OCD-HOBBS

ATS-08-735

Form 3160-3
(August 2007)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

EC

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMLC030133B

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☐ DRILL ☐ REENTER CONFIDENTIAL

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

8. Lease Name and Well No. (30148)
LANGLEY DEEP FEDERAL 2H

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

2. Name of Operator
CHESAPEAKE OPERATING INC
Contact: LINDA GOOD
E-Mail: linda.good@chk.com
(147179)

9. API Well No.
30-025-39116

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

3b. Phone No. (include area code)
Ph: 405-767-4275

10. Field and Pool, or Exploratory
~~LANGLIE~~ Devonian
Langley (79936)

4. Location of Well (Report locn clearly and in accordance with any State requirements.*)
At surface NWNE 330FNL 1990FEL Unit B ~~UNORTHODOX~~
At proposed prod. zone SENE 1980FNL 660FEL Unit H LOCATION
Split Estate

11. Sec., T., R., M., or Blk and Survey or Area
Sec 28 T22S R36E Mer NMP
SME: FEE

14. Distance in miles and direction from nearest town or post office*
18 MILES SW OF EUNICE, NEW MEXICO

12. County or Parish
LEA

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
920.00

17. Spacing Unit dedicated to this well
320.00

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

19. Proposed Depth
14460 MD

20. BLM/BIA Bond No. on file
NM2634

21. Elevations (Show whether DF, KB, RT, GL, etc.
3508 GL

22. Approximate date work will start

23. Estimated duration

24. Attachments

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

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3 A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6 Such other site specific information and/or plans as may be required by the authorized officer.

25 Signature	Name (Printed/Typed)	Date
(Electronic Submission)	LINDA GOOD Ph: 405-767-4275	06/30/2008

Title
REGULATORY COMPLIANCE SPEC.

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ James Stovall	/s/ James Stovall	AUG 0 8 2008
Title	**Office**	
FIELD MANAGER	CARLSBAD FIELD 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) Capitan Controlled Water Basin

RECEIVED

Electronic Submission #61149 verified by the BLM Well Information System
For CHESAPEAKE OPERATING INC, sent to the Hobbs
Committed to AFMSS for processing by TESSA CISNEROS on 06/30/2008 (08TLC0130AE)

AUG 12 2008

HOBBS OCD

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

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

State of New Mexico

Energy, Minerals and Natural Resources Department

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

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
30-025-39116	79936	Langley Devonian (GAS)

Property Code	Property Name	Well Number
301485	LANGLEY DEEP	2H

OGRID No	Operator Name	Elevation
147179	CHESPEAKE OPERATING, INC.	3512'

Surface Location

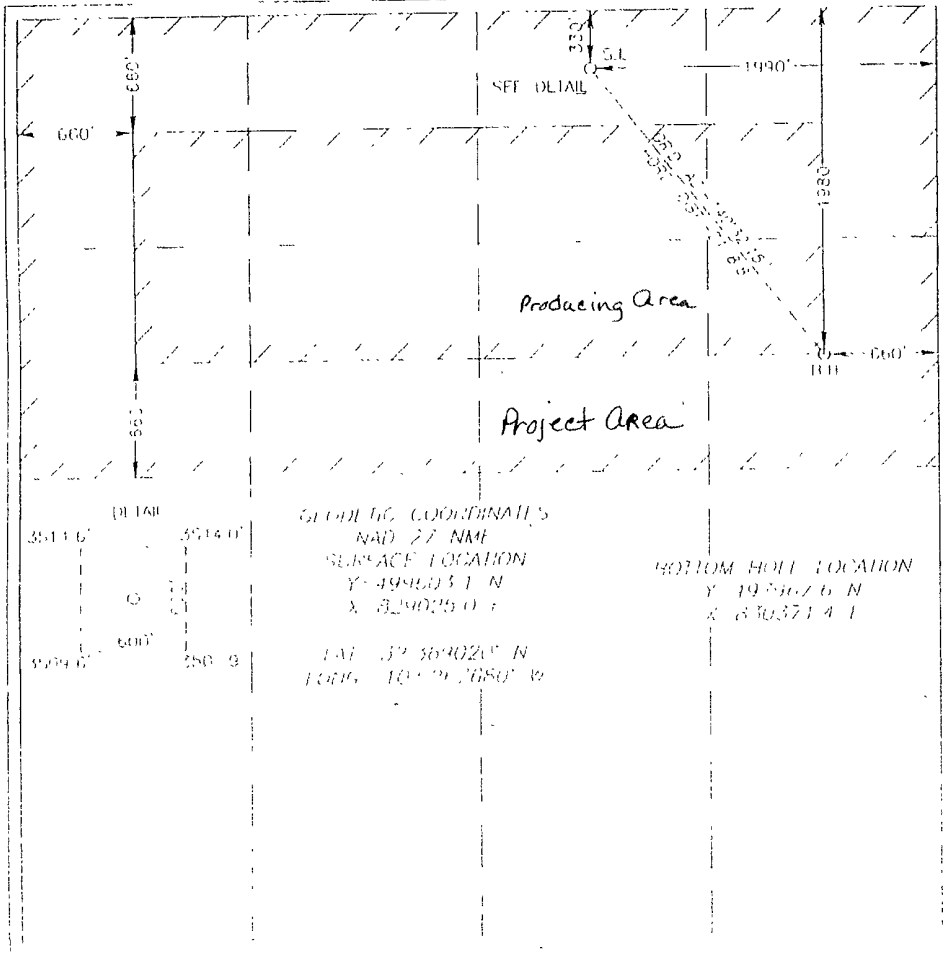
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	28	22-S	36-E		330	NORTH	1990	EAST	LEA

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
H	28	22 S	36-E		1980	NORTH	660	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No
~~360~~ 320	per Linda Good 8/28/08		

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 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 or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division

Ed Bandy 6-2-08
Signature Date

Ed Birdshead
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 supervision, and that the same is true and correct to the best of my belief.

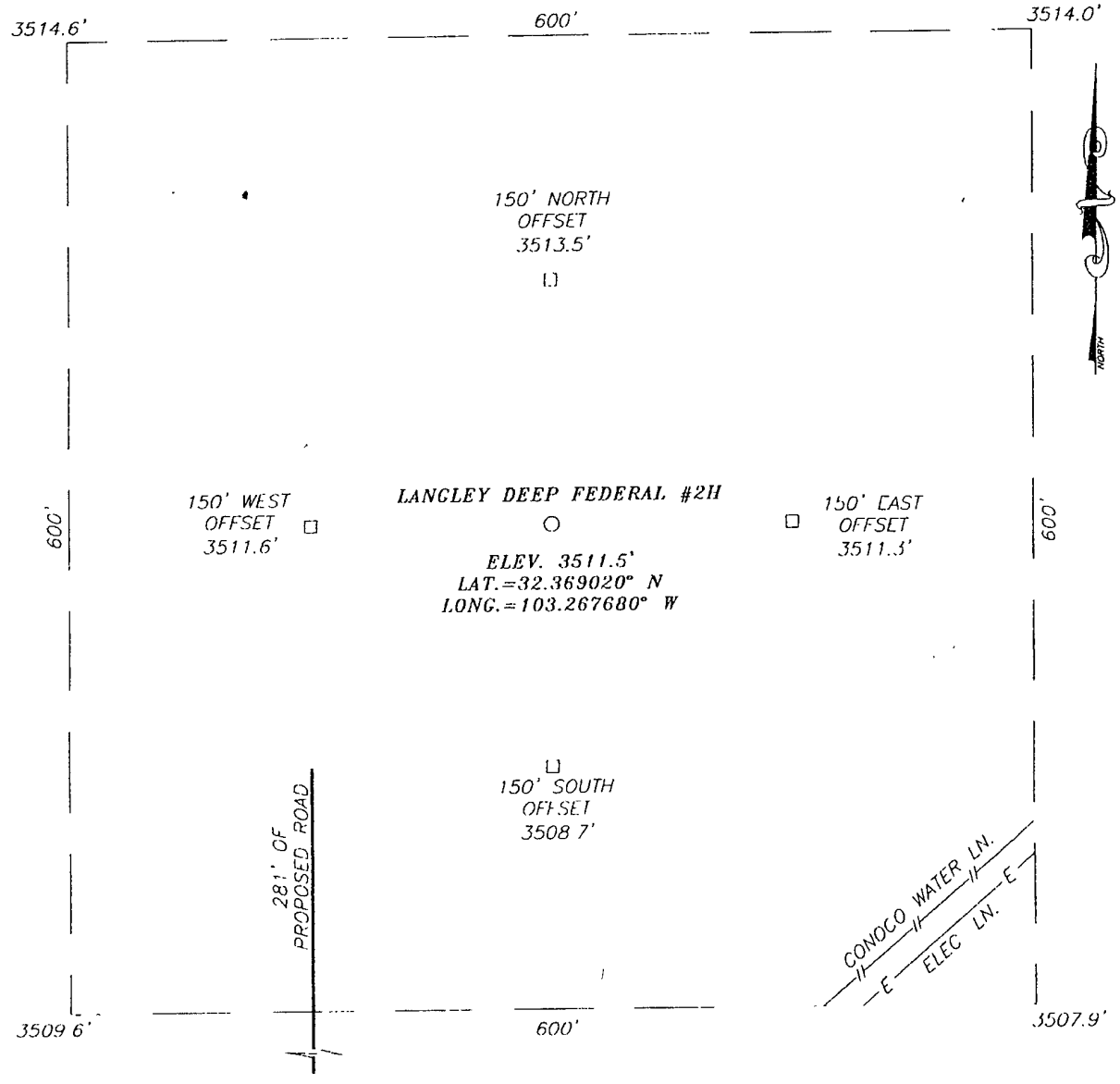
MAY 27, 2005
Date Surveyed

Signature & Seal of Professional Surveyor

EXHIBIT A-1

SECTION 28, TOWNSHIP 22 SOUTH, RANGE 36 EAST, N.M.P.M.,

LEA COUNTY, NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF DELAWARE BASIN ROAD AND WEAVER ROAD, GO EAST APPROX 0.9 MILES TURN RIGHT AND GO SOUTH APPROX 1.3 MILLS TURN LEFT AND GO SOUTHEAST APPROX 0.5 MILES TURN RIGHT AND GO SOUTH APPROX 0.8 MILES TURN LEFT AND GO EAST APPROX [illegible]
ROAD SURFACE [illegible]
[illegible]

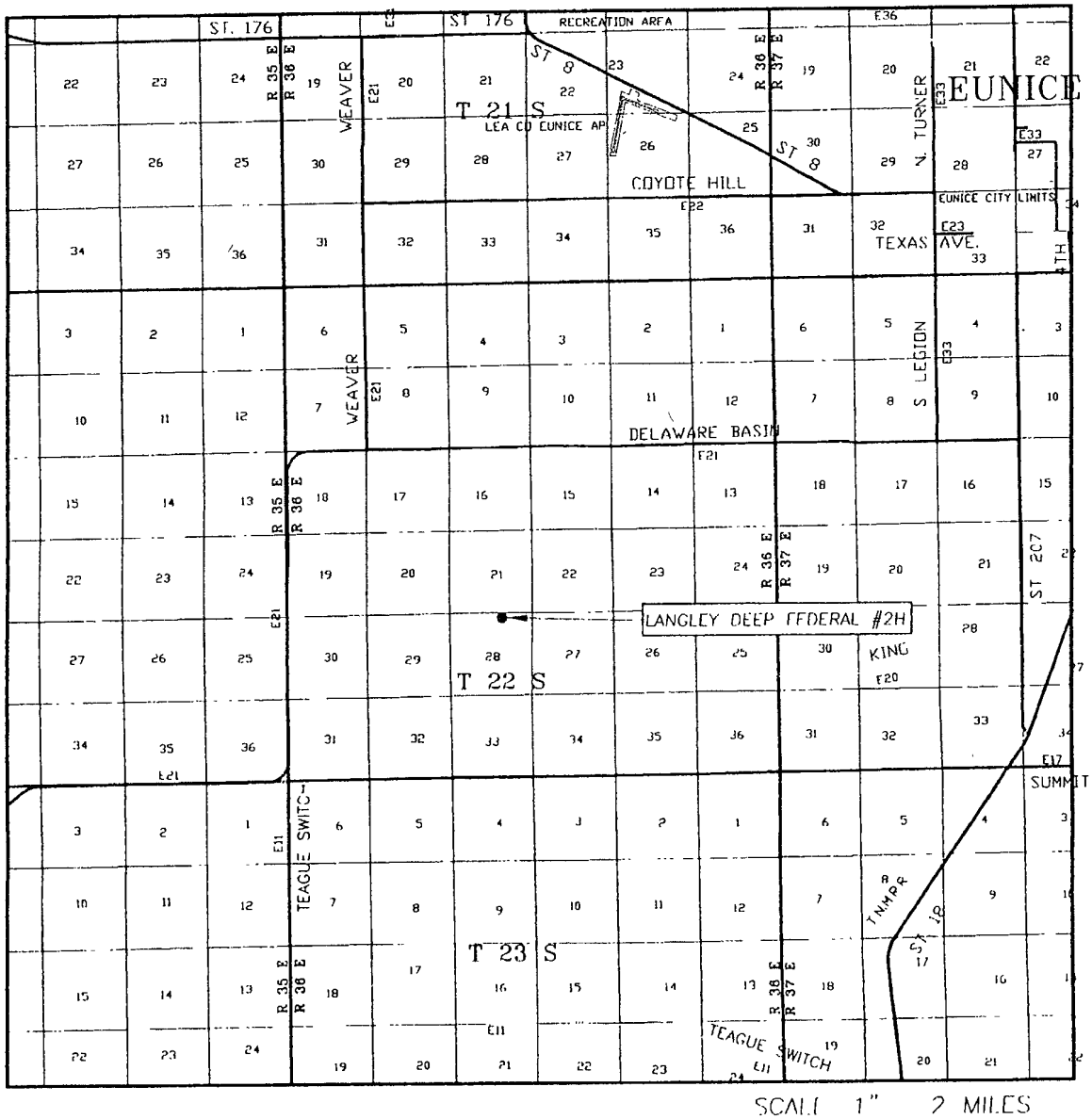
100 0 100 200 Feet

Scale: 1" = 100'

CHESAPEAKE OPERATING, INC.

LANGLEY DEEP FEDERAL #2H WELL
LOCATED [illegible] FEET FROM THE [illegible]
AND [illegible] FEET EAST [illegible]

VICINITY MAP



SCALE 1" 2 MILES

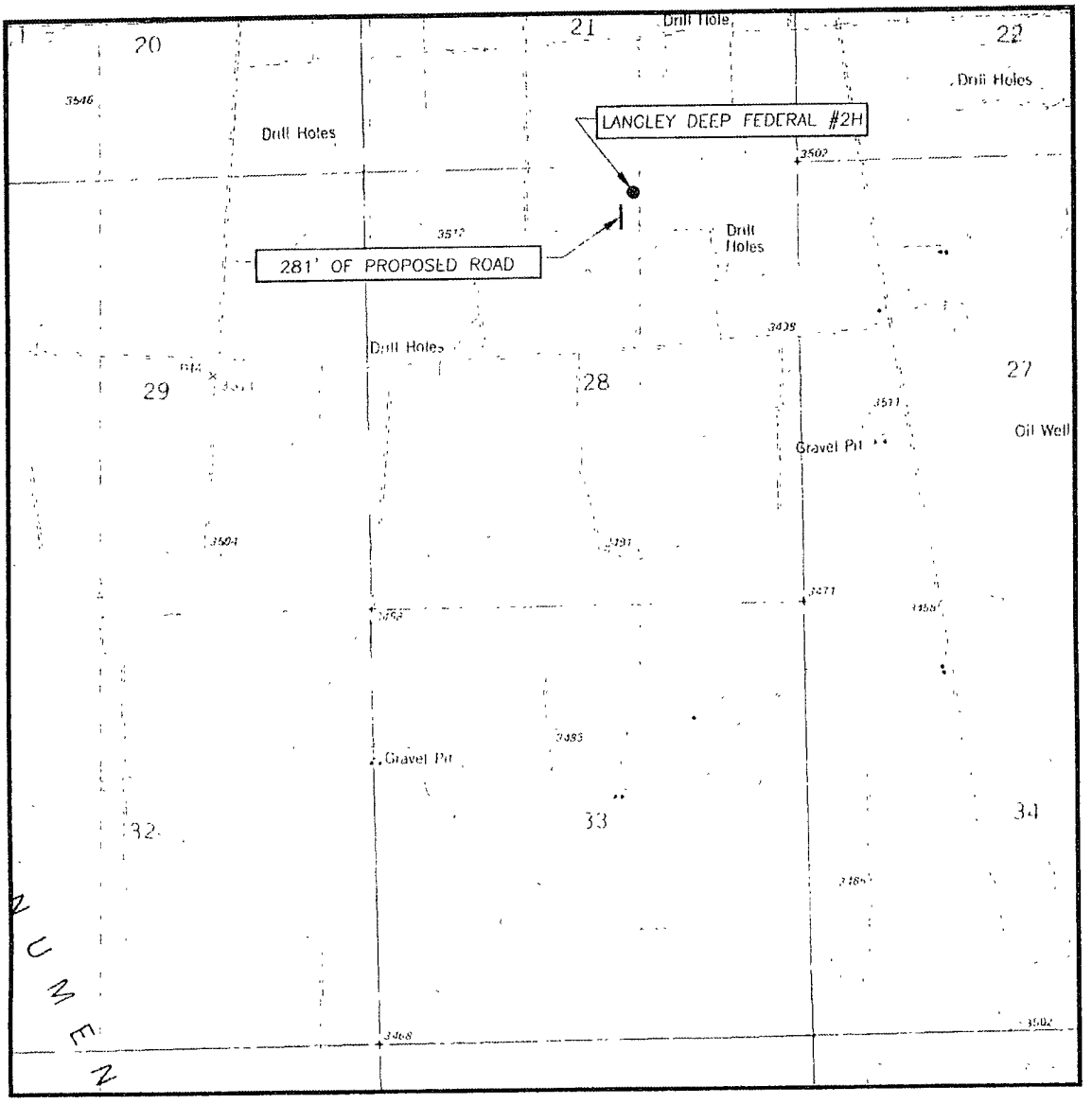
SEC 28 TWP. 22-S RGE. 36-E

SURVEY N M P M

COUNTY [illegible]

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
[illegible] N. DAL PASO
[illegible] N.M. 88240

LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:
EAST LAKE, N.M. 10'

SEC 28 TWP 22 S RGE 36 E

SURVEY N.M.P.M.

COUNTY LEA STATE NEW MEXICO

DESCRIPTION 330' FNL & 1990' FEL

ELEVATION 3512'

OPERATOR CHESAPEAKE OPERATING INC.

LEASE LANGLEY DEEP FEDERAL

U.S.G.S. TOPOGRAPHIC MAP
EAST LAKE, N.M.

A-4

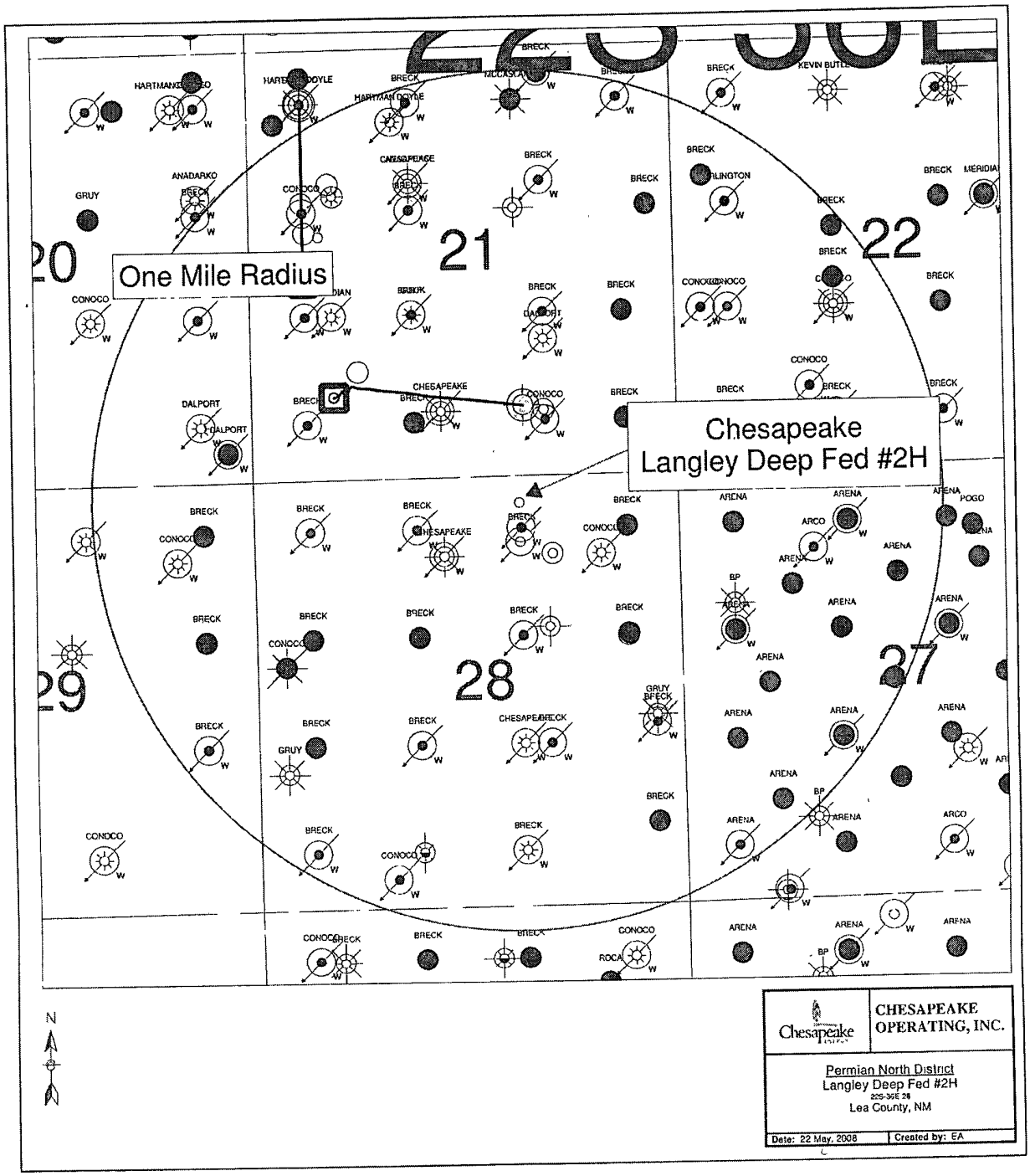

One Mile Radius
Chesapeake
Langley Deep Fed #2H
21
22
28
27
20
29
BRECK
CONOCO
ARENA
CHESAPEAKE
DALPORT
GRUY
ANADARKO
HARTMAN DOYLE
ARCO
BP
POGO
ROCA
N
Chesapeake
CHESAPEAKE OPERATING, INC.
Permian North District
Langley Deep Fed #2H
22S-36E 28
Lea County, NM
Date: 22 May, 2008
Created by: EA

EXHIBIT B

Additional Operator Remarks:

CHESAPEAKE OPERATING, INC. RESPECTFULLY REQUESTS PERMISSION TO DRILL A WELL TO 14,460' TO TEST THE DEVONIAN FORMATION. IF PRODUCTIVE, CASING WILL BE RUN AND THE WELL COMPLETED. IF DRY, THE WELL WILL BE PLUGGED & ABANDONED AS PER BLM AND NEW MEXICO OIL CONSERVATION DIVISION REQUIREMENTS.

PLEASE FIND THE SURFACE USE PLAN AND DRILLING PLAN AS REQUIRED BY ONSHIRE 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 LATSHAW #6 LAYOUT AND EXHIBIT F-1 TO
F-3 BOP & CHOKE MANIFOLD AND EXHIBIT G DIRECTIONAL DRILL PLAN.

EXHIBIT E ARCHEOLOGICAL SURVEY WILL BE DELIVERED TO THE BLM WHEN COMPLETED.

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 621654)

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	DRILL DEPTH
Rustler	2140	1392
Yates	348	3184
**Seven Rivers	150	3382'
**Queen	-226	3758'
*Strawn Marker_4	-5625	9157'
*Barnett (TVD)	-7437	10969'
Mississippian Lime (TVD)	-7856	11388'
Woodford (TVD)	-8346	11878'
*Devonian (TVD)	-8660	12192'
TVD for lowest part of heal		12500'
TVD for end of lateral		12350'
Measured Depth		Approx. 14460'

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

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

Substance	Formation	Depth
Gas	Yates	3184
Oil	Seven Rivers	3640
Oil	Queen	3758
Oil	Strawn	9157
~~Oil~~ GAS	Devonian	12342

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

Will have a 5000 psi rig stack (see proposed schematic) for drill out below intermediate casing; this system will be tested to ~~3000~~ 5000 psi working pressure. ← See COA

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

I. BOP, Annular, Choke Manifold, Pressure Test – (See Exhibit F-1 to F-3)

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~~ 10 **minutes,** with no observable pressure decline, once the test pressure as been applied.

Onshore Order

II. Accumulator Performance Test

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

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

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

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

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

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

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

D. Test Procedure
1. Shut accumulator pumps off and record accumulator pressure.

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

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

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

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

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

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

4. CASING AND CEMENTING PROGRAM

a. The proposed casing program will be as follows:

Purpose	Interval	Hole Size	Casing Size	Weight	Grade	Thread	Condition
Surface	Surface – ~~400'~~ 1400	17-1/2"	13-3/8"	48.0#	H-40	STC	New
Intermediate	Surface – ~~4330~~ 4330 – 4,600'	12-1/4"	9-5/8"	40.0# 40.0	J-55 N-80	LTC "	New
Intermediate	Surface – 12,235'	8-3/4"	7"	26.0#	HCP-110	LTC	New
Production	11,990' – 14,415'	6-1/8"	4-1/2"	13.5#	L-80	LTC	New

See COA per Operator 8/6/08

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

c. Casing Safety Factors:
13-3/8" Surface Casing: SFb = 1.4, SFc = 3.9 and SFt = 6.0
9-5/8" Intermediate Casing: SFb = 2.40, SFc = 1.6 and SFt = 2.8
7" Intermediate Casing: SFb = 1.4, SFc = 1.5, and SFt = 2.3
4-1/2" Production Liner: SFb = 1.3, SFc = 1.5 and SFt = 5.3

d. The cementing program will be as follows:

5. Cementing Program

Interval	Type	Amount	Yield	Top of CMT	Excess
Surface	Class C 1% CaCl2 (Accelerator)	450 sks	1.34	Surface	100%
Intermediate (9-5/8")	Lead: 50/50 Poz/Class C	1050 sks	2.00	Surface	100%
	Tail: Class C Neat	500 sks	1.32		100%
Intermediate (7")	Lead: Lightweight Class H Neat	600 sks	2.03	4000'	50%
	Tail: Class H 0.5% Fluid Loss Control 0.4% Dispersant 1 pps NaCl2 0.2% Retarder	250 sks	1.26		50%
Production	None ← See COA				

See COA

Cement volumes may be revised based on caliper volume measurements.

6. MUD PROGRAM

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

Interval	Mud Type	Mud Weight	Viscosity	Fluid Loss
0' – ~~400~~'	FW	8.5 – 9.2	30-36	NC
~~400~~' – 4,600'	Native/Brine	8.8 – 10.1	28-30	NC
4,600' – 12,225'TVD	FW/LSND	8.8-9.0	34-40	25-10
12,225'TVD - TD	FW/LSND	8.8 – 9.0	29-35	20-8

See COA

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.

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 GR, Density, Neutron Pe & High resolution Induction, Sonic from 4800-12,100. Then GR, Density, Neutron, Pe, Dual laterolog, Sonic 12,100 to TD.

c. Cores samples are not planned.

7. ABNORMAL PRESSURES AND HYDROGEN SULFIDE
a. The estimated bottom hole pressures is 5500 psi. No abnormal pressures or temperatures are anticipated.
b. Hydrogen sulfide gas is not anticipated.

Permian District

NM - Lea - Devonian
Langley Deep Fed #2H
Langley Deep Fed#2H
Wellbore #1

Plan: Plan #1

Standard Planning Report

20 May, 2008

EXHIBIT 6

Planning Report

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Langley Deep Fed#2H
Company:	Permian District	**TVD Reference:**	RKB @ 3532.0ft
Project:	NM - Lea - Devonian	**MD Reference:**	RKB @ 3532.0ft
Site:	Langley Deep Fed #2H	**North Reference:**	True
Well:	Langley Deep Fed#2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project NM - Lea - Devonian

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

Site Langley Deep Fed #2H

Site Position:		**Northing:**	ft	**Latitude:**	
From:	None	**Easting:**	ft	**Longitude:**	
Position Uncertainty:	ft	**Slot Radius:**	in	**Grid Convergence:**	0.00 °

Well Langley Deep Fed#2H

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:**	0.0 ft	**Ground Level:**	3,508 0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	4/28/2008	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	141.10

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	
11,990.0	0.00	0.00	11,990.0	0 0	0.0	0.00	0.00	0 00	0.00	
12,232 0	24.00	141 10	12,225.0	-38 9	31.4	9.92	9.92	0.00	141 10	
12,806.7	95.30	141.10	12,497.0	-400 4	323.1	12 41	12.41	0.00	0 00	
14,417.0	95.30	141.10	12,348.3	-1,648.2	1,330.0	0 00	0.00	0 00	0.00	

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Langley Deep Fed#2H
Company:	Permian District	**TVD Reference:**	RKB @ 3532.0ft
Project:	NM - Lea - Devonian	**MD Reference:**	RKB @ 3532.0ft
Site:	Langley Deep Fed #2H	**North Reference:**	True
Well:	Langley Deep Fed#2H	**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
13 3/8"									
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
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
4,100.0	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
9 5/8"									
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
5,000.0	0.00	0 00	5,000.0	0.0	0 0	0 0	0.00	0.00	0.00

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Langley Deep Fed#2H
Company:	Permian District	**TVD Reference:**	RKB @ 3532.0ft
Project:	NM - Lea - Devonian	**MD Reference:**	RKB @ 3532.0ft
Site:	Langley Deep Fed #2H	**North Reference:**	True
Well:	Langley Deep Fed#2H	**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)
5,100 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
8,300 0	0.00	0.00	8,300.0	0.0	0 0	0.0	0 00	0.00	0.00
8,400 0	0 00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,500 0	0.00	0 00	8,500.0	0.0	0 0	0.0	0 00	0.00	0.00
8,600 0	0.00	0.00	8,600.0	0.0	0.0	0 0	0.00	0.00	0.00
8,700 0	0 00	0 00	8,700.0	0.0	0.0	0.0	0 00	0.00	0.00
8,800 0	0 00	0 00	8,800.0	0 0	0.0	0.0	0.00	0.00	0 00
8,900.0	0.00	0 00	8,900 0	0 0	0.0	0.0	0 00	0.00	0.00
9,000 0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0 00	0.00	9,100.0	0.0	0 0	0.0	0 00	0.00	0.00
9,200 0	0 00	0 00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,300.0	0 0	0.0	0.0	0 00	0.00	0 00
9,400 0	0 00	0.00	9,400.0	0.0	0.0	0.0	0 00	0.00	0 00
9,500 0	0.00	0.00	9,500.0	0.0	0.0	0 0	0 00	0.00	0.00
9,600.0	0 00	0 00	9,600.0	0 0	0 0	0.0	0.00	0.00	0 00
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0 0	0 00	0.00	0.00
9,800 0	0.00	0 00	9,800.0	0.0	0.0	0.0	0 00	0.00	0.00
9,900.0	0.00	0.00	9,900.0	0.0	0 0	0.0	0.00	0.00	0 00
10,000.0	0 00	0 00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00
10,100.0	0.00	0.00	10,100 0	0.0	0.0	0.0	0 00	0.00	0.00
10,200.0	0 00	0 00	10,200.0	0.0	0.0	0.0	0.00	0.00	0.00
10,300.0	0 00	0.00	10,300.0	0.0	0.0	0.0	0.00	0.00	0 00
10,400 0	0 00	0.00	10,400.0	0.0	0 0	0.0	0.00	0.00	0.00

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Langley Deep Fed#2H
Company:	Permian District	**TVD Reference:**	RKB @ 3532.0ft
Project:	NM - Lea - Devonian	**MD Reference:**	RKB @ 3532.0ft
Site:	Langley Deep Fed #2H	**North Reference:**	True
Well:	Langley Deep Fed#2H	**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)
10,500.0	0.00	0.00	10,500.0	0.0	0.0	0.0	0.00	0.00	0.00
10,600.0	0.00	0.00	10,600.0	0.0	0.0	0.0	0.00	0.00	0.00
10,700.0	0.00	0.00	10,700.0	0.0	0.0	0.0	0.00	0.00	0.00
10,800.0	0.00	0.00	10,800.0	0.0	0.0	0.0	0.00	0.00	0.00
10,900.0	0.00	0.00	10,900.0	0.0	0.0	0.0	0.00	0.00	0.00
11,000.0	0.00	0.00	11,000.0	0.0	0.0	0.0	0.00	0.00	0.00
11,100.0	0.00	0.00	11,100.0	0.0	0.0	0.0	0.00	0.00	0.00
11,200.0	0.00	0.00	11,200.0	0.0	0.0	0.0	0.00	0.00	0.00
11,300.0	0.00	0.00	11,300.0	0.0	0.0	0.0	0.00	0.00	0.00
11,400.0	0.00	0.00	11,400.0	0.0	0.0	0.0	0.00	0.00	0.00
11,500.0	0.00	0.00	11,500.0	0.0	0.0	0.0	0.00	0.00	0.00
11,600.0	0.00	0.00	11,600.0	0.0	0.0	0.0	0.00	0.00	0.00
11,700.0	0.00	0.00	11,700.0	0.0	0.0	0.0	0.00	0.00	0.00
11,800.0	0.00	0.00	11,800.0	0.0	0.0	0.0	0.00	0.00	0.00
11,900.0	0.00	0.00	11,900.0	0.0	0.0	0.0	0.00	0.00	0.00
11,990.0	0.00	0.00	11,990.0	0.0	0.0	0.0	0.00	0.00	0.00
12,000.0	0.99	141.10	12,000.0	-0.1	0.1	0.1	9.92	9.92	0.00
12,100.0	10.91	141.10	12,099.3	-8.1	6.6	10.4	9.92	9.92	0.00
12,196.4	20.46	141.10	12,192.0	-28.4	22.9	36.5	9.92	9.92	0.00
Devonian									
12,200.0	20.83	141.10	12,195.4	-29.4	23.7	37.7	9.92	9.92	0.00
12,232.0	24.00	141.10	12,225.0	-38.9	31.4	49.9	9.92	9.92	0.00
7"									
12,300.0	32.43	141.10	12,284.9	-63.9	51.5	82.1	12.41	12.41	0.00
12,400.0	44.84	141.10	12,362.8	-112.4	90.7	144.4	12.41	12.41	0.00
12,500.0	57.25	141.10	12,425.6	-172.8	139.4	222.0	12.41	12.41	0.00
12,600.0	69.66	141.10	12,470.2	-242.2	195.5	311.3	12.41	12.41	0.00
12,700.0	82.06	141.10	12,494.5	-317.6	256.2	408.1	12.41	12.41	0.00
12,800.0	94.47	141.10	12,497.6	-395.2	318.9	507.8	12.41	12.41	0.00
12,806.7	95.30	141.10	12,497.0	-400.4	323.1	514.5	12.41	12.41	0.00
12,900.0	95.30	141.10	12,488.4	-472.7	381.4	607.4	0.00	0.00	0.00
13,000.0	95.30	141.10	12,479.1	-550.2	443.9	707.0	0.00	0.00	0.00
13,100.0	95.30	141.10	12,469.9	-627.7	506.5	806.5	0.00	0.00	0.00
13,200.0	95.30	141.10	12,460.7	-705.2	569.0	906.1	0.00	0.00	0.00
13,300.0	95.30	141.10	12,451.4	-782.7	631.5	1,005.7	0.00	0.00	0.00
13,400.0	95.30	141.10	12,442.2	-860.2	694.1	1,105.3	0.00	0.00	0.00
13,500.0	95.30	141.10	12,433.0	-937.6	756.6	1,204.8	0.00	0.00	0.00
13,600.0	95.30	141.10	12,423.7	-1,015.1	819.1	1,304.4	0.00	0.00	0.00
13,700.0	95.30	141.10	12,414.5	-1,092.6	881.6	1,404.0	0.00	0.00	0.00
13,800.0	95.30	141.10	12,405.2	-1,170.1	944.2	1,503.5	0.00	0.00	0.00
13,900.0	95.30	141.10	12,396.0	-1,247.6	1,006.7	1,603.1	0.00	0.00	0.00
14,000.0	95.30	141.10	12,386.8	-1,325.1	1,069.2	1,702.7	0.00	0.00	0.00
14,100.0	95.30	141.10	12,377.5	-1,402.6	1,131.8	1,802.3	0.00	0.00	0.00
14,200.0	95.30	141.10	12,368.3	-1,480.1	1,194.3	1,901.8	0.00	0.00	0.00
14,300.0	95.30	141.10	12,359.1	-1,557.6	1,256.8	2,001.4	0.00	0.00	0.00
14,400.0	95.30	141.10	12,349.8	-1,635.1	1,319.3	2,101.0	0.00	0.00	0.00
14,417.0	95.30	141.10	12,348.3	-1,648.2	1,330.0	2,117.9	0.00	0.00	0.00

Database:	Drilling Database	**Local Co-ordinate Reference:**	Well Langley Deep Fed#2H
Company:	Permian District	**TVD Reference:**	RKB @ 3532.0ft
Project:	NM - Lea - Devonian	**MD Reference:**	RKB @ 3532.0ft
Site:	Langley Deep Fed #2H	**North Reference:**	True
Well:	Langley Deep Fed#2H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Casing Points

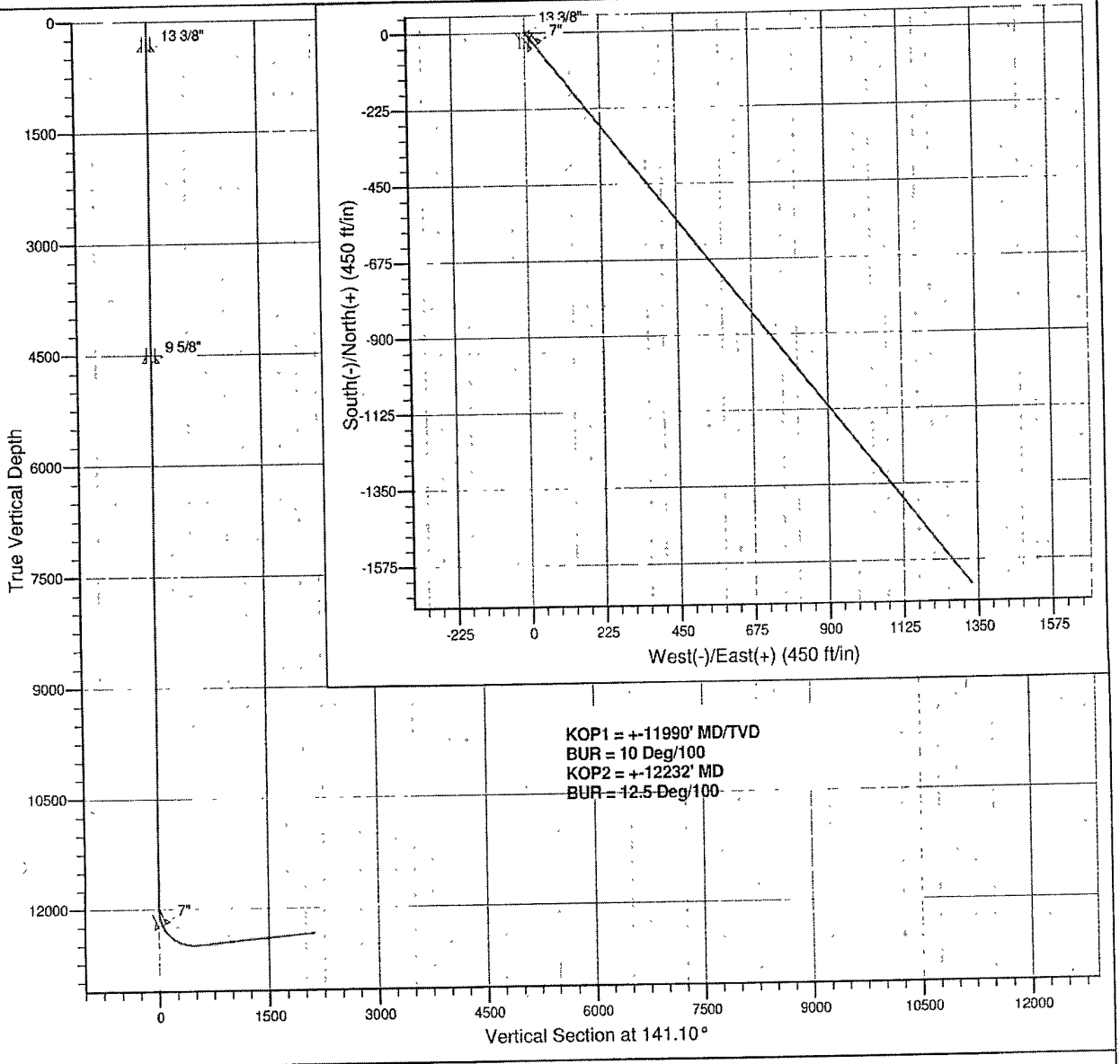
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
400.0	400.0	13 3/8"	13.375	17.500
4,600.0	4,600.0	9 5/8"	9.625	12.250
12,232 0	12,225.0	7"	7.000	8.750
14,418.0		4 1/2"	4.500	6 125

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
12,196.4	12,192.0	Devonian		0.00	

Chesapeake Operating Inc. Langley Deep Fed 2H County: Lea, NM

Section 28-22S-36E



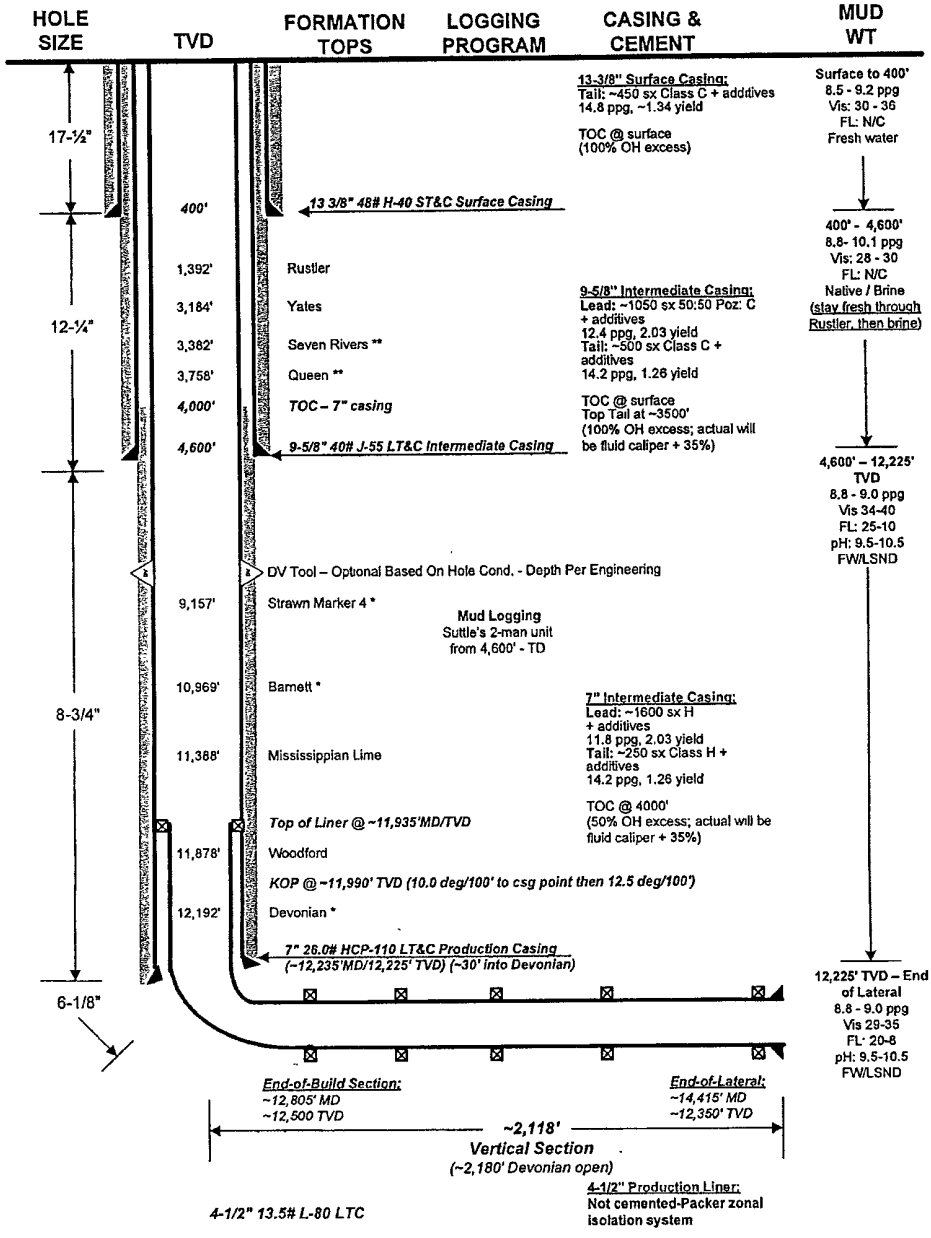
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	11990.0	0.00	0.00	11990.0	0.0	0.0	0.00	0.00	0.0	
3	12232.0	24.00	141.10	12225.0	-38.9	31.4	9.92	141.10	50.0	
4	12806.7	95.30	141.10	12497.0	-400.4	323.1	12.41	0.00	514.5	
5	14417.0	95.30	141.10	12348.3	-1648.2	1330.0	0.00	0.00	2117.9	

CHESAPEAKE OPERATING INC

Proposed Well Schematic (Drilling)

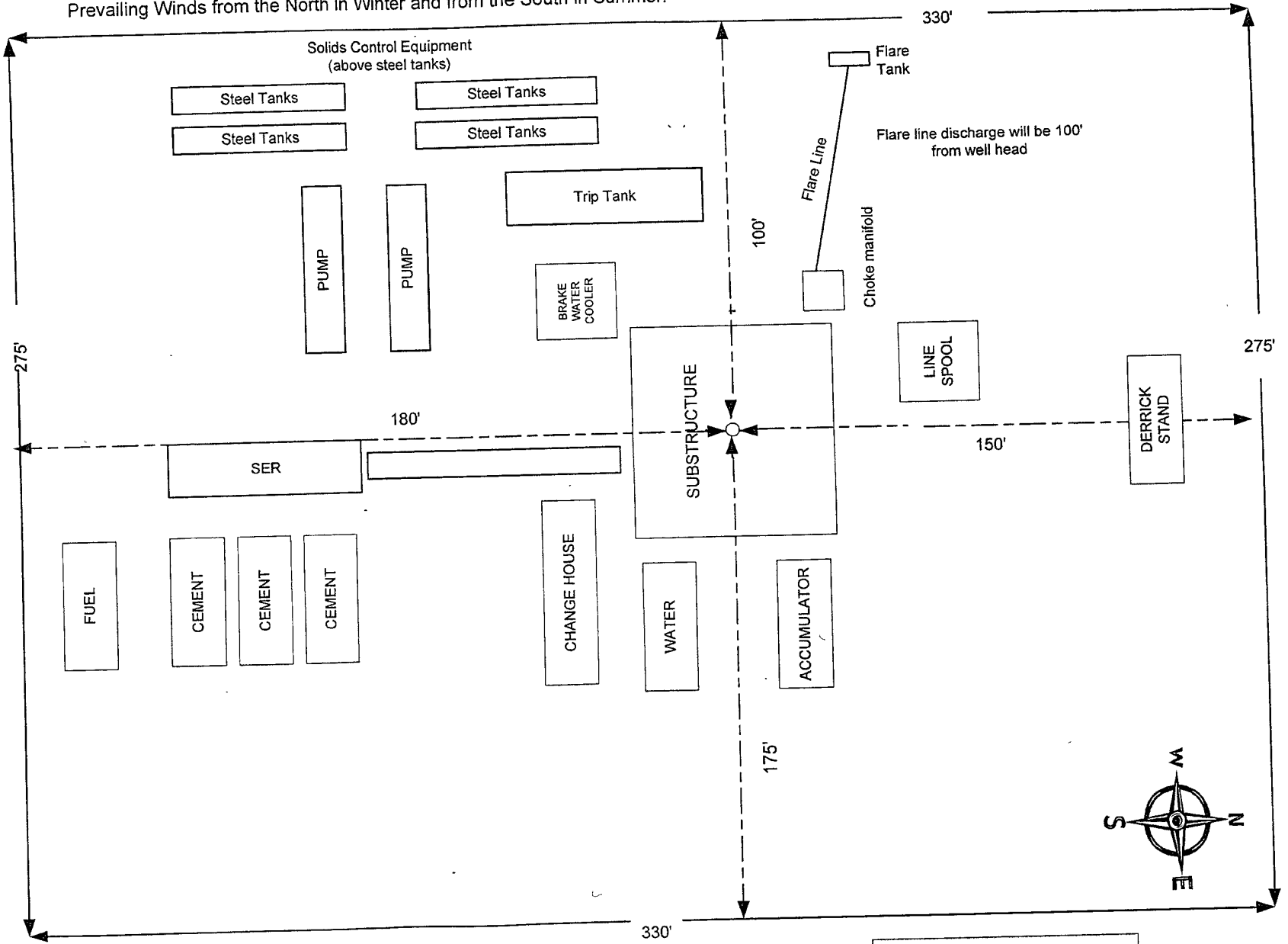
WELL : Langley Deep Fed #2H
SHL : Section 28 - 22S - 36E, 330' FNL & 1,990' FEL
BHL : Section 28 - 22S - 36E, 1980' FNL & 660' FEL
COUNTY : Lea
STATE : New Mexico
FIELD : Langley (Devonian)
ELEVATION : GL – 3,512' RKB – 3,533' (based on est. 23' KB)



PREPARED BY: LDW/TAN DATE: 5/20/08

APPROVED BY: _____ DATE: _____

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



Not to scale

LATSHAW #6

Exhibit D

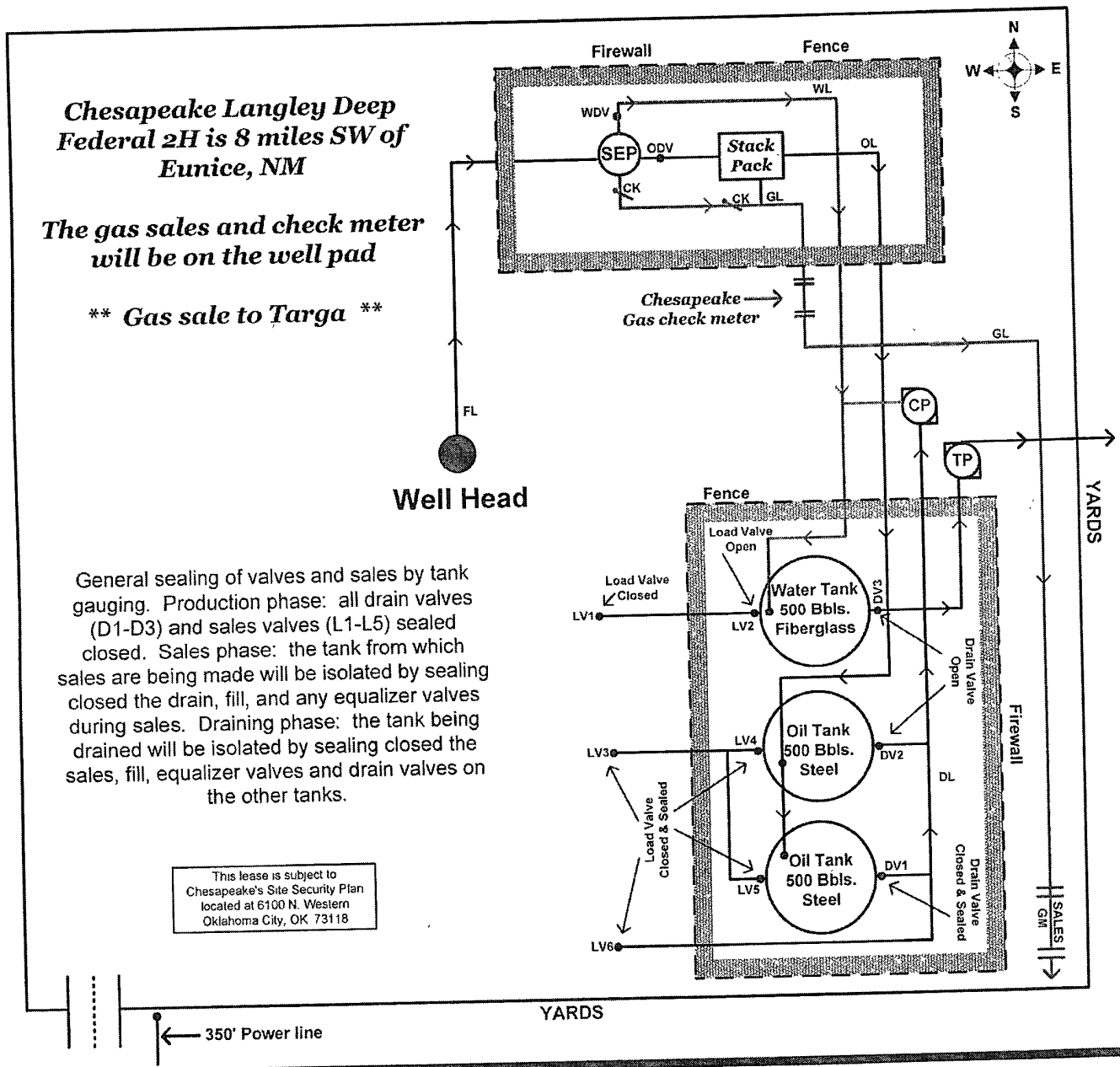
CHESAPEAKE OPERATING, INC.

LANGLEY DEEP FEDERAL 2H
28-22S-36E
LEA CO., NEW MEXICO

Chesapeake Langley Deep Federal 2H is 8 miles SW of Eunice, NM

The gas sales and check meter will be on the well pad

*** Gas sale to Targa ****



General sealing of valves and sales by tank gauging. Production phase: all drain valves (D1-D3) and sales valves (L1-L5) sealed closed. Sales phase: the tank from which sales are being made will be isolated by sealing closed the drain, fill, and any equalizer valves during sales. Draining phase: the tank being drained will be isolated by sealing closed the sales, fill, equalizer valves and drain valves on the other tanks.

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

Prepared by: Jackie Reynolds
Date: 6/1/2008

Approved by:
Date:

EXHIBIT C

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

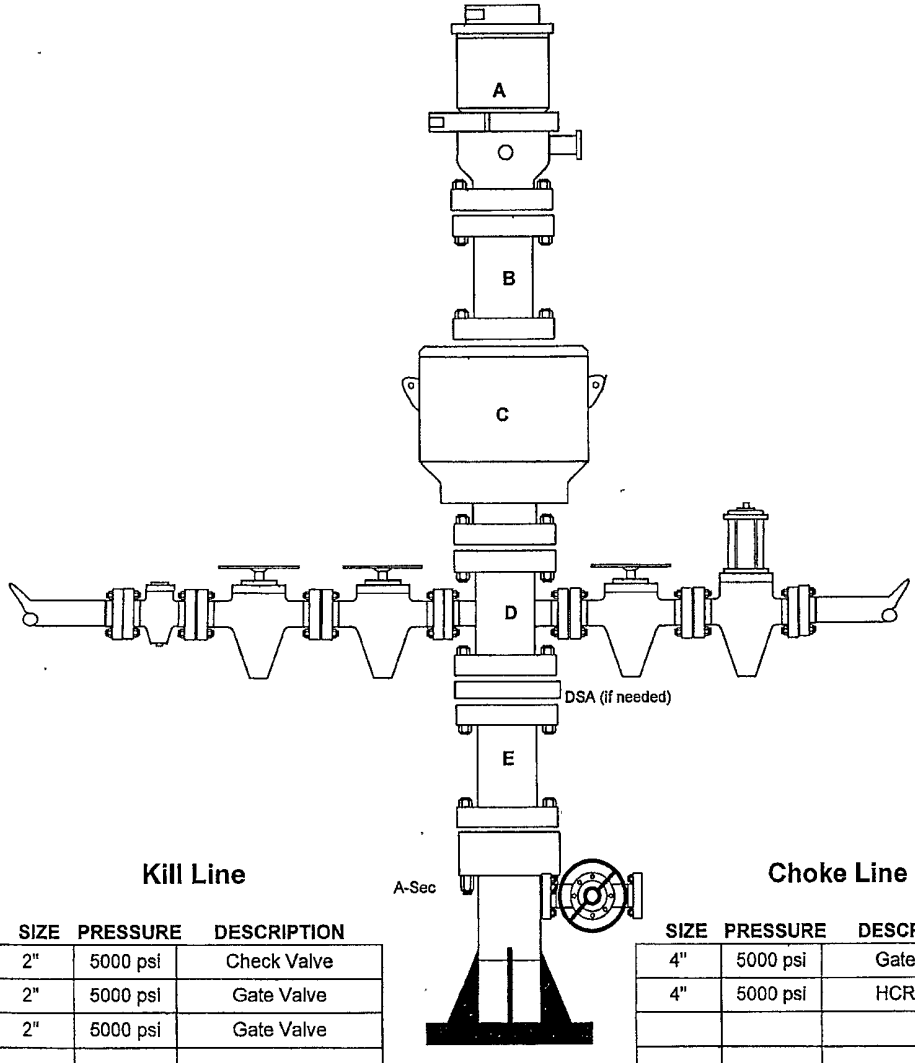
WELL : **Langley Deep Fed #2H**

RIG : **Latshaw 6**

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

OPERATION : **Drill out below 13-3/8" Casing** (12-1/4" 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

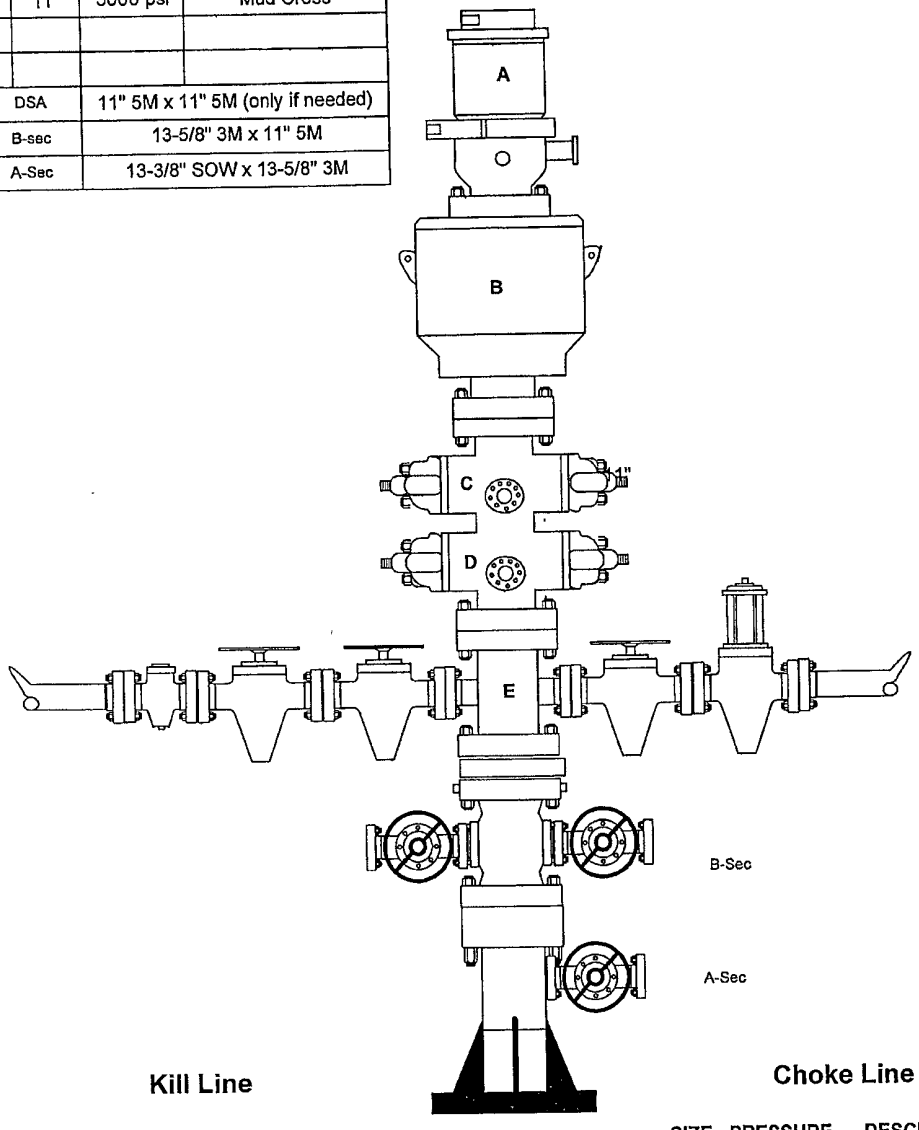
WELL : Langley Deep Fed#2H

RIG : Latshaw 6

COUNTY : Lea **STATE:** New Mexico

OPERATION : **Drill out below 9-5/8" Casing** (8-3/4" / 6-1/8" 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

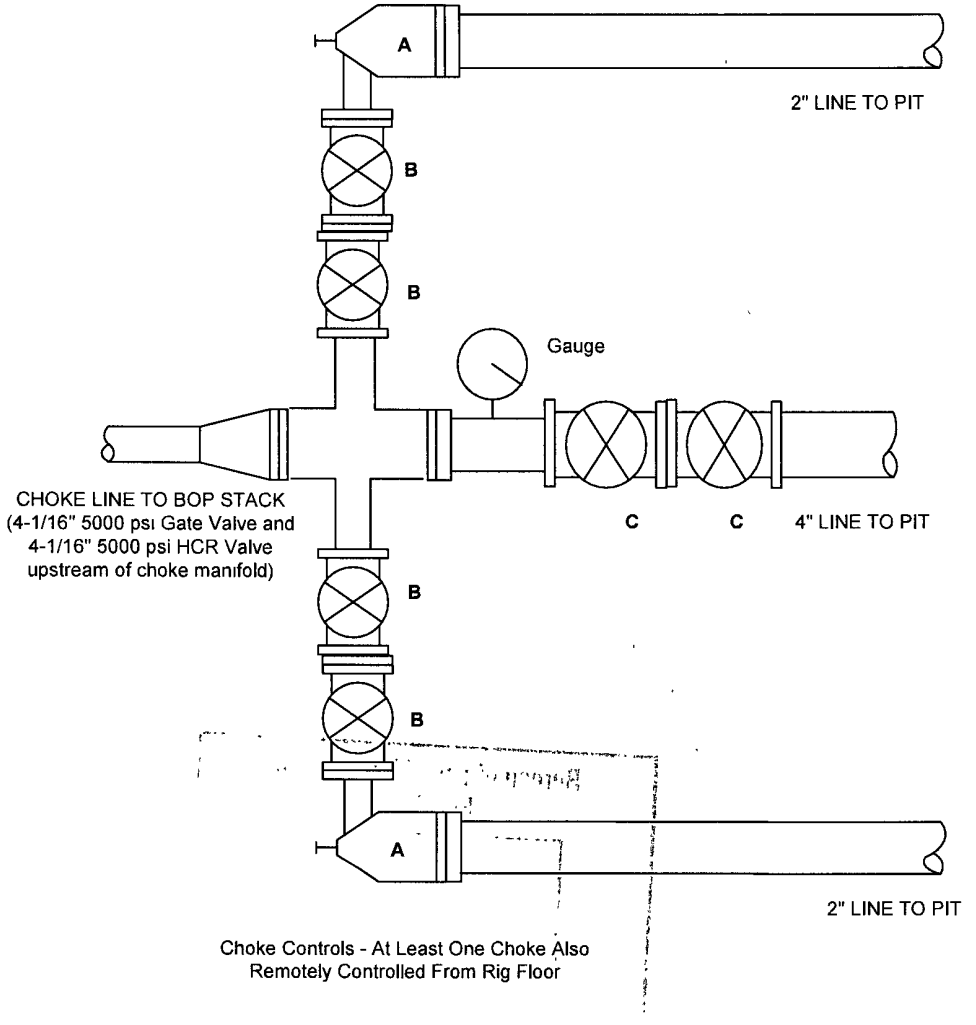
SIZE	PRESSURE	DESCRIPTION
4"	5000 psi	Gate Valve
4"	5000 psi	HCR Valve

EXHIBIT F-2

CHOKE MANIFOLD SCHEMATIC

CHESAPEAKE OPERATING, INC.

WELL : **Langley Deep Fed #2**
RIG : **Latshaw 6**
COUNTY : **Lea** **STATE** : **New Mexico**
OPERATION: **Drilling below/beyond 13-3/8" surface casing**



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

Geological Prognosis
Permian North District – CBP Region
CBP NM Project - Langley Prospect
Robert Martin – Geologist/Cliff Hanoch - Geophysicist
April 1, 2008

WELL NAME: Langley Deep Fed #2H
Section 28-22S-36E, Lea County, New Mexico

SURFACE LOCATION: 330' FNL & 1990' FEL, Section 28-22S-36E (entry, also called penetration point, at Top of Devonian will be approximately 330' FNL & 1980' FEL in Section 28)

ANTICIPATED BHL: 1980' FNL & 660' FEL, Section 28-22S-36E
(approx. 1750' lateral not including curve)

FIELD NAME: Langley (Devonian) Field

ELEVATIONS: GL (est.) 3,508' KB (est.) 3,532'

CASING IN WELLBORE: 13 3/8" @ 400'; 9 5/8" @ 4600'; 7" @ 12200 (TVD)'

EXPECTED FORMATION TOPS:

FORMATION	SUBSEA	DRILL DEPTH
Rustler	2140	1392
Yates	348	3184
**Seven Rivers	150	3382' OIL
**Queen	-226	3758' OIL
*Strawn Marker_4	-5625	9157' GAS/OIL
*Barnett (TVD)	-7437	10969' GAS
Mississippian Lime (TVD)	-7856	11388'
Woodford (TVD)	-8346	11878'
*Devonian (TVD)	-8660	12192' GAS/OIL
TVD for lowest part of heal		12500'
TVD for end of lateral		12350'
Measured Depth		Approx. 14460'

*Potentially productive zones
**Productive zone by another operator

Offset Logs: Arco Langley Getty Com #1 (21N-22S-36E)

OPEN HOLE LOGS: **Company:** To be determined **Phone:**

Log Types & Depths: Triple Combo (Spectral Gamma Ray/Neutron/Density/Pe/Dual Laterolog/MSFL) and Sonic from vertical TD of approximately 12,200' up to casing at 4600'. Gamma Ray while drilling from approximately 12,200' to end of lateral for up-to-date correlation purposes.

MUDLOGGER: **Company:** Suttles Mudlogging **Phone:**
2-Man Unit **Depth:** 4600' to TD (end of lateral)

Geological Prognosis
Permian North District – CBP Region
CBP NM Project - Langley Prospect
Robert Martin – Geologist/Cliff Hanoch - Geophysicist
April 1, 2008

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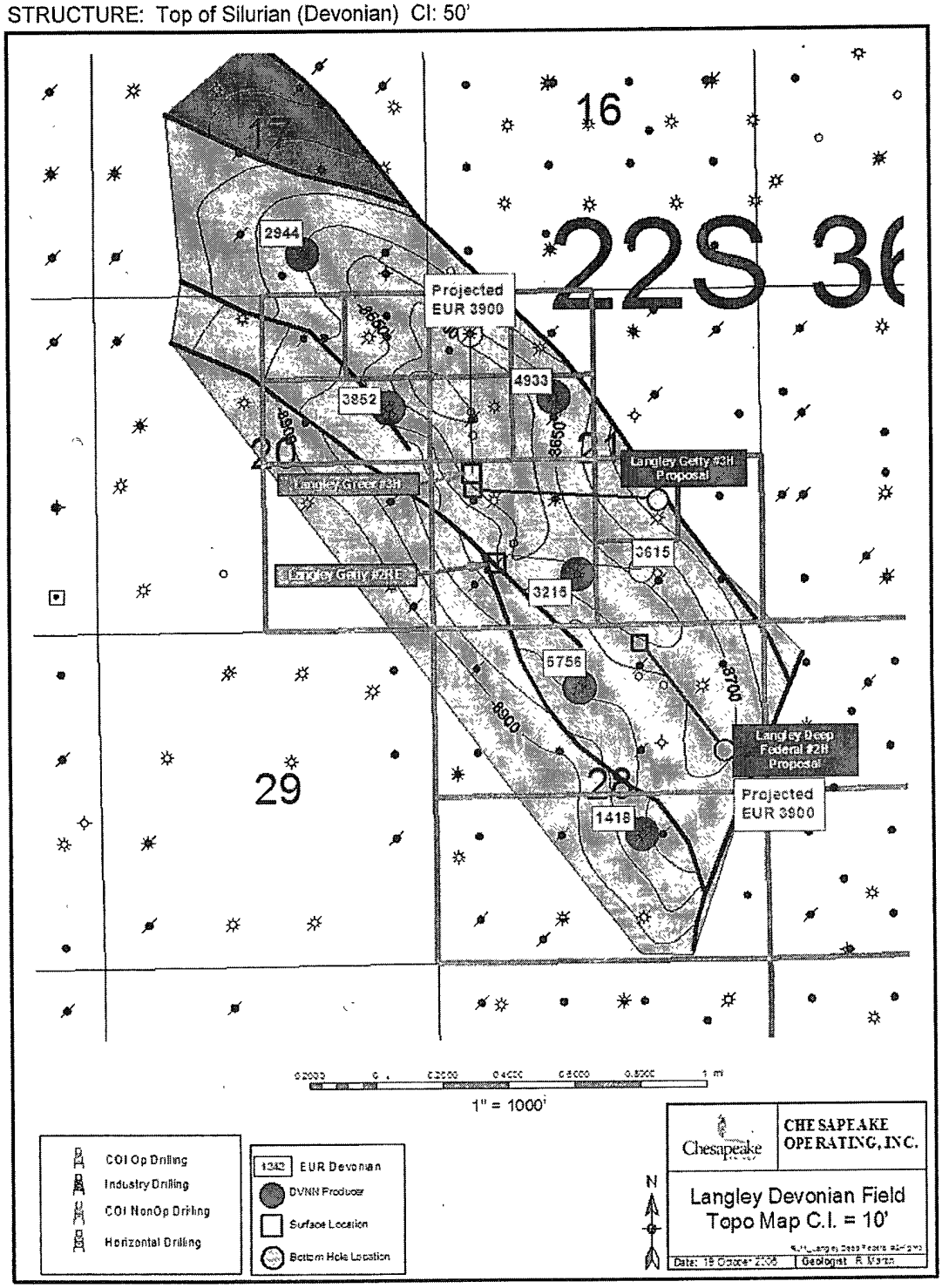
PROSPECT SUMMARY:

- Offset Upper Devonian horizontal test to the successful Langley Getty Com #2RE (which was also an Upper Devonian horizontal).

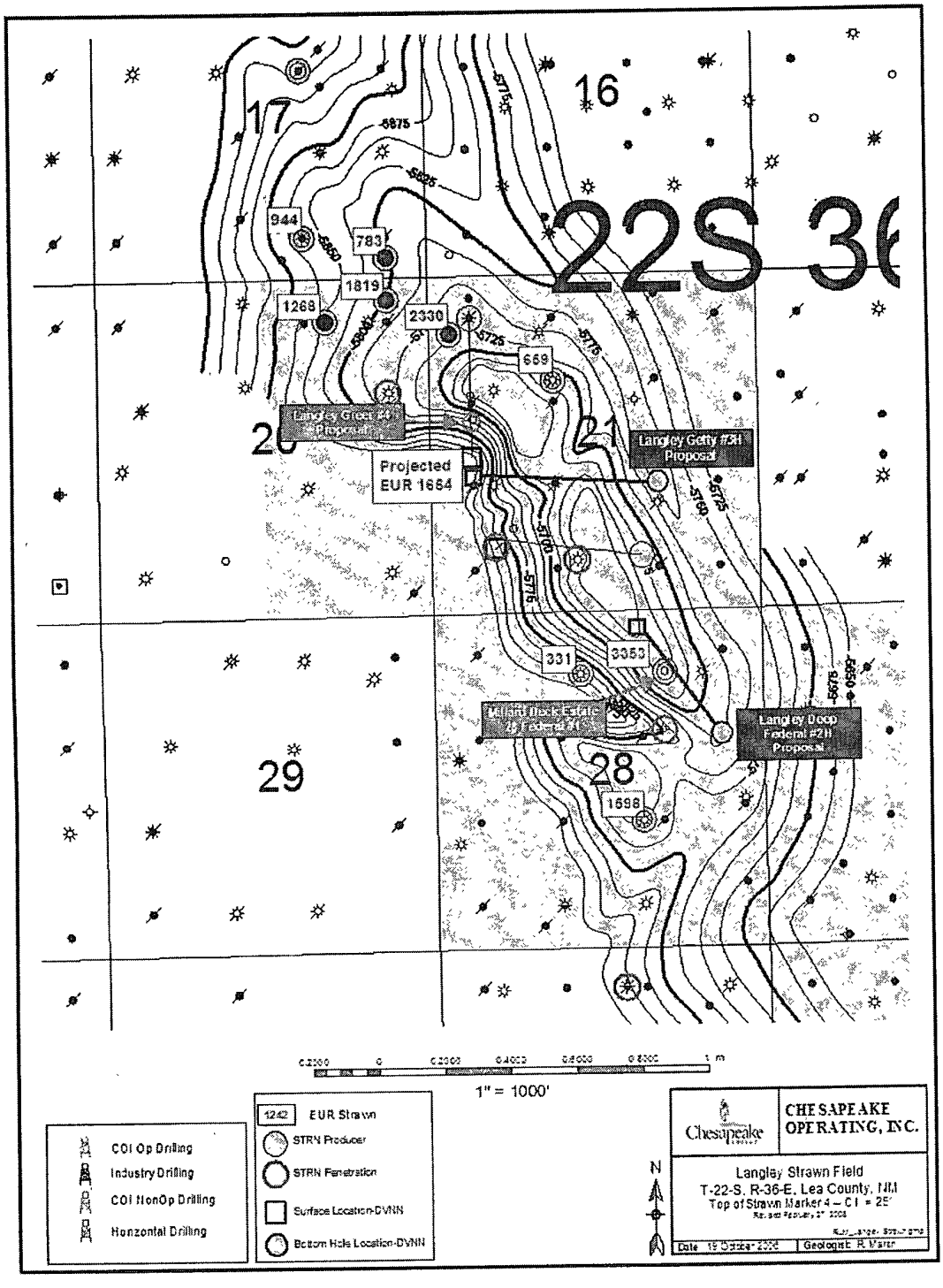
GEOLOGICAL PROGNOSIS
Langley Deep #2H, Lea County, NM

STRUCTURE: Top of Silurian (Devonian) CI: 50'



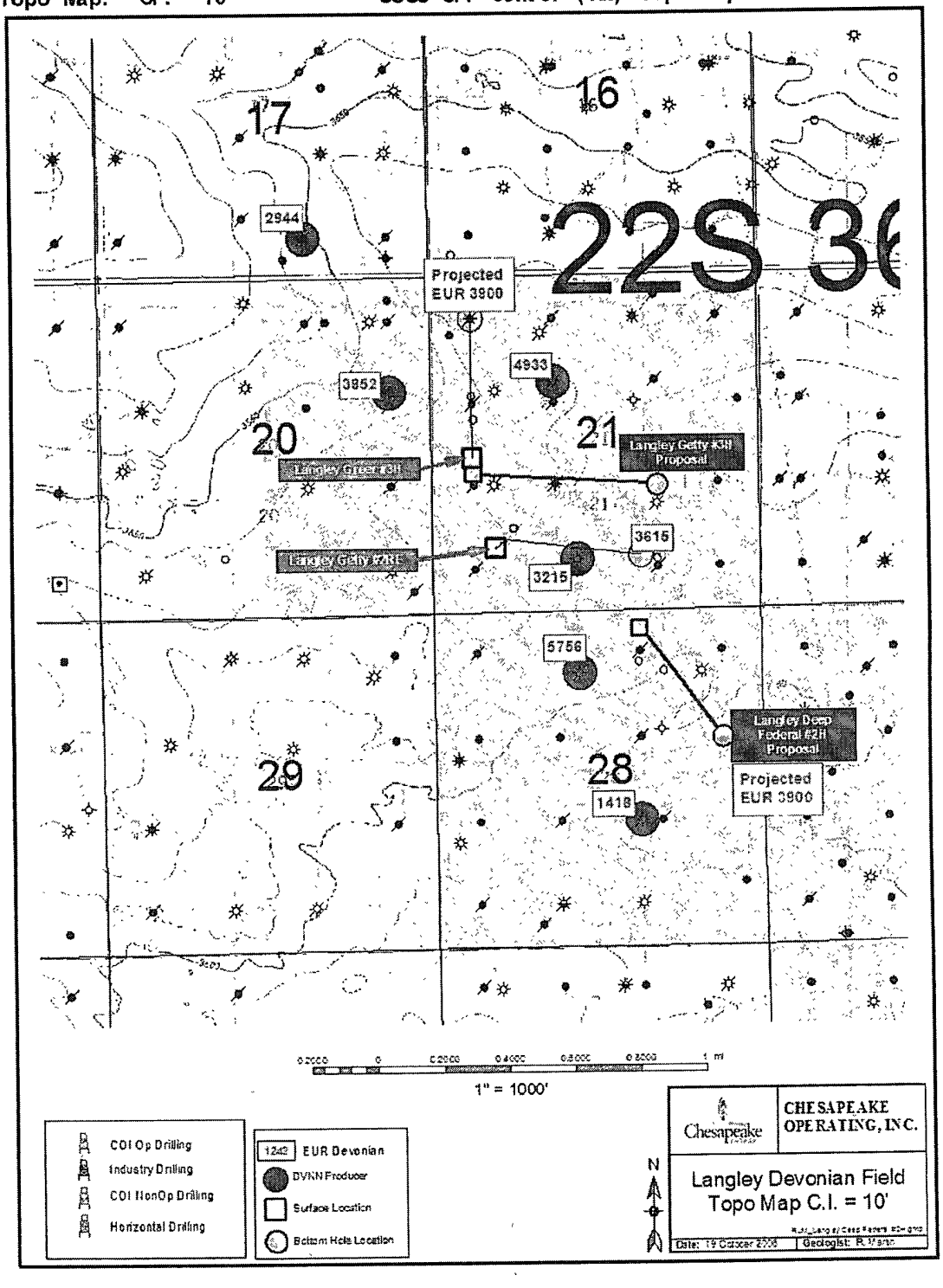
GEOLOGICAL PROGNOSIS
Langley Deep #2H, Lea County, NM

STRUCTURE: Top of Strawn CI: 25'



GEOLOGICAL PROGNOSIS
Langley Deep #2H, Lea County, NM

Topo Map: CI : 10' **USGS Oil Center (NM) Topo Map**



PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Chesapeake Operating
LEASE NO.:	NMLC030133B
WELL NAME & NO.:	Langley Deep Federal No 2H
SURFACE HOLE FOOTAGE:	330' FNL & 1990' FEL
BOTTOM HOLE FOOTAGE	1980' FNL & 660' FEL
LOCATION:	Section 28, T. 22 S., R 36 E., NMPM
COUNTY:	Lea 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.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Hobbs Field Station at (505) 393-3612 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

There is no measurable soil on this well pad to stockpile. No topsoil stockpile is required.

C. RESERVE PITS

The operator has applied for a closed-loop system. The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the
Carlsbad Field Office at (505) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

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.

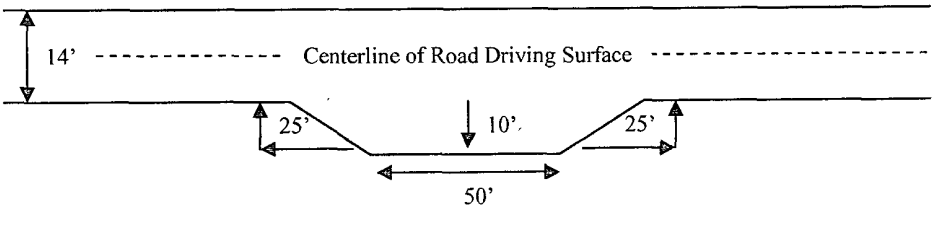
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing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

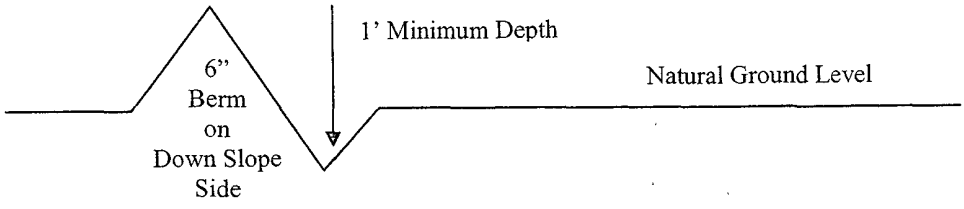
Standard Turnout – Plan View



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.

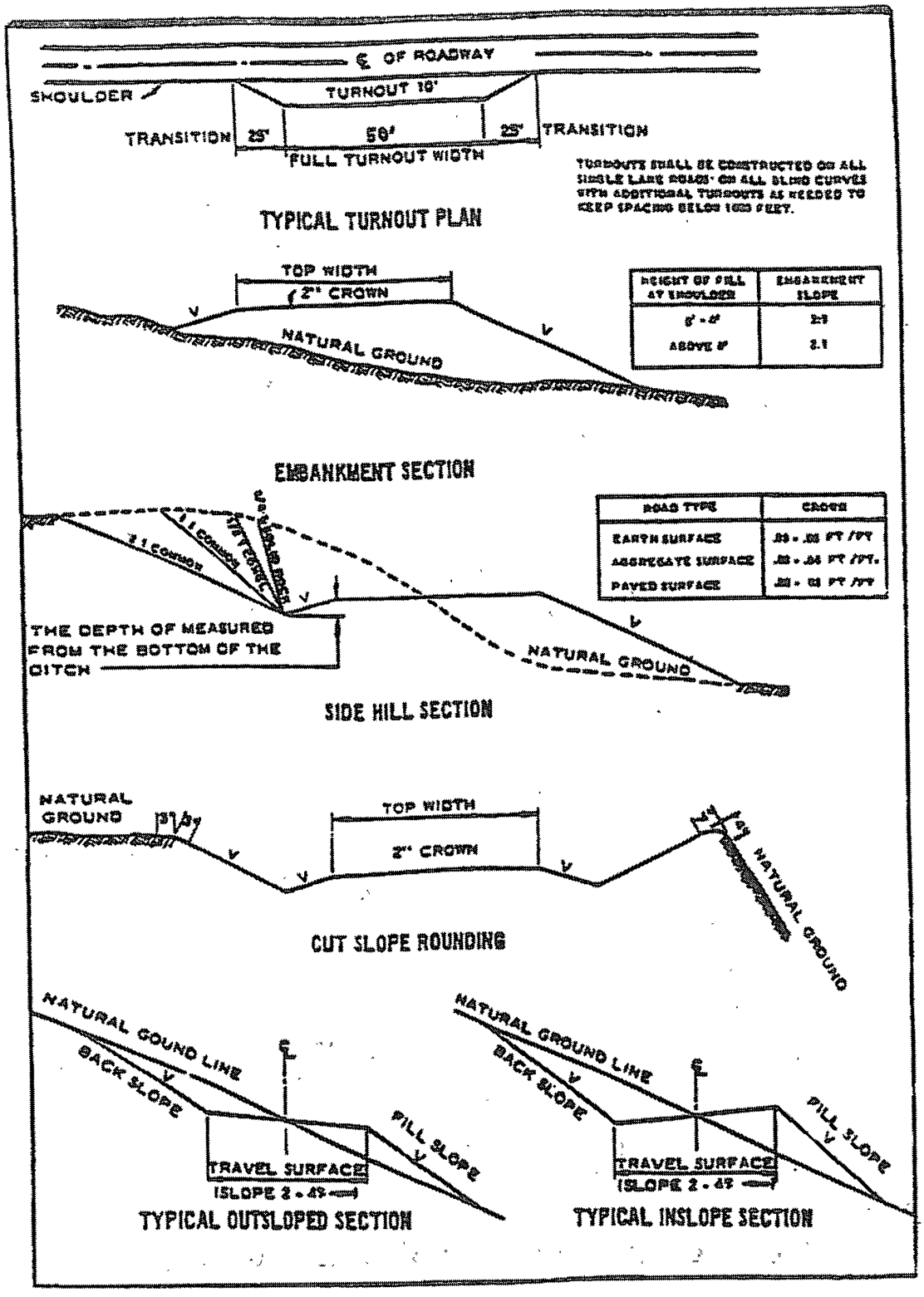
A gate shall be constructed and fastened securely to H-braces.

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



VI. 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

☒ **Lea County**
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Yates** formation. **If Hydrogen Sulfide is encountered, please provide measured values 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.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Lead slurry does not have to reach 500 pounds, but information still required to show compressive strength within 18-24 hours depending on water basin or potash. WOC for water basin or potash applies to entire wellbore.

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

Possible lost circulation in the San Andres and Delaware formations. Possible high pressure gas bursts in the Wolfcamp and over pressure in the Pennsylvanian section and under pressure in the Devonian.

1. The **13-3/8** inch surface casing shall be set **at approximately 1400 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Fresh water mud to be used to setting depth. Additional cement will be required.**

    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 will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater.

    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-d above.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i.

3. The minimum required fill of cement behind the **7** inch second intermediate casing is:

    ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification. **Additional cement may be required.**

Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i.

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

4. The minimum required fill of cement behind the **4 1/2** inch production liner is:

   ☒ **Seal is required for liner per Onshore Oil and Gas Order 2.III.B.1.b and is to be tested. Please call BLM for witness of seal test.**

5. 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. **Anticipated pressure in the Atoka Clastics could be 6300 psi.**

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.

D. DRILLING MUD

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

E. DRILL STEM TEST

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

WWI 080608

VII. 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

VIII. 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.

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 2, for Sandy 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 see 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
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

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.