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

Form 3160-3
(April 2004)

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No. **NMNM 114964**

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No. 35539

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

8. Lease Name and Well No. **COMANCHE HILL 18 FED 1**

2. Name of Operator **CHESAPEAKE ~~ENERGY CORP~~ Oper INC.** ATTN: LINDA GOOD 147179

9. API Well No. 30-005-63815

3a. Address **P.O. BOX 18496, OKLAHOMA CITY, OK 73154-0496**

3b. Phone No. *(include area code)* **405-767-4275** 82730

10. Field and Pool, or Exploratory **PECOS SLOPE; ABO (GAS)**

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface **1980 FNL ~~660~~ 710 FWL, SW NW**
At proposed prod. zone **SAME**

RECEIVED
MAR 27 2006
OCD-ARTESIA

11. Sec., T. R. M. or Blk. and Survey or Area **18-10S-26E**

14. Distance in miles and direction from nearest town or post office* **13.2 MILES EAST OF ROSWELL, NM.**

12. County or Parish **CHAVES**

13. State **NM**

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
	1278.8	**160**
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
	4750	**NM2634**
21. Elevations (Show whether DF, KDB, RT, GL, etc.) **3803 GR 3813 KB**	22. Approximate date work will start*	23. Estimated duration

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall 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 shall 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 authorized officer.

25. Signature	Name *(Printed/Typed)*	Date
	HENRY HOOD	2/24/06

Title **SR. VICE PRESIDENT - LAND & LEGAL**

Approved by *(Signature)* /S/LARRY D. BRAY	Name *(Printed/Typed)* /S/LARRY D. BRAY	Date MAR 23 2006
Title **Assistant Field Manager, Lands And Minerals**	Office ROSWELL FIELD OFFICE	APPROVED FOR 1 YEAR

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.

**(Instructions on page 2)*

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

Chesapeake Operating Inc.
Comanche Hill 18 Federal 1
1980 FNL 660 FWL
SW NW of Section 18-10S-26E
Chaves County, NM

Confidential – Tight Hole
Lease No. NMNM 114964

#24 Attachment to Application for Permit to Drill or Re-enter

Chesapeake Operating, Inc. respectfully requests permission to drill a well to 4750' to test the Abo formation. If productive, casing will be run and the well completed. If dry, the well will be plugged and abandoned as per BLM and New Mexico Oil Conservation Division requirements.

Please find the Surface Use Plan and Drilling Plan as required by Onshore Order No. 1. A general rig plat is attached as Exhibit D. A final rig plat will be submitted prior to spud. Exhibit_E Archeological Survey to follow.

Chesapeake Operating, Inc. has an agreement with the grazing lessee.

Please be advised that Chesapeake Operating, Inc. is considered to be the Operator of the above mentioned well. Chesapeake Operating, Inc. agrees to be responsible under the terms and conditions of the lease for the operations conducted upon the lease lands.

DISTRICT I
1625 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	Pool Code	Pool Name
	82730	Pecos Slope; Abo (gas)

Property Code	Property Name	Well Number
	COMANCHE HILL 18 FEDERAL	1

OGRID No.	Operator Name	Elevation
147179	CHESAPEAKE OPERATING, INC.	3818'

Surface Location

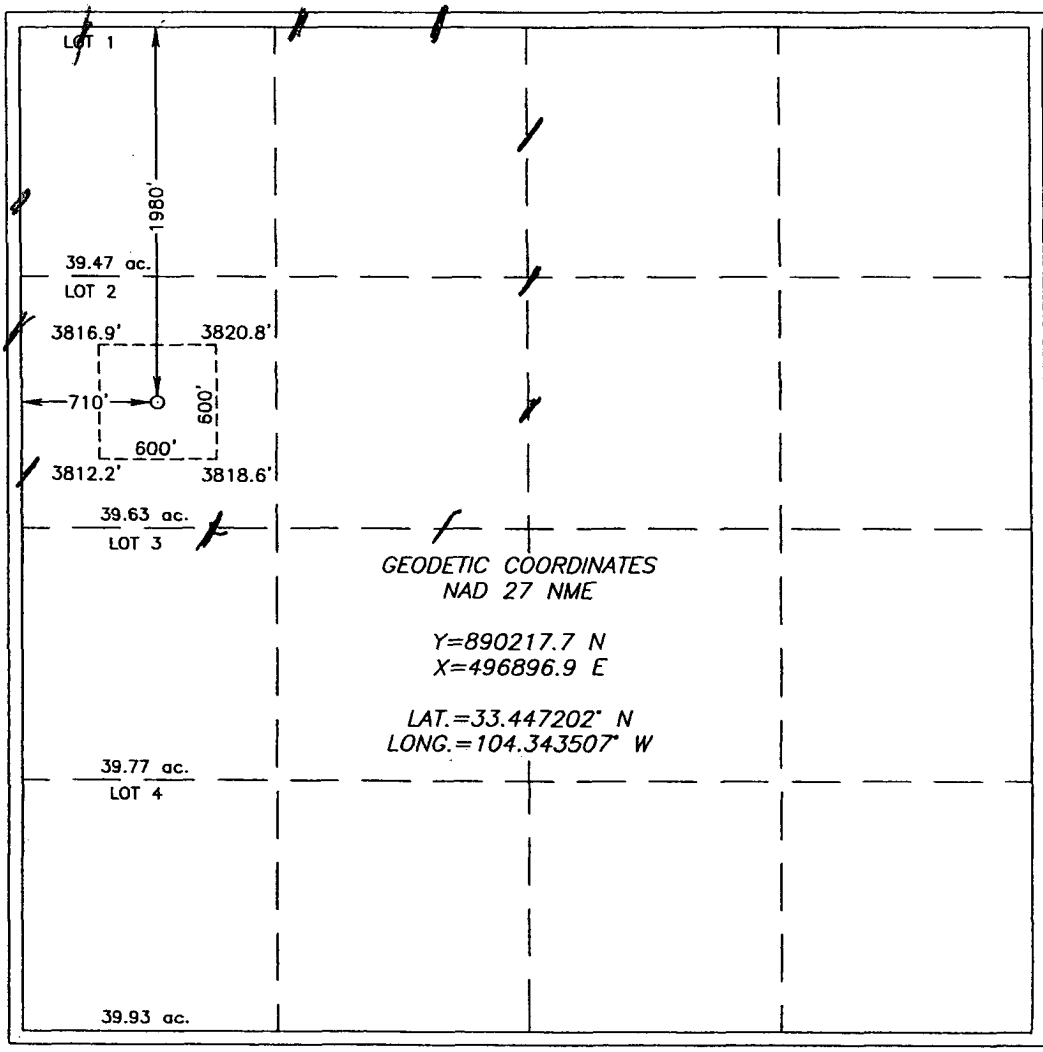
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
2	18	10-S	26-E		1980	NORTH	710	WEST	CHAVES

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

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 the the information contained herein is true and complete to the best of my knowledge and belief.

Signature

JIM BALL
Printed Name

SENIOR LANDMAN
Title

2/7/06
Date

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 supervison, and that the same is true and correct to the best of my belief.

JANUARY 24, 2006
Date Surveyed JR

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
12641
REGISTERED PROFESSIONAL SURVEYOR

2/2/06

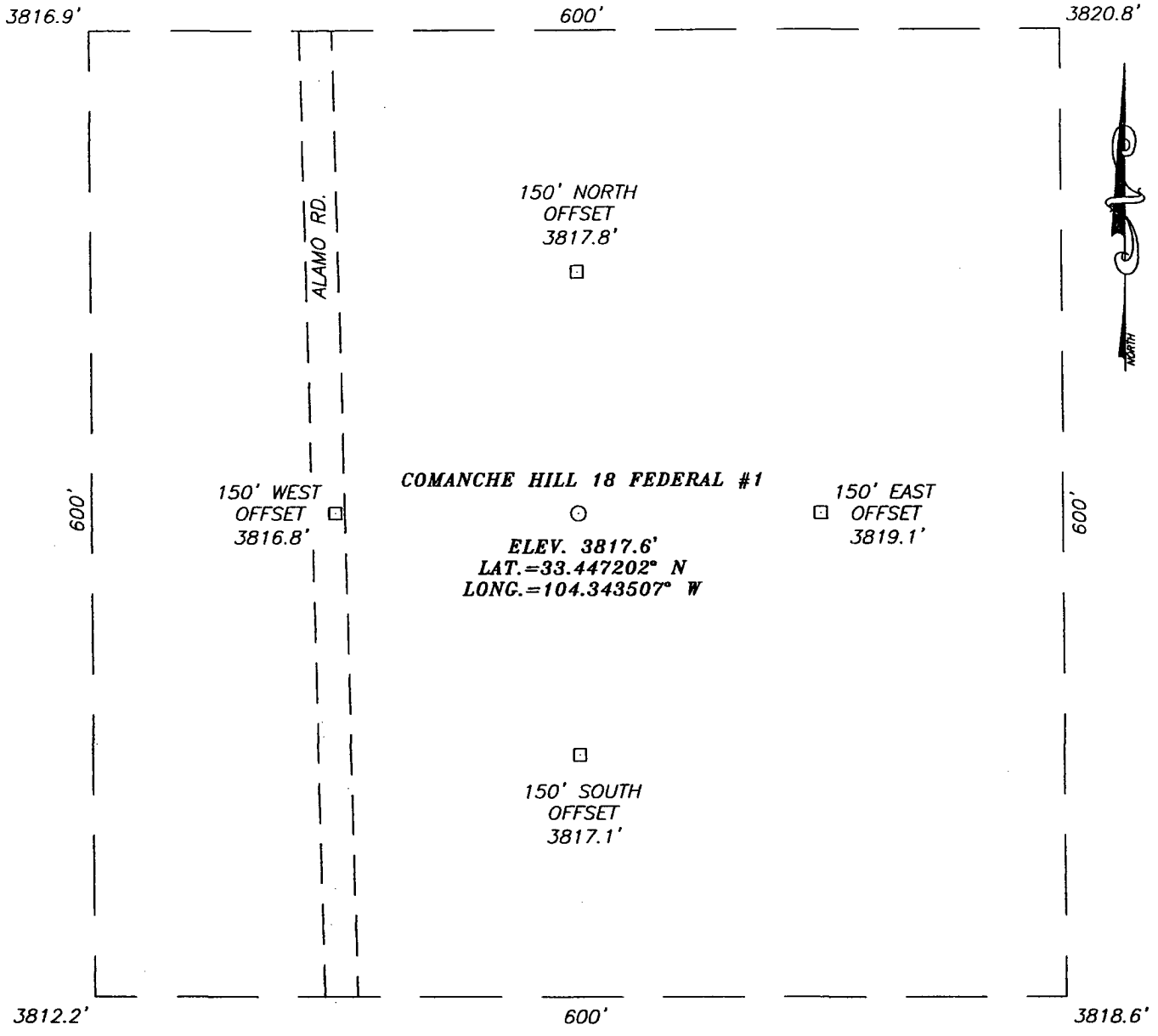
06.11.0172

Certificate No. GARY L. JONES 12641

EXHIBIT A-1

SECTION 18, TOWNSHIP 10 SOUTH, RANGE 26 EAST, N.M.P.M.,

CHAVES COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #380 AND ALAMO RD., GO NORTH ALONG ALAMO RD. APPROXIMATLEY 3.2 MILES. THIS LOCATION IS APPROXIMATLEY 150' EAST.

100 0 100 200 Feet

Scale: 1"=100'

CHESAPEAKE OPERATING, INC.

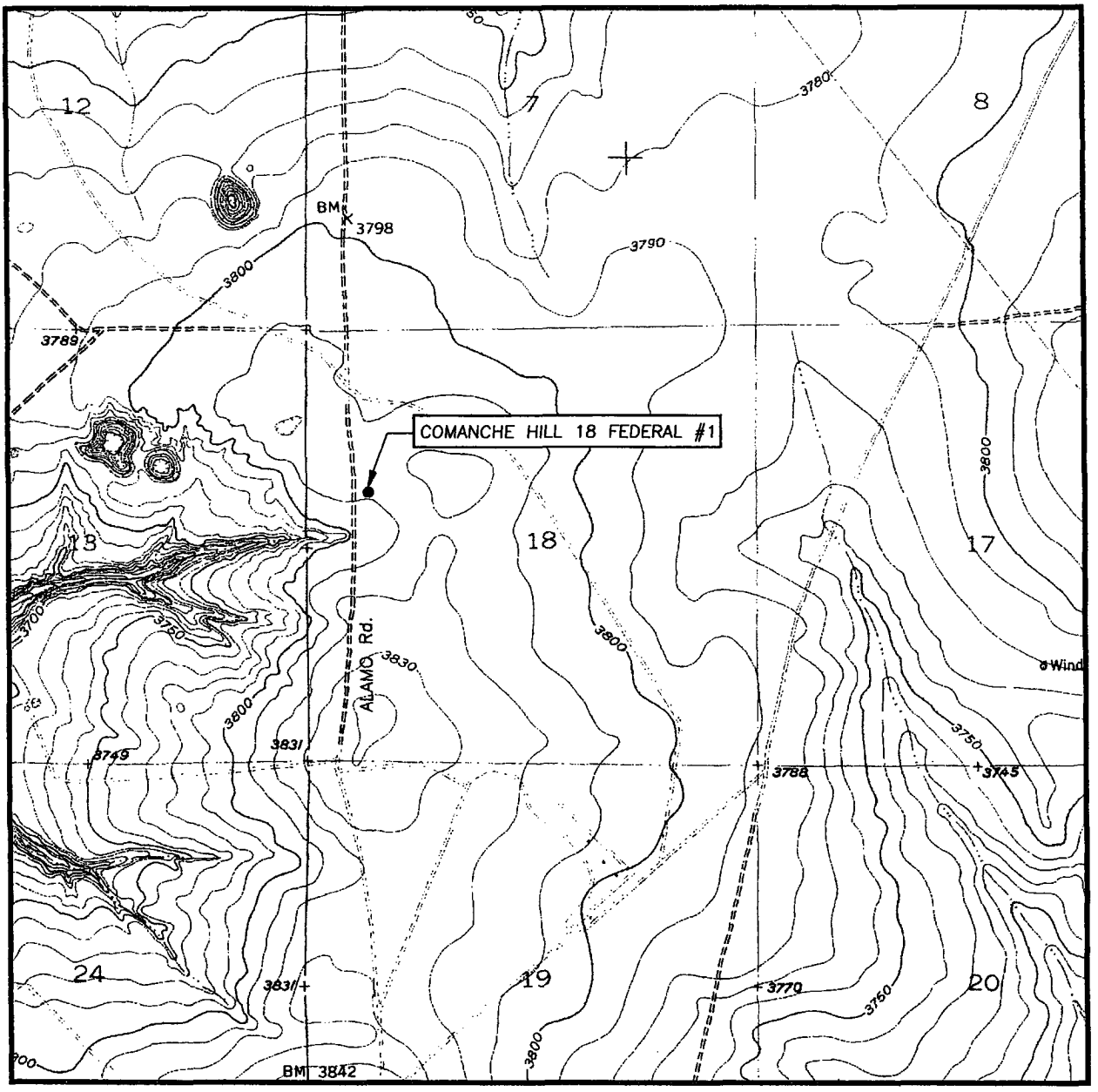
COMANCHE HILL 18 FEDERAL #1 WELL
LOCATED 1980 FEET FROM THE NORTH LINE
AND 710 FEET FROM THE WEST LINE OF SECTION 18,
TOWNSHIP 10 SOUTH, RANGE 26 EAST, N.M.P.M.,
CHAVES COUNTY, NEW MEXICO.

Survey Date: 1/24/06	Sheet 1 of 1 Sheets		
W.O. Number: 06.11.0172	Dr By: J.R.	Rev 1:N/A	
Date: 1/26/06	Disk: CD#6	06110172	Scale: 1"=100'

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

EXHIBIT A-2

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
COMANCHE SPRING, N.M. – 10'

SEC. 18 TWP. 10-S RGE. 26-E

SURVEY N.M.P.M.

COUNTY CHAVES STATE NEW MEXICO

DESCRIPTION 1980' FNL & 710' FWL

ELEVATION 3818'

OPERATOR CHESAPEAKE OPERATING, INC.

LEASE COMANCHE HILL 18 FEDERAL

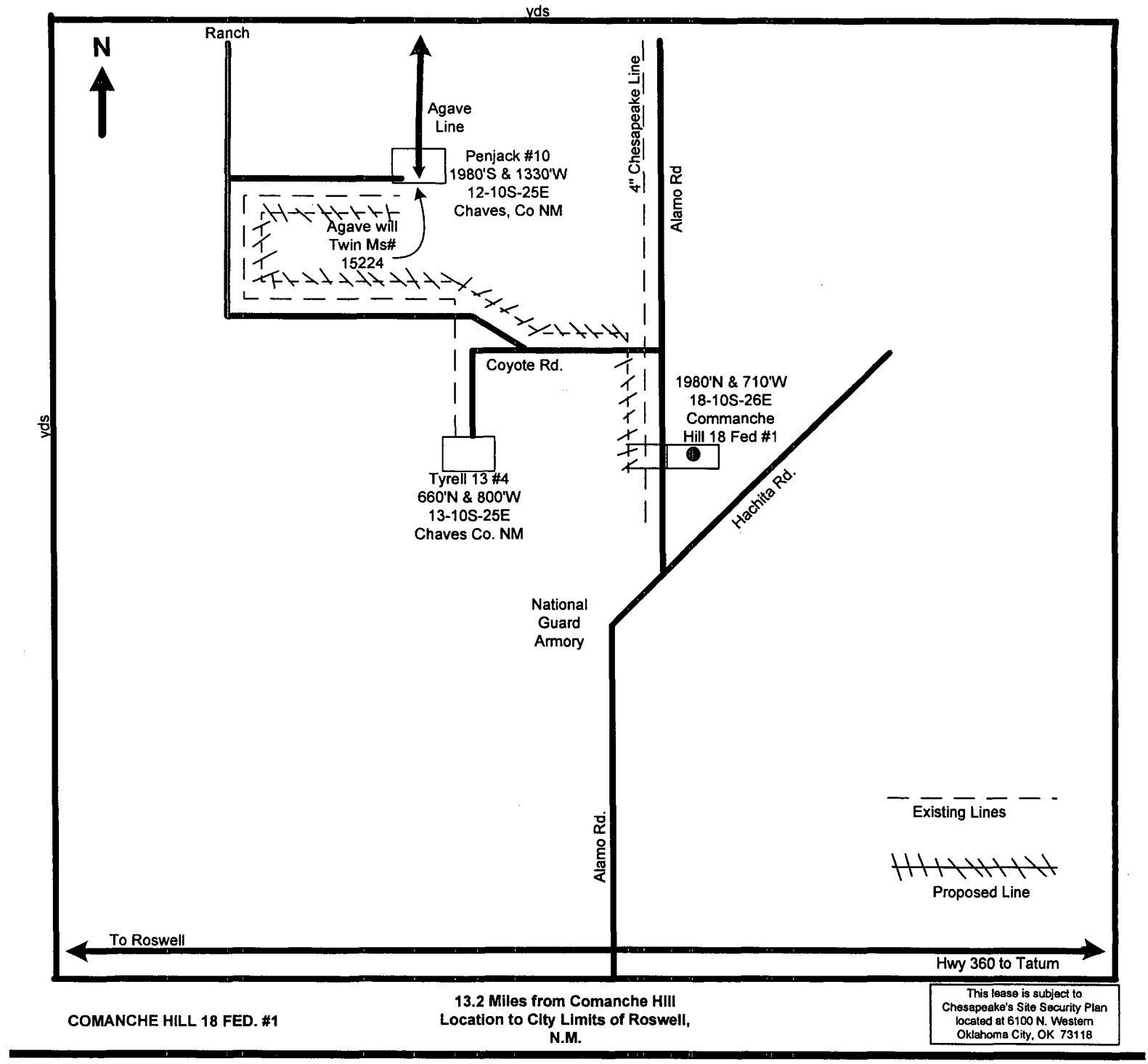
U.S.G.S. TOPOGRAPHIC MAP
COMANCHE SPRING, N.M.

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

EXHIBIT A-4

CHESAPEAKE OPERATING, INC.

COMANCHE HILL 18 FEDERAL 1
18-10S-26E
CHAVES COUNTY, NEW MEXICO



COMANCHE HILL 18 FED. #1

13.2 Miles from Comanche Hill Location to City Limits of Roswell, N.M.

This lease is subject to Chesapeake's Site Security Plan located at 6100 N. Western Oklahoma City, OK 73118

Prepared by: DEBBIE HERNANDEZ
Date: 02-09-2006

Approved by:
Date:

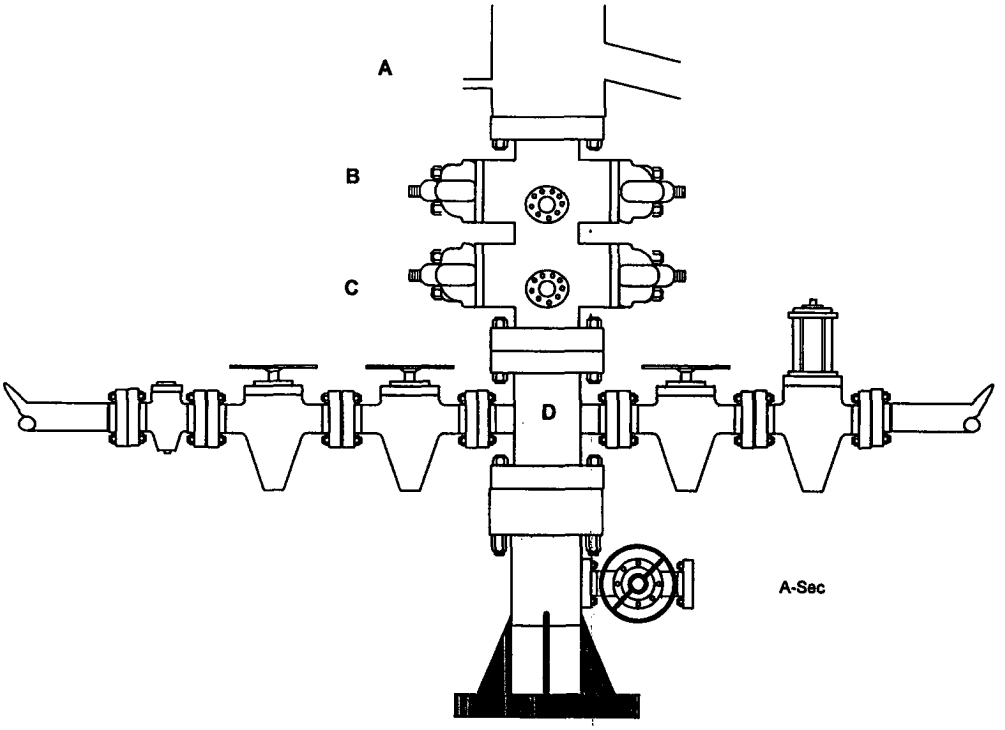
EXHIBIT C-1

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

WELL : **Comanche Hill 18 Federal #1**
FIELD : **Pecos Slope**
RIG :
COUNTY : **Chaves** **STATE: New Mexico**
OPERATION: Drill out below 8-5/8" Casing

	SIZE	PRESSURE	DESCRIPTION
A			Flow Line
B	11"	3,000#	Pipe Rams
C	11"	3,000#	Blind Rams
D	11"	3,000#	Mud Cross
A-Sec		8-5/8" SOW x 11" 3M	



Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	3,000#	Check Valve
2"	3,000#	Gate Valve
2"	3,000#	Gate Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
2"	3,000#	Gate Valve
2"	3,000#	HCR Valve

EXHIBIT E-1

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

1. EXISTING ROADS

   a. We are using the Alamo county road, there will be no access road. – See Exhibit A-2.
   b. Location, access and vicinity plats attached hereto. See Exhibit A-1 through A-4.

2. PLANNED LOCATION

   a. A locking gate will be installed at the site entrance.
   b. Any fences cut will be repaired. Cattle guards will be installed, if needed.
   c. Surface disturbance and vehicular travel will be limited to the approved location. Any additional area needed will be approved in advance.
   d. Driving directions are from the intersection of U S Hwy #380 and Alamo Rd., Go North along Alamo Rd. approximately 3.2 miles. This location is approximately 150' East.

3. LOCATION OF EXISTING WELLS WITHIN A 1-MILE RADIUS OF THE PROPOSED LOCATION – see Exhibit B.

4. LOCATION OF PRODUCTION FACILITIES

   It is anticipated that production facilities will be located on the well pad as product will be sold at the wellhead and/or tank battery. Chesapeake Operating, Inc. proposes to lay 2 3/8" "Class"A" steel tubing approximately 1 mile up to the Penjack Federal 10, Agave will twin the existing meter on that location. If the well is a low producer we will tie into the JJ Federal 1 4" line that goes to our compressor at the JJ Federal 1 (Approx. 120' west of location) – See Exhibit's C-1_to_C-2.

5. LOCATION AND TYPE OF WATER SUPPLY

   Water will be obtained from a private water source. Chesapeake Operating, Inc. will ensure all proper notifications and filings are made with the state.

6. CONSTRUCTION MATERIALS

No construction materials will be used from Section 18-10S-26E. All material (i.e. shale) will be acquired from private or commercial sources.

7. METHODS FOR HANDLING WASTE DISPOSAL

An in-ground, lined pit will be utilized during the drilling of this well. All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

8. ANCILLARY FACILITIES

None.

9. WELLSITE LAYOUT

The proposed site layout plat is attached showing rig orientation and equipment location. See Exhibit D. Also see Exhibit A for the size of the pad.

10. PLANS FOR RECLAMATION OF THE SURFACE

The location will be restored to as near as original condition as possible. Reclamation of the surface shall be done in strict compliance with the existing New Mexico Oil Conservation Division regulations.

Backfilling leveling, and contouring are planned as soon as the drilling rig and steel tanks are removed. Wastes and spoils materials will be buried immediately after drilling is completed. If production is obtained, the unused area will be restored as soon as possible. The rehabilitation will begin after the drilling rig is removed.

11. SURFACE AND MINERAL OWNERSHIP

United States of America
Department of Interior
Bureau of Land Management

GRAZING LEASE

Jack Hagelstein Jr.
P.O. Box 297
Dexter, NM 88230
(Chesapeake Operating, Inc. has an agreement with the grazing lessee)

12. ADDITIONAL INFORMATION

A Class III cultural resource inventory report was prepared by Boone Archaeological Services, Carlsbad, New Mexico for the proposed location. A copy of the report has been sent to the BLM office under separate cover and is also attached for reference. See Exhibit E.

Chesapeake Operating, Inc. agrees to be responsible under the terms and conditions of the lease for the operations conducted upon the lease lands.

13. OPERATOR'S REPRESENTATIVES

Drilling and Completion Operations
Jarvis Hensley
District Manager – Northern Permian
P.O. Box 18496
Oklahoma City, OK 73154
(405) 879-7863 (OFFICE)
(405) 879-9529 (FAX)
jhensley@chkenergy.com

Drilling Engineer
David DeLaO
P.O. Box 14896
Oklahoma City, OK 73154
(405) 767-4339 (OFFICE)
(405) 879-9573 (FAX)
(405) 990-8182 (MOBILE)
ddelao@chkenergy.com

Sr. Field Representative
Cecil Gutierrez
P.O. Box 11050
Midland, TX 79705
432-687-2992 (OFFICE)
432-687-3675 (FAX)
cgutierrez@chkenergy.com

Assett Manager
Andrew McCalmont
P.O. Box 18496
Oklahoma City, OK 73154-0496
405-879-7852 (OFFICE)
405-879-7930 (FAX)
amccalmont@chkenergy.com

Regulatory Compliance
Linda Good
Regulatory Compliance Analyst
P.O. Box 18496
Oklahoma City, OK 73154
(405) 767-4275 (OFFICE)
(405) 879-9583 (FAX)
lgood@chkenergy.com

14. 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 surface use plan are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed will be performed by operator (including contractors and subcontractors) submitting the APD, in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

By: _____

Date: 2/24/06

ONSHORE OIL & GAS ORDER NO. 1
Approval of Operations on Onshore
Federal and Indian Oil and Gas Leases

All lease and/or unit operations are to be conducted in such a manner that full compliance is made with the applicable laws, regulations (CFR 43, Part 3160) and the approved Application for Permit to Drill. The operator is considered fully responsible for the actions of his subcontractors. A copy of the approved APD must be on location during construction, drilling and completion operations.

Approval of this application 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.

1. FORMATION TOPS

The estimated tops of important geologic markers are as follows:

Formation	Depth	Subsea
San Andres	860	2953
Glorieta	2050	1763
Tubb	3479	334
*Abo	4230	-417
**Abo B	4375	-562
**Abo C	4482	-669
**Abo C Lower	4525	-712
*Abo D	4635	-822
TD	4750	-937
*Potential Pay Zones; **Primary Objective		

2. ESTIMATED DEPTH OF WATER, OIL GAS & OTHER MINERAL BEARING FORMATIONS

The estimated depths at which the top and bottom of the anticipated water, oil, gas or other mineral bearing formations are expected to be encountered are as follows:

Substance	Formation	Depth
Gas	Abo	4230

All shows of fresh water and minerals will be reported and protected.

3. BOP EQUIPMENT: **3,000# System**

Chesapeake Operating, Inc.'s minimum specifications for pressure control equipment are as follows:

I. BOP, Annular, Choke Manifold, Pressure Test

A. Equipment
1. The equipment to be tested includes all of the following that is installed on the well. See Exhibit ___.
   (a) Ram-type and annular preventers,
   (b) Choke manifolds and valves,
   (c) Kill lines and valves, and
   (d) Upper and lower kelly cock valves, inside BOP's and safety valves.

B. Test Frequency
1. All tests should be performed with clear **water**,
   (a) when installed,
   (b) before drilling out each casing string,
   (c) at any time that there is a repair requiring a pressure seal to be broken in the assembly, and
   (d) at least once every **30 days** while drilling.

C. Test Pressure
1. In some drilling operations, the pressures to be used for low and high-pressure testing of preventers and casing may be different from those given below due to governmental regulations, or approved local practices.
2. If an individual component does not test at the low pressure, **do not,** test to the high pressure and then drop back down to the low pressure.
3. All valves located downstream of a valve being tested must be placed in the open position.
4. All equipment will be tested with an initial "low pressure" test at 250 psi.
5. The subsequent "high pressure" test will be conducted at the rated working pressure of the equipment for all equipment except the annular preventer.
6. The "high pressure" test for the annular preventer will be conducted at 70% of the rated working pressure.
7. A record of all pressures will be made on a pressure-recording chart.

D. Test Duration
1. In each case, the individual components should be monitored for leaks for **5 minutes,** with no observable pressure decline, once the test pressure as been applied.

II. Accumulator Performance Test

A. Scope
1. The purpose of this test is to check the capabilities of the BOP control systems, and to detect deficiencies in the hydraulic oil volume and recharge time.

B. Test Frequency

1. The accumulator is to be tested each time the BOP's are tested, or any time a major repair is performed.

C. Minimum Requirements

1. The accumulator should be of sufficient volume to supply 1.5 times the volume to close and hold all BOP equipment in sequence, **without recharging** and the **pump turned off**, and have remaining pressures of **200 PSI above the precharge pressure**.

2. Minimum precharge pressures for the various accumulator systems per **manufacturers recommended specifications** are as follows:

System Operating Pressures	Precharge Pressure
1,500 PSI	750 PSI
2,000 PSI	1,000 PSI
3,000 PSI	1,000 PSI

3. Closing times for the Hydril should be less than **20 seconds**, and for the ram-type preventers less than **10 seconds**.

4. System Recharge time should not exceed **10 minutes**.

D. Test Procedure

1. Shut accumulator pumps off and record accumulator pressure.

2. In sequence, close the annular and one set of properly sized pipe rams, and open the HCR valve.
3. Record time to close or open each element and the remaining accumulator pressure after each operation.

4. Record the remaining accumulator pressure at the end of the test sequence. Per the previous requirement, this pressure **should not be less** than the following pressures:

System Pressure	Remaining Pressure At Conclusion of Test
1,500 PSI	950 PSI
2,000 PSI	1,200 PSI
3,000 PSI	1,200 PSI

5. Turn the accumulator pumps on and record the recharge time. This time should not exceed **10 minutes.**

6. Open annular and ram-type preventers. Close HCR valve.

7. Place all 4-way control valves in **full open** or **full closed** position. **Do not leave in neutral position**.

4. CASING AND CEMENTING PROGRAM

a. The proposed casing program will be as follows:

Purpose	Interval	Hole Size	Casing Size	Weight	Grade	Thread	Condition
Surface Casing	0' – 700'	11"	8-5/8"	24 ppf	J-55	ST&C	New
Production Casing	0' – 4,750'	7-7/8"	4-1/2"	11.6 ppf	J-55	LT&C	New

b. Casing design subject to revision based on geologic conditions encountered.
c. The cementing program will be as follows:

Interval	Type	Amount	Yield	Washout	Excess
Surface	**Lead**: (65:35) Fly Ash: Class C + 0.25 pps Flocele + 2% Calcium Chloride	225 sks	1.98	50%	100%
	Tail: Class C + 2% CaCl	100 sks	1.34		
Production	**Lead**: (35:65) Poz (Fly Ash):Class C + 6% bwoc Bentonite + 5% bwow Sodium Chloride + 0.25 lbs/sack Cello Flake	650 sks	2.04	20%	20%
	Tail: Class C + 2% bwow Sodium Chloride + 0.8% bwoc BA-10 + 0.3% bwoc CD-32	100 sks	1.35		

5. MUD PROGRAM

a. The proposed circulating mediums to be used in drilling are as follows:

Interval	Mud Type	Mud Weight	Viscosity	Fluid Loss
0' – 700'	Water	8.4 – 9.0 ppg	28-40	N/C
700' – 4,750'	Cut Brine/Brine	9.4 – 10.0 ppg	35-46	10-12

An in-ground, lined pit will be utilized during the drilling of this well. All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

A mud test shall be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH.

6. TESTING, LOGGING AND CORING

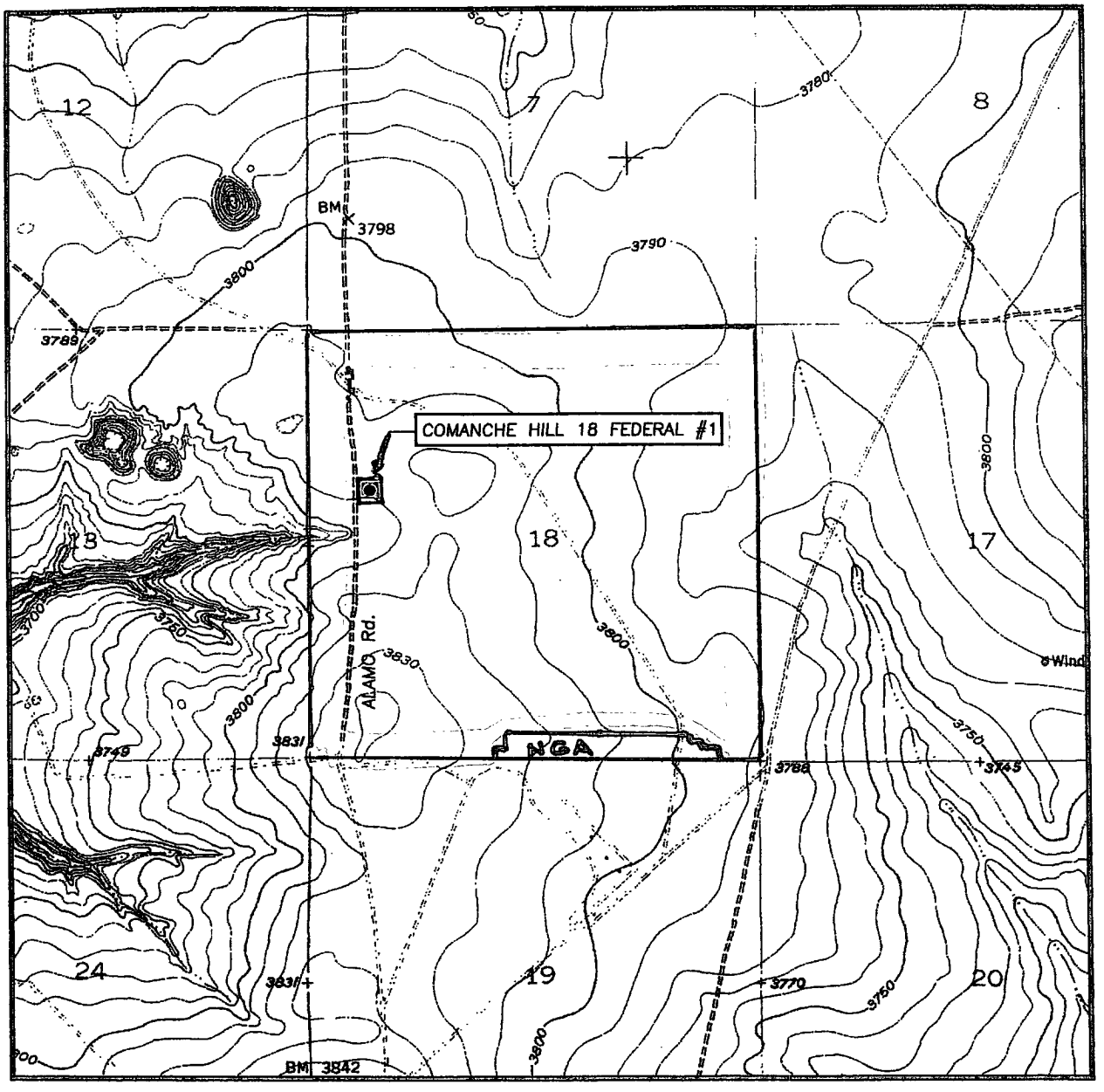
The anticipated type and amount of testing, logging and coring are as follows:

a. Drill stem tests are not planned.
b. The logging program will consist of Natural GR, Density, Neutron and Pe from TD to surface casing, then GR and Neutron to surface; Dual Laterolog from TD to surface casing.
c. Cores samples are not planned.

7. ABNORMAL PRESSURES AND HYDROGEN SULFIDE
   a. The estimated bottom hole pressures is 1100 psi. No abnormal pressures or temperatures are anticipated.
   b. Hydrogen sulfide gas is not expected to be encountered.

EXHIBIT A

OPERATORS NAME: **Chesapeake Operating, Inc.** LEASE NO.: **NM-114964**
WELL NAME & NO: **Comanche Hill 18 Federal #1**
QUARTER/QUARTER & FOOTAGE: **Lot 2 - 1980' FNL & 710' FWL**
LOCATION: **Section 18, T. 10 S., R. 26 E., NMPM**
COUNTY: **Chaves County, New Mexico**



United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Roswell Field Office
2909 West Second Street
Roswell, New Mexico 88201

EXHIBIT C

WELL DRILLING REQUIREMENTS

OPERATORS NAME: **Chesapeake Operating, Inc.** LEASE NO.: **NM-114964**
WELL NAME & NO: **Comanche Hill 18 Federal #1**
QUARTER/QUARTER & FOOTAGE: **Lot 2 - 1980' FNL & 710' FWL**
LOCATION: **Section 18, T. 10 S., R. 26 E., NMPM**
COUNTY: **Chaves County, New Mexico**

I. GENERAL PROVISIONS:

A. The operator has the right of administrative review of these requirements pursuant to 43 CFR 3165.1(a).

B. The operator shall hereafter be identified as the holder in these requirements. The Authorized Officer is the person who approves the Well Drilling Requirements.

II. WELL PAD CONSTRUCTION REQUIREMENTS:

A. The BLM shall administer compliance and monitor construction of the well pad. Notify **Richard G. Hill** at least **3** working days (72 Hours) prior to commencing construction of the well pad. Call the Roswell Field Office number **(505) 627-0247**.

B. Prior to commencing construction of the well pad, or other associated developments, the holder shall provide the dirt contractor with **a copy of the approved APD signature page, a copy of the location map (EXHIBIT A), Fence Construction (Exhibit B), and a copy of pages 1 & 2 from the Well Drilling Requirements (EXHIBIT C).**

C. The holder shall stockpile the topsoil from the surface of the well pad. The topsoil on the **Comanche Hill 18 Federal #1** well pad is approximate **6** inches in depth. Approximately **800** cubic yards of topsoil shall be stockpiled on the **Northwest** corner of the well pad, opposite the reserve pit.

D. **The well pad shall be fenced off with a three strand wire fence that shall be constructed around the entire well pad (See Exhibit B). H-Braces shall be constructed at each corner of the fence. The wire fence enclosure shall be constructed around the well pad prior to commencement of drilling operations.**

C. **Reserve Pit Requirements:**

1. The reserve pit shall be constructed 150' X 100' on the **East** side of the well pad.

2. The reserve pit shall be constructed to a minimum depth of four (4) feet below ground level. The reserve pit shall be constructed, so that the cuttings in the reserve pit can be buried a minimum depth of three (3) feet below ground level. **See Exhibit E – Surface Reclamation/Restoration Requirements.**

3. A synthetic or fabricated liner **12** mil in thickness shall be used to line the reserve pit. The liner shall meet ASTM standards that are designed to be resistant to the reserve pit contents.

4. The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

5. The reserve pit shall be constructed so as not to leak, break, or allow discharge of drilling muds. Under no circumstances will the reserve pit be cut to drain drilling muds on the well location.

6. The reserve pit shall not be located in any natural drainage.

7. The reserve pit shall be equipped to deter entry by birds, bats, other wildlife, and livestock, if the reserve pit contains any oil and/or toxic fluids.

8. Drilling muds shall be properly disposed of before the reserve pit is reclaimed. Drilling muds can be allowed to evaporate in the reserve pit or be removed and transported to an authorized disposal site. The reserve pit shall be backfilled when dry.

9. Dumping of junk or trash into the reserve pit is not allowed. Junk or trash shall be removed from within the reserve pit before the reserve pit is reclaimed. **Junk or trash shall not be buried in the reserve pit.**

E. Federal Mineral Materials Pit Requirements:

1. Caliche, gravel, or other related materials from new or existing pits on Federal mineral estate shall not be taken without prior approval from the authorized officer. Contact Jerry Dutchover at (505) 627 -0236.

2. Payment for any Federal mineral materials that will be used to surface the well pad is required prior to removal of the mineral materials.

3. Mineral Materials extracted during construction of the reserve pit may be used for development of the pad as needed, for the Comanche Hill 18 Federal #1 gas well only. Removal of any additional material on location must be purchased from BLM prior to removal of any material.

a. An optional mineral material pit may be constructed within the archaeologically cleared area. The mineral material removed in the process can be used for surfacing the pad. However, a mineral material sales contract must be purchased from the BLM prior to removal of any material.

F. **Well Pad Surfacing Requirement:**

The well pad shall be surfaced with 6 inches of compacted caliche, gravel, or other approved surfacing material. The well pad shall be surfaced prior to drilling operations.

G. **Cave Requirements:**

1. If, during any construction activities any sinkholes or cave openings are discovered, all construction activities shall immediately cease. Contact Larry Bray at (505) 627-0250.

2. The BLM Authorized Officer will, within 24 hours of notification in "A" above, conduct an on-the-ground field inspection for karst. At the field inspection the authorized field inspector will authorize or suggest mitigating measures to lessen the damage to the karst environment. A verbal order to proceed or stop the operation will be issued at that time.

III. DRILLING OPERATION REQUIREMENTS:

A. GENERAL DRILLING REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County in sufficient time for a representative to witness:

A. Well spud B. Cementing casing **8-5/8** 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. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15-day time frame.

4. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

B. CASING:

1. The **8-5/8** inch surface casing shall be set at **approximately 865 feet** and cement circulated to the surface. If cement does not circulate to the surface the appropriate 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. The minimum required fill of cement behind the **4-1/2** inch production casing is **to reach at least 500 feet above the top of the uppermost hydrocarbon productive interval.** .

C. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the **8-5/8** inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.

2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be **2000** psi.

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- 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.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.