 70.9% Fresh Water, 12.9 ppg, Yield: 1.85 cf/sk, **TOC @ surface**

Tail: 360 sx Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Water, 14.8 ppg, Yield: 1.33 cf/sk

5-1/2" Production 1st Lead: 220 sx (50:50) Class H Cement:Poz (Fly Ash) + 10% bwoc Bentonite + 8 lb/sk Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 0.3% bwoc HR-601 + 0.3% bwoc Econolite + 77.2% Fresh Water, 11.8 ppg, **Yield: 2.52 cf/sk**

2nd Lead: 260 sx (65:35) Class H Cement:Poz (Fly Ash) + 6% bwoc Bentonite + 0.125 lbs/sack Poly-E-Flake + 0.1% bwoc HR-601 + 74.1% Fresh Water, 12.5 ppg, **Yield: 1.95 cf/sk**

Tail: 2165 sx (50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water, 14.5 ppg, **Yield: 1.22 cf/sk**
TOC @ 4000'

The above cement volumes could be revised pending the caliper measurement from the open hole logs.

5. Pressure Control Equipment

The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. A 3M system will be installed and tested prior to drilling out the surface shoe. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2.

The BOP system used to drill the production hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. A 3M system will be installed and tested prior to drilling out the intermediate shoe. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line); if an H&P rig drills this well. Otherwise no flex line is needed. The line will be kept as straight as possible with minimal turns.

6. Proposed Mud Circulation System

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 – 875' 810	8.4-9.0	30 – 34	N/C	FW
875' – 4,500'	9.8 – 10.0	28 – 32	N/C	Brine
4,500' – 15,451'	8.6 – 9.0	28 – 32	N/C-12	FW

The necessary mud products for weight addition and fluid loss control will be on location at all times. Visual mud monitoring equipment will be in place to detect volume changes indicating loss or gain of circulating fluid volume. If abnormal pressures are encountered, electronic/mechanical mud monitoring equipment will be installed.

7. Auxiliary Well Control and Monitoring Equipment:

- A Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

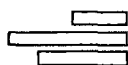
8. **Logging, Coring, and Testing Program:** *See COM*
- a. Drill stem tests will be based on geological sample shows.
 - b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
 - c. The open hole electrical logging program will be:
 - i. Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 - ii. Total Depth to Surface Compensated Neutron with Gamma Ray
 - iii. No coring program is planned
 - iv. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.
9. **Potential Hazards:**
- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6 No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3800 psi and Estimated BHT 150°. No H₂S is anticipated to be encountered.
10. **Anticipated Starting Date and Duration of Operations:**
- a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 30 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.



Weatherford®

Drilling Services

Proposal



devon

COTTON DRAW 32 STATE FED COM 2H

LEA COUNTY, NM

WELL FILE: **PLAN 1**

MARCH 12, 2013

Weatherford International, Ltd.

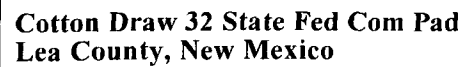
P.O. Box 61028

Midland, TX 79711 USA

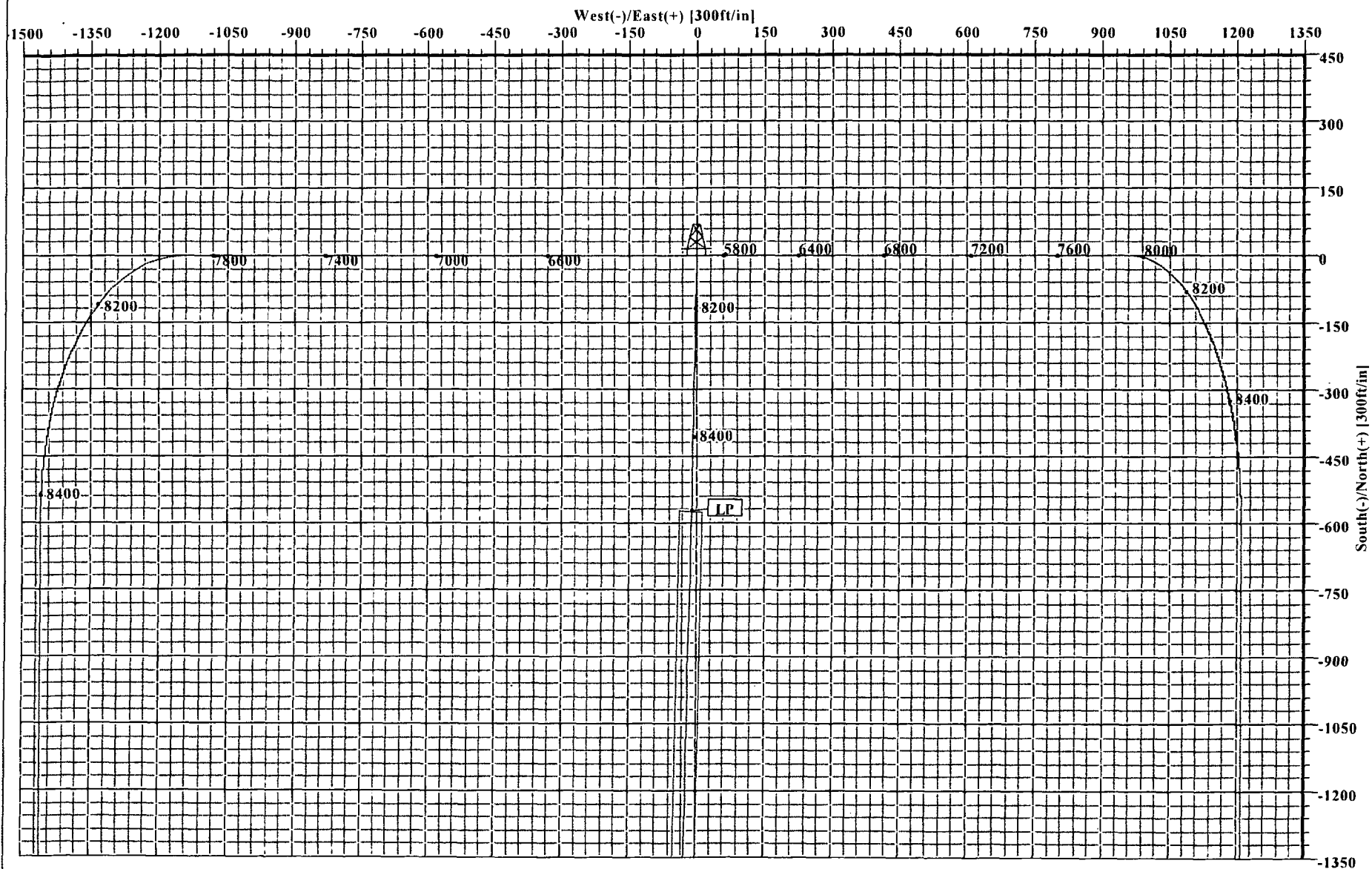
+1.432.561.8892 Main

+1.432.561.8895 Fax

www.weatherford.com



CD 32 State Fed Com 2H (1)
CD 32 State Fed Com 4H (1)
1
Plan #1



Plan: Plan #1 (CD 32 State Fed Com 3H/1)

Created By: Russell W. Joyner

Date: 3/12/2013



Cotton Draw 32 State Fed Com 2H
Lea County, New Mexico



KB ELEV: 3497
GL ELEV: 3472

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00	
3	6453.89	25.62	90.00	6425.72	-0.01	187.73	3.00	0.00	29.60	
4	8125.88	25.62	90.00	7933.37	-0.04	910.61	0.00	0.00	143.59	
5	9025.87	90.00	180.00	8450.00	-573.00	1158.32	10.00	90.00	748.43	
6	15710.02	90.00	180.00	8450.00	-7257.15	1158.32	0.00	0.00	7349.01	PBHL

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
CD 32 State Fed Com 2H	0.00	0.00	427250.29	737716.73	32°10'22.780N	103°41'55.116W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	8450.00	-7257.15	1158.32	419993.14	738875.05	Rectangle (6684x50)

SITE DETAILS

Cotton Draw 32 State Fed Com 2H

Site Centre Northing: 427250.29
Easting: 737716.73

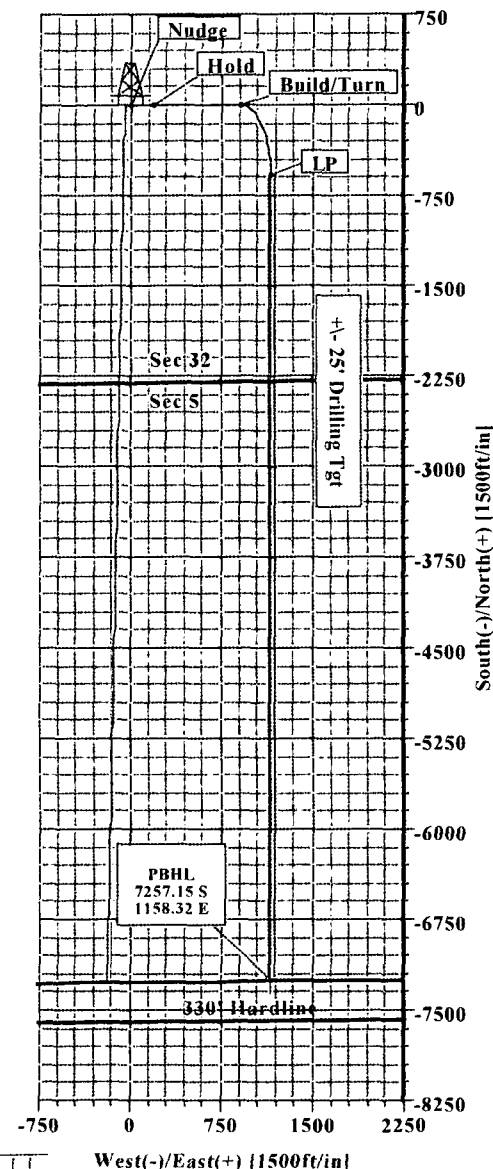
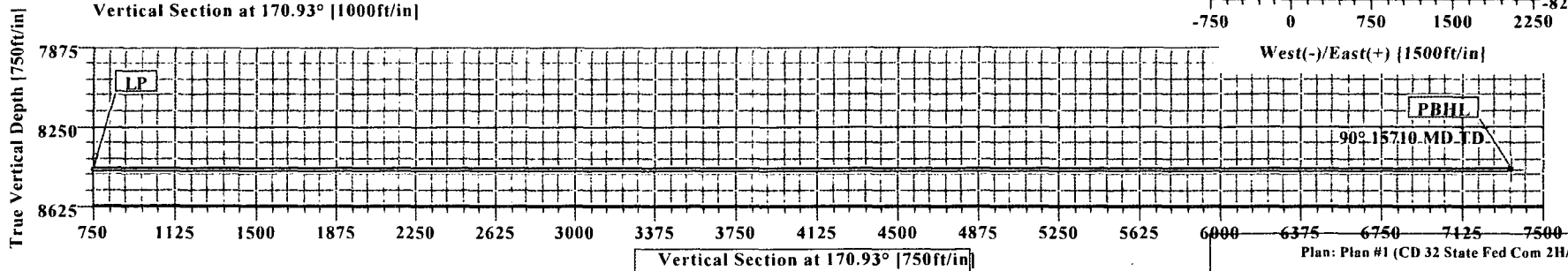
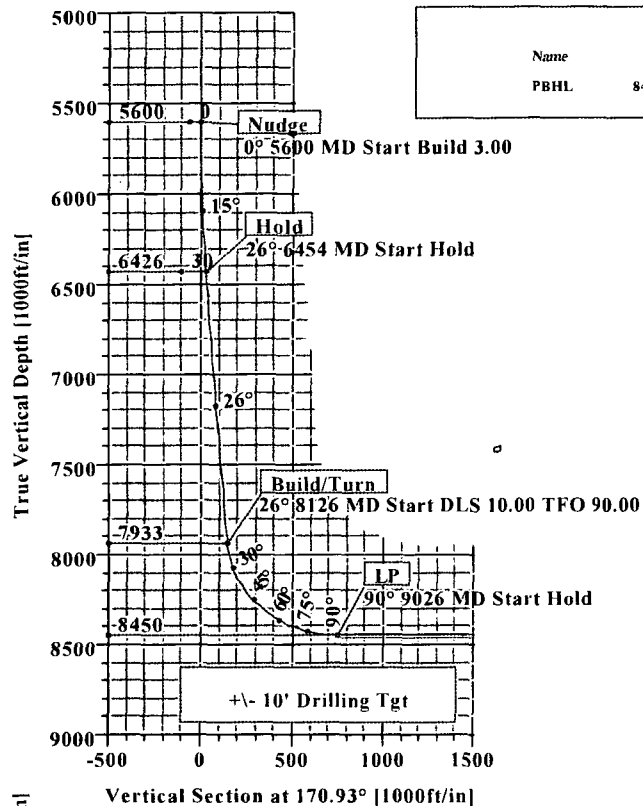
Ground Level: 3472.00
Positional Uncertainty: 0.00
Convergence: 0.34

LEGEND

- CD 32 State Fed Com 3H (1)
- CD 32 State Fed Com 4H (1)
- Plan #1



Weatherford



Created By: Russell W. Joyner

Date: 3/12/2013



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Wft Plan Report X Y's.

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Cotton Draw 32 State Fed Com 2H
Well: CD 32 State Fed Com 2H
Wellpath: 1

Date: 3/12/2013 Time: 08:31:50 Page: 1
Co-ordinate(NE) Reference: Well: CD 32 State Fed Com 2H, Grid North
Vertical (TVD) Reference: SITE 3497.0
Section (VS) Reference: Well (0.00N,0.00E,170.93Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Plan: Plan #1

Date Composed: 3/12/2013

Principal: Yes

Version: 1

Tied-to: From Surface

Site: Cotton Draw 32 State Fed Com 2H

Site Position: Northing: 427250.29 ft Latitude: 32 10 22.780 N
From: Map Easting: 737716.73 ft Longitude: 103 41 55.116 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 3472.00 ft Grid Convergence: 0.34 deg

Well: CD 32 State Fed Com 2H

Slot Name:

Well Position: +N/-S 0.00 ft Northing: 427250.29 ft Latitude: 32 10 22.780 N
+E/-W 0.00 ft Easting: 737716.73 ft Longitude: 103 41 55.116 W
Position Uncertainty: 0.00 ft

Wellpath: 1

Drilled From: Surface

Current Datum: SITE Height 3497.00 ft
Magnetic Data: 7/20/2013 Tie-on Depth: 0.00 ft
Field Strength: 48387 nT Above System Datum: Mean Sea Level
Vertical Section: Depth From (TVD) +N/-S +E/-W Declination: 7.38 deg
ft ft ft Mag Dip Angle: 60.07 deg
deg
0.00 0.00 0.00 170.93

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	0.00	0.00	
6453.89	25.62	90.00	6425.72	-0.01	187.73	3.00	3.00	0.00	0.00	
8125.88	25.62	90.00	7933.37	-0.04	910.61	0.00	0.00	0.00	0.00	
9025.87	90.00	180.00	8450.00	-573.00	1158.32	10.00	7.15	10.00	90.00	
15710.02	90.00	180.00	8450.00	-7257.15	1158.32	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
5600.00	0.00	0.00	5600.00	0.00	0.00	0.00	0.00	427250.29	737716.73	Nudge
5700.00	3.00	90.00	5699.95	0.00	2.62	0.41	3.00	427250.29	737719.35	
5800.00	6.00	90.00	5799.63	0.00	10.46	1.65	3.00	427250.29	737727.19	
5900.00	9.00	90.00	5898.77	0.00	23.51	3.71	3.00	427250.29	737740.24	
6000.00	12.00	90.00	5997.08	0.00	41.74	6.58	3.00	427250.29	737758.47	
6100.00	15.00	90.00	6094.31	0.00	65.08	10.26	3.00	427250.29	737781.81	
6200.00	18.00	90.00	6190.18	0.00	93.48	14.74	3.00	427250.29	737810.21	
6300.00	21.00	90.00	6284.43	-0.01	126.85	20.00	3.00	427250.28	737843.58	
6400.00	24.00	90.00	6376.81	-0.01	165.12	26.04	3.00	427250.28	737881.85	
6453.89	25.62	90.00	6425.72	-0.01	187.73	29.60	3.00	427250.28	737904.46	Hold
6500.00	25.62	90.00	6467.30	-0.01	207.66	32.75	0.00	427250.28	737924.39	
6600.00	25.62	90.00	6557.47	-0.01	250.90	39.56	0.00	427250.28	737967.63	
6700.00	25.62	90.00	6647.64	-0.01	294.13	46.38	0.00	427250.28	738010.86	
6800.00	25.62	90.00	6737.81	-0.02	337.37	53.20	0.00	427250.27	738054.10	
6900.00	25.62	90.00	6827.99	-0.02	380.60	60.02	0.00	427250.27	738097.33	
7000.00	25.62	90.00	6918.16	-0.02	423.84	66.83	0.00	427250.27	738140.57	
7100.00	25.62	90.00	7008.33	-0.02	467.07	73.65	0.00	427250.27	738183.80	
7200.00	25.62	90.00	7098.50	-0.02	510.31	80.47	0.00	427250.27	738227.04	
7300.00	25.62	90.00	7188.67	-0.03	553.54	87.29	0.00	427250.26	738270.27	
7400.00	25.62	90.00	7278.84	-0.03	596.78	94.10	0.00	427250.26	738313.51	
7500.00	25.62	90.00	7369.01	-0.03	640.01	100.92	0.00	427250.26	738356.74	



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Wft Plan Report X Y's.

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Cotton Draw 32 State Fed Com 2H
Well: CD 32 State Fed Com 2H
Wellpath: 1

Date: 3/12/2013 Time: 08:31:50 Page: 2
Co-ordinate(NE) Reference: Well: CD 32 State Fed Com 2H, Grid North
Vertical (TVD) Reference: SITE 3497.0
Section (VS) Reference: Well (0.00N,0.00E,170.93Azi)
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	Comment
7600.00	25.62	90.00	7459.18	-0.03	683.24	107.74	0.00	427250.26	738399.97	
7700.00	25.62	90.00	7549.35	-0.03	726.48	114.56	0.00	427250.26	738443.21	
7800.00	25.62	90.00	7639.52	-0.04	769.71	121.37	0.00	427250.25	738486.44	
7900.00	25.62	90.00	7729.69	-0.04	812.95	128.19	0.00	427250.25	738529.68	
8000.00	25.62	90.00	7819.86	-0.04	856.18	135.01	0.00	427250.25	738572.91	
8100.00	25.62	90.00	7910.03	-0.04	899.42	141.83	0.00	427250.25	738616.15	
8125.88	25.62	90.00	7933.37	-0.04	910.61	143.59	0.00	427250.25	738627.34	Build/Turn
8200.00	26.60	106.75	8000.02	-4.83	942.56	153.36	10.00	427245.46	738659.29	
8300.00	30.64	125.96	8087.97	-26.30	984.73	181.21	10.00	427223.99	738701.46	
8400.00	36.83	140.18	8171.22	-64.38	1024.65	225.10	10.00	427185.91	738741.38	
8500.00	44.26	150.52	8247.25	-117.91	1061.11	283.71	10.00	427132.38	738777.84	
8600.00	52.40	158.33	8313.74	-185.28	1092.99	355.26	10.00	427065.01	738809.72	
8700.00	60.95	164.55	8368.67	-264.42	1119.32	437.56	10.00	426985.87	738836.05	
8800.00	69.74	169.80	8410.37	-352.94	1139.32	528.13	10.00	426897.35	738856.05	
8900.00	78.67	174.49	8437.58	-448.14	1152.37	624.20	10.00	426802.15	738869.10	
9000.00	87.67	178.88	8449.47	-547.14	1158.07	722.86	10.00	426703.15	738874.80	
9025.87	90.00	180.00	8450.00	-573.00	1158.32	748.43	10.00	426677.29	738875.05	LP
9100.00	90.00	180.00	8450.00	-647.13	1158.32	821.64	0.00	426603.16	738875.05	
9200.00	90.00	180.00	8450.00	-747.13	1158.32	920.39	0.00	426503.16	738875.05	
9300.00	90.00	180.00	8450.00	-847.13	1158.32	1019.14	0.00	426403.16	738875.05	
9400.00	90.00	180.00	8450.00	-947.13	1158.32	1117.89	0.00	426303.16	738875.05	
9500.00	90.00	180.00	8450.00	-1047.13	1158.32	1216.64	0.00	426203.16	738875.05	
9600.00	90.00	180.00	8450.00	-1147.13	1158.32	1315.39	0.00	426103.16	738875.05	
9700.00	90.00	180.00	8450.00	-1247.13	1158.32	1414.14	0.00	426003.16	738875.05	
9800.00	90.00	180.00	8450.00	-1347.13	1158.32	1512.89	0.00	425903.16	738875.05	
9900.00	90.00	180.00	8450.00	-1447.13	1158.32	1611.64	0.00	425803.16	738875.05	
10000.00	90.00	180.00	8450.00	-1547.13	1158.32	1710.39	0.00	425703.16	738875.05	
10100.00	90.00	180.00	8450.00	-1647.13	1158.32	1809.13	0.00	425603.16	738875.05	
10200.00	90.00	180.00	8450.00	-1747.13	1158.32	1907.88	0.00	425503.16	738875.05	
10300.00	90.00	180.00	8450.00	-1847.13	1158.32	2006.63	0.00	425403.16	738875.05	
10400.00	90.00	180.00	8450.00	-1947.13	1158.32	2105.38	0.00	425303.16	738875.05	
10500.00	90.00	180.00	8450.00	-2047.13	1158.32	2204.13	0.00	425203.16	738875.05	
10600.00	90.00	180.00	8450.00	-2147.13	1158.32	2302.88	0.00	425103.16	738875.05	
10700.00	90.00	180.00	8450.00	-2247.13	1158.32	2401.63	0.00	425003.16	738875.05	
10800.00	90.00	180.00	8450.00	-2347.13	1158.32	2500.38	0.00	424903.16	738875.05	
10900.00	90.00	180.00	8450.00	-2447.13	1158.32	2599.13	0.00	424803.16	738875.05	
11000.00	90.00	180.00	8450.00	-2547.13	1158.32	2697.88	0.00	424703.16	738875.05	
11100.00	90.00	180.00	8450.00	-2647.13	1158.32	2796.63	0.00	424603.16	738875.05	
11200.00	90.00	180.00	8450.00	-2747.13	1158.32	2895.38	0.00	424503.16	738875.05	
11300.00	90.00	180.00	8450.00	-2847.13	1158.32	2994.13	0.00	424403.16	738875.05	
11400.00	90.00	180.00	8450.00	-2947.13	1158.32	3092.88	0.00	424303.16	738875.05	
11500.00	90.00	180.00	8450.00	-3047.13	1158.32	3191.63	0.00	424203.16	738875.05	
11600.00	90.00	180.00	8450.00	-3147.13	1158.32	3290.38	0.00	424103.16	738875.05	
11700.00	90.00	180.00	8450.00	-3247.13	1158.32	3389.13	0.00	424003.16	738875.05	
11800.00	90.00	180.00	8450.00	-3347.13	1158.32	3487.88	0.00	423903.16	738875.05	
11900.00	90.00	180.00	8450.00	-3447.13	1158.32	3586.63	0.00	423803.16	738875.05	
12000.00	90.00	180.00	8450.00	-3547.13	1158.32	3685.38	0.00	423703.16	738875.05	
12100.00	90.00	180.00	8450.00	-3647.13	1158.32	3784.13	0.00	423603.16	738875.05	
12200.00	90.00	180.00	8450.00	-3747.13	1158.32	3882.88	0.00	423503.16	738875.05	
12300.00	90.00	180.00	8450.00	-3847.13	1158.32	3981.63	0.00	423403.16	738875.05	
12400.00	90.00	180.00	8450.00	-3947.13	1158.32	4080.38	0.00	423303.16	738875.05	
12500.00	90.00	180.00	8450.00	-4047.13	1158.32	4179.13	0.00	423203.16	738875.05	
12600.00	90.00	180.00	8450.00	-4147.13	1158.32	4277.88	0.00	423103.16	738875.05	



Weatherford

Wft Plan Report X Y's.

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Site: Cotton Draw 32 State Fed Com 2H
Well: CD 32 State Fed Com 2H
Wellpath: 1

Date: 3/12/2013 Time: 08:31:50 Page: 3
Co-ordinate(NE) Reference: Well: CD 32 State Fed Com 2H, Grid North
Vertical (TVD) Reference: SITE 3497.0
Section (VS) Reference: Well (0.00N,0.00E,170.93Azi)
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	Comment
12700.00	90.00	180.00	8450.00	-4247.13	1158.32	4376.63	0.00	423003.16	738875.05	
12800.00	90.00	180.00	8450.00	-4347.13	1158.32	4475.38	0.00	422903.16	738875.05	
12900.00	90.00	180.00	8450.00	-4447.13	1158.32	4574.13	0.00	422803.16	738875.05	
13000.00	90.00	180.00	8450.00	-4547.13	1158.32	4672.87	0.00	422703.16	738875.05	
13100.00	90.00	180.00	8450.00	-4647.13	1158.32	4771.62	0.00	422603.16	738875.05	
13200.00	90.00	180.00	8450.00	-4747.13	1158.32	4870.37	0.00	422503.16	738875.05	
13300.00	90.00	180.00	8450.00	-4847.13	1158.32	4969.12	0.00	422403.16	738875.05	
13400.00	90.00	180.00	8450.00	-4947.13	1158.32	5067.87	0.00	422303.16	738875.05	
13500.00	90.00	180.00	8450.00	-5047.13	1158.32	5166.62	0.00	422203.16	738875.05	
13600.00	90.00	180.00	8450.00	-5147.13	1158.32	5265.37	0.00	422103.16	738875.05	
13700.00	90.00	180.00	8450.00	-5247.13	1158.32	5364.12	0.00	422003.16	738875.05	
13800.00	90.00	180.00	8450.00	-5347.13	1158.32	5462.87	0.00	421903.16	738875.05	
13900.00	90.00	180.00	8450.00	-5447.13	1158.32	5561.62	0.00	421803.16	738875.05	
14000.00	90.00	180.00	8450.00	-5547.13	1158.32	5660.37	0.00	421703.16	738875.05	
14100.00	90.00	180.00	8450.00	-5647.13	1158.32	5759.12	0.00	421603.16	738875.05	
14200.00	90.00	180.00	8450.00	-5747.13	1158.32	5857.87	0.00	421503.16	738875.05	
14300.00	90.00	180.00	8450.00	-5847.13	1158.32	5956.62	0.00	421403.16	738875.05	
14400.00	90.00	180.00	8450.00	-5947.13	1158.32	6055.37	0.00	421303.16	738875.05	
14500.00	90.00	180.00	8450.00	-6047.13	1158.32	6154.12	0.00	421203.16	738875.05	
14600.00	90.00	180.00	8450.00	-6147.13	1158.32	6252.87	0.00	421103.16	738875.05	
14700.00	90.00	180.00	8450.00	-6247.13	1158.32	6351.62	0.00	421003.16	738875.05	
14800.00	90.00	180.00	8450.00	-6347.13	1158.32	6450.37	0.00	420903.16	738875.05	
14900.00	90.00	180.00	8450.00	-6447.13	1158.32	6549.12	0.00	420803.16	738875.05	
15000.00	90.00	180.00	8450.00	-6547.13	1158.32	6647.87	0.00	420703.16	738875.05	
15100.00	90.00	180.00	8450.00	-6647.13	1158.32	6746.62	0.00	420603.16	738875.05	
15200.00	90.00	180.00	8450.00	-6747.13	1158.32	6845.37	0.00	420503.16	738875.05	
15300.00	90.00	180.00	8450.00	-6847.13	1158.32	6944.12	0.00	420403.16	738875.05	
15400.00	90.00	180.00	8450.00	-6947.13	1158.32	7042.87	0.00	420303.16	738875.05	
15500.00	90.00	180.00	8450.00	-7047.13	1158.32	7141.62	0.00	420203.16	738875.05	
15600.00	90.00	180.00	8450.00	-7147.13	1158.32	7240.37	0.00	420103.16	738875.05	
15700.00	90.00	180.00	8450.00	-7247.13	1158.32	7339.12	0.00	420003.16	738875.05	
15710.02	90.00	180.00	8450.00	-7257.15	1158.32	7349.01	0.00	419993.14	738875.05	PBHL

Targets

Name	Description Dip. Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->			<--- Longitude --->		
							Deg	Min	Sec	Deg	Min	Sec
PBHL		8450.00	-7257.15	1158.32	419993.14	738875.05	32	9	10.899 N	103	41	42.140 W

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD ft	TVD ft	
5600.00	5600.00	Nudge
6453.89	6425.72	Hold
8125.88	7933.37	Build/Turn
9025.87	8450.00	LP
15710.01	8450.00	PBHL



Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy Date: 3/12/2013 Time: 08:30:22 Page: 1
Field: Lea County, New Mexico (NAD 83)
Reference Site: Cotton Draw 32 State Fed Com 2H Co-ordinate(NE) Reference: Well: CD 32 State Fed Com 2H, Grid North
Reference Well: CD 32 State Fed Com 2H Vertical (TVD) Reference: SITE 3497.0
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 15710.02 ft
Maximum Radius: 0000.00 ft

Reference: Plan: Plan #1
Error Model: ISCWSA Ellipse
Scan Method: Closest Approach 3D
Error Surface: Ellipse

Plan: Plan #1

Date Composed: 3/12/2013
Version: 1
Tied-to: From Surface

Principal: Yes

Summary

Site	Offset Wellpath	Wellpath	Reference MD	Offset MD	Ctr-Ctr Distance	Edge Distance	Separation Factor	Warning
Cotton Draw 32 State	CD 32 State Fed Com 1 V0	Plan: Plan #1 V1	5600.00	5601.00	50.00	25.11	2.01	

Site: Cotton Draw 32 State Fed Com 3H

Well: CD 32 State Fed Com 3H

Wellpath: 1 V0 Plan: Plan #1 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		
0.00	0.00	1.00	1.00	0.00	0.00	269.42	-0.51	-50.00	50.00	50.00	59324.03	
100.00	100.00	101.00	101.00	0.08	0.09	269.42	-0.51	-50.00	50.00	49.83	292.72	
200.00	200.00	201.00	201.00	0.31	0.31	269.42	-0.51	-50.00	50.00	49.38	80.60	
300.00	300.00	301.00	301.00	0.53	0.54	269.42	-0.51	-50.00	50.00	48.93	46.74	
400.00	400.00	401.00	401.00	0.76	0.76	269.42	-0.51	-50.00	50.00	48.48	32.91	
500.00	500.00	501.00	501.00	0.98	0.99	269.42	-0.51	-50.00	50.00	48.03	25.40	
600.00	600.00	601.00	601.00	1.21	1.21	269.42	-0.51	-50.00	50.00	47.58	20.68	
700.00	700.00	701.00	701.00	1.43	1.44	269.42	-0.51	-50.00	50.00	47.13	17.43	
800.00	800.00	801.00	801.00	1.66	1.66	269.42	-0.51	-50.00	50.00	46.69	15.07	
900.00	900.00	901.00	901.00	1.88	1.88	269.42	-0.51	-50.00	50.00	46.24	13.27	
1000.00	1000.00	1001.00	1001.00	2.11	2.11	269.42	-0.51	-50.00	50.00	45.79	11.86	
1100.00	1100.00	1101.00	1101.00	2.33	2.33	269.42	-0.51	-50.00	50.00	45.34	10.72	
1200.00	1200.00	1201.00	1201.00	2.56	2.56	269.42	-0.51	-50.00	50.00	44.89	9.77	
1300.00	1300.00	1301.00	1301.00	2.78	2.78	269.42	-0.51	-50.00	50.00	44.44	8.98	
1400.00	1400.00	1401.00	1401.00	3.01	3.01	269.42	-0.51	-50.00	50.00	43.99	8.31	
1500.00	1500.00	1501.00	1501.00	3.23	3.23	269.42	-0.51	-50.00	50.00	43.54	7.74	
1600.00	1600.00	1601.00	1601.00	3.46	3.46	269.42	-0.51	-50.00	50.00	43.09	7.23	
1700.00	1700.00	1701.00	1701.00	3.68	3.68	269.42	-0.51	-50.00	50.00	42.64	6.79	
1800.00	1800.00	1801.00	1801.00	3.91	3.91	269.42	-0.51	-50.00	50.00	42.19	6.40	
1900.00	1900.00	1901.00	1901.00	4.13	4.13	269.42	-0.51	-50.00	50.00	41.74	6.05	
2000.00	2000.00	2001.00	2001.00	4.35	4.36	269.42	-0.51	-50.00	50.00	41.29	5.74	
2100.00	2100.00	2101.00	2101.00	4.58	4.58	269.42	-0.51	-50.00	50.00	40.84	5.46	
2200.00	2200.00	2201.00	2201.00	4.80	4.81	269.42	-0.51	-50.00	50.00	40.39	5.20	
2300.00	2300.00	2301.00	2301.00	5.03	5.03	269.42	-0.51	-50.00	50.00	39.94	4.97	
2400.00	2400.00	2401.00	2401.00	5.25	5.26	269.42	-0.51	-50.00	50.00	39.49	4.76	
2500.00	2500.00	2501.00	2501.00	5.48	5.48	269.42	-0.51	-50.00	50.00	39.04	4.56	
2600.00	2600.00	2601.00	2601.00	5.70	5.71	269.42	-0.51	-50.00	50.00	38.59	4.38	
2700.00	2700.00	2701.00	2701.00	5.93	5.93	269.42	-0.51	-50.00	50.00	38.14	4.22	
2800.00	2800.00	2801.00	2801.00	6.15	6.16	269.42	-0.51	-50.00	50.00	37.69	4.06	
2900.00	2900.00	2901.00	2901.00	6.38	6.38	269.42	-0.51	-50.00	50.00	37.24	3.92	
3000.00	3000.00	3001.00	3001.00	6.60	6.60	269.42	-0.51	-50.00	50.00	36.80	3.79	
3100.00	3100.00	3101.00	3101.00	6.83	6.83	269.42	-0.51	-50.00	50.00	36.35	3.66	
3200.00	3200.00	3201.00	3201.00	7.05	7.05	269.42	-0.51	-50.00	50.00	35.90	3.54	
3300.00	3300.00	3301.00	3301.00	7.28	7.28	269.42	-0.51	-50.00	50.00	35.45	3.44	
3400.00	3400.00	3401.00	3401.00	7.50	7.50	269.42	-0.51	-50.00	50.00	35.00	3.33	
3500.00	3500.00	3501.00	3501.00	7.73	7.73	269.42	-0.51	-50.00	50.00	34.55	3.24	



Weatherford Anticollision Report

**Weatherford**

Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Cotton Draw 32 State Fed Com 2H
Reference Well: CD 32 State Fed Com 2H
Reference Wellpath:

Date: 3/12/2013 Time: 08:30:22 Page: 2
Co-ordinate(NE) Reference: Well: CD 32 State Fed Com 2H, Grid North
Vertical (TVD) Reference: SITE 3497.0
Db: Sybase

Site: Cotton Draw 32 State Fed Com 3H
Well: CD 32 State Fed Com 3H
Wellpath: 1 V0 Plan: Plan #1 V1

Inter-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis			Offset Location		Ctr-Ctr Edge		Separation	Warning
MD ft	TVD ft	MD ft	TVD ft	Ref ft	Offset ft	TFO-HS deg	North ft	East ft	Distance ft	Distance ft	Factor	
3600.00	3600.00	3601.00	3601.00	7.95	7.95	269.42	-0.51	-50.00	50.00	34.10	3.14	
3700.00	3700.00	3701.00	3701.00	8.18	8.18	269.42	-0.51	-50.00	50.00	33.65	3.06	
3800.00	3800.00	3801.00	3801.00	8.40	8.40	269.42	-0.51	-50.00	50.00	33.20	2.98	
3900.00	3900.00	3901.00	3901.00	8.63	8.63	269.42	-0.51	-50.00	50.00	32.75	2.90	
4000.00	4000.00	4001.00	4001.00	8.85	8.85	269.42	-0.51	-50.00	50.00	32.30	2.82	
4100.00	4100.00	4101.00	4101.00	9.07	9.08	269.42	-0.51	-50.00	50.00	31.85	2.75	
4200.00	4200.00	4201.00	4201.00	9.30	9.30	269.42	-0.51	-50.00	50.00	31.40	2.69	
4300.00	4300.00	4301.00	4301.00	9.52	9.53	269.42	-0.51	-50.00	50.00	30.95	2.62	
4400.00	4400.00	4401.00	4401.00	9.75	9.75	269.42	-0.51	-50.00	50.00	30.50	2.56	
4500.00	4500.00	4501.00	4501.00	9.97	9.98	269.42	-0.51	-50.00	50.00	30.05	2.51	
4600.00	4600.00	4601.00	4601.00	10.20	10.20	269.42	-0.51	-50.00	50.00	29.60	2.45	
4700.00	4700.00	4701.00	4701.00	10.42	10.43	269.42	-0.51	-50.00	50.00	29.15	2.40	
4800.00	4800.00	4801.00	4801.00	10.65	10.65	269.42	-0.51	-50.00	50.00	28.70	2.35	
4900.00	4900.00	4901.00	4901.00	10.87	10.88	269.42	-0.51	-50.00	50.00	28.25	2.30	
5000.00	5000.00	5001.00	5001.00	11.10	11.10	269.42	-0.51	-50.00	50.00	27.80	2.25	
5100.00	5100.00	5101.00	5101.00	11.32	11.32	269.42	-0.51	-50.00	50.00	27.36	2.21	
5200.00	5200.00	5201.00	5201.00	11.55	11.55	269.42	-0.51	-50.00	50.00	26.91	2.16	
5300.00	5300.00	5301.00	5301.00	11.77	11.77	269.42	-0.51	-50.00	50.00	26.46	2.12	
5400.00	5400.00	5401.00	5401.00	12.00	12.00	269.42	-0.51	-50.00	50.00	26.01	2.08	
5500.00	5500.00	5501.00	5501.00	12.22	12.22	269.42	-0.51	-50.00	50.00	25.56	2.05	
5600.00	5600.00	5601.00	5601.00	12.45	12.45	269.42	-0.51	-50.00	50.00	25.11	2.01	
5700.00	5699.95	5700.95	5700.95	12.66	12.67	179.44	-0.51	-50.00	52.62	27.30	2.08	
5800.00	5799.63	5800.63	5800.63	12.86	12.90	179.51	-0.51	-50.00	60.46	34.77	2.35	
5900.00	5898.77	5899.77	5899.77	13.07	13.12	179.60	-0.51	-50.00	73.52	47.48	2.82	
6000.00	5997.08	5998.08	5998.08	13.28	13.34	179.67	-0.51	-50.00	91.74	65.38	3.48	
6100.00	6094.31	6095.31	6095.31	13.52	13.56	179.74	-0.51	-50.00	115.08	88.43	4.32	
6200.00	6190.18	6191.18	6191.18	13.78	13.78	179.78	-0.51	-50.00	143.48	116.57	5.33	
6300.00	6284.43	6285.43	6285.43	14.07	13.99	179.82	-0.51	-50.00	176.85	149.72	6.52	
6400.00	6376.81	6377.81	6377.81	14.42	14.19	179.85	-0.51	-50.00	215.12	187.78	7.87	
6453.89	6425.72	6426.72	6426.72	14.63	14.30	179.86	-0.51	-50.00	237.73	210.30	8.67	
6500.00	6467.30	6468.30	6468.30	14.82	14.40	179.87	-0.51	-50.00	257.66	230.04	9.33	
6600.00	6557.47	6558.47	6558.47	15.27	14.60	179.89	-0.51	-50.00	300.90	272.85	10.73	
6700.00	6647.64	6648.64	6648.64	15.75	14.80	179.91	-0.51	-50.00	344.13	315.66	12.09	
6800.00	6737.81	6738.81	6738.81	16.28	15.01	179.92	-0.51	-50.00	387.37	358.46	13.40	
6900.00	6827.99	6828.99	6828.99	16.83	15.21	179.92	-0.51	-50.00	430.60	401.25	14.67	
7000.00	6918.16	6919.16	6919.16	17.42	15.41	179.93	-0.51	-50.00	473.84	444.04	15.90	
7100.00	7008.33	7009.33	7009.33	18.03	15.61	179.94	-0.51	-50.00	517.07	486.82	17.09	
7200.00	7098.50	7099.50	7099.50	18.66	15.82	179.94	-0.51	-50.00	560.31	529.60	18.24	
7300.00	7188.67	7189.67	7189.67	19.32	16.02	179.95	-0.51	-50.00	603.54	572.37	19.36	
7400.00	7278.84	7279.84	7279.84	19.99	16.22	179.95	-0.51	-50.00	646.78	615.13	20.44	
7500.00	7369.01	7370.01	7370.01	20.69	16.42	179.95	-0.51	-50.00	690.01	657.89	21.48	
7600.00	7459.18	7460.18	7460.18	21.40	16.63	179.96	-0.51	-50.00	733.24	700.65	22.49	
7700.00	7549.35	7550.35	7550.35	22.12	16.83	179.96	-0.51	-50.00	776.48	743.40	23.47	
7800.00	7639.52	7640.52	7640.52	22.86	17.03	179.96	-0.51	-50.00	819.71	786.15	24.42	
7900.00	7729.69	7730.69	7730.69	23.60	17.24	179.96	-0.51	-50.00	862.95	828.89	25.34	
8000.00	7819.86	7820.86	7820.86	24.36	17.44	179.96	-0.51	-50.00	906.18	871.63	26.23	
8100.00	7910.03	7908.99	7908.90	25.13	17.64	179.78	-3.34	-50.05	949.48	914.44	27.09	
8125.88	7933.37	7931.25	7931.00	25.33	17.69	179.60	-5.98	-50.10	960.74	925.56	27.31	
8150.00	7955.11	7951.84	7951.34	25.49	17.74	173.25	-9.18	-50.17	971.25	935.94	27.51	
8200.00	8000.02	7994.32	7992.86	25.68	17.84	160.48	-18.08	-50.34	993.02	957.37	27.86	
8250.00	8044.42	8036.62	8033.44	25.73	17.94	148.79	-29.98	-50.56	1014.62	978.55	28.13	



Weatherford Anticollision Report



Company: Devon Energy Date: 3/12/2013 Time: 08:30:22 Page: 3
Field: Lea County, New Mexico (NAD 83)
Reference Site: Cotton Draw 32 State Fed Com 2H Co-ordinate(NE) Reference: Well: CD 32 State Fed Com 2H, Grid North
Reference Well: CD 32 State Fed Com 2H Vertical (TVD) Reference: SITE 3497.0
Reference Wellpath: Db: Sybase

Site: Cotton Draw 32 State Fed Com 3H
Well: CD 32 State Fed Com 3H
Wellpath: 1 V0 Plan: Plan #1 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		
8300.00	8087.97	8078.86	8072.98	25.63	18.05	138.48	-44.81	-50.84	1035.87	999.32	28.34	
8350.00	8130.35	8121.16	8111.37	25.39	18.16	129.62	-62.55	-51.18	1056.60	1019.51	28.49	
8400.00	8171.22	8163.61	8148.48	25.03	18.28	122.09	-83.14	-51.58	1076.65	1039.00	28.59	
8450.00	8210.29	8206.30	8184.16	24.57	18.41	115.72	-106.57	-52.02	1095.88	1057.65	28.66	
8500.00	8247.25	8249.32	8218.25	24.04	18.55	110.35	-132.79	-52.52	1114.13	1075.33	28.71	
8550.00	8281.82	8292.73	8250.55	23.48	18.72	105.81	-161.77	-53.07	1131.28	1091.93	28.75	
8600.00	8313.74	8336.59	8280.86	22.95	18.90	101.99	-193.44	-53.68	1147.19	1107.32	28.77	
8650.00	8342.76	8380.92	8308.95	22.50	19.10	98.78	-227.72	-54.33	1161.76	1121.40	28.78	
8700.00	8368.67	8425.77	8334.58	22.17	19.33	96.11	-264.49	-55.03	1174.88	1134.06	28.78	
8750.00	8391.26	8471.12	8357.50	21.98	19.59	93.92	-303.61	-55.78	1186.45	1145.20	28.76	
8800.00	8410.37	8516.99	8377.46	21.90	19.87	92.16	-344.89	-56.57	1196.39	1154.72	28.71	
8850.00	8425.85	8563.33	8394.20	21.91	20.19	90.78	-388.08	-57.39	1204.63	1162.55	28.62	
8900.00	8437.58	8610.12	8407.51	21.99	20.53	89.78	-432.92	-58.24	1211.11	1168.61	28.50	
8950.00	8445.48	8657.30	8417.18	22.12	20.91	89.12	-479.07	-59.12	1215.77	1172.85	28.33	
9000.00	8449.47	8704.80	8423.05	22.31	21.31	88.80	-526.18	-60.02	1218.58	1175.21	28.10	
9025.87	8450.00	8729.47	8424.56	22.42	21.53	88.76	-550.80	-60.49	1219.30	1175.69	27.96	
9100.00	8450.00	8802.55	8425.00	23.09	22.21	88.78	-623.87	-61.88	1220.70	1175.75	27.15	
9200.00	8450.00	8902.54	8425.00	24.09	23.23	88.78	-723.83	-63.79	1222.61	1175.65	26.04	
9300.00	8450.00	9002.52	8425.00	25.17	24.34	88.78	-823.79	-65.70	1224.52	1175.36	24.91	
9400.00	8450.00	9102.50	8425.00	26.33	25.54	88.79	-923.76	-67.60	1226.42	1174.91	23.81	
9500.00	8450.00	9202.48	8425.00	27.56	26.80	88.79	-1023.72	-69.51	1228.33	1174.31	22.74	
9600.00	8450.00	9302.46	8425.00	28.85	28.13	88.79	-1123.69	-71.41	1230.23	1173.60	21.72	
9700.00	8450.00	9402.45	8425.00	30.20	29.51	88.79	-1223.65	-73.32	1232.14	1172.77	20.75	
9800.00	8450.00	9502.43	8425.00	31.59	30.93	88.79	-1323.61	-75.23	1234.04	1171.85	19.84	
9900.00	8450.00	9602.41	8425.00	33.03	32.40	88.79	-1423.58	-77.13	1235.95	1170.85	18.98	
10000.00	8450.00	9702.39	8425.00	34.50	33.90	88.80	-1523.54	-79.04	1237.86	1169.77	18.18	
10100.00	8450.00	9802.37	8425.00	36.00	35.43	88.80	-1623.50	-80.94	1239.76	1168.64	17.43	
10200.00	8450.00	9902.35	8425.00	37.53	36.98	88.80	-1723.47	-82.85	1241.67	1167.45	16.73	
10300.00	8450.00	10002.34	8425.00	39.09	38.56	88.80	-1823.43	-84.76	1243.57	1166.21	16.07	
10400.00	8450.00	10102.32	8425.00	40.67	40.16	88.80	-1923.39	-86.66	1245.48	1164.93	15.46	
10500.00	8450.00	10202.30	8425.00	42.27	41.77	88.81	-2023.36	-88.57	1247.38	1163.61	14.89	
10600.00	8450.00	10302.28	8425.00	43.88	43.41	88.81	-2123.32	-90.47	1249.29	1162.26	14.36	
10700.00	8450.00	10402.26	8425.00	45.51	45.05	88.81	-2223.29	-92.38	1251.20	1160.88	13.85	
10800.00	8450.00	10502.25	8425.00	47.16	46.71	88.81	-2323.25	-94.29	1253.10	1159.48	13.38	
10900.00	8450.00	10602.23	8425.00	48.82	48.39	88.81	-2423.21	-96.19	1255.01	1158.05	12.94	
11000.00	8450.00	10702.21	8425.00	50.49	50.07	88.81	-2523.18	-98.10	1256.91	1156.60	12.53	
11100.00	8450.00	10802.19	8425.00	52.17	51.76	88.82	-2623.14	-100.00	1258.82	1155.12	12.14	
11200.00	8450.00	10902.17	8425.00	53.86	53.46	88.82	-2723.10	-101.91	1260.73	1153.64	11.77	
11300.00	8450.00	11002.15	8425.00	55.56	55.17	88.82	-2823.07	-103.81	1262.63	1152.13	11.43	
11400.00	8450.00	11102.14	8425.00	57.26	56.88	88.82	-2923.03	-105.72	1264.54	1150.61	11.10	
11500.00	8450.00	11202.12	8425.00	58.98	58.60	88.82	-3022.99	-107.63	1266.44	1149.08	10.79	
11600.00	8450.00	11302.10	8425.00	60.70	60.33	88.83	-3122.96	-109.53	1268.35	1147.53	10.50	
11700.00	8450.00	11402.08	8425.00	62.42	62.06	88.83	-3222.92	-111.44	1270.25	1145.98	10.22	
11800.00	8450.00	11502.06	8425.00	64.16	63.80	88.83	-3322.89	-113.34	1272.16	1144.41	9.96	
11900.00	8450.00	11602.05	8425.00	65.89	65.54	88.83	-3422.85	-115.25	1274.07	1142.84	9.71	
12000.00	8450.00	11702.03	8425.00	67.63	67.28	88.83	-3522.81	-117.16	1275.97	1141.25	9.47	
12100.00	8450.00	11802.01	8425.00	69.38	69.03	88.83	-3622.78	-119.06	1277.88	1139.66	9.25	
12200.00	8450.00	11901.99	8425.00	71.13	70.78	88.84	-3722.74	-120.97	1279.78	1138.06	9.03	
12300.00	8450.00	12001.97	8425.00	72.88	72.54	88.84	-3822.70	-122.87	1281.69	1136.46	8.83	
12400.00	8450.00	12101.95	8425.00	74.64	74.30	88.84	-3922.67	-124.78	1283.60	1134.84	8.63	
12500.00	8450.00	12201.94	8425.00	76.40	76.06	88.84	-4022.63	-126.69	1285.50	1133.23	8.44	



Weatherford Anticollision Report



Company: Devon Energy
Field: Lea County, New Mexico (NAD 83)
Reference Site: Cotton Draw 32 State Fed Com 2H
Reference Well: CD 32 State Fed Com 2H
Reference Wellpath:

Date: 3/12/2013 Time: 08:30:22 Page: 4
Co-ordinate(NE) Reference: Well: CD 32 State Fed Com 2H, Grid North
Vertical (TVD) Reference: SITE 3497.0
Db: Sybase

Site: Cotton Draw 32 State Fed Com 3H
Well: CD 32 State Fed Com 3H
Wellpath: 1 V0 Plan: Plan #1 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		
12600.00	8450.00	12301.92	8425.00	78.16	77.83	88.84	-4122.60	-128.59	1287.41	1131.60	8.26	
12700.00	8450.00	12401.90	8425.00	79.93	79.59	88.84	-4222.56	-130.50	1289.31	1129.97	8.09	
12800.00	8450.00	12501.88	8425.00	81.70	81.36	88.85	-4322.52	-132.40	1291.22	1128.34	7.93	
12900.00	8450.00	12601.86	8425.00	83.47	83.13	88.85	-4422.49	-134.31	1293.13	1126.70	7.77	
13000.00	8450.00	12701.85	8425.00	85.24	84.91	88.85	-4522.45	-136.21	1295.03	1125.06	7.62	
13100.00	8450.00	12801.83	8425.00	87.02	86.68	88.85	-4622.41	-138.12	1296.94	1123.41	7.47	
13200.00	8450.00	12901.81	8425.00	88.80	88.46	88.85	-4722.38	-140.03	1298.84	1121.76	7.33	
13300.00	8450.00	13001.79	8425.00	90.58	90.24	88.85	-4822.34	-141.93	1300.75	1120.10	7.20	
13400.00	8450.00	13101.77	8425.00	92.36	92.02	88.86	-4922.30	-143.84	1302.65	1118.45	7.07	
13500.00	8450.00	13201.75	8425.00	94.14	93.80	88.86	-5022.27	-145.74	1304.56	1116.79	6.95	
13600.00	8450.00	13301.74	8425.00	95.93	95.59	88.86	-5122.23	-147.65	1306.47	1115.12	6.83	
13700.00	8450.00	13401.72	8425.00	97.71	97.37	88.86	-5222.20	-149.56	1308.37	1113.46	6.71	
13800.00	8450.00	13501.70	8425.00	99.50	99.16	88.86	-5322.16	-151.46	1310.28	1111.79	6.60	
13900.00	8450.00	13601.68	8425.00	101.29	100.94	88.86	-5422.12	-153.37	1312.18	1110.12	6.49	
14000.00	8450.00	13701.66	8425.00	103.08	102.73	88.87	-5522.09	-155.27	1314.09	1108.44	6.39	
14100.00	8450.00	13801.65	8425.00	104.87	104.52	88.87	-5622.05	-157.18	1316.00	1106.77	6.29	
14200.00	8450.00	13901.63	8425.00	106.66	106.31	88.87	-5722.01	-159.09	1317.90	1105.09	6.19	
14300.00	8450.00	14001.61	8425.00	108.46	108.10	88.87	-5821.98	-160.99	1319.81	1103.41	6.10	
14400.00	8450.00	14101.59	8425.00	110.25	109.90	88.87	-5921.94	-162.90	1321.71	1101.73	6.01	
14500.00	8450.00	14201.57	8425.00	112.05	111.69	88.87	-6021.90	-164.80	1323.62	1100.04	5.92	
14600.00	8450.00	14301.56	8425.00	113.84	113.48	88.88	-6121.87	-166.71	1325.52	1098.36	5.83	
14700.00	8450.00	14401.54	8425.00	115.64	115.28	88.88	-6221.83	-168.61	1327.43	1096.67	5.75	
14800.00	8450.00	14501.52	8425.00	117.44	117.08	88.88	-6321.80	-170.52	1329.34	1094.98	5.67	
14900.00	8450.00	14601.50	8425.00	119.24	118.87	88.88	-6421.76	-172.43	1331.24	1093.29	5.59	
15000.00	8450.00	14701.48	8425.00	121.04	120.67	88.88	-6521.72	-174.33	1333.15	1091.60	5.52	
15100.00	8450.00	14801.46	8425.00	122.84	122.47	88.88	-6621.69	-176.24	1335.05	1089.90	5.45	
15200.00	8450.00	14901.45	8425.00	124.64	124.27	88.89	-6721.65	-178.14	1336.96	1088.21	5.37	
15300.00	8450.00	15001.43	8425.00	126.44	126.06	88.89	-6821.61	-180.05	1338.87	1086.51	5.31	
15400.00	8450.00	15101.41	8425.00	128.25	127.86	88.89	-6921.58	-181.96	1340.77	1084.82	5.24	
15500.00	8450.00	15201.39	8425.00	130.05	129.66	88.89	-7021.54	-183.86	1342.68	1083.12	5.17	
15600.00	8450.00	15301.37	8425.00	131.85	131.47	88.89	-7121.50	-185.77	1344.58	1081.42	5.11	
15700.00	8450.00	15401.36	8425.00	133.66	133.27	88.89	-7221.47	-187.67	1346.49	1079.72	5.05	
15710.02	8450.00	15411.37	8425.00	133.84	133.45	88.89	-7231.48	-187.86	1346.68	1079.55	5.04	

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

GeoDec v5.03

Report Date: March 12, 2013
Job Number: _____
Customer: Devon Energy
Well Name: Cotton Draw 32 State Fed Com 2H
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 427250.290 USFT	Latitude 32.1729968 DEG
East/West 737716.730 USFT	Longitude -103.6986386 DEG
Grid Convergence: .34°	
Total Correction: +7.15°	

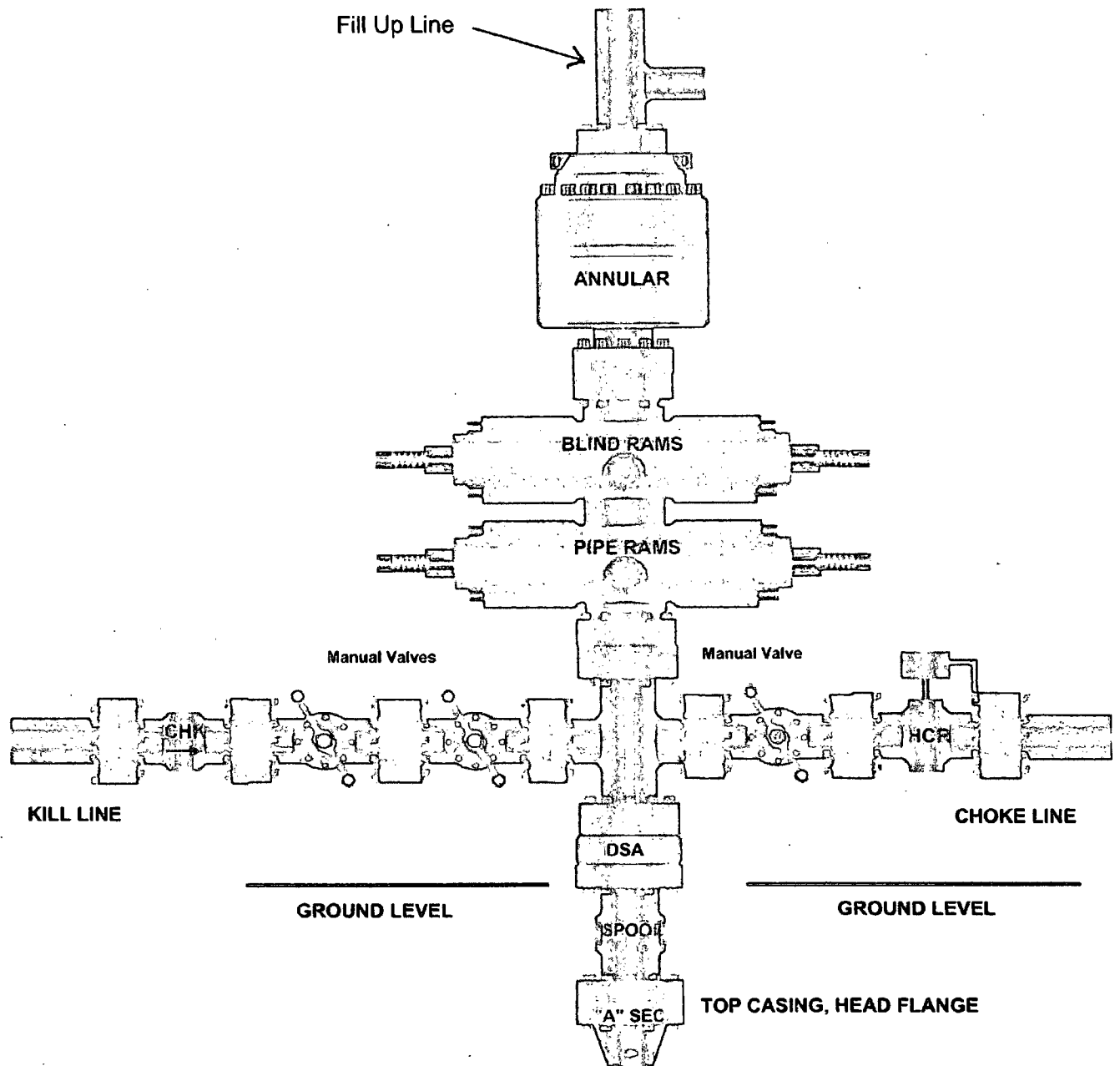
Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	32.17300° N	32° 10 min 22.789 sec
Longitude =	103.69864° W	103° 41 min 55.099 sec

Magnetic Declination =	7.49°	[True North Offset]
Local Gravity =	.9988 g	Checksum = 6498
Local Field Strength =	48355 nT	Magnetic Vector X = 23957 nT
Magnetic Dip =	60.02°	Magnetic Vector Y = 3151 nT
Magnetic Model =	bggm2012	Magnetic Vector Z = 41884 nT
Spud Date =	Jul 20, 2013	Magnetic Vector H = 24164 nT

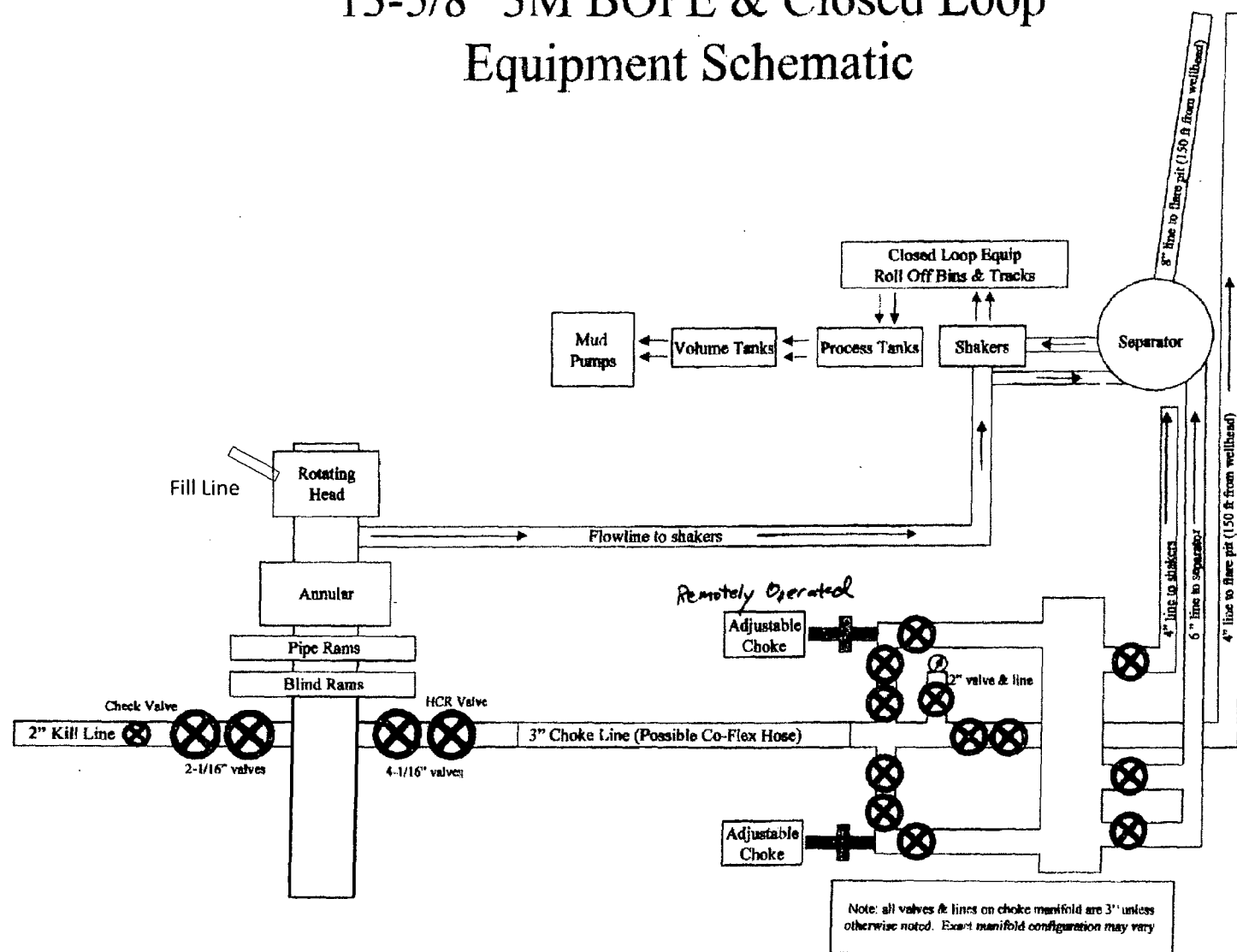
Signed: _____

Date: _____

13-5/8" x 3,000 psi BOP Stack



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



NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, LP
Cotton Draw 32 State Fed Com 2H

Surface Location: 2310' FSL & 2030' FWL, Unit K, Sec 32 T24S R32E, Lea, NM
Bottom Hole Location: 330' FSL & 1980' FEL, Unit O, Sec 5 T25S R32E, Lea, NM

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 fittings will be in operable condition to withstand a minimum 3000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 3000 psi 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.



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





QUALITY DOCUMENT

**PHOENIX RUBBER
INDUSTRIAL LTD.**

H-6728 Szeged, Budapesti út 10. Hungary • H-6701 Szeged, P. O. Box 152
Phone: (3662) 566-737 • Fax: (3662) 566-738

SALES & MARKETING: H-1092 Budapest, Ráday u. 42-44. Hungary • H-1440 Budapest, P. O. Box 26
Phone: (361) 456-4200 • Fax: (361) 217-2972, 456-4273 • www.taurummargaz.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 555	
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°: 34137		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 = 16 MPa					
COUPLINGS					
Type	Serial N°		Quality	Heat N°	
3" coupling with 4 1/16" Flange end	714 715		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: 30. April. 2002.	Inspector		Quality Control		
			PHOENIX RUBBER Industrial Ltd. Hose Inspection and Testing Department		

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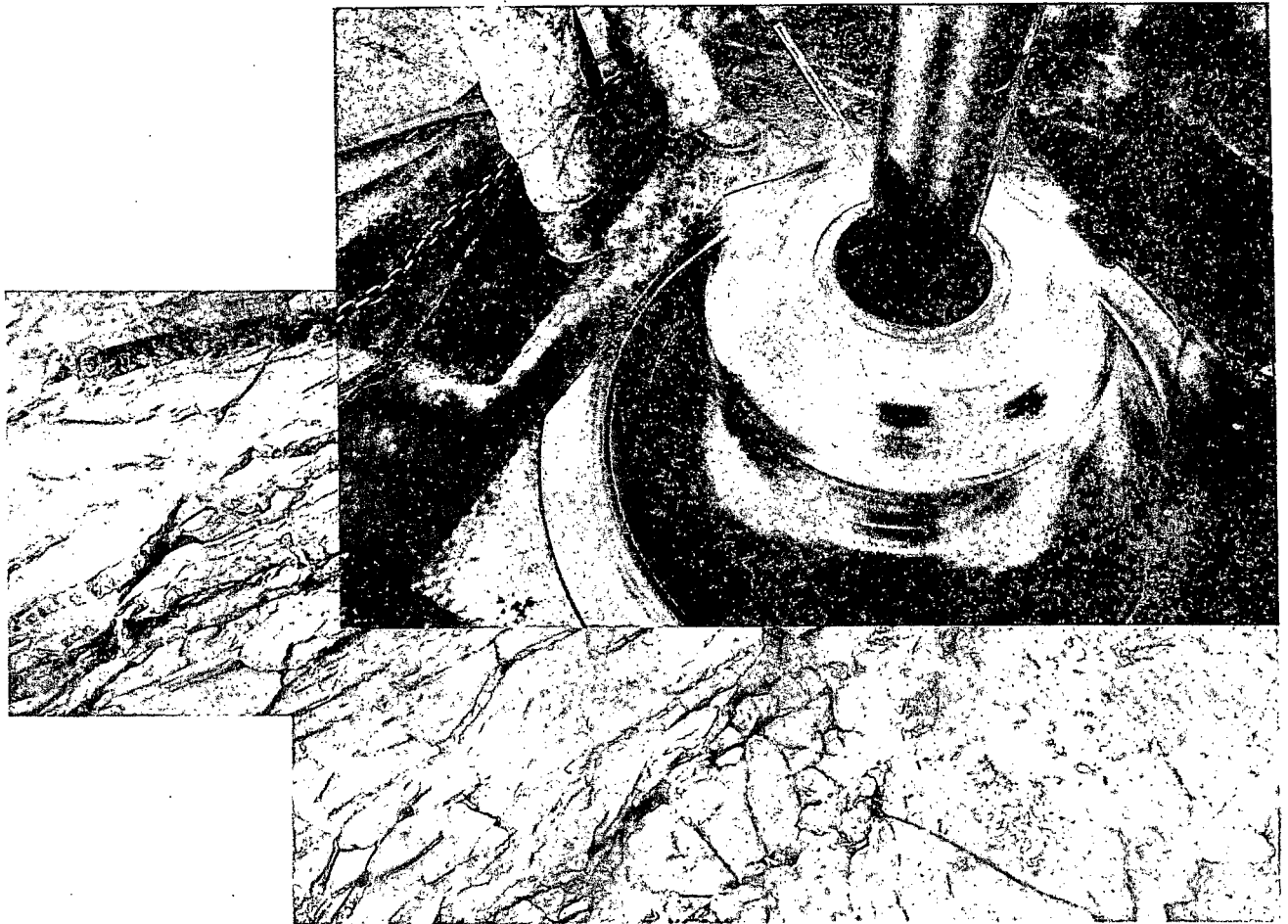
23	RU	BL	C2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
24	RU	BL	C2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
25	RU	BL	C2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
26	RU	BL	C2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
27	RU	BL	C2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
19	NYGEB 19 04 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100																																																																																																						
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Industrial Ltd.
Hose Inspection and
Certification Dept.

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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.

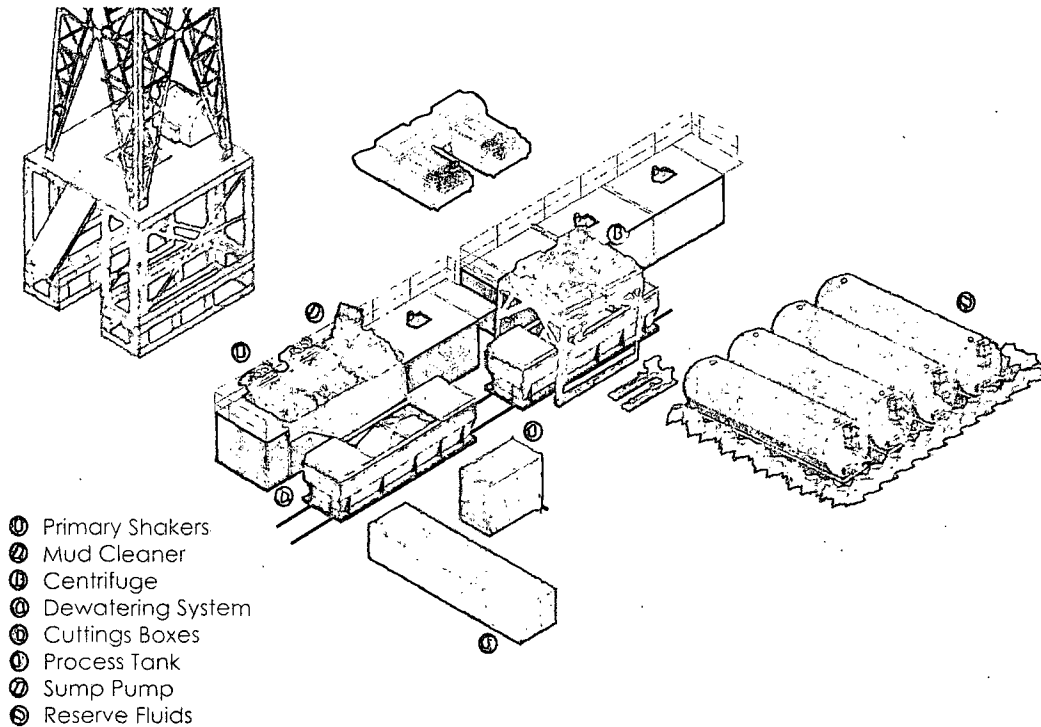
II. Operations and Maintenance Plan

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.