

New Mexico Oil Conservation Division, District I
1625 N. French Drive
Hobbs, NM 88240

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No 1004-0137
Expires July 31, 2010

5. Lease Serial No.
SL NMLC 105886 BHL Fee
6. If Indian, Allottee or Tribe Name

N/A

7. If Unit or CA Agreement, Name and No.
N/A

8. Lease Name and Well No.
Gemini Federal #15

<36788>

9. API Well No.

30-005-27972

10. Field and Pool, or Exploratory
Undesignated Wolfcamp

11. Sec., T. R. M. or Blk. and Survey or Area
Section 12, T15S, R31E

12. County or Parish
Chaves Co..

13. State
NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator COG Operating, LLC

3a. Address 550 West Texas, Suite 1300
Midland, TX 79701

3b. Phone No. (include area code)
(432)- 685-9158

<229137>

4. Location of Well (Report location clearly and in accordance with any State requirements.)

At surface 330' FSL & 330' FEL, Unit P

ROSWELL CONTROLLED WATER BASIN

At proposed prod. zone 330' FSL & 330' FWL, Unit M

14. Distance in miles and direction from nearest town or post office*
Approx 15 miles North of Maljamar, New Mexico

15. Distance from proposed*
location to nearest
property or lease line, ft
(Also to nearest drig. unit line, if any)

330

16. No. of acres in lease
560

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location*
to nearest well, drilling, completed,
applied for, on this lease, ft

N/A

19. Proposed Depth
13450' MD
8910' TVD

20. BLM/BIA Bond No. on file
NMB 000215

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
4355' GL

22. Approximate date work will start*
11/30/2007

23. Estimated duration
45 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office)

4. Bond to cover the operations unless covered by an existing bond on file, (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM

25. Signature

Name (Printed/Typed)
Dwayne Moore

Date
09/12/2007

Title

Agent for COG Operating LLC

Approved by (Signature) /S/ JOHN S. SIMITZ

Name (Printed/Typed)

/S/ JOHN S. SIMITZ

Date

UCT 11 2007

Title

Assistant Field Manager,
Lands And Minerals

Office

ROSWELL FIELD OFFICE

APPROVED FOR 2 YEARS

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, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

(Continued on page 2)

*(Instructions on page 2)

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS AND
SPECIAL STIPULATIONS ATTACHED

Exhibit "A"

DISTRICT I

1625 N. French Dr., Hobbs, NM 88240

DISTRICT II

4301 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 October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|-----------------------------------|---|---|
| API Number 30-005-27922 | Pool Code ✓ | Pool Name Wildcat Undesignated Wolfcamp |
| Property Code 36788 | Property Name GEMINI FEDERAL | Well Number 1H |
| OGRID No. 229137 | Operator Name C.O.G. OPERATING L.L.C. | Elevation 4355' |

Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| P | 12 | 15 S | 31 E | | 330 | SOUTH | 330 | EAST | CHAVES |

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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| M | 12 | 15 S | 31 E | | 330 | SOUTH | 330 | WEST | CHAVES |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|-----------------|-----------------|--------------------|-----------|
| 160 | | | |

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

| | | |
|---|---|--|
| | OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature <u>[Signature]</u> Date <u>9/12/07</u> Printed Name <u>Dwaine Marie Agcat For COG</u> | |
| | SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date Surveyed <u>JULY 28, 2007</u> Signature <u>[Signature]</u> Professional Surveyor W.O. Jones 10033 | |
| | Certificate No. Gary L. Jones 7977 BASIN SURVEYS | |
| | BOTTOM HOLE LOCATION LAT.: N 33°01'26.9" LONG.: W103°46'57.3" SPC- N.: 736765.26 E.: 710122.84 (NAD-83) | |
| SURFACE LOCATION LAT.: N 33°01'27.23" LONG.: W103°46'03.19" SPC- N.: 736815.4 E.: 714748.2 (NAD-83) | | |

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Gemini Federal # 1H
SL: 330' FSL & 330' FEL, Unit P
BHL: 330' FSL & 330' FWL, Unit M
Sec 12, T15S, R31E
Chaves County, NM

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 4355'
3. Proposed Depths: Pilot hole TD = 9190', Horizontal TVD = 8910', MD = 13450'
4. Estimated tops of geological markers:

| | |
|------------|---------|
| Quaternary | Surface |
| Yates | 2440' |
| Queen | 3250' |
| San Andres | 3980' |
| Tubb | 6810' |
| Abo | 7500' |
| Wolfcamp | 8890' |

5. Possible mineral bearing formations:

| | | |
|------------|-------|-------------|
| Water sand | 150' | Fresh Water |
| Yates | 2440' | Oil / Gas |
| Queen | 3250' | Oil / Gas |
| San Andres | 3980' | Oil / Gas |
| Tubb | 6810' | Oil / Gas |
| Abo | 7500' | Oil / Gas |
| Wolfcamp | 8890' | Oil / Gas |

- ## 6. Casing Program - Proposed

| <u>Hole size</u> | <u>Interval</u> | <u>OD of Casing</u> | <u>Weight</u> | <u>Cond.</u> | <u>Collar</u> | <u>Grade</u> |
|---|-----------------|---------------------|---------------|--------------|---------------|--------------|
| 17-1/2" | 0' - +/-400' | 13-3/8" | 48# | New | STC | H40 |
| Collapse sf – 3.78, Burst sf – 7.20, Tension sf – 15.72 | | | | | | |
| 12 1/4" | 0' - 4000' | 9-5/8" | 40# | New | STC | J-55 |
| Collapse sf – 1.285, Burst sf – 1.17, Tension sf – 3.25 | | | | | | |
| 8-3/4" | 0' – 8500' | 5-1/2" | 17# | New | LTC | P-110 |
| Collapse sf – 1.754, Burst sf – 2.42, Tension sf – 2.94 | | | | | | |
| 7-7/8" | 8500' – 13450' | 5-1/2" | 17# | New | BTC | P-110 |
| Collapse sf – 1.68, Burst sf – 2.39, Tension sf – 79.28 | | | | | | |

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COG Operating, LLC
Gemini Federal # 1H
Page 2 of 3

7. Cement Program

13 3/8" Surf. Csg. Set at +/- 400', Circ to Surf with +/- 400 sx Class "C" w/ 2% CaCl₂, 1.35 yd.

9 5/8" Intrmd. Csg. Set at +/- 4000'. Circ to Surf with +/- 800 sx 35/65 Poz "C", 2.05 yd. & 200 sx Class "C" w/ 2% CaCl₂, 1.35 yd.

5 1/2" Prod. Csg. Set at +/- 13450' MD. Cement casing with +/- 200 sx. 50/50/2 "C", 1.37 yd & +/- 900 sx Class "H", 1.18 yd. Est. TOC @ 8500'.

8. Pressure Control Equipment:

After setting 13 3/8" casing and installing 3000 psi casing head, NU 13 5/8" 3000 psi annular BOP. Test annular BOP, casing and manifold with clear fluid to 800 psi w/ rig pump. After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000psi annular BOP. Test double ram BOP and manifold to 3000# with clear fluid and annular to 1500 psi using an independent tester and used continuously until TD is reached. Blind rams will be operationally checked on each trip out of hole. Pipe rams will be operationally checked each 24 hour period. These checks will be noted on daily tour sheets. Other accessories to the BOP equipment include a Kelly cock and floor safety valves, choke lines and choke manifold with 3000 psi WP rating.

9. Proposed Mud Circulating System

| <u>Interval</u> | <u>Mud Wt.</u> | <u>Visc.</u> | <u>FL</u> | <u>Type Mud System</u> |
|-----------------|----------------|--------------|-----------|---|
| 0' - 400' | 8.5 | 28 | NC | Fresh water native mud w/ paper for seepage and sweeps. Lime for PH. |
| 400' - 4000' | 9.1 | 30 | NC | Cut brine mud, lime for PH and paper for seepage and sweeps. |
| 4000' - 7500' | 9.1 | 29 | NC | Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal. |
| 7500' - 13450' | 9.5 | 36 | 10 | Drill pilot hole, curve and horizontal section with XCD polymer / cut brine / starch. |

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

10. Auxiliary Well Control and Monitoring Equipment

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
Gemini Federal # 1H
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11. Production Hole Drilling Summary:

Drill 8-3/4" Pilot hole thru Wolfcamp, run open hole logs. Spot 150 sx. "H" Kick off plug from +/- 9000' to +/-8500'. Time drill and kick off 7-7/8" hole at +/- 8500', building curve over +/- 475' to horizontal at 8910' TVD. Drill horizontal section in a westerly direction for +/-4500' lateral. Run production casing and cement.

12. Logging, Testing and Coring Program:

- A. The electric logging program will consist of GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. in vertical pilot hole to 9 5/8" casing shoe.
- B. The mud logging program will consist of lagged 10' samples from intermediate casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.
- C. Drill Stem test is not anticipated.
- D. No conventional coring is anticipated.
- E. Further testing procedures will be determined after the 5 1/2" production casing has been cemented at TD based on drill shows and log evaluation.

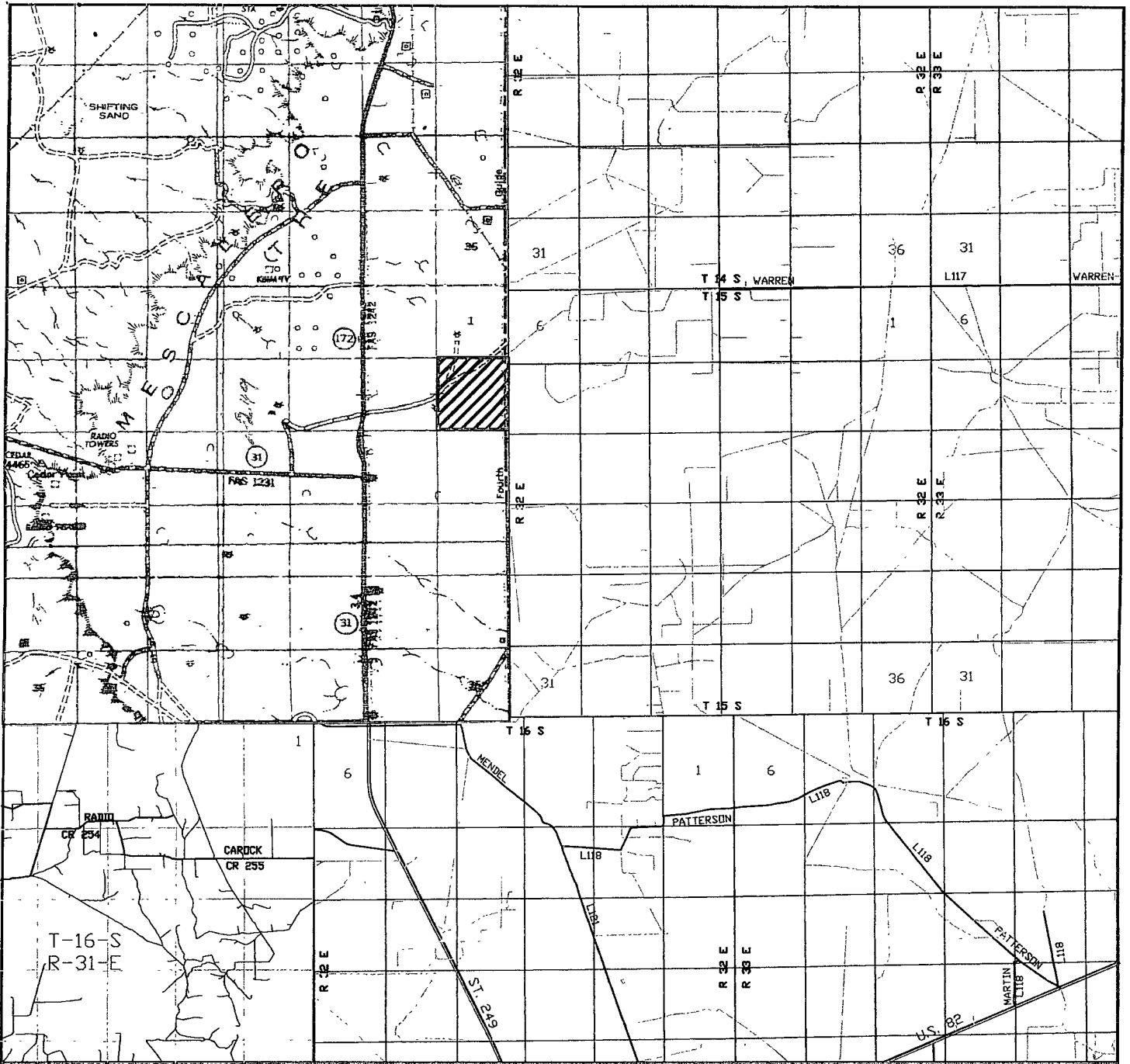
13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole at TD is 120 degrees and estimated maximum bottom hole pressure is 3858 psig. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H2S may be present while drilling of the well. An H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence approximately on November 30, 2007 with drilling and completion operations lasting approximately 45 days.

Exhibit "B"



GEMINI FEDERAL #1H
 Located at 330' FSL and 330 FEL
 Section 12, Township 15 South, Range 31 East,
 N.M.P.M., Chaves County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (505) 393-7316 - Office
 (505) 392-3074 - Fax
 basinsurveys.com

W.O. Number: JMS 18363TR

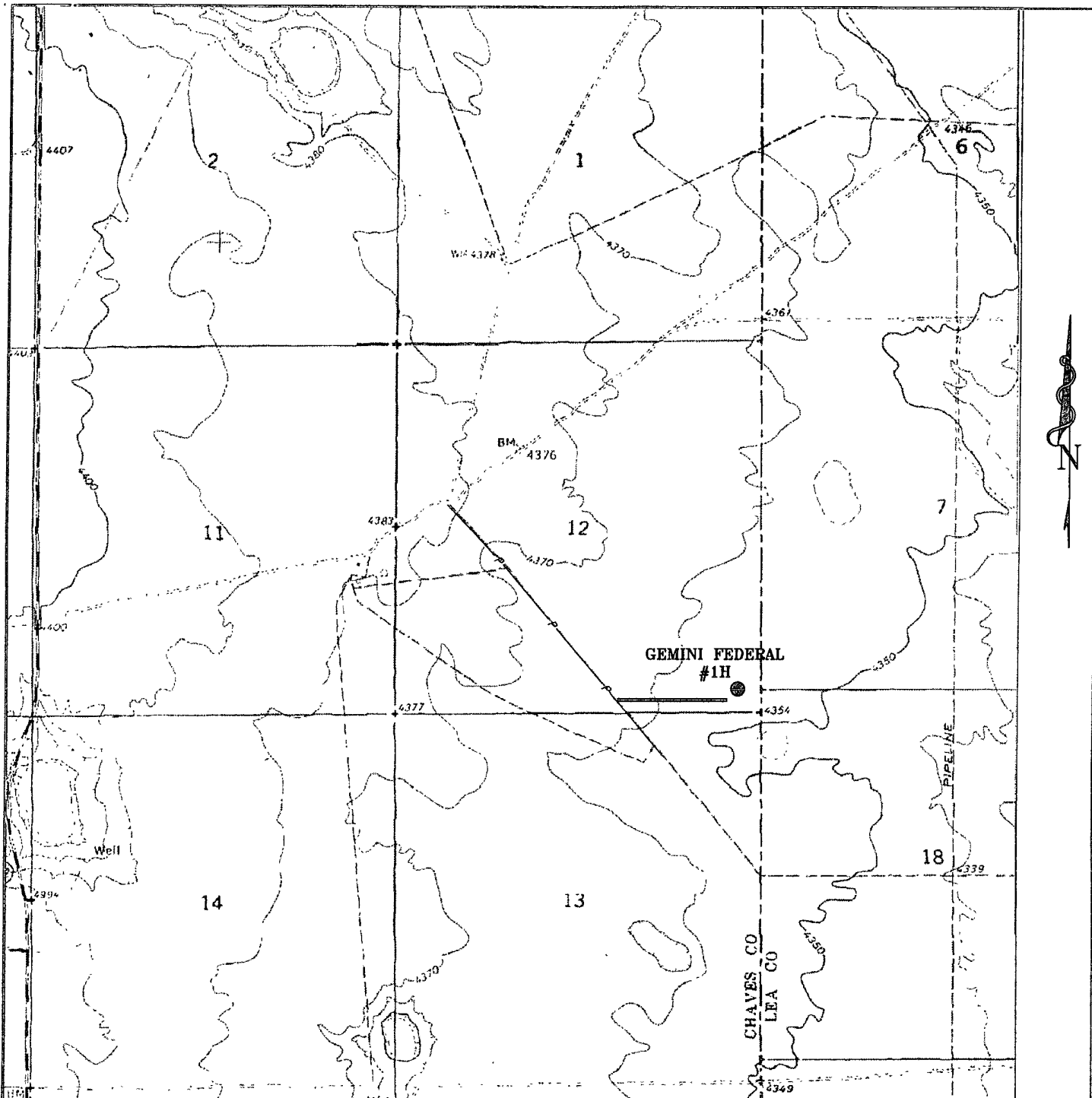
Survey Date: 07-28-2007

Scale: 1" = 2 MILES

Date: 07-30-2007

C.O.G.
 OPERATING
 L.L.C.

Exhibit "D"



GEMINI FEDERAL #1H

Located at 330' FSL and 330 FEL
 Section 12, Township 15 South, Range 31 East,
 N.M.P.M., Chaves County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (505) 393-7316 - Office
 (505) 392-3074 - Fax
 basinsurveys.com

W.O. Number: JMS 18363T

Survey Date: 07-28-2007

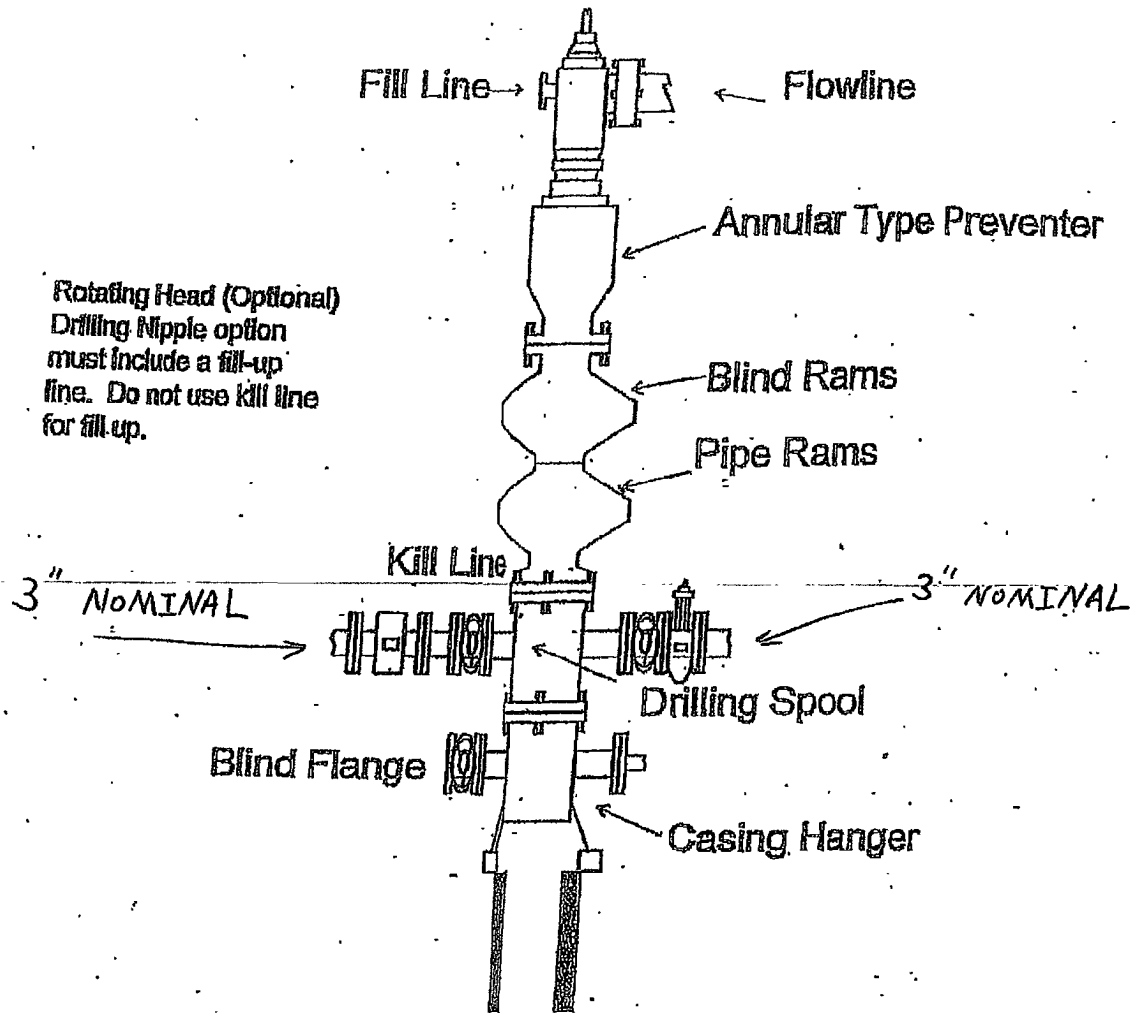
Scale: 1" = 2000'

Date: 07-30-2007

**C.O.G.
 OPERATING
 L.L.C.**

Exhibit "I"

BOPE SCHEMATIC



900SERIES