Form 3160-3
(December 1990)

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

# UNITED STATES
# DEPARTMENT OF THE INTERIOR
## BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE (See other instructions on reverse side)

Form approved.

CONFIDENTIAL – TIGHT HOLE

## APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a TYPE OF WORK: DRILL ☒ DEEPEN ☐

b. TYPE OF WELL: OIL WELL ☐ GAS WELL ☒ Other ___ SINGLE ZONE ☐ MULTIPLE ZONE ☐

2 NAME OF OPERATOR
CHESAPEAKE OPERATING, INC. Attn. Linda Good (147179)

3. ADDRESS AND TELEPHONE NO.
P.O. BOX 18496 OKLAHOMA CITY, OK 73154-0496 405-767-4275

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements)**
At surface 1090 FNL 330 FEL, NENE (24270)
At top proposed prod. zone Unit A

5.LEASE DESIGNATION AND SERIAL NO.
NM OKNM 16835

6.IF INDIAN, ALLOTTEE OR TRIBE NAME

7.UNIT AGREEMENT NAME

8.FARM OR LEASE NAME, WELL NO.
NEUHAUS 14 FEDERAL #5 (300106)

9.API WELL NO.
30-025-37351

10.FIELD AND POOL, OR WILDCAT
FEATHERSTONE EAST (Bone Spring)

11.SEC.,T.,R.,M.,OR BLOCK AND SURVEY OR AREA
SECTION 14-20S-35E

14.DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*
10 MILES SOUTHWEST OF MONUMENT, NM

12. COUNTY OR PARISH: LEA COUNTY

13. STATE: NM

| 15.DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line if any) | 16.NO. OF ACRES IN LEASE | 17.NO. OF ACRES ASSIGNED TO THIS WELL |
|---|---|---|
| | 40 | 40 |
| **18.DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.** | **19.PROPOSED DEPTH** | **20.ROTARY OR CABLE TOOLS*** |
| | 10,400 | ROTARY |

21.ELEVATIONS (Show whether DF, RT, GR, etc.)
3650'

22. APPROX. DATE WORK WILL START*

Lea County Controlled Water Basin

23. PROPOSED CASING AND CEMENTING PROGRAM

| SIZE OF HOLE | GRADE, SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
|---|---|---|---|---|
| " | " | # | ' | +/- |
| " | " | # | ' | +/- |
| | " | # | ' | +/- |

Chesapeake Operating, Inc. proposes to drill a well to 10,000' to test the Seven Rivers and Bone Spring formations. 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 Devision requirements.

NSL-5228

Attached please find the Surface Use Plan, Drilling Plan, and attachments 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 once a rig is assigned.

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.

Bond coverage for this well is provided by Chesapeake Operating, Inc. under their Nationwide Bond No. NM2634.

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

**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 _____ Henry Hood TITLE Sr. Vice President Land and Legal DATE 3/14/05

*(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 /s/ Joe G. Lara TITLE ACTING FIELD MANAGER DATE APR 26 2005

See Instructions On Reverse Side

APPROVAL FOR 1 YEAR

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

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

1. EXISTING ROADS

a. Existing county roads will be used to enter proposed access road.
b. Location, access, and vicinity plats attached hereto. See Exhibits A-1 through A-4.

2. PLANNED ACCESS ROADS

a. A new access road 221.16' in length and 14' in travel way width with a maximum disturbance area of 30' will be built in accordance with guidelines set forth in the BLM Onshore Orders.
b. No turnouts are expected.
c. In order to level the location, cut and fill will be required. Please see attached Well Location and Acreage Dedication Plat – Exhibit A1-A4.
d. A locking gate will be installed at the site entrance.
e. Any fences cut will be repaired. Cattle guards will be installed, if needed.
f. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
g. Driving directions are from Eunice West on Hwy 176 to Pearson Ranch Rd, North and West approximately 8 miles, then North 2.5 miles, East 1 mile and North into location.

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 off site, but on Lease NMNM16835 as product will be sold at the Neuhaus Central Tank battery located 660 FNL 1650 FEL of Sec 14-20S-35E, NWNE. A Sundry will be submitted for the pipeline to the Central Tank Battery. – See Exhibit C.

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 4-20S-33E. All material (i.e. shale) will be acquired from private or commercial sources.

7. METHODS FOR HANDLING WASTE DISPOSAL

An in ground reserve pit will be used to handle all drilling fluids, this pit design is based on the current (OCD guidelines for reserve pits). This will consist of two parallel pits approximately 150' in length X 15" in width X 12' deep. The pits will be lined with 12 mil woven plastic liner. The closing procedure will follow Guidelines set forth on page 14 Item B #3 in "The Pit and Below Grade Tank Guidelines" dated Nov. 1, 2004. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-tolet and then hauled to an approved sanitary landfill.

8. ANCILLARY FACILITIES

None

9. WELLSITE LAYOUT

The proposed site layout plat is attached showing a generic rig plat with rig orientation and equipment location. See Exhibit D.

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 OWNERSHIP

G. P. Sims
Box 1046
Eunice, NM 88231
505-390-2642

Mineral Ownership
United States of America
Department of Interior
Bureau of Land Management

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.

13. OPERATOR'S REPRESENTATIVES

**Drilling and Completion Operations**
Rob Jones
District Manager
P.O. Box 18496
Oklahoma City, OK 73154
(405) 810-2694 (OFFICE)
(405) 879-9573 (FAX)
rjones@chkenergy.com

**Drilling Engineer**
David DeLaO
P.O. Box 18496
Oklahoma City, OK 73154
(405) 767-4339 (OFFICE)
(405) 879-9573 (FAX)
(405) 990-8182 (MOBILE)

**Field Representative**
Mike Whitefield
550 West Texas Ave.
Midland, TX 79701
432-683-7443 (OFFICE)
432-685-4399 (FAX)
mwhitefield@chkenergy.com

**Asset Manager**
Jeff Finell
P.O. Box 18496
Oklahoma City, OK 73154-0496
405-767-4347 (OFFICE)
405-879-7930 (FAX)
jfinnell@chkenergy.com

**Regulatory Compliance**
Linda Good
Regulatory Compliance Analyst
P.O. Box 11050
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: _____

Henry Hood
Sr. Vice President
Land and Legal

Date: 3/14/05

DISTRICT I
625 N. French Dr., Hobbs, NM 88240

DISTRICT II
11 South First, Artesia, NM 88210

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

DISTRICT IV
040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

# OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, New Mexico 87504-2088

Form C-102
Revised March 17, 1999

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30-025-37351 | 24270 | Featherstone; Bone Spring East |

| Property Code | Property Name | Well Number |
|---|---|---|
| 300106 | NEU HAUS "14" FEDERAL | 5 |

| OGRID No. | Operator Name | Elevation |
|---|---|---|
| 147179 | CHESAPEAKE OPERATING INC. | 3658.3' |

### Surface Location

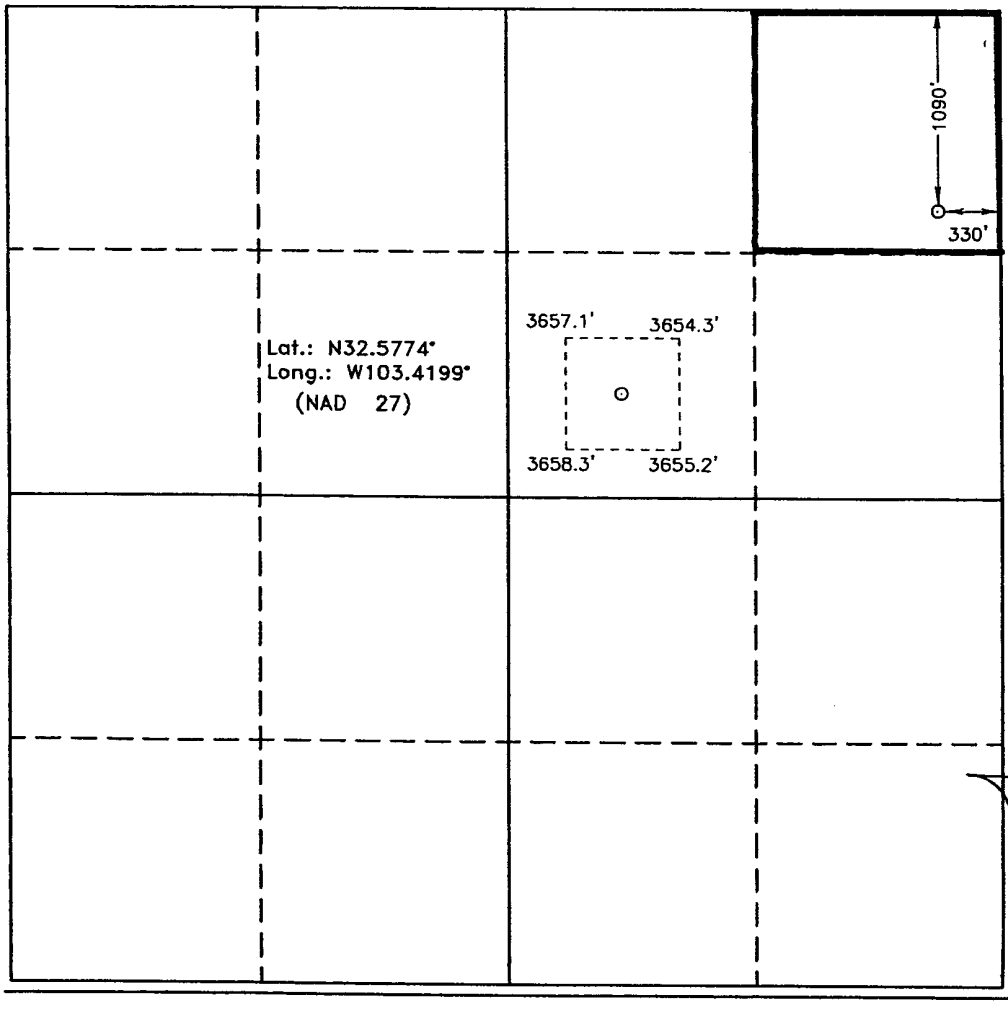
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| A | 14 | 20 S | 35 E | | 1090 | NORTH | 330 | EAST | LEA |

### 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 | Joint or Infill | Consolidation Code | Order No. |
|---|---|---|---|
| 40 | | | NSL-5228 |

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: Lynda F. Townsend

Printed Name: Lynda F. Townsend

Title: Senior Landman

Date: 1-12-05

### 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.*

December 27, 2004
Date Surveyed

Signature & Seal of Professional Surveyor: GARY L. JONES, NEW MEXICO, REGISTERED PROFESSIONAL LAND SURVEYOR

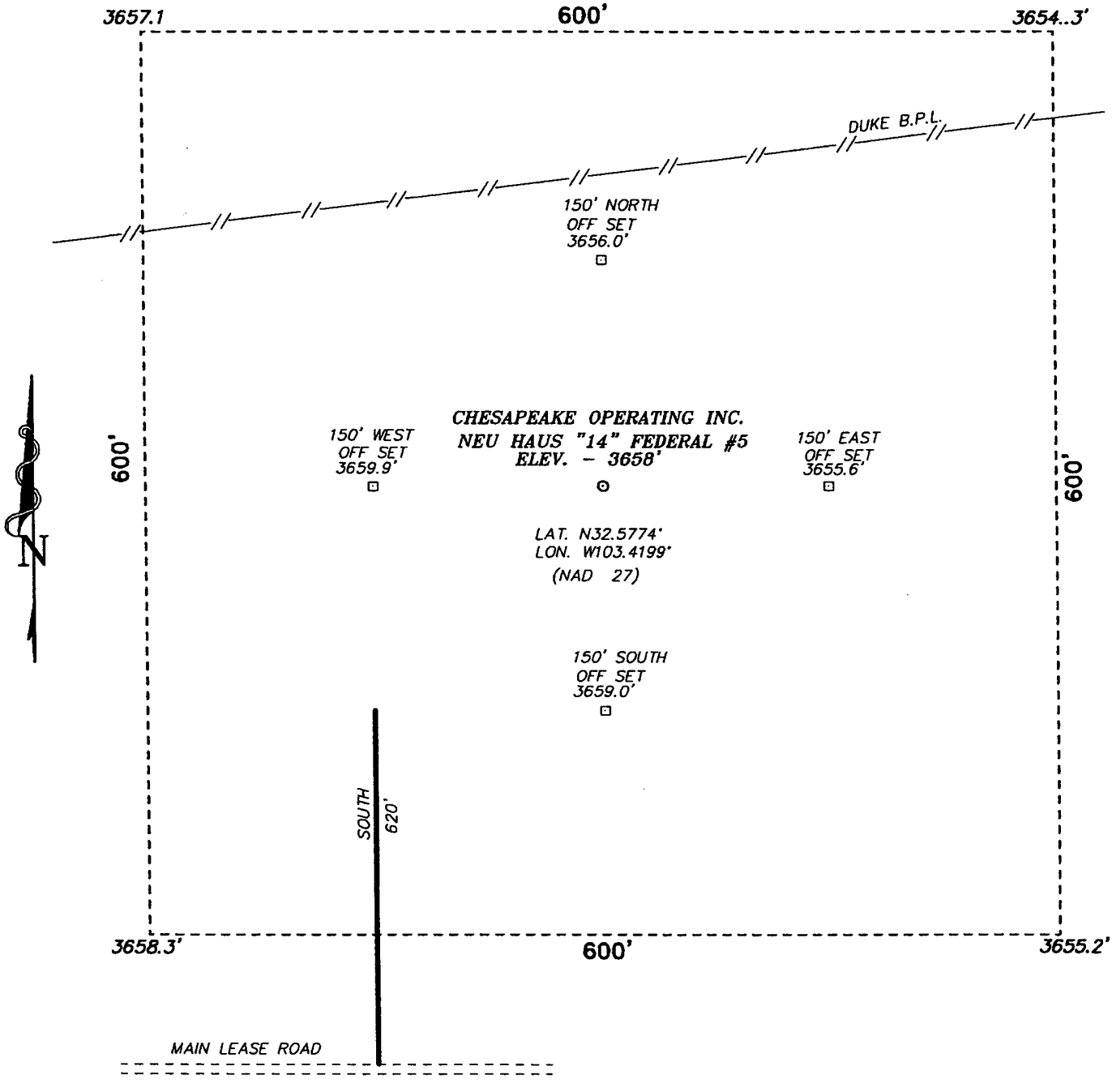
W.O. No. 4947

Certificate No. Gary L. Jones 7977

JLP

Exhibit A-1

# SECTION 14, TOWNSHIP 20 SOUTH, RANGE 35 EAST, N.M.P.M.,
**LEA COUNTY,** **NEW MEXICO.**




Directions to Location:

FROM THE JUNCTION OF US HWY. 62 & 180 AND CO. RD. H-37 (WILLOW) AT MM 85, GO SOUTHEAST ON H-37, 1.3 MILES TO LEASE ROAD RIGHJT FOLLOW MAIN LEASE RD. 0.3 MI. W. THEN 0.3 MI. SOUTH, THEN 0.1 MI. EAST, THEN 1.0 MI. SOUTH, THEN 0.5 MI. SOUTH, AND SOUTHEAST 0.2 MI. THEN SOUTH 2.0 MILES, THEN 2.9 MI. SOUTH TO A LEASE ROAD RT. GO WEST ON LEASE ROAD 0.4 MILES TO PROPOSED LEASE ROAD.

100 0 100 200 FEET

SCALE: 1" = 100'

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

| | |
|---|---|
| W.O. Number: 4947 | Drawn By: JAMES PRESLEY |
| Date: 12/28/04 | Disk: JLP #1 - 4947A |

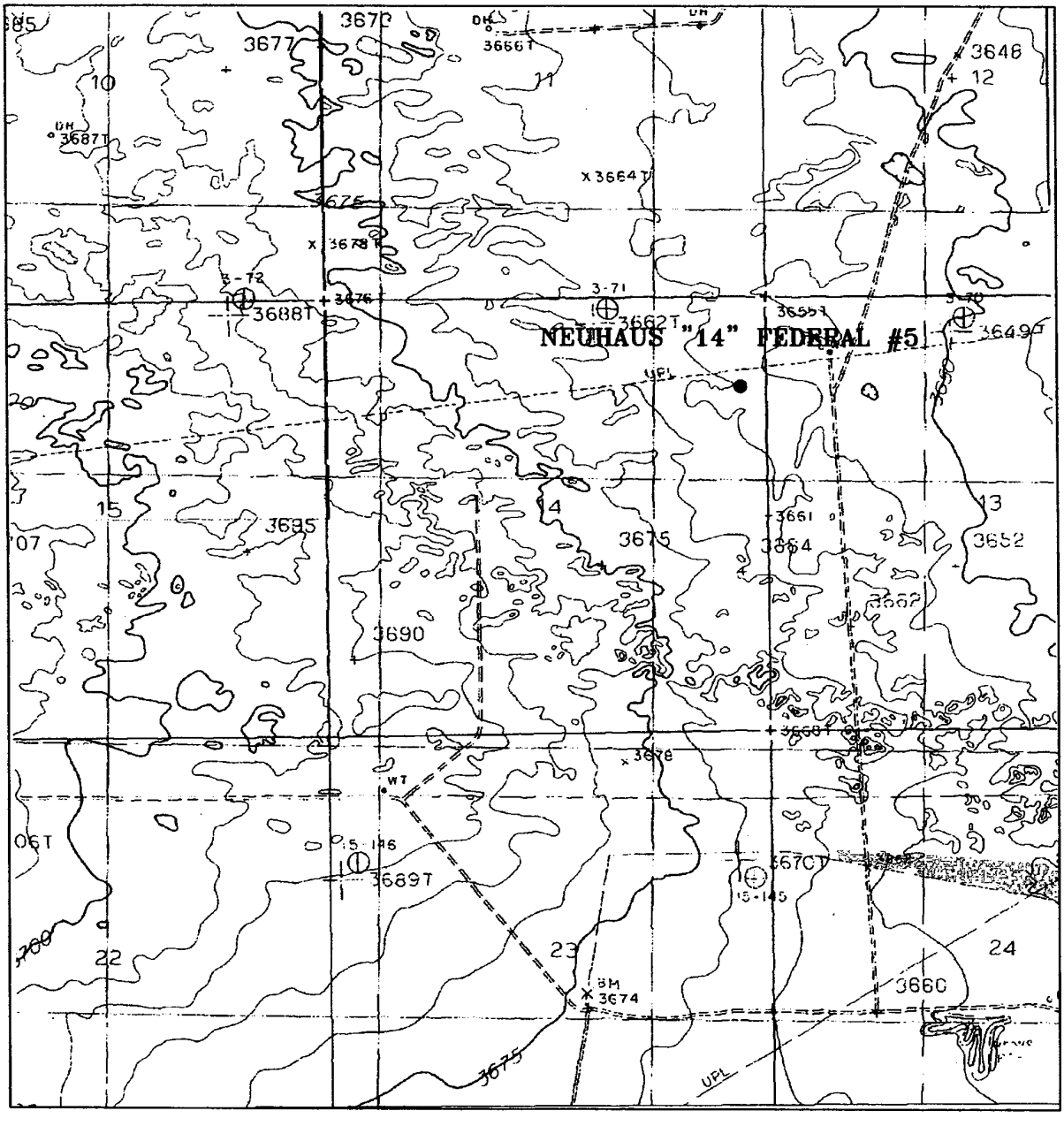
## CHESAPEAKE OPERATING INC.

REF: NEU HAUS "14" FEDERAL #5 / Well Pad Topo

NEU HAUS "14" FEDERAL #5 LOCATED 1090' FROM THE NORTH LINE AND 330' FROM THE EAST LINE OF SECTION 14, TOWNSHIP 20 SOUTH, RANGE 35 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO.

Survey Date: 12/27/04 | Sheet 1 of 1 Sheets

Exhibit A-2



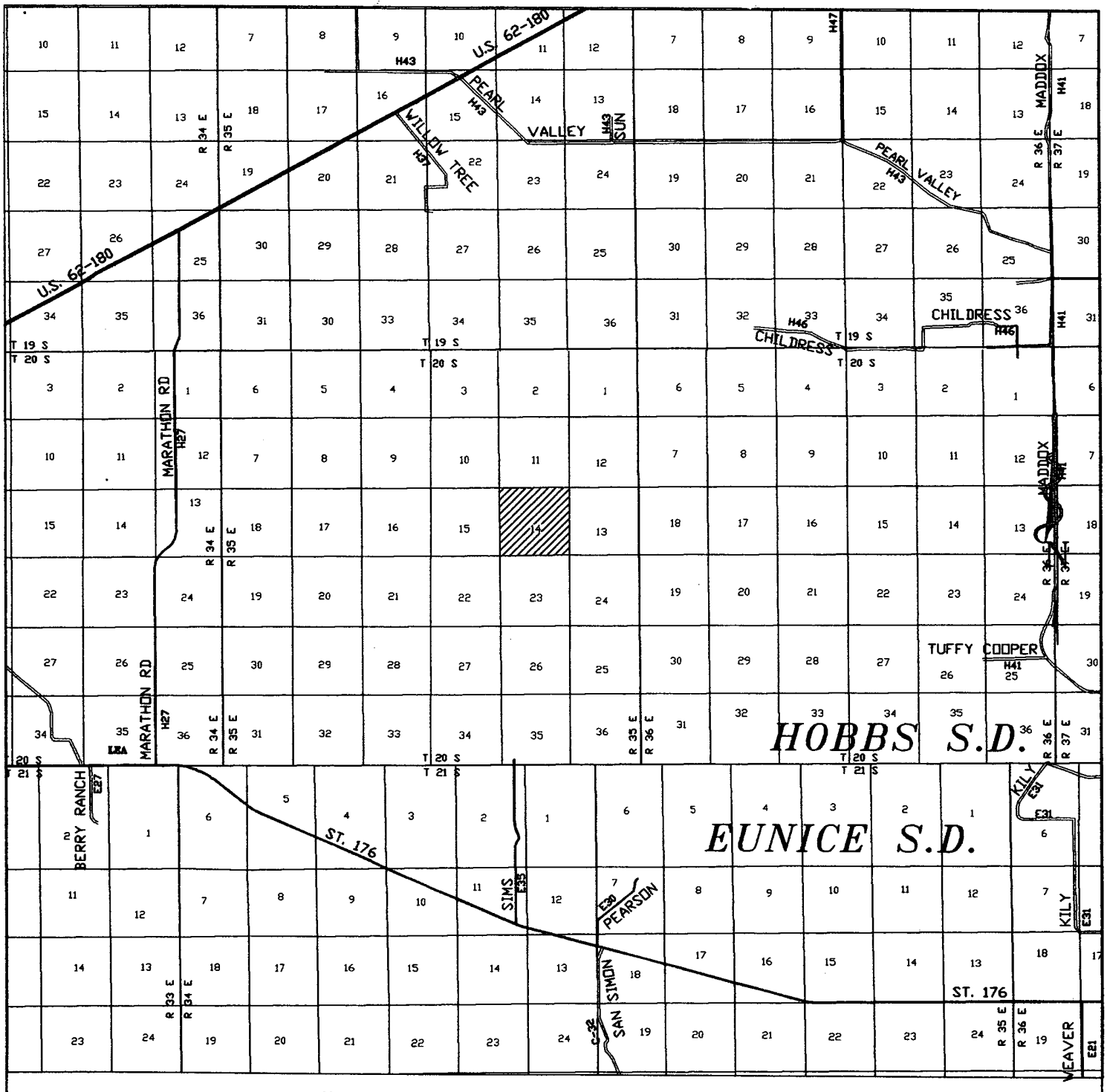

NEU HAUS "14" FEDERAL #5
Located at 1090' FNL and 330' FEL
Section 14, Township 20 South, Range 35 East,
N.M.P.M., Lea County, New Mexico.

basin surveys
focused on excellence in the oilfield
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: 4947AA – JLP #1
Survey Date: 12/27/04
Scale: 1" = 2000'
Date: 12/28/04

CHESAPEAKE OPERATING INC.

Exhibit 2-3




# NEU HAUS "14" FEDERAL #5
Located at 1090' FNL and 330' FEL
Section 14, Township 20 South, Range 35 East,
N.M.P.M., Lea County, New Mexico.


Basin Surveys
focused on excellence in the oilfield

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: 4947AA – JLP #1
Survey Date: 12/27/04
Scale: 1" = 2000'
Date: 12/28/04

**CHESAPEAKE OPERATING INC.**

Exhibit 1

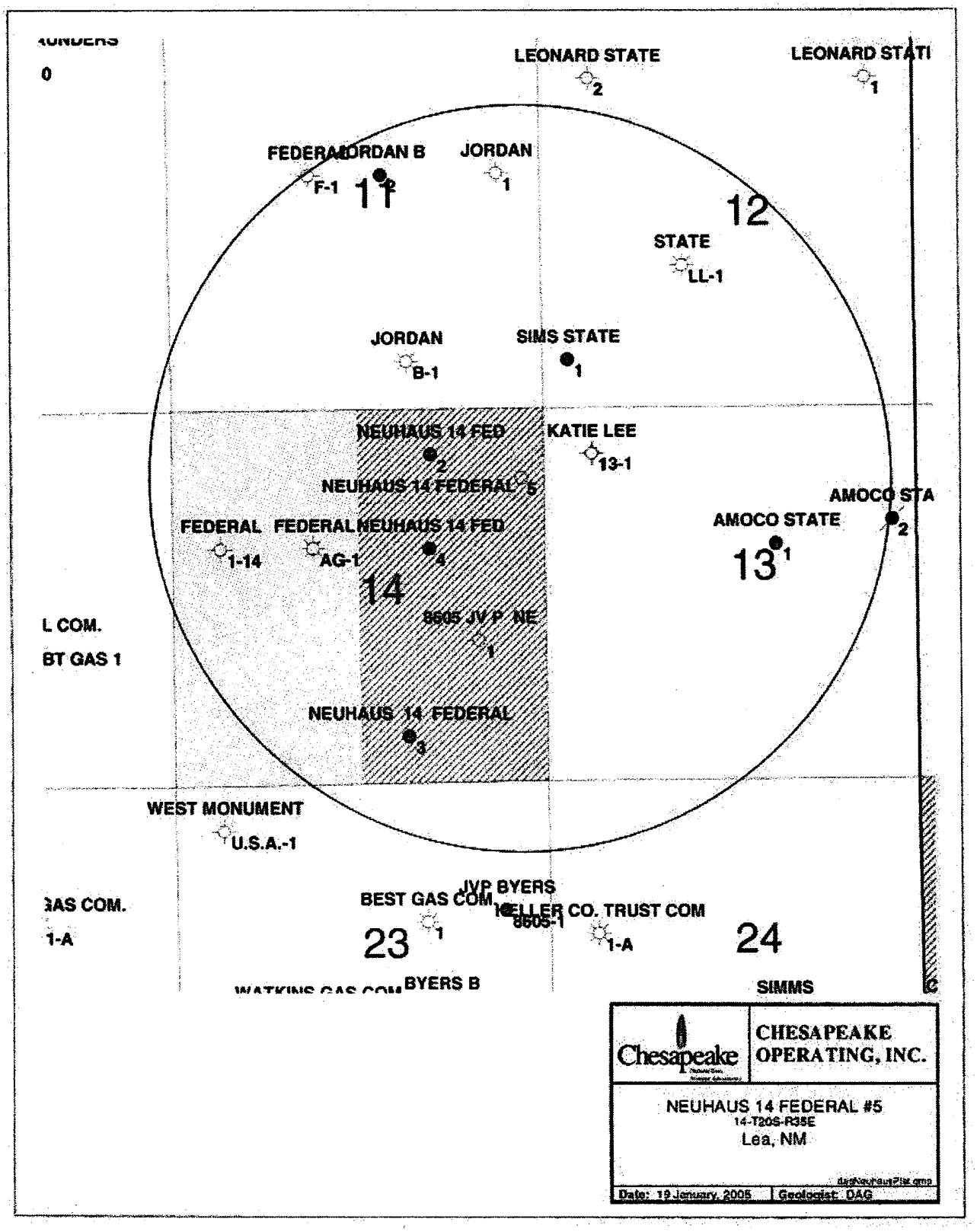
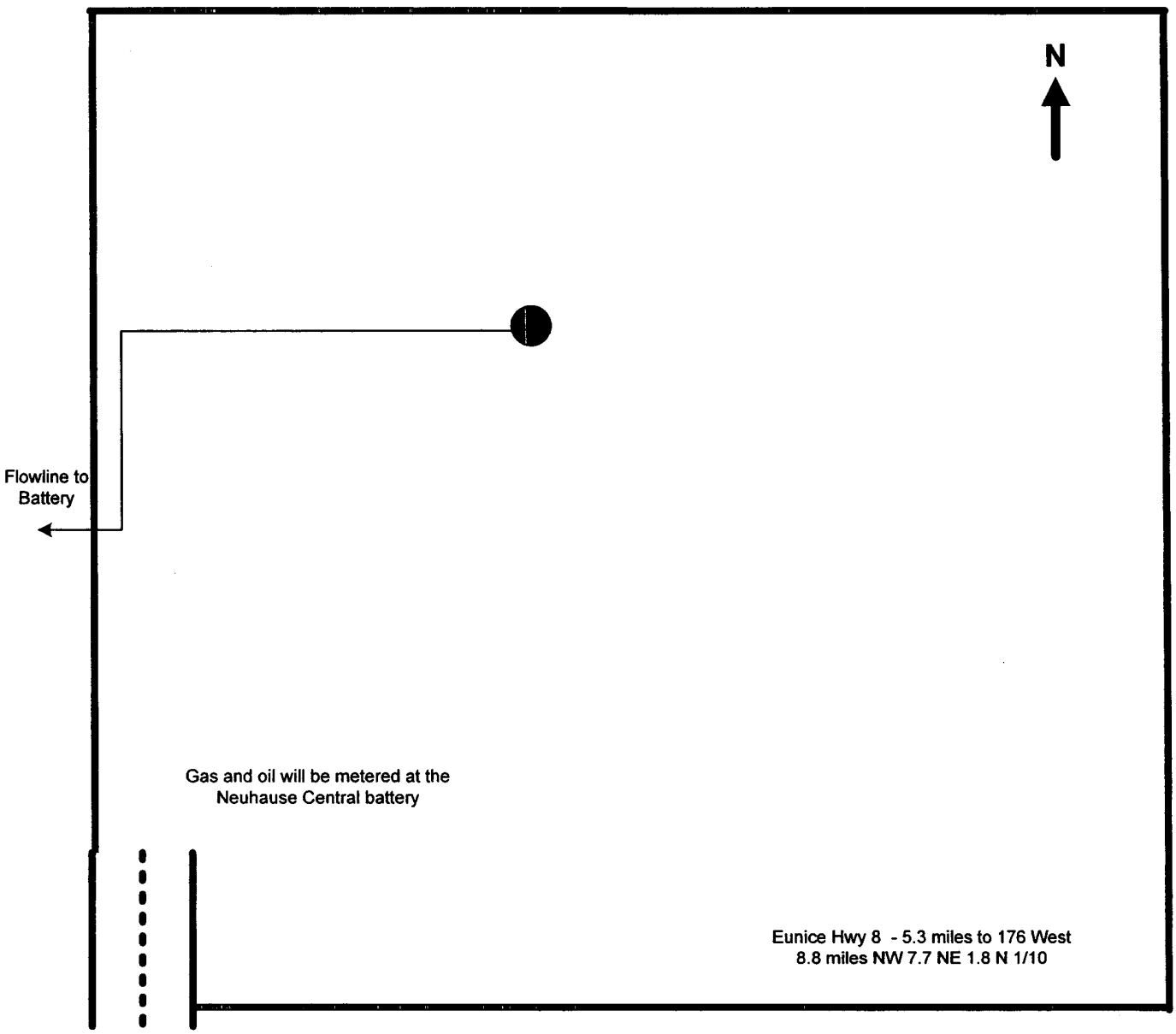

LEONARD STATE
2
LEONARD STATI
1
FEDERAL
F-1
JORDAN B
2
11
JORDAN
1
12
STATE
LL-1
JORDAN
B-1
SIMS STATE
1
NEUHAUS 14 FED
2
KATIE LEE
13-1
NEUHAUS 14 FEDERAL 5
AMOCO STA
2
AMOCO STATE
13
1
FEDERAL
1-14
FEDERAL
AG-1
NEUHAUS 14 FED
4
14
8605 JV P NE
1
NEUHAUS 14 FEDERAL
3
WEST MONUMENT
U.S.A.-1
BEST GAS COM.
1
JVP BYERS
8605-1
1-A
23
24
BYERS B
SIMMS
Chesapeake
CHESAPEAKE OPERATING, INC.
NEUHAUS 14 FEDERAL #5
14-T20S-R35E
Lea, NM
Date: 19 January, 2005
Geologist: DAG

Exhibit B

# CHESAPEAKE OPERATING, INC.

## NEUHAUS 14 FEDERAL 5
## 10-24S-31E
## EDDY COUNTY, NM




**Prepared by: DEBBIE HERNANDEZ**
**Date: 01-27-2005**

**Approved by:**
**Date:**

**Exhibit C**

Prevailing Winds from the North in Winter and from the South in Summer.

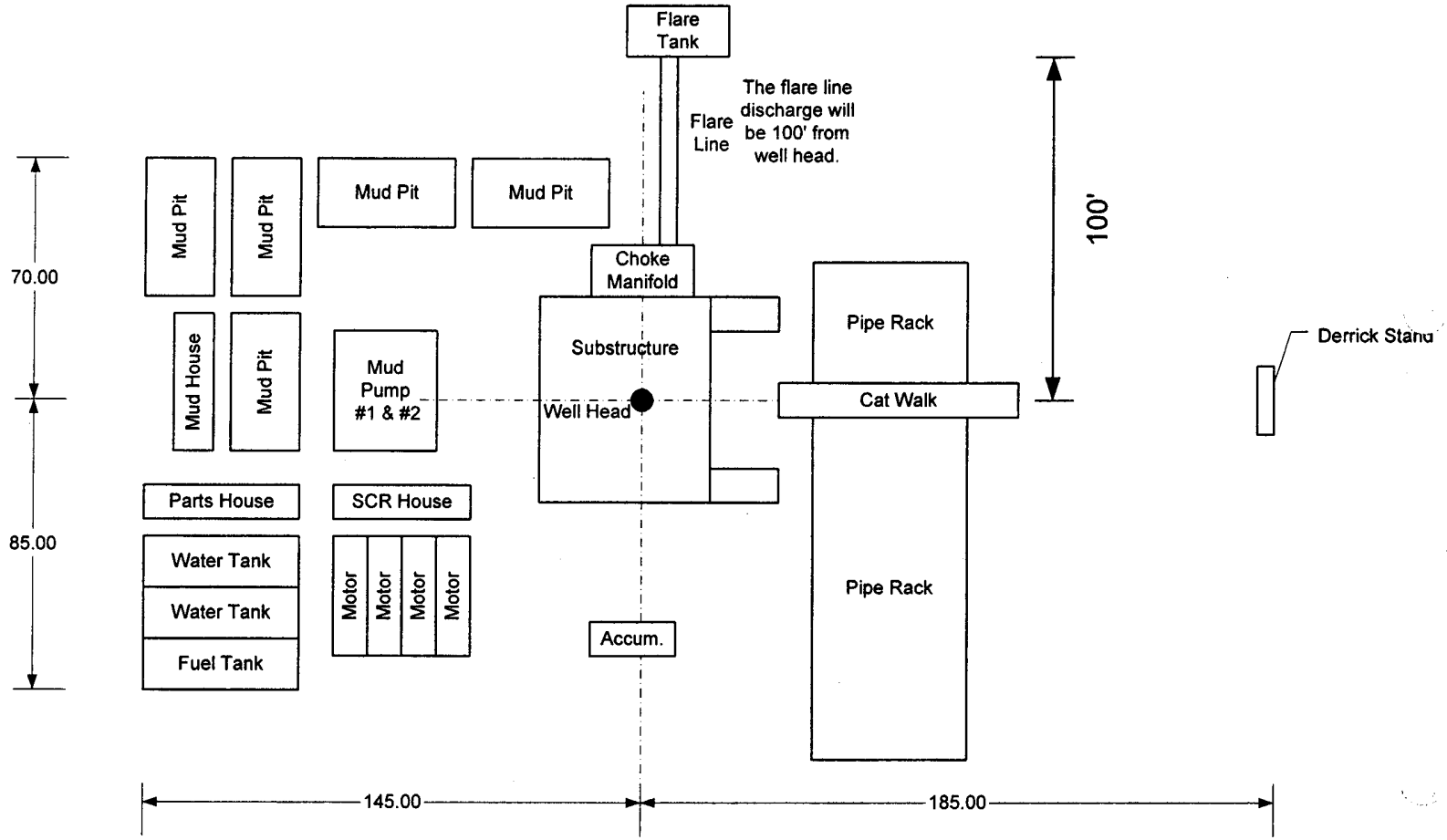



Exhibit 7

| Chesapeake Operating, Inc | | | |
|---|---|---|---|
| General Rig Layout | | | |
| SIZE | FSCM NO | DWG NO | REV |
| SCALE Not to Scale | | SHEET 1 OF 1 | |

| 1. (For BLM Use)<br>BLM Report No. | 2. (For BLM Use)<br>Reviewer's Initials/Date_____<br>Accepted ( ) Rejected ( ) | 3. NMCRIS Number: 91443 |
|---|---|---|

4. Type of Report: Negative ( X ) Positive ( )

5. Title of Report: A Class III Cultural Resource Survey for the Neu Haus "14" Federal No. 5 Well Pad and Access Road

Author(s): Justin Rein

6. Fieldwork Date(s): January 18, 2005

7. Report Date: January 19, 2005

8. Consultant Name/Address: Boone Archaeological Services, LLC

Direct Charge: Danny Boone

Field Personnel Names: Justin Rein

Address: 2030 North Canal
Carlsbad, New Mexico 88220

Phone (505) 885-1352

9. Cultural Resource Permit No.: 190-2920-03-E

10. Consultant Report No.: BAS-01-05-09

11. Customer Name: Chesapeake Operating Inc.

Responsible Individual: Linda Good

Address: PO Box 18496
Oklahoma City, OK 73154-0496

Phone: (405) 767-4275

12. Customer Project No.:

| 13. Land Status | BLM | State | Private | Other | Total |
|---|---|---|---|---|---|
| a. Area Surveyed (acres) | 9.34 | | | | 9.34 |
| b. Area of Effect (acres) | 4.38 | | | | 4.38 |

14. Block Length 600 ft Width 600 ft
Linear Length 620 ft Width 100 ft

15. Location (Map[s] Attached):

a. State: New Mexico

b. County: Lea County

c. BLM Office: Carlsbad Field Office

d. Nearest City or Town: Hobbs, New Mexico

e. Legal Description: T 20 S, R 35 E, Section 14: E½ NE¼

f. Well Pad Footages: The Neu Haus "14" Fed No. 5 is centered 1,090 feet from the north line and 330 feet from the east line of Section 14.

g. USGS 7.5' Map Name(s), Date(s), and Code(s): Monument SW, New Mexico Provisional Edition 1985 (32103-E4)

16. Project Data:

a. Records Search: Date(s) of BLM File Review: January 18, 2005 Name of Reviewer(s): Justin Rein
Date(s) of ARMS Data Review: January 19, 2005 Name of Reviewer(s): Justin Rein
Findings (see Field Office requirements to determine area to be reviewed during records search): No previously recorded sites were found within one mile of the survey area.

Exhibit E

**b. Description of Undertaking:** Chesapeake Operating Inc. plans to construct the Neu Haus "14" Federal No. 5 well pad and associated access road. Linda Good, with Chesapeake Operating, requested the survey and provided plats. The project can be found in Township 20 South, Range 35 East, Section 14. The proposed well is centered 1,090 feet from the north line and 330 feet from the east line of Section 14. The well will impact an area 400 ft by 400 ft, yet a 600 ft by 600 ft block was surveyed around the well center to ensure protection of cultural resources. The proposed access road begins at an existing caliche-capped lease road and travels 620 ft north to the southwest corner of the proposed well location. A 100 ft wide corridor was surveyed along the access road centerline. Approximately 150 ft of the proposed access road is overlapped by the block survey and is not included in the total survey acreage. In all, 9.34 acres was surveyed on private property with federal mineral rights under the jurisdiction of the Bureau of Land Management – Carlsbad Field Office (BLM-CFO).

**c. Environmental Setting (NRCS soil designation; vegetative community; elevation; etc.):** The project area is located on a flat plain roughly 19 miles southwest of Hobbs, New Mexico. The elevation averages 3,660 feet above mean sea level. The terrain slopes gradually downhill towards the east at a grade of less than one percent. Local soils are of the Pyote-Maljamar-Kermit association as defined by the Soil Conservation Service of the U.S. Department of Agriculture. The light brown sandy soils have been wind-worked into occasional parabolic dunes to 1.5 m high. Local vegetation is typical of Chihuahuan Desert scrub and consists of various grasses, shin oak, yucca, low forbes, and various cacti. Due to the vegetative ground cover, surface visibility averaged 80 percent at the time of survey. A buried pipeline and associated two-track road run east/ west along the northern portion the project area and several other wells are visible in the surrounding area. The project area is otherwise undisturbed aside from grazing cattle.

Climatic data was obtained for the nearby town of Hobbs, New Mexico from the Western Regional Climate Center (WRCC) online database. From 1919 to 2004, Hobbs received an average annual precipitation of 15.96 inches. During the same time, Hobbs had an average high temperature of 76.3 degrees Fahrenheit and an average low temperature of 47.4 degrees Fahrenheit. January was the coldest month averaging 56.5 degrees Fahrenheit, while July was the warmest on average at 93.8 degrees Fahrenheit.

**d. Field Methods (transect intervals; crew size; time in field; etc.):** A crew of one spent 3 hours surveying the project area. A 15 m transect interval was used.

**e. Artifacts Collected?:** None

**17. Cultural Resource Findings:** No cultural materials were encountered.

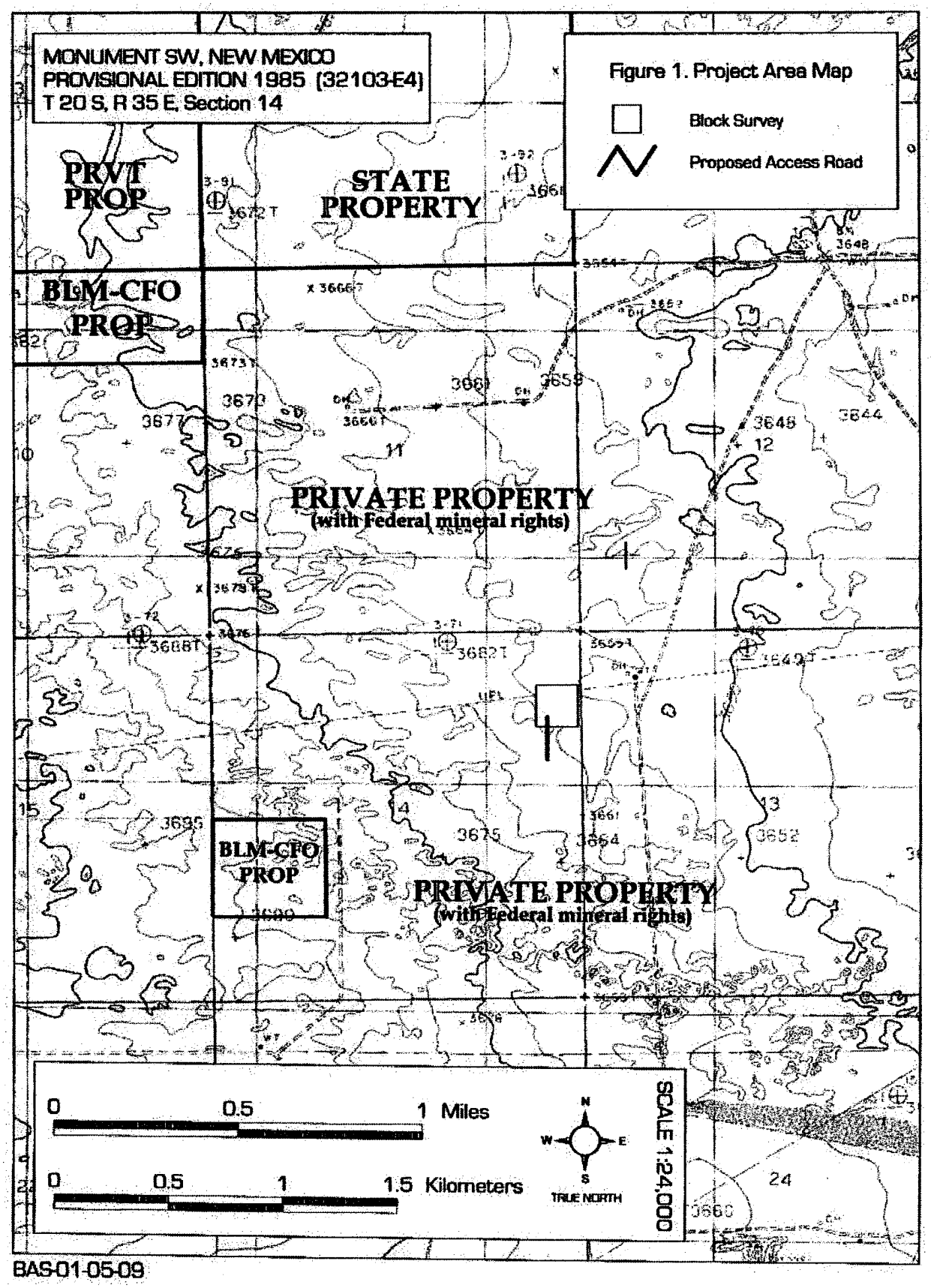
**a. Location/Identification of Each Resource:** N/A

**b. Evaluation of Significance of Each Resource:** N/A

**18. Management Summary (Recommendations):** No cultural materials were encountered during the survey. As such, archaeological clearance is recommended for the proposed Neu Haus "14" Fed No. 5 well and associated access road. If any cultural materials are encountered during construction, work at that location should cease and archaeologists with the BLM-CFO should be notified immediately.

**19.**
**I certify the information provided above is correct and accurate and meets all applicable BLM standards.**

**Responsible Archaeologist** _____ 1·19·05
**Signature** **Date**


MONUMENT SW, NEW MEXICO
PROVISIONAL EDITION 1985 (32103-E4)
T 20 S, R 35 E, Section 14
Figure 1. Project Area Map
Block Survey
Proposed Access Road
PRVT PROP
STATE PROPERTY
BLM-CFO PROP
PRIVATE PROPERTY
(with Federal mineral rights)
BLM-CFO PROP
PRIVATE PROPERTY
(with Federal mineral rights)
0 0.5 1 Miles
0 0.5 1 1.5 Kilometers
N
W E
S
TRUE NORTH
SCALE 1:24,000

BAS-01-05-09

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 |
|---|---|---|
| **Rustler** | **2035** | **1635** |
| **Yates** | **3805** | **-135** |
| ***Seven Rivers Sand** | **4230** | **-560** |
| **Queen** | **4725** | **-1055** |
| **Grayburg** | **5070** | **-1400** |
| **Delaware** | **5605** | **-1935** |
| **Bone Spring** | **7990** | **-4320** |
| **1st Bone Spring Sand** | **9265** | **--5595** |
| **2nd Bone Spring Carbonate** | **9540** | **-5870** |
| **2nd Bone Spring Sand** | **9940** | **-6270** |
| ***Bone Spring "Neuhaus Zone"** | **10,080** | **-6410** |
| TD | **10400** | |
| *Potentially Productive Zone | | |

## 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 |
|---|---|---|
| Oil/Gas | Seven Rivers Sand | 4230' |
| Oil/Gas | Bone Spring | 10,080' |

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 - See Exhibit F-1 and F-2.

A. Equipment
1. The equipment to be tested includes all of the following that is installed on the well:
   (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:
3.

| System Operating Pressures | Precharge Pressure |
|---|---|
| 1500 PSI | 750 PSI |
| 2000 PSI | 1,000 PSI |
| 3000 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 | 0-400' | 17-1/2" | 13-3/8" | 48# | H40 | STC | New |
| Intermediate | 400'-3,750' | 11" | 8-5/8" | 32# | J55 | STC | New |
| Production | 3,750' – 10,400' | 7-7/8" | 5-1/2" | 17# | L80 | LTC | 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 | 35:65 Poz:C (Lead) | 135 sx | 2.07 | 20% | 100% |
| | Class C (Tail) | 210 sx | 1.34 | | 100% |
| Intermediate | 50:50 Poz:C (Lead) | 590 sx | 2.48 | 20% | 75% |
| | Class C (Tail) | 150 sx | 1.32 | | 50% |
| Production | 50:50 Poz:H (Lead) | 405 sx | 2.5 | 10% | 25% |
| | 50:50 Poz:H (Tail) | 385 sx | 1.35 | | 25% |

5. MUD PROGRAM

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

| Interval | Mud Type | Mud Weight | Viscosity | Fluid Loss |
|---|---|---|---|---|
| Surface | Native/Spud Mud | 8.6 – 9 | 29-38 | NC |
| Intermediate | Brine | 9.7 - 10 | 29-32 | NC |
| Production | FW-Cut Brine | 8.4 – 9 | 29-34 | NC-10 |

Will be using Lea C. Alternative. Fresh $H_2O$ will be used to 2081 ft. (JSS)

A closed system will be utilized consisting of above ground steel tanks. All wastes accumulated during drilling operations will be contained in a portable trash cage and removed from location and deposited in an approved sanitary landfill. Sanitary wastes will be contained in a chemical porta-toliet and then hauled to an approved sanitary landfill.

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, PE & Dual Laterolog from TD to surface casing; Neutron-GR surface casing to surface.
c. Cores samples are not planned.

7. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

a. The estimated bottom hole pressure is 4000 psi. No abnormal pressures or temperatures are anticipated.
b. Hydrogen sulfide gas is not anticipated.

# BLOWOUT PREVENTOR SCHEMATIC

## CHESAPEAKE OPERATING INC

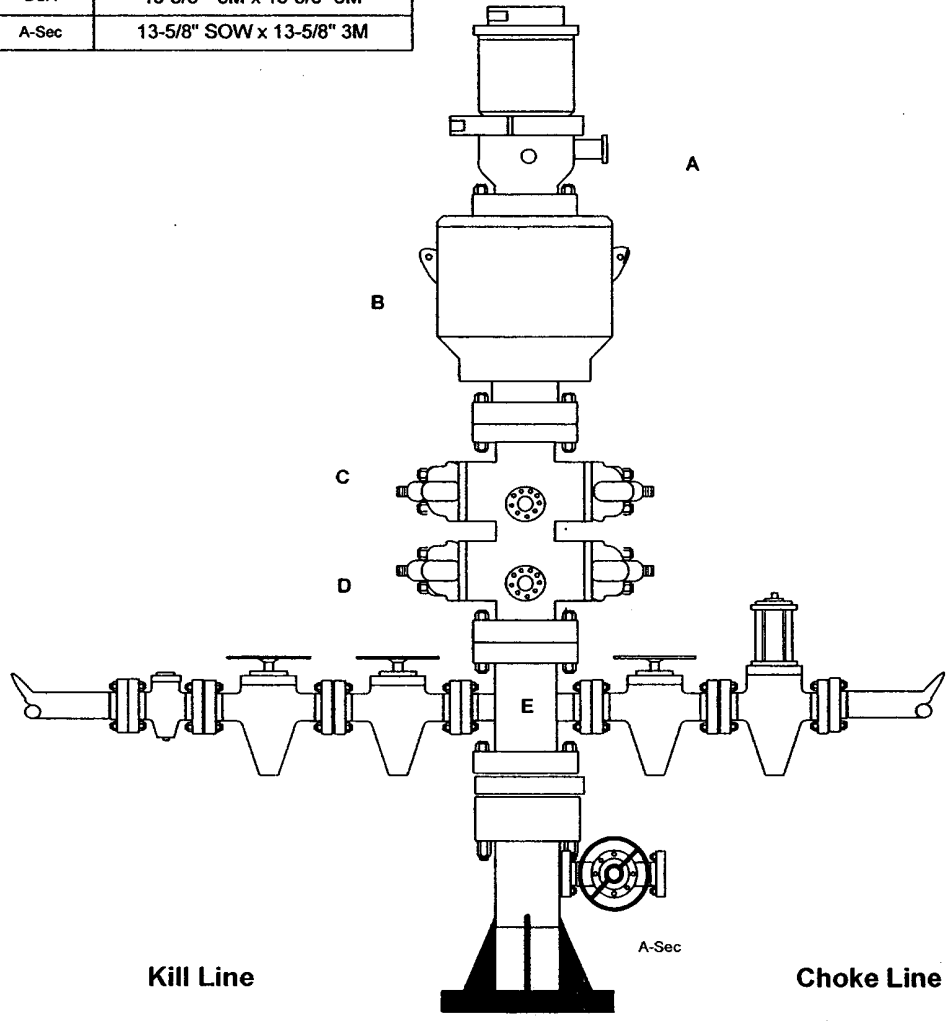
**WELL** : Neuhaus 14 Federal #5

**RIG** :

**COUNTY** : Lea **STATE:** New Mexico

**OPERATION:** Drill out below 13-3/8" Casing

| | SIZE | PRESSURE | DESCRIPTION |
|---|---|---|---|
| A | 13-5/8" | 500# | Rot Head |
| B | 13-5/8" | 5,000# | Annular |
| C | 13-5/8" | 5,000# | Pipe Rams |
| D | 13-5/8" | 5,000# | Blind Rams |
| E | 13-5/8" | 5,000# | Mud Cross |
| | | | |
| | | | |
| | | | |
| DSA | 13-5/8"" 5M x 13-5/8" 3M | | |
| A-Sec | 13-5/8" SOW x 13-5/8" 3M | | |




### Kill Line

| SIZE | PRESSURE | DESCRIPTION |
|---|---|---|
| 2" | 5,000# | Check Valve |
| 2" | 5,000# | Gate Valve |
| 2" | 5,000# | Gate Valve |
| | | |
| | | |

### Choke Line

| SIZE | PRESSURE | DESCRIPTION |
|---|---|---|
| 4" | 5,000# | Gate Valve |
| 4" | 5,000# | HCR Valve |
| | | |
| | | |
| | | |

Exhibit F-1

# BLOWOUT PREVENTOR SCHEMATIC

## CHESAPEAKE OPERATING INC

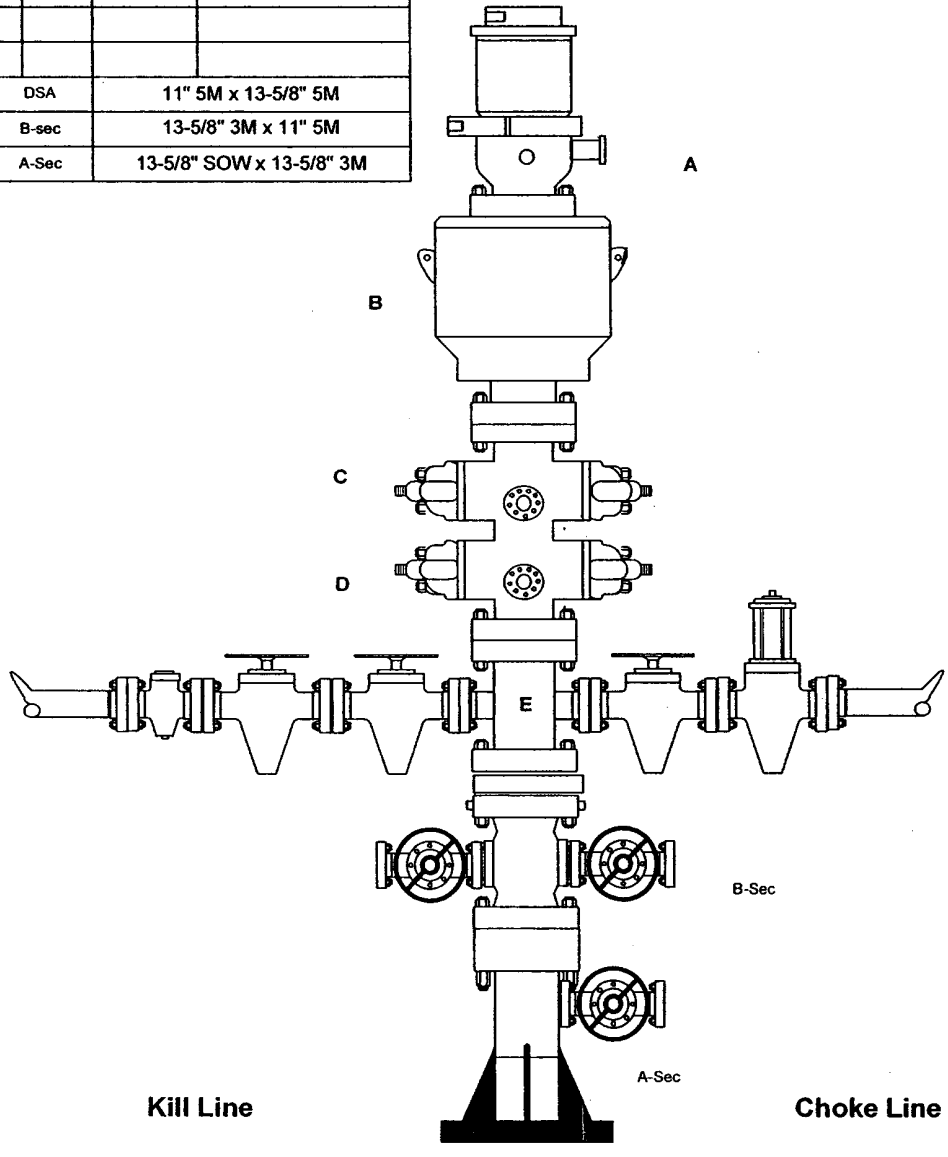
**WELL** : Neuhaus 14 Federal #5

**RIG** :

**COUNTY** : Lea **STATE:** New Mexico

**OPERATION:** Drill out below 8-5/8" Casing

| | SIZE | PRESSURE | DESCRIPTION |
|---|---|---|---|
| A | 13-5/8" | 500# | Rot Head |
| B | 13-5/8" | 5,000# | Annular |
| C | 13-5/8" | 5,000# | Pipe Rams |
| D | 13-5/8" | 5,000# | Blind Rams |
| E | 13-5/8" | 5,000# | Mud Cross |
| | | | |
| | | | |
| DSA | | 11" 5M x 13-5/8" 5M | |
| B-sec | | 13-5/8" 3M x 11" 5M | |
| A-Sec | | 13-5/8" SOW x 13-5/8" 3M | |




### Kill Line

| SIZE | PRESSURE | DESCRIPTION |
|---|---|---|
| 2" | 5,000# | Check Valve |
| 2" | 5,000# | Gate Valve |
| 2" | 5,000# | Gate Valve |
| | | |
| | | |

### Choke Line

| SIZE | PRESSURE | DESCRIPTION |
|---|---|---|
| 4" | 5,000# | Gate Valve |
| 4" | 5,000# | HCR Valve |
| | | |
| | | |
| | | |

Exhibit F-2

Chesapeake
*Natural Gas.*
*Natural Advantages.*



**Regulatory Department**

March 23, 2005

**VIA EXPRESS MAIL**

Bureau of Land Management
Roswell Field Office
Linda Askwig
2909 West Second Street
Roswell, NM 88201-2019

Re: Private Surface Owner Agreement
Neuhaus 14 Federal 5
14-20S-35E
Lea County, New Mexico

Dear Linda,

This letter is to inform you per Cecil Gutierrez that Chesapeake Operating, Inc. has obtained a verbal agreement with the surface owner for the Neuhaus 14 Federal 5.

Please let me know if you need anything else.

Chesapeake Operating, Inc.

Linda Good

Linda Good
Permitting Agent

g:\regops\federal_regulatory_permitting\correspondence_blm\surface_owner_agreement_letter_03/23/2005

**Chesapeake Energy Corporation**
6100 N. Western Ave. • Oklahoma City, OK 73118 • P.O. Box 18496 • Oklahoma City, OK 73154-0496
405.848.8000 • fax 405.879.9583

Submit 3 Copies To Appropriate District Office
District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Ave., 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

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
May 27, 2004

WELL API NO. 30-025-37351

5. Indicate Type of Lease STATE ☐ FEE ☐

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Neu Haus "14" Federal

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

8. Well Number 005

2. Name of Operator
Chesapeake Operating, Inc.

9. OGRID Number 147179

3. Address of Operator P. O. Box 11050
Midland, TX 79702-8050

10. Pool name or Wildcat
Featherstone;Bone Spring, East

4. Well Location
Unit Letter A : 1090 feet from the North line and 330 feet from the East line
Section 14 Township 20S Range 35E NMPM County Lea

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3658.3' GR

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type Drilling Depth to Groundwater 100' Distance from nearest fresh water well 1000+ Distance from nearest surface water 1000+

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume 12,139 bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

| NOTICE OF INTENTION TO: | | SUBSEQUENT REPORT OF: | |
|---|---|---|---|
| PERFORM REMEDIAL WORK ☐ | PLUG AND ABANDON ☐ | REMEDIAL WORK ☐ | ALTERING CASING ☐ |
| TEMPORARILY ABANDON ☐ | CHANGE PLANS ☐ | COMMENCE DRILLING OPNS. ☐ | P AND A ☐ |
| PULL OR ALTER CASING ☐ | MULTIPLE COMPL ☐ | CASING/CEMENT JOB ☐ | |
| OTHER:Drilling Pit ☒ | | OTHER: ☐ | |

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Chesapeake, hereby certifys that we will close the drilling pit for this well according to NMOCD Guidelines For Pit Closure Section B3b.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that any 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 ☐.**

SIGNATURE Brenda Coffman TITLE Regulatory Analyst DATE 04/29/2005

Type or print name Brenda Coffman E-mail address: bcoffman@chkenergy.com Telephone No. (432)687-2992

**For State Use Only**

APPROVED BY: TITLE PETROLEUM ENGINEER DATE JUL 07 2005

Conditions of Approval (if any):