ATS-12-361

EC

HOBBS OCD
MAY 31 2012
RECEIVED

CONFIDENTIAL

OCD-HOBBS

Form 3160-3
(August 2007)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5 Lease Serial No.
NMNM118723

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

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. <39251>
KIEHNE RANCH 15 26 32 USA 1H

2. Name of Operator CHESAPEAKE OPERATING, INC. ATTN: LINDA GOOD <147179>

9. API Well No.
30-025-40602

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

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

10. Field and Pool, or Exploratory
WILDCAT; BONE SPRING <97838>7

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 100 FSL & 400' FWL, SWSW
At proposed prod. zone 330 FNL & 400 FWL, NWNW
UNORTHODOX LOCATION

11. Sec., T. R. M. or Blk. and Survey or Area
15-26S-32E

14. Distance in miles and direction from nearest town or post office*
APPROXIMATELY 30 MILES WEST OF BENNET, 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 drig. unit line, if any)
SHL 100' FROM SOUTH LINE OF LEASE/UNIT.

16 No. of acres in lease
1280 ACRES

17 Spacing Unit dedicated to this well
160 ACRES

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

19 Proposed Depth
14,043' MD / 9330' TVD

20 BLM/BIA Bond No. on file
ESB000159

21 Elevations (Show whether DF, KDB, RT, GL, etc.)
3145' GL

22 Approximate date work will start*
05/15/2012

23. Estimated duration
30 DAYS

24. Attachments

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

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

25 Signature Lyndee Songer
Name *(Printed/Typed)* Lyndee Songer for Linda Good
Date 04/26/2012

Title
Regulatory Analyst III

Approved by *(Signature)* /s/ Don Peterson
Name *(Printed/Typed)* /s/ Don Peterson
Date MAY 29 2012

Title FOR FIELD MANAGER
Office CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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.

(Continued on page 2)

Conditions of Approval for Non Standard Location
Intent to drill ONLY-**CANNOT produce** until the Non- Standard Location has been approved by OCD Santa Fe Office

*(Instructions on page 2)

CARLSBAD CONTROLLED WATER BASIN

SEE ATTACHED FOR CONDITIONS OF APPROVAL

05/31/12

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

JUN 07 2012

Additional Operator Remarks:

Chesapeake Operating, Inc. respectfully requests permission to drill a well to 14,043' 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 Plan 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 Latshaw Rig #14 layout, Exhibit E Temp Wtr Transfer Line Route, Exhibit F-1 to F-2 BOP & Choke Manifold, Exhibit G Standard Planning Report, Exhibit H H2S Contingency Plan and C-144 Closed?Loop System Permit.

The Archeological Survey will be delivered to the BLM when completed.

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

PLEASE BE ADVISED THAT CHESAPEAKE OPERATING, INC. IS CONSIDERED TO BE THE OPERATOR OF THE ABOVE MENTIONED WELL. CHESAPEAKE OPERATING, INC. AGREES TO BE RESPONSIBLE UNDER THE TERMS AND CONDITIONS OF THE LEASE FOR THE OPERATIONS CONDUCTED UPON THE LEASE LANDS.

(CHK PN 643383)

OHSORE OIL & GAS ODER 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	SUB-SEA	KBTVD	MD
Rustler	2633	534	
Top of Salt	2262	905	
Base of Salt	-1255	4422	
Lamar	-1263	4430	
Bell Canyon	-1284	4451	
Cherry Canyon	-2244	5411	
Brushy Canyon	-4200	7367	
Bone Spring	-5416	8583	
Lateral TD	-6163	9330	14043.1

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
Water	Rustler	534
Oil/Gas	Brushy Canyon	7367
Oil/Gas	Bone Spring	8583

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

3. BOP EQUIPMENT

Will have a 5000 psi rig stack (see proposed schematic) for drill out below surface casing. Stack will be tested as specified below. Surface casing and Intermediate Casing shoes will be tested to 10.5 ppg equivalent after drilling out 10' of new formation.

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

I. BOP, Annular, Choke Manifold Pressure Test - See Exhibit F-1 and F-2

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

B. Frequency
1. All tests shall 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
(d) at least once every 30 days while drilling

C. Frequency
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.

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 Requency
1. The accumulator is to be tested each time the BO'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 Pressure	Precharge Pressure
1500 psi	750 psi
2000 psi	1000 psi
3000 psi	1000 psi

3. Closing times for the annular preventer 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 Operating Pressure	Remaining Pressure After Test
1500 psi	950 psi
2000 psi	1200 psi
3000 psi	1200 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

3. CASING PROGRAM

a. The proposed casing program will be as follows:

Purpose	From	To	Hole Size	Csg Size	Weight	Grade	Thread	Condition
Surface	0'	650'	17-1/2"	13-3/8"	48 #	H-40	STC	New
Shallow Intermediate	0'	4,430'	11"	8-5/8"	32 #	J-55	LTC	New
Production	0'	14,043'	7-7/8"	5-1/2"	20.0 #	L-80	LTC	New

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

c. Casing Safety Factors

Casing String	Min SF Burst	Min SF Collapse	Min SF Tension
Surface	1.35	2.42	2.53
Shallow Intermediate	1.31	1.1	1.89
Production	1.22	1.92	1.6

Min SF is the smallest of a group of safety factors that include the following considerations:

	Surf	Int	Prod
Burst Design			
Pressure Test- Surface, Int, Prod Csg P external: Water P internal: Test psi + next section heaviest mud in csg	X	X	X
Displace to Gas- Surf Csg P external: Water P internal: Dry Gas from Next Csg Point	X		
Frac at Shoe, Gas to Surf- Int Csg P external: Water P internal: Dry Gas, 15 ppg Frac Gradient		X	
Stimulation (Frac) Pressures- Prod Csg P external: Water P internal: Max inj pressure w/ heaviest injected fluid			X
Tubing leak- Prod Csg (packer at KOP) P external: Water P internal: Leak just below surf, 8.7 ppg packer fluid			X
Collapse Design			
Full Evacuation P external: Water gradient in cement, mud above TOC P internal: none	X	X	X
Cementing- Surf, Int, Prod Csg P external: Wet cement P internal: water	X	X	X
Tension Design			
100k lb overpull	X	X	X

5. CEMENTING PROGRAM

Slurry	Type	Top	Btm	Wt	Yld	%Exc	Sx
Surface				(ppg)	(sx/cu ft)	Open Hole	
Single Slurry	C + 4% Gel	0'	650'	13.5	1.73	200	758
Shallow Int							
Lead	TXI + 5% Salt	0'	3,930'	12	1.99	200	1407
Tail	50C/50Poz +5% Salt	3,930'	4,430'	14.2	1.37	200	290
Production							
Lead	35/65Poz H +8% Gel	3,930'	8,950'	12.4	2.11	75	692
Tail	50/50Poz H +2% Gel	8,950'	14,043'	14.5	1.27	75	1225

1. Final cement volumes will be determined by caliper.
2. Surface casing shall have at least one centralizer installed on each of the bottom three joints starting with the shoe joint.
3. The production casing will be cemented in a single stage
4. Production casing will have one centralizer on every other joint from TD to KOP (horizontal type) and from KOP to intermediate casing (bowspring type).

6. MUD PROGRAM

From	To	Type	Weight	F. Vis	Filtrate
0'	650'	Spud Mud	8.4 - 8.7	32 - 34	NC - NC
650'	4,430'	Brine	9.5 - 10.1	28 - 29	NC - NC
4,430'	8,852'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC
8,852'	9,602'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC
9,602'	14,043'	Cut Brine	8.3 - 8.8	28 - 29	NC - NC

A closed system will by 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

All fluids and cuttings will be disposed of in accordance with New Mexico Oil Conservation Division rules and regulations.

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

7. TESTING, LOGGING, AND CORING See COA

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 be as follows:

TYPE	Logs	Interval	Timing	Vendor
Mud Log	2 man Mudlog	Int Cas to TD	Int Csg Drill out	Suttles
OH	Triple Combo	Curve to Int Csg	After Curve	TBD
OH	GR/Neutron	Int Cas to Surf	After Curve	TBD
LWD	MWD Gamma	Curve and Lateral	While Drilling	Ryan

c. Core samples are not planned.
d. A Directional Survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE

a. No abnormal pressures or temperatures are expected. Estimated BHP is: 4366 psi
b. Hydrogen sulfide gas is not anticipated.
c. H2S Contingency Plan enclosed.

Permian District

NM- Lea- Avalon
Kiehne Ranch 15-26-32-USA 1H
Well #1

Wellbore #1

Plan: Plat

Standard Planning Report

14 February, 2012

EXHIBIT G

Chesapeake Operating
Planning Report

Database:	Drilling Database	**Local Co-ordinate Reference:**	Site Kiehne Ranch 15-26-32-USA 1H
Company:	Permian District	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	NM- Lea- Avalon	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Kiehne Ranch 15-26-32-USA 1H	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plat		

Project NM- Lea- Avalon

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 Kiehne Ranch 15-26-32-USA 1H

Site Position:		**Northing:**	377,357.00 usft	**Latitude:**	32.035725
From:	Map	**Easting:**	706,067.00 usft	**Longitude:**	-103.668339
Position Uncertainty:	0.0 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.35 °

Well Well #1

Well Position	**+N/-S**	0.0 usft	**Northing:**	377,357.00 usft	**Latitude:**	32.035725
	+E/-W	0.0 usft	**Easting:**	706,067.00 usft	**Longitude:**	-103.668339
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	0.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2/14/2012	7.53	60.00	48,490

Design Plat

Audit Notes:

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

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.83

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
8,852.5	0.00	0.00	8,852.5	0.0	0.0	0.00	0.00	0.00	0.00	
9,602.5	90.00	359.83	9,330.0	477.5	-1.5	12.00	12.00	0.00	359.83	
14,043.1	90.00	359.83	9,330.0	4,918.0	-15.0	0.00	0.00	0.00	0.00	KR 15-26-32 1H- BI

Chesapeake Operating

Planning Report

Database:	Drilling Database	**Local Co-ordinate Reference:**	Site Kiehne Ranch 15-26-32-USA 1H
Company:	Permian District	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	NM- Lea- Avalon	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Kiehne Ranch 15-26-32-USA 1H	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plat		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
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
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
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

Chesapeake Operating
Planning Report

Database:	Drilling Database	**Local Co-ordinate Reference:**	Site Kiehne Ranch 15-26-32-USA 1H
Company:	Permian District	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	NM- Lea- Avalon	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Kiehne Ranch 15-26-32-USA 1H	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plat		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
8,852.5	0.00	0.00	8,852.5	0.0	0.0	0.0	0.00	0.00	0.00
8,900.0	5.70	359.83	8,899.9	2.4	0.0	2.4	12.00	12.00	0.00
9,000.0	17.70	359.83	8,997.7	22.6	-0.1	22.6	12.00	12.00	0.00
9,100.0	29.70	359.83	9,089.1	62.7	-0.2	62.7	12.00	12.00	0.00
9,200.0	41.70	359.83	9,170.1	120.9	-0.4	120.9	12.00	12.00	0.00
9,300.0	53.70	359.83	9,237.3	194.8	-0.6	194.8	12.00	12.00	0.00
9,400.0	65.70	359.83	9,287.7	280.9	-0.9	280.9	12.00	12.00	0.00
9,500.0	77.70	359.83	9,319.0	375.7	-1.1	375.7	12.00	12.00	0.00
9,600.0	89.70	359.83	9,330.0	474.9	-1.4	474.9	12.00	12.00	0.00
9,602.5	90.00	359.83	9,330.0	477.5	-1.5	477.5	12.00	12.00	0.00
9,700.0	90.00	359.83	9,330.0	574.9	-1.8	574.9	0.00	0.00	0.00
9,800.0	90.00	359.83	9,330.0	674.9	-2.1	674.9	0.00	0.00	0.00
9,900.0	90.00	359.83	9,330.0	774.9	-2.4	774.9	0.00	0.00	0.00
10,000.0	90.00	359.83	9,330.0	874.9	-2.7	874.9	0.00	0.00	0.00
10,100.0	90.00	359.83	9,330.0	974.9	-3.0	974.9	0.00	0.00	0.00
10,200.0	90.00	359.83	9,330.0	1,074.9	-3.3	1,074.9	0.00	0.00	0.00
10,300.0	90.00	359.83	9,330.0	1,174.9	-3.6	1,174.9	0.00	0.00	0.00
10,400.0	90.00	359.83	9,330.0	1,274.9	-3.9	1,274.9	0.00	0.00	0.00
10,500.0	90.00	359.83	9,330.0	1,374.9	-4.2	1,374.9	0.00	0.00	0.00

Chesapeake Operating

Planning Report

Database:	Drilling Database	**Local Co-ordinate Reference:**	Site Klehne Ranch 15-26-32-USA 1H
Company:	Permian District	**TVD Reference:**	WELL @ 0.0usft (Original Well Elev)
Project:	NM- Lea- Avalon	**MD Reference:**	WELL @ 0.0usft (Original Well Elev)
Site:	Klehne Ranch 15-26-32-USA 1H	**North Reference:**	Grid
Well:	Well #1	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plat		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,600.0	90.00	359.83	9,330.0	1,474.9	-4.5	1,474.9	0.00	0.00	0.00
10,700.0	90.00	359.83	9,330.0	1,574.9	-4.8	1,574.9	0.00	0.00	0.00
10,800.0	90.00	359.83	9,330.0	1,674.9	-5.1	1,674.9	0.00	0.00	0.00
10,900.0	90.00	359.83	9,330.0	1,774.9	-5.4	1,774.9	0.00	0.00	0.00
11,000.0	90.00	359.83	9,330.0	1,874.9	-5.7	1,874.9	0.00	0.00	0.00
11,100.0	90.00	359.83	9,330.0	1,974.9	-6.0	1,974.9	0.00	0.00	0.00
11,200.0	90.00	359.83	9,330.0	2,074.9	-6.3	2,074.9	0.00	0.00	0.00
11,300.0	90.00	359.83	9,330.0	2,174.9	-6.6	2,174.9	0.00	0.00	0.00
11,400.0	90.00	359.83	9,330.0	2,274.9	-6.9	2,274.9	0.00	0.00	0.00
11,500.0	90.00	359.83	9,330.0	2,374.9	-7.2	2,374.9	0.00	0.00	0.00
11,600.0	90.00	359.83	9,330.0	2,474.9	-7.5	2,474.9	0.00	0.00	0.00
11,700.0	90.00	359.83	9,330.0	2,574.9	-7.9	2,574.9	0.00	0.00	0.00
11,800.0	90.00	359.83	9,330.0	2,674.9	-8.2	2,674.9	0.00	0.00	0.00
11,900.0	90.00	359.83	9,330.0	2,774.9	-8.5	2,774.9	0.00	0.00	0.00
12,000.0	90.00	359.83	9,330.0	2,874.9	-8.8	2,874.9	0.00	0.00	0.00
12,100.0	90.00	359.83	9,330.0	2,974.9	-9.1	2,974.9	0.00	0.00	0.00
12,200.0	90.00	359.83	9,330.0	3,074.9	-9.4	3,074.9	0.00	0.00	0.00
12,300.0	90.00	359.83	9,330.0	3,174.9	-9.7	3,174.9	0.00	0.00	0.00
12,400.0	90.00	359.83	9,330.0	3,274.9	-10.0	3,274.9	0.00	0.00	0.00
12,500.0	90.00	359.83	9,330.0	3,374.9	-10.3	3,374.9	0.00	0.00	0.00
12,600.0	90.00	359.83	9,330.0	3,474.9	-10.6	3,474.9	0.00	0.00	0.00
12,700.0	90.00	359.83	9,330.0	3,574.9	-10.9	3,574.9	0.00	0.00	0.00
12,800.0	90.00	359.83	9,330.0	3,674.9	-11.2	3,674.9	0.00	0.00	0.00
12,900.0	90.00	359.83	9,330.0	3,774.9	-11.5	3,774.9	0.00	0.00	0.00
13,000.0	90.00	359.83	9,330.0	3,874.9	-11.8	3,874.9	0.00	0.00	0.00
13,100.0	90.00	359.83	9,330.0	3,974.9	-12.1	3,974.9	0.00	0.00	0.00
13,200.0	90.00	359.83	9,330.0	4,074.9	-12.4	4,074.9	0.00	0.00	0.00
13,300.0	90.00	359.83	9,330.0	4,174.9	-12.7	4,174.9	0.00	0.00	0.00
13,400.0	90.00	359.83	9,330.0	4,274.9	-13.0	4,274.9	0.00	0.00	0.00
13,500.0	90.00	359.83	9,330.0	4,374.9	-13.3	4,374.9	0.00	0.00	0.00
13,600.0	90.00	359.83	9,330.0	4,474.9	-13.6	4,474.9	0.00	0.00	0.00
13,700.0	90.00	359.83	9,330.0	4,574.9	-14.0	4,574.9	0.00	0.00	0.00
13,800.0	90.00	359.83	9,330.0	4,674.9	-14.3	4,674.9	0.00	0.00	0.00
13,900.0	90.00	359.83	9,330.0	4,774.9	-14.6	4,774.9	0.00	0.00	0.00
14,000.0	90.00	359.83	9,330.0	4,874.9	-14.9	4,874.9	0.00	0.00	0.00
14,043.1	90.00	359.83	9,330.0	4,918.0	-15.0	4,918.0	0.00	0.00	0.00

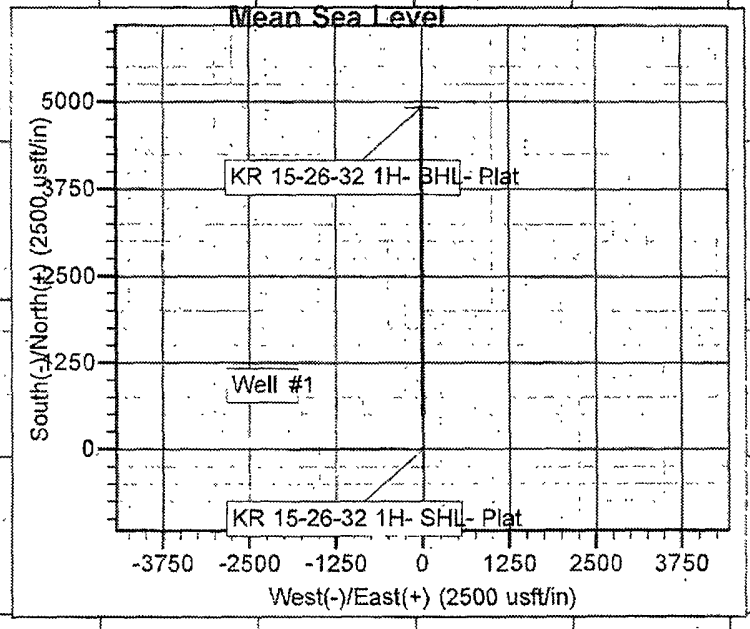
Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KR 15-26-32 1H- SHL - plan misses target center by 198.1usft at 9218.2usft MD (9183.5 TVD, 133.3 N, -0.4 E) - Point	0.00	359.93	9,330.0	0.0	0.0	377,357.00	706,067.00	32.035725	-103.668339
KR 15-26-32 1H- BHL - plan hits target center - Point	0.00	359.93	9,330.0	4,918.0	-15.0	382,275.00	706,052.00	32.049245	-103.668289

Project: NM- Lea- Avalon
Site: Kiehne Ranch 15-26-32-USA 1H
Well: Well #1
Wellbore: Wellbore #1
Design: Plat

PROJECT DETAILS: NM- Lea- Avalon

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001



SECTION DETAILS

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	
28852.5	0.00	0.00	8852.5	0.0	0.0	0.00	0.00	0.0		
39602.5	90.00	359.83	9330.0	477.5	-1.5	12.00	359.83	477.5		
44043.1	90.00	359.83	9330.0	4918.0	-15.0	0.00	0.00	4918.0	KR 15-26-32 1H- BHL- Plat	

Chesapeake ENERGY

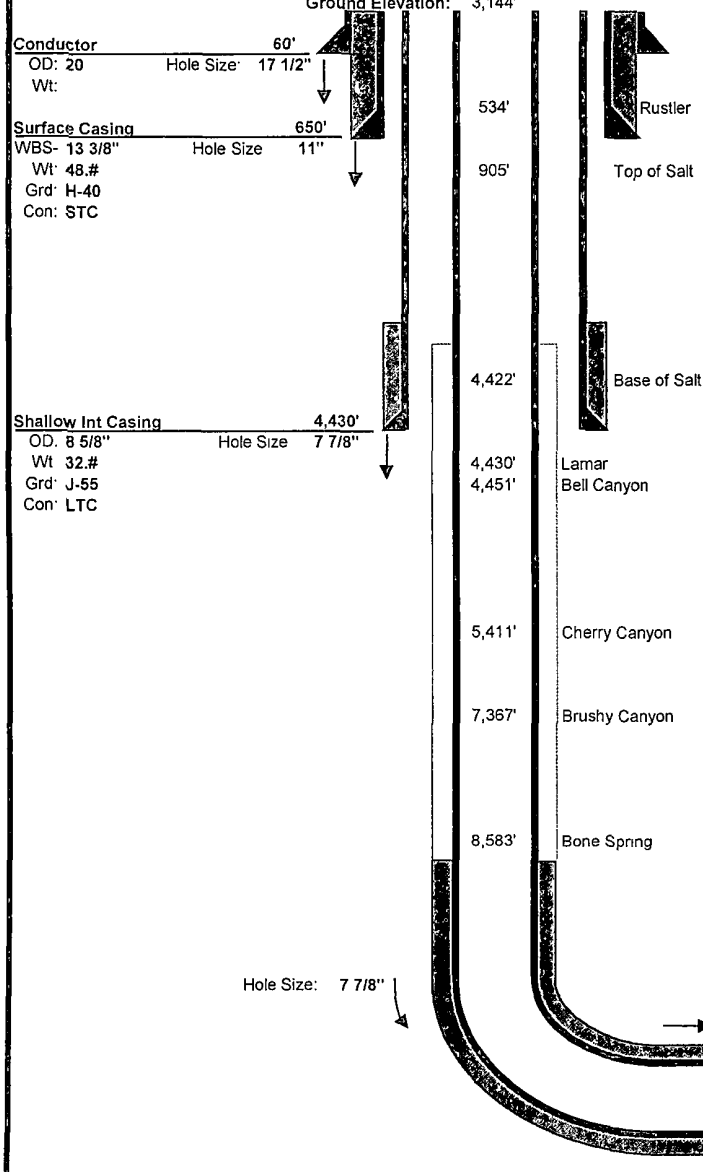
Drilling Engineer: Chris Gray
Superintendent: Daniel Gipson
Geologist: Chris Persellin

Well Name:	Kiehne Ranch 15-16-32 USA 1H
Target:	Avalon Shale
County, State:	Lea, NM
Surface Location:	100' FSL 400' FWL, Section 15, Township 26 S, Range 32 E
BH Location:	330' FSL 400' FWL, Section 15, Township 26 S, Range 32 E

SHL Latitude:	32 035722	SHL North:	377353
SHL Longitude:	-103 669630	SHL East:	705667
BHL Latitude:	32 049243	BHL North:	382272
BHL Longitude:	-103 6695807	BHL East:	705652
Coordinates:	NAD 27	Coordinates:	NMSPCE

Drilling Rig:	Latshaw 14
Directional-Surface:	Ryan
Directional-Curve:	Ryan
Directional-Lateral:	Ryan
Drilling Mud:	Nova
Cement:	Schlumberger
Wellhead:	Sunbelt
Property Number:	643383
AFE Number:	161724

KB Elevation: 3,169' KB: 25'
Ground Elevation: 3,144'



Wellhead Equipment	
A Section	13-3/8" x 13-5/8" 5K SOW (Multibowl)
B Section	N/A (Multibowl)
C Section	11" 5K X 7-1/16" 10K w/10k gate valve
D Section	N/A
Required BOP Stack	13-5/8" 5K- Double, Annular, Rot Head w/orbit valve

Mud				
Depth	Type	Weight	F. Vis	FL
0' - 650'	Spud Mud	8.4 - 8.7	32 - 34	NC - NC
650' - 4,430'	Brine	9.5 - 10 1	28 - 29	NC - NC
4,430' - 8,852'	Cut Brine	8.3 - 8 8	28 - 29	NC - NC
8,852' - 9,602'	Cut Brine	8.3 - 8 8	28 - 29	NC - NC
9,602' - 14,043'	Cut Brine	8 3 - 8 8	28 - 29	NC - NC

Cement							
Slurry	Top	Btm	Wt	Yld	%Exc	Bbl	Sx
Surface							
Single Slurry	0'	650'	13.5	1 73	200	234	758
Shallow Int							
Lead	0'	3,930'	12.0	1.99	200	499	1407
Tail	3,930'	4,430'	14.2	1 37	200	71	290
Production							
Lead	3,930'	8,950'	12 4	2 11	75	260	692
Tail	8,950'	14,043'	14.5	1.27	75	277	1225

LOGS	Type	Logs	Interval	Vendor
	Mud Log	2 man Mudlog	Int Cas to TD	Suttles
	OH	Triple Combo	Curve to Int Csg	TBD
	OH	GR/Neutron	Int Cas to Surf	TBD
	LWD	MWD Gamma	Curve and Lateral	Ryan

Directional Plan						
Target Line:	9330' @ 0' VS w/ 90 deg inclination					
Target Window:	20' above, 20' below, 50' left, 50' right					
	MD	INC	AZM	TVD	VS	DLS
KOP	8,852'	0 00	0 00	8,852'	0'	0 00
EOB	9,602'	90 00	359 80	9,330'	478'	12.00
TD	14,043'	90 00	359 80	9,330'	4,918'	0 00
Hardlines:	Lateral- 330' from parallel lease lines. Vertical- Actual Lease Lines					
Notes:	Please note SHL and BHL distance from lease lines					

Chesapeake Minimum BOPE Requirements

Wellname: Kiehne Ranch 15-16-32 USA 1H
Operation: Intermediate and Production Hole Sections

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

Permian District-Minimum Requirements

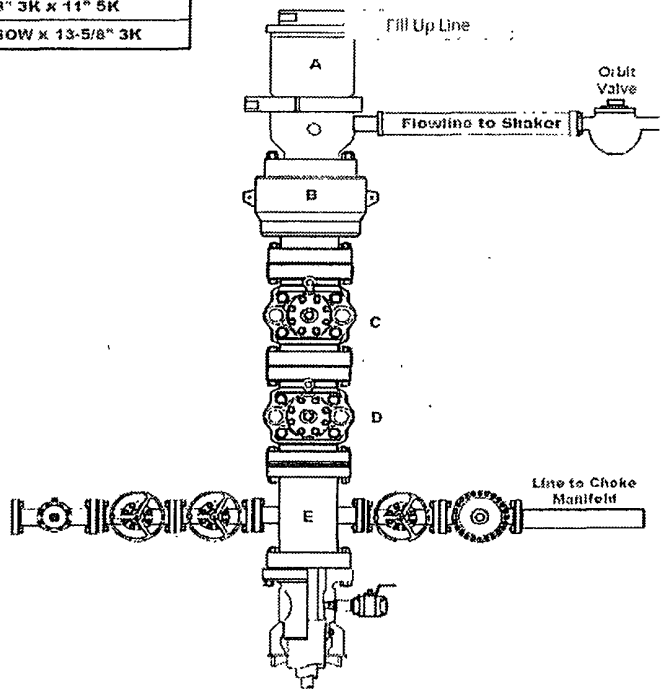
FIELD : Avalon

OPERATION: Intermediate and Production Hole Sections

	SIZE	PRESSURE	DESCRIPTION
A		500	Rotating Head
B	13 5/8"	5,000	Annular
C	13 5/8"	5,000	Pipe Ram
D	13 5/8"	5,000	Blind Ram
E	13 5/8"	5,000	Mud Cross
F			
DSA		As required for each hole size	
C-Sec			
B-Sec		13-5/8" 3K x 11" 5K	
A-Sec		13-3/8" SOW x 13-5/8" 3K	

Test Notes:

- Pressure test to rating of BOP or wellhead every 21 days.
- Function test on trips
- H2S service trim required



Kill Line

SIZE	PRESSURE	DESCRIPTION
2"	5,000	Check Valve
2"	5,000	Gate Valve
2"	5,000	Gate Valve

Choke Line

SIZE	PRESSURE	DESCRIPTION
3"	5,000	Gate Valve
3"	5,000	HCR Valve
3"	5,000	Steel Line Only

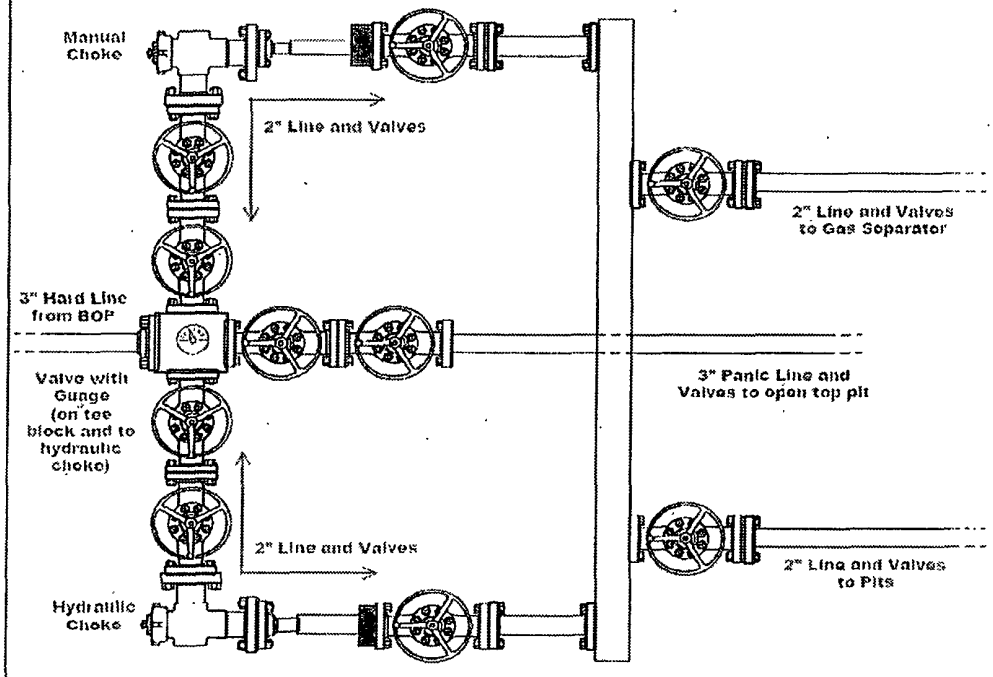
EXHIBIT F-1

Chesapeake Minimum BOPE Requirements

Wellname: Kiehne Ranch 15-16-32 USA 1H
Operation: Intermediate and Production Hole Sections

CHOKE MANIFOLD SCHEMATIC

CHESAPEAKE OPERATING INC
Permian District
Avalon Minimum Requirements



Choke Manifold

SIZE	PRESSURE	DESCRIPTION
2" or 3"	5,000	Gate Valves
3'x15'		Gas Separator
8"		Gas Separator vent line (anchored)

EXHIBIT F-2