

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

5. Lease Designation and Serial No.
SF-078944-A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.

Nelson A No. 2

9. API Well No.

10. Field and Pool, or Exploratory Area
Gallegos Gallup11. Sec., T., R., M., or BLK.
and Survey or Area

E Section 9, T26N, R12W

12. County or Parish
San Juan13. State
NM

17. No. of Acres Assigned to This Well

80W2, NW/4

20. Rotary or Cable Tools

Rotary

22. Approximate Date Work will Start

July, 2004

PROPOSED CASING AND CEMENTING PROGRAM

| SIZE OF HOLE | SIZE & GRADE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|--------------|------------------------|-----------------|---------------|-------------------------|
| 12 1/4" | 9 5/8" J55 | 32.3 ppf | ~240' KB | ~150 cuft (100% excess) |
| 8 3/4" | 7" J55 | 23 ppf | ~4050' KB | ~974 cuft (60% excess) |
| 6 1/4" | 4 1/2" J55 Liner | 10.5 ppf | ~5225' KB | ~174 cuft (60% excess) |

Merrion proposes to drill 12 1/4" hole with spud mud to ~240' and set 9 5/8" 32.3# J55 surface casing, cement to surface with ~150 cuft (100% excess). Will drill 8 3/4" hole to ~4050' KB with low solids non-dispersed mud system. May run open-hole surveys.

Will set 7" 23 ppf J55 intermediate casing from ~4050' KB to surface and cement in one stage. Will cement with 10 bbls of mud cleaner, 5 bbls of H₂O, followed by ~816 cuft Premium Lite and tail in with ~159 cuft (60% excess) Type III cement to fill from total depth to surface.

Top of Cement should circulate to surface (will adjust volumes based upon caliper log if available). If cement does not reach surface, a temperature log or cement bond log will be run to determine top of cement. A cementing chronology will be recorded and submitted to the BLM after completion of the job.

Will wait on cement minimum of 12 hours. Will rig up air equipment and air drill out with 6 1/4" bit to total depth ~ 5225' KB through Gallup interval. Will circulate hole clean and test for natural inflows. Will run open-hole surveys. Will run a 4 1/2" 10.5ppf J55 production liner from ~3950' KB to TD @ 5225' KB. Will cement with 10 bbls conditioning spacer, 5 bbl fresh water spacer followed by ~174 cuft (60% excess) of Premium Lite to bring cement above liner hanger.

The production liner will be centralized through the Gallup interval.

Will test Gallup through perforated casing. Will fracture stimulate and put on for production test. Drilling operations below surface casing will be conducted with a double ram BOP with a rotating head for air drilling in place, minimum working pressure 2000 psig. Additional drilling technical details attached.

Gas sales tie-in will be on lease either into line running near location or by laying line to nearest existing sales point at the Nelson A1 location. No off-lease ROW is required for this project.

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

COPIES: BLM-3 WELL FILE+1

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

Signed

Steven S. Dunn

Title Drilling & Production Manager

Date March 7, 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

ALL OPERATIONS AUTHORIZED ARE
SUBJECT TO COMPLIANCE WITH ATTACHED
"GENERAL REQUIREMENTS".

NMOC

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

District I

1625 N. French Dr., Hobbs, NM 88240

District II

1301 W. Grand Avenue, Artesia, NM 88210

District III

1000 Rio Brazos Rd., Aztec, NM 87410

District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico

Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102

Revised June 10, 2003

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

| | | | |
|---|---|---------------------------------|---|
| ¹ API Number 30-045-32215 | | ² Pool Code 26980 | ³ Pool Name Gallegos Gallup |
| ⁴ Property Code 7823 | ⁵ Property Name Nelson A | | ⁶ Well Number 2 |
| ⁷ OGRID No. 014634 | ⁸ Operator Name Merrion Oil & Gas Corporation | | ⁹ Elevation 5990' |

¹⁰ Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|----------|
| E | 9 | 26N | 12W | | 1620' | North | 1035' | West | San Juan |

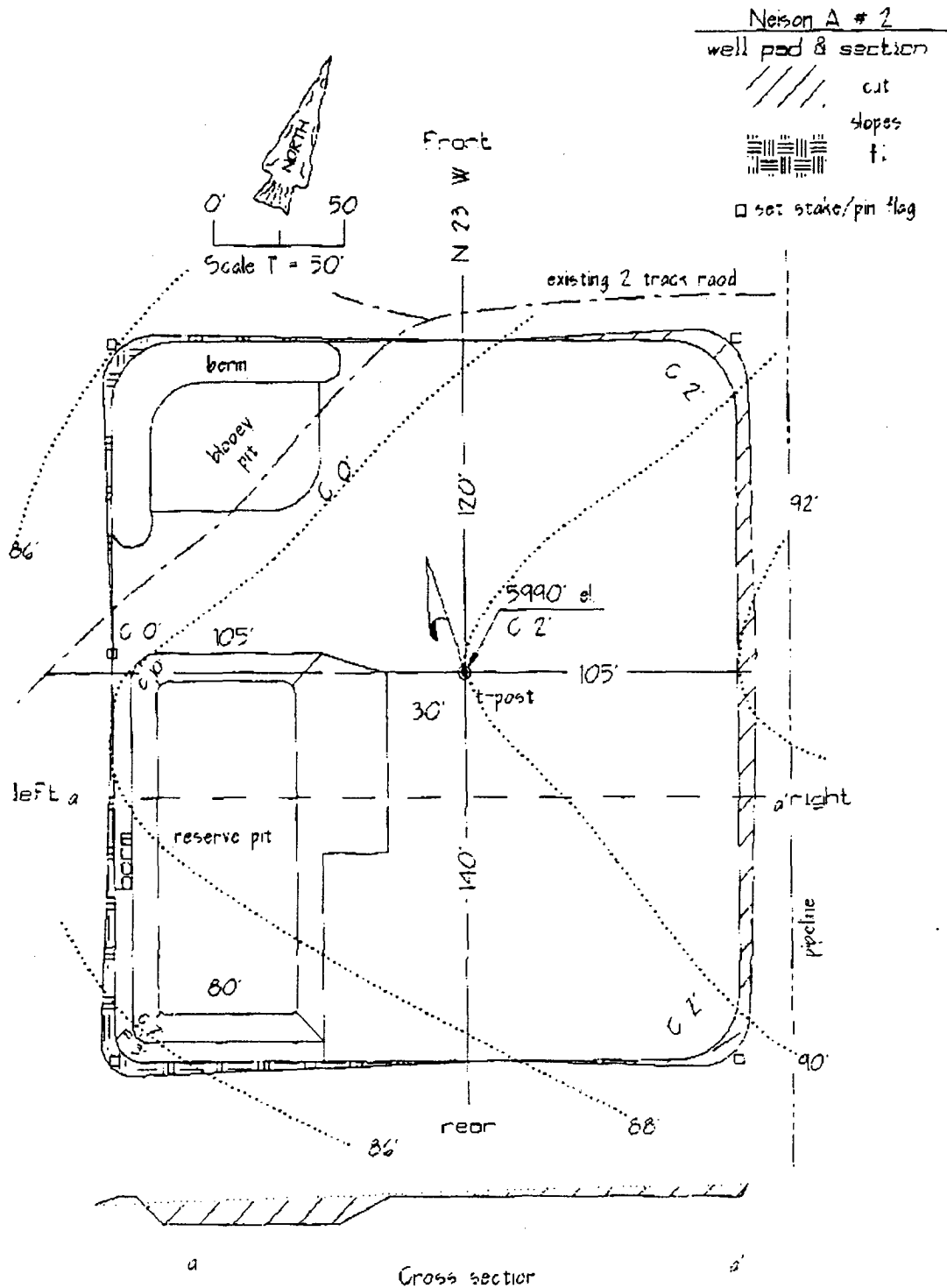
¹¹ Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| | | | | | | | | | |

| | | | |
|--------------------------------------|------------------------------------|----------------------------------|-------------------------|
| ¹² Dedicated Acres 5.0 | ¹³ Joint or Infill N | ¹⁴ Consolidation Code | ¹⁵ Order No. |
|--------------------------------------|------------------------------------|----------------------------------|-------------------------|

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

| | |
|--|--|
| | ¹⁷ 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: Steven S. Dunn Title and E-mail Address: Drilling & Production Manager, sdunn@merrion.bz Date: 3-07-04 |
| | ¹⁸ SURVEYOR 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. Date of Survey: 2/02/04 Signature and Seal of Professional Surveyor: Certificate Number: |



B. No construction materials will be taken off Federal or Indian lands.

MERRION OIL & GAS CORPORATION

DRILLING TECHNICAL PROGRAM

(Attachment to Form 3160-3)

Nelson A No. 2

1620' fml & 1035' fwl (sw nw)
Section 9, T26N, R12W, NMPM
San Juan County, New Mexico

1. ESTIMATED FORMATION TOPS:

| <u>Formation</u> | <u>Depth-MD</u> | <u>Formation</u> | <u>Depth-MD</u> |
|------------------|-----------------|------------------|-----------------|
| Undiff. Tertiary | Surface | Menefee | 2770' |
| Ojo Alamo | 165' | Point Lookout | 3740' |
| Kirtland | 275' | Mancos | 3950' |
| Fruitland | 955' | Gallup | 4800' |
| Pictured Cliffs | 1255' | Total Depth | 5225' |
| Lewis | 1360' | | |
| La Ventana | 2065' | | |

2. WELL CONTROL SYSTEM

- A. Proposed blowout preventer system (schematic drawing follows) is a double-ram type preventer, and will be used in 2000 psi service.
- B. Minimum required working pressure rating for BOP stack is 2000 psi. Maximum anticipated bottomhole pressure = 1515-psi. Well Control Anticipated Surface Pressure (ASP) = $1515\text{-psi} - (0.22 \times 5225') = 366$ 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. Ram type preventer will be tested to 1000 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 the enclosed schematic drawing). Working pressure for choke manifold is greater than 2000 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 on the rig floor. A Kelly cock valve will be installed.
- E. Anticipated formation pressures average 0.29 psi/ft gradient and formation fracture initiation pressures are anticipated to exceed the maximum mud weight of 9.2 ppg except through the depleted Gallup pay interval where air drilling will be used.

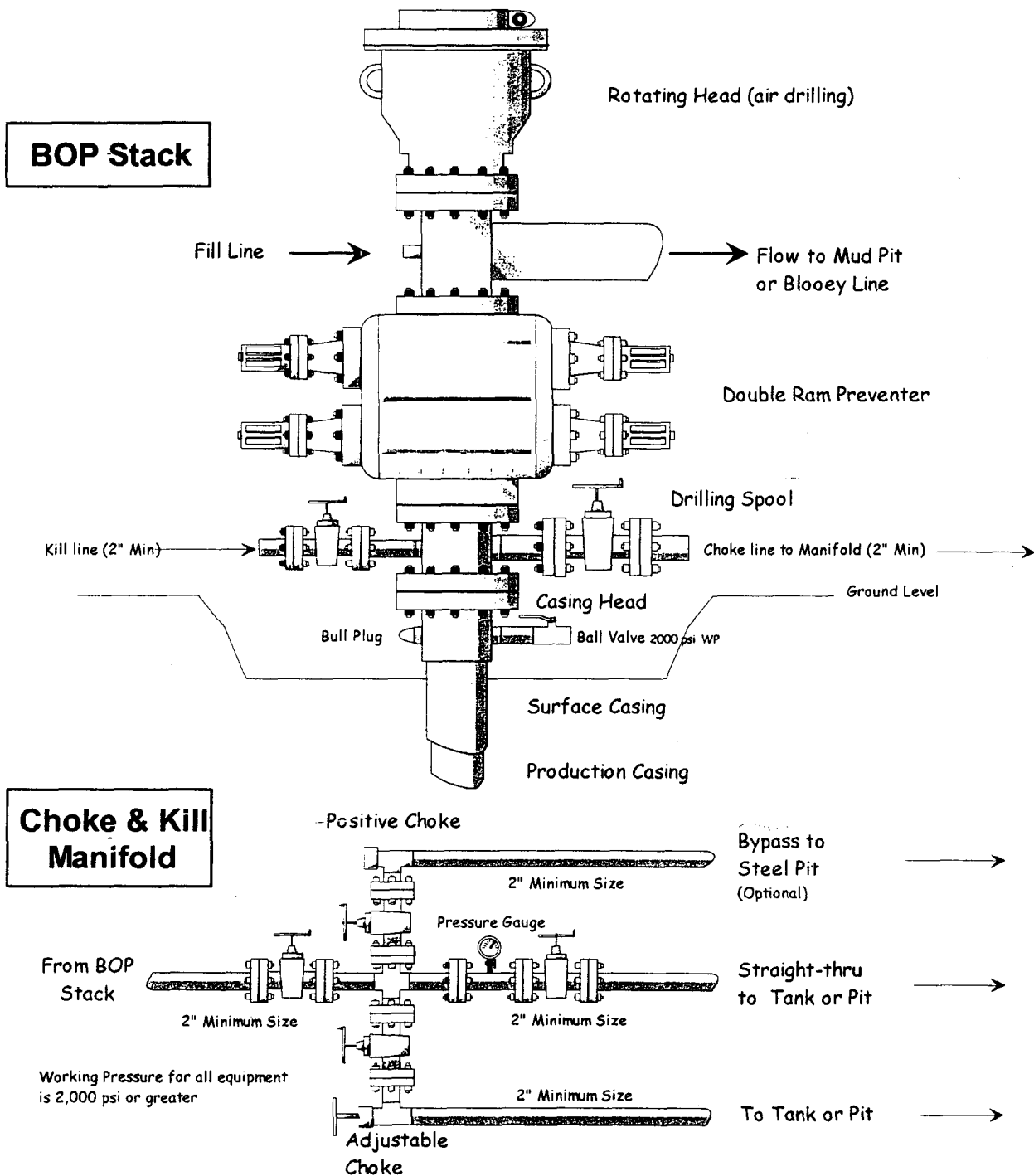
3. DRILLING MUD PROGRAM

- A. A 12 1/4" surface hole will be drilled with fresh water system, lime and gel added to provide viscosity as needed.
- B. An 8 3/4" hole will be drilled to ~ 4050' 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.

Merrion Oil & Gas Corporation

Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program



Lost circulation materials will be stored on location.

Mud weighting materials will 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 - 240' | Native | < 9.0 | 35-55 | NA |
| 240' - 4050'± | LSND | 8.6-9.2 | 28-45 | NA |
| 4050' - 5225'± | Air | NA | | |

Maximum anticipated mud weight is 9.2 lb/gal (0.48 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. Lost circulation materials will be stored on location and mud weights will be controlled.
- C. No H₂S is expected. However, should H₂S 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, neutron-density log may be run in the intermediate casing hole across zones of interest. In addition, an induction-density log will be run from total depth back to intermediate casing.
- 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:

| | Description | Top | Bottom |
|---|---------------------|-----------|-----------|
| 1 | 9 5/8" 32.3 ppf J55 | Surface | 240 ft ± |
| 2 | 7" 23 ppf J55 | Surface | 4050 ft ± |
| 3 | 4 1/2" 10.5 ppf J55 | 3950 ft ± | 5225 ft ± |

Merrion requests that a variance be granted to allow us to set surface casing at the proposed depth of ± 240' 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 ~0.29 psi/ft.

- B. For a proposed wellbore schematic see the following page.

Merrion Oil & Gas Corporation Wellbore Schematic

Nelson A No. 2 Proposed Wellbore Configuration

Location: 1620' fnl & 1035' fwl (sw nw)
Sec 9, T26N, R12W, NMPM
San Juan Co, New Mexico

Updated: Mar 03, 04

Elevation: 5,990' GL
6,003' RKB

By: Steve Dunn

Cretaceous

