

OCD-ARTESIA

Form 3160-3
(April 2004)

SECRETARY'S POTASH

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

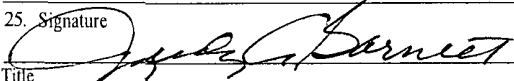
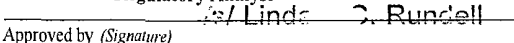
EA 66

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. NM 036379	
1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator Devon Energy Production Company, LP		7. If Unit or CA Agreement, Name and No.	
3a. Address 20 North Broadway Oklahoma City, Oklahoma City 73102-8260		8. Lease Name and Well No. Cotton Draw Unit 122H 300635	
3b. Phone No. (include area code) 405-228-8699		9. API Well No. 30-015-38453	
4. Location of Well (Report location clearly and in accordance with any State requirements) At surface NW/4 NW/4 160 FNL & 1345 FWL Unit C At proposed prod. zone SW/4 SW/4 330 FSL & 1650 FWL Unit N UNORTHODOX LOCATION becomes orthodoxy @ approx. 13,900' md		10. Field and Pool, or Exploratory Cotton Draw Unit Wolfcamp	
11. Sec., T. R. M. or Blk. and Survey or Area SEC 35 T24S R31E		12. County or Parish Eddy County	
13. State NM		14. Distance in miles and direction from nearest town or post office* Approximately 21 miles east of Loving, 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 628.68 Acres	
17. Spacing Unit dedicated to this well W/2 320 Acres		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map.	
19. Proposed Depth 13,600' MD 13,700' TVD 18,134' 13,700' Piled hole		20. BLM/BIA Bond No. on file CO-1104	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3504' 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, shall be attached to this form:

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

25. Signature 	Name (Printed/Typed) Judy A. Barnett	Date 09/29/2010
Title Regulatory Analyst		
Approved by (Signature) 	Name (Printed/Typed) Linda S. Rundell	Date JAN 5 2011
Title STATE DIRECTOR FIELD MANAGER	Office NM STATE OFFICE CARLSBAD FIELD OFFICE	

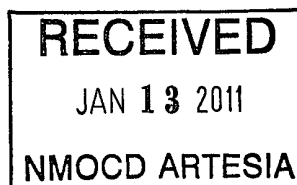
Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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.

*(Instructions on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

DRILLING PROGRAM

Devon Energy Production Company, LP

Cotton Draw Unit 122H

Surface Location: 160' FSL & 1345' FWL, Unit C, Sec 35 T24S R31E, Eddy, NM

Bottom Hole Location: 330' FSL & 1650' FWL, Unit N, Sec 35 T24S R31E, Eddy, NM

1. Geologic Name of Surface Formation

a. Permian

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

a. Rustler	606'	
b. Salado	980'	
c. Castile	2812'	
d. Bell Canyon	4364'	
e. Cherry Canyon	5355'	Oil
f. Brushy Canyon	6626'	Oil
g. 1 st Bone Spring Lime	8215'	Oil
h. 1 st Bone Spring Ss	9318'	Oil
i. 2 nd Bone Spring Lime	9692'	Oil
j. 2 nd Bone Spring Ss	9916'	Oil
k. 3 rd Bone Spring Lime	10,402'	Oil
l. 3 rd Bone Spring Ss	11,188'	Oil
m. Wolfcamp	11,618'	Gas
n. Wolfcamp Lower Shale	13,188'	Gas
o. Strawn	13,610'	Gas
Total Depth	18,140' 18,134'	

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 20" casing at ~~650'~~^{725'} and circulating cement back to surface. Fresh water sands will be protected by setting 13 3/8" casing at 4200' and circulating cement to surface. The Wolfcamp intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement above the base of the 9 5/8" casing.

Casing Program:

	<u>Hole</u> <u>Size</u>	<u>Hole</u> <u>Interval</u>	<u>OD Csg</u>	<u>Casing</u> <u>Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
See cch	26"	0' - 650' 755'	20"	0' - 650' 755'	106.6#	BT&C	J-55
	17 1/2"	650' - 4200'	13 3/8"	0' - 4200'	68#	BT&C	HCL-80
	12 1/4"	4200' - 11,650'	9 5/8"	0' - 11,650'	40#	BT&C	HCE-110
	8 3/4"	11,650' - 13,700' PH					
	8 3/4"	0 - 18,140' 13,134'	5 1/2"	0 - 17,600'	23#	Vam Top	HEC-P110

Design Parameter Factors:

<u>Casing Size</u>	<u>Collapse Design</u> <u>Factor</u>	<u>Burst Design</u> <u>Factor</u>	<u>Tension Design</u> <u>Factor</u>
20"	3.7	10.1	20.2
13 3/8"	1.3	2.3	5.4
9 5/8"	1.7	1.4	2.7
5 1/2"	1.6	1.7	2.2

The collapse SF for the 9 5/8" is derived using a 9 lb fluid gradient behind the casing and a minimum of a 9 lb fluid gradient in the casing. This casing will not be evacuated.

3. Cement Program:

20" Surface

Lead: w/ 745 sx Class C + 2% CC + 4% Gel Yld: 1.75 cf/sx.

Tail: w/ 300 sx Class C + 2% CC + 0.125 #/sx CF. Yld: 1.35 cf/sx. **TOC @ surface.**

13 3/8" Intermediate

Lead: w/ 2360 sx (35:65) Poz (Fly Ash): Premium Plus C + 5% bwow Sodium Chloride. Yld: 2.04 cf/sx. **TOC @ surface. Tail:** w/ 430 sx Premium Plus C + 2% bwow Calcium Chloride + 0.125#/sx CF + 56.3% FW. Yld: 1.35 cf/sx.

9 5/8" Intermediate

Lead: w/ 1100 sx (35:65) Poz (Fly Ash): Premium Plus C + 5% bwow Sodium Chloride + 0.125#/sx CF+ 6% bwoc Bentonite + 107.8% FW. Yld: 2.04 cf/sx. **Tail:** w/850 sx Premium Plus C + 5% bwow Sodium Chloride + 0.125#/sx CF + 0.4% bwoc MPA-5 + 64.7% FW. Yld: 1.56 cf/sx

2nd Stage . DV TOOL @ 5,500'

Lead: w/550 sx 35:65 Poz (Fly Ash):Class H + 6% Gel +2% SC. Yld: 1.98 cf/sx.

Tail: w/ 150 sx (60:40) Poz Class C + 1% KCL + 0.125#/sx CF. Yld: 1.56 cf/sx. **TOC @ 3500'.**

5 1/2" Production

Lead: w/ 2150 sx Premium Plus H + 0.35% bwoc R-3 + 0.4% bwoc CD-32 + 1.4% FW. Yld: 1.13 cf/sx. **TOC @ 11,000'.**

Cement Plug for PH:

Plug 1: 12,500'-13,700' w/ 525 sx Class H + R-3, Yld: 1.18 cf/sx

An 8 3/4" Open Hole Whipstock with a packer type anchor will be set @ ~12,400' after the cement plug has been set. Directional tools will be run and KOP will be ~12,500'. The lateral will be drilled from ~14,000' MD to 18,140' MD.

All cement volumes have 25% excess included. The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach approximately 500' above the 9 5/8" casing shoe. All casing is new and API approved.

BOP DESIGN: Will consist of a (10M system) triple ram type (10M psi WP) preventer and a bag-type (Hydril) preventer (10M psi WP) and a rotation head. All units will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and 5" drill pipe rams on bottom. A 3M Annular BOP will be installed on the 20" surface casing and utilized continuously until total depth (~4200') is reached. The 20" BOP will utilize as a 2000 psi BOP and tested as per 2000 psi BOP requirements (1000 psi). The mentioned 10M preventer will be installed on the 13 3/8" casing. The 17 1/2" hole section and the 12 1/4" hole section will be tested as 5000 psi requirements. The 8 3/4" hole will be the only hole section to be tested and drilled with 10000 psi requirements. All BOP's will be tested with independent testers before drilling out the associated casing shoes. Prior to drilling out the 13 3/8" casing shoe, the BOP's and Hydril will be tested as per BLM Drilling Operations Order #2.

Pipe rams will be operated and checked each 24-hour period and each time the drill pipe is out of the hole. These functional tests will be documented on the daily driller's log. A 2" kill line and 3" choke line will be incorporated in the drilling spool below the ram-type BOP. Other accessory BOP equipment will include a Kelly cock, floor safety valve, choke lines and choke manifold having 10000 psi WP rating.

Proposed Mud Circulation System See COA

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc</u>	<u>Fluid Loss</u>	<u>Type System</u>
0' - 650 755'	8.4-8.8	32-34	NC	FW/Gel
755 650' - 4200'	9.7-10.0	28-30	NC	Brine
4200' - 11,650'	9.0-9.3	28-30	NC-40	FW
11,650-13,700'	10.5-13.0	40-60	12-8cc	FW
PH 18,140 18,134'	13.0-14.0	40-60		80/20 Oil Base

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

4. 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 20" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 20" shoe until total depth is reached.

5. **Logging, Coring, and Testing Program:** See COA
 - 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 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

6. 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 9140 psi and Estimated BHT 200°. No H₂S is anticipated to be encountered.

7. 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.



Devon Energy

Eddy Co., New Mexico (Nad 83)

Cotton Draw Unit #122

Cotton Draw Unit #122

Lateral #1

Plan: Design #1

Standard Survey Report

17 September, 2010



devon

Project: Eddy Co., New Mexico (Nad 83)
Site: Cotton Draw Unit #122
Well: Cotton Draw Unit #122
Wellbore: Lateral #1
Design: Design #1



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	12848.00	0.00	0.00	12848.00	0.00	0.00	0.00	0.00	0.00	
3	13173.43	32.54	105.40	13155.21	-23.89	86.73	10.00	105.40	29.57	
4	13173.68	32.54	105.40	13155.43	-23.83	86.86	0.00	0.00	29.62	
5	13600.30	79.28	179.90	13590.00	-498.12	306.07	10.00	82.70	517.26	PP (CDU#122)
6	14007.50	90.00	179.90	13600.00	-604.70	306.25	10.00	0.00	623.62	
7	18134.55	90.00	179.90	13600.00	-4731.74	313.10	0.00	0.00	4742.09	PBHL - TD (CDU#122)

ANNOTATIONS

TVD	MD	Annotation
12848.00	12848.00	KOP - B&T 10.0°/100'
13600.00	14007.50	EOC - Hold 190.0° @ A:179.90

PROJECT DETAILS: Eddy Co., New Mexico (Nad 83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

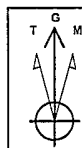
Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
PP (CDU#122)	13590.00	-498.12	306.07	429387.07	721263.74	32° 10' 44.853 N	103° 45' 6.389 W	Point
PBHL - TD (CDU#122)	13600.00	-4731.74	313.10	425153.46	721270.77	32° 10' 2.959 N	103° 45' 6.573 W	Point

WELL DETAILS: Cotton Draw Unit #122

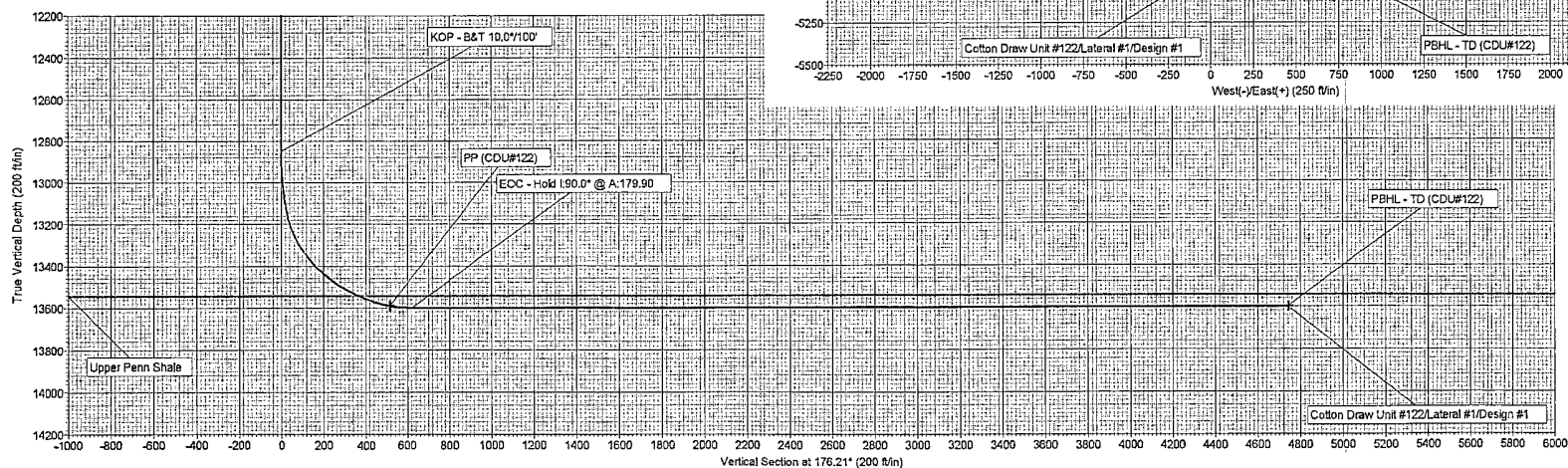
Ground Level 3504.00					
WELL @ 3524.00ft (Original Well Elev)					
+N-S	+E-W	Northing	Easting	Latitude	Slot
0.00	0.00	429885.19	720957.87	32° 10' 49.799 N	103° 45' 9.919 W

Plan: Design #1 (Cotton Draw Unit #122/Lateral #1)

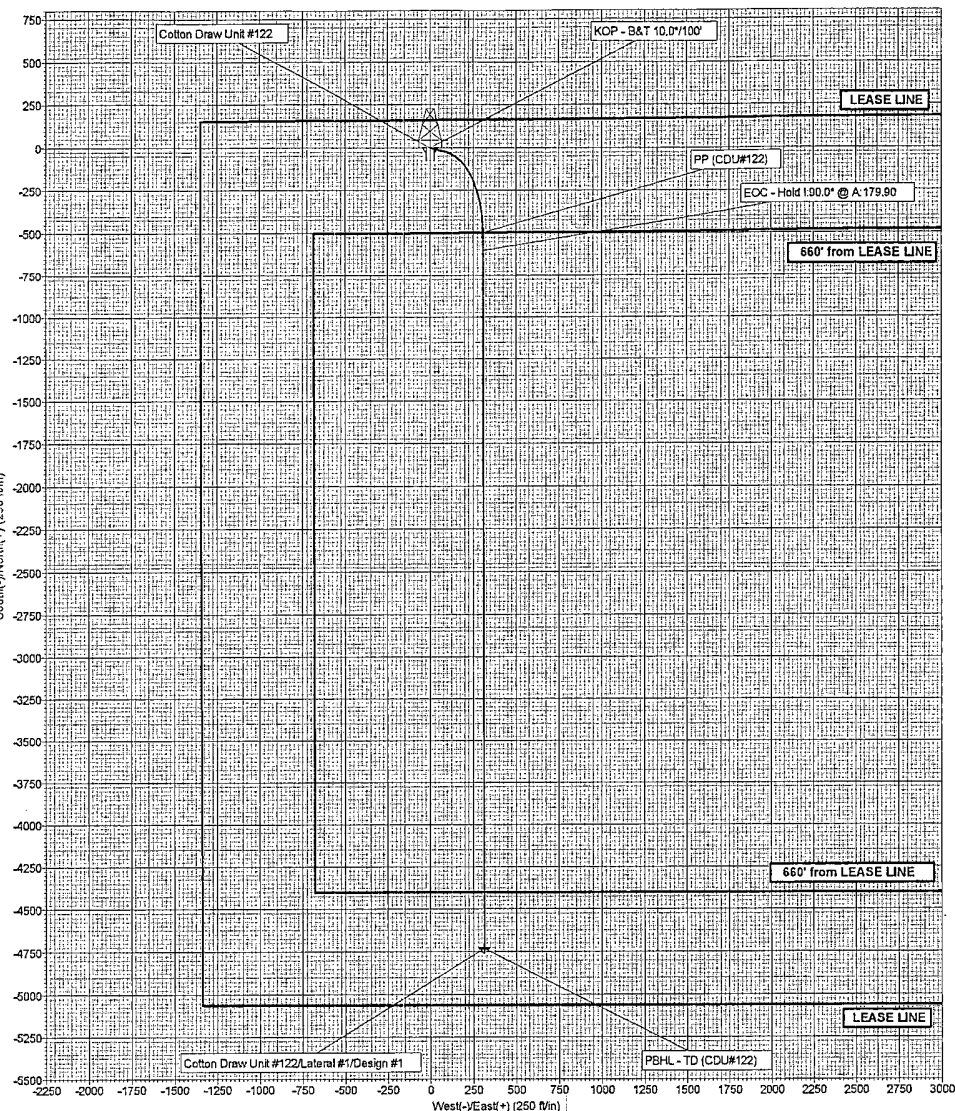
Created By: Mike Starkey Date: 9/43, September 21 2010
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____



Azimuths to Grid North
True North: -0.31°
Magnetic North: 7.43°
Magnetic Field
Strength: 48677.4nT
Dip Angle: 60.15°
Date: 09/17/2010
Model: IGRF200510



South(-)/North(+) (250 ft/m)





CUDD Drilling & Measurement Services

Survey Report



Company:	Devon Energy	Local Co-ordinate Reference:	Site Cotton Draw Unit #122
Project:	Eddy Co., New Mexico (Nad 83)	TVD Reference:	WELL @ 3524.00ft (Original Well Elev)
Site:	Cotton Draw Unit #122	MD Reference:	WELL @ 3524.00ft (Original Well Elev)
Well:	Cotton Draw Unit #122	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 2003.21 Single User Db

Project	Eddy Co., New Mexico (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Cotton Draw Unit #122, Sec 35, T-24S, R-31E		
Site Position:		Northing:	429,885.19 ft
From:	Map	Easting:	720,957.67 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 10' 49.799 N
		Longitude:	103° 45' 9.919 W
		Grid Convergence:	0.31 °

Well	Cotton Draw Unit #122					
Well Position	+N-S	0.00 ft	Northing:	429,885.19 ft	Latitude:	32° 10' 49.799 N
	+E-W	0.00 ft	Easting:	720,957.67 ft	Longitude:	103° 45' 9.919 W
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,524.00 ft	Ground Level:	3,504.00 ft	

Wellbore	Lateral #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	09/17/10	7.74	60.15	48,677

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.00	0.00	0.00	176.21

Survey Tool Program	Date	09/17/10		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	0.00	Design #1 (Lateral #1)	NS-GYRO-MS	North sensing gyrocompassing m/s
12,700.00	18,134.24	Design #1 (Lateral #1)	CUDD MWD	MWD - Standard CUDD MWD

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
606.00	0.00	0.00	606.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
980.00	0.00	0.00	980.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
2,812.00	0.00	0.00	2,812.00	0.00	0.00	0.00	0.00	0.00	0.00
Castile									
4,107.00	0.00	0.00	4,107.00	0.00	0.00	0.00	0.00	0.00	0.00
Base of Salt									
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8" Casing									



CUDD Drilling & Measurement Services

Survey Report



Company:	Devon Energy	Local Co-ordinate Reference:	Site Cotton Draw Unit #122
Project:	Eddy Co., New Mexico (Nad 83)	TVD Reference:	WELL @ 3524.00ft (Original Well Elev)
Site:	Cotton Draw Unit #122	MD Reference:	WELL @ 3524.00ft (Original Well Elev)
Well:	Cotton Draw Unit #122	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 2003.21 Single User Db

Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Rate
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
4,364.00	0.00	0.00	4,364.00	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon									
5,355.00	0.00	0.00	5,355.00	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									
6,626.00	0.00	0.00	6,626.00	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
8,215.00	0.00	0.00	8,215.00	0.00	0.00	0.00	0.00	0.00	0.00
1st BS Lime									
9,318.00	0.00	0.00	9,318.00	0.00	0.00	0.00	0.00	0.00	0.00
1st BS Ss									
9,692.00	0.00	0.00	9,692.00	0.00	0.00	0.00	0.00	0.00	0.00
2nd BS Lime									
9,916.00	0.00	0.00	9,916.00	0.00	0.00	0.00	0.00	0.00	0.00
2nd BS Ss									
10,402.00	0.00	0.00	10,402.00	0.00	0.00	0.00	0.00	0.00	0.00
3rd BS Lime									
11,118.00	0.00	0.00	11,118.00	0.00	0.00	0.00	0.00	0.00	0.00
3rd BS Ss									
11,618.00	0.00	0.00	11,618.00	0.00	0.00	0.00	0.00	0.00	0.00
Wolfcamp									
12,848.00	0.00	0.00	12,848.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP - B&T 10.0°/100'									
13,173.43	32.54	105.40	13,156.21	-23.89	86.73	29.57	10.00	10.00	0.00
13,173.68	32.54	105.40	13,156.43	-23.93	86.86	29.62	0.00	0.00	0.00
13,742.00	66.17	170.59	13,543.00	-347.97	294.02	366.64	10.00	5.92	11.47
Upper Penn Shale									
13,900.30	79.28	179.90	13,590.00	-498.12	306.07	517.26	10.00	8.28	5.89
PP (CDU#122)									
14,007.50	90.00	179.90	13,600.00	-604.70	306.25	623.62	10.00	10.00	0.00
EOC - Hold I:90.0° @ A:179.90									
18,134.55	90.00	179.90	13,600.00	-4,731.74	313.10	4,742.09	0.00	0.00	0.00
PBHL - TD (CDU#122)									

Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
PP (CDU#122)	0.00	0.00	13,590.00	-498.12	306.07	429,387.07	721,263.74	32° 10' 44.853 N	103° 45' 6.389 W
- plan hits target center									
- Point									
PBHL - TD (CDU#122)	0.00	0.00	13,600.00	-4,731.74	313.10	425,153.46	721,270.77	32° 10' 2.959 N	103° 45' 6.573 W
- plan hits target center									
- Point									



CUDD Drilling & Measurement Services
Survey Report



Company:	Devon Energy	Local Co-ordinate Reference:	Site Cotton Draw Unit #122
Project:	Eddy Co., New Mexico (Nad 83)	TVD Reference:	WELL @ 3524.00ft (Original Well Elev)
Site:	Cotton Draw Unit #122	MD Reference:	WELL @ 3524.00ft (Original Well Elev)
Well:	Cotton Draw Unit #122	North Reference:	Grid
Wellbore:	Lateral #1	Survey Calculation Method:	Minimum Curvature
Design:	Design #1	Database:	EDM 2003.21 Single User Db

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
4,200.00	4,200.00	9 5/8" Casing	9-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
606.00	606.00	Rustler		0.00	
980.00	980.00	Salado		0.00	
2,812.00	2,812.00	Castile		0.00	
4,107.00	4,107.00	Base of Salt		0.00	
4,364.00	4,364.00	Bell Canyon		0.00	
5,355.00	5,355.00	Cherry Canyon		0.00	
6,626.00	6,626.00	Brushy Canyon		0.00	
8,215.00	8,215.00	1st BS Lime		0.00	
9,318.00	9,318.00	1st BS Ss		0.00	
9,692.00	9,692.00	2nd BS Lime		0.00	
9,916.00	9,916.00	2nd BS Ss		0.00	
10,402.00	10,402.00	3rd BS Lime		0.00	
11,118.00	11,118.00	3rd BS Ss		0.00	
11,618.00	11,618.00	Wolfcamp		0.00	
13,742.00	13,543.00	Upper Penn Shale		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
12,848.00	12,848.00	0.00	0.00	KOP - B&T 10.0°/100'
14,007.50	13,600.00	-604.70	306.25	EOC - Hold 1:90.0° @ A:179.90

Checked By: _____ Approved By: _____ Date: _____

CDU #122_Plan #1_Report_09-17-10.txt

Devon Energy
Cotton Draw Unit #122 - Design #1

Eddy Co., New Mexico (Nad 83)
Cotton Draw Unit #122

Measured Dogleg Depth Rate (ft) (°/100ft)	Incl.	Azim.	Vertical Depth (ft)	Northings (ft)	Eastings (ft)	Vertical Section (ft)
0.00	0.00	0.00	0.00	0.00 N	0.00 E	0.00
12848.00	0.00	0.00	12848.00	0.00 N	0.00 E	0.00
12900.00	5.20	105.40	12899.93	0.63 S	2.27 E	0.78
13000.00	15.20	105.40	12998.22	5.32 S	19.32 E	6.59
13100.00	25.20	105.40	13091.95	14.48 S	52.57 E	17.92
13173.43	32.54	105.40	13156.21	23.89 S	86.73 E	29.57
13173.68	32.54	105.40	13156.43	23.93 S	86.86 E	29.62
13200.00	32.97	110.20	13178.56	28.28 S	100.41 E	34.86
13300.00	36.13	126.98	13261.10	55.48 S	149.62 E	65.25
13400.00	41.25	140.77	13339.27	98.87 S	194.14 E	111.48
13500.00	47.69	151.72	13410.70	157.12 S	232.60 E	172.15
13600.00	54.97	160.52	13473.21	228.47 S	263.86 E	245.41
13700.00	62.78	167.83	13524.90	310.74 S	286.94 E	329.03
13800.00	70.92	174.16	13564.21	401.45 S	301.15 E	420.48
13900.00	79.25	179.89	13589.94	497.82 S	306.07 E	516.97
13900.30	79.28	179.90	13590.00	498.12 S	306.07 E	517.26
14000.00	89.25	179.90	13599.95	597.20 S	306.24 E	616.13
14007.50	90.00	179.90	13600.00	604.70 S	306.25 E	623.62
14100.00	90.00	179.90	13600.00	697.19 S	306.40 E	715.92
14200.00	90.00	179.90	13600.00	797.19 S	306.57 E	815.72
14300.00	90.00	179.90	13600.00	897.19 S	306.73 E	915.51
14400.00	90.00	179.90	13600.00	997.19 S	306.90 E	1015.30
14500.00	90.00	179.90	13600.00	1097.19 S	307.07 E	1115.09
14600.00	90.00	179.90	13600.00	1197.19 S	307.23 E	1214.88
14700.00	90.00	179.90	13600.00	1297.19 S	307.40 E	1314.68

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14800.00	90.00	179.90	13600.00	1397.19 S	307.56 E	1414.47
0.00						
14900.00	90.00	179.90	13600.00	1497.19 S	307.73 E	1514.26
0.00						
15000.00	90.00	179.90	13600.00	1597.19 S	307.90 E	1614.05
0.00						
15100.00	90.00	179.90	13600.00	1697.19 S	308.06 E	1713.84
0.00						
15200.00	90.00	179.90	13600.00	1797.19 S	308.23 E	1813.64
0.00						
15300.00	90.00	179.90	13600.00	1897.19 S	308.39 E	1913.43
0.00						
15400.00	90.00	179.90	13600.00	1997.19 S	308.56 E	2013.22
0.00						
15500.00	90.00	179.90	13600.00	2097.19 S	308.73 E	2113.01
0.00						
15600.00	90.00	179.90	13600.00	2197.19 S	308.89 E	2212.81
0.00						
15700.00	90.00	179.90	13600.00	2297.19 S	309.06 E	2312.60
0.00						
15800.00	90.00	179.90	13600.00	2397.19 S	309.22 E	2412.39
0.00						
15900.00	90.00	179.90	13600.00	2497.19 S	309.39 E	2512.18
0.00						
16000.00	90.00	179.90	13600.00	2597.19 S	309.56 E	2611.97
0.00						
16100.00	90.00	179.90	13600.00	2697.19 S	309.72 E	2711.77
0.00						
16200.00	90.00	179.90	13600.00	2797.19 S	309.89 E	2811.56
0.00						
16300.00	90.00	179.90	13600.00	2897.19 S	310.05 E	2911.35
0.00						
16400.00	90.00	179.90	13600.00	2997.19 S	310.22 E	3011.14
0.00						
16500.00	90.00	179.90	13600.00	3097.19 S	310.39 E	3110.93
0.00						
16600.00	90.00	179.90	13600.00	3197.19 S	310.55 E	3210.73
0.00						
16700.00	90.00	179.90	13600.00	3297.19 S	310.72 E	3310.52
0.00						
16800.00	90.00	179.90	13600.00	3397.19 S	310.88 E	3410.31
0.00						
16900.00	90.00	179.90	13600.00	3497.19 S	311.05 E	3510.10
0.00						
17000.00	90.00	179.90	13600.00	3597.19 S	311.22 E	3609.90
0.00						
17100.00	90.00	179.90	13600.00	3697.19 S	311.38 E	3709.69
0.00						
17200.00	90.00	179.90	13600.00	3797.19 S	311.55 E	3809.48
0.00						
17300.00	90.00	179.90	13600.00	3897.19 S	311.71 E	3909.27
0.00						
17400.00	90.00	179.90	13600.00	3997.19 S	311.88 E	4009.06
0.00						
17500.00	90.00	179.90	13600.00	4097.19 S	312.05 E	4108.86
0.00						
17600.00	90.00	179.90	13600.00	4197.19 S	312.21 E	4208.65
0.00						
17700.00	90.00	179.90	13600.00	4297.19 S	312.38 E	4308.44
0.00						
17800.00	90.00	179.90	13600.00	4397.19 S	312.55 E	4408.23
0.00						
17900.00	90.00	179.90	13600.00	4497.19 S	312.71 E	4508.02

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0.00	18000.00	90.00	179.90	13600.00	4597.19 S	312.88 E	4607.82
0.00	18100.00	90.00	179.90	13600.00	4697.19 S	313.04 E	4707.61
0.00	18134.55	90.00	179.90	13600.00	4731.74 S	313.10 E	4742.09

All data are in feet unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to WELL. Northings and Eastings are relative to Site.

The Dogleg Severity is in Degrees per 100 feet.
Vertical Section is from Slot and calculated along an Azimuth of 176.210° (Grid).

Coordinate System is North American Datum 1983 US State Plane 1983, New Mexico Eastern Zone.

Central meridian is -104.333°.

Grid Convergence at Surface is 0.309°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 18134.55ft., the Bottom Hole Displacement is 4742.09ft., in the Direction of 176.210° (Grid).

NOTES REGARDING BLOWOUT PREVENTERS

Devon Energy Production Company, LP

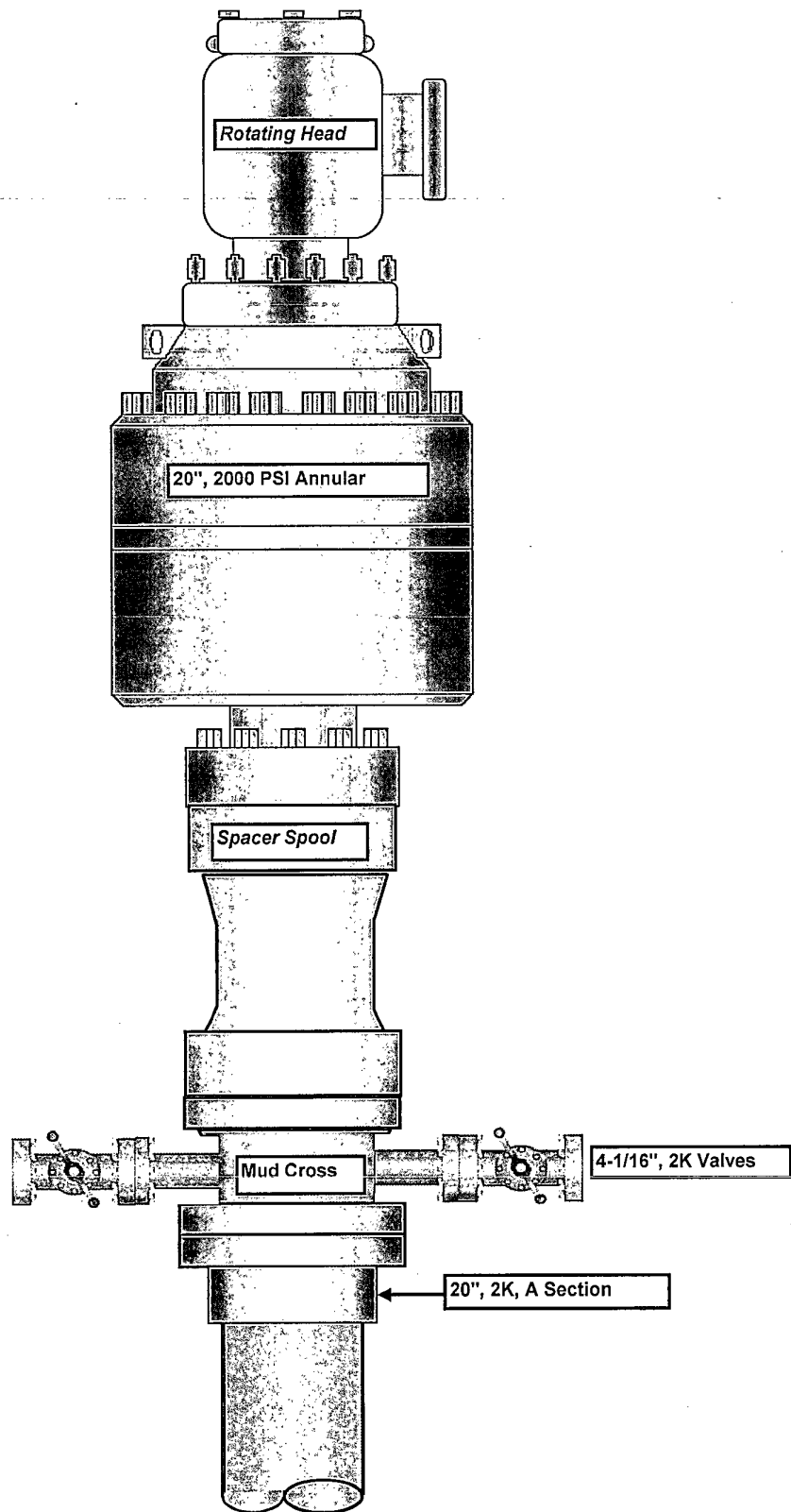
Cotton Draw Unit 122H

Surface Location: 160' FSL & 1345' FWL, Unit C, Sec 35 T24S R31E, Eddy, NM

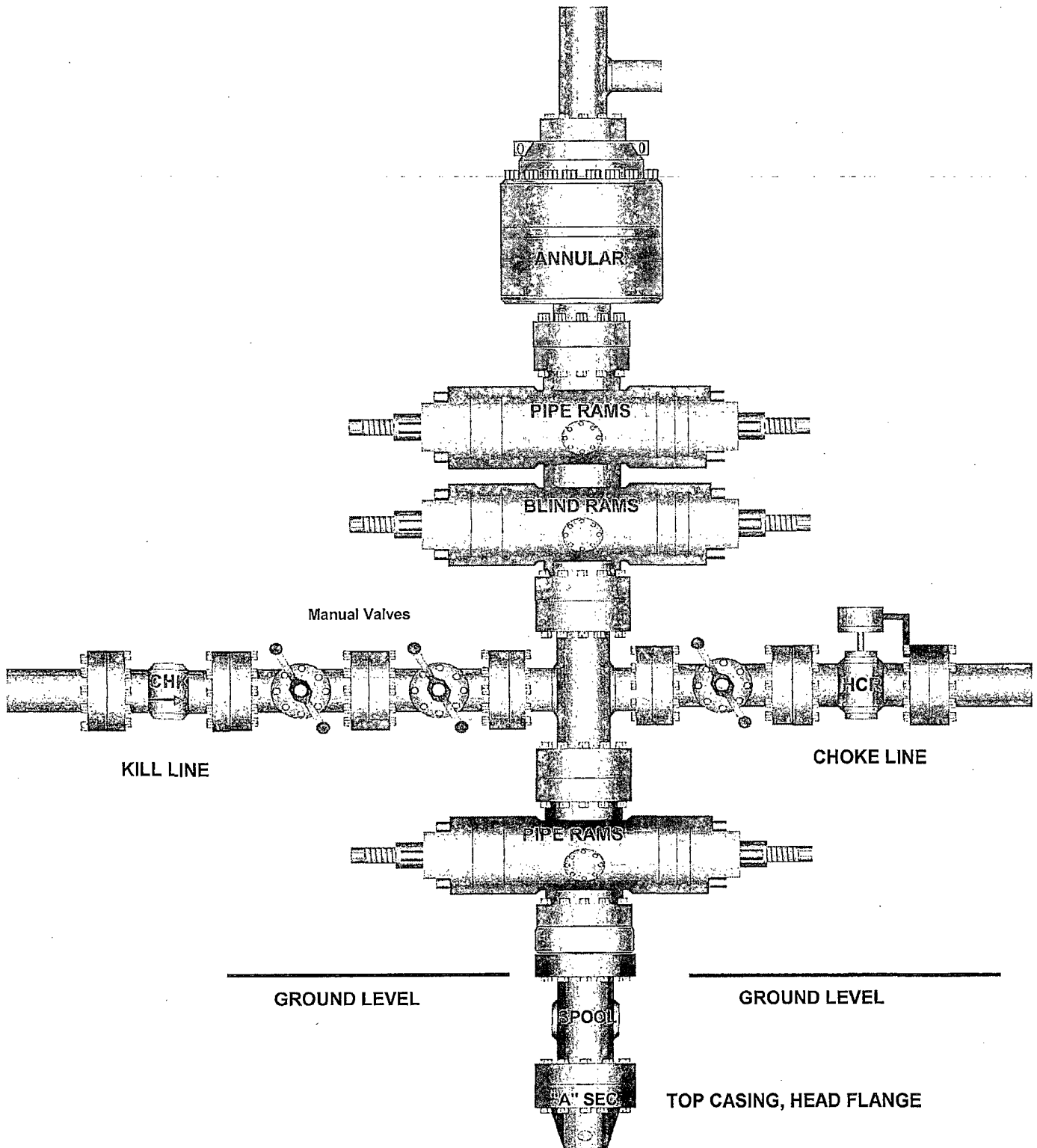
Bottom Hole Location: 330' FSL & 1650' FWL, Unit N, Sec 35 T24S R31E, Eddy, NM

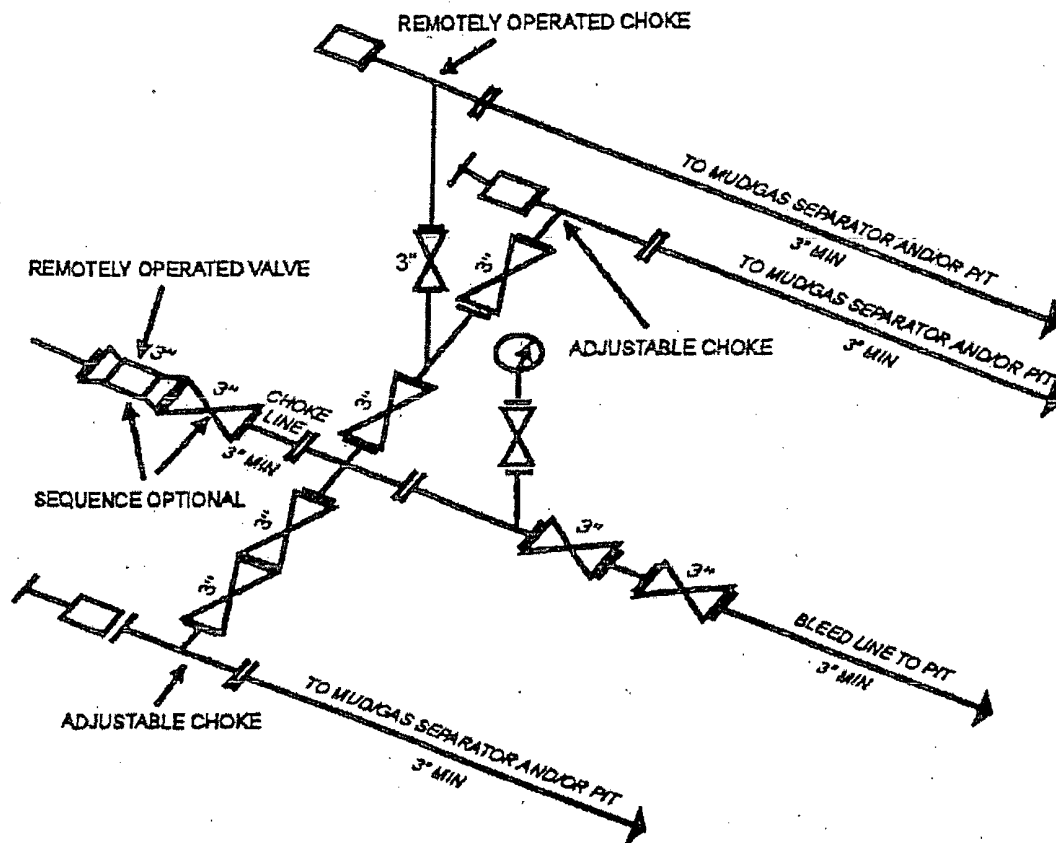
1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 5,000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 5,000 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.

20" 2K Annular



13-5/8" x 10,000 psi BOP Stack





10M AND 15M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY
 [53 FR 49661, Dec. 9, 1988 and 54 FR 39528, Sept. 27, 1989]

Operator should supply their own schematic and not use the generic one found in Onshore Order #2. BLM inspectors are expecting what is approved and the generic schematic is not adequate.