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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.
NMLC064894

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
NM 71016X

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

8. Lease Name and Well No. (38439)
PLU ROSS RANCH 20 FEDERAL 1H

2. Name of Operator (147179)
CHESAPEAKE AGENT FOR BOPCO ATTN: LINDA GOOD

9. API Well No.
30-015-38357

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 (13354)
~~WILDCAT~~ S. Corral Canyon Bone Spring

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

11. Sec., T. R. M. or Blk. and Survey or Area
20-25S-30E

14. Distance in miles and direction from nearest town or post office*
22.5 MILES SE 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
960 ACRES
Max TVD 8114

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.

19. Proposed Depth 8650'
PH: 8560'MD /8560'TVD
BHL:12,823' MD/8098' TVD

20. BLM/BIA Bond No. on file
NM2634

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3199' GR

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, 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	Name *(Printed/Typed)*	Date
Linda Good	Linda Good	Revised 11/17/2010

Title
Sr. Regulatory Compliance Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
/s/ Don Peterson		NOV 29 2010

Title	Office
FIELD MANAGER	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)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

Additional Operator Remarks:

Chesapeake Operating, Inc. respectfully requests permission to drill a well to 13,466? 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 Cactus Rig #116 layout, Exhibit F-1 to F-2 BOP & Choke Manifold, Exhibit G Directional Drill Plan and Wellbore Schematic

Exhibit E 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 the Designated Agent for BOPCO, the Operator of this unit. 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 632399)

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

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.

5. Lease Serial No.
NMLC064894

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 ROSS RANCH 20 FEDERAL 1H

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

9. API Well No.

3a. Address
OKLAHOMA CITY, OK 73154-0496

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

10. Field and Pool, or Exploratory
WILDCAT

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 20 T25S R30E NWNW 100FNL 400FWL

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
	☐ 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.)

Chesapeake Agent for BOPCO LP, respectfully, requests permission to build this location while waiting on APD approval.

(CHK PN 632399)

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #95878 verified by the BLM Well Information System
For CHESAPEAKE OPERATING INC, sent to the Carlsbad
Committed to AFMSS for processing by KURT SIMMONS on 11/01/2010 (11KMS0083SE)

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

Signature (Electronic Submission) — Date 10/27/2010

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By DON PETERSON — Title AFM LANDS AND MINERALS — Date 11/02/2(

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 Carlsbad

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.

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

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

Operator to show Rustler and Top of Salt.

The estimated tops of important geologic markers are as follows:

FORMATION	SUB-SEA	KBTVD	MD
Base of Salt	-425'	3642'	
Bell Canyon	-458'	3675'	
Brushy Canyon	-2526'	5743'	
Bone Spring Lime	-4500'	7412'	
Upper Avalon	-4822'	7660'	
Lower Avalon	-4758'	7975'	
1st Bone Spring	-5094'	8311'	
Pilot Hole TD		8650'	8650'
Lateral TD		8098'	12823'

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	3675'
Oil/Gas	Brushy canyon	5743'
Oil/Gas	Bone Spring	7412'

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

Water depth to be shown per Onshore Order 1.

3. BOP EQUIPMENT:

Will have a 5000 psi rig stack (see proposed schematic) for drill out below surface casing, but this system will be tested to 3000 psi working pressure and 3000 psi working pressure for the annular preventer; therefore, no shoe tests will be conducted.

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

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

A. Equipment

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

B. Test Frequency

Shall

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 **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. Test Frequency

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

C. Minimum Requirements

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

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

3.

System Operating Pressures	Precharge Pressure
1500 PSI	750 PSI
2000 PSI	1,000 PSI
3000 PSI	1,000 PSI

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

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

D. Test Procedure

1. Shut accumulator pumps off and record accumulator pressure.

2. In sequence, close the annular and one set of properly sized pipe rams, and open the HCR valve.

3. Record time to close or open each element and the remaining accumulator pressure after each operation.

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

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

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

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

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

4. CASING PROGRAM

a. The proposed casing program will be as follows:

Purpose	Interval 800	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 – 3,660' 3610	11"	8-5/8"	32.0#	J-55	LTC	New
Production	Surface – 12,823'	7-7/8"	5-1/2"	20.0#	L-80	LTC	New

See COA

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

c. Casing Safety Factors:
13-3/8" Surface Casing: SFb = 1.44, SFc = 2.38 and SFt = 1.52
9-5/8" Intermediate Casing: SFb = 2.14, SFc = 1.6 and SFt = 1.88
5-1/2" Production Casing: SFb = 1.21, SFc = 2.4 and SFt = 1.74

d. The cementing program will be as follows:

5. Cementing Program

Interval	Type	Weight	Amount	Yield	Top Of Cement	Open Hole Excess
Surface	C+4%Gel	13.5 ppg	723 sks	1.73	Surface	150%
Inter-mediate	Lead: TXL	12.0 ppg	868 sks	1.82	Surface	150%
	Tail: 50/50 C/Poz +2%Gel, 5%Salt	14.2 ppg	464 sks	1.37	2,660'	150%
Production 1st Stage	Lead: TXL + 1% Salt	12.0 ppg	440 sks	1.83	4,100'(DV)	60%
	Tail:50/50 H/Poz +6%Gel, 5%Salt	13.2 ppg	930 sks	1.74	7,000'	60%
Production 2nd Stage	Lead: TXL	12.0 ppg	118 sks	1.83	3,000'	200%
	Tail: C	14.8 ppg	100 sks	1.33	3,850'	200%

= 100%

= 100%

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 two stages with DV tool placed at 4,100'
4) Production casing will have centralizer on every other joint.

Pilot Hole Plugging Plan:

Pilot Hole will TD in the Bone Spring formation and will be plugged back with one cement plug. Plug will be placed from 8650' to 8250'. Plug will be 200 sx (40% excess) Class H 17.5 ppg 0.96 yield cement.

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'~~ 800	FW/Gel	8.4 – 8.7	28-32	NC
~~700'~~ – ~~3,660'~~ 3610	Native/Brine	8.7 – 10.1	28-30	NC
~~3,660'~~ - 7,704' (KOP)	KCl	8.5 – 9.0	28-30	NC
7,704'-Pilot TD	FW/Cut Brine	9.0-9.5	34-38	12-20
7,704'- Lateral TD	FW/Cut Brine	9.0-9.5	34-38	12-20

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

will be contained in a chemical porta-toliet and then hauled to an approved sanitary landfill.

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

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

7. TESTING, LOGGING AND CORING
The anticipated type and amount of testing, logging and coring are as follows:

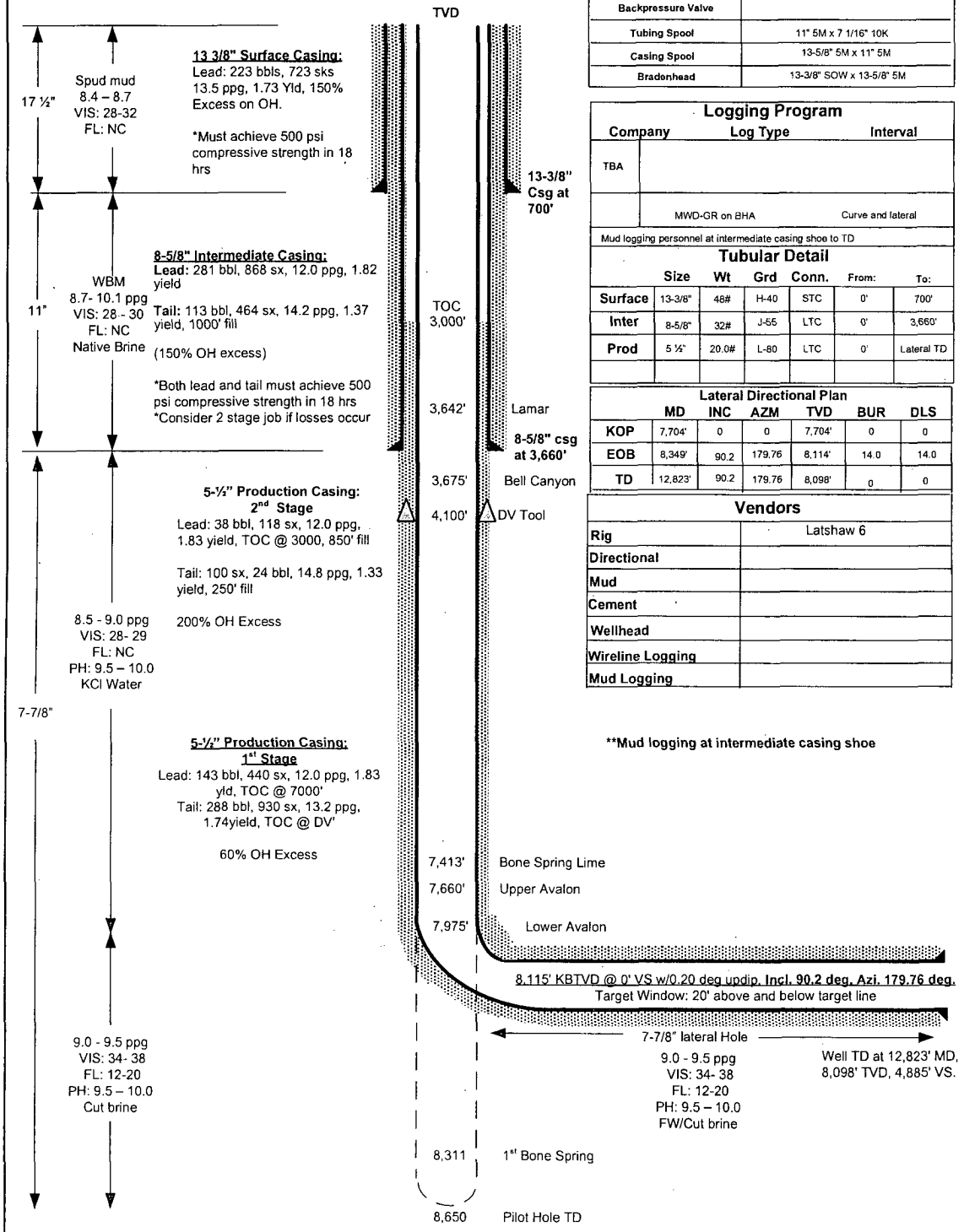
See COA

a. Drill stem tests are not planned.
b. The logging program will consist of Natural GR, Density-Neutron, PE & Dual Laterolog from pilot hole TD to surface casing; Neutron-GR surface casing to surface. GR in lateral.
c. Cores samples are not planned.
d. A Directional Survey will be run.

8. ABNORMAL PRESSURES AND HYDROGEN SULFIDE
a. The estimated bottom hole pressure is 3850 psi. No abnormal pressures or temperatures are anticipated.
b. Hydrogen sulfide gas is not anticipated.

Chesapeake Operating Inc	Proposed Drilling Program

Well : **PLU Ross Ranch 20 Fed 1H**
Field : **Delaware Basin North**
County : **Eddy** **State : NM**
Surf Locat : **Section 20-25S-30E, 100' FNL & 400' FWL Lat: N32.122585° Long: W103.910800° (NAD83)**
BH Locat : **Section 20-25S-30E, 330' FSL & 400' FWL Lat: N32.109157° Long: W103.910795° (NAD83)**
KB Elev : **3,221' (Latshaw 6)** **Grd Elev : 3,199'**



Wellhead Equipment

Tree Connection	
Backpressure Valve	
Tubing Spool	11" 5M x 7 1/16" 10K
Casing Spool	13-5/8" 5M x 11" 5M
Bradenhead	13-3/8" SOW x 13-5/8" 5M

Logging Program

Company	Log Type	Interval
TBA		
	MWD-GR on BHA	Curve and lateral

Mud logging personnel at intermediate casing shoe to TD

Tubular Detail

	Size	Wt	Grd	Conn.	From:	To:
Surface	13-3/8"	48#	H-40	STC	0'	700'
Inter	8-5/8"	32#	J-55	LTC	0'	3,660'
Prod	5 ½"	20.0#	L-80	LTC	0'	Lateral TD

Lateral Directional Plan

	MD	INC	AZM	TVD	BUR	DLS
KOP	7,704'	0	0	7,704'	0	0
EOB	8,349'	90.2	179.76	8,114'	14.0	14.0
TD	12,823'	90.2	179.76	8,098'	0	0

Vendors

Rig	Latshaw 6
Directional	
Mud	
Cement	
Wellhead	
Wireline Logging	
Mud Logging	

**Mud logging at intermediate casing shoe

Drawn by:	Date:	AFE No:	Property No:	Drilling Engineer:	Drilling Superintendent:	Geologist:
CG	Rev #0: 8/30/10	153054	632399	Chris Gray	Cecil Luttrull	Robert Martin

Permian District

Poker Lake
PLU Ross Ranch 20 Fed 1H
PLU Ross Ranch 20 Fed 1H

PLU Ross Ranch 20 Fed 1H

Plan: Plat

Standard Planning Report

01 September, 2010

Revised
EXHIBIT G

Chesapeake Energy Corporation

Planning Report

Database:	Drilling Database	Local Co-ordinate Reference:	Well PLU Ross Ranch 20 Fed 1H
Company:	Permian District	TVD Reference:	well2 @ 3221.0ft
Project:	Poker Lake	MD Reference:	well2 @ 3221.0ft
Site:	PLU Ross Ranch 20 Fed 1H	North Reference:	Grid
Well:	PLU Ross Ranch 20 Fed 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLU Ross Ranch 20 Fed 1H		
Design:	Plat		

Project	Poker Lake, Eddy County, NM		
Map System:	US State Plane 1983	System Datum:	Ground Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	PLU Ross Ranch 20 Fed 1H				
Site Position:		Northing:	408,587.82 usft	Latitude:	32.12258188
From:	Map	Easting:	672,146.35 usft	Longitude:	-103.91079158
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	0.2247000 °

Well	PLU Ross Ranch 20 Fed 1H					
Well Position	+N/-S	0.0 ft	Northing:	408,587.82 usft	Latitude:	32.12258188
	+E/-W	0.0 ft	Easting:	672,146.35 usft	Longitude:	-103.91079158
Position Uncertainty		0.0 ft	Wellhead Elevation:	3,199.0 ft	Ground Level:	3,199.0 ft

Wellbore	PLU Ross Ranch 20 Fed 1H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	4/12/2010	7.8611284	60.0808275	48,645

Design	Plat				
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	179.76

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	0.0000000	
7,704.4	0.00	0.00	7,704.4	0.0	0.0	0.00	0.00	0.00	0.0000000	
8,348.7	90.20	179.76	8,113.6	-410.7	1.7	14.00	14.00	0.00	179.7576205	
12,822.8	90.20	179.76	8,098.0	-4,884.7	20.7	0.00	0.00	0.00	0.0000000	RR 20 BHL- original l

Chesapeake Energy Corporation

Planning Report

Database:	Drilling Database	Local Co-ordinate Reference:	Well PLU Ross Ranch 20 Fed 1H
Company:	Permian District	TVD Reference:	well2 @ 3221.0ft
Project:	Poker Lake	MD Reference:	well2 @ 3221.0ft
Site:	PLU Ross Ranch 20 Fed 1H	North Reference:	Grid
Well:	PLU Ross Ranch 20 Fed 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLU Ross Ranch 20 Fed 1H		
Design:	Plat		

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
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 Energy Corporation

Planning Report

Database:	Drilling Database	Local Co-ordinate Reference:	Well PLU Ross Ranch 20 Fed 1H
Company:	Permian District	TVD Reference:	well2 @ 3221.0ft
Project:	Poker Lake	MD Reference:	well2 @ 3221.0ft
Site:	PLU Ross Ranch 20 Fed 1H	North Reference:	Grid
Well:	PLU Ross Ranch 20 Fed 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLU Ross Ranch 20 Fed 1H		
Design:	Plat		

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)
5,400.0	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
7,704.4	0.00	0.00	7,704.4	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	13.39	179.76	7,799.1	-11.1	0.0	11.1	14.00	14.00	0.00
7,900.0	27.39	179.76	7,892.6	-45.9	0.2	45.9	14.00	14.00	0.00
8,000.0	41.39	179.76	7,975.0	-102.2	0.4	102.2	14.00	14.00	0.00
8,100.0	55.39	179.76	8,041.2	-176.8	0.7	176.8	14.00	14.00	0.00
8,200.0	69.39	179.76	8,087.4	-265.2	1.1	265.2	14.00	14.00	0.00
8,300.0	83.39	179.76	8,110.9	-362.2	1.5	362.2	14.00	14.00	0.00
8,348.7	90.20	179.76	8,113.6	-410.7	1.7	410.7	14.00	14.00	0.00
8,400.0	90.20	179.76	8,113.4	-462.0	2.0	462.1	0.00	0.00	0.00
8,500.0	90.20	179.76	8,113.1	-562.0	2.4	562.1	0.00	0.00	0.00
8,600.0	90.20	179.76	8,112.7	-662.0	2.8	662.0	0.00	0.00	0.00
8,700.0	90.20	179.76	8,112.4	-762.0	3.2	762.0	0.00	0.00	0.00
8,800.0	90.20	179.76	8,112.0	-862.0	3.6	862.0	0.00	0.00	0.00
8,900.0	90.20	179.76	8,111.7	-962.0	4.1	962.0	0.00	0.00	0.00
9,000.0	90.20	179.76	8,111.3	-1,062.0	4.5	1,062.0	0.00	0.00	0.00
9,100.0	90.20	179.76	8,111.0	-1,162.0	4.9	1,162.0	0.00	0.00	0.00
9,200.0	90.20	179.76	8,110.6	-1,262.0	5.3	1,262.0	0.00	0.00	0.00
9,300.0	90.20	179.76	8,110.3	-1,362.0	5.8	1,362.0	0.00	0.00	0.00
9,400.0	90.20	179.76	8,109.9	-1,462.0	6.2	1,462.0	0.00	0.00	0.00
9,500.0	90.20	179.76	8,109.6	-1,562.0	6.6	1,562.0	0.00	0.00	0.00
9,600.0	90.20	179.76	8,109.2	-1,662.0	7.0	1,662.0	0.00	0.00	0.00
9,700.0	90.20	179.76	8,108.9	-1,762.0	7.5	1,762.0	0.00	0.00	0.00
9,800.0	90.20	179.76	8,108.6	-1,862.0	7.9	1,862.0	0.00	0.00	0.00
9,900.0	90.20	179.76	8,108.2	-1,962.0	8.3	1,962.0	0.00	0.00	0.00
10,000.0	90.20	179.76	8,107.9	-2,062.0	8.7	2,062.0	0.00	0.00	0.00
10,100.0	90.20	179.76	8,107.5	-2,162.0	9.1	2,162.0	0.00	0.00	0.00
10,200.0	90.20	179.76	8,107.2	-2,262.0	9.6	2,262.0	0.00	0.00	0.00
10,300.0	90.20	179.76	8,106.8	-2,362.0	10.0	2,362.0	0.00	0.00	0.00
10,400.0	90.20	179.76	8,106.5	-2,462.0	10.4	2,462.0	0.00	0.00	0.00
10,500.0	90.20	179.76	8,106.1	-2,562.0	10.8	2,562.0	0.00	0.00	0.00

Chesapeake Energy Corporation

Planning Report

Database:	Drilling Database	Local Co-ordinate Reference:	Well PLU Ross Ranch 20 Fed 1H
Company:	Permian District	TVD Reference:	well2 @ 3221.0ft
Project:	Poker Lake	MD Reference:	well2 @ 3221.0ft
Site:	PLU Ross Ranch 20 Fed 1H	North Reference:	Grid
Well:	PLU Ross Ranch 20 Fed 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	PLU Ross Ranch 20 Fed 1H		
Design:	Plat		

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)
10,600.0	90.20	179.76	8,105.8	-2,662.0	11.3	2,662.0	0.00	0.00	0.00
10,700.0	90.20	179.76	8,105.4	-2,762.0	11.7	2,762.0	0.00	0.00	0.00
10,800.0	90.20	179.76	8,105.1	-2,862.0	12.1	2,862.0	0.00	0.00	0.00
10,900.0	90.20	179.76	8,104.7	-2,962.0	12.5	2,962.0	0.00	0.00	0.00
11,000.0	90.20	179.76	8,104.4	-3,062.0	13.0	3,062.0	0.00	0.00	0.00
11,100.0	90.20	179.76	8,104.0	-3,162.0	13.4	3,162.0	0.00	0.00	0.00
11,200.0	90.20	179.76	8,103.7	-3,262.0	13.8	3,262.0	0.00	0.00	0.00
11,300.0	90.20	179.76	8,103.3	-3,362.0	14.2	3,362.0	0.00	0.00	0.00
11,400.0	90.20	179.76	8,103.0	-3,462.0	14.6	3,462.0	0.00	0.00	0.00
11,500.0	90.20	179.76	8,102.6	-3,562.0	15.1	3,562.0	0.00	0.00	0.00
11,600.0	90.20	179.76	8,102.3	-3,662.0	15.5	3,662.0	0.00	0.00	0.00
11,700.0	90.20	179.76	8,101.9	-3,762.0	15.9	3,762.0	0.00	0.00	0.00
11,800.0	90.20	179.76	8,101.6	-3,862.0	16.3	3,862.0	0.00	0.00	0.00
11,900.0	90.20	179.76	8,101.2	-3,962.0	16.8	3,962.0	0.00	0.00	0.00
12,000.0	90.20	179.76	8,100.9	-4,062.0	17.2	4,062.0	0.00	0.00	0.00
12,100.0	90.20	179.76	8,100.5	-4,162.0	17.6	4,162.0	0.00	0.00	0.00
12,200.0	90.20	179.76	8,100.2	-4,262.0	18.0	4,262.0	0.00	0.00	0.00
12,300.0	90.20	179.76	8,099.8	-4,362.0	18.5	4,362.0	0.00	0.00	0.00
12,400.0	90.20	179.76	8,099.5	-4,462.0	18.9	4,462.0	0.00	0.00	0.00
12,500.0	90.20	179.76	8,099.1	-4,562.0	19.3	4,562.0	0.00	0.00	0.00
12,600.0	90.20	179.76	8,098.8	-4,662.0	19.7	4,662.0	0.00	0.00	0.00
12,700.0	90.20	179.76	8,098.4	-4,762.0	20.1	4,762.0	0.00	0.00	0.00
12,800.0	90.20	179.76	8,098.1	-4,862.0	20.6	4,862.0	0.00	0.00	0.00
12,822.8	90.20	179.76	8,098.0	-4,884.7	20.7	4,884.8	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RR 20 BHL- original targ - plan hits target center - Point	0.00	0.00	8,098.0	-4,884.7	20.7	403,703.11	672,167.02	32.10915419	-103.91078670
RR20- SHL - plan misses target center by 170.9ft at 8016.6ft MD (7987.2 TVD, -113.4 N, 0.5 E) - Point	0.00	0.00	8,115.0	0.0	0.0	408,587.82	672,146.35	32.12258188	-103.91079158

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
715.0	715.0	13 3/8" Surface Casing	13.375	17.500
3,625.0	3,625.0	8 5/8" Intermediate Casing	8.625	11.000
12,833.8		5 1/2" Production Casing	5.500	7.875

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

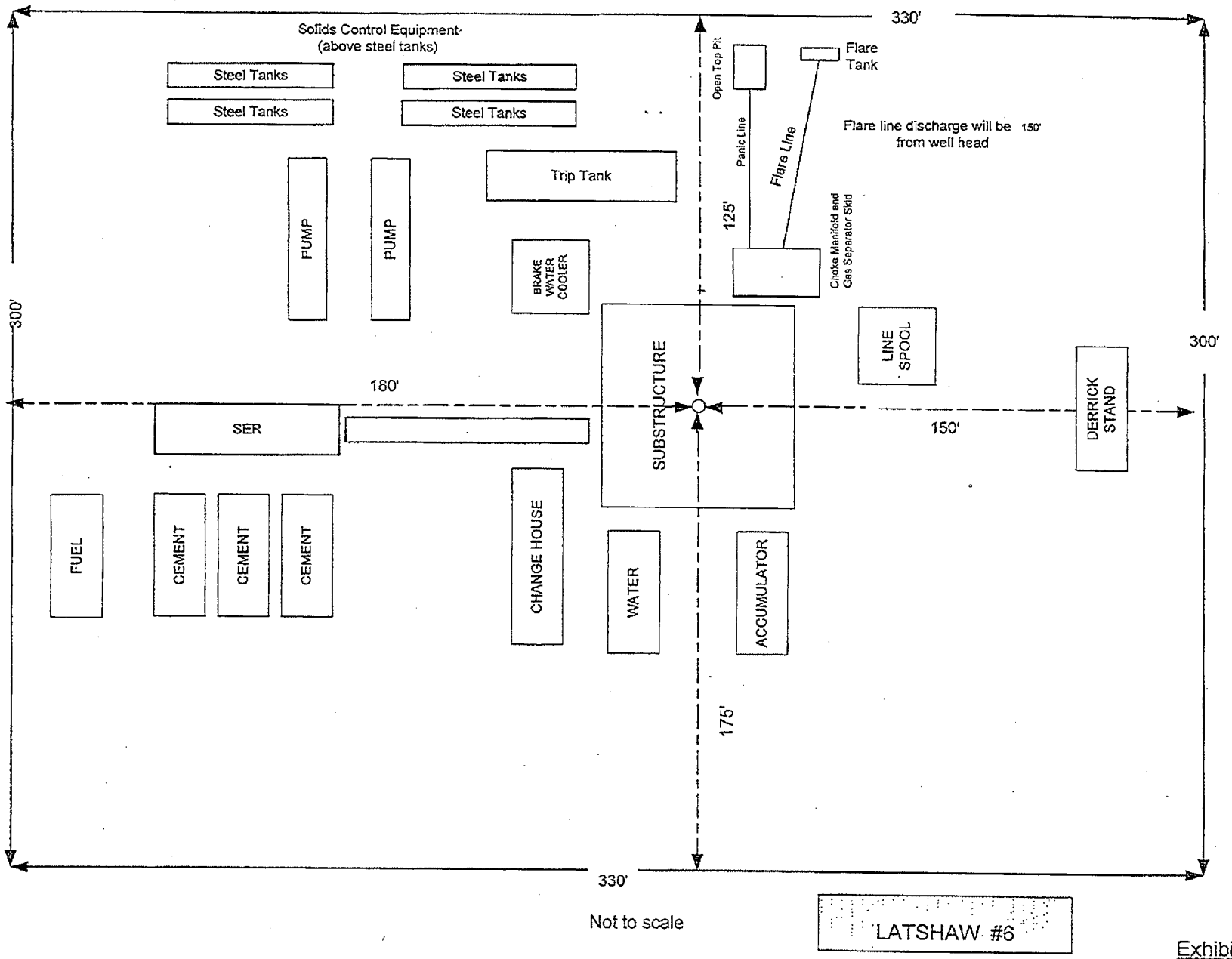


Exhibit D

Revised Exhibit D

CHESAPEAKE OPERATING, INC.

Site Name: PLU Ross Ranch 20 Federal #1H

Section 20/Township 25S/Range 30E

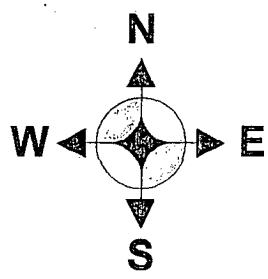
Eddy Co. New Mexico

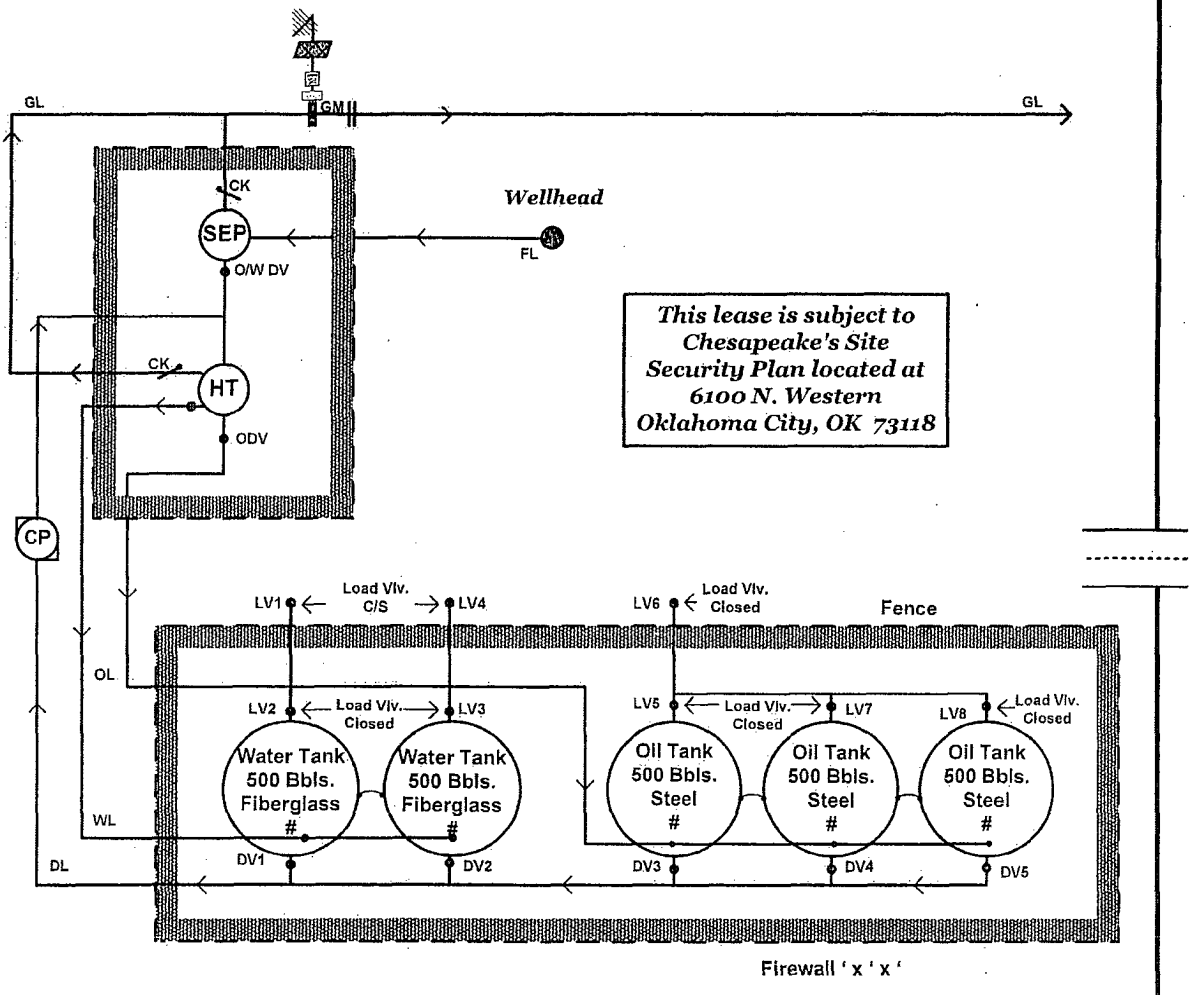
100' FNL - 400' FWL

Feet

Feet

General sealing of valves and sales by tank gauging. Production phase: all drain valves (D1-D5) and sales valves (L1-L8) 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.





Direction of Flow off Site:

Prepared by: Jackie Reynolds
Date: 6-30-2010

Approved by:
Date:

EXHIBIT C

BLOWOUT PREVENTOR SCHEMATIC

CHESAPEAKE OPERATING INC

Permian District-Minimum Requirements

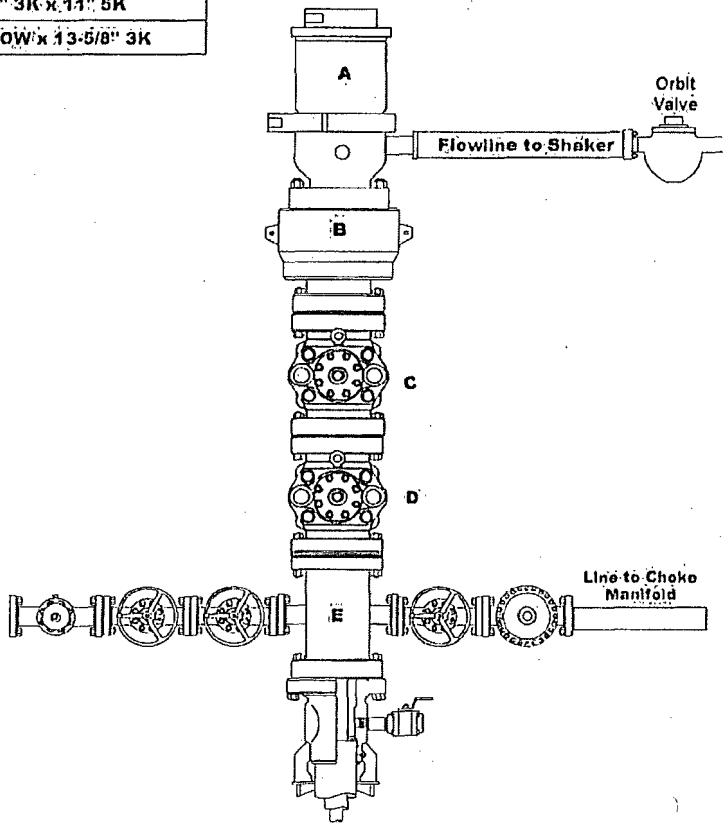
FIELD : Avalon

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 6/8"	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

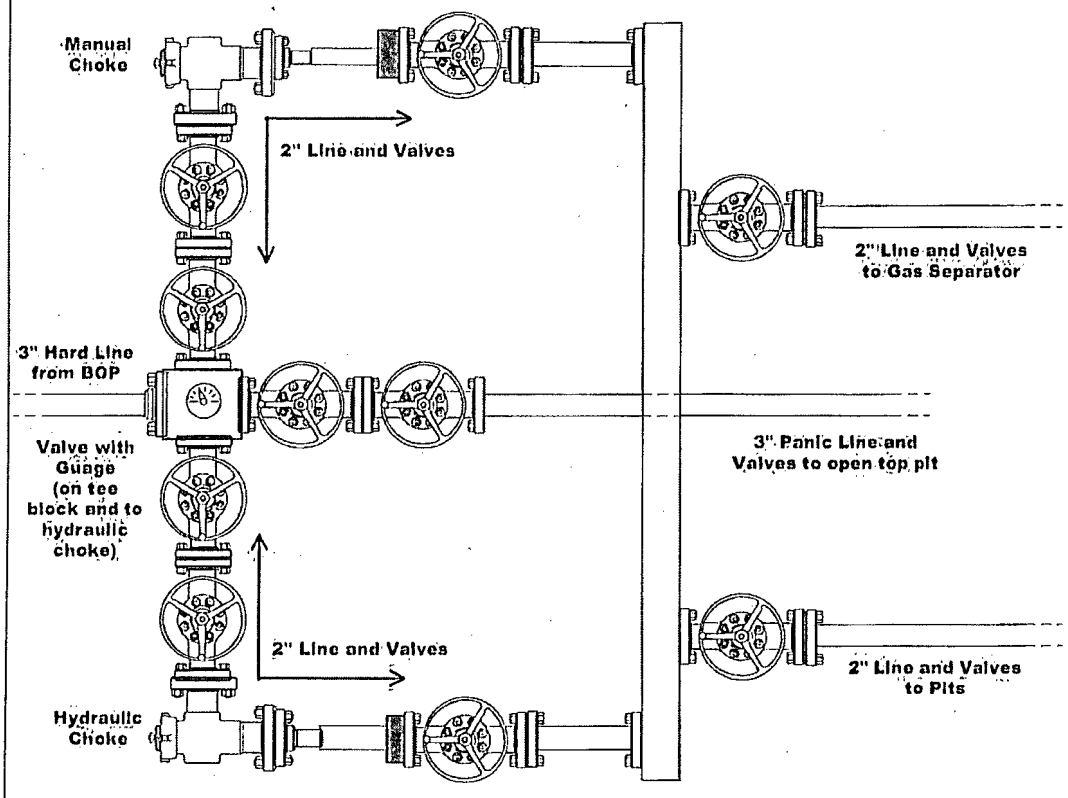
Revised EXHIBIT F-1

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)

Revised EXHIBIT F-2