

Form 3160-3
(February 2005)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

HOBBS OCD

MAY 17 2011

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

1a. Type of work: ☒ DRILL ☐ REENTER		5. Lease Serial No. USA NMNM 94186	
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 Co., LP (6137)		7. If Unit or CA Agreement, Name and No.	
3a. Address 20 North Broadway OKC, OK 73102		8. Lease Name and Well No. Thistle Unit 25H(30884)	
3b. Phone No. (include area code) (405)-236-3511		9. API Well No. 25H 70-025-40136	
4. Location of Well (Report location clearly and in accordance with any State requirements*) At surface NENE 150' FNL & 1170' FEL (Unit A) UNORTHODUA At proposed prod. zone SESE 150' FSL & 150' FEL Unit P LOCATION		10. Field and Pool, or Exploratory BRINNINSTOOL, DELAWARE	
11. Sec., T. R. M. or Blk. and Survey or Area Sec 21 T23S R33E		12. County or Parish Lea	
13. State NM		14. Distance in miles and direction from nearest town or post office* Approximately 20 miles southeast of, Jal NM.	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 150'	16. No. of acres in lease 960 ac 9220	17. Spacing Unit dedicated to this well 160 acres	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. See attached map	19. Proposed Depth PH 9245' TVD 9048' MD 13,832'	20. BLM/BIA Bond No. on file CO-1104	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3725' GL	22. Approximate date work will start* 09/01/2011	23. Estimated duration 45 days	
24. Attachments			

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

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

25. Signature <i>Spence Laird</i>	Name (Printed/Typed) Spence Laird	Date 01/03/2011
Title Regulatory Analyst		

Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) CARRISBAWATER OFFICE	Date APR 22 2011
Title FIELD MANAGER		

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)

OCD CONDITION OF APPROVAL of Drilling:
Intent to drill ONLY --- CANNOT produce until the Non-Standard
Location has been approved by OCD Santa Fe office.

CARLSBAD CONTROLLED WATER BASIN

SEE ATTACHED FOR
CONDITIONS OF APPROVALAPPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

MAY 19 2011

MAY 17 2011

DRILLING PROGRAM

Devon Energy Production Company, LP

Thistle Unit 25H**RECEIVED**

Surface Location: 150' FNL & 1170' FEL, Unit A, Sec 21 T23S R33E, Lea, NM

Bottom Location: 150' FSL & 150' FEL, Unit P, Sec 21 T23S R33E, Lea, NM

1. Geologic Name of Surface Formation

a. Permian

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

a. Water	200'	Fresh Water
b. Rustler	1373'	Barren
c. Top Salt	1479'	Barren
d. Base Salt	2239'	Barren
e. Delaware	5259'	Oil/Gas
f. Cherry Canyon	6162'	Oil/Gas
g. Brushy Canyon	7624'	Oil/Gas
h. Top Brushy Canyon Pay Snd	8935'	Oil/Gas
i. Landing Pt. in Brushy Canyon	8985'	Oil/Gas
j. TD Pilot Hole	9215' ⁹²²⁰	Oil/Gas
k. Bone Spring Lime	9227'	Oil/Gas

TVD: 9048' MD: 13,832'

Producing formation: Brushy Canyon

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 13 3/8" casing at 1400' and circulating cement back to surface. The fresh water sands will be protected by setting 9 5/8" casing at 2265' and circulating cement to surface. The production 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. All casing is new and API approved.

3. Casing Program:

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
See COA 17 1/2"	0'-1400' ¹⁴⁶⁰	13 3/8"	0'-1400'	54.5#	STC	J-55
See COA 12 1/4"	1400'-2265' ⁵¹⁹⁵	9 5/8"	0'-2265'	40#	LTC	N-80
8 3/4"	2265'-8200'	5 1/2"	0-8200'	17#	LTC	N-80
8 3/4"	8200'-13,832'	5 1/2"	8200'-13832'	17#	BTC	N-80

Design Parameter Factors:

<u>Casing Size</u>	<u>Collapse Design Factor</u>	<u>Burst Design Factor</u>	<u>Tension Design Factor</u>
13-3/8" J-55 LTC	1.55	3.75	11.17
9-5/8" 40# N-80 LTC	2.18	3.35	6.95
5-1/2" 17# N-80 LTC	1.63	2.01	2.85
5-1/2" 17# N-80 BTC	1.49	1.83	1.68

Cement Program:

Pilot Hole (Plug depth 8200'-9220') Cement: 600 sacks Class H, 1.18 cuft/sack yield with cement Whipstock at 8200'. The Whipstock will have 900' of 2 7/8" tubing tailpipe.

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

13-3/8" Surface **Lead:** 805 sacks (35:65) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 4% bwoc Bentonite + 1% bwoc Sodium Metasilicate + 5% bwoc MPA-5 + 101.3% Fresh Water

Yield: 1.97 cf/sk

TOC @ surface

Tail: 300 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water

Yield: 1.35 cf/sk

9-5/8" Intermediate **Lead:** 465 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 1% bwoc Sodium Metasilicate + 89.7% Fresh Water

See
COA

Yield: 1.73 cf/sk

TOC @ surface

Tail: 250 sacks Class C Cement + 1% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.2% Fresh Water

Yield: 1.34 cf/sk

5-1/2" Production

1st Stage

Lead: 705 sacks (35:65) Poz (Fly Ash):Class H Cement + 3% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 3 lbs/sack LCM-1 + 6% bwoc Bentonite + 0.7% bwoc FL-52A + 102.5% Fresh Water

Yield: 2.01 cf/sk

Tail: 1435 sacks (50:50) Poz (Fly Ash):Class H Cement + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 0.6% bwoc Sodium Metasilicate + 0.5% bwoc FL-52A + 57.3% Fresh Water

Yield: 1.28 cf/sk

DV TOOL at 5,500 ft

2nd Stage

Lead: 565 sacks Class C Cement + 1% bwoc R-3 + 0.125 lbs/sack Cello Flake + 3% bwoc Sodium

Metasilicate + 157% Fresh Water

Yield: 2.88 cf/sk

Tail: 100 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.3% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 65.5% Fresh Water

Yield: 1.38cf/sk

TOC for All Strings:

Surface: 0
Intermediate: 0
Production: 1,765' See COA

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.

5. Pressure Control Equipment:

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

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

Out Per Operator 1/15/11 [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

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 - 1,400 ¹⁴⁰⁰	8.4 - 9.0	30 - 34	N/C	FW
1400 - 2,265 ^{5/45}	9.8 - 10.0	28 - 32	N/C	Brine
2,265 - 13,832	8.6 - 9.0	28 - 32	N/C	FW

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 Kelly cock will be in the drill string at all times.
- A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.

- 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:

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.

9. Potential Hazards:

- a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area; therefore, no H₂S is anticipated to be encountered. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3800 psi and Estimated BHT 145°.

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.

devon

Project: Lea County
Site: Thistle Unit
Well: #25H
Wellbore: OH
Plan: Design #1 (#25H/OH)

PROJECT DETAILS: Lea County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level
Local North: Grid



Azimuths to Grid North
True North: -0.41°
Magnetic North: 7.24°

Magnetic Field
Strength: 48745.9snT
Dip Angle: 60.29°
Date: 12/02/2010
Model: IGRF200510

PATHFINDER

A Schlumberger Company

West(-)/East(+) (200 usft/in)

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSeet	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28412.00	0.00	0.00	0.00	8412.00	0.00	0.00	0.00	0.00	0.00	
39304.15	89.20	168.01	8965.00	-552.73	117.39	10.00	168.01	565.05		
33832.21	89.20	168.01	9048.22	-4981.57	1057.96	0.00	0.00	5032.67	PBHL(TU#25)	

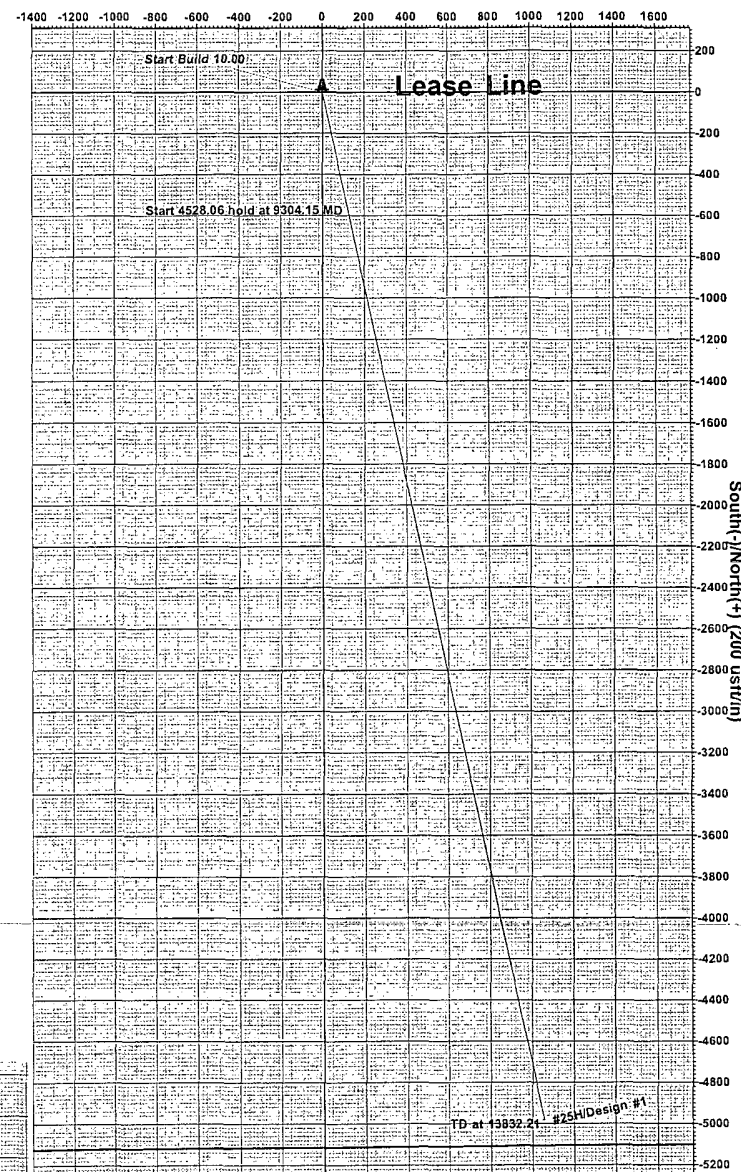
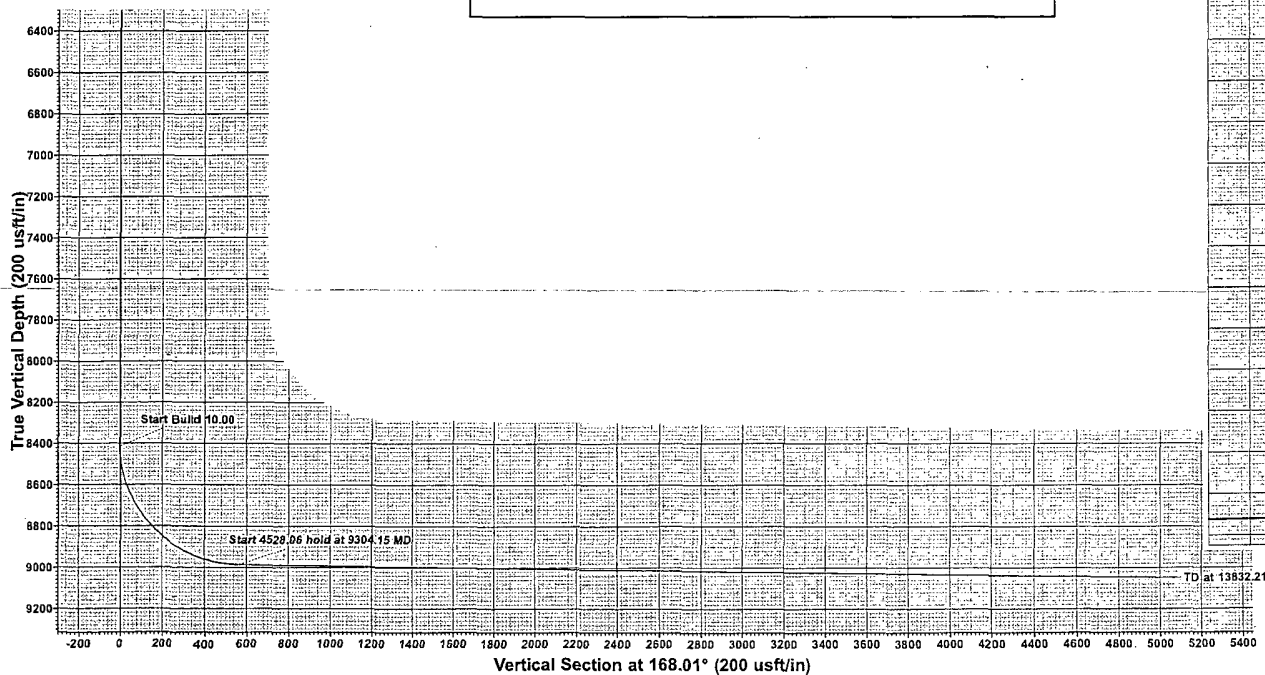
WELL DETAILS: #25H

Ground Elevation: 3725.00
RKB Elevation: WELL @ 3744.00usft (19' KB Correction)
Rig Name: 19' KB Correction

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	472593.770	776427.780	32° 17' 48.988 N	103° 34' 20.985 W	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL(TU#25)9048.00	-4981.54	1058.08	467612.230	777485.860	Point	



Plan: Design #1 (#25H/OH)

Created By: Nate Bingham Date: 17.01, December 07 2010



Devon Energy Production Company, L.P.

Lea County
Thistle Unit
#25H
OH

HOBBS OCD

MAY 17 2011

RECEIVED

Plan: Design #1

Pathfinder X & Y Planning Report

07 December, 2010

PATHFINDER[®]

A Schlumberger Company



Pathfinder
Pathfinder X & Y Planning Report

PATHFINDER
A Schlumberger Company

Company: Devon Energy Production Company, L.P.
Project: Lea County
Site: Thistle Unit
Well: #25H
Wellbore: OH
Design: Design #1

Local Co-ordinate Reference: Well #25H
TVD Reference: WELL @ 3744.00usft (19' KB Correction)
MD Reference: WELL @ 3744.00usft (19' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project	Lea County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Thistle Unit		
Site Position:		Northing:	467,314.060 usft
From:	Map	Easting:	777,788.180 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 16' 56.649 N
		Longitude:	103° 34' 5.575 W
		Grid Convergence:	0.41 °

Well	#25H					
Well Position	+N/-S	0.00 usft	Northing:	472,593.770 usft	Latitude:	32° 17' 48.988 N
	+E/-W	0.00 usft	Easting:	776,427.780 usft	Longitude:	103° 34' 20.985 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,725.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/02/10	7.64	60.29	48,746

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	168.01

Survey Tool Program	Date	12/07/10		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
0.00	13,832.20	Design #1 (OH)		



Pathfinder
Pathfinder X & Y Planning Report



Company: Devon Energy Production Company, L.P.
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey												
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)		
0.00	0.00	0.00	0.00	3,744.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
100.00	0.00	0.00	100.00	3,644.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
200.00	0.00	0.00	200.00	3,544.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
300.00	0.00	0.00	300.00	3,444.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
400.00	0.00	0.00	400.00	3,344.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
500.00	0.00	0.00	500.00	3,244.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
600.00	0.00	0.00	600.00	3,144.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
700.00	0.00	0.00	700.00	3,044.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
800.00	0.00	0.00	800.00	2,944.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
900.00	0.00	0.00	900.00	2,844.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,000.00	0.00	0.00	1,000.00	2,744.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,100.00	0.00	0.00	1,100.00	2,644.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,200.00	0.00	0.00	1,200.00	2,544.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,300.00	0.00	0.00	1,300.00	2,444.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,400.00	0.00	0.00	1,400.00	2,344.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,500.00	0.00	0.00	1,500.00	2,244.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,600.00	0.00	0.00	1,600.00	2,144.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,700.00	0.00	0.00	1,700.00	2,044.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,800.00	0.00	0.00	1,800.00	1,944.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
1,900.00	0.00	0.00	1,900.00	1,844.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
2,000.00	0.00	0.00	2,000.00	1,744.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
2,100.00	0.00	0.00	2,100.00	1,644.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
2,200.00	0.00	0.00	2,200.00	1,544.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
2,300.00	0.00	0.00	2,300.00	1,444.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
2,400.00	0.00	0.00	2,400.00	1,344.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
2,500.00	0.00	0.00	2,500.00	1,244.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		
2,600.00	0.00	0.00	2,600.00	1,144.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78		



Pathfinder
Pathfinder X & Y Planning Report

PATHFINDER
A Schlumberger Company

Company: Devon Energy Production Company, L.P.
Project: Lea County
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2,700.00	0.00	0.00	2,700.00	1,044.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
2,800.00	0.00	0.00	2,800.00	944.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
2,900.00	0.00	0.00	2,900.00	844.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,000.00	0.00	0.00	3,000.00	744.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,100.00	0.00	0.00	3,100.00	644.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,200.00	0.00	0.00	3,200.00	544.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,300.00	0.00	0.00	3,300.00	444.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,400.00	0.00	0.00	3,400.00	344.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,500.00	0.00	0.00	3,500.00	244.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,600.00	0.00	0.00	3,600.00	144.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,700.00	0.00	0.00	3,700.00	44.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,800.00	0.00	0.00	3,800.00	-56.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
3,900.00	0.00	0.00	3,900.00	-156.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,000.00	0.00	0.00	4,000.00	-256.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,100.00	0.00	0.00	4,100.00	-356.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,200.00	0.00	0.00	4,200.00	-456.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,300.00	0.00	0.00	4,300.00	-556.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,400.00	0.00	0.00	4,400.00	-656.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,500.00	0.00	0.00	4,500.00	-756.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,600.00	0.00	0.00	4,600.00	-856.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,700.00	0.00	0.00	4,700.00	-956.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,800.00	0.00	0.00	4,800.00	-1,056.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
4,900.00	0.00	0.00	4,900.00	-1,156.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,000.00	0.00	0.00	5,000.00	-1,256.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,100.00	0.00	0.00	5,100.00	-1,356.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,200.00	0.00	0.00	5,200.00	-1,456.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,300.00	0.00	0.00	5,300.00	-1,556.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	



Pathfinder
Pathfinder X & Y Planning Report



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Project: Lea County
Site: Thistle Unit
Well: #25H
Wellbore: OH
Design: Design #1

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MD Reference: WELL @ 3744.00usft (19' KB Correction)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

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5,400.00	0.00	0.00	5,400.00	-1,656.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,500.00	0.00	0.00	5,500.00	-1,756.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,600.00	0.00	0.00	5,600.00	-1,856.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,700.00	0.00	0.00	5,700.00	-1,956.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,800.00	0.00	0.00	5,800.00	-2,056.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
5,900.00	0.00	0.00	5,900.00	-2,156.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,000.00	0.00	0.00	6,000.00	-2,256.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,100.00	0.00	0.00	6,100.00	-2,356.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,200.00	0.00	0.00	6,200.00	-2,456.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,300.00	0.00	0.00	6,300.00	-2,556.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,400.00	0.00	0.00	6,400.00	-2,656.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,500.00	0.00	0.00	6,500.00	-2,756.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,600.00	0.00	0.00	6,600.00	-2,856.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,700.00	0.00	0.00	6,700.00	-2,956.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,800.00	0.00	0.00	6,800.00	-3,056.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
6,900.00	0.00	0.00	6,900.00	-3,156.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,000.00	0.00	0.00	7,000.00	-3,256.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,100.00	0.00	0.00	7,100.00	-3,356.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,200.00	0.00	0.00	7,200.00	-3,456.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,300.00	0.00	0.00	7,300.00	-3,556.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,400.00	0.00	0.00	7,400.00	-3,656.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,500.00	0.00	0.00	7,500.00	-3,756.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,600.00	0.00	0.00	7,600.00	-3,856.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,700.00	0.00	0.00	7,700.00	-3,956.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,800.00	0.00	0.00	7,800.00	-4,056.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
7,900.00	0.00	0.00	7,900.00	-4,156.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
8,000.00	0.00	0.00	8,000.00	-4,256.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	



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8,100.00	0.00	0.00	8,100.00	-4,356.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
8,200.00	0.00	0.00	8,200.00	-4,456.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
8,300.00	0.00	0.00	8,300.00	-4,556.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
8,400.00	0.00	0.00	8,400.00	-4,656.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
8,412.00	0.00	0.00	8,412.00	-4,668.00	0.00	0.00	0.00	0.00	472,593.77	776,427.78	
8,450.00	3.80	168.01	8,449.97	-4,705.97	-1.23	0.26	1.26	10.00	472,592.54	776,428.04	
8,500.00	8.80	168.01	8,499.65	-4,755.65	-6.60	1.40	6.74	10.00	472,587.17	776,429.18	
8,550.00	13.80	168.01	8,548.67	-4,804.67	-16.18	3.44	16.54	10.00	472,577.59	776,431.22	
8,600.00	18.80	168.01	8,596.65	-4,852.65	-29.90	6.35	30.56	10.00	472,563.87	776,434.13	
8,650.00	23.80	168.01	8,643.22	-4,899.22	-47.65	10.12	48.72	10.00	472,546.12	776,437.90	
8,700.00	28.80	168.01	8,688.03	-4,944.03	-69.31	14.72	70.86	10.00	472,524.46	776,442.50	
8,750.00	33.79	168.01	8,730.74	-4,986.74	-94.71	20.11	96.82	10.00	472,499.06	776,447.89	
8,800.00	38.79	168.01	8,771.03	-5,027.03	-123.65	26.26	126.41	10.00	472,470.12	776,454.04	
8,850.00	43.79	168.01	8,808.58	-5,064.58	-155.92	33.11	159.40	10.00	472,437.85	776,460.89	
8,900.00	48.79	168.01	8,843.12	-5,099.12	-191.26	40.62	195.53	10.00	472,402.51	776,468.40	
8,950.00	53.79	168.01	8,874.38	-5,130.38	-229.41	48.72	234.53	10.00	472,364.36	776,476.50	
9,000.00	58.79	168.01	8,902.12	-5,158.12	-270.09	57.36	276.11	10.00	472,323.68	776,485.14	
9,050.00	63.79	168.01	8,926.13	-5,182.13	-312.97	66.47	319.95	10.00	472,280.80	776,494.25	
9,100.00	68.79	168.01	8,946.23	-5,202.23	-357.74	75.97	365.71	10.00	472,236.03	776,503.75	
9,150.00	73.79	168.01	8,962.27	-5,218.27	-404.05	85.81	413.06	10.00	472,189.72	776,513.59	
9,200.00	78.79	168.01	8,974.12	-5,230.12	-451.55	95.90	461.62	10.00	472,142.22	776,523.68	
9,250.00	83.79	168.01	8,981.69	-5,237.69	-499.88	106.16	511.02	10.00	472,093.89	776,533.94	
9,304.15	89.20	168.01	8,985.00	-5,241.00	-552.73	117.39	565.05	10.00	472,041.04	776,545.17	
9,400.00	89.20	168.01	8,986.34	-5,242.34	-646.47	137.29	660.89	0.00	471,947.30	776,565.07	
9,500.00	89.20	168.01	8,987.73	-5,243.73	-744.28	158.07	760.88	0.00	471,849.49	776,585.85	
9,600.00	89.20	168.01	8,989.13	-5,245.13	-842.09	178.84	860.87	0.00	471,751.68	776,606.62	
9,700.00	89.20	168.01	8,990.53	-5,246.53	-939.90	199.61	960.86	0.00	471,653.87	776,627.39	



Pathfinder
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PATHFINDER
A Schlumberger Company

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Wellbore: OH
Design: Design #1

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MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
9,800.00	89.20	168.01	8,991.92	-5,247.92	-1,037.71	220.38	1,060.85	0.00	471,556.06	776,648.16
9,900.00	89.20	168.01	8,993.32	-5,249.32	-1,135.52	241.15	1,160.84	0.00	471,458.25	776,668.93
10,000.00	89.20	168.01	8,994.72	-5,250.72	-1,233.33	261.93	1,260.83	0.00	471,360.44	776,689.71
10,100.00	89.20	168.01	8,996.11	-5,252.11	-1,331.14	282.70	1,360.82	0.00	471,262.63	776,710.48
10,200.00	89.20	168.01	8,997.51	-5,253.51	-1,428.95	303.47	1,460.81	0.00	471,164.82	776,731.25
10,300.00	89.20	168.01	8,998.90	-5,254.90	-1,526.75	324.24	1,560.81	0.00	471,067.02	776,752.02
10,400.00	89.20	168.01	9,000.30	-5,256.30	-1,624.56	345.02	1,660.80	0.00	470,969.21	776,772.80
10,500.00	89.20	168.01	9,001.70	-5,257.70	-1,722.37	365.79	1,760.79	0.00	470,871.40	776,793.57
10,600.00	89.20	168.01	9,003.09	-5,259.09	-1,820.18	386.56	1,860.78	0.00	470,773.59	776,814.34
10,700.00	89.20	168.01	9,004.49	-5,260.49	-1,917.99	407.33	1,960.77	0.00	470,675.78	776,835.11
10,800.00	89.20	168.01	9,005.89	-5,261.89	-2,015.80	428.10	2,060.76	0.00	470,577.97	776,855.88
10,900.00	89.20	168.01	9,007.28	-5,263.28	-2,113.61	448.88	2,160.75	0.00	470,480.16	776,876.66
11,000.00	89.20	168.01	9,008.68	-5,264.68	-2,211.42	469.65	2,260.74	0.00	470,382.35	776,897.43
11,100.00	89.20	168.01	9,010.07	-5,266.07	-2,309.23	490.42	2,360.73	0.00	470,284.54	776,918.20
11,200.00	89.20	168.01	9,011.47	-5,267.47	-2,407.03	511.19	2,460.72	0.00	470,186.74	776,938.97
11,300.00	89.20	168.01	9,012.87	-5,268.87	-2,504.84	531.96	2,560.71	0.00	470,088.93	776,959.74
11,400.00	89.20	168.01	9,014.26	-5,270.26	-2,602.65	552.74	2,660.70	0.00	469,991.12	776,980.52
11,500.00	89.20	168.01	9,015.66	-5,271.66	-2,700.46	573.51	2,760.69	0.00	469,893.31	777,001.29
11,600.00	89.20	168.01	9,017.06	-5,273.06	-2,798.27	594.28	2,860.68	0.00	469,795.50	777,022.06
11,700.00	89.20	168.01	9,018.45	-5,274.45	-2,896.08	615.05	2,960.67	0.00	469,697.69	777,042.83
11,800.00	89.20	168.01	9,019.85	-5,275.85	-2,993.89	635.82	3,060.66	0.00	469,599.88	777,063.60
11,900.00	89.20	168.01	9,021.24	-5,277.24	-3,091.70	656.60	3,160.65	0.00	469,502.07	777,084.38
12,000.00	89.20	168.01	9,022.64	-5,278.64	-3,189.50	677.37	3,260.64	0.00	469,404.27	777,105.15
12,100.00	89.20	168.01	9,024.04	-5,280.04	-3,287.31	698.14	3,360.63	0.00	469,306.46	777,125.92
12,200.00	89.20	168.01	9,025.43	-5,281.43	-3,385.12	718.91	3,460.62	0.00	469,208.65	777,146.69
12,300.00	89.20	168.01	9,026.83	-5,282.83	-3,482.93	739.68	3,560.61	0.00	469,110.84	777,167.46
12,400.00	89.20	168.01	9,028.22	-5,284.22	-3,580.74	760.46	3,660.60	0.00	469,013.03	777,188.24



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12,500.00	89.20	168.01	9,029.62	-5,285.62	-3,678.55	781.23	3,760.59	0.00	468,915.22	777,209.01	
12,600.00	89.20	168.01	9,031.02	-5,287.02	-3,776.36	802.00	3,860.58	0.00	468,817.41	777,229.78	
12,700.00	89.20	168.01	9,032.41	-5,288.41	-3,874.17	822.77	3,960.57	0.00	468,719.60	777,250.55	
12,800.00	89.20	168.01	9,033.81	-5,289.81	-3,971.98	843.54	4,060.56	0.00	468,621.79	777,271.32	
12,900.00	89.20	168.01	9,035.21	-5,291.21	-4,069.78	864.32	4,160.55	0.00	468,523.99	777,292.10	
13,000.00	89.20	168.01	9,036.60	-5,292.60	-4,167.59	885.09	4,260.54	0.00	468,426.18	777,312.87	
13,100.00	89.20	168.01	9,038.00	-5,294.00	-4,265.40	905.86	4,360.53	0.00	468,328.37	777,333.64	
13,200.00	89.20	168.01	9,039.39	-5,295.39	-4,363.21	926.63	4,460.52	0.00	468,230.56	777,354.41	
13,300.00	89.20	168.01	9,040.79	-5,296.79	-4,461.02	947.41	4,560.51	0.00	468,132.75	777,375.19	
13,400.00	89.20	168.01	9,042.19	-5,298.19	-4,558.83	968.18	4,660.50	0.00	468,034.94	777,395.96	
13,500.00	89.20	168.01	9,043.58	-5,299.58	-4,656.64	988.95	4,760.49	0.00	467,937.13	777,416.73	
13,600.00	89.20	168.01	9,044.98	-5,300.98	-4,754.45	1,009.72	4,860.48	0.00	467,839.32	777,437.50	
13,700.00	89.20	168.01	9,046.38	-5,302.38	-4,852.26	1,030.49	4,960.47	0.00	467,741.51	777,458.27	
13,800.00	89.20	168.01	9,047.77	-5,303.77	-4,950.06	1,051.27	5,060.46	0.00	467,643.71	777,479.05	
13,832.20	89.20	168.01	9,048.22	-5,304.22	-4,981.56	1,057.96	5,092.67	0.00	467,612.21	777,485.74	
PBHL(TU#25)											

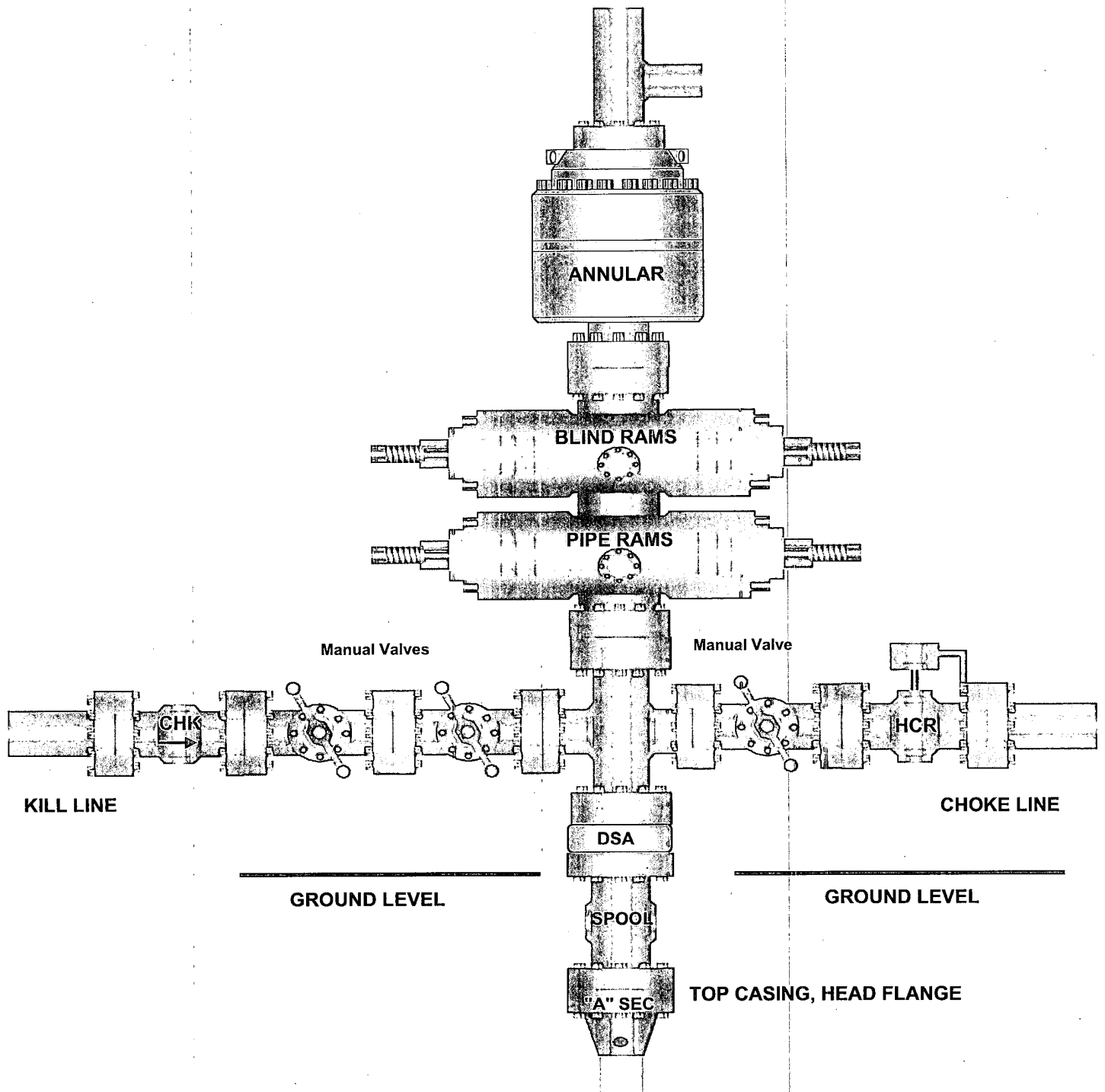
Checked By: _____ Approved By: _____ Date: _____

Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
Thistle Unit 25H

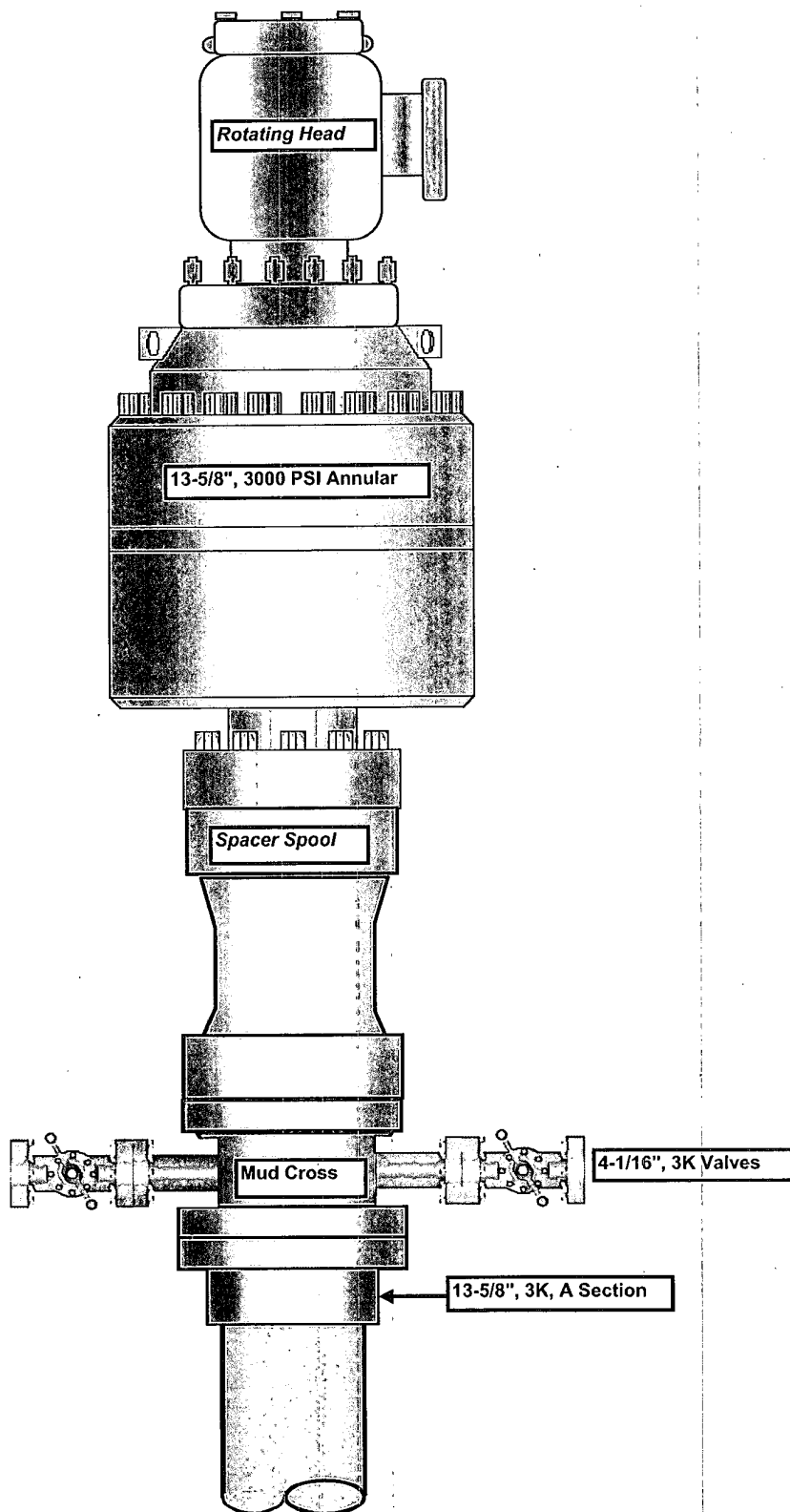
Surface Location: 150' FNL & 1170' FEL, Unit A, Sec 21 T23S R33E, Lea, NM
Bottom Location: 150' FSL & 150' FEL, Unit P, Sec 21 T23S R33E, Lea, NM

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 5000 psi working pressure.
4. All fittings will be flanged.
5. A full bore safety valve tested to a minimum 5000 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.

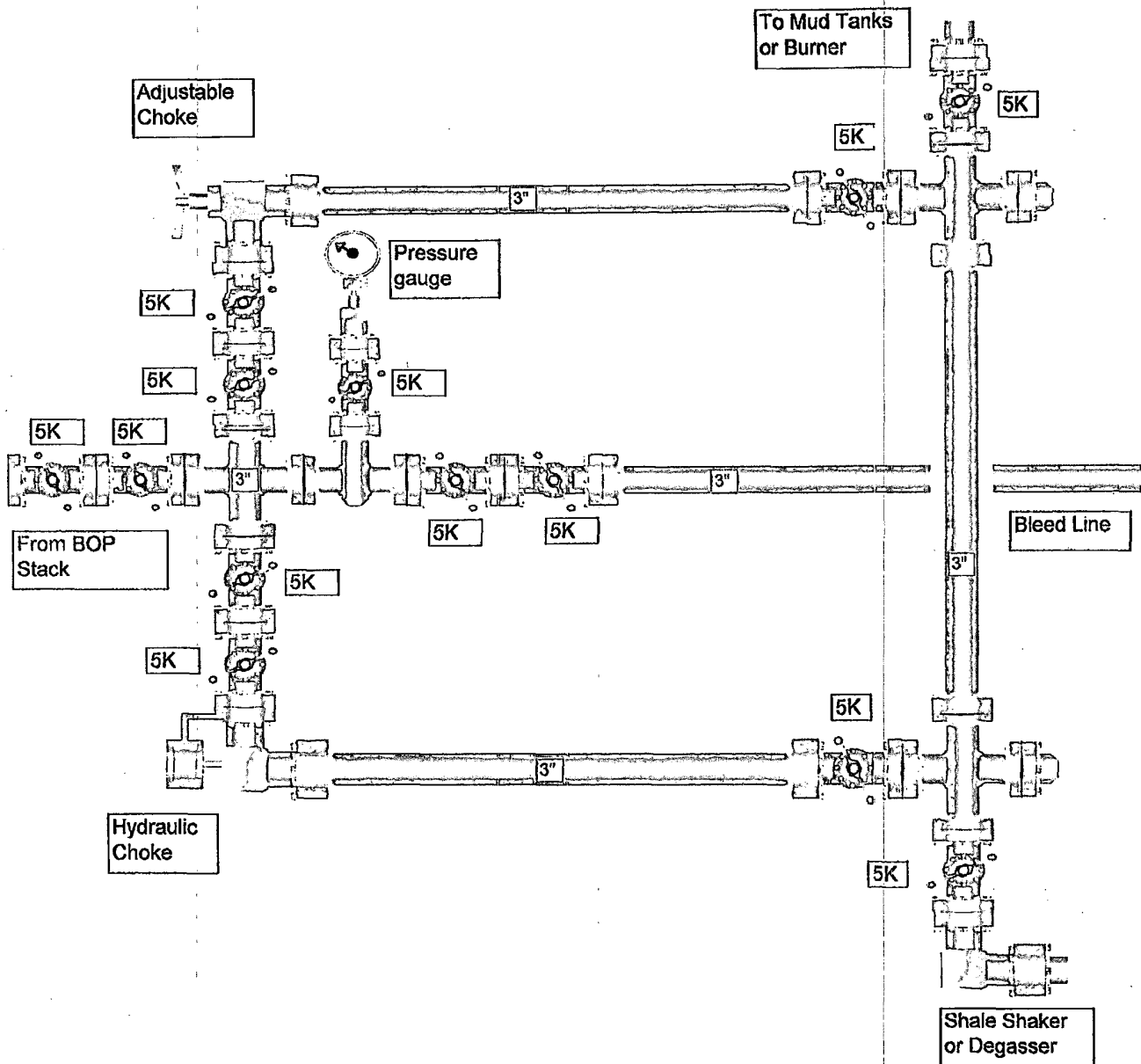
13-5/8" x 5,000 psi BOP Stack



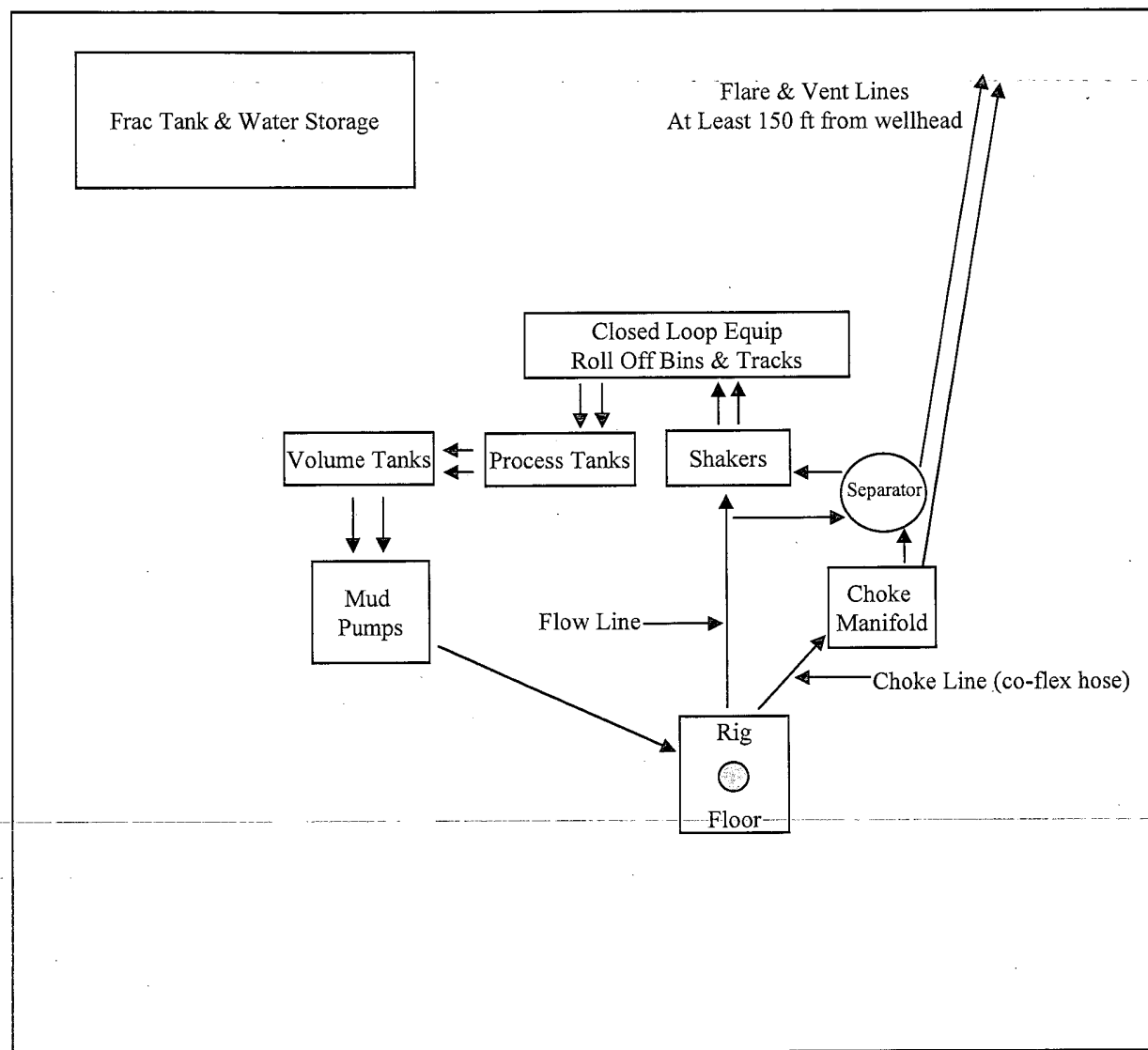
13-5/8" 3K Annular



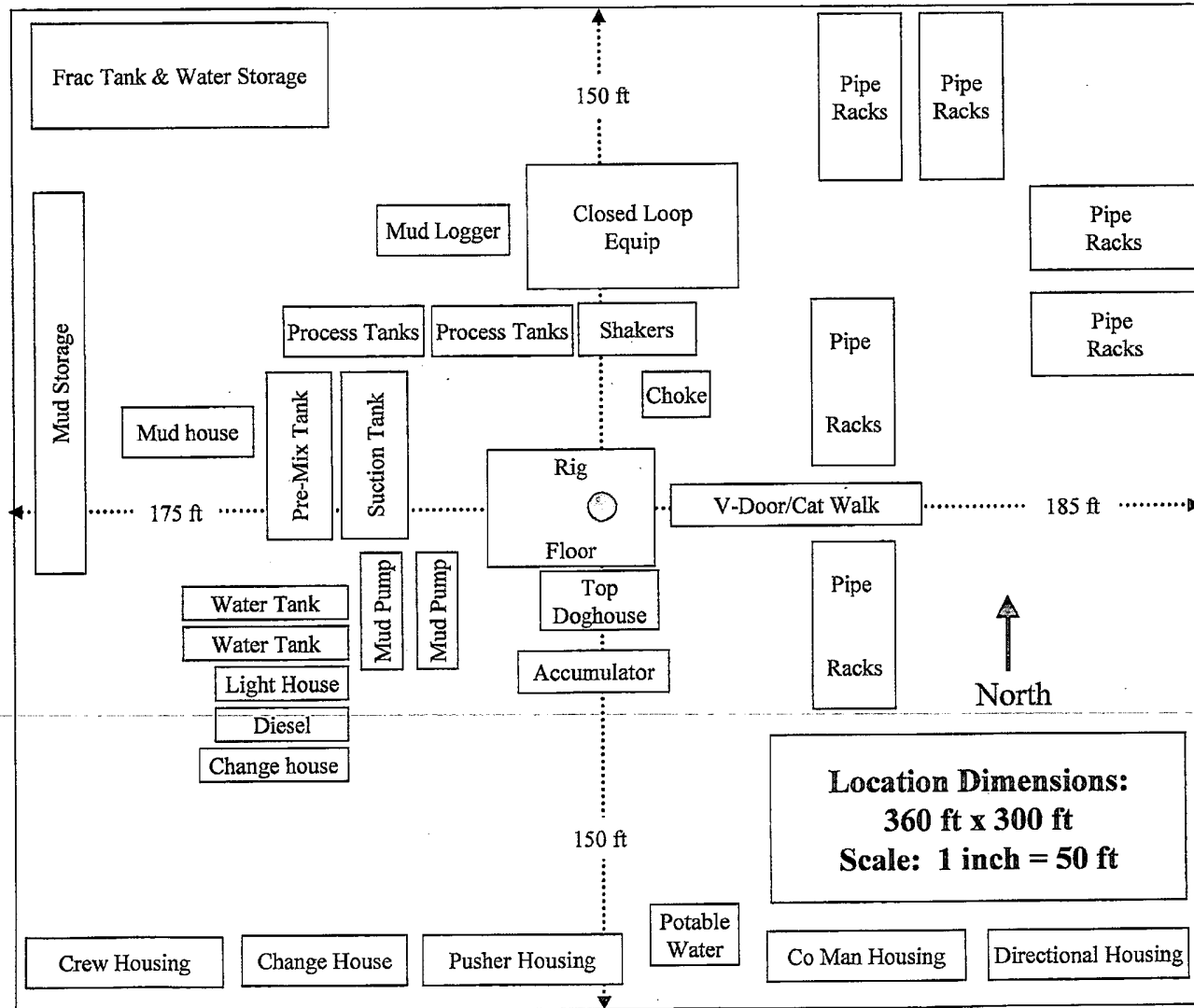
5,000 PSI CHOKE MANIFOLD



Closed Loop Equipment Diagram



Conventional Rig Location Layout





Proposed Interim Site Reclamation

Devon Energy Production Co.

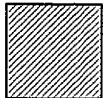
THISTLE UNIT # 25H

150' FNL & 1,170' FEL

Sec. 21 - T23S - R33E

Lea County, NM

Proposed
Reclamation Area



1" : 60'

