Form 3160-5
(November 1994)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Oil Cons.
N.M. DIV-Dist. 2
1301 W. Grand Avenue
Artesia, NM 88210

FORM APPROVED
OMB No. 1004-0135
Expires July 31, 1996

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

5. Lease Serial No.
NM0041951

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM 91062

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
Eddy 21 Federal Com No. 2

2. Name of Operator
Gruy Petroleum Management Co.

9. API Well No.
30-015-32386

3a. Address
P. O. Box 140907 Irving, TX 75014-0907

3b. Phone No. *(include area code)*
972-401-3111

10. Field and Pool, or Exploratory Area
White City; Penn (Gas)

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
890' FNL & 990' FEL Sec. 21 T24S - R26E

11. County or Parish, State
Eddy Co., NM

RECEIVED
OCD ARTESIA

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☒ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Request approval for setting 3200' of 9/5/8" 40# J-55 intermediate casing, and revised drilling fluid program per attached.

APPROVED
JUL
LES BABYAK
PETROLEUM ENGINEER

14. I hereby certify that the foregoing is true and correct
Name *(Printed/Typed)*
Zeno Farris

Title
Manager, Operations Administration

Signature
Zeno Farris

Date
July 25, 2002

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice 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.	Office	

Title 18 U.S.C. Section 1001, makes 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 reverse)

Gruy Petroleum Management Co
Eddy 21 Federal Com 2
Eddy County
21D-T24S-R26E
Drilling Procedure

1. MIRU Patterson-UTI Rig 80. Over preset 20" conductor pipe.

2. Drill 17 1/2" hole to 425'. Place stabilizers as needed. Take surveys every 500' maximum. Run 13 3/8 ", 48 ppf, H-40 casing with PDC drillable float equipment and cement to surface drift 13 3/8" on location. Centralizers to be run on shoe joint and every fourth joint per NM specifications. WOC 8 hours. Note: **Drift all drill pipe to full ID when picking it up.**

3. Install 13 3/8"- 3M SOW casing head. Test same to 500 psi. N/U 13 5/8" 3M BOP's and function test . Run accumulator test. Pick up 12 1/4" bit, and required BHA and TIH above float collar and drill ahead. Maximum distance between surveys will be 500 feet, unless hole conditions dictate shorter intervals.ALWAYS BREAK CIRCULATION IN STAGES WHILE TRIPPING.

4. Drill to +/- **3200'**. Short trip as required . **BE SURE TO WATCH ECD AND KEEP HOLE CLEAN.**

5. Circulate and condition hole to run pipe. Run fluid caliper for cement volume. POOH .

6. Clean and drift 9 ⅝", 40 ppf, J-55 , casing on location. Run and cement 9 ⅝" casing with 1 shoe joint and PDC drillable float equipment. Install centralizers on shoe joint, then every fourth casing collar to surface. NU 11" 5M x 13 3/8" 3M casing head. Test to 1000 psi . NU 11" 5M BOP's and test to 5,000 psi. Install rotating head and function test same.
7. Install wear bushing. Pick up 8 3/4" bit and required BHA and GIH to FE. Test casing to 2200 psi for 30 mins on chart. Drill out and C&CM. Test formation to 10.5 ppg EMW (if leak off occurs record same and call Tom Strother for instructions). Drill ahead taking surveys as required and short trips as hole dictates. Follow mud program as required. Follow any requirements of Regulatory Agencies. Drill to TD of 11700' or sufficient depth below the Morrow to allow for logging and setting pipe.

Note: Watch all Mud properties closely and maintain pH at or near 10.5 at all times. Mud logger on at 6000'.

8. Circulation bottoms up at TD and make a wiper trip into casing. POOH for logs.

9. If required a condition trip will be needed for MRIL run. Check with Irving , Texas office.

10. If productive run and cement 5 ½" , 17 ppf, HCN-80, LTC casing as per Irving office. Install temp wellhead and De Mob rig to next location. Use marker joints.

11. If non-productive P&A as approved by the State of New Mexico.

RECOMMENDED CASING PROGRAM

13 3/8"	at	~~500'~~ 425'
9 5/8"	at	~~3,900'~~ 3,200'
5 1/2"	at	12,000'

RECOMMENDED DRILLING FLUID PROGRAM

DEPTH 425	WEIGHT	VISCOSITY	FILTRATE
~~0-500'~~	**8.6-9.0**	**32-34**	**No Control**

Spud with Fresh Water Gel and Lime spud mud, circulating through the working pits. Use Paper seepage control and hole sweeps. There is a potential for lost returns in this interval. If lost returns are encountered, and circulation cannot be regained after pumping several viscous LCM pills, you should consider dry drilling to casing point. While dry drilling, we recommend periodically pumping viscous LCM sweeps, to prevent solid accumulation in annulus.

Devon's, Elbow Canyon 4 Fed # 1, Section 4, T-24-S, R-26-E, reported dry drilling to casing point at 496'.

Interval Days 2
Cumulative Days 2
Estimated Product Usage This interval:

Product	**Units**
Fresh Gel	70
Lime	7
Paper	20
Transportation	1
Interval Cost	**$1,110.00**
Cumulative Cost	**$1,110.00**

RECOMMENDED DRILLING FLUID PROGRAM

DEPTH	WEIGHT	VISCOSITY	FILTRATE
500'-3,900'	10.0-10.1	28-29	No Control

Drill out from under surface with brine water, circulating through the inner reserve. Use premixed Salt Gel for hole sweeps. Use Paper as needed for seepage. Control the pH 9.0-9.5 with Caustic and Lime. Use Star NP-110 to control solids. There is a potential for lost circulation in this interval. If lost circulation is encountered, refer to Ambar Lone Star's Lost Circulation Procedure.

Note: most operators set pipe into the Bone Spring to eliminate the potential for losses in the Delaware Group.

Mallon's, Black River 10 # 1, Section 10, T-24-S, R-26-E, reported 3.75° deviation at 2,986'.

Devon's, Elbow Canyon 4 Fed # 1, Section 4, T-24-S, R-26-E, reported 3.75° deviation at 975'.

Interval Days 7
Cumulative Days 9
Estimated Product Usage This Interval:

Product	Units
Star NP-110	4
Lime	30
Caustic	30
Paper	35
Interval Cost	**$1,457.00**
Cumulative Cost	**$2,567.00**

RECOMMENDED DRILLING FLUID PROGRAM

DEPTH	WEIGHT	VISCOSITY	FILTRATE
3,900'-10,500'	**8.4-9.5**	**28-29**	**No Control**

Drill out from under intermediate with fresh water, circulating through the outer reserve pit. Control the pH 9.0-9.5 with Lime and Caustic. Use Star NP-110 for hole sweeps and to control solids. Paper should be utilized to control seepage. If lost circulation is encountered, refer to Ambar Lone Star's Lost Circulation Procedure. There is a potential for abnormal pressure in this interval. Diligently monitor background gas and penetration rates, adjusting the fluid weight with brine or Salt, as hole conditions dictate. If a sample mud is required for evaluation, or if hole conditions dictate, we recommend returning into the working pits and mudding up with a Star NP-110/Starch system. Use Starch for a 20cc API fluid loss. Star NP-110 should be used for hole stability and to control solids.

Mallon's, Pennzoil 10 Fed WD # 2, Section 10, T-24-S, R-26-E, is reported as a water disposal well with perforations from 7,636' to 7,804'.

Mewbourne's, Black River 35 State Com # 1, Section 35, T-23-S, R-26-E, reported a kick at 7,708' while drilling with a 9.2 ppg fluid weight. The fluid weight was increased to 9.5 ppg with brine to control.

Interval Days 17
Cumulative Days 26
Estimated Product Usage This Interval:

Product	**Units**
Star NP-110/MF-55	8
Lime	100
Caustic	30
Paper	80
Transportation	1
Interval Cost	**$3,034.00**
Cumulative Cost	**$5,601.00**

RECOMMENDED DRILLING FLUID PROGRAM

DEPTH	WEIGHT	VISCOSITY	FILTRATE
10,500'-12,000'	**9.5-10.2**	**42-50**	**15-8cc**

At **10,500'**, or prior to drilling the **Atoka**, Return to the working pits and mud up with a Xanthan Gum/White Starch system. Maintain an API filtrate of 10cc to 15cc. Caustic Soda should be used to control pH at 9-10. Begin additions of and maintain 2% to 4% KCl. Prior to drilling the **Morrow** at ±**10,932'**, reduce the API fluid loss to <8cc with White Starch. If abnormal pressures are encountered, we recommend additions of Salt, as needed to control. If densities above 10 ppg are required, we recommend additions of Barite. Our engineer will monitor the .3 rpm reading with a Brookefield rheometer, and maintain a minimum 18,000 centipoise viscosity through this interval.

While mudding up with an enhanced LSRV (Low Shear Rate Viscosity) fluid, we recommeded you initally add 1.0 to 1.25 ppb Xanthan Gum, and drill for a minimum of 12 hours before adding the remaining 1.0 to .75 ppb. This allows time for the Xanthan Gum to sheer, which reduces the potential for blinding at the shaker, airation of the fluid and pumps, and severe gas cutting.

We recommend a linear shaker with <120 mesh screens and a decanting centrifuge for solids control. We also recommend a 150-bbl premix pit and a rotating head for this well.

Note: we estimate an additional interval cost of $10,000.00 if Barite is required for an 11.0 ppg fluid weight.

C & K's, Pennzoil Federal 15 # 1, Section 15, T-24-S, R-26-E, reported a gas kick at 11,583'. They reported an 11.6 ppg fluid weight at 11,735'. They noted lost circulation several time in this interval. This well was drilled in 1976.

Interval Days 7
Cumulative Days 3
Estimated Product Usage This Interval:

Product	**Units**
Xanthan Gum	115
White Starch	100
Caustic	20
KCl	200
Brine Defoamer	10
IDB-60	10
Transportation	2
Interval Cost	**$28,127.00**
Cumulative Cost	**$33,728.00**

Cost is based on a 1,200 bbl system. It does not reflect lost circulation, water flows, or pressures requiring fluid weights in excess of 10.0 ppg.