

**UNITED STATES  
DEPARTMENT OF THE  
BUREAU OF LAND MANAGEMENT**

NM OIL & CONSERVATION DISTRICT I  
1625 NORTH FRENCH DRIVE  
HOBBS NM 88240

FORM APPROVED  
OMB NO. 1004-0136  
Expires: February 28, 1995  
LEASE DESIGNATION AND SERIAL NO.  
NM-58938 83607  
IF INDIAN, ALLOTTEE OR TRIBE NAME

**APPLICATION FOR PERMIT**

1a. TYPE OF WORK

DRILL ☒

DEEPEN ☐

7. UNIT AGREEMENT NAME

b. TYPE OF WELL

OIL WELL ☐

GAS WELL ☒

OTHER

SINGLE ZONE ☒

MULTIPLE ZONE ☐

2. NAME OF OPERATOR

COG OPERATING, LLC.

(ERICK NELSON 432-685-4341)

3. ADDRESS AND TELEPHONE NO.

550 WEST TEXAS AVENUE SUITE 1300 MIDLAND, TEXAS 79701

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.)  
At surface

1980' FNL & 1650' FEL SECTION 34 T21S-R32E LEA CO. NM

At proposed prod. zone SAME

Unit 6

R-111-P Potash

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE

Approximately 35 miles East of Carlsbad New Mexico.

15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT.

(Also to nearest drlg. unit line, if any)

660'

16. NO. OF ACRES IN LEASE

320

17. NO. OF ACRES ASSIGNED TO THIS WELL

320

18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.

2000'

19. PROPOSED DEPTH

15,000'

20. ROTARY OR CABLE TOOLS

ROTARY

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

3684' GR.

22. APPROX. DATE WORK WILL START WHEN APPROVED

23.

**PROPOSED CASING AND CEMENTING PROGRAM**

**Controlled Water Basin**

| SIZE OF HOLE | GRADE SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT              |
|--------------|----------------------|-----------------|---------------|---------------------------------|
| 25"          | Conductor            | NA              | 40'           | Cement to surface with Redi-mix |
| 17 1/2"      | H-40/J-55 13 3/8"    | 48# & 54.5#     | 750'          | 500 Sx. circulate cement        |
| 12 1/4"      | HCK/J-55 9 5/8"      | 36# & 40#       | 4700'         | 1000 Sx. " "                    |
| 8 3/4"       | N-80/P-110 7"        | 26# & 29#       | 12,000'       | 500 Sx. estimate TOC 9000'      |
| 6 1/8"       | N-80/P-110 3 1/2"    | 13.5#           | 3400' Liner   | 400 Sx. " " 11,600'             |

OPER. OGRID NO. 224137

PROPERTY NO. 301042

POOL CODE 72124

EFF. DATE 7/14/05

API NO. 30-025-37363

SEE ATTACHED SHEET

**APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED**

COG OPERATING, LLC. ACCEPTS THE RESPONSIBILITY FOR THE OPERATIONS OF THIS LEASE.

**DECLARED WATER BASIN  
CEMENT BEHIND THE 13 3/8"  
CASING MUST BE CIRCULATED  
WITNESS**

**DECLARED WATER BASIN  
CEMENT BEHIND THE 29 5/8"  
CASING MUST BE CIRCULATED  
WITNESS**

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED [Signature]

TITLE Agent

DATE 04/12/05

(This space for Federal or State office use)

PERMIT NO.

APPROVAL DATE

Application approval 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.  
CONDITIONS OF APPROVAL, IF ANY:

APPROVED BY

TITLE STATE DIRECTOR

DATE

\*See Instructions On Reverse Side

**APPROVAL FOR 1 YEAR**

APPLICATION TO DRILL

COG OPERATING, LLC.  
BILBREY "34" FEDERAL #2  
UNIT "G" SECTION 34  
T21S-R32E LEA CO. NM

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1. Drill 25" hole to 40'. Set 40' of 20" conductor and cement to surface with Redi-mix.
2. Drill 17½" hole to 750'. Run and set 750' of 13 3/8" 48# H-40 & 54.5# J-55 ST&C casing. Cement with 300 Sx. of 35/65 POZ + additives, tail in with 200 Sx. of Class "C" cement + 2% CaCl, + ¼# Flocele/Sx. circulate cement to surface.
3. Drill 12¼" hole to 4700'. Run and set 4700' of 9 5/8" 36 & 40 # H&K/J-55 ST&C casing. Cement with 800 Sx. of 50/50 Class "C" POZ + additives, tail in with 200 Sx. of Class "C" cement + additives, circulate cement to surface.
4. Drill 8 3/4" hole to 12,000'. Run and set 12,000' of 29# & 26# P-110 & N-80 LT&C casing. Cement with 300 Sx. of Class "H" 35/65 POZ + additives, tail in with 200 Sx. of Class "H" cement + additives, estimate top of cement 9000' from surface.
5. Drill 6 1/8" hole to 15,000'. Run and set 3400' of 4½" 13.6# P-110 LT&C liner from 11,600' to TD. Cement with 400 Sx. of Class "H" Premium Plus cement + additives, cement to top of liner.

DISTRICT I  
1626 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 and Natural Resources Department

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

|                                   |                                     |                                 |
|-----------------------------------|-------------------------------------|---------------------------------|
| API Number<br><b>30-025-37363</b> | Pool Code<br>72124                  | Pool Name<br>BILBREY MORROW GAS |
| Property Code<br>301042           | Property Name<br>BILBREY 34 FEDERAL | Well Number<br>2                |
| OGRID No.<br>229137               | Operator Name<br>COG OPERATING LLC  | Elevation<br>3684'              |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| G             | 34      | 21-S     | 32-E  |         | 1980          | NORTH            | 1650          | EAST           | LEA    |

Bottom Hole Location If Different From Surface

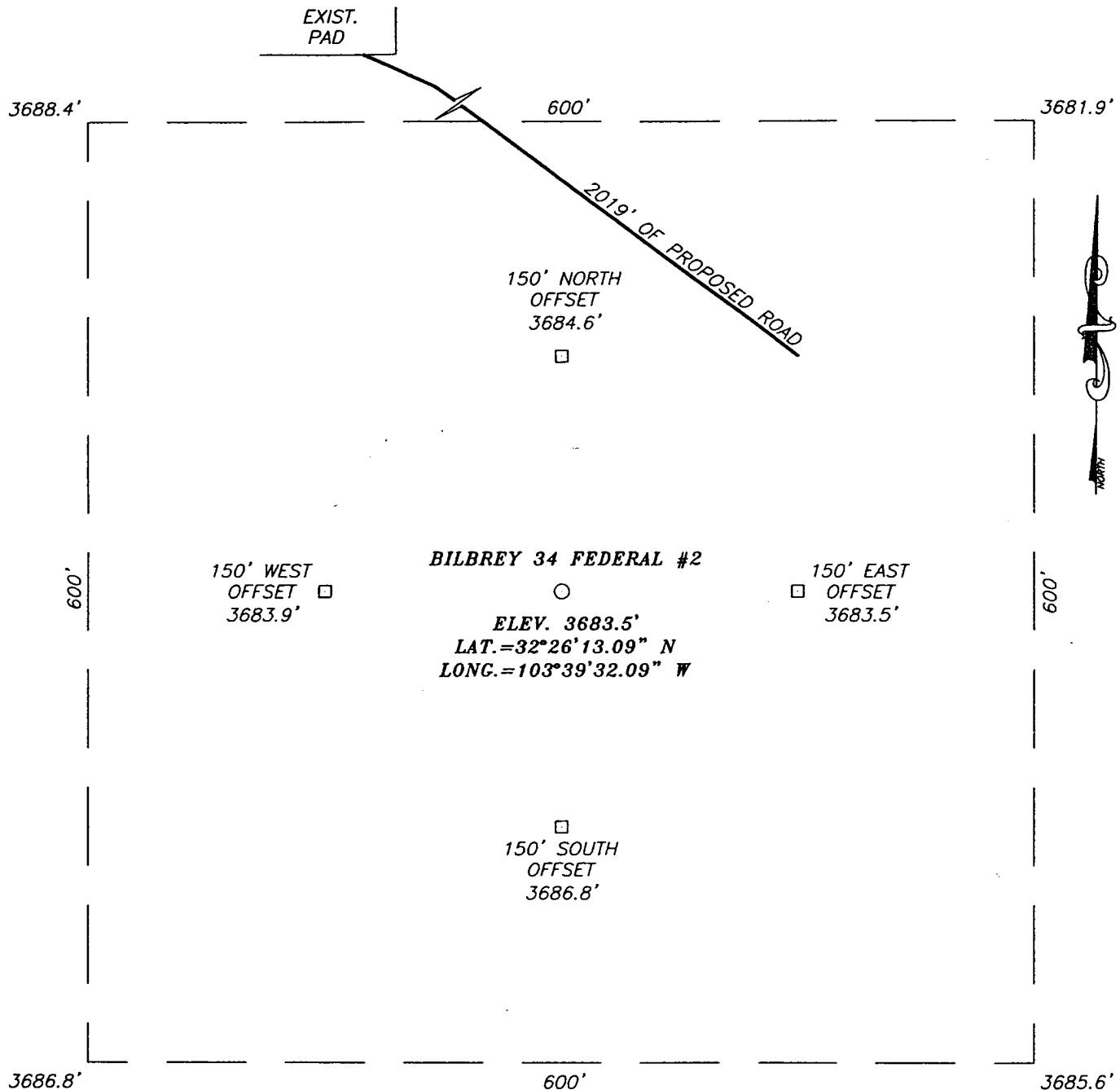
| UL or lot No.          | Section         | Township           | Range     | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|------------------------|-----------------|--------------------|-----------|---------|---------------|------------------|---------------|----------------|--------|
|                        |                 |                    |           |         |               |                  |               |                |        |
| Dedicated Acres<br>320 | Joint or Infill | Consolidation Code | 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

|  |   |
|--|---|
| <p>Existing Gas Well</p> <p>GEODETIC COORDINATES<br/>NAD 27 NME<br/>Y=523340.3 N<br/>X=708070.8 E<br/>LAT.=32°26'13.09" N<br/>LONG.=103°39'32.09" W</p> <p>3688.4' 3681.9' 3686.8' 3685.6' 1980' 1650' 600' 600'</p> | <b>OPERATOR CERTIFICATION</b><br><i>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</i><br><br>Signature<br>Joe T. Janica<br>Printed Name<br>Agent<br>Title<br>04/12/05<br>Date  |
|  | <b>SURVEYOR CERTIFICATION</b><br><i>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.</i><br><br>DECEMBER 29, 2004<br>Date Surveyed<br>LA<br>Signature & Seal of Professional Surveyor<br><br>Certificate No. GARY E. EDSON 12841 |
|  |   |
|  |   |

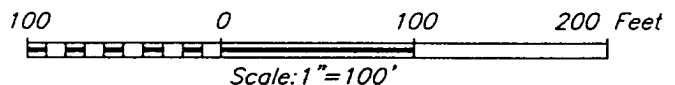
EXHIBIT "A"

SECTION 34, TOWNSHIP 21 SOUTH, RANGE 32 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF CO. RD. C-29  
(CAMPBELL RD.) AND MILLS RANCH RD. GO EAST  
ON MILLS RANCH RD. FOR 5.0 MILES TO A FORK  
IN THE ROAD. TURN LEFT AND GO 1.7 MILES TO  
AN INTERSECTION. TURN LEFT AND GO NORTH 1.0  
MILES. TO WHERE ROAD TURNS RIGHT. FOLLOW  
TRAIL ROAD NORTHWEST FOR 2.4 MILES. THIS  
LOCATION IS APPROX. 1000' WEST FROM TRAIL  
ROAD.



COG OPERATING LLC

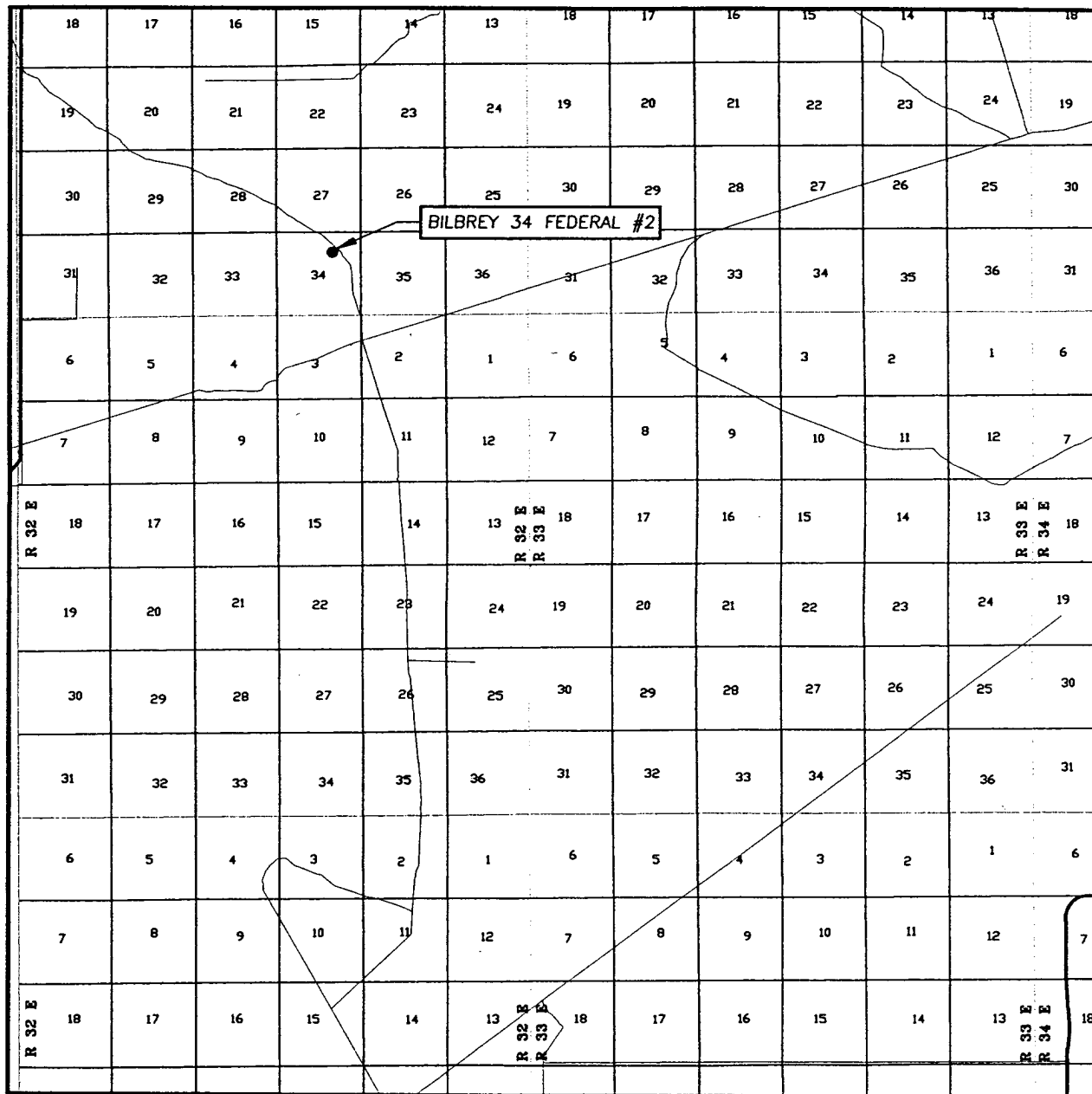
BILBREY 34 FEDERAL #2 WELL  
LOCATED 1980 FEET FROM THE NORTH LINE  
AND 1650 FEET FROM THE EAST LINE OF SECTION 34,  
TOWNSHIP 21 SOUTH, RANGE 32 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.

|                         |                     |           |                |
|-------------------------|---------------------|-----------|----------------|
| Survey Date: 12/29/04   | Sheet 1 of 1 Sheets |           |                |
| W.O. Number: 04.11.1742 | Dr By: LA           | Rev 1:N/A |                |
| Date: 1/04/05           | Disk: CD#3          | 04111742  | Scale: 1"=100' |



PROVIDING SURVEYING SERVICES  
SINCE 1946  
**JOHN WEST SURVEYING COMPANY**  
412 N. DAL PASO  
HOBBS, N.M. 88240  
(505) 393-3117

# VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 34 TWP. 21-S RGE. 32-E

SURVEY N.M.P.M.

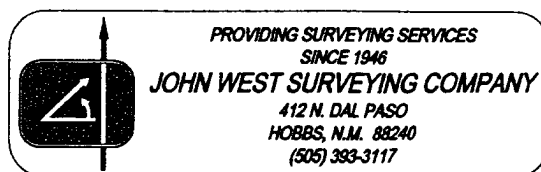
COUNTY LEA

DESCRIPTION 1980' FNL & 1650' FEL

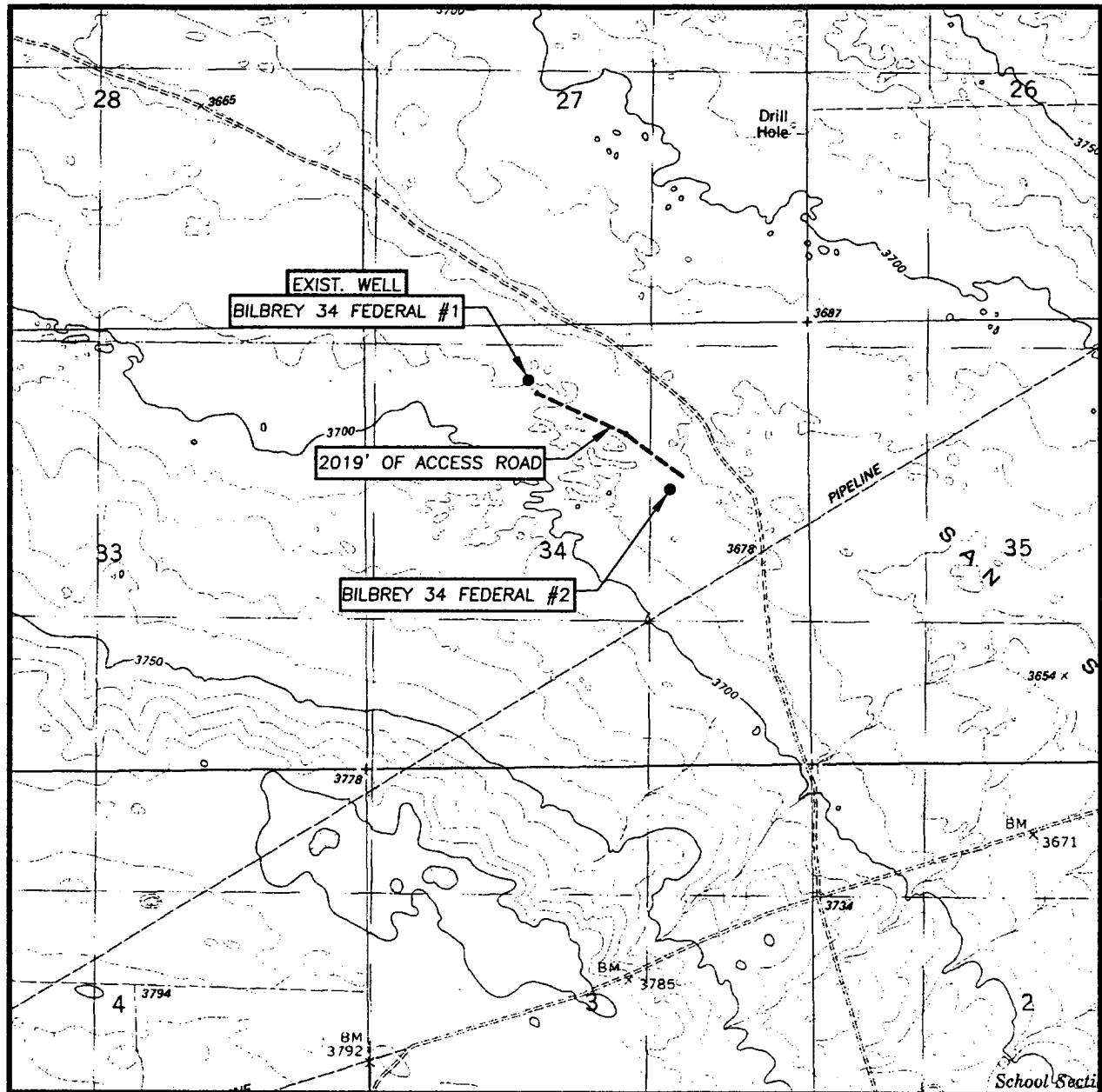
ELEVATION 3684'

OPERATOR COG OPERATING LLC

LEASE BILBREY 34 FEDERAL



# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'  
THE DIVIDE, N.M.

SEC. 34 TWP. 21-S RGE. 32-E

SURVEY N.M.P.M.

COUNTY LEA

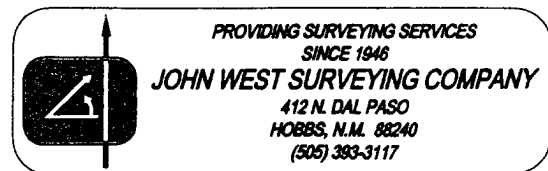
DESCRIPTION 1980' FNL & 1650' FEL

ELEVATION 3684'

OPERATOR COG OPERATING LLC

LEASE BILBREY 34 FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
THE DIVIDE, N.M.



PROVIDING SURVEYING SERVICES  
SINCE 1946

**JOHN WEST SURVEYING COMPANY**

412 N. DAL PASO  
HOBBS, N.M. 88240  
(505) 393-3117

## APPLICATION TO DRILL

COG OPERATING, LLC.  
 BILBREY "34" FEDERAL #2  
 UNIT "G" SECTION 34  
 T21S-R32E LEA CO. NM

In response to questions asked under Section II of Bulletin NTL-6 the following information on the above well is provided for your consideration.

1. Location of well: 1980' FNL & 1650' FEL SECTION 34 T21S-R32E LEA CO. NM
2. Ground Elevation above Sea Level: 3684'
3. Geological age of surface formation: Quaternary Deposits:
4. Drilling tools and associated equipment: Conventional rotary drilling rig using drilling mud as a circulating medium to remove solids from hole.
5. Proposed drilling depth: 15,000'
6. Estimated tops of geological markers:

|             |        |        |        |
|-------------|--------|--------|--------|
| Delaware    | 4750'  | Strawn | 13180' |
| Bone Spring | 8750'  | Atoka  | 13300' |
| Wolfcamp    | 11750' | Morrow | 14150' |

7. Possible mineral bearing formations:

|             |     |        |     |
|-------------|-----|--------|-----|
| Bone Spring | Oil | Atoka  | Gas |
| Wolfcamp    | Oil | Morrow | Gas |
| Strawn      | Gas |        |     |

8. Casing Program:

| Hole Size | Interval       | OD of Casing- | Weight    | Thread | Collar | Grade        |
|-----------|----------------|---------------|-----------|--------|--------|--------------|
| 25"       | 0-40'          | 20"           | NA        | NA     | NA     | Conductor    |
| 17½"      | 0-750'         | 13 3/8"       | 48 & 54.5 | 8-R    | ST&C   | H-40 & J-55  |
| 12¼"      | 0-4700'        | 9 5/8"        | 36 & 40   | 8-R    | ST&C   | HCK & J-55   |
| 8 3/4"    | 0-12,000'      | 7"            | 26 & 29   | 8-R    | LT&C   | N-80 & P-110 |
| 6 1/8"    | 11,800-15,000' | 4½" (liner)   | 13.5      | 8-R    | LT&C   | N-80 & P-110 |

# APPLICATION TO DRILL

COG OPERATING, LLC.  
BILBREY "34" FEDERAL #2  
UNIT "G" SECTION 34  
T21S-R32E LEA CO. NM

## 7. Cementing and Setting Depth

|         |              |          |  |
|---------|--------------|----------|--|
| 13 3/8" | Surface      | +/-750'  | Set +/- 750' of 13 3/8" 48#/54.5 H40 STC casing. Cement w/ 300 sx 35:65 Poz: "C" cement + additives followed by 200 sx Class "C" + 2% CaCl2 Circulate cement     |
| 9 5/8"  | Intermediate | +/-4700' | Set +/- 4700' of 9 5/8" 36#/40# J-55 STC casing. Cement w/ 800 sx 50:50 Poz: "C" light cement + additives followed by 200 sx Class "C" cement. Circulate cement. |
| 7"      | Intermediate | 12000'   | Set +/- 12000' of 7" 26/29# N80/P110 LTC casing. Cement w/ 300 sx 35:65 Poz: "H" cement + additives followed by 200 sx Class "H" TOC @ +/- 9000'                 |
| 4 1/2"  | Prod/Liner   | 15000'   | Set +/- 3400' of 4 1/2" 13.6# P-110 casing from 15000'- 11500'. Cement w/ 400 sx Class "H" + additives. TOC at liner top   |

## 8. Pressure Control Equipment:

After setting 13-3/8" casing and installing 3000 psi casing head, NU 13-5/3" 3000 psi annular BOP. Test annular BOP, casing, and manifold with clear fluid to 1350 psi with rig pump

After setting 9-5/8" casing and installing 5000 psi casing spool, NU 5000 psi double ram BOP and 5000 psi annular BOP. Test double ram BOP and manifold to 4000# with clear fluid and test annular to 2500 psi using an independent tester

After setting 7" casing and installing 10000 psi casing spool, NU 10000 psi double ram BOP and 5000 psi annular BOP. Test double ram BOP and manifold to 8000# with clear fluid and test annular to 4000 psi using an independent tester

## 9. Proposed Mud Circulating System

| Interval        | Mud Wt.    | Visc. | FL   | Type Mud System   |
|-----------------|------------|-------|------|---|
| 0'- 750'        | 8.4-9.2    | 28-35 | NC   | Fresh water native mud w/ paper for seepage and sweeps. Lime for PH   |
| 750'- 4700'     | 10.0- 10.2 | 28-29 | NC   | Brine mud, lime for PH and paper for seepage and sweeps.  |
| 4700' - 12000'  | 8.4 - 9.0  | NC    | NC   | Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal. |
| 12000' - 13000' | 9.0-10.0   | 30-31 | 30   | Increase weight with brine additions and reduce fluid loss w/ starch  |
| 13000'- 15000'  | 10.0-12.2  | 38-40 | 8-15 | Reduce Fluid loss w/ starch and XCD Polymer. Maintain properties to TD. Spot a high vis pill on bottom for logs                                       |

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing the viscosity and/or water loss may have to be adjusted to meet these needs.



APPLICATION TO DRILL

COG OPERATING, LLC.  
BILBREY "34" FEDERAL #2  
UNIT "G" SECTION 34  
T21S-R32E LEA CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

- A. Open hole logs: Dual Laterolog, LDT, SNP, Gamma ray, caliper from 12,000' back to 4700'. Gamma Ray neutron from 9 5/8" casing shoe back to surface.
- B. Dual Laterolog, LDT, SNP Gamma Ray and Caliper from TD back to 7" casing.
- C. Rig up mud logger on hole at 4700'. Cores and DST's when Geologist deems it necessary where shows occur.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H<sup>2</sup>S in this area. If H<sup>2</sup>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 8000 PSI, and Estimated BHT 200°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 60 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Morrow formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as a gas well.

1. All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
2. H<sub>2</sub>S Detection and Alarm Systems
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of blooie line (mud pit) and on derrick floor or doghouse.
3. Windsack and/or wind streamers
  - A. Windsack at mudpit area should be high enough to be visible.
  - B. Windsack at briefing area should be high enough to be visible.
  - C. There should be a windsack at entrance to location.
4. Condition Flags and Signs
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H<sub>2</sub>S present in dangerous concentration. Only emergency personnel admitted to location.
5. Well control equipment
  - A. See exhibit "E" & "E-1"
6. Communication
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephoned will be available at most drilling foreman's trailer or living quarters.
7. Drillstem Testing
  - A. Exhausts will be watered.
  - B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
  - C. If the location is near to a dwelling a closed DST will be performed.

## HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

8. Drilling contractor supervisor will be required to be familiar with the effects H<sub>2</sub>S has on tubular goods and other mechanical equipment.
9. If H<sub>2</sub>S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H<sub>2</sub>S scavengers if necessary.

## SURFACE USE PLAN

COG OPERATING, LLC.  
BILBREY "34" FEDERAL # 2  
UNIT "G" SECTION 34  
T21S-R34E LEA CO. NM

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1. EXISTING ROADS & PROPOSED ROADS: Area maps; Exhibit "B" is a reproduction of a County General Hi-way Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.

A. Exhibit "A" shows the proposed well site as staked.

B. From Hobbs New Mexico take U.S. Hi-way 62-180 West toward Carlsbad, go 38± miles to CR-29, turn South go 14 miles to Mills Ranch road. Turn East (Left) follow lease road 7.2 miles, turn North (Left) go 1.2 miles on lease road, continue North for 2.2 miles on trail road, turn West (Left) go .75 miles, turn North (Right) go .75 miles to well # 1, cross location take new road South-east go 2000'± to location.

C. Exhibit "C" shows proposed roads, flowlines and tank battery.

2. PLANNED ACCESS ROADS: Approximately 2000' of new road will be constructed.

A. The access roads will be crowned and ditched to a 12' wide travel surface with a 40' Right-of-Way.

B. Gradient of all roads will be less than 5.00%.

C. If turn-outs are necessary they will be constructed.

D. If needed roads will be surfaced with a minimum of 4" of caliche. This material will be obtained from a local source.

E. Center-line for new roads will be flagged. Earth-work will be will be done as field conditions require.

F. Culverts will be placed in the access road if they are necessary. The roads will be constructed to utilize low water crossings for drainage as required by topography.

3. LOCATIONS OF EXISTING WELLS IN A ONE MILE RADIUS. EXHIBIT "A-1"

A. Water wells - One approximately 4 miles South of location

B. Disposal wells - One approximately 2.5 miles South of location

C. Drilling wells - None known

D. Producing wells - As shown on Exhibit "A-1"

E. Abandoned wells - As shown on Exhibit "A-1"

## SURFACE USE PLAN

COG OPERATING, LLC.  
BILBREY "34" FEDERAL # 2  
UNIT "G" SECTION 34  
T21S-R34E LEA CO. NM

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4. If on completion this well is a producer the operator will lay pipelines and construct powerlines along existing road R-O-W's or other existing R-O-W's. Exhibit "C" shows proposed routes of roads, flowlines and powerlines.

5. LOCATION AND TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and trucked over the access roads or piped to location in flexible lines laid on top of the ground.

6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from the excavation of drill site, if additional material is needed it will be obtained from a local source and transported over the access roads as shown on Exhibit "C".

7. METHODS OF HANDLING WASTE MATERIAL:

- A. Drill cuttings will be disposed of in the reserve pits.
- B. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed all contents will be removed and disposed of in a approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by the supplier, including broken sacks.
- D. Waste water from living quarters will be drained into holes with a minium of 10'. These holes will be covered during drilling and will be back filled when the well is completed. A Porto-John will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- E. Remaining drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry enough to be broken out for furthed drying. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a state approve disposal site. Later pips will be broken out to speed drying. Water produced during completion will be put in reserve pits. Oil and condensate produced will be put in storage tanks and sold.

8. ANCILLARY FACILITIES:

- A. No camps or air strips will be constructed on location.

## SURFACE USE PLAN

COG OPERATING, LLC.  
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UNIT "G" SECTION 34  
T21S-R34E LEA CO. NM

### 9. WELL SITE LAYOUT

- A. Exhibit "D" shows the proposed well site layout.
- B. This exhibit indicated proposed location of reserve and sump pits and living facilities.
- C. Mud pits in the active circulating system will be steel pits & the reserve pit is proposed to be unlined unless subsurface condition encountered during pit construction indicate that lining is needed for lateral containment of fluids.
- D. If needed, the reserve pit is to be lined with polyethelene. The pit liner will be 6 mils thick. Pit liner will extend a minimum 2'00" over the reserve pits dikes where the liner will be anchored down.
- E. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

### 10. PLANS FOR RESTORATION OF SURFACE

Rehabilitation of the location and reserve pit will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be contoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

SURFACE USE PLAN

COG OPERATING, LLC.  
BILBREY "34" FEDERAL # 2  
UNIT "G" SECTION 34  
T21S-R34E LEA CO. NM

11. OTHER INFORMATION:

- A. Topography consists of low lying sand dunes on the North side of a low rise over looking the San Simon Swale. Soil consists of loose sands, tan in color. Vegetation consists of yucca, cholla, desert holly, broom snakeweed, prickly pear and various native grasses.
- B. Surface is owned by the U.S. Department of Interior and is administered by the Bureau of Land Management. The surface is leased to ranchers for grazing of live stock.
- C. An archaeological survey will be conducted on the location and access roads, this report will be filed with the Carlsbad Field office Bureau of Land Management.
- D. There are no domestic dwellings located within one mile of the location.

12. OPERATORS REPRESENTATIVE:

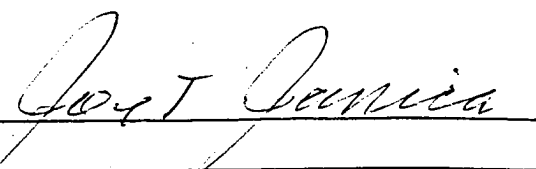
Before construction:

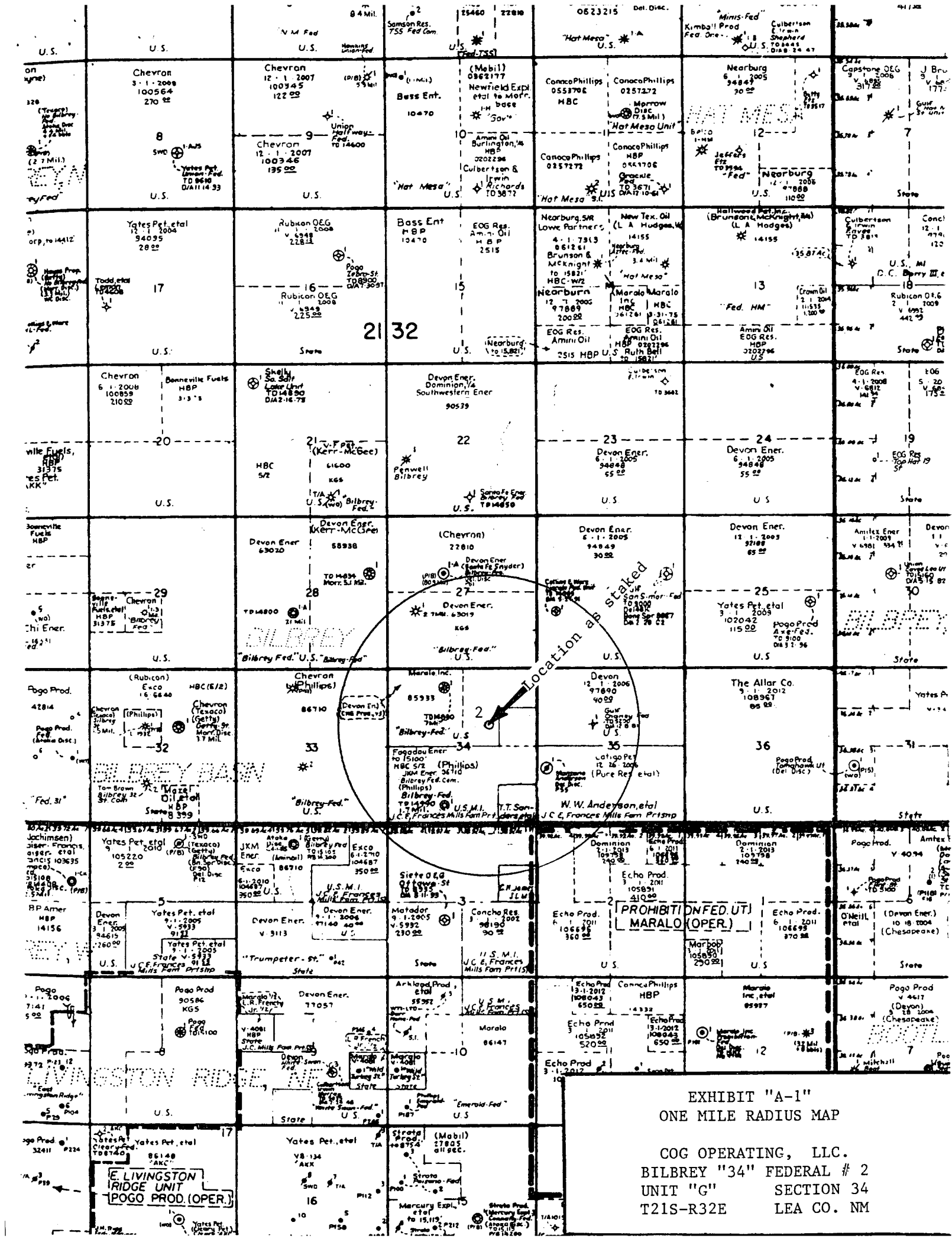
TIERRA EXPLORATION, INC.  
P.O. BOX 2188  
HOBBS, NEW MEXICO 88241  
JOE T. JANICA  
OFFICE PHONE 505-391-8503

During and after construction:

COG OPERATING, LLC.  
550 WEST TEXAS AVE  
SUITE 1300  
MIDLAND, TEXAS 79701  
ERICK NELSON  
OFFICE PHONE 432-685-4342

13. 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 currently exist, that the statements made in this plan are to the best of my knowledge, are true and correct, and that the work associated with the operations proposed herein will be performed by COG OPERATING, LLC. it's contractors/subcontractors is in the conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

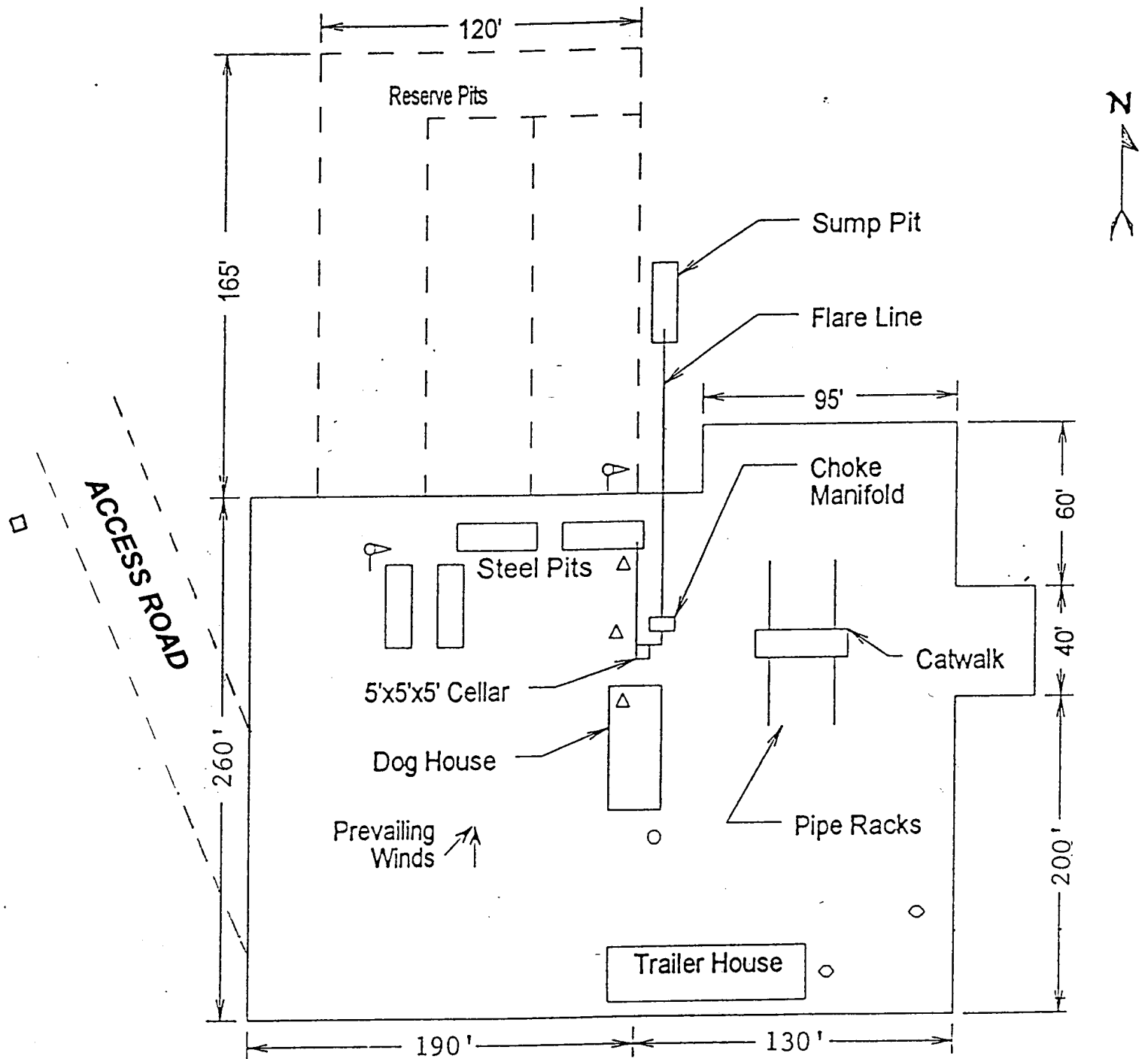
NAME : Joe T. Janica   
DATE : 04/12/05  
TITLE : Agent







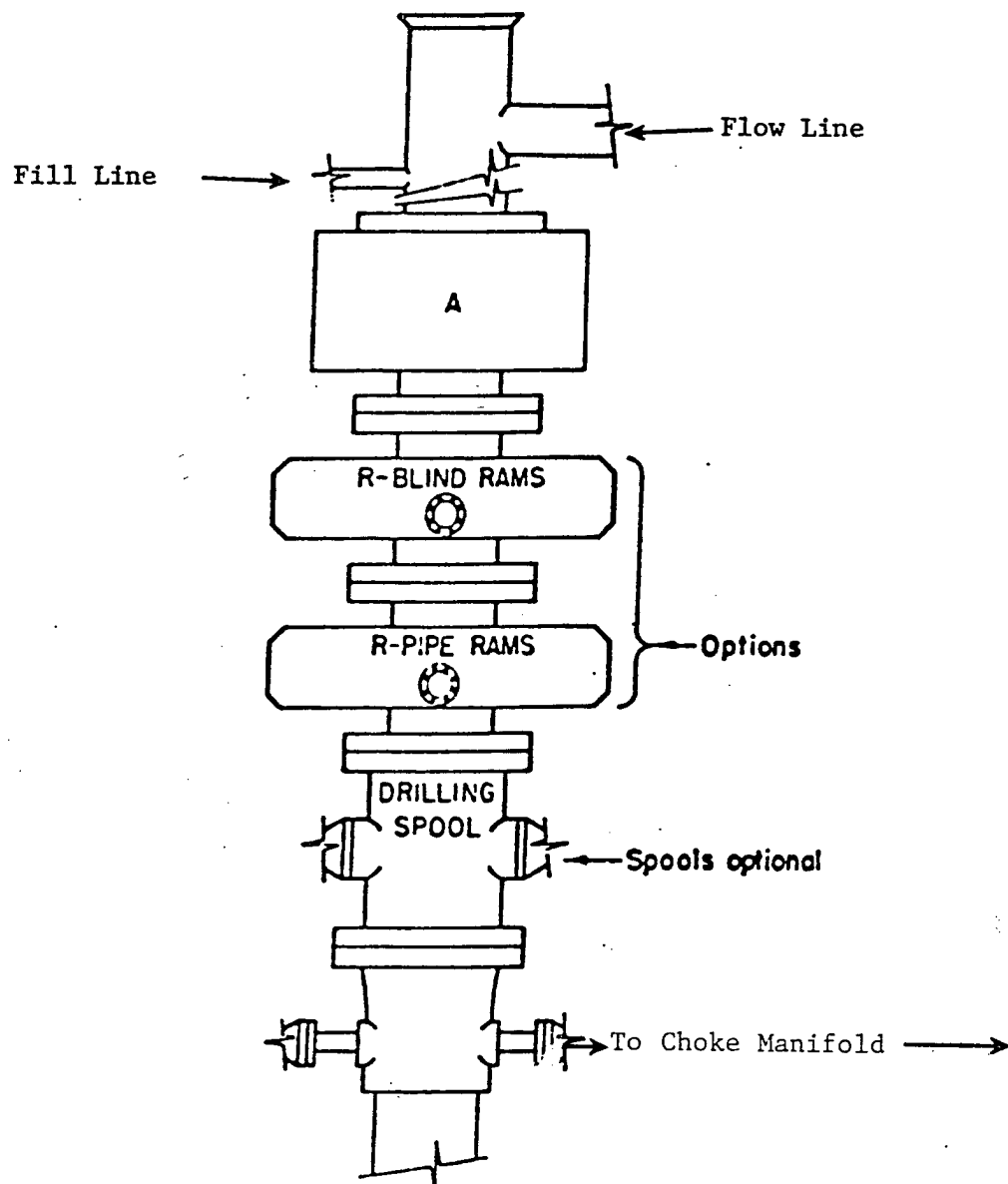




- Wind Direction Indicators (wind sock or streamers)
- H2S Monitors (alarms at bell nipple and shale shaker)
- Briefing Areas
- Remote BOP Closing U
- Sign and Condition Flag

EXHIBIT "D"  
RIG LAY OUT PLAT

COG OPERATING, LLC.  
BILBREY "34" FEDERAL # 2  
UNIT "G" SECTION 34  
T21S-R32E LEA CO. NM



# **ARRANGEMENT SRRA**

1500 Series

5000# Working Pressure

EXHIBIT "E"  
SKETCH OF B.O.P. TO BE USED ON  
5000 PSI

COG OPERATING, LLC.  
BILBREY "34" FEDERAL # 2  
UNIT "G" SECTION 34  
T21S-R32E LEA CO. NM

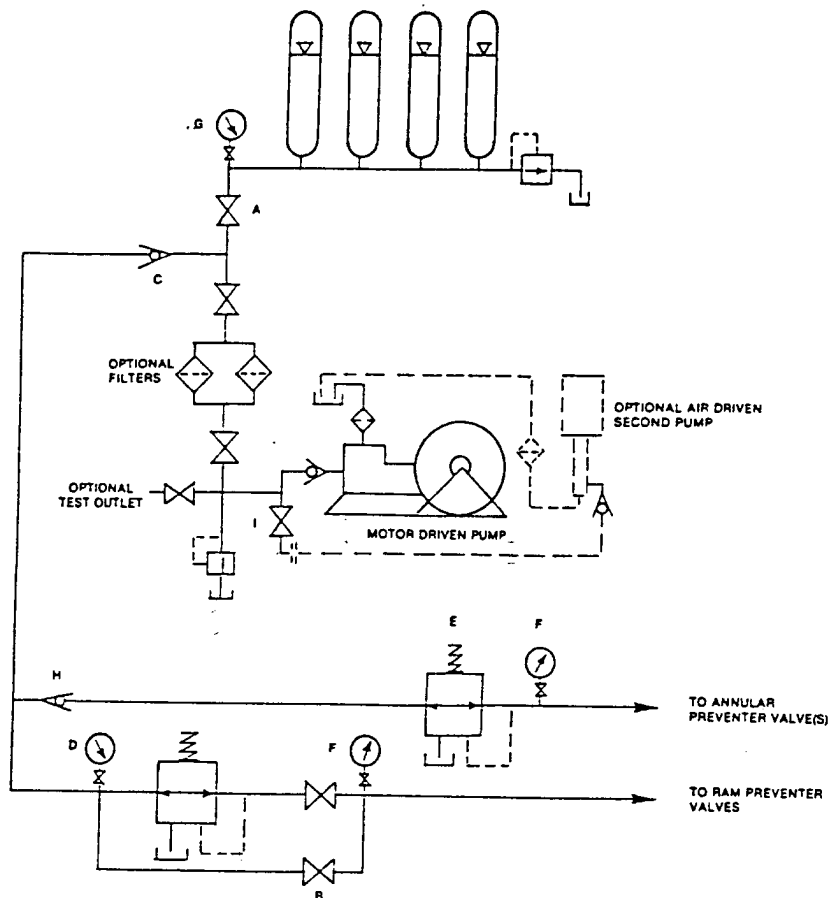


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

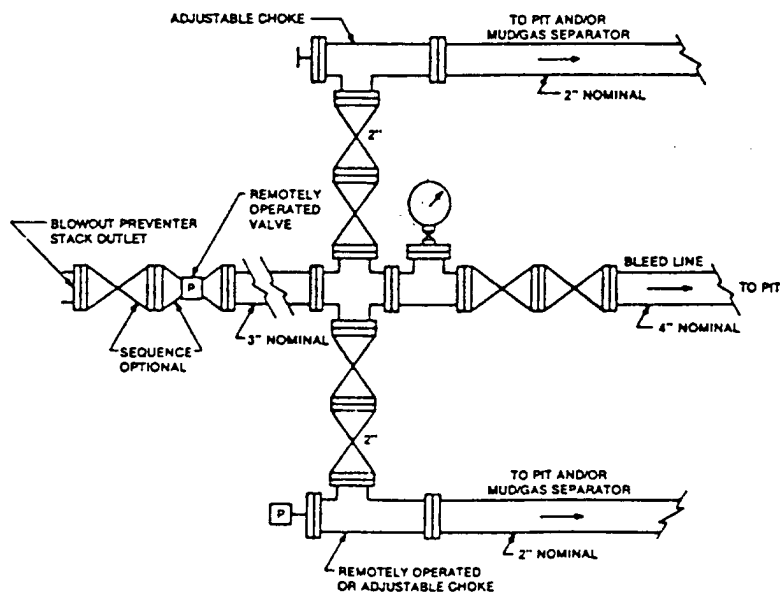


FIGURE K4-2. Typical choke manifold assembly for 5M rated working pressure service — surface installation.

EXHIBIT "E-1"  
CHOKE MANIFOLD & CLOSING UNIT  
5000 PSI

COG OPERATING, LLC.  
BILBREY "34" FEDERAL # 2  
UNIT "G" SECTION 34  
T21S-R32E LEA CO. NM

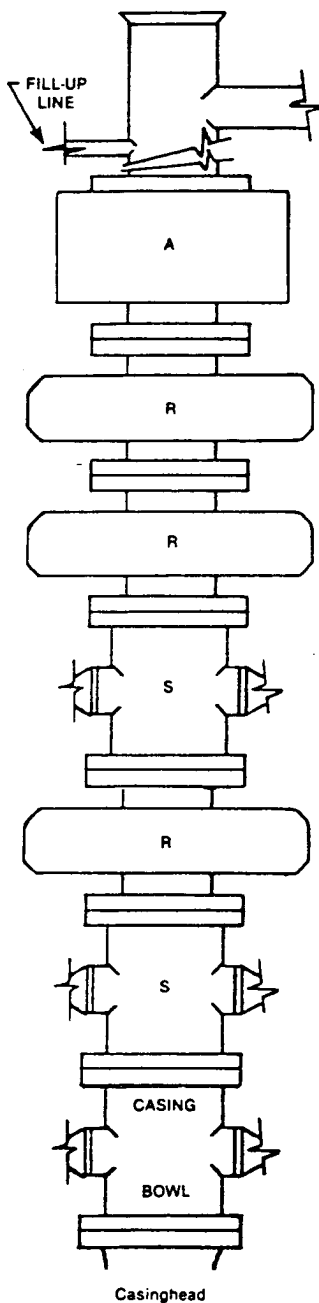


FIGURE K1-3. Recommended IADC Class 10 BOP stack arrangement SRSRRA, 10,000 psi WP. Lower drilling spool is optional with outlets on lower ram. Annular preventers 10,000 psi.

EXHIBIT "F"  
SKETCH OF B.O.P. TO BE USE ON  
10,000 PSI

COG OPERATING, LLC.  
BILBREY "34" FEDERAL # 2  
UNIT "G" SECTION 34  
T21S-R32E LEA CO. NM

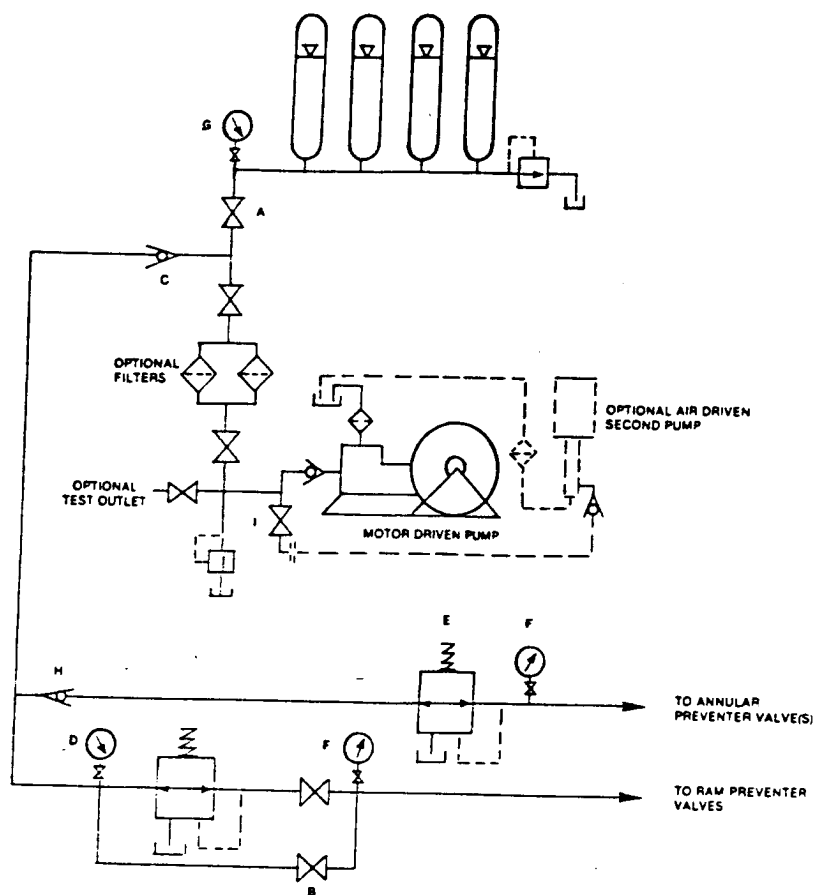


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

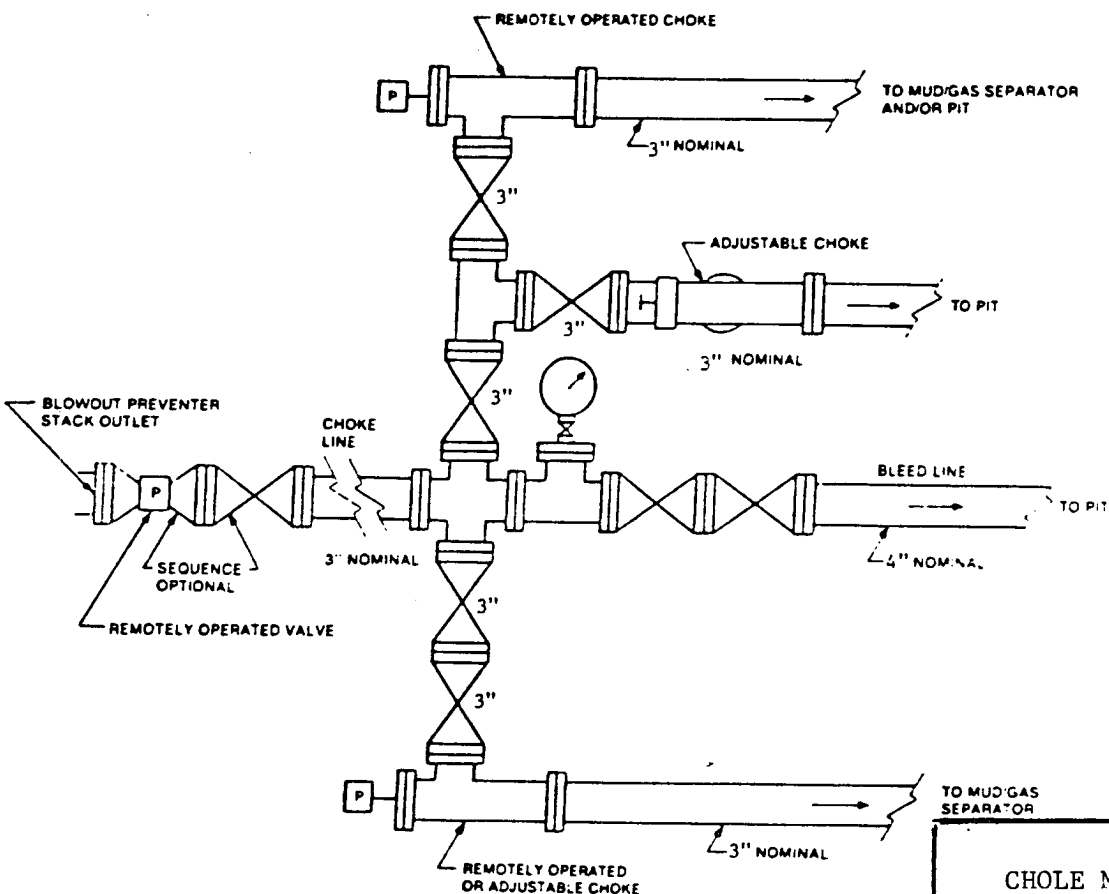


FIGURE K4-3. Typical choke manifold assembly for 10M and 15M rated working pressure service — surface installation.

EXHIBIT "F-1"  
CHOLE MANIFOLD & CLOSING UNIT  
10,000 PSI

COG OPERATING, LLC.  
BILBREY "34" FEDERAL # 2  
UNIT "G" SECTION 34  
T21S-R32E LEA CO. NM

## SPECIAL DRILLING STIPULATIONS

### THE FOLLOWING DATA IS REQUIRED ON THE WELL SIGN

Operator's Name COG Operating Co. Well Name & No. Bilbrey 34 Federal #2  
Location 1980 F N L & 1650 F E L Sec. 34, T. 21 S, R. 32 E.  
Lease No. NM-83607 County Lea State New Mexico

The Special stipulations check marked below are applicable to the above described well and approval of this application to drill is conditioned upon compliance with such stipulations in addition to the General Requirements. The permittee should be familiar with the General Requirements, a copy of which is available from a Bureau of Land Management office. EACH PERMITTEE HAS THE RIGHT OF ADMINISTRATIVE APPEAL TO THESE STIPULATIONS PURSUANT TO TITLE 43 CRF 3165.3 AND 3165.4.

This permit is valid for a period of one year from the date of approval or until lease expiration or termination whichever is shorter.

#### I. SPECIAL ENVIRONMENT REQUIREMENTS

- ☒ Lesser Prairie Chicken (stips attached)      ☐ Flood plain (stips attached)  
☐ San Simon Swale (stips attached)      ☐ Other

#### II. ON LEASE - SURFACE REQUIREMENTS PRIOR TO DRILLING

☒ The BLM will monitor construction of this drill site. Notify the ☒ Carlsbad Field Office at (505) 234-5972 ☐ Hobbs Office (505) 393-3612, at least 3 working days prior to commencing construction.

☒ Roads and the drill pad for this well must be surfaced with 6 inches of compacted caliche.

☐ All topsoil and vegetation encountered during the construction of the drill site area will be stockpiled and made available for resurfacing of the disturbed area after completion of the drilling operation. Topsoil on the subject location is approximately \_\_\_\_\_ inches in depth. Approximately \_\_\_\_\_ cubic yards of topsoil material will be stockpiled for reclamation.

☐ Other.

#### III. WELL COMPLETION REQUIREMENTS

☐ A Communitization Agreement covering the acreage dedicated to the well must be filed for approval with the BLM. The effective date of the agreement must be prior to any sales.

☒ Surface Restoration: If the well is a producer, the reserve pit(s) will be backfilled when dry, and cut-and-fill slopes will be reduced to a slope of 3:1 or less. All areas of the pad not necessary for production must be re-contoured to resemble the original contours of the surrounding terrain, and topsoil must be re-distributed and re-seeded with a drill equipped with a depth indicator (set at depth of ½ inch) with the following seed mixture, in pounds of Pure Live Seed (PLS), per acre.

- |  |   |
|--|---|
| <input type="checkbox"/> A. Seed Mixture 1 (Loamy Sites)   | <input type="checkbox"/> B. Seed Mixture 2 (Sandy Sites)  |
| Side Oats Grama ( <i>Bouteloua curtipendula</i> ) 5.0      | Sand Dropseed ( <i>Sporobolus cryptandrus</i> ) 1.0       |
| Sand Dropseed ( <i>Sporobolus cryptandrus</i> ) 1.0        | Sand Lovegrass ( <i>Eragrostis trichodes</i> ) 1.0        |
|  | Plains Bristlegrass ( <i>Setaria magrostachya</i> ) 2.0   |
| <input type="checkbox"/> C. Seed Mixture 3 (Shallow Sites) | <input type="checkbox"/> D. Seed Mixture 4 (Gypsum Sites) |
| Side oats Grama ( <i>Boute curtipendula</i> ) 1.0          | Alkali Sacaton ( <i>Sporobolus airoides</i> ) 1.0         |
|  | Four-Wing Saltbush ( <i>Atriplex canescens</i> ) 5.0      |

☒ OTHER SEE ATTACHED SEED MIXTURE

Seeding should be done either late in the fall (September 15 - November 15, before freeze up, or early as possible the following spring to take advantage of available ground moisture.

☐ Other.



## RESERVE PIT CONSTRUCTION STANDARDS

The reserve pit shall be constructed entirely in cut material and lined with 6 mil plastic.

Mineral material extracted during construction of the reserve pit may be used for development of the pad and access road as needed. Removal of any additional material on location must be purchased from BLM.

Reclamation: Reclamation of this type of deep pit will consist of pushing the pit walls into the pit when sufficiently dry to support track equipment. The pit liner is NOT TO BE RUPTURED to facilitate drying; a ten month period after completion of the well is allowed for drying of the pit contents.

The pit area must be contoured to the natural terrain with all contaminated drilling mud buried with at least 3 feet of clean soil. The reclaimed area will then be seeded as specified in this permit.

## OPTIONAL PIT CONSTRUCTION STANDARDS

The reserve pit may be constructed in predominantly fill material if:

- (1) Lined as specified above and
- (2) A borrow/caliche/gravel pit can be constructed immediately adjacent to the reserve pit and it capable of containing all reserve pit contents. The mineral material removed in the process can be used for pad and access road construction. However, a material sales contract must be purchased from the BLM prior to removal of the material.

Reclamation of the reserve pit consists of bulldozing all reserve pit contents and contaminants into the borrow pit and covering with a minimum of 3 feet of clean soil material. The entire area must be recontoured, all trash removed, and reseeded as specified in this permit.

## CULTURAL

Whether or not an archaeological survey has been completed and notwithstanding that operations are being conducted as approved, the lessee/operator/grantee shall notify the BLM immediately if previously unidentified cultural resources are observed during surface disturbing operations. From the time of the observation, the lessee/operator/grantee shall avoid operations that will result in disturbance to these cultural resources until directed to processed by BLM.

## TRASH PIT STIPS

All trash, junk, and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

## EXHIBIT B

BLM Serial No.: NM-83607

Company Reference: COG Operating

### Seed Mixture for LPC Sand/Shinnery Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

| <u>Species</u>      | <u>lb/acre</u> |
|---------------------|----------------|
| Plains Bristlegrass | 5lbs/A         |
| Sand Bluestem       | 5lbs/A         |
| Little Bluestem     | 3lbs/A         |
| Big Bluestem        | 6lbs/A         |
| Plains Coreopsis    | 2lbs/A         |
| Sand Dropseed       | 1lbs/A         |

\*\*Four-winged Saltbush 5lbs/A

\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

PRAIRIE CHICKENS

No surface use is allowed during the following time periods; unless otherwise specified, this stipulation does not apply to operation and maintenance of production facilities.

On the following lands: All of Section 34 T. 21 S., R. 32 E.

For the purpose of: Protecting Prairie Chickens:

Drilling for oil and gas, and 3-D geophysical exploration operations will not be allowed in Lesser Prairie Chicken Habitat during the period of March 15 through June 15, each year. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 a.m. and 9:00 a.m. The 3:00 a.m. and 9:00 a.m. restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during the period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Bureau of Land Management  
Carlsbad Field Office

SENM-S-22  
December 1997

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: COG Operating, LLC. Well No. 2 - Bilbrey 34 Federal

Location: 1980' FNL & 1650' FEL sec. 34, T. 21 S., R. 32 E.

Lease: NM-83607

.....

### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at (505) 393-3612 in sufficient time for a representative to witness:

A. Spudding

B. Cementing casing: 13-3/8 inch 9-5/8 inch 7 inch 4-1/2 inch

C. BOP tests

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

3. Include the API No. assigned to well by NMOCD on the subsequent report of setting the first casing string.

4. A Communitization Agreement covering the acreage and formation dedicated to this well may be required for approval with the BLM. The effective date of the agreement shall be prior to any sales.

5. Gamma-Ray/Neutron logs shall be run from the base of the Salado formation to the surface; cable speed not to exceed 30 feet per minute.

### II. CASING:

1. 13-3/8 inch surface casing should be at approximately 975 feet in the top of the Rustler Anhydrite or per the attached ALTERNATIVE CONDITIONS OF APPROVAL - DRILLING, below usable water and circulate cement to the surface. If cement does not circulate to the surface the Hobbs BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

2. Minimum required fill of cement behind the 9-5/8 inch intermediate casing is sufficient to circulate to surface per the attached ALTERNATIVE CONDITIONS OF APPROVAL - DRILLING. If cement does not circulate to the surface the Hobbs BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

3. Minimum required fill of cement behind the 7 inch production casing is sufficient to tie back 500 feet above the uppermost perforation in the pay zone.

4. Minimum required fill of cement behind the 4-1/2 inch production liner is sufficient to tie back 200 feet into the 7 inch intermediate casing set at approximately 12000 feet.

## CONDITIONS OF APPROVAL - DRILLING (CONTINUED)

**Operator's Name:** COG Operating, LLC. Well No. 2 - Bilbrey 34 Federal

**Location:** 1980' FNL & 1650' FEL sec. 34, T. 21 S., R. 32 E.

**Lease:** NM-83607

.....

### **III. PRESSURE CONTROL:**

1. Before drilling below the 13-3/8 inch surface casing, the blowout preventer assembly shall consist of a minimum of One Annular Preventer or Two Ram-Type Preventers and a Kelly Cock/Stabbing Valve. Before drilling below the 9-5/8 inch intermediate casing, the blowout preventer assembly shall consist of a minimum of One Annular Preventer, Two Ram-Type Preventers, and a Kelly Cock/Stabbing Valve.

2. Before drilling below the 13-3/8 inch surface casing, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi. Before drilling below the 9-5/8 inch intermediate casing, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 5000 psi. Before drilling below the 7 inch production casing, minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 10000 psi.

3. After setting the 9-5/8 inch intermediate casing and before drilling into the Wolfcamp formation, the BOPE shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

A. The Hobbs BLM office shall be notified at (505) 393-3612 in sufficient time for a representative to witness the tests.

B. The tests shall be done by an independent service company.

C. The results of the test shall be reported to the BLM Hobbs Office at 414 West Taylor, Hobbs, New Mexico 88240.

D. Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.

E. Testing must be done in a safe workman like manner. Hard line connections shall be required.

### **IV. DRILLING MUD:**

1. Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

A. Recording pit level indicator to indicate volume gains and losses.

B. Flow-sensor on the flow-line to warn of abnormal mud returns from the well.

## **ALTERNATIVE CONDITIONS OF APPROVAL - DRILLING**

### Drilling Fluids, Casing and Cementing Requirements for Most of Lea County:

#### **Casing and Cementing**

Surface casing is to be set at a sufficient depth to protect useable water zones and cement circulated to surface. In areas where the salt section (Salado) is present, surface casing should be set at least 25 feet into the top of the Rustler Anhydrite and cement circulated to the surface.

As an alternative, surface casing may be set through the Santa Rosa Formation or other potable water bearing zones and circulate cement to surface. For wells requiring an intermediate casing string, such string shall be cemented to the ground surface. In the case where intermediate casing is not required the operator shall case and cement the production hole to the ground surface.

While drilling from the surface casing to the Rustler formation it is recommended that operators periodically sweep the hole with viscous low water loss pills to help build a filter cake across useable water zones in the redbeds.

#### **Drilling Fluid**

Fresh water or fresh water spud mud shall be used to drill to surface casing depth. If surface casing is set at a lesser depth than the top of the Rustler formation, fresh water spud mud may be used to drill down to the first salt in the Rustler Formation. after which brine or fresh water may be used.

Non-toxic or biodegradable water based polymers, drilling paper, starch and gels may be used in the mud system in order to retard seepage into the redbeds.

Two to five percent diesel or crude oil may be used in the redbed section in order to control heaving shales and mudstones.

Caustics and Lime shall not be used in the red beds but may be added when the Rustler formation is reached. However, sodium carbonate maybe used for alkalinity or ph control while drilling the redbeds above the Rustler formation.

Additionally, questions of whether an additive may be used should be referred to the Roswell Field office.

BLM Serial Number: NM-83607  
Company Reference: COG Operating Co.  
Well No. & Name: Bilbrey 34 Federal #2

STANDARD STIPULATIONS FOR PERMANENT RESOURCE ROADS  
CARLSBAD FIELD OFFICE

A copy of the grant and attachments, including stipulations and map, will be on location during construction. BLM personnel may request to view a copy of your permit during construction to ensure compliance with all stipulations.

The holder/grantee/permittee shall hereafter be identified as the holder in these stipulations. The Authorized Officer is the person who approves the Application for Permit to Drill (APD) and/or Right-of-Way (ROW).

GENERAL REQUIREMENTS

A. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

B. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et. seq.*) with regard to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized by this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act, Section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

C. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et. seq.* or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, *et. seq.*) on the right-of-way (unless the release or threatened release is wholly unrelated to the right-of-way holder's activity on the right-of-way). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

D. If, during any phase of the construction, operation, maintenance, or termination of the road, any oil or other pollutant should be discharged, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages to Federal lands resulting there from, the Authorized Officer may take such measures as deemed necessary to control and cleanup the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any liability or responsibility.

E. The holder shall minimize disturbance to existing fences and other improvements on public domain surface. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times.

The holder will make a documented good-faith effort to contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence.

F. The Holder shall ensure that the entire right-of-way, including the driving surface, ditching and drainage control structures, road verges and any construction sites or zones, will be kept free of the following plant species: Malta starthistle, African rue, Scotch thistle and salt cedar.

Holder agrees to comply with the following stipulations:

1. ROAD WIDTH AND GRADE

The road will have a driving surface of 14 feet (all roads shall have a minimum driving surface of 12 feet, unless local conditions dictate a different width). The maximum grade is 10 percent unless the box below is checked. Maximum width of surface disturbance from construction will be 30 feet.

☐ Those segments of road where grade is in excess of 10% for more than 300 feet shall be designed by a professional engineer.

2. CROWNING AND DITCHING

Crowning with materials on site and ditching on one side of the road on the uphill side will be required. The road cross-section will conform to the cross section diagrams in Figure 1. If conditions dictate, ditching may be required for both sides of the road; if local conditions permit, a flat-bladed road may be considered (if these conditions exist, check the appropriate box below). The crown shall have a grade of approximately 2% (i.e., 1" crown on a 12' wide road).



☒ Ditching will be required on both sides of the roadway as shown on the attached map or as staked in the field.

☐ Flat-blading is authorized on segment(s) delineated on the attached map.

### 3. DRAINAGE

Drainage control shall be ensured over the entire road through the use of borrow ditches, outsloping, insloping, natural rolling topography, lead-off (turnout) ditches, culverts, and/or drainage dips.

A. All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval for lead-off ditches shall be determined according to the following table, but may be amended depending upon existing soil types and centerline road slope (in %):

#### SPACING INTERVAL FOR TURNOUT DITCHES

| Percent slope | Spacing interval |
|---------------|------------------|
| 0% - 4%       | 400' - 150'      |
| 4% - 6%       | 250' - 125'      |
| 6% - 8%       | 200' - 100'      |
| 8% - 10%      | 150' - 75'       |

A typical lead-off ditch has a minimum depth of 1 foot below and a berm 6 inches above natural ground level. The berm will be on the down-slope side of the lead-off ditch. The ditch end will tie into vegetation whenever possible.

For this road the spacing interval for lead-off ditches shall be at

☒ 400 foot intervals.

☐ \_\_\_\_\_ foot intervals.

☐ locations staked in the field as per spacing intervals above.

☐ locations delineated on the attached map.

B. Culvert pipes shall be used for cross drains where drainage dips or low water crossings are not feasible. The minimum culvert diameter must be 18 inches. Any culvert pipe installed shall be of sufficient diameter to pass the anticipated flow of water. Culvert location and required diameter are shown on the attached map (Further details can be obtained from the Roswell District Office or the appropriate Resource Area Office).

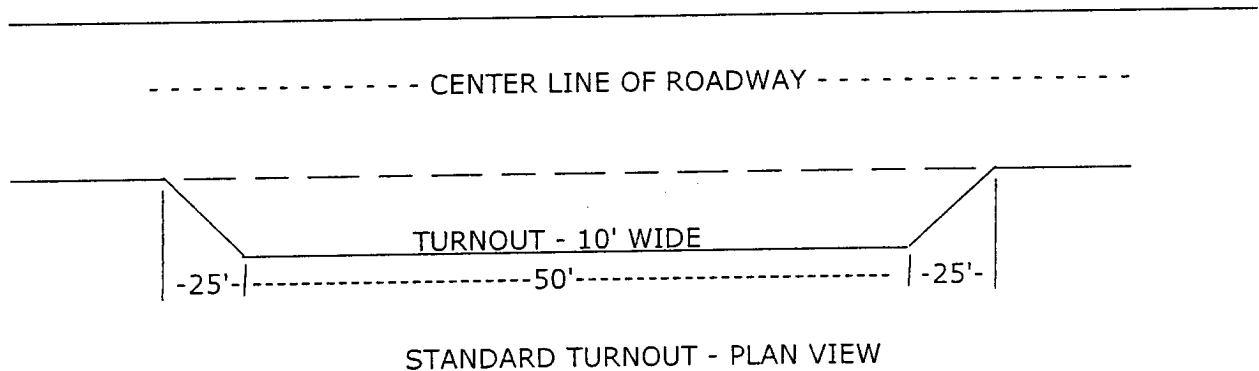
C. On road slopes exceeding 2%, drainage dips shall drain water into an adjacent lead-off ditch. Drainage dip location and spacing shall be determined by the formula:

$$\text{spacing interval} = \frac{400'}{\text{road slope in \%}} + 100'$$

Example: 4% slope: spacing interval =  $\frac{400}{4} + 100 = 200$  feet

#### 4. TURNOUTS

Unless otherwise approved by the Authorized Officer, vehicle turnouts will be required. Turnouts will be located at 2000-foot intervals, or the turnouts will be intervisible, whichever is less. Turnouts will conform to the following diagram:



#### 5. SURFACING

Surfacing of the road or those portions identified on the attached map may, at the direction of the Authorized Officer, be required, if necessary, to maintain traffic within the right-of-way with caliche, gravel, or other surfacing material which shall be approved by the Authorized Officer. When surfacing is required, surfacing materials will be compacted to a minimum thickness of six inches with caliche material. The width of surfacing shall be no less than the driving surface. Prior to using any mineral materials from an existing or proposed Federal source, authorization must be obtained from the Authorized Officer.

A sales contract for the removal of mineral materials (caliche, sand, gravel, fill dirt, etc.) from an authorized pit, site, or on location must be obtained from the BLM prior to using any such mineral material from public lands. Contact the BLM solid minerals staff for the various options to purchase mineral material.

#### 6. CATTLEGUARDS

Where used, all cattleguard grids and foundation designs and construction shall meet the American Association of State Highway and Transportation Officials (AASHTO) Load Rating H-20, although AASHTO U-80 rated grids shall be required where heavy loads (exceeding H-20 loading), are anticipated (See BLM standard drawings for cattleguards). Cattleguard grid length shall not be less than 8 feet and width of not less than 14 feet. A wire gate (16-foot minimum width) will be provided on one side of the cattleguard unless requested otherwise by the surface user.

7. MAINTENANCE

The holder shall maintain the road in a safe, usable condition. A maintenance program shall include, but not be limited to blading, ditching, culvert installation, culvert cleaning, drainage installation, cattleguard maintenance, and surfacing.

8. PUBLIC ACCESS

Public access along this road will not be restricted by the holder without specific written approval being granted by the Authorized Officer. Gates or cattleguards on public lands will not be locked or closed to public use unless closure is specifically determined to be necessary and is authorized in writing by the Authorized Officer.

9. CULTURAL RESOURCES

Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the authorized officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the authorized officer after consulting with the holder.

10. SPECIAL STIPULATIONS:

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

Form C-144  
March 12, 2004

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

**Pit or Below-Grade Tank Registration or Closure**

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

|  |  |   |
|--|--|---|
| Operator: <u>COG OPERATING, LLC.</u> Telephone: <u>432-685-4342</u> e-mail address: _____  |  |   |
| Address: <u>550 WEST TEXAS AVENUE SUITE 1300 MIDLAND, TEXAS 79701</u>  |  |   |
| Facility or well name: <u>BILBREY "34" FED #2 API #30-025-37363</u> U/L or Qtr/Qtr <u>G</u> Sec. <u>34</u> T <u>21S</u> -R <u>32E</u>  |  |   |
| County: <u>LEA CO.</u> Latitude <u>32°26'13"</u> Longitude <u>103°39'32"</u> NAD: 1927 <input type="checkbox"/> 1983 <input type="checkbox"/> Surface Owner Federal <input checked="" type="checkbox"/> State <input type="checkbox"/> Private <input type="checkbox"/> Indian <input type="checkbox"/>  |  |   |
| <b>Pit</b><br>Type: Drilling <input checked="" type="checkbox"/> Production <input type="checkbox"/> Disposal <input type="checkbox"/><br>Workover <input type="checkbox"/> Emergency <input type="checkbox"/><br>Lined <input checked="" type="checkbox"/> Unlined <input type="checkbox"/><br>Liner type: Synthetic <input type="checkbox"/> Thickness <u>12</u> mil Clay <input type="checkbox"/> Volume <u>15M</u> bbl | <b>Below-grade tank</b><br>Volume: _____ bbl Type of fluid: _____<br>Construction material: _____<br>Double-walled, with leak detection? Yes <input type="checkbox"/> If not, explain why not. _____ |   |
| Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)<br><u>350'</u>  | Less than 50 feet<br>50 feet or more, but less than 100 feet<br>100 feet or more<br><u>0</u>   | (20 points)<br>(10 points)<br>( 0 points)<br><u>0</u> |
| Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)  | Yes<br>No<br><u>0</u>  | (20 points)<br>( 0 points)<br><u>0</u>                |
| Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)  | Less than 200 feet<br>200 feet or more, but less than 1000 feet<br>1000 feet or more<br><u>0</u>   | (20 points)<br>(10 points)<br>( 0 points)<br><u>0</u> |
|  | <b>Ranking Score (Total Points)</b><br><u>0</u>  | <u>0</u>  |

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 ☐ If 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 ☐ If yes, 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 ☒ a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

Date: 04/14/05

Printed Name/Title: Joe T. Janica / Agent

Signature: Joe T. Janica

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.

Approval:

Date: JUL 14 2005

Printed Name/Title: \_\_\_\_\_

Signature: [Signature]

**PETROLEUM ENGINEER**