

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
Budget Bureau No. 1004-0136  
Expires: February 28, 1995

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. Type of Work

DRILL ☒DEEPEN ☐

b. Type of Well

Oil Well ☐ Gas Well ☒ Other ☐Single Well ☒ Multiple Zone ☐

2. Name of Operator

Merrion Oil &amp; Gas Corporation

3. Address and Telephone No.

610 Reilly Ave Farmington NM 87401  
ph: (505) 327-9801

4. Location of Well (Footages)

At Surface 2435' fml &amp; 1705' fwl (se nw)

At proposed prod. zone Same

14. Distance in Miles and Directions from Nearest Town or Post Office

22 miles south of Farmington NM, near Chaco Plant

15. Distance from Proposed Location to Nearest Property or Lease Line, Ft

935'

16. No. of Acres in Lease

320 acres

17. No. of Acres Assigned to This Well

320 acres w/x

18. Distance from Proposed Location to Nearest Well Drilling, Completed, or Applied for, on this Lease, FT

-1589'

19. Proposed Depth

-1500'

20. Rotary or Cable Tools

Rotary

21. Elevations (Show whether DF, RT, GR, etc)

6135' GR, 6140' RKB

22. Approximate Date Work will Start

As soon as permitted

5. Lease Designation and Serial No.

SF-078899 A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Hard Rock Com No. 1

9. API Well No.

3004532100

10. Field and Pool, or Explanatory Area

Basin Fruitland

11. Sec., T., R., M., or BLK. and Survey or Area

Section 20, T26N, R11W

12. County or Parish

San Juan

13. State

NM

## PROPOSED CASING AND CEMENTING PROGRAM

SIZE OF HOLE	SIZE & GRADE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
8-3/4"	7" J55	20 ppf or greater	~120' KB	~30 sx (36 cuft)
6-1/4"	4-1/2" J55	10.5 ppf or greater	~1500' KB	~120 sx (195 cuft)

Merrion proposes to drill 8-3/4" hole with native mud to approx 120' and set 7" 20# J55 (or greater) surface casing, cement to surface with ~30 sx 'B' w/ 2% CaCl<sub>2</sub> (35 cuft). Will drill 6-1/4" hole to TD @ approx 1500' KB with low solids non-dispersed mud system. Run open hole surveys. Will set 4-1/2" 10.5 ppf J55 production casing (or greater) from TD to surface. Will cement with 60 sx 'B' w/ 2% SMS (124 cuft) and tail in with 60 sx 'B' (71 cuft) cement to fill from total depth to surface. A cementing chronology will be recorded and submitted to the BLM after completion of the job. Top of Cement should circulate to surface (will adjust volumes based upon caliper log if available).

A ~5 bbl water spacer will be pumped ahead of the lead slurry to prevent mud contamination of the cement. If cement does not reach surface, a temperature log or cement bond log will be run to determine top of cement.

Will test Fruitland through perforated casing. Will fracture stimulate and put on for production test. Drilling operations below surface casing will be conducted with a Bag type BOP in place, minimum working pressure 1000 psig. Additional drilling technical details attached.

A pipeline route approval is also proposed as part of this APD as per the enclosed topographic map.

ALL ACTIONS AUTHORIZED ARE  
IN ACCORDANCE WITH ATTACHED  
GENERAL REQUIREMENTS".

This action is subject to technical and  
procedural review pursuant to 43 CFR 3165.3  
and appeal pursuant to 43 CFR 3165.4

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal to deepen, give present productive zone and proposed new productive zone.

COPIES: BLM+5, WELL FILE+1

24. I hereby certify that the foregoing is true and correct

Signed

Connie S. Dinning Title Production Engineer

Date January 5, 2004

(This space for Federal or State office use)

Permit No.

Approval Date

Application approval does not warrant or certify that 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.

APPROVED BY:

TITLE

DATE

NMCCO

AFM

6-29-05

State of New Mexico  
Energy, Minerals & Mining Resources Department  
OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Form C - 102

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number <b>30-045-32100</b>	Pool Code <b>71629</b>	Pool Name <b>Basin Fruitland Coal</b>
Property Code <b>34930</b>	Property Name <b>Hard Rock Com</b>	
OGRD No. <b>014634</b>	Operator Name <b>MERRION OIL &amp; GAS</b>	Well Number <b>1</b>
		Elevation <b>6135'</b>

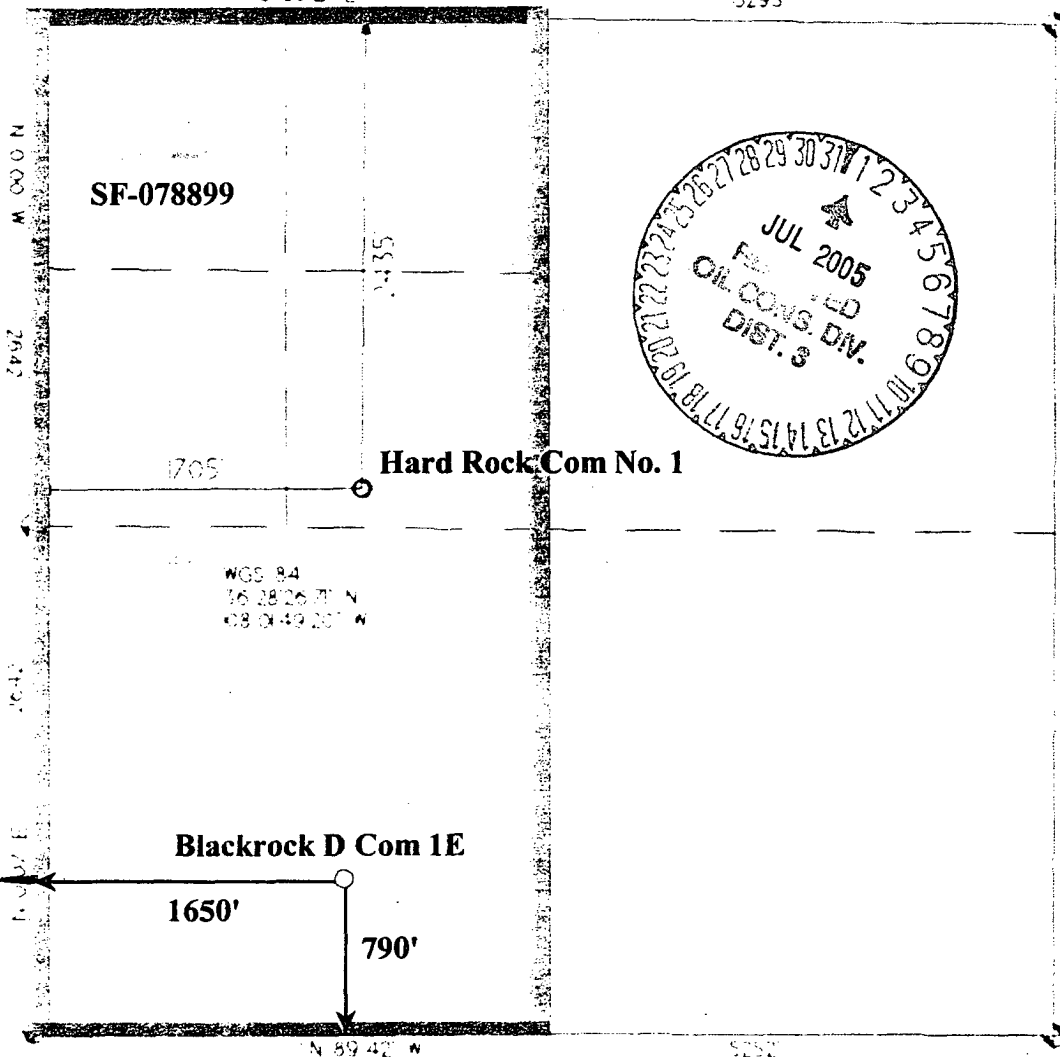
Surface Location								
UL or Lot	Sec.	Twp.	Rge.	Lot lch.	Feet from >	North/South	Feet from >	East/West
F	20	26 N	11 W	SE NW	2435'	NORTH	1705'	WEST
County SAN JUAN								

Bottom Hole Location If Different From Surface								
UL or Lot	Sec.	Twp.	Rge.	Lot lch.	Feet from >	North/South	Feet from >	East/West
County								

Dedication <b>320 Ac</b>	Joint ?	Consolidation	Order No.
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NO ALLOWABLE WILL ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

S 89° 15' E 5293



OPERATOR CERTIFICATION  
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Printed Name **Connie S. Dinning**

Title **Production Engineer**

Date **January 6, 2004**

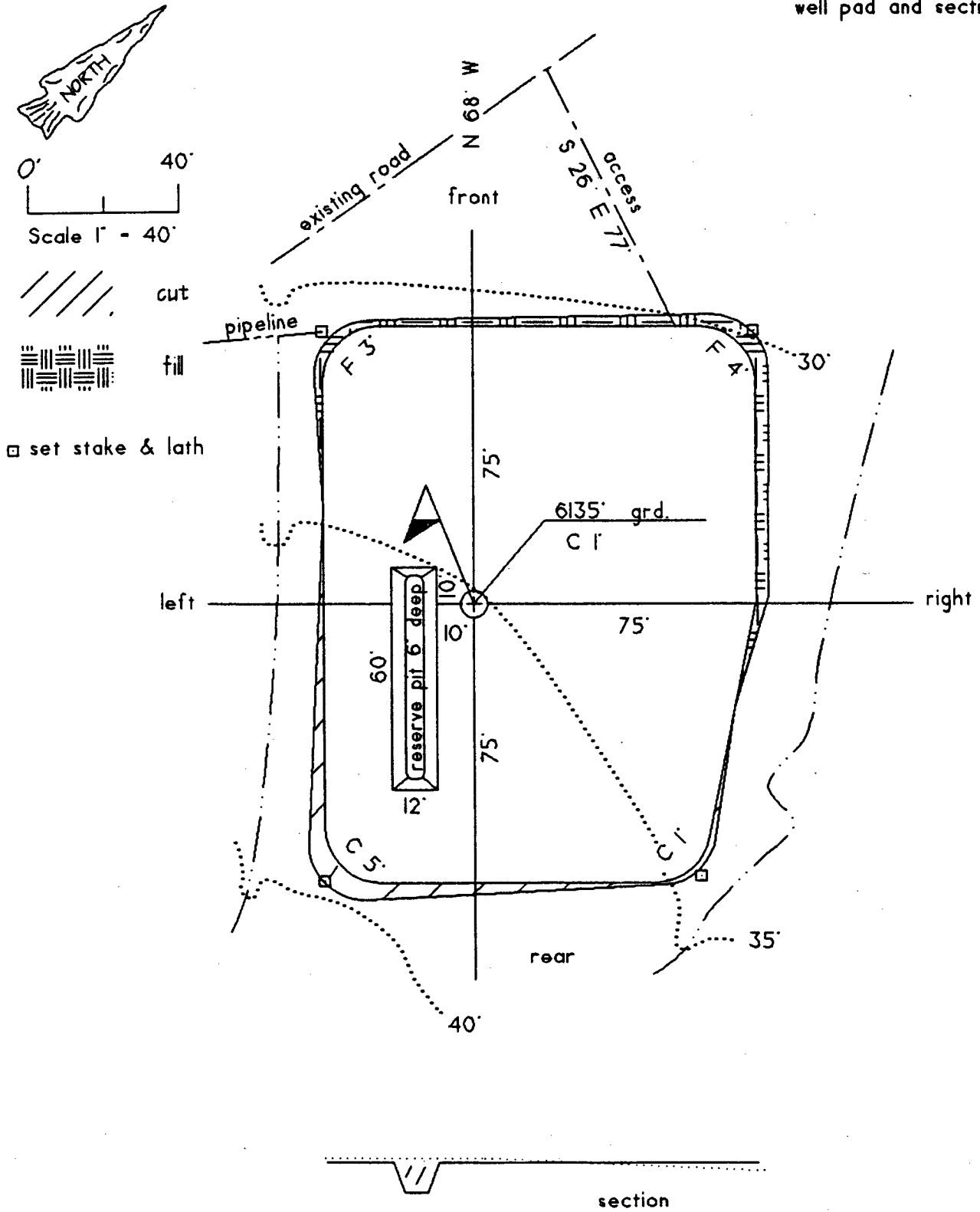
SURVEYOR CERTIFICATION

I hereby certify that the well location 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.

Date of Survey

Signature and Seal of Professional Surveyor

Hard Rock # 1  
well pad and section



# MERRION OIL & GAS CORPORATION

## DRILLING TECHNICAL PROGRAM

(Attachment to Form 3160-3)

### ***Hard Rock Com No. 1***

2435' fnl & 1705' fwl (se nw)  
Section 20, T26N, R11W, NMPM  
San Juan County, New Mexico

#### **1. ESTIMATED FORMATION TOPS:**

<u>FORMATION</u>	<u>DEPTH KB</u>	<u>EST PSI</u>
Undif Tertiary	Surface	
Ojo Alamo	255'	
Kirtland Shale	400'	
Fruitland	1000'	
Main Fruitland Coal	1300'	338 psi
Pictured Cliffs	1327'	345 psi
Total Depth	~1500'	

#### **2. WELL CONTROL SYSTEM**

- A. Proposed blowout preventer system (schematic drawings attached) is a Bag type preventer, and will be used in 1000 psi service. Merrion requests a waiver from O&G Order No. 2 requirements for 2M service because the well is shallow and low pressure, with the surface pressure not expected to exceed ~390 psig at the wellhead. Such moderate conditions lower any chance of uncontrolled gas flow.
- B. Minimum required working pressure rating for BOP stack is 1000 psi. Maximum anticipated bottomhole pressure = 390 psi. Well Control Anticipated Surface Pressure (ASP) =  $390 \text{ psi} - (0.22 * 1500') = 60 \text{ psi}$ , assuming a partially gas cut column per BLM guidelines.
- C. BOP pressure testing will be conducted at time of installation and prior to drillout of surface casing shoe. Bag type preventer will be tested to 250 psi. The BOPs will be activated on each trip for a bit and recorded in the driller's log. A choke manifold will be installed (Refer to schematic drawing). Working pressure for choke manifold is minimum 1000 psi. In addition, a kill line from the mud pump will be installed.
- D. Stabbing valves for drill pipe and drill collars will be available. Merrion requests an exception to the requirement for an upper kelly cock valve to be utilized during drilling; pull-down type rig to be used will not allow use of kelly cock valve.
- E. Anticipated formation pressures average 0.26 psi/ft gradient and formation fracture pressures are anticipated to exceed the maximum mud weight of 9.1 ppg.

### 3. DRILLING MUD PROGRAM

- A. A 8-3/4" surface hole will be drilled with fresh water system, lime and gel added to provide viscosity as needed.
- B. A 6-1/4" hole will be drilled to total depth utilizing a low solids non-dispersed mud system. Additives such as starch, cmc, and others will be used to control mud characteristics as necessary. No materials of a hazardous nature will be added to the drilling fluid in hazardous quantities. Lost circulation materials will not be stored on location. Mud weighting materials will not be stored on location.

<u>INTERVAL</u>	<u>MUD SYSTEM</u>	<u>WEIGHT #/GAL</u>	<u>VISCOSITY SEC/QT</u>	<u>WATER LOSS CC</u>
0 - 120'	Native	< 9.0	35-55	NA
120' - 1500' ±	LSND	8.6-9.1	28-45	NA

Maximum anticipated mud weight is 9.1 lb./gal (0.47 psi/ft).

- C. Mud trip monitoring will be done visually.

### 4. HAZARDS

- A. Abnormal Pressure is not expected to be a problem in this area.
- B. Lost circulation is not expected to be a problem in this area.
- C. No H<sub>2</sub>S is expected. However, should H<sub>2</sub>S be found during drilling, detection and warning equipment will be installed.
- D. Unintentional hole deviation is not expected to be a problem. Single shot surveys giving hole inclination will be run a minimum of every 500 feet.

### 5. LOGGING AND TESTING

- A. An Induction, Density Log will be run from TD across zones of interest.
- B. Drill stem tests will not be run.
- C. No coring is anticipated.
- D. A mud logging unit may be used during drilling.

### 6. CASING PROGRAM

- A. Casing:

	<u>Description</u>	<u>Top</u>	<u>Bottom</u>
1	7" 20# J55 or greater	Surface	120 ft ±
2	4-1/2" 10.5# J55 or greater	Surface	1500 ft ±

Merrion requests that a variance be granted to allow us to set surface casing at the proposed depth of ± 120' because this setting depth has been shown to be adequate as demonstrated by the innumerable wells that have been previously drilled in the area without incident. In addition, the potential for a gas kick is very low.

Estimated formation pore pressure gradient is ~0.26 psi/ft.

- B. A proposed wellbore schematic is attached.

# Merrion Oil & Gas Corporation

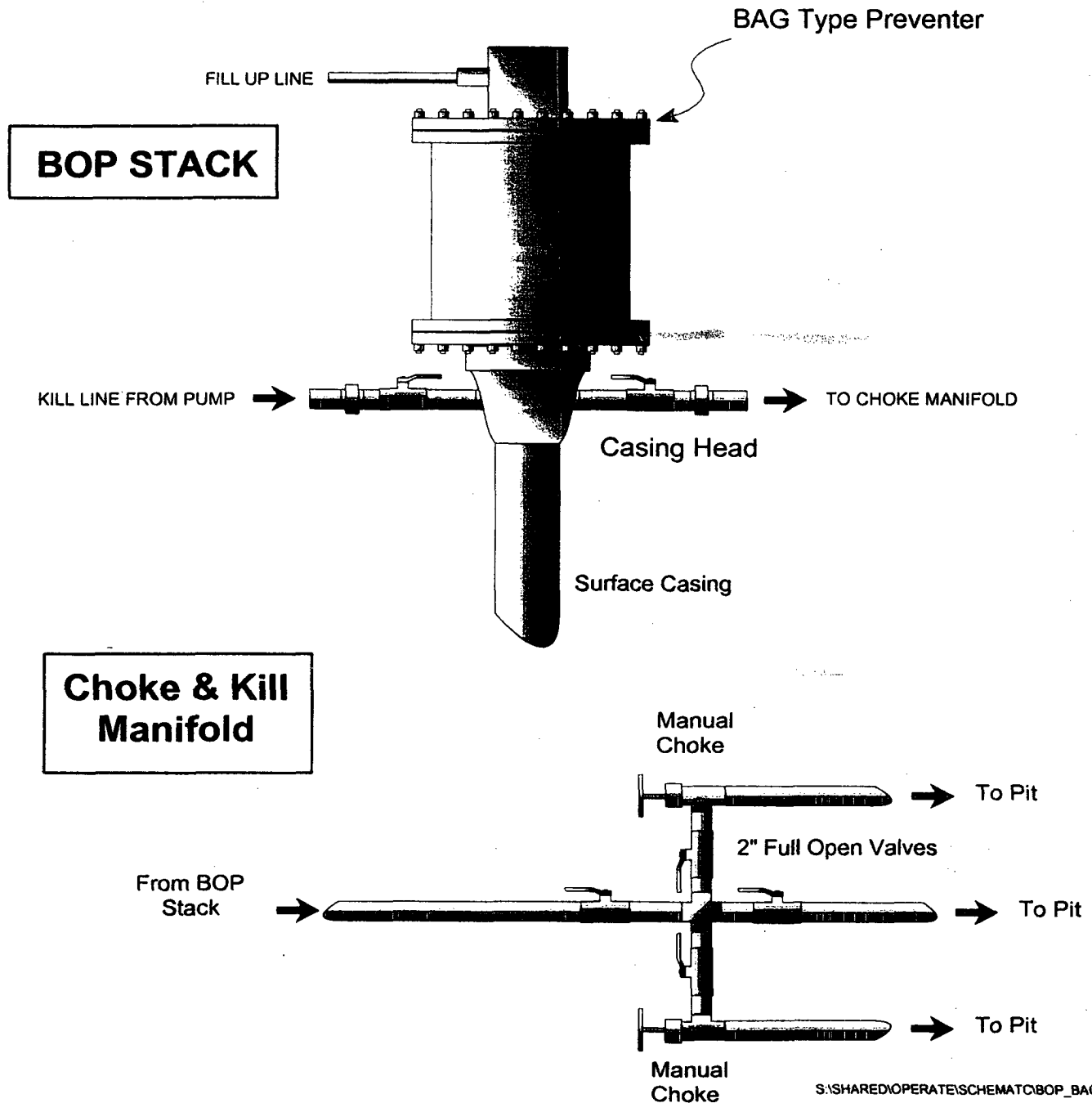
## Well Control Equipment Schematic for 1M Service

Attachment to APD Form 3160-3

### Hard Rock Com No. 1

Location: 2435' fml & 1705' fml (se nw)  
Sec 20, T26N, R11W  
San Juan County, New Mexico

Date: December 23, 2003  
Drawn By: Connie S. Dinning



# Merrion Oil & Gas Corporation Wellbore Schematic

Hard Rock Com No. 1

Proposed Wellbore Configuration

Location: 2435' fnl, 1705' fwl (senw)  
Sec.20, T26N, R11W  
San Juan County, New Mexico

Elevation: 6135' GL  
6140' KB

Prepared by: Connie Dinning

