

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

ROW/APD

FORM 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 & Gas Corporation

3. Address and Telephone No.

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

4. Location of Well (Footages)

At Surface

173' fsl & 827' fwl (SW)

At proposed prod. zone

Same

5. Lease Designation and Serial No.
SF-081028-A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

7841

8. Well Name and No.

Serendipity #3R

9. API Well No.

30-045-30811

10. Field and Pool, or Exploratory Area
Basin Fruitland Coal11. Sec., T., R., M., or BLK.
and Survey or Area

Section 26, T26N, R13W

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

22 miles south of Farmington NM, near Chaco Plant

12. County or Parish

San Juan

13. State

NM

15. Distance from Proposed Location to Nearest

Property or Lease Line, Ft 827'

16. No. of Acres in Lease

320 acres

17. No. of Acres Assigned to This Well

320 acres 1/2

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

+/-100'

19. Proposed Depth

+/-1460'

20. Rotary or Cable Tools

Rotary

21. Elevations (Show whether DF, RT, or R, etc)

6212' GR, 6217' RKB

6230' GL

22. Approximate Date Work will Start

As soon as permitted

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 | 23 ppf | ~120' KB | ~30 sx (35 cuft) |
| 6-1/4" | 4-1/2" J55 | 10.5 ppf | ~1460' KB | ~112 sx (176 cuft) |

Merrion proposes to drill 8-3/4" hole with native mud to approx 120' and set 7" 23# J55 surface casing, cement to surface with ~30 sx 'B' w/ 2% CaCl2 (35 cuft). Will drill 6-1/4" hole to TD @ approx 1460' KB with low solids non-dispersed mud system. Run open hole surveys. Will set 4-1/2" 10.5 ppf J55 production casing from TD to surface. Will cement with 49 sx 'B' w/ 2% SMS (100 cuft) and tail in with 64 sx 'B' (75 cuft) cement to fill from total depth to surface. Top of Cement should circulate to surface (will adjust volumes based upon caliper log).

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 Coal 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 and locator maps are on file in the original Serendipity #3 APD package. Also included are the documents for Archaeological clearance, T&E and EA. The original well was drilled and completed about 2 1/2 years ago. There will be no further disturbance outside the existing location.

The access road and pipeline for the existing well will be used for this well.

This action is subject to technical and procedural review pursuant to 43 CFR 3166.3 and appeal pursuant to 43 CFR 3166.4.

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

COPIES: BLM+6, WELL FILE+1

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

Signed

Connie S. Dinning Title Production Engineer

Date August 22, 2001

(This space for Federal or State 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

c letter change to c

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT--" for such proposals

SUBMIT IN TRIPLICATE

| | |
|--|---|
| 1. Type of Well <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other | 5. Lease Designation and Serial No. SF-081028-A |
| 2. Name of Operator Merrion Oil & Gas Corporation (14634) | 6. If Indian, Allottee or Tribe Name |
| 3. Address and Telephone No. 610 Reilly Avenue, Farmington, NM 87401-2634 (505) 327-9801 | 7. If Unit or CA, Agreement Designation |
| 4. Location of Well (Footage, Sec., T., R., M., or Survey Description) 691' fsl & 1268' fwl (sw sw) Section 26, T26N, R13W | 8. Well Name and No. Serendipity 3R |
| | 9. API Well No. 30-045-30811 |
| | 10. Field and Pool, or Exploratory Area Basin Fruitland |
| | 11. County or Parish, State San Juan County, New Mexico |

12. CHECK APPROPRIATE BOX (s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION |
|--|--|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Abandonment (Temporary) |
| <input type="checkbox"/> Subsequent Report | <input type="checkbox"/> Recompletion |
| <input type="checkbox"/> Final Abandonment Notice | <input type="checkbox"/> Plugging Back |
| | <input type="checkbox"/> Casing Repair |
| | <input type="checkbox"/> Altering Casing |
| | <input checked="" type="checkbox"/> Other <u>Change Location</u> |
| | <input type="checkbox"/> Change of Plans |
| | <input type="checkbox"/> New Construction |
| | <input type="checkbox"/> Non-Routine Fracturing |
| | <input type="checkbox"/> Water Shut-Off |
| | <input type="checkbox"/> Conversion to Injection |
| | <input type="checkbox"/> Dispose Water |

(Note: Report results of multiple completion on Completion or Recompletion Report and Log form.)

13. Describe Proposed or completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Merrion Oil & Gas proposes change the location of this well. It was previously staked at 1752' fsl & 1954' fwl. The new location is at the edge of an existing road. About 800' of pipeline will be connected to the existing Serendipity 3 pipeline. The wellpad and the pipeline will be the only surface disturbance. A revised C-102, topo map and cut/fill diagram are attached.

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

Signed Connie S. Dinning Title Production Engineer Date 2/26/02

(This space for Federal or State office use)

Approved By /s/ Jim Lovato Title _____ Date AUG - 9

Conditions of approval, if any:

BUDGET

A ✓

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

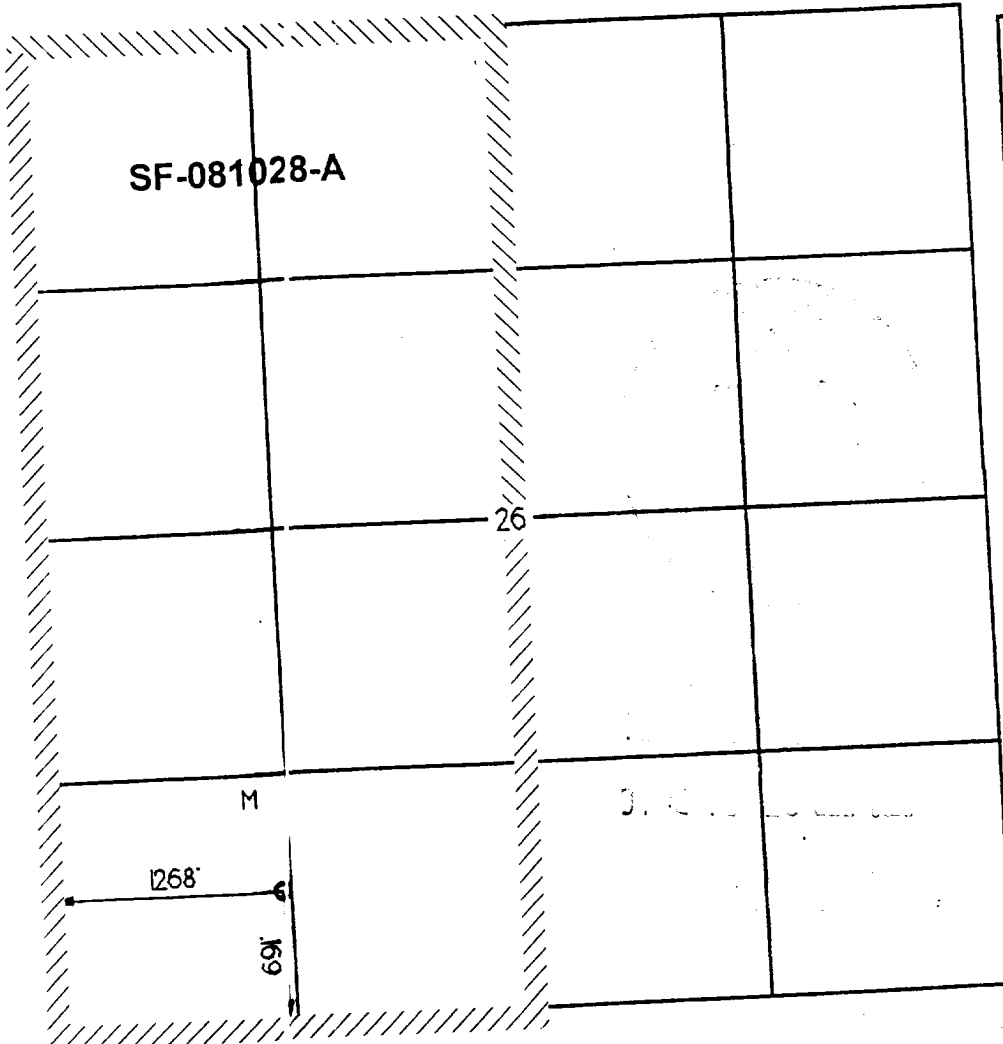
Form C - 102

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | | | | | | |
|--|------------|------------------------------------|---------------|-----------------------------------|------------------|----------------------|--------------------|
| APA Number 30-045-308 | | Pool Code 71629 | | Pool Name Basin Fruitland Coal | | | |
| Property Code 7841 | | Property Name SERENDIPITY | | | | Well Number 3 R | |
| OGRD No. 014634 | | Operator Name MERRION OIL & GAS | | | | Elevation 6230' | |
| Surface Location | | | | | | | |
| UL or Lot M | Sec. 26 | Top. 26 N. | Rge. 13 W. | Lot Lbl. SWSW | Feet from 69' | North/South SOUTH | Feet from 1268' |
| | | | | | | East/West WEST | County SAN JUAN |
| Bottom Hole Location if Different From Surface | | | | | | | |
| UL or Lot | Sec. | Top. | Rge. | Lot Lbl. | Feet from | North/South | Feet from |
| | | | | | | East/West | County |
| Dedication 320 | | Joint ? | | Consolidation | | Order No. | |

NO ALLOWABLE WILL 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. Signature <i>[Signature]</i> | |
| Printed Name Connie S. Dinning | |
| Title Production Engineer | |
| Date February 26, 2002 | |
| 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 REV 2-7-02 | |
| Signature <i>[Signature]</i> Professional 6844 REGISTERED LAND SURVEYOR | |

MERRION OIL & GAS

Topographic Locator Map

Serendipity No. 3R

691' fsl & 1268' fwl,
Sec 26, T26N, R13W
San Juan County, New Mexico

Serendipity #3

Serendipity #3R

Pipeline tie to existing Serendipity 3 pipeline

Oil Wells

Access from existing road

MERRION OIL & GAS CORPORATION

DRILLING TECHNICAL PROGRAM

(Attachment to Form 3160-3)

Serendipity No. 3R

1473' fsl & 827' fwl (nw sw)
Section 26, T26N, R12W, NMPM
San Juan County, New Mexico

1. ESTIMATED FORMATION TOPS:

| <u>FORMATION</u> | <u>DEPTH KB</u> | <u>EST PSI</u> |
|---------------------|-----------------|----------------|
| Undif. Tertiary | Surface | |
| Kirtland shale | 215' | |
| Fruitland | 826' | |
| Main Fruitland Coal | 1231' | 320 psi |
| Pictured Cliffs | 1258' | 327 psi |
| Total Depth | ~1460' | |

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 ~380 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 = 380 psi. Well Control Anticipated Surface Pressure (ASP) = 380 psi - $(0.22 * 1400') = 59$ 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' - 1460'±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 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, 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:

| | Description | Top | Bottom |
|---|------------------|---------|-----------|
| 1 | 7" 23# J55 | Surface | 120 ft ± |
| 2 | 4-1/2" 10.5# J55 | Surface | 1460 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.