13-152

TES 3/26/2013

Form 3160-3
(March 2012)

RECEIVED
MAR 22 2013
OCD Artesia
NMOCD ARTESIA

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM-89055, NMNM-012121 SH

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
Cotton Draw Unit NM70928X

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Cotton Draw Unit 166H <300635>

2. Name of Operator Devon Energy Production Company, L.P. <6137>

9. API Well No.
30-015-41228

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; Bone Spring (O) <96641>

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface (Unit O) Sec 25, 25' FSL & 1780' FEL
At proposed prod. zone Unit B, Sec 25, 330' FNL & 1880' FEL

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 25, T24S-R31E

14. Distance in miles and direction from nearest town or post office*
Approximately 21 miles northeast of Malaga, NM

12. County or Parish
Eddy 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
NMNM-89055 - 160
NMNM12121 - 1280

17. Spacing Unit dedicated to this well
W2 E/2 of Sec 25, 24S-31E or 160 acres

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
See attached map

19. Proposed Depth
TVD: 8,360' MD: 13,041'

20. BLM/BIA Bond No. on file
CO-1104 & NMB-000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3516.7' GL

22. Approximate date work will start*

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.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator ~~certification~~
6. Such other site specific information and/or plans as may be required by the BLM.

~~25.~~ Signature Patti Riechers
Name *(Printed/Typed)* Patti Riechers
Date 10/30/2012

Title
Regulatory Specialist

Approved by *(Signature)* /s/ Don Peterson
~~Name (Printed/Typed)~~
Date MAR 20 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

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-41228	96641	Paduca; B.S. ~~Paduca South~~

Property Code	Property Name	Well Number
300635	COTTON DRAW UNIT	166H

OGRID No.	Operator Name	Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, LP.	3516.7'

Surface Location

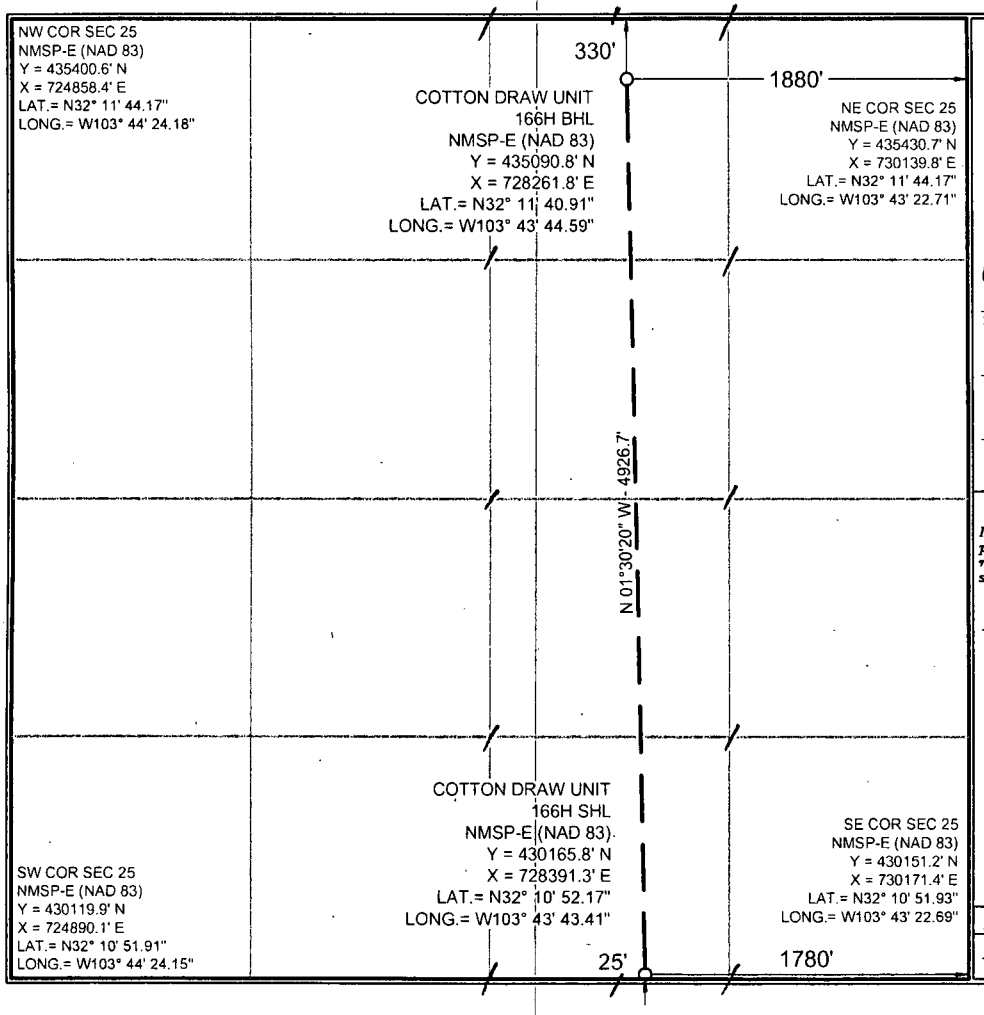
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	25	24 S	31 E		25	SOUTH	1780	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	25	24 S	31 E		330	NORTH	1880	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidated Code	Order No.
160			

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Patti Riechers 10/30/12
Signature Date

Patti Riechers
Print Name

Patti.Riechers@dvn.com
E-mail Address

SURVEYORS CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

Sept. 2012
Date of Survey

Signature and Seal of Professional Surveyor:

JAMES E. TOMPKINS NEW MEXICO 14729 REGISTERED PROFESSIONAL LAND SURVEYOR

James E. Tompkins

Job No.: WTC48670
JAMES E. TOMPKINS 14729
Certificate Number

Operators Representative:

The Devon Energy Production Company, L.P. representatives responsible for ensuring compliance of the surface use plan are listed below.

Jim Cromer - Operations Engineer Advisor
Devon Energy Production Company, L.P.
333 W. Sheridan
Oklahoma City, OK 73102-5010
(405) 228-8965 (office)
(405) 464-9769 (Cellular)

Don Mayberry - Superintendent
Devon Energy Production Company, L.P.
Post Office Box 250
Artesia, NM 88211-0250
(575) 748-3371 (office)
(575) 746-4945 (home)

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this _30th__ day of __October, 2012.
Printed Name: Patti Riechers
Signed Name: Patti Riechers
Position Title: Operations Technician
Address: 333 W. Sheridan, OKC OK 73102
Telephone: (405)-228-4248

DRILLING PROGRAM
Devon Energy Production Company, LP
Cotton Draw Unit #166H

Surface Location: 25' FSL & 1780' FEL, Unit O, Sec 25 T24S R31E, Eddy, NM
Bottom Hole Location: 330' FNL & 1880' FEL, Unit B, Sec 25 T24S R31E, Eddy, 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	230'	
b.	Rustler	670'	
c.	Salado	1050'	
d.	Castile	3159'	Oil/Gas
e.	Base of Salt	4276'	Oil
f.	Delaware	4503'	Oil
g.	Bell Canyon	4538'	Oil
h.	Cherry Canyon	5437'	Oil
i.	Brushy Canyon	6683'	Oil
	Total Depth	8360'	

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

Hole Size	Hole Interval	OD Csg	Casing Interval	Weight	Collar	Grade
17 ½"	0'–750'780'	13 3/8"	0'-750'780'	48#	ST&C	H-40
12 ¼"	780'750'-4,350'4460'	9 5/8"	0'-4,350'4460'	40#	LT&C	J-55
8 ¾"	4460'4,350'-7,500'	5 ½"	0'-7,500'	17#	LT&C	HCP-110
8 ¾"	7,500'-13,041'	5 ½"	7,500'-13,041'	17#	BT&C	HCP-110

See COA

Design Parameter Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13 3/8"	1.98	4.44	8.94
9 5/8"	1.14	1.75	2.99
5 ½"	2.45	3.03	3.49
5 ½"	2.13	3.03	2.19

4. **Cement Program: (volumes based on at least 25% excess):**

a. 13 3/8"	~~1st~~ Surface	**Lead** w/ 800 sx Class C +2% bwoc Calcium Chloride +0.125#/sx Poly-E-Flake + 63.1% FW, 14.8 ppg. **Yield** 1.35 cf/sx. **TOC** @ surface.
b. 9 5/8"	~~2nd~~ Intermediate	**Lead** w/ 965 sacks Cl C(65:35) Poz (Fly Ash) + 5% bwow Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 6% bwoc Bentonite + 70.9% FW. 12.9 ppg. **Yield** 1.85 cf/sx. **Tail** w375 sx Cl C Cmt + 0.125 lbs/sack Poly-E-Flake + 63.5% Water. 14.8 ppg. **Yield** 1.33 cf/sx. **TOC** @ surface.
c. 5 1/2"	Production	**Lead** w/ 270 sx 50:50 POZ (Fly Ash) Class H + 10% bwoc Bentonite + 8 lbs/sack Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 0.3% bwoc HR-601 + 0.3% bwoc Econolite + 77.2% FW, 11.8 ppg. **Yield** 2.52 cf/sx. **2nd Lead** 390 sacks (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% FW, 12.5 ppg, **Yield:** 1.95 cf/sk. **Tail** w/ 1365 sacks (50:50) Poz (Fly Ash):Class H Cement + 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% FW, 14.5 ppg. **Yield** 1.22 cf/sx. **TOC** @ 3850'.

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 **12-1/4" and 8-3/4"** holes will consist of a **13-5/8" 3M Double Ram and Annular preventer**. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the casing shoe.

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**.

See COA

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

6. **Proposed Mud Circulation System**

Depth	Mud Wt.	Visc	Fluid Loss	Type System
0' – ~~750'~~ 780'	8.4-9.6	32-34	NC	FW
~~750'~~–~~4,350'~~4460'	9.8-10.0	28-32	NC	Brine
~~4350'~~–13,041'	8.4–10.0	28-30	NC-12	FW

See COA

The necessary mud products for weight addition and fluid loss control will be on location at all times.

7. **Auxiliary Well Control and Monitoring Equipment**:
   - **a.** A Kelly cock will be in the drill string at all times.
   - **b.** A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
   - **c.** 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:**
   - **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 3000 psi and Estimated BHT 130°. 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 32 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 UNIT #166H

EDDY COUNTY, NM

WELL FILE: **PLAN 1**

OCTOBER 26, 2012

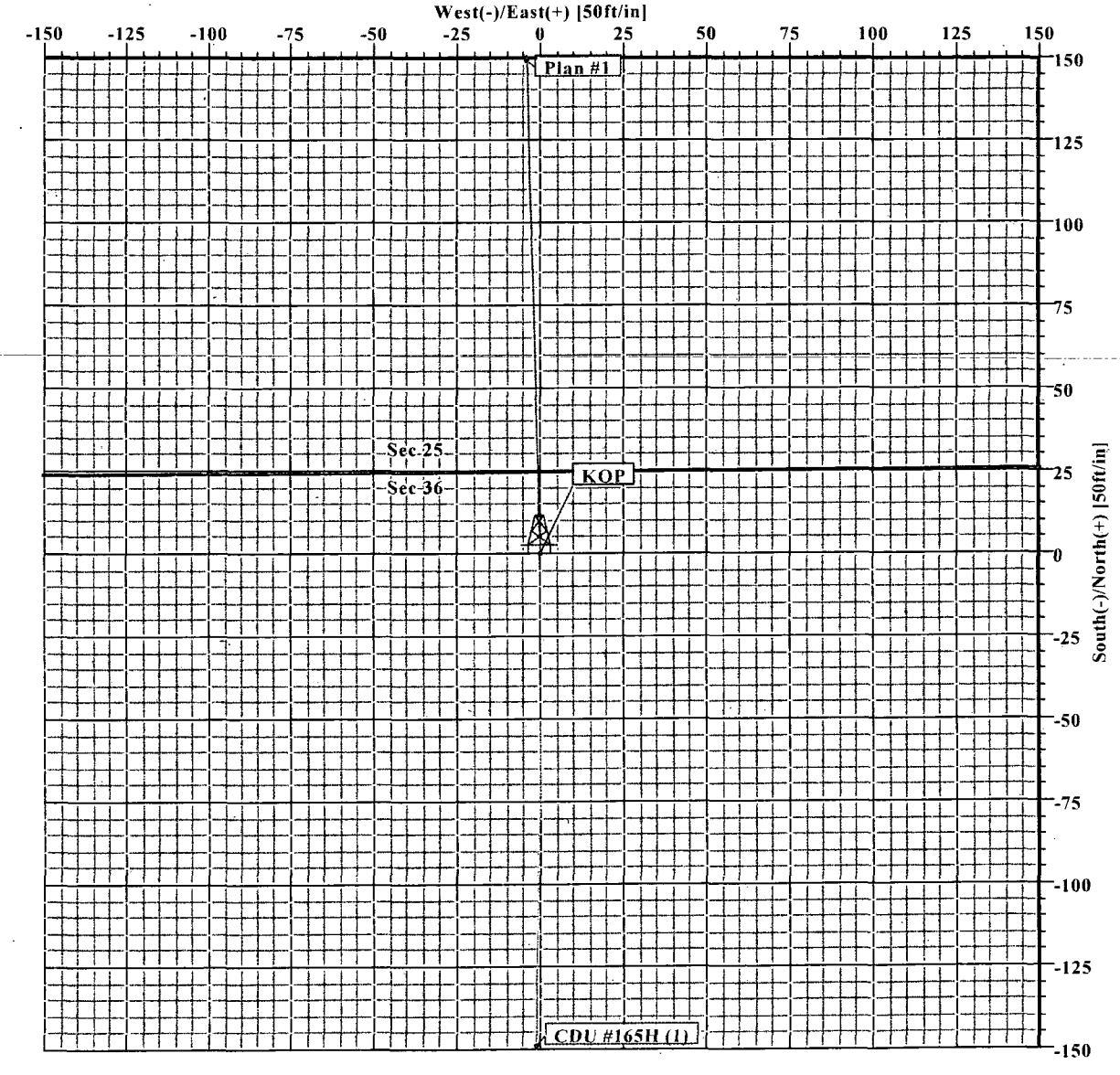
Weatherford International, Ltd.
P.O. Box 61028
Midland, TX 79711 USA
+1.432.561.8892 Main
+1.432.561.8895 Fax
www.weatherford.com

devon

Cotton Draw Unit #165, 166 Pad
Eddy Co, NM

LEGEND
CDU #165H (1)
1
Plan #1

Weatherford



Plan: Plan #1 (CDU #166H/1)
Created By: Russell W. Joyner Date: 10/26/2012

devon

Cotton Draw Unit #166H
Eddy Co, NM

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	358.49	0.00	0.00	0.00	0.00	0.00	0.00	
2	7787.04	0.00	358.49	7787.04	0.00	0.00	0.00	0.00	0.00	
3	8687.04	90.00	358.49	8360.00	572.76	-15.06	10.00	358.49	572.96	
4	13040.79	90.00	358.49	8360.00	4925.00	-129.50	0.00	0.00	4926.70	PBHL

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
CDU #166H	0.00	0.00	430165.80	728391.30	32°10'52.162N	103°43'43.423W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	8360.00	4925.00	-129.50	435090.80	728261.80	Point

LEGEND

CDU #165H (1)
Plan #1

FIELD DETAILS

Eddy Co., NM (NAD 83)

Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010

System Datum: Mean Sea Level
Local North: Grid North

SITE DETAILS

Cotton Draw Unit #166H

Site Centre Northing: 430165.80
Easting: 728391.30

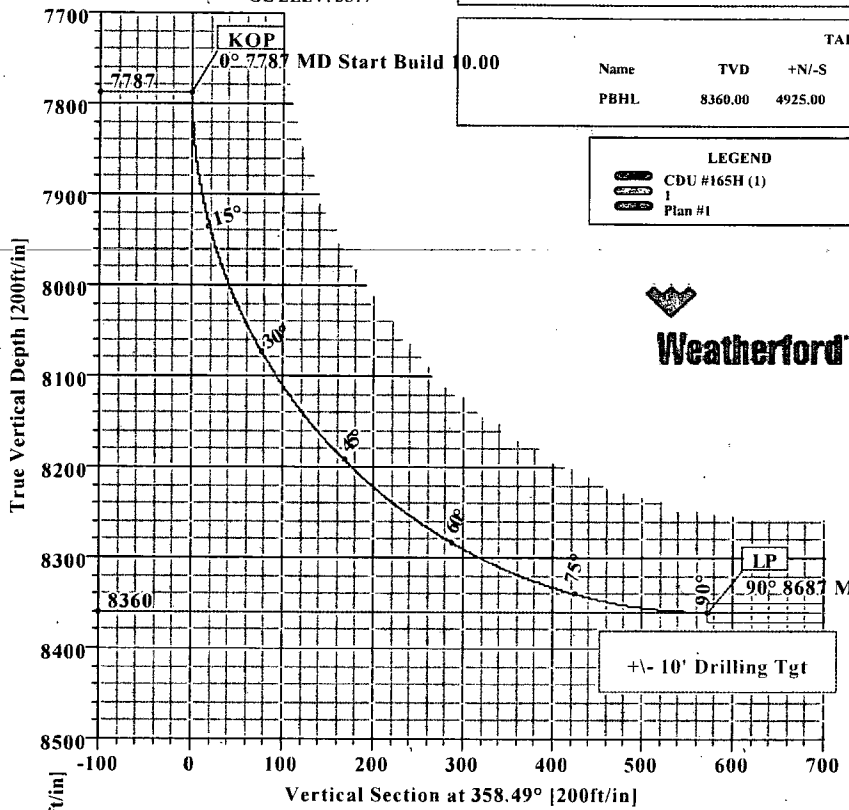
Ground Level: 3517.00
Positional Uncertainty: 0.00
Convergence: 0.32

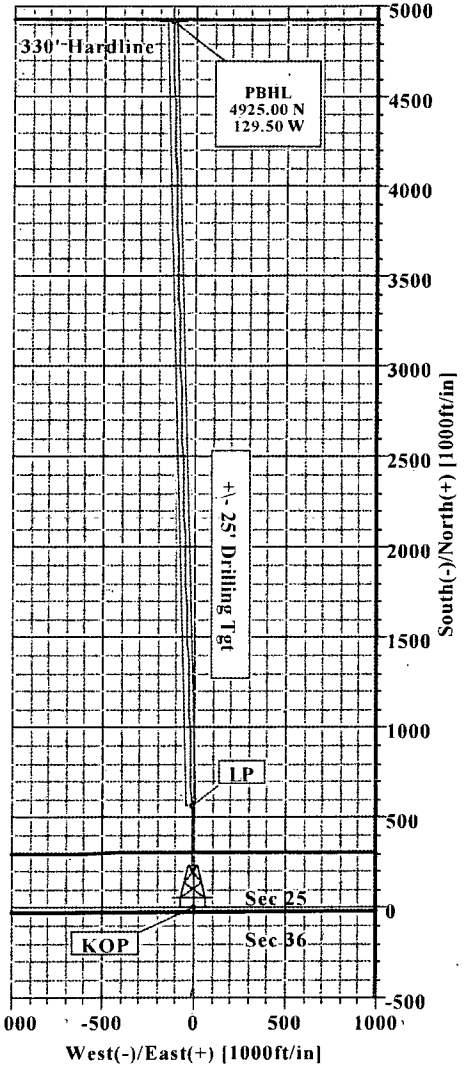
Azimuths to Grid North
True North: -0.32°
Magnetic North: 7.09°

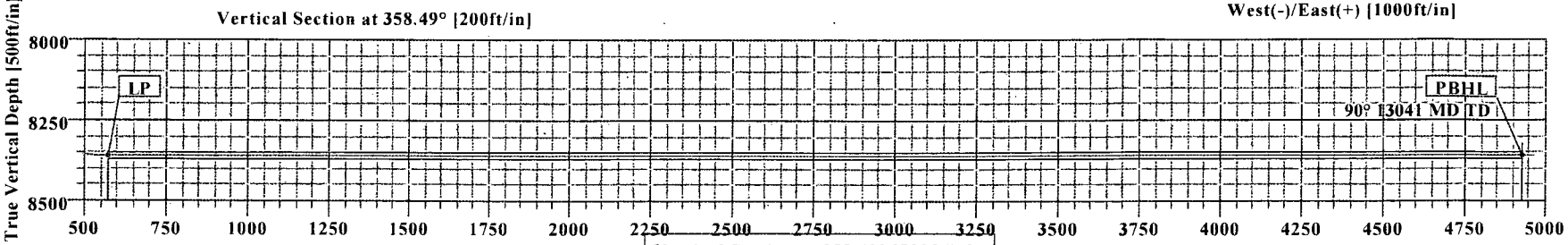
Magnetic Field
Strength: 48399nT
Dip Angle: 60.07°
Date: 6/15/2013
Model: IGRF2010

Total Correction to Grid North: 7.09°

KB ELEV: 3542
GL ELEV: 3517







Plan: Plan #1 (CDU #166H/1)

Created By: Russell W. Joyner Date: 10/26/2012

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WFT Plan Report - X & Y's

Company:	Devon Energy	**Date:**	10/26/2012	**Time:**	09:13:35 **Page:** 1
Field:	Eddy Co., NM (NAD 83)	**Co-ordinate(NE) Reference:**	Well: CDU #166H, Grid North		
Site:	Cotton Draw Unit #166H	**Vertical (TVD) Reference:**	SITE 3542.0		
Well:	CDU #166H	**Section (VS) Reference:**	Well (0.00N,0.00E,358.49Azi)		
Wellpath:	1	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Plan:	Plan #1	**Date Composed:**	10/26/2012
		Version:	1
Principal:	Yes	**Tied-to:**	From Surface

Field:	Eddy Co., NM (NAD 83)		
Map System:	US State Plane Coordinate System 1983	**Map Zone:**	New Mexico, Eastern Zone
Geo Datum:	GRS 1980	**Coordinate System:**	Well Centre
Sys Datum:	Mean Sea Level	**Geomagnetic Model:**	IGRF2010

Site:	Cotton Draw Unit #166H				
Site Position:		**Northing:**	430165.80 ft	**Latitude:**	32 10 52.162 N
From:	Map	**Easting:**	728391.30 ft	**Longitude:**	103 43 43.423 W
Position Uncertainty:	0.00 ft			**North Reference:**	Grid
Ground Level:	3517.00 ft			**Grid Convergence:**	0.32 deg

Well:	CDU #166H				**Slot Name:**	
Well Position:	+N/-S	0.00 ft	**Northing:**	430165.80 ft	**Latitude:**	32 10 52.162 N
	+E/-W	0.00 ft	**Easting:**	728391.30 ft	**Longitude:**	103 43 43.423 W
Position Uncertainty:		0.00 ft				

Wellpath:	1			**Drilled From:**	Surface
				Tie-on Depth:	0.00 ft
Current Datum:	SITE	**Height**	3542.00 ft	**Above System Datum:**	Mean Sea Level
Magnetic Data:	6/15/2013			**Declination:**	7.41 deg
Field Strength:	48399 nT			**Mag Dip Angle:**	60.07 deg

Vertical Section: Depth From (TVD)	**+N/-S**	**+E/-W**	**Direction**
ft	ft	ft	deg
0.00	0.00	0.00	358.49

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	358.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7787.04	0.00	358.49	7787.04	0.00	0.00	0.00	0.00	0.00	0.00	
8687.04	90.00	358.49	8360.00	572.76	-15.06	10.00	10.00	0.00	358.49	
13040.79	90.00	358.49	8360.00	4925.00	-129.50	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
7700.00	0.00	358.49	7700.00	0.00	0.00	0.00	0.00	430165.80	728391.30	
7787.04	0.00	358.49	7787.04	0.00	0.00	0.00	0.00	430165.80	728391.30	KOP
7800.00	1.30	358.49	7800.00	0.15	0.00	0.15	10.00	430165.95	728391.30	
7850.00	6.30	358.49	7849.87	3.45	-0.09	3.46	10.00	430169.25	728391.21	
7900.00	11.30	358.49	7899.27	11.09	-0.29	11.10	10.00	430176.89	728391.01	
7950.00	16.30	358.49	7947.81	23.01	-0.61	23.02	10.00	430188.81	728390.69	
8000.00	21.30	358.49	7995.13	39.11	-1.03	39.12	10.00	430204.91	728390.27	
8050.00	26.30	358.49	8040.87	59.27	-1.56	59.29	10.00	430225.07	728389.74	
8100.00	31.30	358.49	8084.67	83.34	-2.19	83.37	10.00	430249.14	728389.11	
8150.00	36.30	358.49	8126.21	111.13	-2.92	111.17	10.00	430276.93	728388.38	
8200.00	41.30	358.49	8165.16	142.44	-3.75	142.49	10.00	430308.24	728387.55	
8250.00	46.30	358.49	8201.24	177.02	-4.65	177.08	10.00	430342.82	728386.65	
8300.00	51.30	358.49	8234.17	214.61	-5.64	214.69	10.00	430380.41	728385.66	
8350.00	56.30	358.49	8263.69	254.93	-6.70	255.02	10.00	430420.73	728384.60	
8400.00	61.30	358.49	8289.59	297.67	-7.83	297.77	10.00	430463.47	728383.47	
8450.00	66.30	358.49	8311.66	342.50	-9.01	342.62	10.00	430508.30	728382.29	
8500.00	71.30	358.49	8329.74	389.09	-10.23	389.22	10.00	430554.89	728381.07	

Weatherford

WFT Plan Report - X & Y's

Company:	Devon Energy	**Date:** 10/26/2012 **Time:** 09:13:35	**Page:** 2
Field:	Eddy Co. NM (NAD 83)	**Co-ordinate(NE) Reference:**	Well: CDU #166H, Grid North
Site:	Cotton Draw Unit #166H	**Vertical (TVD) Reference:**	SITE 3542.0
Well:	CDU #166H	**Section (VS) Reference:**	Well (0.00N,0.00E,358.49Azi)
Wellpath:	1	**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
8550.00	76.30	358.49	8343.69	437.07	-11.49	437.22	10.00	430602.87	728379.81	
8600.00	81.30	358.49	8353.40	486.08	-12.78	486.25	10.00	430651.88	728378.52	
8650.00	86.30	358.49	8358.80	535.76	-14.09	535.94	10.00	430701.56	728377.21	
8687.04	90.00	358.49	8360.00	572.76	-15.06	572.96	10.00	430738.56	728376.24	LP
8700.00	90.00	358.49	8360.00	585.71	-15.40	585.92	0.00	430751.51	728375.90	
8800.00	90.00	358.49	8360.00	685.68	-18.03	685.92	0.00	430851.48	728373.27	
8900.00	90.00	358.49	8360.00	785.64	-20.66	785.92	0.00	430951.44	728370.64	
9000.00	90.00	358.49	8360.00	885.61	-23.29	885.92	0.00	431051.41	728368.01	
9100.00	90.00	358.49	8360.00	985.57	-25.92	985.92	0.00	431151.37	728365.38	
9200.00	90.00	358.49	8360.00	1085.54	-28.54	1085.92	0.00	431251.34	728362.76	
9300.00	90.00	358.49	8360.00	1185.51	-31.17	1185.92	0.00	431351.31	728360.13	
9400.00	90.00	358.49	8360.00	1285.47	-33.80	1285.92	0.00	431451.27	728357.50	
9500.00	90.00	358.49	8360.00	1385.44	-36.43	1385.92	0.00	431551.24	728354.87	
9600.00	90.00	358.49	8360.00	1485.40	-39.06	1485.92	0.00	431651.20	728352.24	
9700.00	90.00	358.49	8360.00	1585.37	-41.69	1585.92	0.00	431751.17	728349.61	
9800.00	90.00	358.49	8360.00	1685.33	-44.31	1685.92	0.00	431851.13	728346.99	
9900.00	90.00	358.49	8360.00	1785.30	-46.94	1785.92	0.00	431951.10	728344.36	
10000.00	90.00	358.49	8360.00	1885.26	-49.57	1885.92	0.00	432051.06	728341.73	
10100.00	90.00	358.49	8360.00	1985.23	-52.20	1985.92	0.00	432151.03	728339.10	
10200.00	90.00	358.49	8360.00	2085.19	-54.83	2085.92	0.00	432250.99	728336.47	
10300.00	90.00	358.49	8360.00	2185.16	-57.46	2185.92	0.00	432350.96	728333.84	
10400.00	90.00	358.49	8360.00	2285.13	-60.09	2285.92	0.00	432450.93	728331.21	
10500.00	90.00	358.49	8360.00	2385.09	-62.71	2385.92	0.00	432550.89	728328.59	
10600.00	90.00	358.49	8360.00	2485.06	-65.34	2485.92	0.00	432650.86	728325.96	
10700.00	90.00	358.49	8360.00	2585.02	-67.97	2585.92	0.00	432750.82	728323.33	
10800.00	90.00	358.49	8360.00	2684.99	-70.60	2685.92	0.00	432850.79	728320.70	
10900.00	90.00	358.49	8360.00	2784.95	-73.23	2785.92	0.00	432950.75	728318.07	
11000.00	90.00	358.49	8360.00	2884.92	-75.86	2885.92	0.00	433050.72	728315.44	
11100.00	90.00	358.49	8360.00	2984.88	-78.49	2985.92	0.00	433150.68	728312.81	
11200.00	90.00	358.49	8360.00	3084.85	-81.11	3085.92	0.00	433250.65	728310.19	
11300.00	90.00	358.49	8360.00	3184.81	-83.74	3185.92	0.00	433350.61	728307.56	
11400.00	90.00	358.49	8360.00	3284.78	-86.37	3285.92	0.00	433450.58	728304.93	
11500.00	90.00	358.49	8360.00	3384.75	-89.00	3385.92	0.00	433550.55	728302.30	
11600.00	90.00	358.49	8360.00	3484.71	-91.63	3485.92	0.00	433650.51	728299.67	
11700.00	90.00	358.49	8360.00	3584.68	-94.26	3585.92	0.00	433750.48	728297.04	
11800.00	90.00	358.49	8360.00	3684.64	-96.89	3685.92	0.00	433850.44	728294.41	
11900.00	90.00	358.49	8360.00	3784.61	-99.51	3785.92	0.00	433950.41	728291.79	
12000.00	90.00	358.49	8360.00	3884.57	-102.14	3885.92	0.00	434050.37	728289.16	
12100.00	90.00	358.49	8360.00	3984.54	-104.77	3985.92	0.00	434150.34	728286.53	
12200.00	90.00	358.49	8360.00	4084.50	-107.40	4085.92	0.00	434250.30	728283.90	
12300.00	90.00	358.49	8360.00	4184.47	-110.03	4185.92	0.00	434350.27	728281.27	
12400.00	90.00	358.49	8360.00	4284.43	-112.66	4285.92	0.00	434450.23	728278.64	
12500.00	90.00	358.49	8360.00	4384.40	-115.29	4385.92	0.00	434550.20	728276.01	
12600.00	90.00	358.49	8360.00	4484.37	-117.91	4485.92	0.00	434650.17	728273.39	
12700.00	90.00	358.49	8360.00	4584.33	-120.54	4585.92	0.00	434750.13	728270.76	
12800.00	90.00	358.49	8360.00	4684.30	-123.17	4685.92	0.00	434850.10	728268.13	
12900.00	90.00	358.49	8360.00	4784.26	-125.80	4785.92	0.00	434950.06	728265.50	
13000.00	90.00	358.49	8360.00	4884.23	-128.43	4885.92	0.00	435050.03	728262.87	
13040.79	90.00	358.49	8360.00	4925.00	-129.50	4926.70	0.00	435090.80	728261.80	PBHL

Weatherford
WFT Plan Report - X & Y's

Company:	Devon Energy	**Date:** 10/26/2012 **Time:** 09:13:35	**Page:** 3
Field:	Eddy Co., NM (NAD 83)	**Co-ordinate(NE) Reference:**	Well: CDU #166H, Grid North
Site:	Cotton Draw Unit #166H	**Vertical (TVD) Reference:**	SITE 3542.0
Well:	CDU #166H	**Section (VS) Reference:**	Well (0.00N,0.00E,358.49Azi)
Wellpath:	1	**Survey Calculation Method:**	Minimum Curvature **Db:** Sybase

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<---- Latitude ----> Deg	Min	Sec	<--- Longitude ---> Deg	Min	Sec
PBHL			8360.00	4925.00	-129.50	435090.80	728261.80	32	11	40.905 N	103	43	44.608 W

Casing Points

MD	TVD	Diameter	Hole Size	Name

Annotation

MD ft	TVD ft	
7787.04	7787.04	KOP
8687.04	8360.00	LP
13040.78	8360.00	PBHL

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

devon

Weatherford
Anticollision Report

Weatherford

Company:	Devon Energy	**Date:**	10/26/2012	**Time:**	09:24:40 **Page:** 1
Field:	Eddy Co. NM (NAD 83)				
Reference Site:	Cotton Draw Unit #166H	**Co-ordinate(NE) Reference:**	Well CDU #166H, Grid North		
Reference Well:	CDU #166H	**Vertical (TVD) Reference:**	SITE 3542.0		
Reference Wellpath:					**Db:** Sybase

NO GLOBAL SCAN: Using user defined selection & scan criteria

Interpolation Method:	MD + Stations **Interval:** 100.00 ft	**Reference:**	Plan: Plan #1
Depth Range:	0.00 **to** 13040.79 ft	**Error Model:**	ISCWSA Ellipse
Maximum Radius:	10000.00 ft	**Scan Method:**	Closest Approach 3D
		Error Surface:	Ellipse

Plan:	Plan #1	**Date Composed:**	10/26/2012
		Version:	1
Principal:	Yes	**Tied-to:**	From Surface

Summary

<-------- Offset Wellpath --------> Site	Well	Wellpath	Reference MD ft	Offset MD ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
Cotton Draw Unit #16	CDU #165H	1 V0 Plan: Plan #1 V1	5600.00	5600.00	50.00	25.11	2.01	

Site: Cotton Draw Unit #165H
Well: CDU #165H
Wellpath: 1 V0 Plan: Plan #1 V1 **Inter-Site Error:** 0.00 ft

Reference MD ft	Reference TVD ft	Offset MD ft	Offset TVD ft	Semi-Major Axis Ref ft	Semi-Major Axis Offset ft	TFO-HS deg	Offset Location North ft	Offset Location East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	179.77	-50.00	0.20	50.00			No Data
100.00	100.00	100.00	100.00	0.08	0.08	179.77	-50.00	0.20	50.00	49.83	296.61	
200.00	200.00	200.00	200.00	0.31	0.31	179.77	-50.00	0.20	50.00	49.38	80.89	
300.00	300.00	300.00	300.00	0.53	0.53	179.77	-50.00	0.20	50.00	48.93	46.83	
400.00	400.00	400.00	400.00	0.76	0.76	179.77	-50.00	0.20	50.00	48.48	32.96	
500.00	500.00	500.00	500.00	0.98	0.98	179.77	-50.00	0.20	50.00	48.03	25.42	
600.00	600.00	600.00	600.00	1.21	1.21	179.77	-50.00	0.20	50.00	47.58	20.69	
700.00	700.00	700.00	700.00	1.43	1.43	179.77	-50.00	0.20	50.00	47.13	17.45	
800.00	800.00	800.00	800.00	1.66	1.66	179.77	-50.00	0.20	50.00	46.69	15.08	
900.00	900.00	900.00	900.00	1.88	1.88	179.77	-50.00	0.20	50.00	46.24	13.28	
1000.00	1000.00	1000.00	1000.00	2.11	2.11	179.77	-50.00	0.20	50.00	45.79	11.86	
1100.00	1100.00	1100.00	1100.00	2.33	2.33	179.77	-50.00	0.20	50.00	45.34	10.72	
1200.00	1200.00	1200.00	1200.00	2.56	2.56	179.77	-50.00	0.20	50.00	44.89	9.78	
1300.00	1300.00	1300.00	1300.00	2.78	2.78	179.77	-50.00	0.20	50.00	44.44	8.99	
1400.00	1400.00	1400.00	1400.00	3.01	3.01	179.77	-50.00	0.20	50.00	43.99	8.32	
1500.00	1500.00	1500.00	1500.00	3.23	3.23	179.77	-50.00	0.20	50.00	43.54	7.74	
1600.00	1600.00	1600.00	1600.00	3.46	3.46	179.77	-50.00	0.20	50.00	43.09	7.23	
1700.00	1700.00	1700.00	1700.00	3.68	3.68	179.77	-50.00	0.20	50.00	42.64	6.79	
1800.00	1800.00	1800.00	1800.00	3.91	3.91	179.77	-50.00	0.20	50.00	42.19	6.40	
1900.00	1900.00	1900.00	1900.00	4.13	4.13	179.77	-50.00	0.20	50.00	41.74	6.05	
2000.00	2000.00	2000.00	2000.00	4.35	4.35	179.77	-50.00	0.20	50.00	41.29	5.74	
2100.00	2100.00	2100.00	2100.00	4.58	4.58	179.77	-50.00	0.20	50.00	40.84	5.46	
2200.00	2200.00	2200.00	2200.00	4.80	4.80	179.77	-50.00	0.20	50.00	40.39	5.20	
2300.00	2300.00	2300.00	2300.00	5.03	5.03	179.77	-50.00	0.20	50.00	39.94	4.97	
2400.00	2400.00	2400.00	2400.00	5.25	5.25	179.77	-50.00	0.20	50.00	39.49	4.76	
2500.00	2500.00	2500.00	2500.00	5.48	5.48	179.77	-50.00	0.20	50.00	39.04	4.56	
2600.00	2600.00	2600.00	2600.00	5.70	5.70	179.77	-50.00	0.20	50.00	38.59	4.38	
2700.00	2700.00	2700.00	2700.00	5.93	5.93	179.77	-50.00	0.20	50.00	38.14	4.22	
2800.00	2800.00	2800.00	2800.00	6.15	6.15	179.77	-50.00	0.20	50.00	37.69	4.06	
2900.00	2900.00	2900.00	2900.00	6.38	6.38	179.77	-50.00	0.20	50.00	37.24	3.92	
3000.00	3000.00	3000.00	3000.00	6.60	6.60	179.77	-50.00	0.20	50.00	36.80	3.79	
3100.00	3100.00	3100.00	3100.00	6.83	6.83	179.77	-50.00	0.20	50.00	36.35	3.66	
3200.00	3200.00	3200.00	3200.00	7.05	7.05	179.77	-50.00	0.20	50.00	35.90	3.55	
3300.00	3300.00	3300.00	3300.00	7.28	7.28	179.77	-50.00	0.20	50.00	35.45	3.44	
3400.00	3400.00	3400.00	3400.00	7.50	7.50	179.77	-50.00	0.20	50.00	35.00	3.33	
3500.00	3500.00	3500.00	3500.00	7.73	7.73	179.77	-50.00	0.20	50.00	34.55	3.24	

Weatherford
Anticollision Report

devon

Weatherford

Company:	Devon Energy	**Date:** 10/26/2012 **Time:** 09:24:40	**Page:** 2
Field:	Eddy Co., NM (NAD 83)		
Reference Site:	Cotton Draw Unit #166H	**Co-ordinate(NE) Reference:** Well: CDU #166H, Grid North	
Reference Well:	CDU #166H	**Vertical (TVD) Reference:** SITE 3542.0	
Reference Wellpath:			**Db:** Sybase

Site: Cotton Draw Unit #165H
Well: CDU #165H
Wellpath: 1 V0 Plan: Plan #1 V1 **Inter-Site Error:** 0.00 ft

Reference MD ft	Reference TVD ft	Offset MD ft	Offset TVD ft	Semi-Major Axis Ref ft	Semi-Major Axis Offset ft	TFO-HS deg	Offset Location North ft	Offset Location East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
3600.00	3600.00	3600.00	3600.00	7.95	7.95	179.77	-50.00	0.20	50.00	34.10	3.14	
3700.00	3700.00	3700.00	3700.00	8.18	8.18	179.77	-50.00	0.20	50.00	33.65	3.06	
3800.00	3800.00	3800.00	3800.00	8.40	8.40	179.77	-50.00	0.20	50.00	33.20	2.98	
3900.00	3900.00	3900.00	3900.00	8.63	8.63	179.77	-50.00	0.20	50.00	32.75	2.90	
4000.00	4000.00	4000.00	4000.00	8.85	8.85	179.77	-50.00	0.20	50.00	32.30	2.82	
4100.00	4100.00	4100.00	4100.00	9.07	9.07	179.77	-50.00	0.20	50.00	31.85	2.75	
4200.00	4200.00	4200.00	4200.00	9.30	9.30	179.77	-50.00	0.20	50.00	31.40	2.69	
4300.00	4300.00	4300.00	4300.00	9.52	9.52	179.77	-50.00	0.20	50.00	30.95	2.62	
4400.00	4400.00	4400.00	4400.00	9.75	9.75	179.77	-50.00	0.20	50.00	30.50	2.56	
4500.00	4500.00	4500.00	4500.00	9.97	9.97	179.77	-50.00	0.20	50.00	30.05	2.51	
4600.00	4600.00	4600.00	4600.00	10.20	10.20	179.77	-50.00	0.20	50.00	29.60	2.45	
4700.00	4700.00	4700.00	4700.00	10.42	10.42	179.77	-50.00	0.20	50.00	29.15	2.40	
4800.00	4800.00	4800.00	4800.00	10.65	10.65	179.77	-50.00	0.20	50.00	28.70	2.35	
4900.00	4900.00	4900.00	4900.00	10.87	10.87	179.77	-50.00	0.20	50.00	28.25	2.30	
5000.00	5000.00	5000.00	5000.00	11.10	11.10	179.77	-50.00	0.20	50.00	27.80	2.25	
5100.00	5100.00	5100.00	5100.00	11.32	11.32	179.77	-50.00	0.20	50.00	27.36	2.21	
5200.00	5200.00	5200.00	5200.00	11.55	11.55	179.77	-50.00	0.20	50.00	26.91	2.17	
5300.00	5300.00	5300.00	5300.00	11.77	11.77	179.77	-50.00	0.20	50.00	26.46	2.12	
5400.00	5400.00	5400.00	5400.00	12.00	12.00	179.77	-50.00	0.20	50.00	26.01	2.08	
5500.00	5500.00	5500.00	5500.00	12.22	12.22	179.77	-50.00	0.20	50.00	25.56	2.05	
5600.00	5600.00	5600.00	5600.00	12.45	12.45	179.77	-50.00	0.20	50.00	25.11	2.01	
5700.00	5700.00	5697.36	5697.32	12.67	12.67	179.82	-52.48	0.17	52.55	27.23	2.08	
5800.00	5800.00	5795.09	5794.77	12.90	12.89	179.94	-59.74	0.06	59.97	34.23	2.33	
5900.00	5900.00	5894.71	5894.01	13.12	13.12	180.05	-68.43	-0.06	68.69	42.50	2.62	
6000.00	6000.00	5994.90	5993.83	13.35	13.34	180.13	-77.05	-0.18	77.30	50.66	2.90	
6100.00	6100.00	6096.84	6095.54	13.57	13.52	180.19	-83.83	-0.27	83.95	56.90	3.10	
6200.00	6200.00	6199.06	6197.68	13.80	13.69	180.21	-87.90	-0.33	87.93	60.47	3.20	
6300.00	6300.00	6301.40	6300.00	14.02	13.86	180.22	-89.23	-0.35	89.23	61.37	3.20	
6400.00	6400.00	6401.40	6400.00	14.24	14.06	180.22	-89.23	-0.35	89.23	60.95	3.15	
6500.00	6500.00	6501.40	6500.00	14.47	14.29	180.22	-89.23	-0.35	89.23	60.50	3.11	
6600.00	6600.00	6601.40	6600.00	14.69	14.51	180.22	-89.23	-0.35	89.23	60.05	3.06	
6700.00	6700.00	6701.40	6700.00	14.92	14.73	180.22	-89.23	-0.35	89.23	59.60	3.01	
6800.00	6800.00	6801.40	6800.00	15.14	14.96	180.22	-89.23	-0.35	89.23	59.15	2.97	
6900.00	6900.00	6901.40	6900.00	15.37	15.18	180.22	-89.23	-0.35	89.23	58.70	2.92	
7000.00	7000.00	7001.40	7000.00	15.59	15.41	180.22	-89.23	-0.35	89.23	58.25	2.88	
7100.00	7100.00	7101.40	7100.00	15.82	15.63	180.22	-89.23	-0.35	89.23	57.80	2.84	
7200.00	7200.00	7201.40	7200.00	16.04	15.86	180.22	-89.23	-0.35	89.23	57.35	2.80	
7300.00	7300.00	7301.40	7300.00	16.27	16.08	180.22	-89.23	-0.35	89.23	56.90	2.76	
7400.00	7400.00	7401.40	7400.00	16.49	16.30	180.22	-89.23	-0.35	89.23	56.45	2.72	
7500.00	7500.00	7501.40	7500.00	16.72	16.53	180.22	-89.23	-0.35	89.23	56.00	2.69	
7600.00	7600.00	7601.40	7600.00	16.94	16.75	180.22	-89.23	-0.35	89.23	55.55	2.65	
7700.00	7700.00	7701.40	7700.00	17.17	16.98	180.22	-89.23	-0.35	89.23	55.11	2.61	
7787.04	7787.04	7788.44	7787.04	17.36	17.17	180.22	-89.23	-0.35	89.23	54.71	2.59	
7800.00	7800.00	7799.64	7798.25	17.39	17.20	181.73	-89.34	-0.35	89.50	54.94	2.59	
7850.00	7849.87	7842.36	7840.89	17.50	17.30	181.71	-91.77	-0.38	95.64	61.00	2.76	
7900.00	7899.27	7883.07	7881.25	17.61	17.39	181.68	-97.03	-0.46	109.61	75.05	3.17	
7950.00	7947.81	7920.49	7917.92	17.72	17.49	181.66	-104.38	-0.56	130.85	96.51	3.81	
8000.00	7995.13	7953.71	7950.03	17.82	17.57	181.67	-112.90	-0.68	158.56	124.57	4.67	
8050.00	8040.87	7982.27	7977.20	17.93	17.65	181.71	-121.70	-0.80	191.85	158.33	5.72	
8100.00	8084.67	8006.08	7999.48	18.05	17.71	181.80	-130.07	-0.92	229.78	196.80	6.97	
8150.00	8126.21	8025.27	8017.19	18.18	17.77	181.96	-137.48	-1.02	271.47	239.10	8.39	

Weatherford
Anticollision Report

devon

Weatherford

Company:	Devon Energy	**Date:**	10/26/2012	**Time:**	09:24:40	**Page:**	3
Field:	Eddy Co. NM (NAD 83)						
Reference Site:	Cotton Draw Unit #166H	**Co-ordinate(NE) Reference:**	Well CDU #166H, Grid North				
Reference Well:	CDU #166H	**Vertical (TVD) Reference:**	SITE 3542.0				
Reference Wellpath:						**Db:**	Sybase

Site: Cotton Draw Unit #165H
Well: CDU #165H
Wellpath: 1 V0 Plan: Plan #1 V1 **Inter-Site Error:** 0.00 ft

Reference MD ft	Reference TVD ft	Offset MD ft	Offset TVD ft	Semi-Major Axis Ref ft	Semi-Major Axis Offset ft	TFO-HS deg	Offset Location North ft	Offset Location East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
8200.00	8165.16	8040.16	8030.75	18.32	17.81	182.22	-143.64	-1.11	316.09	284.36	9.96	
8250.00	8201.24	8050.00	8039.61	18.48	17.84	182.69	-147.90	-1.17	362.92	331.84	11.68	
8300.00	8234.17	8058.66	8047.36	18.67	17.87	183.58	-151.77	-1.22	411.29	380.90	13.54	
8350.00	8263.69	8063.09	8051.30	18.88	17.88	186.03	-153.80	-1.25	460.66	430.90	15.48	
8400.00	8289.59	8064.82	8052.83	19.12	17.88	209.12	-154.60	-1.26	510.54	479.71	16.56	
8450.00	8311.66	8064.20	8052.28	19.39	17.88	351.99	-154.31	-1.26	560.50	531.88	19.58	
8500.00	8329.74	8061.52	8049.90	19.70	17.87	356.69	-153.08	-1.24	610.19	582.23	21.82	
8550.00	8343.69	8050.00	8039.61	20.04	17.84	358.15	-147.90	-1.17	659.36	631.77	23.90	
8600.00	8353.40	8050.00	8039.61	20.41	17.84	358.65	-147.90	-1.17	707.48	680.21	25.95	
8650.00	8358.80	8050.00	8039.61	20.81	17.84	358.94	-147.90	-1.17	754.61	727.51	27.85	
8687.04	8360.00	8037.38	8028.22	21.12	17.80	359.16	-142.46	-1.09	788.55	761.39	29.04	
8700.00	8360.00	8035.10	8026.16	21.23	17.80	359.18	-141.51	-1.08	800.31	773.11	29.42	
8800.00	8360.00	8018.78	8011.23	22.17	17.75	359.26	-134.91	-0.99	891.79	864.23	32.36	
8900.00	8360.00	8000.00	7993.83	23.21	17.70	359.34	-127.84	-0.89	984.34	956.36	35.18	
9000.00	8360.00	8000.00	7993.83	24.35	17.70	359.34	-127.84	-0.89	1077.81	1049.49	38.06	
9100.00	8360.00	7980.22	7975.27	25.57	17.64	359.41	-121.03	-0.79	1171.84	1143.06	40.71	
9200.00	8360.00	7969.99	7965.58	26.86	17.62	-0.56	-117.75	-0.75	1266.59	1237.36	43.32	
9300.00	8360.00	7950.00	7946.47	28.21	17.56	-0.50	-111.86	-0.67	1362.01	1332.25	45.76	
9400.00	8360.00	7950.00	7946.47	29.61	17.56	-0.50	-111.86	-0.67	1457.61	1427.38	48.22	
9500.00	8360.00	7950.00	7946.47	31.05	17.56	-0.50	-111.86	-0.67	1553.76	1523.05	50.59	
9600.00	8360.00	7950.00	7946.47	32.54	17.56	-0.50	-111.86	-0.67	1650.37	1619.15	52.86	
9700.00	8360.00	7931.50	7928.62	34.06	17.52	-0.45	-107.00	-0.60	1746.96	1715.16	54.94	
9800.00	8360.00	7925.64	7922.94	35.61	17.50	-0.44	-105.58	-0.58	1843.99	1811.63	56.99	
9900.00	8360.00	7920.24	7917.68	37.18	17.49	-0.43	-104.32	-0.56	1941.25	1908.32	58.95	
10000.00	8360.00	7900.00	7897.90	38.78	17.44	-0.39	-100.06	-0.50	2038.98	2005.42	60.75	
10100.00	8360.00	7900.00	7897.90	40.40	17.44	-0.39	-100.06	-0.50	2136.50	2102.35	62.57	
10200.00	8360.00	7900.00	7897.90	42.04	17.44	-0.39	-100.06	-0.50	2234.24	2199.49	64.31	
10300.00	8360.00	7900.00	7897.90	43.69	17.44	-0.39	-100.06	-0.50	2332.17	2296.82	65.98	
10400.00	8360.00	7900.00	7897.90	45.35	17.44	-0.39	-100.06	-0.50	2430.26	2394.30	67.57	
10500.00	8360.00	7900.00	7897.90	47.03	17.44	-0.39	-100.06	-0.50	2528.51	2491.92	69.11	
10600.00	8360.00	7900.00	7897.90	48.72	17.44	-0.39	-100.06	-0.50	2626.89	2589.67	70.58	
10700.00	8360.00	7900.00	7897.90	50.42	17.44	-0.39	-100.06	-0.50	2725.39	2687.53	71.99	
10800.00	8360.00	7900.00	7897.90	52.13	17.44	-0.39	-100.06	-0.50	2823.99	2785.49	73.35	
10900.00	8360.00	7900.00	7897.90	53.85	17.44	-0.39	-100.06	-0.50	2922.69	2883.54	74.65	
11000.00	8360.00	7880.23	7878.44	55.57	17.39	-0.36	-96.57	-0.45	3021.07	2981.24	75.86	
11100.00	8360.00	7877.75	7876.00	57.30	17.38	-0.35	-96.18	-0.45	3119.82	3079.34	77.06	
11200.00	8360.00	7875.41	7873.68	59.04	17.38	-0.35	-95.82	-0.44	3218.64	3177.49	78.22	
11300.00	8360.00	7873.18	7871.48	60.79	17.37	-0.35	-95.49	-0.44	3317.52	3275.70	79.33	
11400.00	8360.00	7871.07	7869.38	62.53	17.37	-0.34	-95.18	-0.43	3416.46	3373.97	80.40	
11500.00	8360.00	7850.00	7848.49	64.29	17.32	-0.32	-92.53	-0.39	3515.82	3472.63	81.41	
11600.00	8360.00	7850.00	7848.49	66.05	17.32	-0.32	-92.53	-0.39	3614.78	3570.92	82.41	
11700.00	8360.00	7850.00	7848.49	67.81	17.32	-0.32	-92.53	-0.39	3713.80	3669.26	83.37	
11800.00	8360.00	7850.00	7848.49	69.57	17.32	-0.32	-92.53	-0.39	3812.87	3767.65	84.30	
11900.00	8360.00	7850.00	7848.49	71.34	17.32	-0.32	-92.53	-0.39	3911.99	3866.08	85.20	
12000.00	8360.00	7850.00	7848.49	73.11	17.32	-0.32	-92.53	-0.39	4011.16	3964.55	86.07	
12100.00	8360.00	7850.00	7848.49	74.89	17.32	-0.32	-92.53	-0.39	4110.36	4063.07	86.91	
12200.00	8360.00	7850.00	7848.49	76.67	17.32	-0.32	-92.53	-0.39	4209.60	4161.62	87.73	
12300.00	8360.00	7850.00	7848.49	78.45	17.32	-0.32	-92.53	-0.39	4308.88	4260.20	88.52	
12400.00	8360.00	7850.00	7848.49	80.23	17.32	-0.32	-92.53	-0.39	4408.19	4358.81	89.28	
12500.00	8360.00	7850.00	7848.49	82.02	17.32	-0.32	-92.53	-0.39	4507.53	4457.45	90.02	
12600.00	8360.00	7850.00	7848.49	83.81	17.32	-0.32	-92.53	-0.39	4606.89	4556.12	90.74	

Weatherford
Anticollision Report

Company:	Devon Energy	**Date:** 10/26/2012	**Time:** 09:24:40	**Page:**	4
Field:	Eddy Co., NM (NAD 83)				
Reference Site:	Cotton Draw Unit #166H	**Co-ordinate(NE) Reference:**	Well: CDU #166H, Grid North		
Reference Well:	CDU #166H	**Vertical (TVD) Reference:**	SITE 3542.0		
Reference Wellpath:				**Db:**	Sybase

Site: Cotton Draw Unit #165H
Well: CDU #165H
Wellpath: 1 V0 Plan: Plan #1 V1 **Inter-Site Error:** 0.00 ft

Reference MD ft	Reference TVD ft	Offset MD ft	Offset TVD ft	Semi-Major Axis Ref ft	Semi-Major Axis Offset ft	TFO-HS deg	Offset Location North ft	Offset Location East ft	Ctr-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
12700.00	8360.00	7850.00	7848.49	85.59	17.32	-0.32	-92.53	-0.39	4706.29	4654.82	91.44	
12800.00	8360.00	7850.00	7848.49	87.39	17.32	-0.32	-92.53	-0.39	4805.71	4753.53	92.11	
12900.00	8360.00	7850.00	7848.49	89.18	17.32	-0.32	-92.53	-0.39	4905.15	4852.28	92.77	
13000.00	8360.00	7850.00	7848.49	90.97	17.32	-0.32	-92.53	-0.39	5004.62	4951.04	93.40	
13040.79	8360.00	7850.00	7848.49	91.71	17.32	-0.32	-92.53	-0.39	5045.19	4991.32	93.66	

Weatherford Drilling Services

GeoDec v5.03

Report Date:	October 26, 2012
Job Number:	
Customer:	Devon Energy
Well Name:	Cotton Draw Unit #166H
API Number:	
Rig Name:	
Location:	Eddy Co., NM
Block:	
Engineer:	RWJ

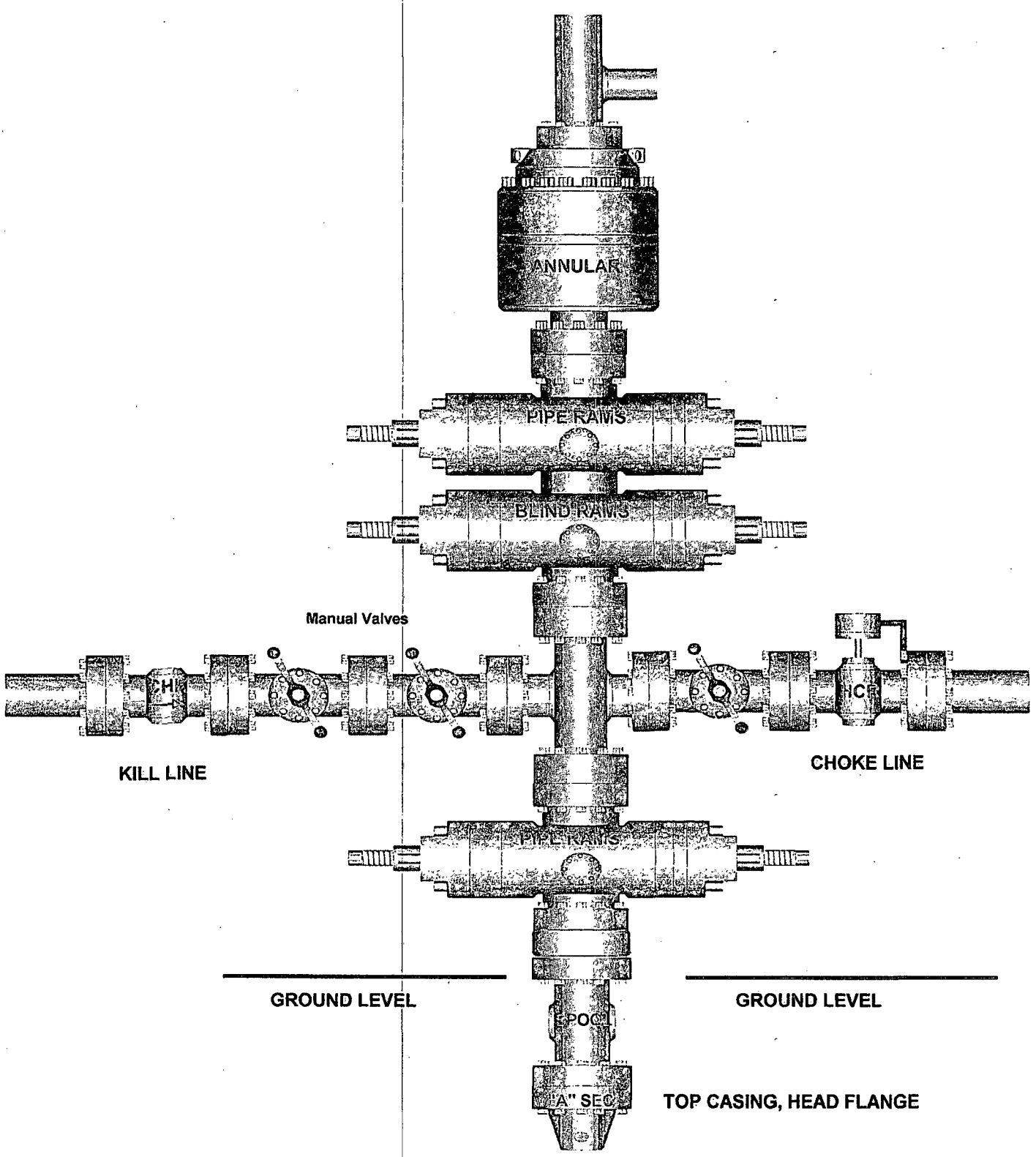
US State Plane 1983	Geodetic Latitude / Longitude
System: New Mexico Eastern Zone	System: Latitude / Longitude
Projection: Transverse Mercator/Gauss Kruger	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
North/South 430165.800 USFT	Latitude 32.1811585 DEG
East/West 728391.300 USFT	Longitude -103.7287238 DEG
Grid Convergence: .32°	
Total Correction: +7.10°	

Geodetic Location WGS84	Elevation = 0.0 Meters	
Latitude =	32.18116° N	32° 10 min 52.171 sec
Longitude =	103.72872° W	103° 43 min 43.406 sec

Magnetic Declination =	7.42°	[True North Offset]	
Local Gravity =	.9988 g	CheckSum =	6501
Local Field Strength =	48403 nT	Magnetic Vector X =	23946 nT
Magnetic Dip =	60.07°	Magnetic Vector Y =	3119 nT
Magnetic Model =	IGRF-2010g11	Magnetic Vector Z =	41949 nT
Spud Date =	May 15, 2013	Magnetic Vector H =	24148 nT

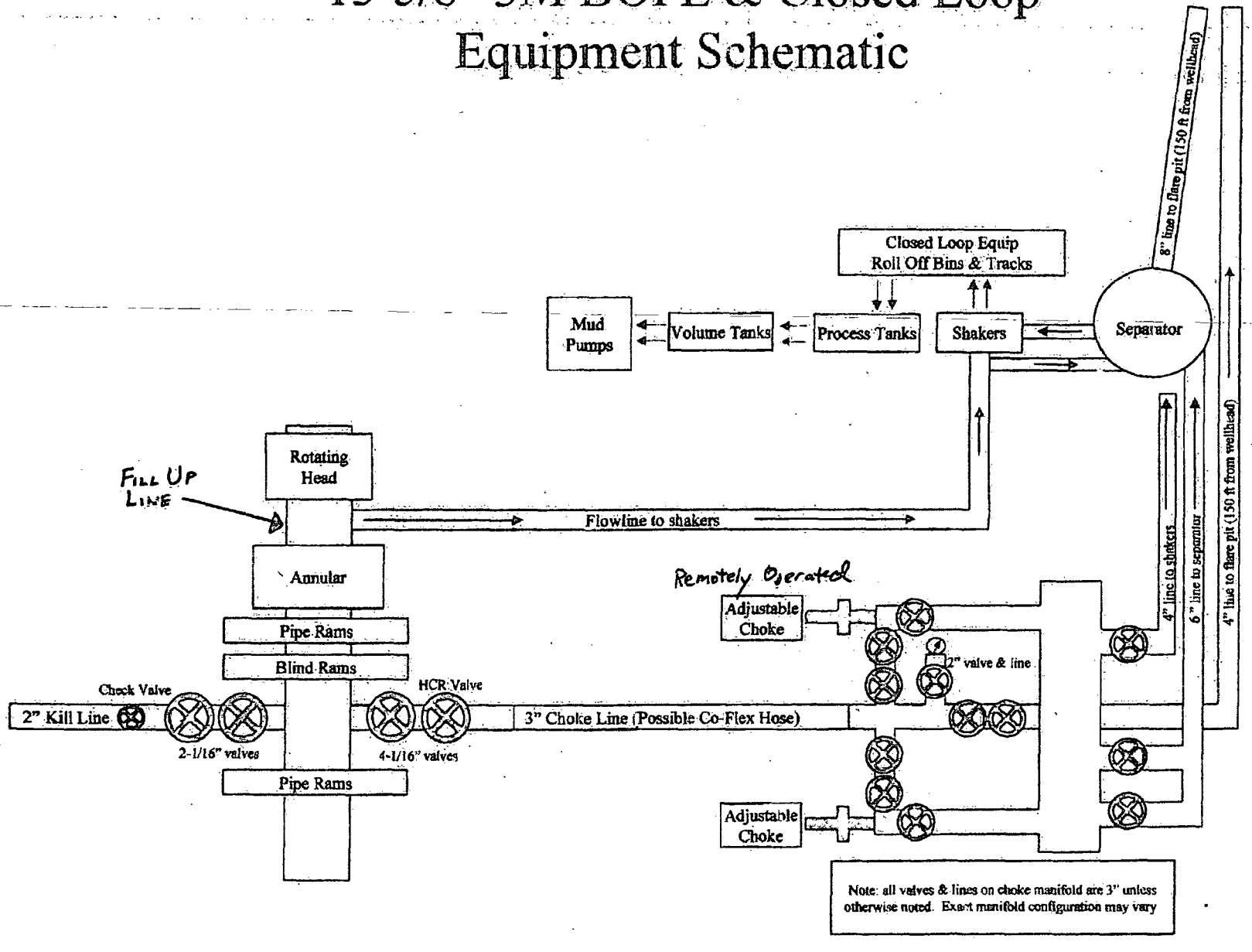
Signed:_____ Date:_____

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



L:\Western\Drilling\Wes Handley\Drawings\BOPS\BOPs.xls

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



Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Cotton Draw Unit 166H

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 5000 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.

PHOENIX

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.taurusemarge.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	714 715	AISI 4130	C7626
4 1/16" Flange end		AISI 4130	47357

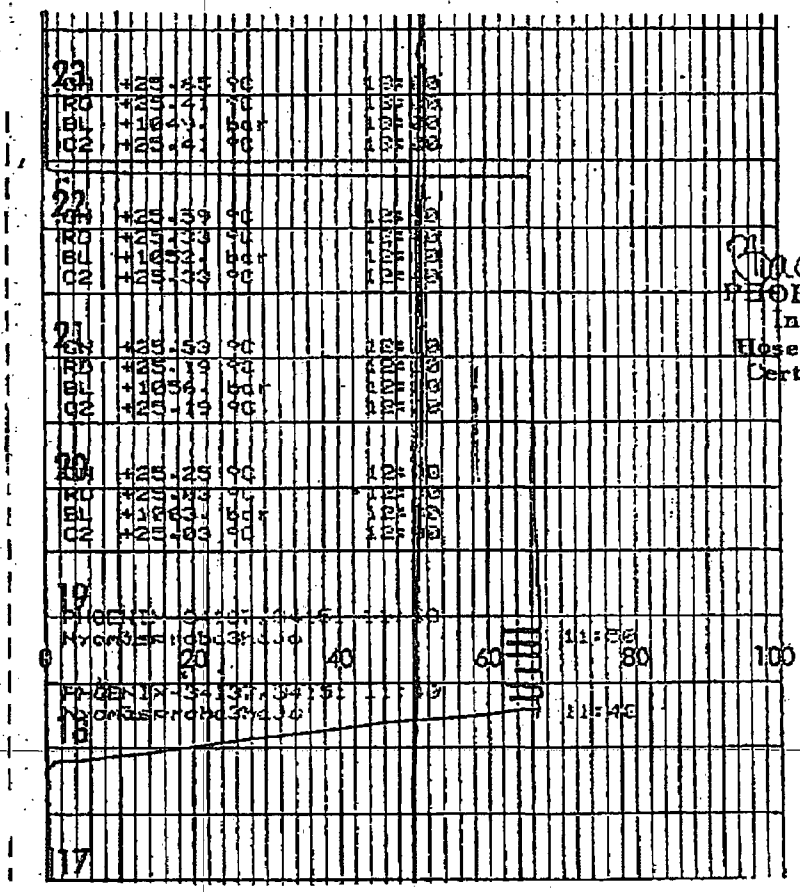
API Spec 16 C
Temperature rate:"B"

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:	Inspector	Quality Control
30. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and

Page: 1/1

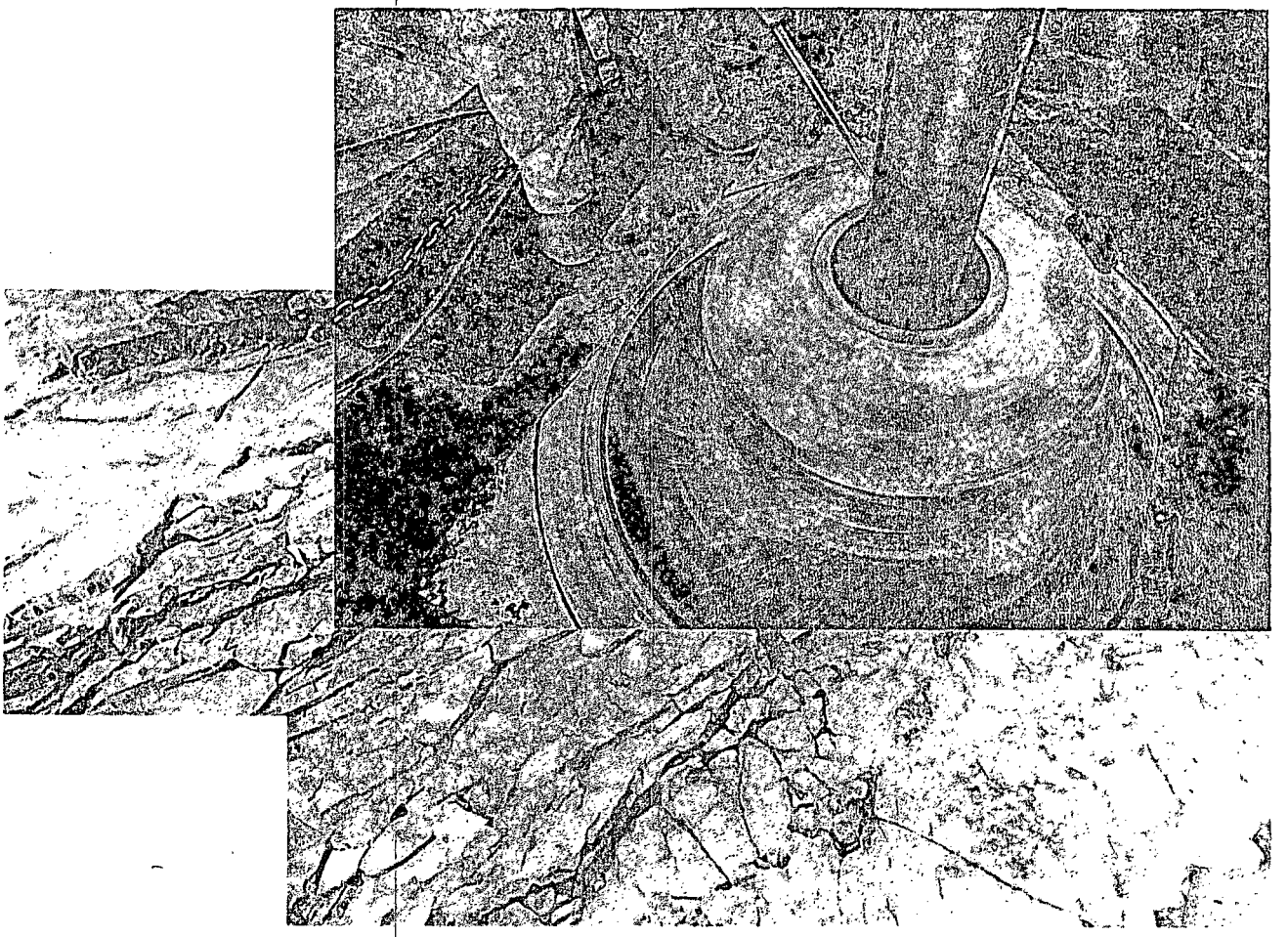


PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE COPY
PHOENIX RUBBER G.P.
Ltd.

devon

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.

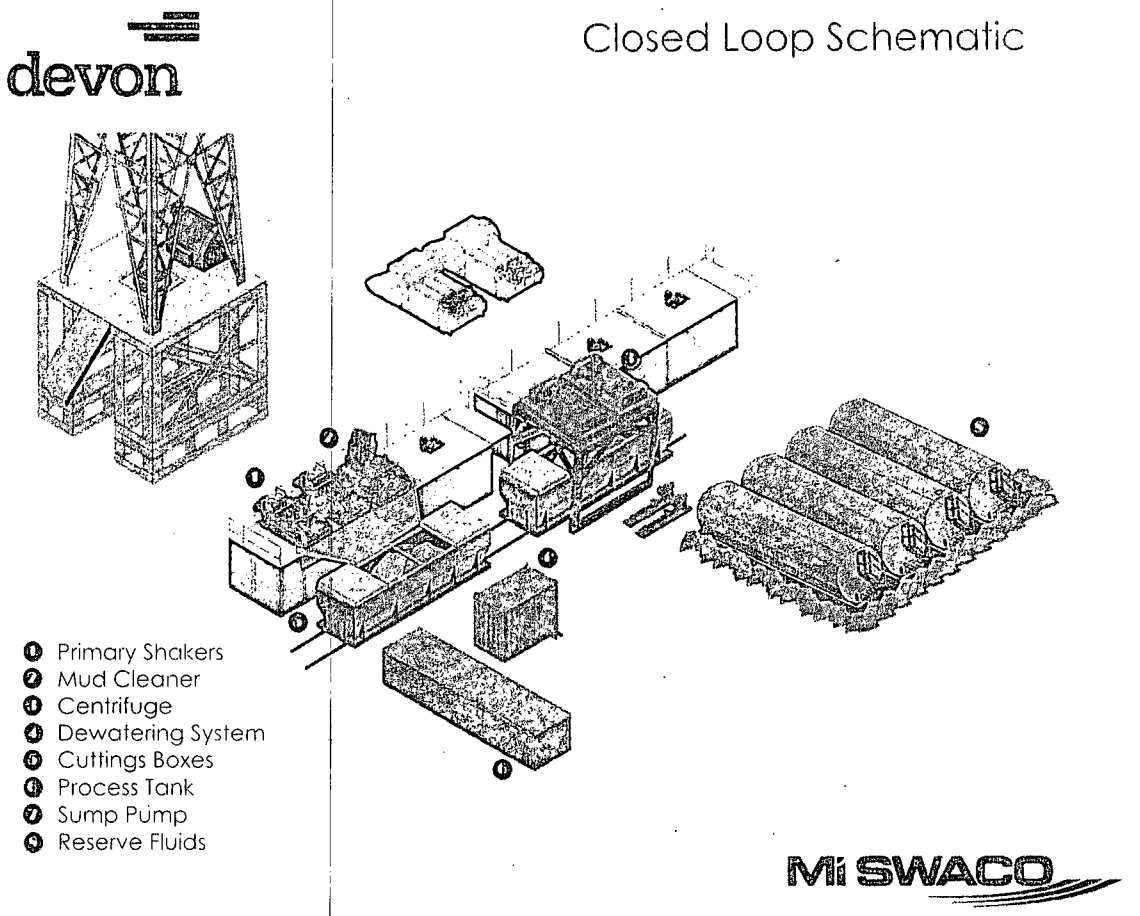
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

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.



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.

Devon Energy Corporation
20 North Broadway
Oklahoma City, Oklahoma 73102-8260

Hydrogen Sulfide (H_2S) Contingency Plan

For

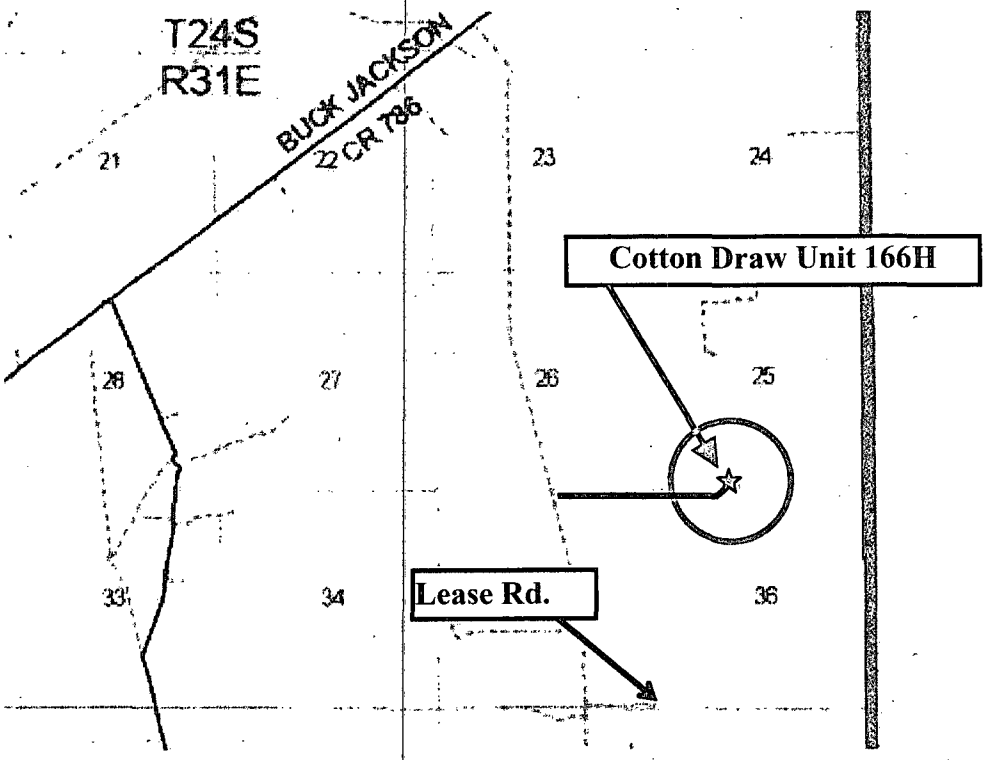
Cotton Draw Unit 166H

Sec-25, T-24S R-31E
25' FSL & 1780' FEL,
LAT. = 32.105217'N (NAD83)
LONG = 103.434341'W

Eddy County NM

Cotton Draw Unit 166H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.



Assumed 100 ppm [illegible] 3000' ( )
100 ppm H2S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road, Southwest the West on lease road or North on lease road. Crews should then block both directions of the road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)

2. The proper use and maintenance of personal protective equipment and life support systems.

3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.

4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.

3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

2. **Protective equipment for essential personnel:**

   A. 30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   A. Portable H_2S monitors positioned on location for best coverage and response. These unites have warning lights and audible sirens when H_2S levels of 20 PPM are reached. These units are usually capable of detecting SO_2, which is a byproduct of burning H_2S.

4. **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate..

5. **Mud program:**

   A. The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

6. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

7. **Communication:**

   A. Radio communications in company vehicles including cellular telephones and 2-way radio

   B. Land line (telephone) communications at Office

8. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

Devon Energy Corp. Company Call List

Artesia (575)	Cellular	Office	Home
Foreman – Robert Bell	748-7448	748-0178	746-2991
Asst. Foreman –Tommy Polly	748-5290	748-0165	748-2846
Don Mayberry	748-5235	748-0164	746-4945
Montral Walker	390-5182	748-0193	936-414-6246
Engineer – Marcos Ortiz	(405) 317-0666	(405) 552-8152	(405) 381-4350

Agency Call List

Lea County (575)

Hobbs

State Police	392-5588
City Police	397-9265
Sheriff's Office	393-2515
Ambulance	911
Fire Department	397-9308
LEPC (Local Emergency Planning Committee)	393-2870
NMOCD	393-6161
US Bureau of Land Management	393-3612

Eddy County (575)

Carlsbad

State Police	885-3137
City Police	885-2111
Sheriff's Office	887-7551
Ambulance	911
Fire Department	885-2111
LEPC (Local Emergency Planning Committee)	887-3798
US Bureau of Land Management	887-6544
New Mexico Emergency Response Commission (Santa Fe)	(505)476-9600
24 HR	(505) 827-9126
National Emergency Response Center (Washington, DC)	(800) 424-8802

Emergency Services

Boots & Coots IWC	1-800-256-9688 or (281) 931-8884
Cudd Pressure Control	(915) 699-0139 or (915) 563-3356
Halliburton	(575) 746-2757
B. J. Services	(575) 746-3569

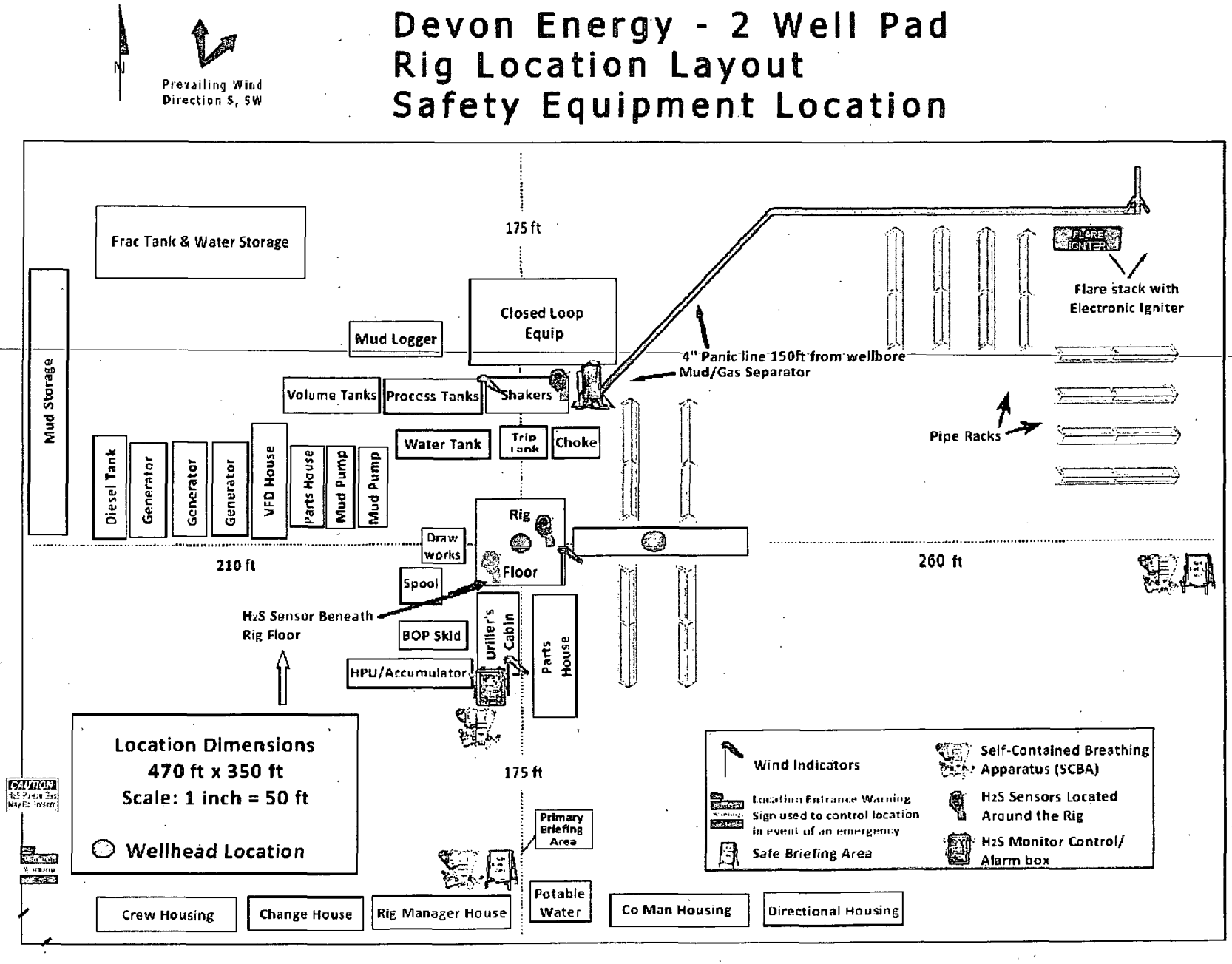
Give GPS position:

Flight For Life - Lubbock, TX	(806) 743-9911
Aerocare - Lubbock, TX	(806) 747-8923
Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
Lifeguard Air Med Svc. Albuquerque, NM	(575) 272-3115

Prepared in conjunction with
Wade Rohloff

Graphic Safety LLC
GraphicSafety.com
Safety is an Art
PO Box 2734 • Hobbs NM 88240
575.631.9661 • Fax 866.352.2183

Devon Energy - 2 Well Pad
Rig Location Layout
Safety Equipment Location



devon

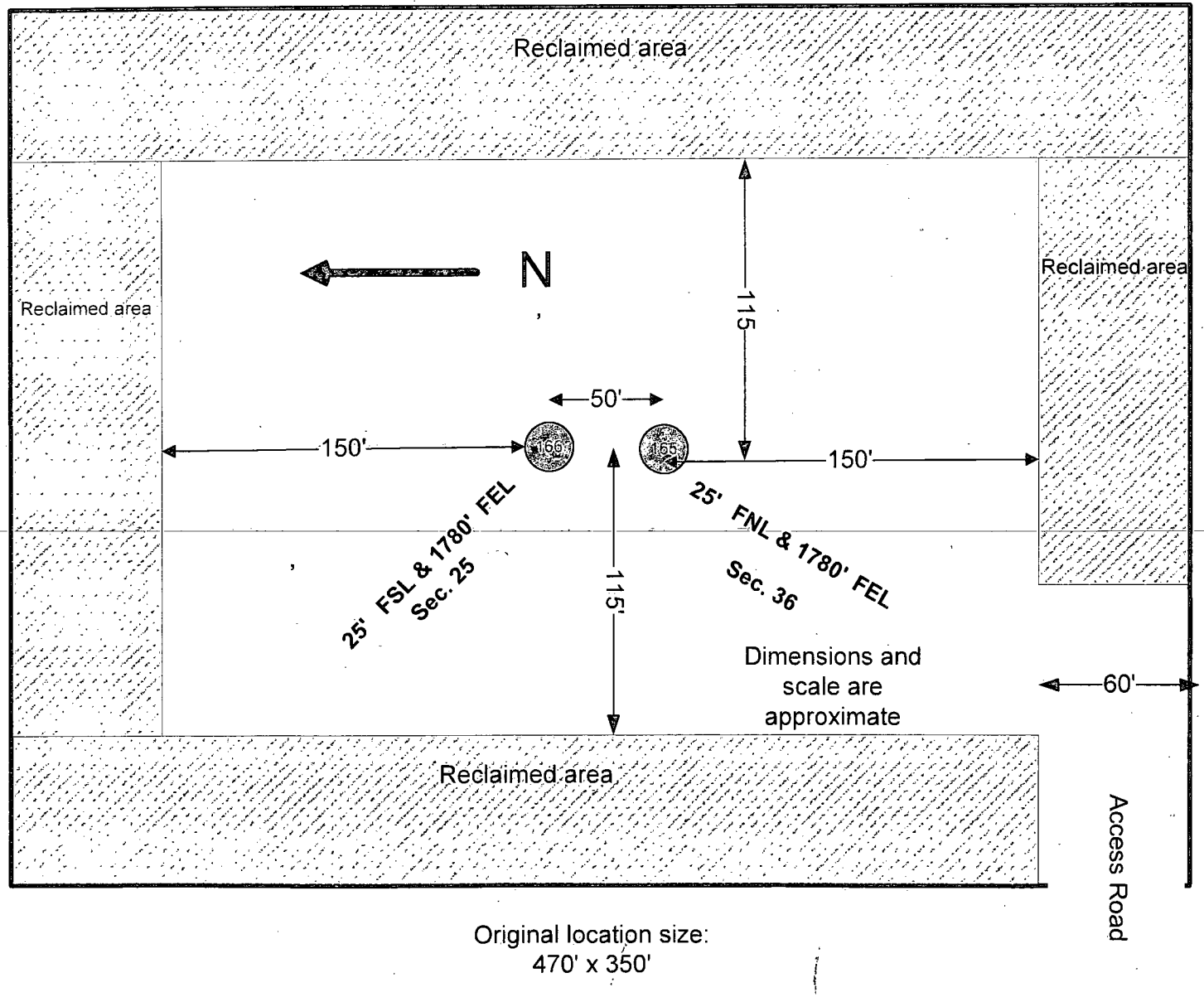
Proposed Interim Site Configuration

Devon Energy Production Co.

Cotton Draw Unit 165H & 166H

Sec. 25 and 36 T24S R31E

Eddy County, NM



Original location size:
470' x 350'

Proposed Reclamation Area

50 '

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company, L.P.**
LEASE NO.:	**NMNM-89055**
WELL NAME & NO.:	**Cotton Draw Unit 166H**
SURFACE HOLE FOOTAGE:	**0025' FSL & 1780' FEL**
BOTTOM HOLE FOOTAGE	**0330' FNL & 1880' FEL**
LOCATION:	**Section 25, T. 24 S., R 31 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Commercial Well Determination
A commercial well determination shall be submitted after production has been established for at least six months.

Unit Wells
The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

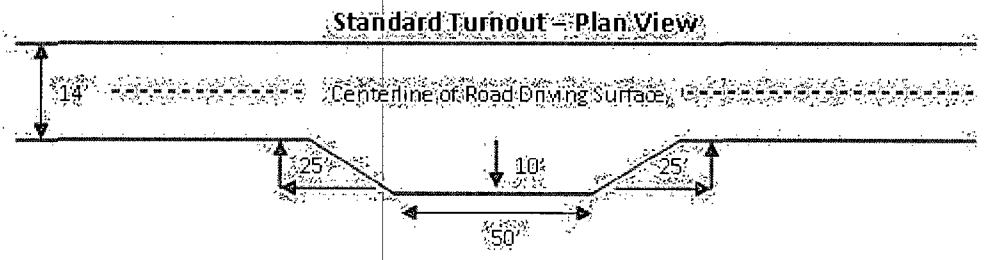
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

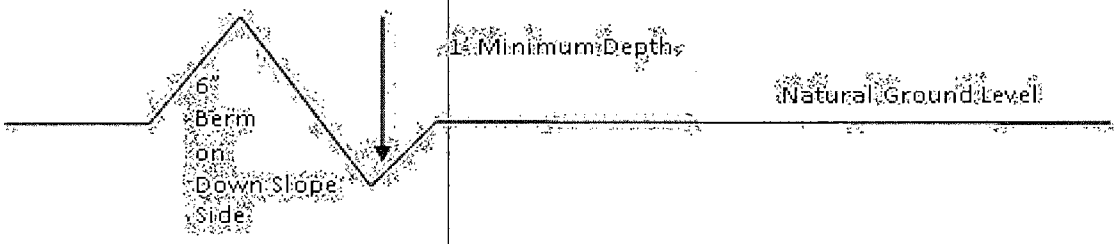
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Fence Requirement

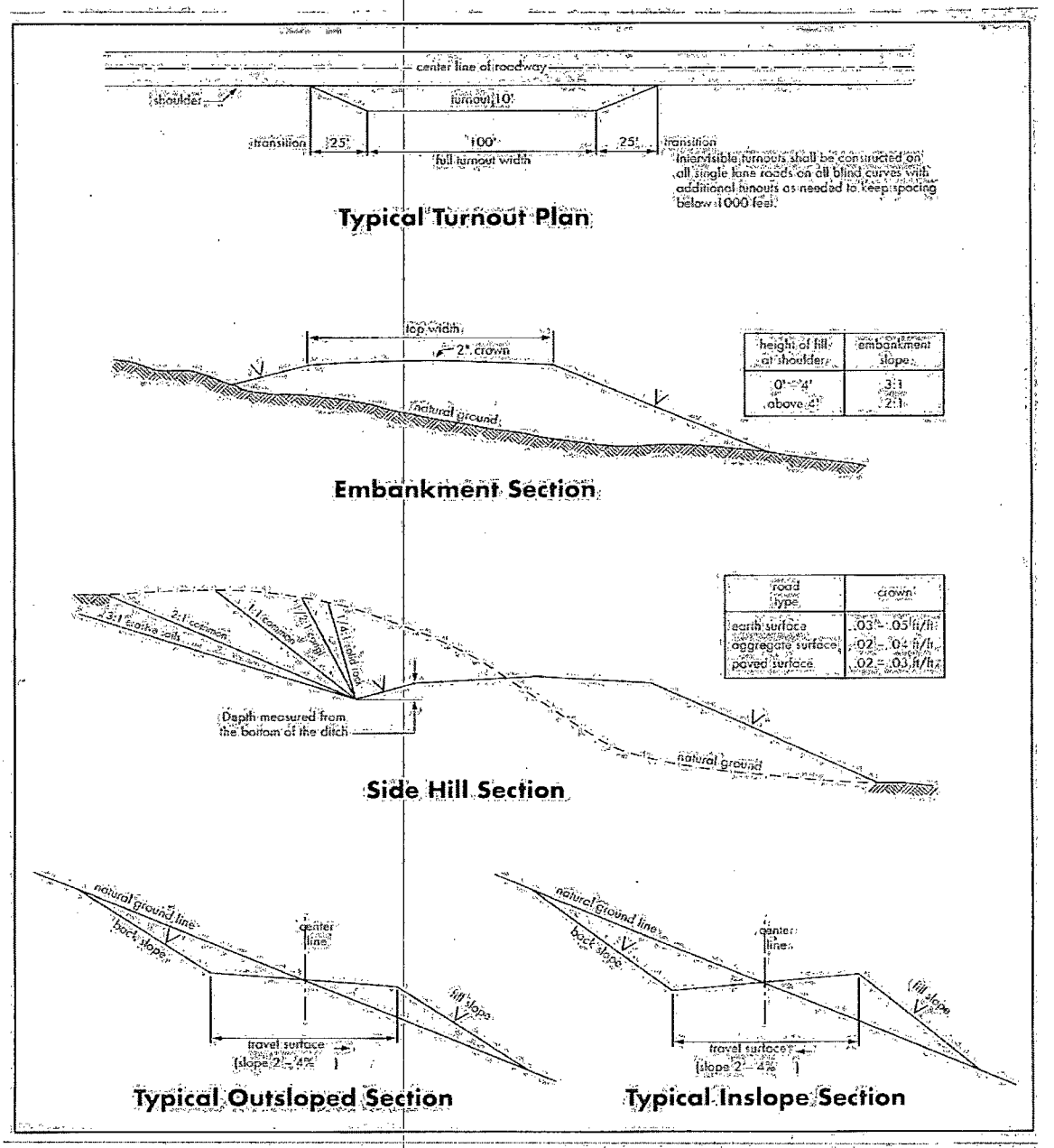
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possibility of water and brine flows in the Salado, Castile, Delaware and Bone Springs Formations.
Possibility of lost circulation in the Delaware and Bone Springs.

1. The **13-3/8** inch surface casing shall be set at approximately **780** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing, which shall be set at **4460** feet, is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review**. If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.

    d. The results of the test shall be reported to the appropriate BLM office.

    e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

    f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

JAM 031813

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

B. PIPELINES
Not applied for in application.

C. ELECTRIC LINES
Not applied for in application.

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed