Form 3160-3 (April 2004)

626

DATTY UNITED LIME OIL CONS. DIV-DIST. 2 DEPARTMENT OF THE INTERIOR Grand Avenue BUREAU OF LAND MAJAGEMEN Grand Avenue

F-34 FORM APPROVED OMB NO. 1004-0137 Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL	5. Lease Serial			
la. Type of Work	6. If Indian, A	llotee or Tribe Name		
1b. Type of Well Oil Well Gas Well Other	Single Zone Multiple Zone	e 7. Unit or CA	Agreement Name and No.	
2. Name of Operator Nearburg Producing Company 3a. Address 3300 N A St., Bldg 2, Suite 120, Midland, TX 7970 4. Location of Well (Report location clearly and in accordance with any Sta	3b. Phone No. (include area co. 432/686-8235	9. API Well N	ick 24 Federal #3 & o. (5-3415/	
At surface 330 FNL and 1480 FEL	RECEIVED	McKittr	ool, or Exploratory ick Hills: Upper Penr , M., or Blk. and Survey or Area	
At proposed prod. zone 1980 FSL and 660 FEL	JUN 0 6 2005		22S, 24E 81160	
14. Distance in miles and direction from nearest town or post office* 12 miles West of Cal	COD:AHTED	12. County or F	Parish 13. State NM	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedic	cated to this well F Section 24	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 2640	19. Proposed Depth			
21. Elevations (Show whether DF, KDB, RT, GL, etc. 3960	22. Approximate date work will star 6/1/05	ated duration 30 days		
2	24. Attachments CARLS	SBAD CONTROL	LED WATER BASIN	
 Well plat certified by a registered surveyor. A Drilling Plan A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). 	4. Bond to cover the operation Item 20 above). 5. Operator certification.	ions unless covered by	an existing bond on file (see as may be required by the	
25. Signature	Name (<i>Printed/Typed</i>) Sarah Jordan		Date 3/24/05	
Title Production Analyst				
Approved by (Signautre) / S/ James Stovall	Name (P/SP/T)Pames Sto	vall	JUN - 1 2005	
FIFLD MANAGER		BAD FIELD		
Application approval does not warrant or certify that the applicant holds leg conduct operations thereon. Conditions of approval, if any, are attached.		the subject lease which LFOR 1 YE		
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crir	ne for any person knowlingly and willfu	illy to make to any dep	artment or agency of the United	

*(Instructions on page 2)

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

Witness Surface Casing

District I 1625 N. French Dr., Hobbs, NM 88240 District II
1301 W. Grand Avenue, Artesia, NM 88210 District III
1000 Rio Brazos Road, Aztec, NM 87410 District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico Energy, Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

For drilling and production facilities, submit to

Form C-144 March 12, 2004

appropriate NMOCD District Office. For downstream facilities, submit to Santa Fe office.

Pit or Below-Grade Tank Registration or Closure

	below-grade tank X Closure of a pit or below-grade			
Operator: Nearburg Producing Company Telephone: 68 Address: 3300 N A St., Bldg 2, Ste 120, Midland, TX Facility or well name: McKittrick 24 Fed #3 API # 30-015 County: Eddy Latitude Longitude	79705 -34151 U/L or Qtr/Qtr B Sec 24 T22	S _R 24E		
Pit Type: Drilling X Production Disposal Workover Emergency Lined X Unlimited Liner type: Synthetic X Thickness 12mil Clay Volume bbl	Below-grade tank Volume:bbl Type of fluid: Construction material: Double-walled, with leak detection? Yes If not	RECEIVED		
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points)		
Wellhead protection area. (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) X		
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points)		
	Ranking Score (Total Points)	0		
If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: onsite offsite offsite, name of facility (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No Yes offsite offsite, show depth below ground surface ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.				
I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines [X], a general permit [, or an (attached) alternative OCD-approved plan [Date: 6/9/05 Printed Name/Title: Sarah Jordan, Production Analyst Signature: Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.				
Approvation 1 4 2005 Date: Printed Name/Title:	Signature			

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

Nearburg Producing Company 3300 North "A" Street, Building 2, Suite 120 Midland, Texas 77905

The undersigned accepts all applicable terms, conditions, stipulations and restrictions covering operations conducted on the leased land or portion thereof, as described below:

Lease No:

NMNM97855

Legal Description of Land:

SHL: 330 FNL and 1480 FEL

BHL: 1980 FSL and 660 FEL, Sec 24, 22S, 24E

Eddy County, New Mexico

Formation(s) (if applicable): Upper Penn

Bond Coverage:

\$25,000 statewide bond of Nearburg Producing Company

BLM Bond File No:

NM1307

H. R. Willis

Drilling Manager

State of New Mexico

DISTRICT I 1625 N. PRENCH DR., HOBBS, NM 88240

Energy, Minerals and Natural Resources Department

DISTRICT II

DISTRICT IV

1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III 1000 Rio Brazos Rd., Aztec, NM 87410

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
API Number

Property Code

OIL CONSERVATION DIVISION 1220 SOUTH ST. FRANCIS DR. Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

Pool Code

81160

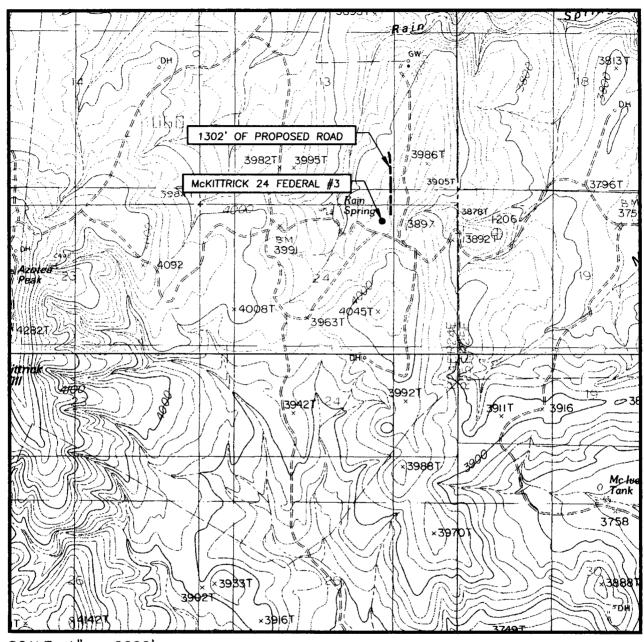
Form C-102
Revised JUNE 10, 2003
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

Pool Name

☐ AMENDED REPORT

Troperty	Couc	McKITTRICK 24 FEDERAL						3	ioci
OGRID N		Operator Name NEARBURG PRODUCING COMPANY						Elevation 3960'	
Surface Location									
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
В	24	22-S	24-E		330	NORTH	1480	EAST	EDDY
	<u> </u>	I	Bottom	Hole Loc	cation If Diffe	erent From Su	rface	I	<u></u>
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
	24	22-S	2 € −E		1980	SOUTH	660	EAST	EDDY
Dedicated Acre	es Joint o	or Infill Co	nsolidation (Code Or	der No.				
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	3953.1' 3961.9'								
 	Signature Signature								
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LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

SEC. <u>24</u> TWP. <u>22-S</u> RGE. <u>24-E</u>

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 330' FNL & 1480' FEL

ELEVATION 3960'

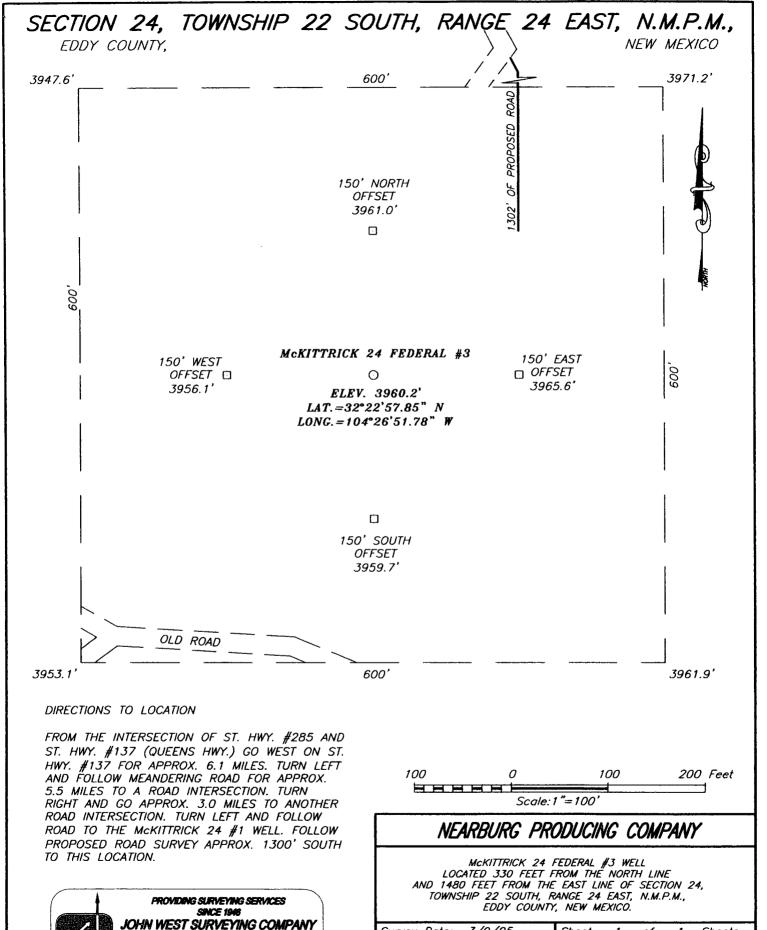
NEARBURG
OPERATOR PRODUCING COMPANY

LEASE McKITTRICK 24 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP AZOTEA PEAK, N.M.

CONTOUR INTERVAL: AZOTEA PEAK, N.M. – 20' CARNERO PEAK, N.M. – 20'

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(506) 389-3117



412 N. DAL PASO HOBBS, N.M. 88240

(505) 393-3117

 Survey
 Date:
 3/9/05
 Sheet
 1
 of
 1
 Sheets

 W.O.
 Number:
 05.11.0406
 Dr
 By:
 J.R.
 Rev
 1:N/A

 Date:
 3/16/05
 Disk:
 CD#5
 05110406
 Scale:1"=100"

ATTACHMENT TO FORM 3160-3 MCKITTRICK 24 FEDERAL #3

SHL: 330 FNL AND 1480 FEL, SEC 24, 22S, 24E BHL: 1980 FSL AND 660 FEL, SEC 24, 22S, 24E EDDY COUNTY, NEW MEXICO

DRILLING PROGRAM

1. GEOLOGIC NAME OF SURFACE FORMATION

Artesia GP

2. ESTIMATED TOPS OF IMPORTANT GEOLOGIC MARKERS

3rd Bone Spring

7350

Wolfcamp Shale

7750

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL, OR GAS

Cisco/ Canyon

8150

4. CASING AND CEMENTING PROGRAM

Casing Size	From To	<u>Weight</u>	<u>Grade</u>	<u>Joint</u>
9-5/8"	0'-1,500'	36#	J55	STC WITNESS
7"	0' - 8,600'	23 & 26#	K55, N80	LTC & BTC

Equivalent or adequate grades and weights of casing may be substituted at time casing is run, depending on availability.

We plan to drill a 14-3/4" hole to equal 1500'. 9-5/8" casing will be cemented with 700 sxs Class "C" or volume necessary to bring cement back to surface.

8-3/4" hole will be drilled to 8,600' and 7" production casing will be cemented with approximately 1000 sxs of Class "H" cement circulated to surface.

MCKITTRICK 24 FEDERAL #3

Page 2

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL

The BOP stack will consist of a 3,000 psi working pressure, dual ram type preventer and annular.

A BOP sketch is attached.

6. TYPES AND CHARACTERTICS OF THE PROPOSED MUD SYSTEM

Spud and drill to 1,500' with fresh water mud for surface string. The production section from 1,600' to 8,600' will be 8.3 ppg Fresh Water system with mud weight sufficient to control formation pressures.

7. AUXILLARY WELL CONTROL AND MONITORING EQUIPMENT

None required.

8. LOGGING, TESTING, AND CORING PROGRAM

DLL/CNL/LDT/CAL/GR logging is planned. Drill stem tests, cores and sidewall cores are possible.

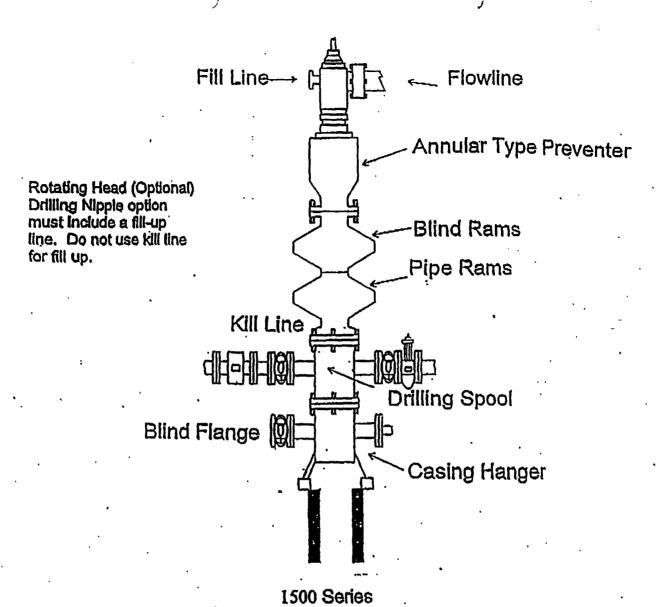
9. <u>ABNORMAL CONDITIONS</u>, <u>PRESSURES</u>, <u>TEMPERATURES</u> & <u>POTENTIAL</u> HAZARDS

None anticipated.

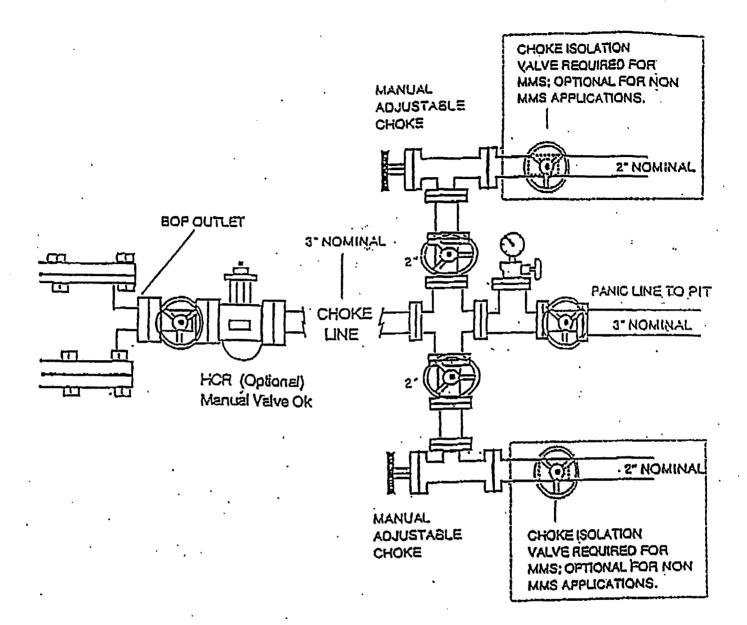
BHP expected to be 1,100 psi.

10. ANTICAPATED STARTING DATE:

Is planned that operations will commence on June 1, 2005 with drilling and completion operation lasting about 30 days.



*AKBUKG PRODUCING COMP CHOKE MANIFOLD 5M SERVICE



SURFACE USE AND OPERATIONS PLAN FOR

DRILLING, COMPLETION, AND PRODUCING

NEARBURG PRODUCING COMPANY MCKITTRICK 24 FEDERAL #3

SHL: 330 FNL AND 1480 FEL, SEC 24, 22S, 24E BHL: 1980 FSL AND 660 FEL, SEC 24, 22S, 24E EDDY COUNTY, NEW MEXICO

LOCATED

12 miles west of Carlsbad

OIL & GAS LEASE

NMNM97855

RECORD LESSEE

Michael Shearn

BOND COVERAGE

\$25,000 statewide bond of Nearburg Producing Company

ACRES IN LEASE

840

GRAZING LEASE

Gregory Ranch, Larry Gregory 617 Queen Hwy, Carlsbad, NM 88220

POOL

McKittrick Hills; Upper Penn, (Gas)

EXHIBITS

- A. Area Road Map
- B. Drilling Rig Layout
- C. Vicinity Oil & Gas Map
- D. Topographic & Location Verification Map
- E. Well Location & Acreage Dedication Map

This well will be drilled to a depth of approximately 8,600'.

MCKITTRICK 24 FEDERAL #3

Page 2

1. EXISTING ROADS

- A. Exhibit A is a portion of a section map showing the location of the proposed well as staked.
- B. Exhibit C is a plat showing existing roads in the vicinity of the proposed well site.

2. ACCESS ROADS

A. Length and Width

The access road will be built and is shown on Exhibit D.

B. Surface Material

Existing.

C. Maximum Grade

Less than five percent

D. Turnouts

None necessary.

E. Drainage Design

Existing.

F. Culverts

None necessary.

G. Gates and Cattle Guards

None needed.

3. LOCATION OF EXISTING WELLS

Existing wells in the immediate area are shown in Exhibit C.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

Necessary production facilities for this well will be located on the well pad.

MCKITTRICK 24 FEDERAL #3

Page 3

5. LOCATION AND TYPE OF WATER SUPPLY

It is not contemplated that a water well will be drilled. Water necessary for drilling will be purchased and hauled to the site over existing roads shown on Exhibit D.

6. METHODS OF HANDLING WASTE DISPOSAL

- A. Drilling fluids will be allowed to evaporate in the drilling pits until the pits are dry.
- B. Water produced during tests will be disposed of in the drilling pits.
- C. Oil produced during tests will be stored in test tanks.
- D. Trash will be contained in a trash trailer and removed from well site.
- E. All trash and debris will be removed from the well site within 30 days after finishing drilling and/or completion operations.

7. ANCILLARY FACILITIES

None required.

8. WELL SITE LAYOUT

Exhibit B shows the relative location and dimensions of the well pad, mud pits, reserve pit, and trash pit, and the location of major rig components.

9. PLANS FOR RESTORATION OF THE SURFACE

- A. After completion of drilling and/or completion operations, all equipment and other material not needed for operations will be removed. The well site will be cleaned of all trash and junk to leave the site in an as aesthetically pleasing condition as possible.
- B. After abandonment, all equipment, trash, and junk will be removed and the site will be clean.

10. OTHER INFORMATION

A. Topography

The land surface at the well site is rolling native grass with a regional slope being to the east.

B. Soil

Topsoil at the well site is sandy soil.

MCKITTRICK 24 FEDERAL #3 Page 4

C. Flora and Fauna

The location is in an area sparsely covered with mesquite and range grasses.

D. Ponds and Streams

There are no rivers, lakes, ponds, or streams in the area.

E. Residences and Other Structures

There are no residences within a mile of the proposed well site.

F. Archaeological, Historical, and Cultural Sites

None observed on this area.

G. Land Use

Agricultural

H. Surface Ownership

Rochhouse Ranch

11. OPERATOR'S REPRESENTATIVE

H. R. Willis 3300 North "A" Street, Bldg 2, Suite 120 Midland, Texas 79705 Office: (432) 686-8235

Home: (432) 697-2484

12. CERTIFICATION

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Nearburg Producing Company and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

3.24.05

H. R. Willis

Drilling Manager

Date

HYDROGEN SULFIDE DRILLING OPERATIONS PLANS NEARBURG PRODUCING COMPANY MCKITTRICK 24 FEDERAL #3

1. HYDROGEN SULFIDE TRAINING

- A. All regularly assigned personnel, contracted or employed by Nearburg Producing Company, will receive training from a qualified instructor in the following areas prior to commencing drilling potential hydrogen sulfide bearing formations in this well:
 - 1. The hazards and characteristics of hydrogen sulfide (H2S).
 - 2. The proper use and maintenance of personal protective equipment and life support systems.
 - 3. The proper use of H2S detectors, alarms, warning systems, briefing areas, evacuation procedures and prevailing winds.
 - 4. The proper techniques for first aid and rescue procedures.
- B. In addition, supervisory personnel will be trained in the following areas:
 - 1. The effects of H2S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
 - 2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
 - 3. The contents and requirements of the H2S Drilling Operations Plan.
- C. There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

HYDROGEN SULFIDE DRILLING OPERATIONS PLANS PAGE 2

2. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S.

A. Well Control Equipment:

- 1. Flare line with continuous pilot.
- 2. Choke manifold with a minimum of one remote choke.
- 3. Blind rams and pipe rams to accommodate all sizes with properly sized closing unit.
- 4. Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head and flare gun with flares as needed.

B. Protective Equipment for Essential Personnel:

Mark II Surviveair 30-minute units located in the dog house and at briefing areas, as indicated on well site diagram.

C. H2S Detection and Monitoring Equipment:

- 1. Two portable H2S monitors positioned and location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.
- 2. One portable SO2 monitor positioned near flare line.

D. Visual Warning systems:

- 1. Wind direction indicators as shown on well site diagram.
- 2. Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used when appropriate. See example attached.

HYDROGEN SULFIDE DRILLING OPERATIONS PLANS PAGE 3

E. Mud Program

- 1. The Mud Program has been designed to minimize the volume of H2S circulated to the surface. Proper mud weights, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.
- 2. A mud-gas separator will be utilized as needed.

F. Metallurgy

All drill strings, casing, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and line and valves shall be suitable for H2S service.

G. Communication

- 1. Cellular telephone communications in company vehicles and mud logging trailer.
- 2. Land line (telephone) communications at area office.

H. Well Testing

Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing in an H2S environment will be conducted during the daylight hours.

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

Nearburg Producing Company 3300 North "A" Street, Building 2, Suite 120 Midland, Texas 77905

The undersigned accepts all applicable terms, conditions, stipulations and restrictions covering operations conducted on the leased land or portion thereof, as described below:

Lease No:

Legal Description of Land: SHL:

SHL: 330 FNL and 1480 FEL

BHL: 1980 FSL and 660 FEL, Sec 24, 22S, 24E

Eddy County, New Mexico

Formation(s) (if applicable): Upper Penn

Bond Coverage:

\$25,000 statewide bond of Nearburg Producing Company

BLM Bond File No:

NM1307

Date H. R. Willis

Drilling Manager

WARNING

YOU ARE ENTERING A H2S AREA AUTHORIZED PERSONNEL ONLY

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED
- 2. HARD HATS REQUIRED
- 3. SMOKING IN DESIGNATED AREAS ONLY
- 4. BE WIND CONSCIOUS AT ALL TIMES
- 5. CHECK WITH NEARBURG SUPERINTENDENT AT MAIN OFFICE

NEARBURG PRODUCING COMPANY

(432) 686-8235

٤ Pumps Water Mud Fuel Mud Circulating Tanks Substructure Doghouse and Co. Trailer ≨ 3 \Box 3 Silde Parking Pipe Racks MudLogger

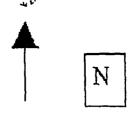
M - H2S Monitors with alarms at bell nipple and shale shaker

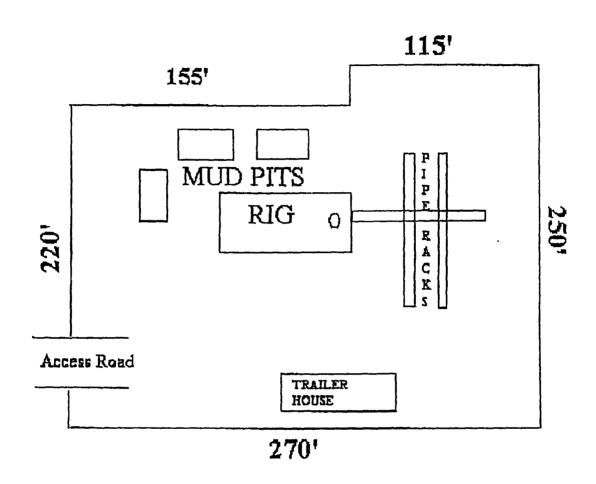
W - Wind Direction Indicators

B - Sale Briefing areas with caution signs and protective breathing equipment. Winfimum 150' from welfhead.

Prevailing Wind Directions: Summer - South/Southwest
Winter - North/Northwest

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NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON

Governor

Joanna Prukop

Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

June 13, 2005 Nearburg Producing Company 3300 N. A St., Bldg. 2, Suite 120 Midland, TX 79705

Attn: Mrs. Sarah Jordan or To Whom It May Concern

RE: APPLICATION FOR PERMIT TO DRILL

McKittrick 24 Federal #3

Section 24, T22S-R24E, 330' FNL & 1480' FEL

(Surface location)

EDDY COUNTY, NEW MEXICO

Dear Sarah or To Whom It May Concern,

The application for permit to drill identified above has been filed with this office will need to have the following stipulation (in part) for approval:

Nearburg Producing Company is to catch mud samples from the flow line in order to determine the chloride content of the drilling mud. Samples are to be taken from surface down to the surface casing setting depth of @ 1500'.

Results of these tests are to be submitted to our office and the Bureau of land Management. Thank you for your assistance.

Sincerely,

Bryan G. Arrant PES, District II Artesia NMOCD

PREPARED FOR:

Mr. Butch Willis NEARBURG PRODUCING CORPORATION

Midland, Texas

McKittrick 24 Federal # 3

Section 24 T-22-S R-24-E Eddy County, New Mexico

JUN 1 0 2005 OCD-ARTESIA

Prepared by: Randy Auburg March 22, 2005

DRILLING FLUID SYNOPSIS

NEARBURG PRODUCING CORPORATION

MCKITTRICK 24 FEDERAL # 3
Section 24
T-22-S
R-24-E
Eddy County, New Mexico

CASING

9 5/8" at 1,500'

5 1/2" at 8,600'

DEPTH	MUD WEIGHT	VISCOSITY	FLUID LOSS	DRILL SOLIDS	COMMENTS
0-1,500'	8.4 to 8.5	28 to 29	No Control	<1%	Fresh Water, Fresh Gel Sweeps, Lime, Paper
1,500'-8,600'	8.4 to 8.5	28 to 29	No Control	<1%	Fresh Water, Star NP-110, Paper, Lime Starch if needed

ESTIMATED FORMATION TOPS

SAN ANDRES	495'
GLORIETA	2,018'
YESO	2,110'
BONE SPRINGS	4,600'
WOLFCAMP	7,548'
PENN (CISCO)	7,775'
CANYON	7,895'
TD	8,600'

RECOMMENDED CASING PROGRAM

9 5/8" at 1,600'

5 1/2" at 8,600'

RECOMMENDED DRILLING FLUID PROGRAM

DEPTH	WEIGHT	VISCOSITY	FILTRATE	
0-1,500'	8.4-8.5	28-29	No Control	

Spud with Fresh Water circulating the working pits. Sweep the hole with Amgel flocculated with Lime, mixed at a 10 to 1 ratio. Use Paper for seepage control and for 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.

DEPTH	<u>WEIGHT</u>	VISCOSITY	FILTRATE
1,500'-8,600'	8.4-8.5	28-29	No Control

Drill out from surface with Fresh Water circulating the reserve pit. Use Star NP-110 for sweeps and for solids control. Maintain a 9.0 to 10.0 pH with Lime. Paper should be used for seepage control and for sweeps. Sweep the hole every 200', or as needed, with pre-hydrated Amgel in order to minimize solids buildup in the annulus and to reduce the possibility of lost circulation while drilling the Upper Pennsylvanian and other sub-normally pressured formations. 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. There is a possibility of encountering H_2S from the Bone Springs and the Upper Pennsylvanian. If H_2S is encountered, we recommend additions of an H_2S Scavenger for personnel safety and a Filming Amine to protect the drill string. We recommend utilizing a ± 200 bbl premix pit for sweeps and LCM pills.

Note: we recommend use of an LCM blend of Fiber Plug, Nut Shell, Maxi-Seal (Chem-Seal), and Mica in this interval.

If a drilling fluid is desired for evaluation of this interval, we recommend returning to the working pits and mudding up with a Star NP-110/Starch system. Reduce the API fluid loss too less than 15cc with Starch. Maintain a 9.0 to 10.0 pH with Lime. Use Amgel if additional viscosity is required.

Estimated Drilling Fluid Cost: \$4,000.00 to \$5,000.00 Estimated Drilling Days: 13 to 16

Estimates are based on a 1,000 bbl system and do not reflect lost circulation, abnormal pressure, H₂S, unstable hole conditions requiring elevated viscosities or mud in production interval.

AMBAR LONE STAR FLUID SERVICES LOST CIRCULATION PROCEDURES

Loss of circulation is a possibility on this well. Although each well is different, there are some basic procedures and drilling practices that can aid in reducing the severity or, in some cases, prevent lost circulation. Below is a list, which may prove helpful.

- 1. Maintain viscosities as low as possible and still clean the hole. We recommend a viscosity of 28 to 29 on this well.
- 2. Maintain mud weights as low as possible without jeopardizing safety.
- 3. Use slow trip speeds to prevent swabbing and surging.
- 4. Break circulation in stages with reduced pump strokes while tripping in the hole.
- 5. Rotate pipe prior to and while tripping in the hole.
- 6. Use an optimum hydraulics program.

Severe seepage to total loss of circulation may occur even when the above procedures are followed. For severe seepage, we recommend circulating pills (50-100 bbls. depending on hole size) containing 10-30 ppb of various (fibrous and flake) lost circulation material. It would be helpful to reduce pump rates until full returns are established. Once full returns are regained, normal pump rates should be returned to in stages. The inclusion of lost circulation material in the entire system is recommended only if the above procedures do not adequately seal off the loss zone.

For total loss of circulation, we recommend pulling enough stands to place the bit above the loss zone. A viscous pill containing the appropriate type of loss circulation material should be spotted. The size of the pill should be determined by hole size and should contain at <u>least</u> 30 ppb lost circulation material. Several attempts should be made before considering other alternatives. After returns are regained, we recommend staging back to bottom using the procedure outlined above.

If returns are not fully re-established, consideration should be given to dry drilling while pumping periodic sweeps to ensure hole cleaning.