HTS-08-1074 lm

OCD-ARTESIA 304

Form 3160-3
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

R-111-POTASH
JUN 26 2009

FORM APPROVED
OMB No. 1004-0136
Expires July 31, 2010

EC

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: ☐ DRILL ☐ REENTER CONFIDENTIAL	5. Lease Serial No. NMLC068905
	6. If Indian, Allottee or Tribe Name
	7. If Unit or CA Agreement, Name and No.
1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone	8. Lease Name and Well No. PLU BIG SINKS 11 FEDERAL 1H (37739)
2. Name of Operator CHESAPEAKE OPERATING, INC. Contact: LINDA GOOD E-Mail: linda.good@chk.com	9. API Well No. 30-015-37147
3a. Address OKLAHOMA CITY, OK 73154-0496 / 3b. Phone No. (include area code) Ph: 405-935-4275 Fx: 405-849-4275	10. Field and Pool, or Exploratory ~~POKER LAKE~~ WILDCAT; Bone Spring
4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface SWSE ~~360~~ 255FSL ~~1700~~ 1500FEL B. Hunt per SN dated 1-15-09 At proposed prod. zone NWNE 350FNL 1700FEL	11. Sec., T., R., M., or Blk. and Survey or Area Sec 11 T24S R30E Mer NMP SME: BLM
14. Distance in miles and direction from nearest town or post office* APPROXIMATELY 21 MILES EAST OF MALAGA, NM.	12. County or Parish EDDY / 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 1960.00	17. Spacing Unit dedicated to this well 160.00
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. / 19. Proposed Depth PILOT HOLE 13060 MD 11450 8652 TVD	20. BLM/BIA Bond No on file NM2634
21. Elevations (Show whether DF, KB, RT, GL, etc. ~~3560~~ GL 3477 / 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 (Electronic Submission)	Name (Printed/Typed) LINDA GOOD Ph: 405-935-4275	Date 12/23/2008
Title SR. REGULATORY COMPLIANCE SPEC		
Approved by (Signature) William Mehege	Name (Printed/Typed) William Mehege	Date 6-23-09
Title STATE DIRECTOR	Office NM STATE OFFICE	

Application approval does not warrant or certify 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.

APPROVAL FOR TWO YEARS

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.

Additional Operator Remarks (see next page)

CARLSBAD CONTROLLED WATER BASIN

Electronic Submission #65850 verified by the BLM Well Information System
For CHESAPEAKE OPERATING, INC., sent to the Carlsbad
Committed to AFMSS for processing by TESSA CISNEROS on 12/30/2008 (09TLC0082AE)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

DESIGNATION OF AGENT

The undersigned is, on the records of the Bureau of Land Management, unit operator under the Poker Lake unit agreement, Eddy County, New Mexico, No. 14-08-001-303 approved and effective on March 18, 1952 and hereby designates
NAME: Chesapeake Exploration
ADDRESS: 6100 N Western Ave
Oklahoma City, OK 73118

as it's agent, with full authority to act on it's behalf in complying with the terms of the unit agreement and regulations applicable thereto and on whom the authorized officer or his representative may serve written or oral instructions in securing compliance with the oil and gas operating regulations with respect to drilling, testing, and completing the Big Sinks 11 Fed. #1H Well in the W½ of the W ½, Sec. 11, T. 24S R. 30E, Eddy County, New Mexico.

It is understood that this designation of agent does not relieve the unit operator of responsibility for compliance with the terms of the unit agreement and the oil and gas operating regulations. It is also understood that this designation of agent does not constitute an assignment of any interest under the unit agreement of any lease committed thereto.

In case of default on the part of the designated agent, the unit operator will make full and prompt compliance with all regulations, lease terms, or orders of the Secretary of the Interior or his duly authorized representative.

The unit operator agrees promptly to notify the authorized officer of any change in the designated agent.

This designation of agent is deemed to be temporary and in no manner a permanent arrangement, and a designated agent may not designate another party as agent.

This designation is given only to enable the agent herein designated to drill the above specified unit well. Unless sooner terminated, this designation shall terminate when there is filed in the appropriate office of the Bureau of Land Management a completed file of all required Federal reports pertaining to the subject well. It is also understood that this designation of agent is limited to Field operations and does not include administrative actions requiring specific authorization of the unit operator.

BEPCO, L.P., a Delaware limited partnership

By: BEPCO Genpar, L.L.C., a Delaware limited liability company, general partner

9-15-08
Date

(Unit Operator)
W. Frank McCreight, Vice President

OCD-ARTESIA

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EC

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

5. Lease Serial No.
NMLC068905

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.
PLU BIG SINKS 11 FEDERAL 11H

2. Name of Operator
CHESAPEAKE OPERATING, INC.
Contact: LINDA GOOD
E-Mail: linda.good@chk.com

9. API Well No.

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

3b. Phone No. (include area code)
Ph: 405-935-4275

10. Field and Pool, or Exploratory
WILDCAT-BONE SPRING

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 11 T24S R30E SESE 255FSL 1300FEL

11. County or Parish, and State
EDDY COUNTY, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Site Facility Diagram/Security Plan
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. *Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof.* If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

PLEASE FIND THE ATTACHED REVISED SURVEY PLATS. PER THE BLM'S REQUEST PROPOSED LOCATION CHANGED FROM 350 FSL & 1700 FEL, SWSE TO 255 FSL & 1300 FEL, SESE.

(CHK PN 623047)

OK C.L. 03/11/09

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #66370 verified by the BLM Well Information System
For CHESAPEAKE OPERATING, INC., sent to the Carlsbad

Name *(Printed/Typed)* LINDA GOOD — Title SR. REGULATORY COMPLIANCE SPEC

Signature (Electronic Submission) — Date 01/15/2009

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By William Merhege — Title **STATE DIRECTOR** — Date 6-23-09

Conditions of approval, if any, are attached. Approval of this notice 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.

Office **NM STATE OFFICE**

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.

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

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 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	Pool Code	Pool Name
30-015-37147	~~96403~~	Wildcat; Bone Spring

Property Code	Property Name	Well Number
37739	PLU BIG SINKS "11" FEDERAL	1H

OGRID No.	Operator Name	Elevation
147179	CHESAPEAKE OPERATING CO.	3477'

Surface Location

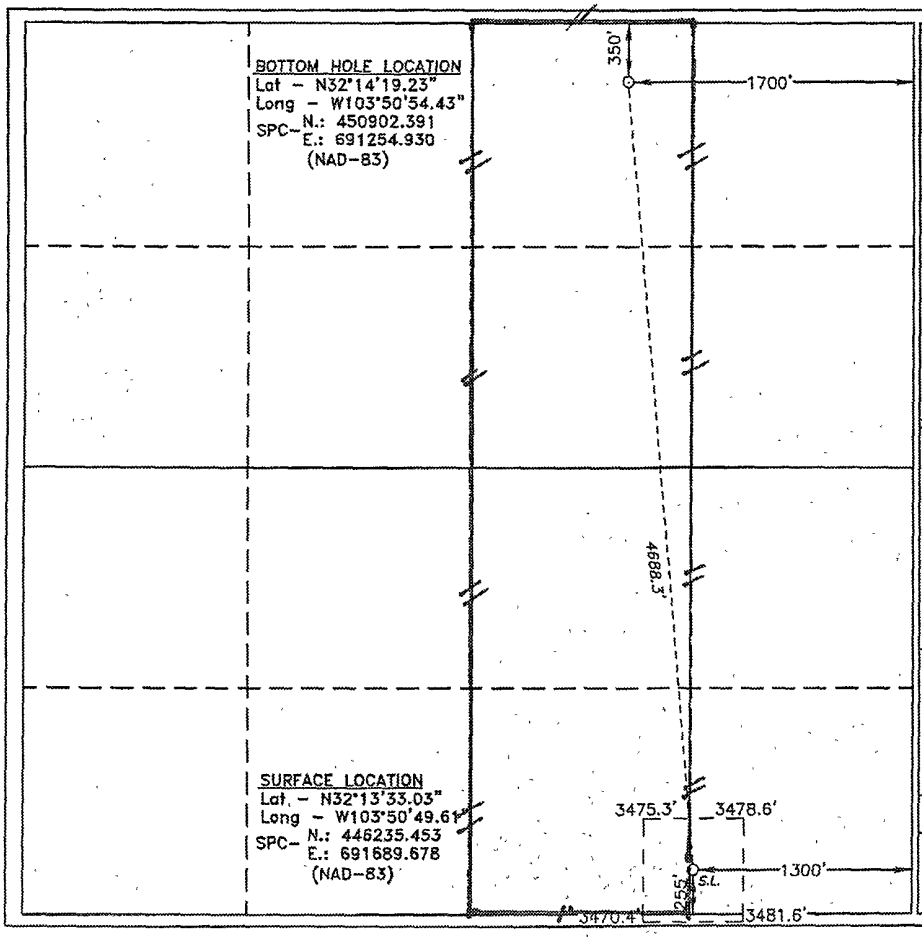
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	11	24 S	30 E		255	SOUTH	1300	EAST	EDDY

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
B	11	24 S	30 E		350	NORTH	1700	EAST	EDDY

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.

Linda Good 1/15/09
Signature Date

Linda Good
Printed Name

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 15, 2009
Date Surveyed

Signature & Seal of Professional Surveyor

GARY L. JONES
NEW MEXICO
7977
REGISTERED PROFESSIONAL SURVEYOR

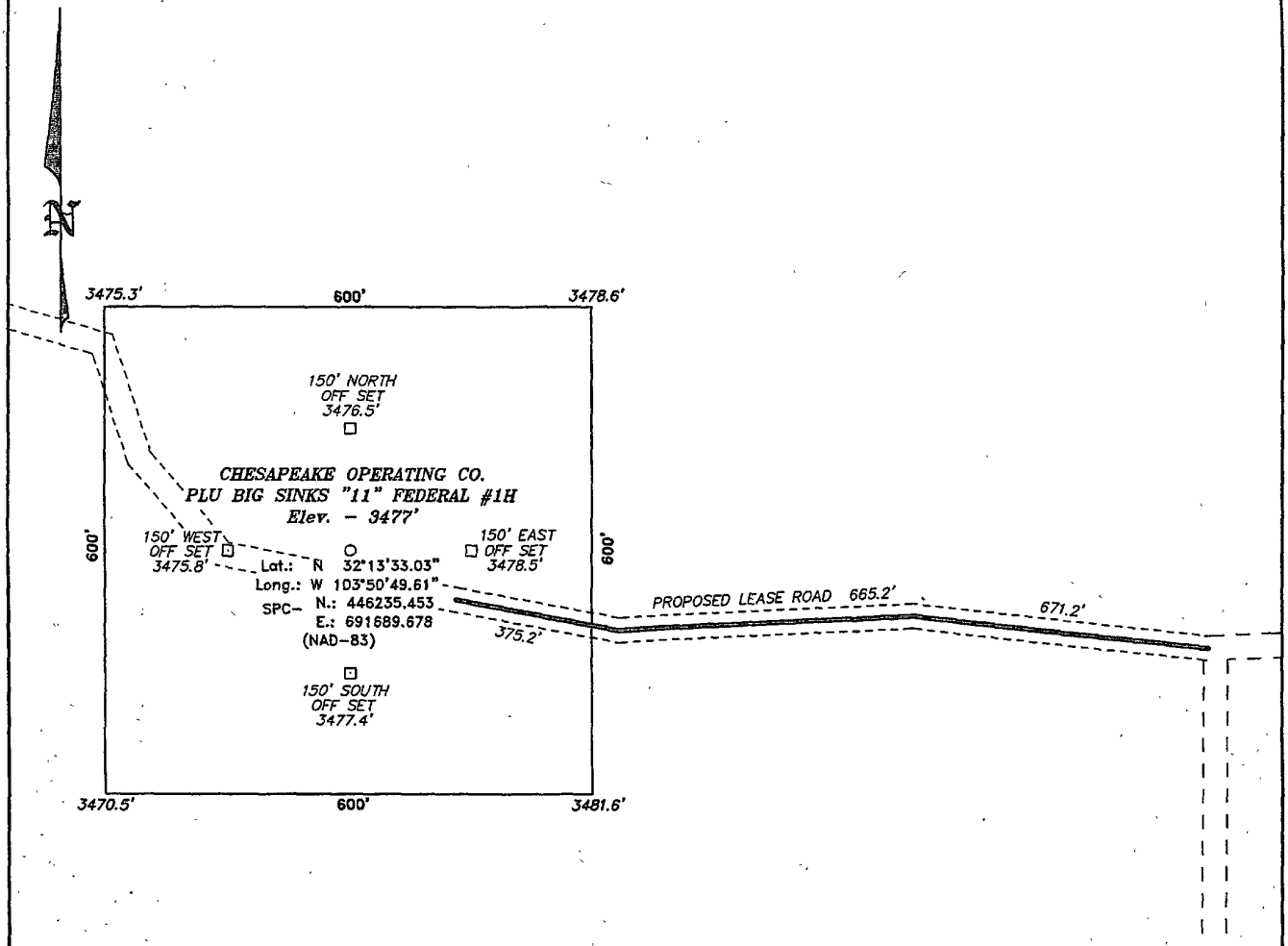
W.O.

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

Revised
EXHIBIT A-1

SECTION 11, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



200 0 200 400 FEET

SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF STATE HWY 128 AND TWIN WELLS, GO SOUTH 5.6 MILES TO CALICHE, CONTINUE SOUTH 1.4 MILES TO A LEASE ROAD, ON LEASE ROAD GO 0.8 MILES TO A LEASE ROAD, ON LEASE ROAD GO WEST 0.6 MILES TO 2-TRACK AND PROPOSED LEASE ROAD.

CHESAPEAKE OPERATING CO.

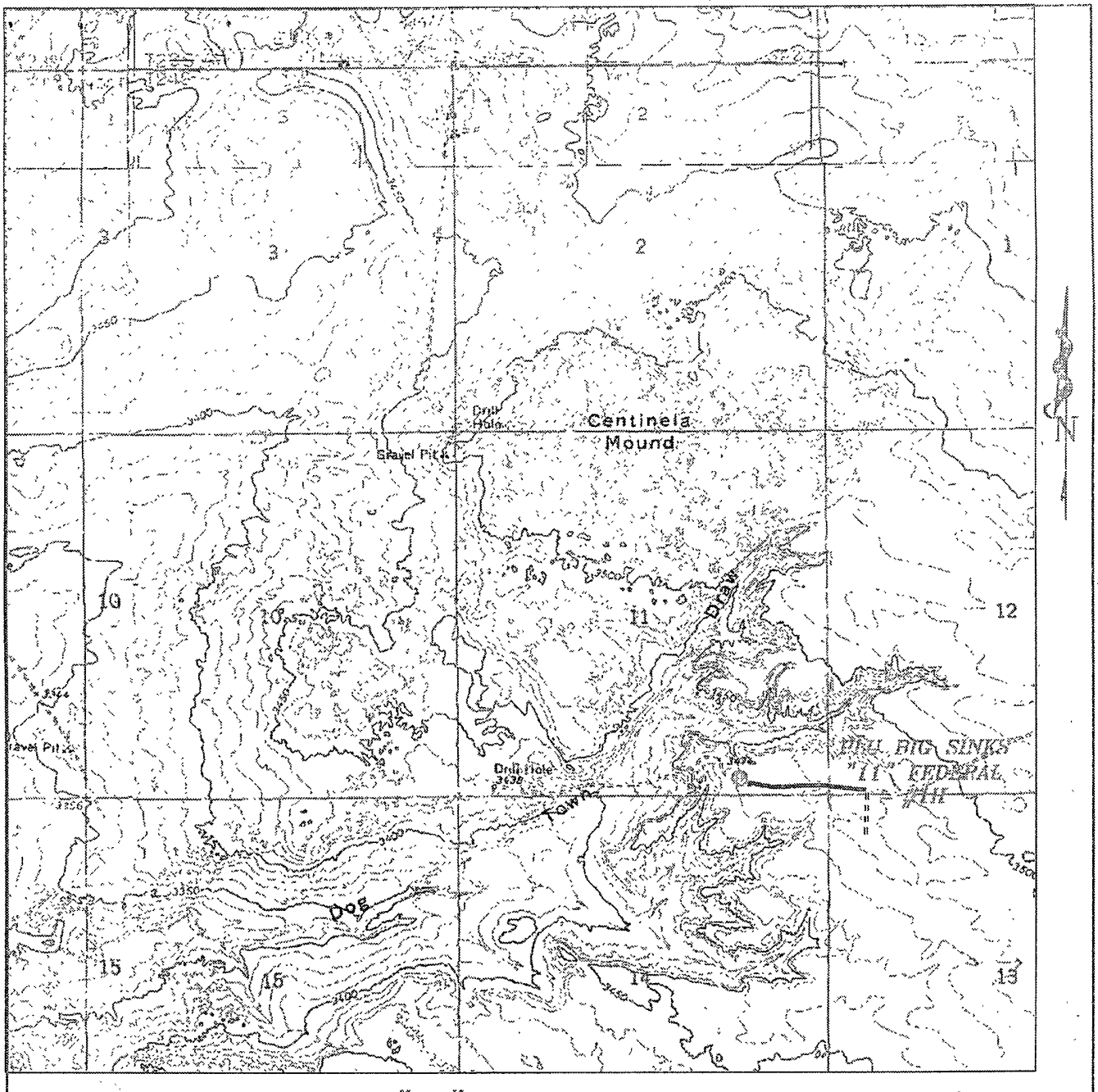
REF: PLU BIG SINKS "11" FEDERAL #1H / WELL PAD TOPO

THE PLU BIG SINKS "11" FEDERAL #1H LOCATED 255' FROM THE SOUTH LINE AND 1300' FROM THE EAST LINE OF SECTION 11, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 21022	Drawn By: J. M. SMALL		
Date: 01-14-2009	Disk: 21022 JMS	Survey Date: 01-13-2009	Sheet 1 of 1 Sheets

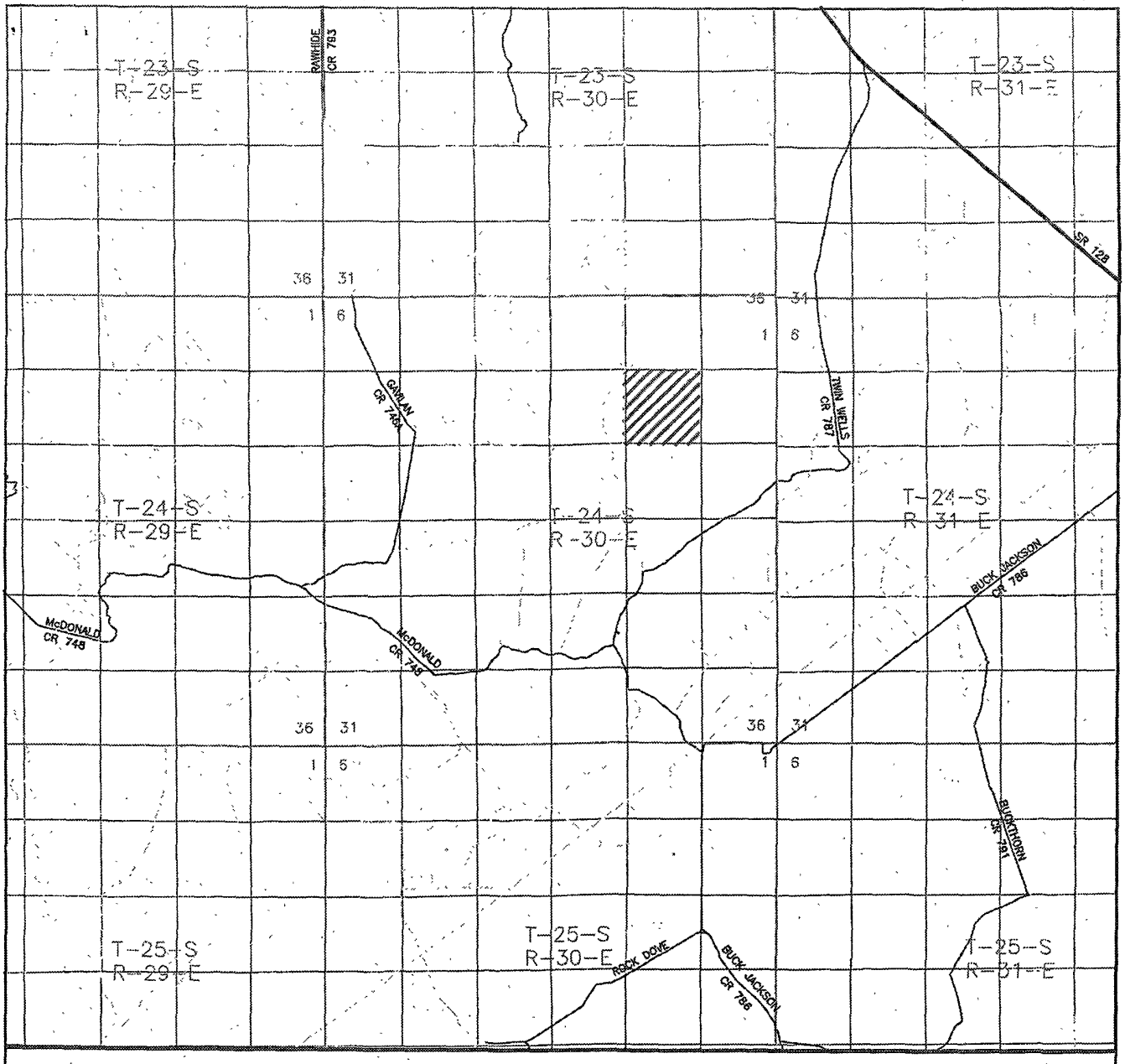
EXHIBIT Revised A-2



PLU BIG SINKS "11" FEDERAL #1H
Located at 255' FSL AND 1300' FEL
Section 11, Township 24 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

Basin Surveys focused on excellence in the oilfield	P.O. Box 1786 1120 N. West County Rd. Hobbs, New Mexico 88241 (575) 393-7316 - Office (575) 392-2206 - Fax basinsurveys.com	W.O. Number: 21022 Survey Date: 01-13-2009 Scale: 1" = 2000' Date: 01-11-2009	CHESAPEAKE OPERATING CO.

EXHIBIT Revised A-3



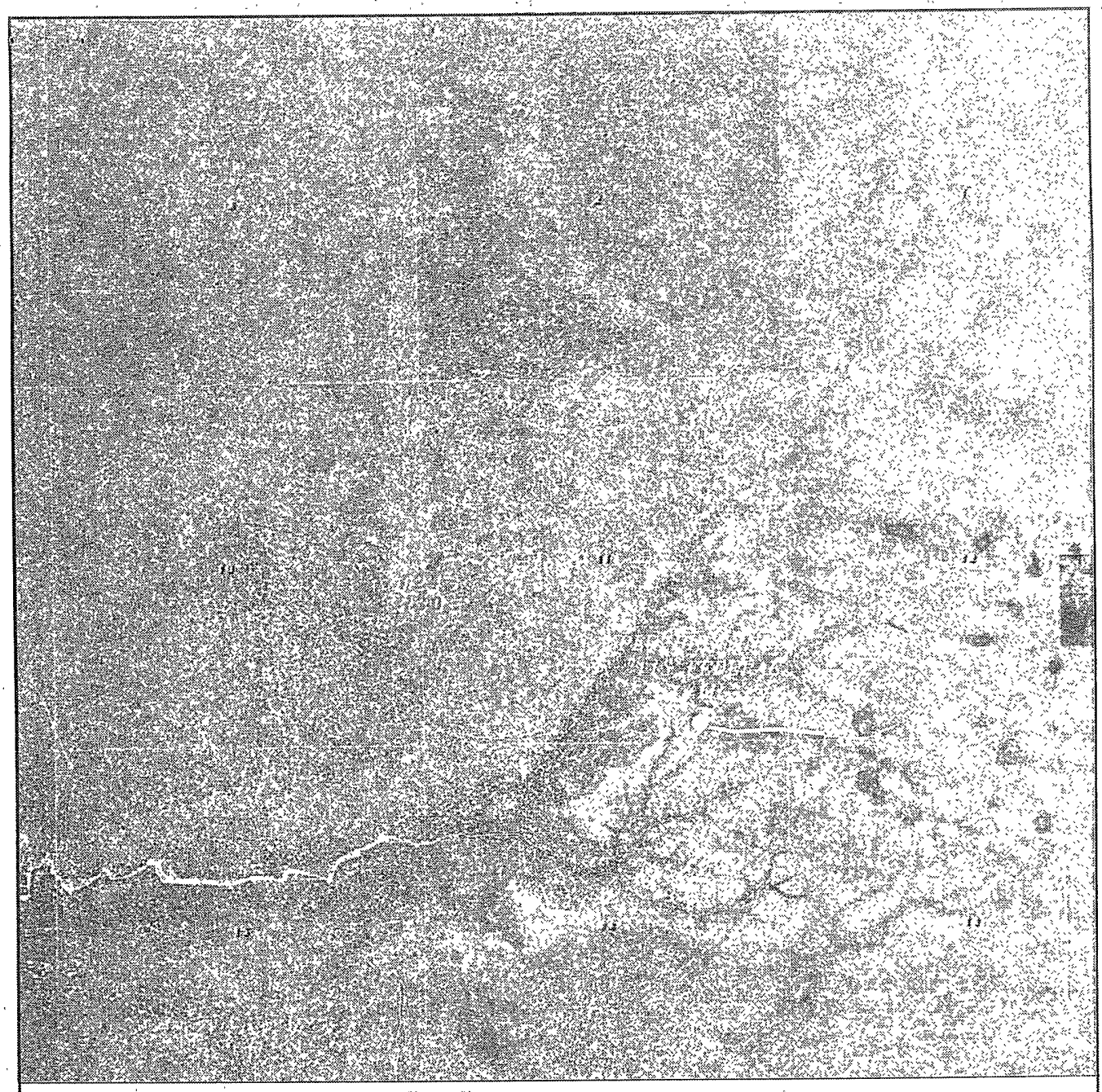
PLU BIG SINKS "11" FEDERAL #1H
Located at 255' FSL AND 1300' FEL
Section 11, Township 24 South, Range 30 East,
N.M.P.M., Eddy County, New Mexico.

Basin Surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: 21022
Survey Date: 01-13-2009
Scale: 1" = 2000'
Date: 01-14-2009

CHESAPEAKE OPERATING CO.

Revised
EXHIBIT A-4



PLU BIG SINKS "11" FEDERAL #1H
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Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: 21022

Scale: 1" = 2000'

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

CHESAPEAKE OPERATING CO.

EXHIBIT 4-5

Additional Operator Remarks:

PILOT HOLE: 11,450' TVD/MD.

CHESAPEAKE OPERATING, INC. RESPECTFULLY REQUESTS PERMISSION TO DRILL A WELL TO 13,060? TO TEST THE BONE SPRING 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 PROGRAM AS REQUIRED BY ONSHORE ORDER NO. 1.

ATTACHED ARE THE EXHIBIT A-1 TO A-4 SURVEY PLATS, EXHIBIT B 1 MILE RADIUS PLAT, EXHIBIT C PRODUCTION FACILITY, EXHIBIT D CAPSTAR RIG #32 LAYOUT, EXHIBIT E ARCH. SURVEY, EXHIBIT F-1 TO F-3 BOP & CHOKE MANIFOLD AND EXHIBIT G DIRECTIONAL DRILL PLAN.

CHESAPEAKE OPERATING, INC. HAS AN AGREEMENT WITH THE SURFACE OWNER.

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.

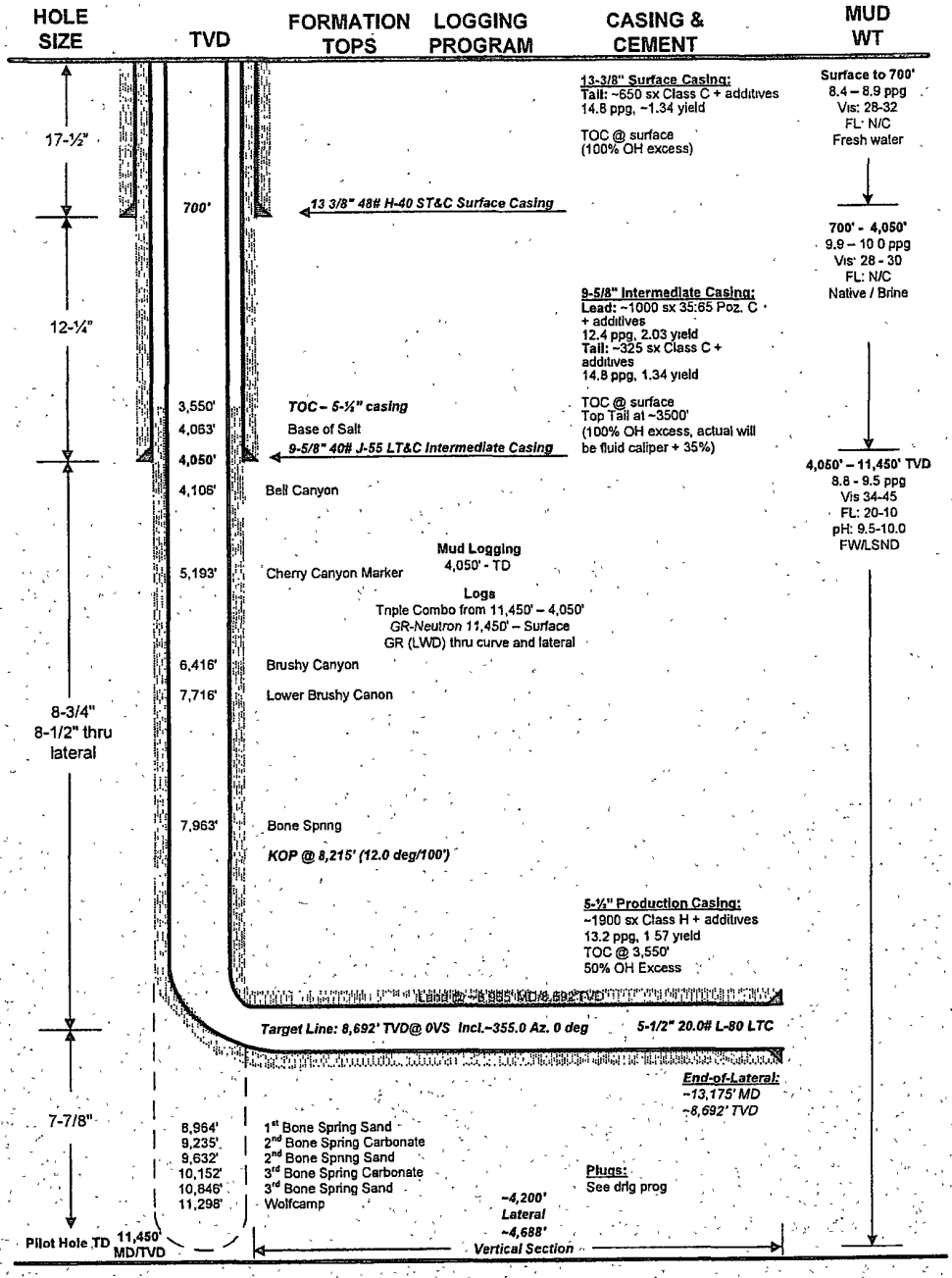
(CHK PN 623047)

CHESAPEAKE OPERATING INC

Proposed Well Schematic (drilling)

WELL : PLU BIG SINKS 11 FEDERAL 1H
SHL : Section 11 - 24S - 30E, 255' FSL & 1300' FEL
BHL : Section 11 - 24S - 30E, 350' FNL & 1700' FEL

COUNTY : Eddy
STATE : New Mexico
FIELD : Delaware Basin North
ELEVATION : GL – 3,477' RKB – 3,498' Est.



PREPARED BY: TAN DATE: 2/24/08

APPROVED BY: _____ DATE: _____

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	Subsea KBTVD	KBTVD
BASE OF SALT	-540'	4,058'
BELL CANYON	-584'	4,102'
CHERRY CANYON MARKER	-1,645'	5,163'
BRUSHY CANYON	-3,121'	6,639'
LOWER BRUSHY CANYON	-4,129'	7,647'
BONE SPRING	-4,410'	7,928'
1ST BONE SPRING SAND	-5,414'	8,932'
2ND BONE SPRING CARBONATE	-5,780'	9,298'
2ND BONE SPRING SAND	-6,244'	9,762'
3RD BONE SPRING CARBONATE	-6,578'	10,096'
3RD BONE SPRING SAND	-7,350'	10,868'
WOLFCAMP	-7,755'	11,273'
PILOT HOLE	**TD**	~~-11,400'~~ 11,450

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	Bell Canyon	4,102'
Oil/Gas	Cherry Canyon	5,163'
Oil/Gas	Brushy Canyon	6,639'
Oil/Gas	Bone Spring	7,928'

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

3. BOP EQUIPMENT:

Will have a 3000 psi simplified rental stack (see proposed schematic) for drill out below surface casing; this system will be tested to 2000 psi working pressure.

See COA Will have a 5000 psi rig stack (see proposed schematic) for drill out below intermediate casing; this system will be tested to ~~3~~5000 psi working pressure.

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-3.

A. Equipme nt
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. Tes t 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
7. the rated working pressure.
8. 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 **10 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. Tes t 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 PROGRAM

a. The proposed casing program will be as follows:

See COA

Purpose	Interval	Hole Size	Casing Size	Weight	Grade	Thread	Condition
Surface	Surface – 700'	17-1/2"	13-3/8"	48.0#	H-40	STC	New
Intermediate	Surface – 4,050'	12-1/4"	9-5/8"	40.0#	J-55	LTC	New
Production	Surface – 13,060'	8-3/4" (4050'-8965')/ 8-1/2" 8965'-TD)	5-1/2"	20.0#	L-80	LTC	New

b. Casing design subject to revision based on geologic conditions encountered.

c. Casing Safety Factors:
13-3/8" Surface Casing: SFb = 1.6, SFc = 3.9 and SFt = 6
9-5/8" Intermediate Casing: SFb = 2.3, SFc = 3.4 and SFt = 3.1
5-1/2" Production Casing: SFb = 1.8, SFc = 2.0 and SFt = 3.4

d. The cementing program will be as follows:

See COA → 5. Cementing Program

Interval	Type	Amount	Yield	Top Of Cement	Excess
Surface	Tail: Class C 1% CaCl2 (Accelerator)	650 sks	1.34	Surface	100%
Intermediate	Lead: 35/65 Poz/Class C	1000 sks	2.0	Surface	100%
	Tail: Class C	325 sks	1.34		100%
Production	Class H 0.5% Halad344 (Fluid Loss Control) 0.4% CFR-3 (Dispersant) 1 lbm/sk Salt 0.3% HR-7 (Retarder) 0.25 lbm D-AIR 3000 (Defoamer)	1900 sks	1.60	~~3,550'~~ See COA	50%

Final cement volumes will be determined by caliper.

Pilot Hole Plugging Plan:

See COA

The pilot hole will be plugged back using a plug of at least 210' from ±11,100' to 11,310' (125 sx, Class H 14.8 ppg 1.35 yld + KCL + Retarder) covering the top of Wolfcamp and base of Bone Spring. Second plug will be the same from ±9,000' to 9,210'. A third 500' balanced plug will be placed from ±8,000' to 8,500' (305 sx, 40% Excess, Class H 17.5 ppg 0.96yld + 0.75% CFR-3 + 3% KCL + 0.2% HR-800).

6. MUD PROGRAM

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

See COA

Interval	Mud Type	Mud Weight	Viscosity	Fluid Loss
0' – 700'	FW/Gel	8.4 – 9.0	28-32	NC
400' – 4,050'	Native/Brine	9.9 – 10.1	28-30	NC
4,050' - TD	FW/LSND	8.8 – 9.5	34-45	20-10

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.

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 4937 psi. No abnormal pressures or temperatures are anticipated.
b. Hydrogen sulfide gas is not anticipated.

Permian District

NM - Eddy - Morrow Project
PLU Big Sinks 11 Federal 1H
Well #1
Wellbore #1

Plan: Plan #1

Standard Planning Report

03 March, 2009

Chesapeake Energy Corporation

Planning Report

Database:	Landmark 2003	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	RKB @ 3518 0ft
Project:	NM - Eddy - Morrow Project	**MD Reference:**	RKB @ 3518.0ft
Site:	PLU Big Sinks 11 Federal 1H	**North Reference:**	True
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project NM - Eddy - Morrow Project

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Ground Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site PLU Big Sinks 11 Federal 1H

Site Position:		**Northing:**	ft	**Latitude:**	
From:	None	**Easting:**	ft	**Longitude:**	
Position Uncertainty:	ft	**Slot Radius:**	in	**Grid Convergence:**	0 00 °

Well Well #1

Well Position	**+N/-S**	0.0 ft	**Northing:**	0 00 ft	**Latitude:**	30° 59' 24 51165130 N
	+E/-W	0.0 ft	**Easting:**	0 00 ft	**Longitude:**	105° 55' 44 13731823 W
Position Uncertainty		ft	**Wellhead Elevation:**	ft	**Ground Level:**	3,500 0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	7/3/2008	0.00	0 00	0

Design Plan #1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0 0	0.0	0.0	355.10

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0 0	0.0	0.00	0.00	0.00	0.00	
8,215.0	0 00	0.00	8,215 0	0.0	0 0	0 00	0.00	0.00	0 00	
8,964 3	90 00	355.10	8,692.0	475.3	-40.7	12.01	12.01	0.00	355.10	
13,175.7	90.00	355.10	8,692 0	4,671.3	-400.5	0 00	0 00	0 00	0.00	

Chesapeake Energy Corporation

Planning Report

Database:	Landmark 2003	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	RKB @ 3518.0ft
Project:	NM - Eddy - Morrow Project	**MD Reference:**	RKB @ 3518.0ft
Site:	PLU Big Sinks 11 Federal 1H	**North Reference:**	True
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
13 3/8"									
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,050.0	0.00	0.00	4,050.0	0.0	0.0	0.0	0.00	0.00	0.00
9 5/8"									
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00

Chesapeake Energy Corporation

Planning Report

Database:	Landmark 2003	**Local Co-ordinate Reference:**	Well Well #1
Company:	Permian District	**TVD Reference:**	RKB @ 3518 0ft
Project:	NM - Eddy - Morrow Project	**MD Reference:**	RKB @ 3518.0ft
Site:	PLU Big Sinks 11 Federal 1H	**North Reference:**	True
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,215.0	0.00	0.00	8,215.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	10.21	355.10	8,299.6	7.5	-0.6	7.6	12.01	12.01	0.00
8,400.0	22.22	355.10	8,395.4	35.3	-3.0	35.4	12.01	12.01	0.00
8,500.0	34.23	355.10	8,483.3	82.3	-7.1	82.6	12.01	12.01	0.00
8,600.0	46.25	355.10	8,559.5	146.6	-12.6	147.1	12.01	12.01	0.00
8,700.0	58.26	355.10	8,620.6	225.2	-19.3	226.0	12.01	12.01	0.00
8,800.0	70.27	355.10	8,664.0	314.8	-27.0	316.0	12.01	12.01	0.00
8,900.0	82.28	355.10	8,687.7	411.4	-35.3	412.9	12.01	12.01	0.00
8,964.3	90.00	355.10	8,692.0	475.3	-40.7	477.0	12.01	12.01	0.00
9,000.0	90.00	355.10	8,692.0	510.9	-43.8	512.7	0.00	0.00	0.00
9,100.0	90.00	355.10	8,692.0	610.5	-52.3	612.7	0.00	0.00	0.00
9,200.0	90.00	355.10	8,692.0	710.1	-60.9	712.7	0.00	0.00	0.00
9,300.0	90.00	355.10	8,692.0	809.8	-69.4	812.7	0.00	0.00	0.00
9,400.0	90.00	355.10	8,692.0	909.4	-78.0	912.7	0.00	0.00	0.00
9,500.0	90.00	355.10	8,692.0	1,009.0	-86.5	1,012.7	0.00	0.00	0.00
9,600.0	90.00	355.10	8,692.0	1,108.7	-95.0	1,112.7	0.00	0.00	0.00
9,700.0	90.00	355.10	8,692.0	1,208.3	-103.6	1,212.7	0.00	0.00	0.00
9,800.0	90.00	355.10	8,692.0	1,307.9	-112.1	1,312.7	0.00	0.00	0.00
9,900.0	90.00	355.10	8,692.0	1,407.6	-120.7	1,412.7	0.00	0.00	0.00
10,000.0	90.00	355.10	8,692.0	1,507.2	-129.2	1,512.7	0.00	0.00	0.00
10,100.0	90.00	355.10	8,692.0	1,606.8	-137.8	1,612.7	0.00	0.00	0.00

Chesapeake Energy Corporation

Planning Report

Database:	Landmark 2003	Local Co-ordinate Reference:	Well Well #1
Company:	Permian District	TVD Reference:	RKB @ 3518.0ft
Project:	NM - Eddy - Morrow Project	MD Reference:	RKB @ 3518.0ft
Site:	PLU Big Sinks 11 Federal 1H	North Reference:	True
Well:	Well #1	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

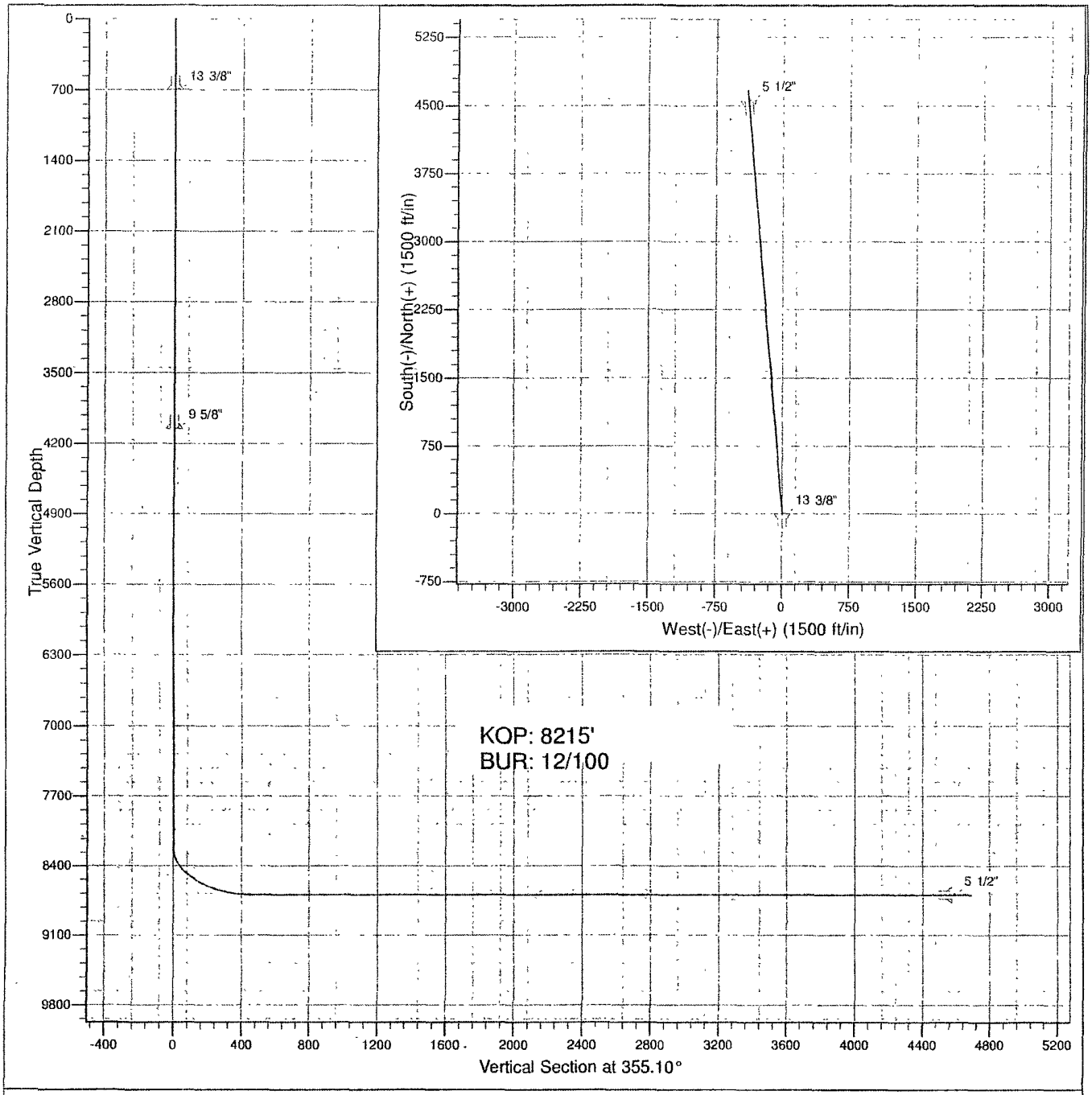
Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,200.0	90.00	355.10	8,692.0	1,706.5	-146.3	1,712.7	0.00	0.00	0.00
10,300.0	90.00	355.10	8,692.0	1,806.1	-154.8	1,812.7	0.00	0.00	0.00
10,400.0	90.00	355.10	8,692.0	1,905.7	-163.4	1,912.7	0.00	0.00	0.00
10,500.0	90.00	355.10	8,692.0	2,005.4	-171.9	2,012.7	0.00	0.00	0.00
10,600.0	90.00	355.10	8,692.0	2,105.0	-180.5	2,112.7	0.00	0.00	0.00
10,700.0	90.00	355.10	8,692.0	2,204.6	-189.0	2,212.7	0.00	0.00	0.00
10,800.0	90.00	355.10	8,692.0	2,304.3	-197.5	2,312.7	0.00	0.00	0.00
10,900.0	90.00	355.10	8,692.0	2,403.9	-206.1	2,412.7	0.00	0.00	0.00
11,000.0	90.00	355.10	8,692.0	2,503.5	-214.6	2,512.7	0.00	0.00	0.00
11,100.0	90.00	355.10	8,692.0	2,603.2	-223.2	2,612.7	0.00	0.00	0.00
11,200.0	90.00	355.10	8,692.0	2,702.8	-231.7	2,712.7	0.00	0.00	0.00
11,300.0	90.00	355.10	8,692.0	2,802.5	-240.3	2,812.7	0.00	0.00	0.00
11,400.0	90.00	355.10	8,692.0	2,902.1	-248.8	2,912.7	0.00	0.00	0.00
11,500.0	90.00	355.10	8,692.0	3,001.7	-257.3	3,012.7	0.00	0.00	0.00
11,600.0	90.00	355.10	8,692.0	3,101.4	-265.9	3,112.7	0.00	0.00	0.00
11,700.0	90.00	355.10	8,692.0	3,201.0	-274.4	3,212.7	0.00	0.00	0.00
11,800.0	90.00	355.10	8,692.0	3,300.6	-283.0	3,312.7	0.00	0.00	0.00
11,900.0	90.00	355.10	8,692.0	3,400.3	-291.5	3,412.7	0.00	0.00	0.00
12,000.0	90.00	355.10	8,692.0	3,499.9	-300.0	3,512.7	0.00	0.00	0.00
12,100.0	90.00	355.10	8,692.0	3,599.5	-308.6	3,612.7	0.00	0.00	0.00
12,200.0	90.00	355.10	8,692.0	3,699.2	-317.1	3,712.7	0.00	0.00	0.00
12,300.0	90.00	355.10	8,692.0	3,798.8	-325.7	3,812.7	0.00	0.00	0.00
12,400.0	90.00	355.10	8,692.0	3,898.4	-334.2	3,912.7	0.00	0.00	0.00
12,500.0	90.00	355.10	8,692.0	3,998.1	-342.8	4,012.7	0.00	0.00	0.00
12,600.0	90.00	355.10	8,692.0	4,097.7	-351.3	4,112.7	0.00	0.00	0.00
12,700.0	90.00	355.10	8,692.0	4,197.3	-359.8	4,212.7	0.00	0.00	0.00
12,800.0	90.00	355.10	8,692.0	4,297.0	-368.4	4,312.7	0.00	0.00	0.00
12,900.0	90.00	355.10	8,692.0	4,396.6	-376.9	4,412.7	0.00	0.00	0.00
13,000.0	90.00	355.10	8,692.0	4,496.2	-385.5	4,512.7	0.00	0.00	0.00
13,060.3	90.00	355.10	8,692.0	4,556.3	-390.6	4,573.0	0.00	0.00	0.00
5 1/2"									
13,100.0	90.00	355.10	8,692.0	4,595.9	-394.0	4,612.7	0.00	0.00	0.00
13,175.7	90.00	355.10	8,692.0	4,671.3	-400.5	4,688.4	0.00	0.00	0.00

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
700.0	700.0	13 3/8"	13.375	17.500
4,050.0	4,050.0	9 5/8"	9.625	12.250
13,060.3	8,692.0	5 1/2"	5.500	8.750

Chesapeake Operating Inc.
PLU Bing Sinks 11 Federal 1 H
Eddy Co., NM
11-24S-30E



PLAN DETAILS

Plan #1
Version

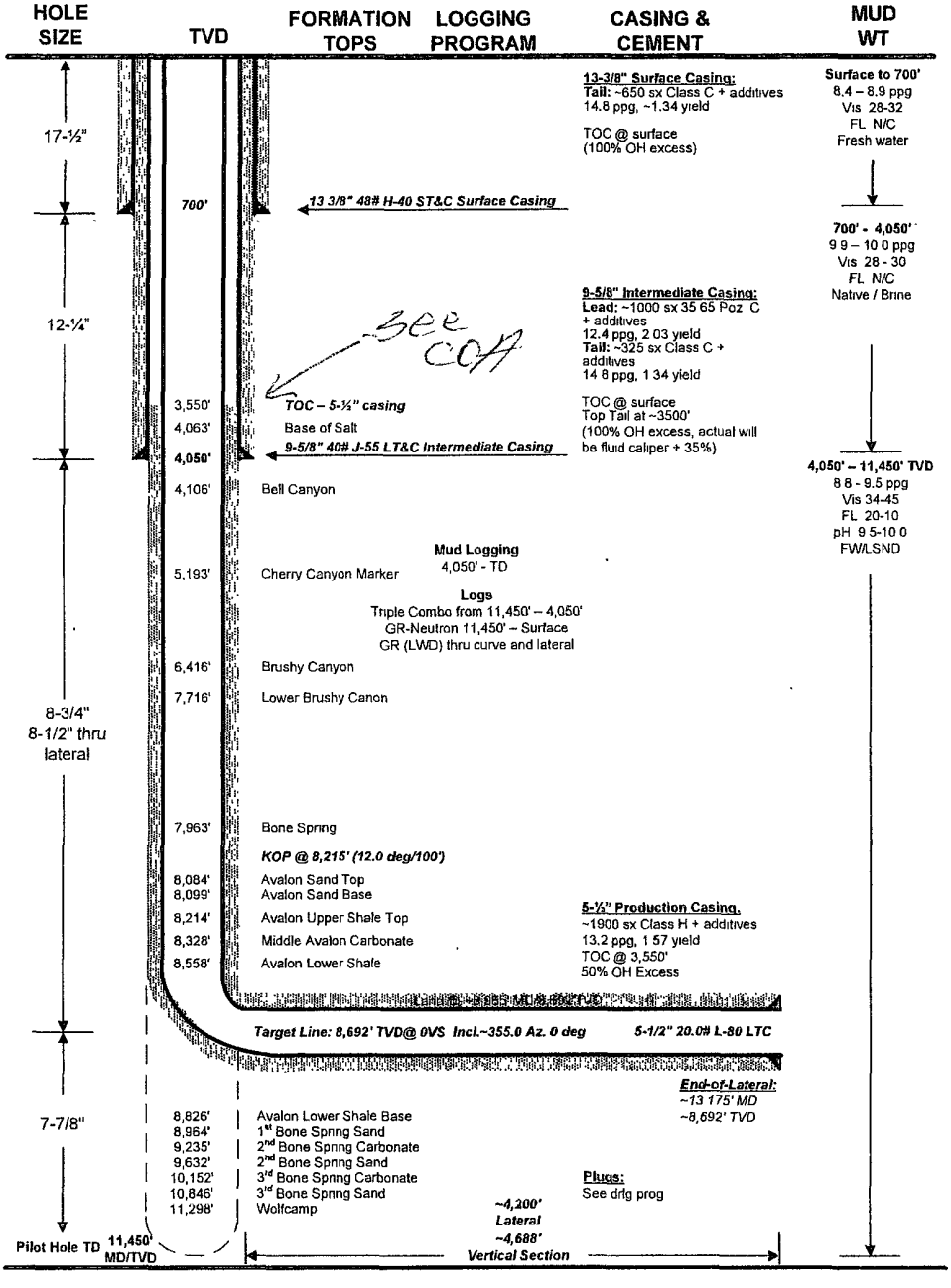
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	8215.0	0.00	0.00	8215.0	0.0	0.0	0.00	0.00	0.0	
3	8964.3	90.00	355.10	8692.0	475.3	-40.7	12.01	355.10	477.0	
4	13175.6	90.00	355.10	8692.0	4671.2	-400.5	0.00	0.00	4688.3	

CHESAPEAKE OPERATING INC

Proposed Well Schematic (drilling)

WELL : **PLU BIG SINKS 11 FEDERAL 1H**
SHL : **Section 11 - 24S - 30E, 255' FSL & 1300' FEL**
BHL : **Section 11 - 24S - 30E, 350' FNL & 1700' FEL**

COUNTY : **Eddy**
STATE : **New Mexico**
FIELD : **Delaware Basin North**
ELEVATION : **GL – 3,477'** **RKB – 3,498' Est.**



PREPARED BY: TAN **DATE:** 2/24/08

APPROVED BY: _____ **DATE:** _____

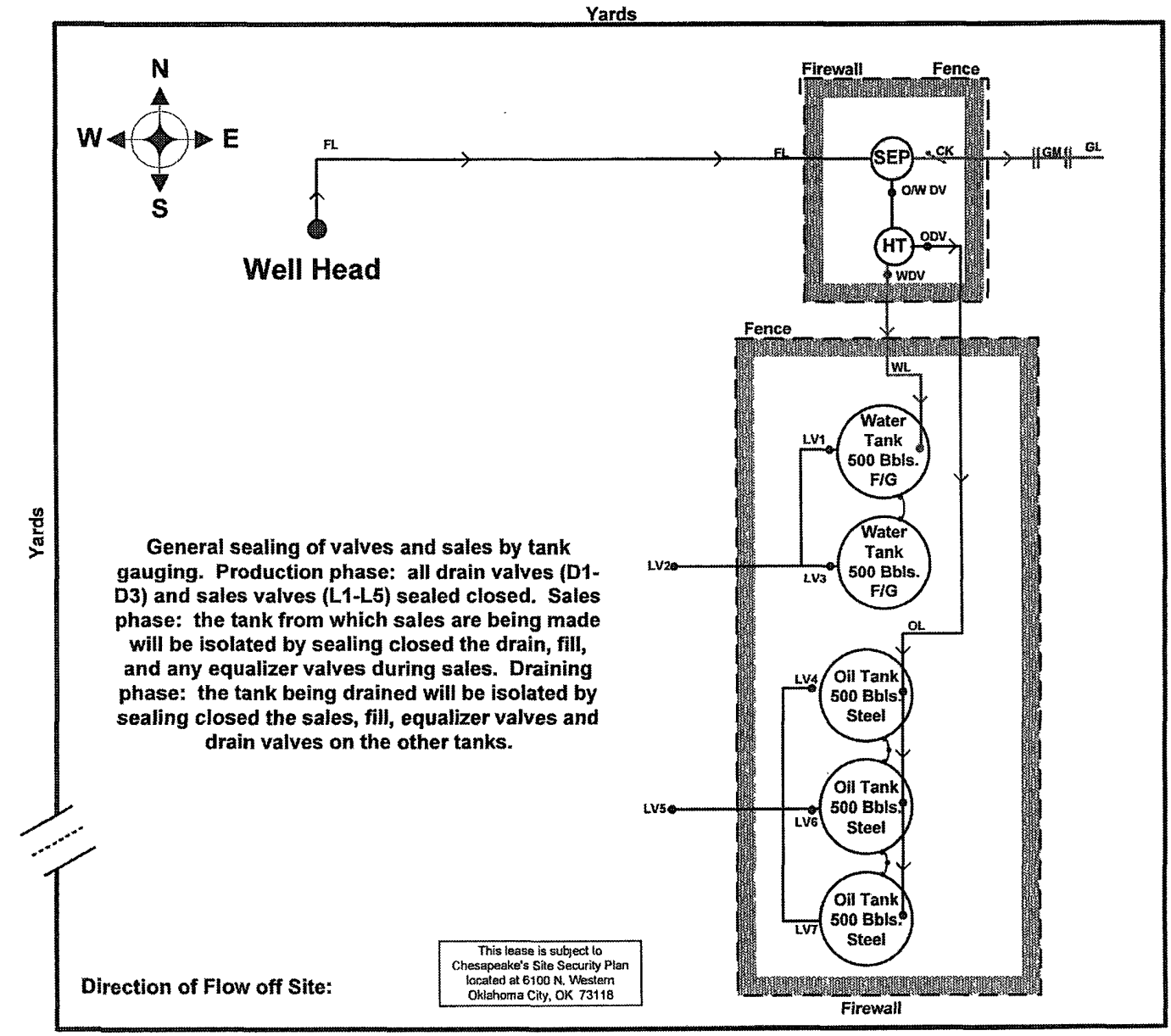
CHESAPEAKE OPERATING, INC.

PLU Big Sinks 11 Federal #1H

Lat: N 32'13'33.99" – Long.: W 103'50'54.26"

S11/T24S/R30E – 350 FSL & 1700 FEL

Eddy Co., New Mexico

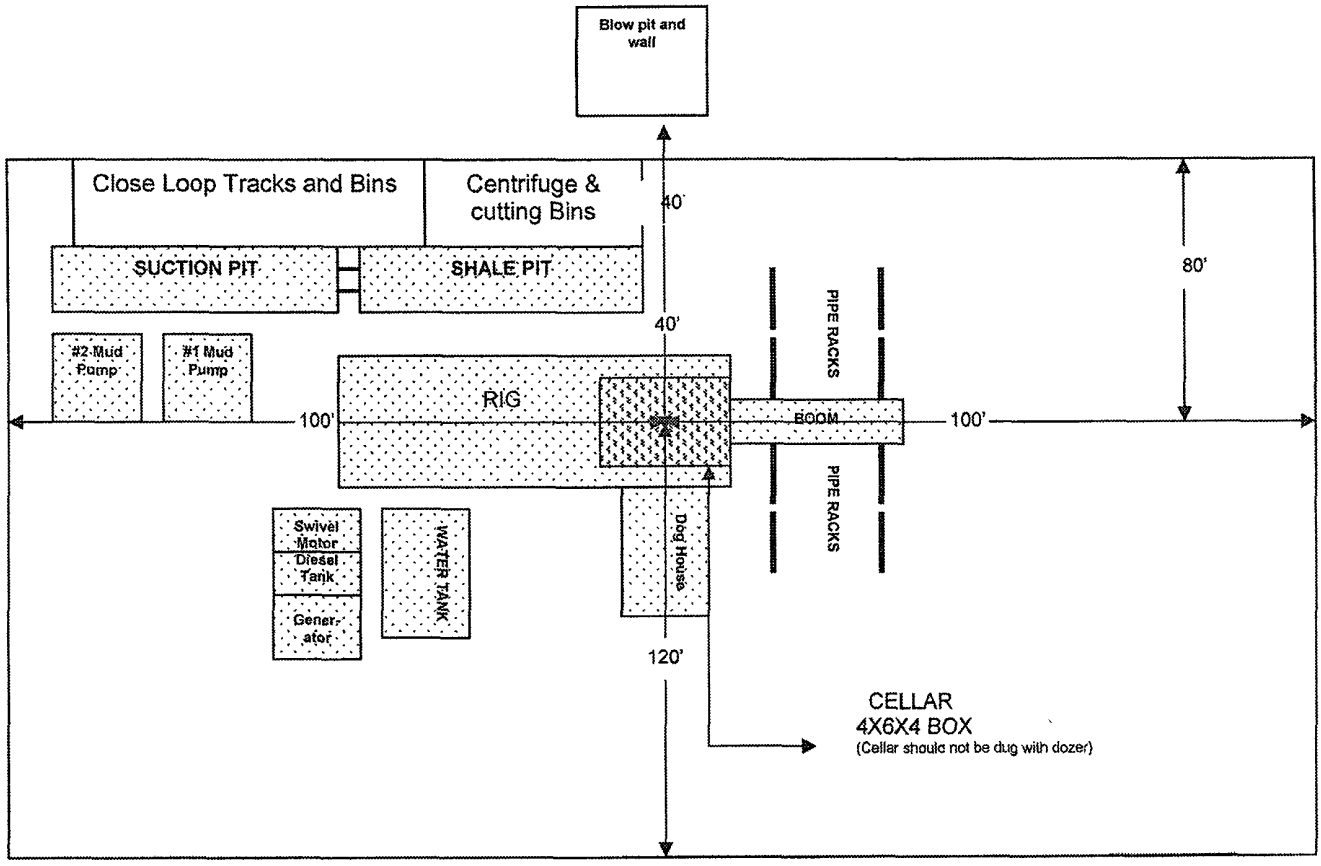


Prepared by: Jackie Reynolds
Date: 9-30-2008

EXHIBIT C

LOCATION SPECIFICATION AND RIG LAYOUT FOR STEEL PITS

(PICTURE NOT TO SCALE)



Cellar can be 4X4X4 if using a screw-on wellhead

EXHIBIT D

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

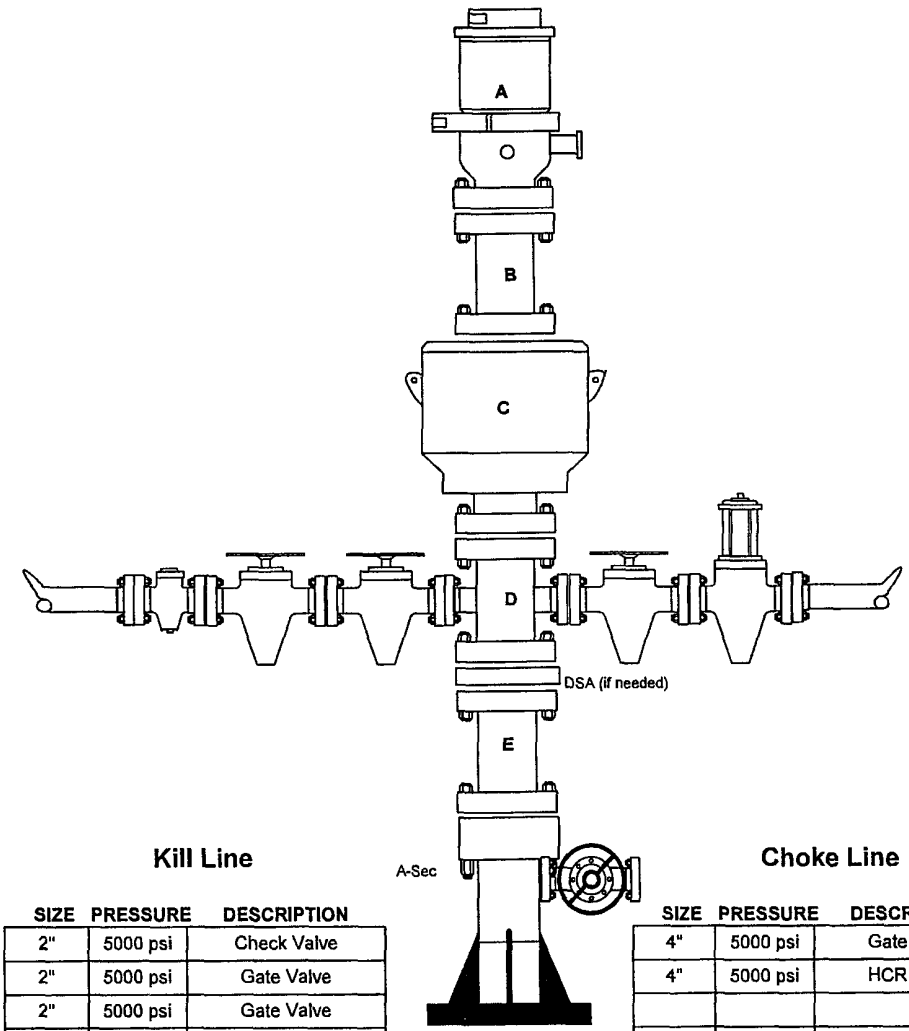
WELL : **PLU Big Sinks 11 Federal 1H**

RIG : **Capstar 32**

COUNTY : **Eddy** **STATE: New Mexico**

OPERATION: Drill out below 13-3/8" Casing (12-¼" hole size)

	SIZE	PRESSURE	DESCRIPTION
A	13-5/8"	500 psi	Rot Head
B	13-5/8"	3000 psi	Spacer Spool
C	13-5/8"	3000 psi	Annular
D	13-5/8"	3000 psi	Mud Cross
E	13-5/8"	3000 psi	Spacer Spool
DSA	13-5/8" 3M x 13-5/8" 3M (if needed)		
A-Sec	13-3/8" SOW x 13-5/8" 3M		



Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5000 psi	Check Valve
2"	5000 psi	Gate Valve
2"	5000 psi	Gate Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
4"	5000 psi	Gate Valve
4"	5000 psi	HCR Valve

EXHIBIT F-1

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

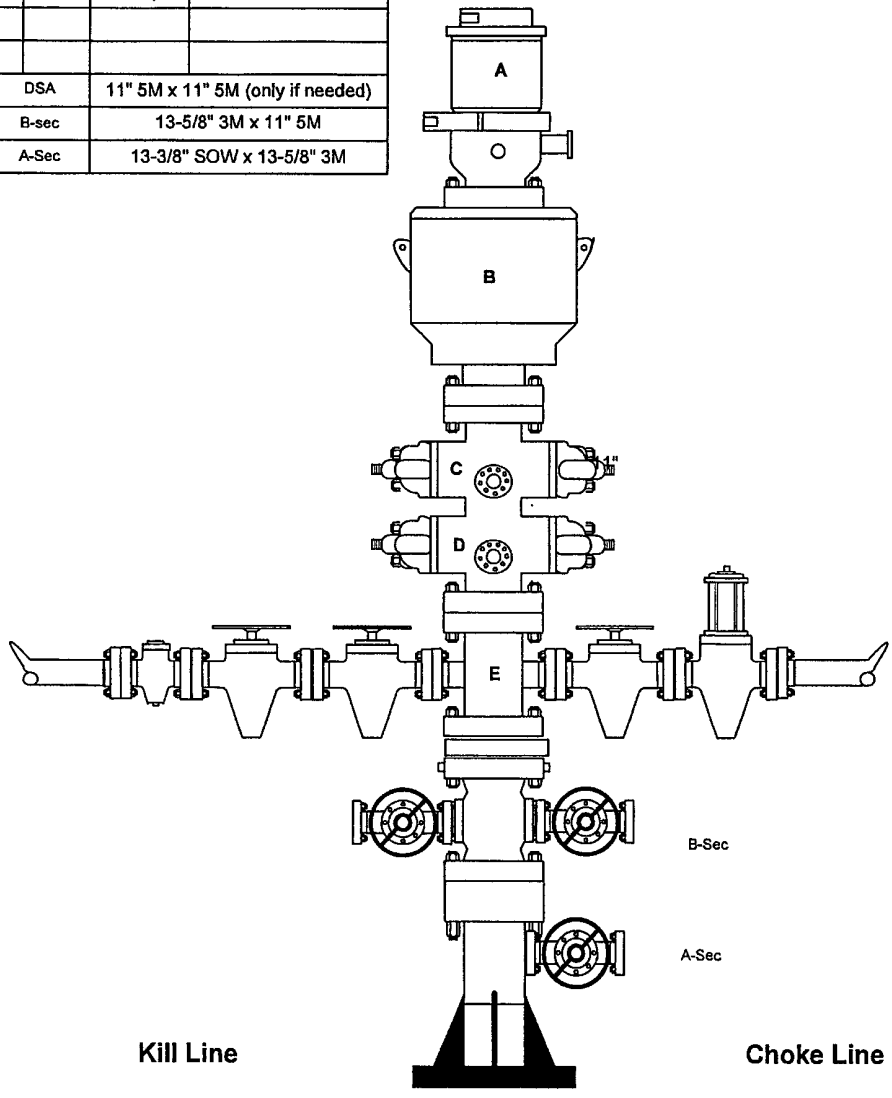
WELL : **PLU Big Sinks 11 Federal 1H**

RIG : **Capstar 32**

COUNTY : **Eddy** **STATE: New Mexico**

OPERATION: Drill out below 9-5/8" Casing (8-3/4"/8-½" hole size)

	SIZE	PRESSURE	DESCRIPTION
A	11"	500 psi	Rot Head
B	11"	5000 psi	Annular
C	11"	5000 psi	Pipe Rams
D	11"	5000 psi	Blind Rams
E	11"	5000 psi	Mud Cross
DSA		11" 5M x 11" 5M (only if needed)	
B-sec		13-5/8" 3M x 11" 5M	
A-Sec		13-3/8" SOW x 13-5/8" 3M	



Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5000 psi	Check Valve
2"	5000 psi	Gate Valve
2"	5000 psi	Gate Valve

Choke Line

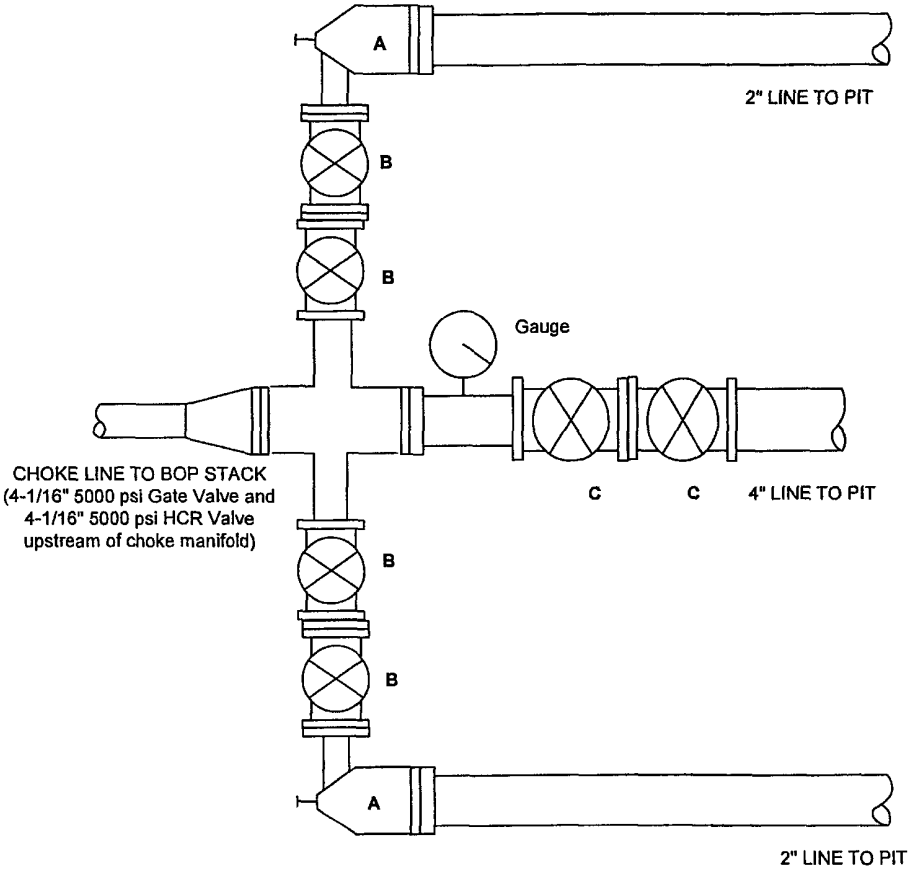
SIZE	PRESSURE	DESCRIPTION
4"	5000 psi	Gate Valve
4"	5000 psi	HCR Valve

EXHIBIT F-2

CHOKE MANIFOLD SCHEMATIC

CHESAPEAKE OPERATING, INC.

WELL : **PLU Big Sinks 11 Federal 1H**
RIG : **Capstar 32**
COUNTY : **Eddy** **STATE** : **New Mexico**
OPERATION: ***Drilling below/beyond 13-3/8" surface casing***



	SIZE	PRESSURE	DESCRIPTION
A	2-1/16"	5000 psi	Remotely Operated Choke With Manual Backup
B	2-1/16"	5000 psi	Gate Valve
C	4-1/16"	5000 psi	Gate Valve

EXHIBIT F-3

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

1. EXISTING ROADS

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

2. PLANNED ACCESS ROADS
   a. The proposed access road 229.9' in length and 14' in travel way width with a maximum disturbance area of 30' will be used, and in accordance with guidelines set forth in the BLM Onshore Orders. No turnouts are expected.
   b. In order to level the location, cut and fill will be required. Please see attached Well Location and Acreage Dedication Plat – Exhibits A-1 to A-4.
   c. A locking gate will be installed at the site entrance.
   d. Any fences cut will be repaired. Cattle guards will be installed, if needed.
   e. 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.
   f. Driving directions are from the junction of State Hwy 128 and Mobley Ranch (795), go South 0.5 miles to a "Y", go left 3.2 miles to lease road, on lease road go East 0.3 miles to a 2-tract, on 2-track go South 2.1 miles to proposed lease road.

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 and oil to be sold at the wellhead and/or tank battery. An allocation meter will be installed on location and CEMI will lay the gas lines from our location to the Southern Union sales meter. – 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 11-24S-30E. All material (i.e. shale) will be acquired from private or commercial sources.

7. METHODS FOR HANDLING WASTE DISPOSAL
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.

8. ANCILLARY FACILITIES
None

9. WELLSITE LAYOUT
The proposed site layout plat is attached showing the Capstar 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 & MINERAL OWNERSHIP
United States of America
Department of Interior
Bureau of Land Management

GRAZING LESSEE
Richardson Cattle Co.
P.O. Box 487
Carlsbad, NM 88221
(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 District Manager
Dave Bert
P.O. Box 18496
Oklahoma City, OK 73154
405-935-6882 (OFFICE)
405-761-4699 (Cell)
dave.bert@chk.com

Sr. Drilling Engineer
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Oklahoma City, OK 73154
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405-849-2795 (FAX)
405-919-9148 (MOBILE)
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Sr. Field Representative
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Sr. Asset Manager
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Sr. Geologist
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405-849-4572 (FAX)
lee.wescott@chk.com

CERTIFICATION

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and, that the work associated with the operations proposed will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Executed this 23rd day of December, 2008.

Name: William M. Fowler, Director – Regulatory Compliance

Address: P.O. Box 18496, Oklahoma City, OK 73154-0496

Telephone: 405-848-8000

Field Representative: Bud Cravey

Telephone: 432-238-7293

E-mail: bud.cravey@chk.com

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chesapeake Operating
LEASE NO.:	NMLC068905
WELL NAME & NO.:	PLU Big Sinks 11 Federal No 1H
SURFACE HOLE FOOTAGE:	255' FSL & 1300' FEL
BOTTOM HOLE FOOTAGE	350' FNL & 1700' FEL
LOCATION:	Section 11, T. 24 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

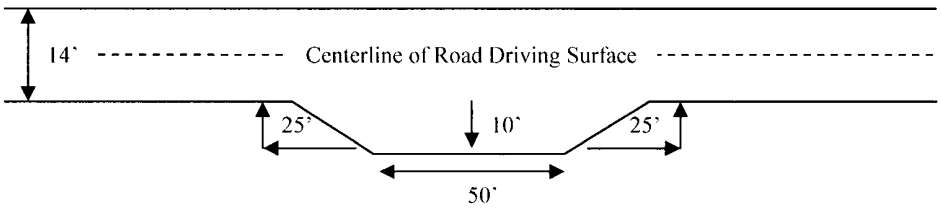
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

Standard Turnout – Plan View

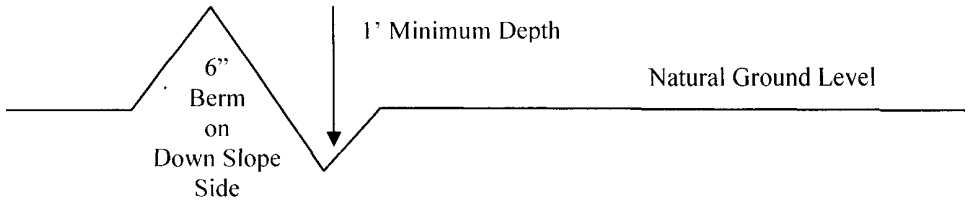


Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



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

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

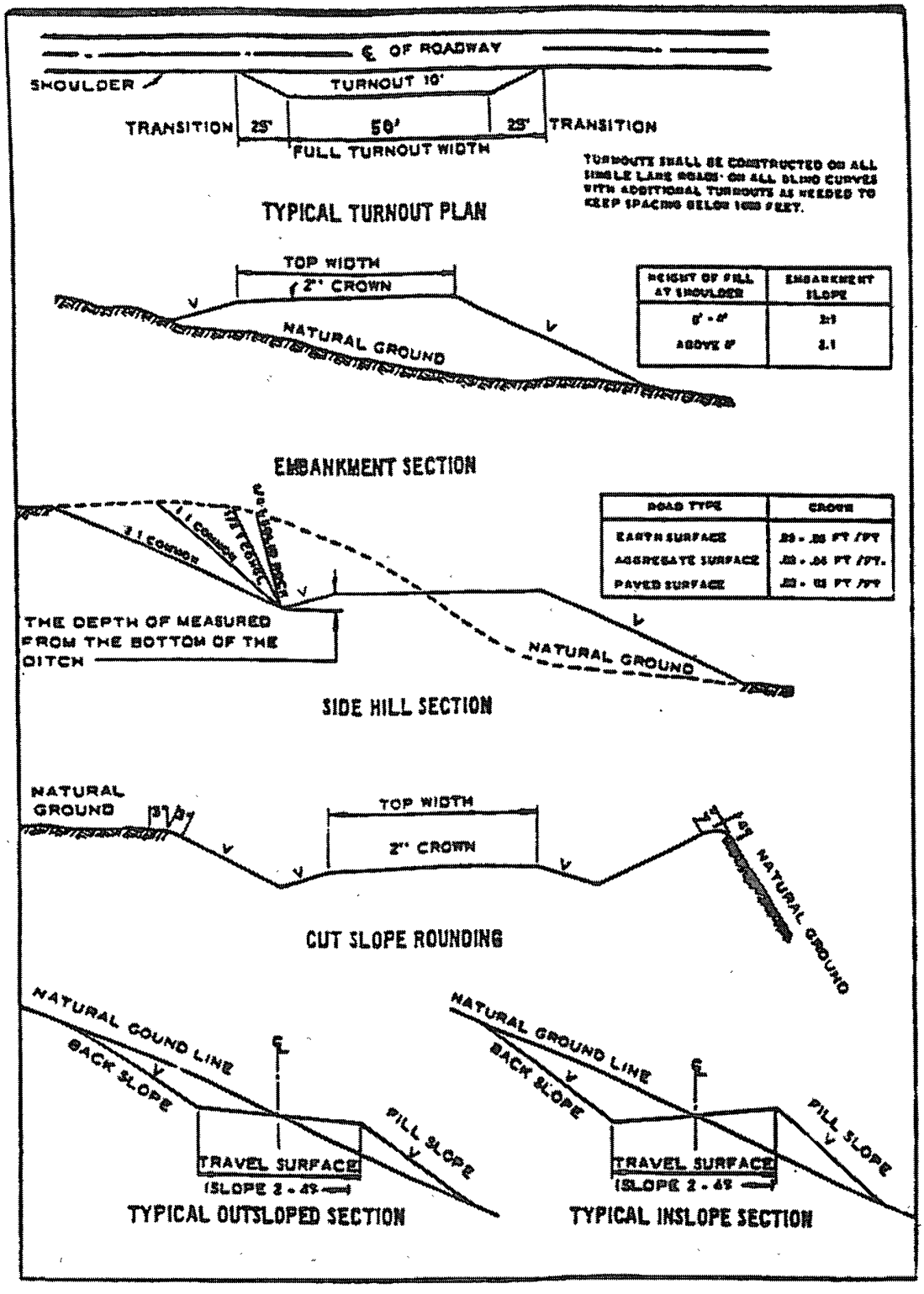
A gate shall be constructed and fastened securely to H-braces.

Fence Requirement
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

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. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

R-111-P Potash.
Medium cave/karst.
Possible lost circulation in the Delaware and Bone Spring formations.
Possible high pressure gas burst in the Wolfcamp formation – applies to pilot hole.

1. The **13-3/8** inch surface casing shall be set **at approximately 700 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry. This will not apply if the proposed surface casing cement program is followed.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Casing to be set a minimum of 100 feet but not more than 600 feet below the salt. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash concerns.**

NOTE: <u>Pilot Hole</u>
Plug required at bottom of pilot hole to a minimum of 50' above the top of the Wolfcamp formation and must be tagged. Second plug is required to be a minimum of 210 feet in length and must be tagged. Tag depth to be recorded and reported on subsequent sundry with casing information. Balanced plug can be set as written.

Centralizers required on horizontal leg, must be type for horizontal service and minimum of one every other joint.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

   ☒ Cement to surface **due to R-111-P Potash**. If cement does not circulate, contact the appropriate BLM office. **Additional cement will be required since cement must come to surface.**

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8"** intermediate casing shoe shall be **5000 (5M)** psi. **5M system required due to total vertical depth for Wolfcamp.**

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

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

   b. The results of the test shall be reported to the appropriate BLM office.

   c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

   d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

   e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2. **Statement applies to pilot hole.**

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

RGH 022309

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

The operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

Seed Mixture 3, for Shallow 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:

Species	lb/acre
Plains Bristlegrass (*Setaria magrostachya*) 1.0	
Green Spangletop (*Leptochloa dubia*)	2.0
Side oats Grama (*Bouteloua curtipendula)*	5.0

*Pounds of pure live seed:

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

(Insert Seed Mixture Here)

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.