

OCD-HOBBS

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RM

Form 3160-3
(August 2008)

RESUBMITTAL

MAY 24 2010

UNITED STATES

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

HOBBSOCD

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB NO 1004-0137
Expires July 31, 2010

5 Lease Serial No

NM-108454

6 If Indian, Allottee or Tribe Name

N/A

7. If Unit or CA Agreement, Name and No

N/A

8 Lease Name and Well No

Mystery AYM Federal #2

9 API Well No

30-015-37852

10. Field and Pool, or Exploratory

CEMETARY
Undesignated Morrow

11 Sec, T, R, M., or Blk And Survey or Area

Section 33-T20S-R25E

1a. Type of Work

☒ DRILL☐ REENTER

1b Type of Well

☐ Oil Well☒ Gas Well☐ Other☐ Single Zone☐ Multiple Zone

2 Name of Operator

Yates Petroleum Corporation

025575

3a Address

105 South Fourth Street, Artesia, NM 88210

3b Phone No. (include area code)

575-748-1471

4. Location of well (Report location clearly and in accordance with any State requirements.)*

At surface

1150' FSL and 1980' FEL

Unit D

At proposed prod zone

same as above

14. Distance in miles and direction from the nearest town or post office*

Approximately 16 miles northwest of Carlsbad, New Mexico

12 County or Parish

Eddy - per Cty C. 3-14-10
Lea County

13 State

NM

15 Distance from proposed*

location to nearest
property or lease line, ft

(Also to nearest drlg unit line, if any)

1150'

16 No. of acres in lease

320.00

17 Spacing Unit dedicated to this well

S/2

18. Distance from proposed location*

to nearest well, drilling, completed,
applied for, on this lease, ft.

.6 of a mile

19. Proposed Depth

10000'

20. BLM/ BIA Bond No on file

NATIONWIDE BOND #NMB000434

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

3686' GL

22 Approximate date work will start*

ASAP

23. Estimated duration

45 days

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 must be filed with the appropriate Forest Service Office)4. Bond to cover the operations unless covered by 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

Cy Cowan

Date

3/1/2010

Title

Land Regulatory Agent

Approved By (Signature)

/s/ Don Peterson

Name (Printed/ Typed)

/s/ Don Peterson

Date

MAY 20 2010

Title

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 cc
operations thereon

Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

File 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and wilfully 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

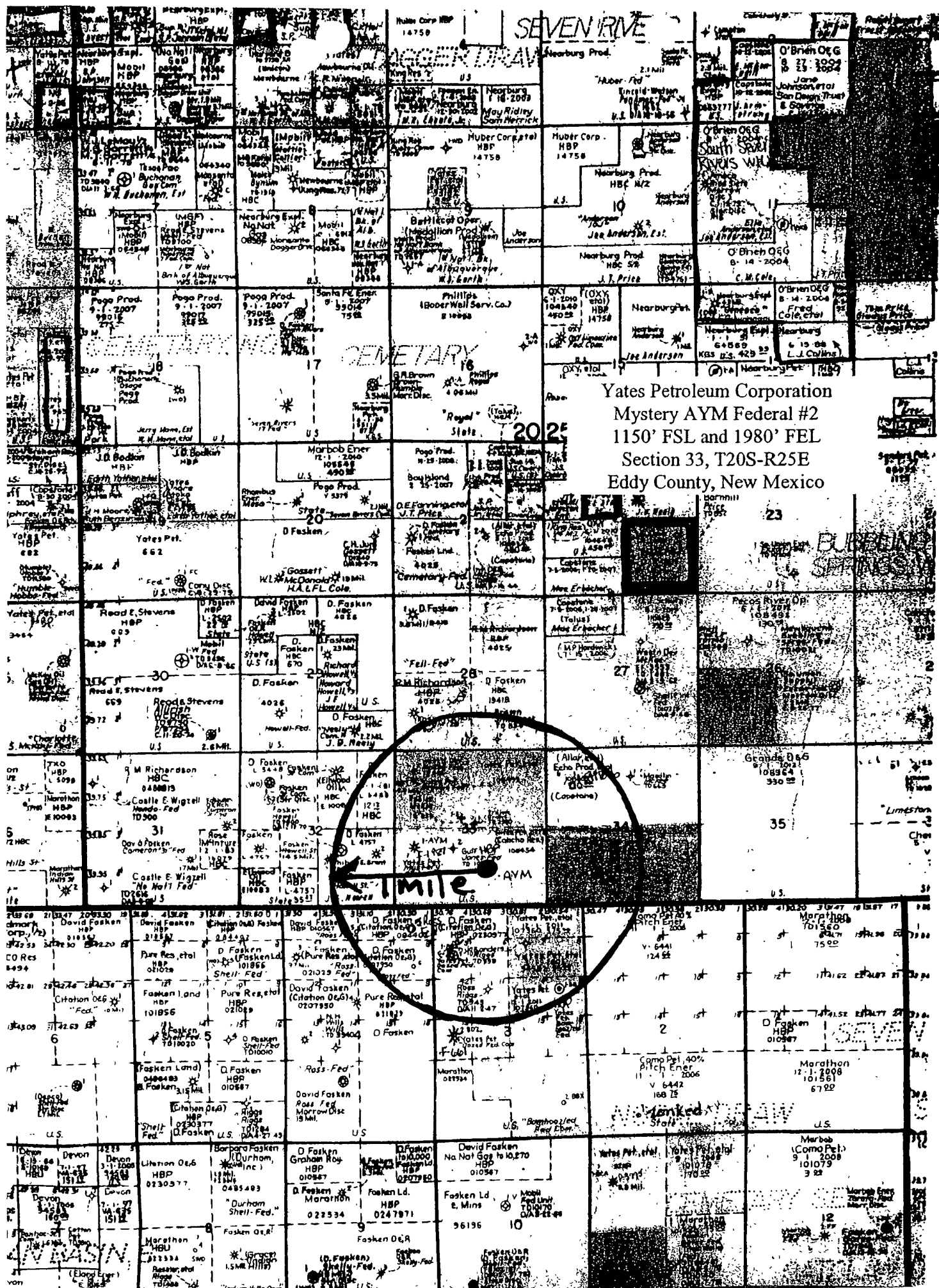
Previously Approved

KE

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHEDSEE ATTACHED FOR
CONDITIONS OF APPROVAL

Carlsbad Controlled Water Basin

0 330' 660' 990' 1650' 1980' 2310' 2310' 1980' 1650' 990' 660' 330' 0



YATES PETROLEUM CORPORATION

Mystery AYM Federal #2

1150' FSL & 1980' FEL

Section 33-T20S-R25E

Eddy County, New Mexico

- The estimated tops of geologic markers are as follows:

San Andres	955'	Strawn	8855' Gas
Glorietta	2615' Oil	Atoka	9195' Gas
Upper Yeso	2785' Oil	Upper Morrow	9525' Gas
2 nd Bone Spring Lime	4900' Oil	Middle Morrow	9595' Gas
3 rd Bone Spring Lime	6615' Oil	Lower Morrow	9775' Gas
Wolfcamp	6380' Gas	Base of Morrow	9860'
Cisco Canyon	7555'	TD	10000'

- The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

Water:	Approx 200' - 300'
Oil:	Glorietta-2615'; Upper Yeso-2785'; 2 nd Bone Spring Lime-4900'; 3 rd Bone Spring Lime-6615'
Gas:	Wolfcamp-6280'; Strawn-8855'; Atoka-9195'; Upper Morrow-9525'; Middle Morrow-9595'; Lower Morrow-9775'

see COA

- Pressure Control Equipment: BOPE will be installed on the 9 5/8" casing and rated for 5000 BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings, which are set and cemented in place. Blowout Preventor controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventors will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. See Exhibit B.

Auxiliary Equipment:

- Auxiliary Equipment: Kelly cock, pit level indicators, flow sensor equipment and a sub with full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when kelly is not in use.

4. THE PROPOSED CASING AND CEMENTING PROGRAM:

- Casing Program: (All New)

see COA

Hole Size	Casing Size	Wt./Ft	Grade	Coupling	Interval	Length
17 1/2"	13 3/8"	48#	H-40	ST&C	0-400'	400'
12 1/4"	9 5/8"	36#	J-55	ST&C	0-3450'	3450'
8 3/4"	5 1/2"	17#	L-80	LT&C	0-200'	200'
8 3/4"	5 1/2"	17#	J-55	LT&C	200'-1300'	1100'
8 3/4"	5 1/2"	17#	J-55	LT&C	1300'-6400'	5100'
8 3/4"	5 1/2"	17#	J-55	LT&C	6400'-8200'	1800'
8 3/4"	5 1/2"	17#	L-80	LT&C	8200'-10000'	1800'

Replaced 4-30-10 DW

See COA

Yates Petroleum Corporation requests a variance to install a rotating head on the surface casing strings when intermediate casing will be set. If a BOP system is required then we wish to install a 2M system and receive a variance to test the system to 1000# using the rig pumps. The test will be held for 30 minutes on each system component. Components to be tested include pipe rams, blind rams, and annular preventer.

- Minimum Casing Design Factors: Burst 1.0, Tensile Strength 1.8, Collapse 1.125

1st segment		10,000 ft	to	8,200 ft	Make up Torque ft-lbs			Total ft =	1,800
O D	Weight	Grade	Threads	opt	min	mx			
5.5 inches	17 #/ft	L-80	LT&C	3410	2560	4280			
Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift					
6,290	7,740 psi	338,000 #	397,000 #	4,767					

2nd segment		8,200 ft	to	6,400 ft	Make up Torque ft-lbs			Total ft =	1,800
O D	Weight	Grade	Threads	opt	min	mx			
5.5 inches	17 #/ft	J-55	LT&C	2470	1850	3090			
Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift					
4,910	5,320 psi	247,000 #	273,000 #	4,767					

3rd segment		6,400 ft	to	1,400 ft	Make up Torque ft-lbs			Total ft =	5,000
O D	Weight	Grade	Threads	opt	min	mx			
5.5 inches	15.5 #/ft	J-55	LT&C	2170	1630	2710			
Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift					
4,040	4,810 psi	217,000 #	248,000 #	4,825					

4th segment		1,400 ft	to	280 ft	Make up Torque ft-lbs			Total ft =	1,200
O D	Weight	Grade	Threads	opt	min	mx			
5.5 inches	17 #/ft	J-55	LT&C	2470	1850	3090			
Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift					
4,910	5,320 psi	247,000 #	273,000 #	4,767					

5th segment		280 ft	to	0 ft	Make up Torque ft-lbs			Total ft =	280
O D	Weight	Grade	Threads	opt	min	mx			
5.5 inches	17 #/ft	L-80	LT&C	3410	2560	4280			
Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift					
6,290	7,740 psi	338,000 #	397,000 #	4,767					

B. CEMENTING PROGRAM:

Surface casing: 450 sx "C" + 2% CaCl₂(YLD 1.34 WT 14.8). TOC Surface.

Intermediate Casing: 1100 sx Lite C (WT 12.5 YLD 1.98); Tail in w/ 200 sx Class C (YLD 1.34 WT 14.8). TOC Surface.

Production Casing: Lead w/750 sx Lite "C" (WT 12.5 YLD 1.95) Tail in w/775 sx Super "C" Modified (WT 13.2 YLD 1.57). TOC ~~3000'~~

2200'

5. MUD PROGRAM AND AUXILLARY EQUIPMENT: See COA

Interval	Type	Weight	Viscosity	Fluid Loss
0-400'	FW/Spud Mud	8.4-8.6	34-36	N/C
400'- 3500' 2650'	Fresh Water	8.4	28	N/C
2650' 3500'-6800'	Cut Brine	8.7-9.0	28	N/C
6800'-7755'	Cut Brine	9.0-9.3	28	N/C
7755'-8800'	Cut Brine	9.3-9.6	34	N/C
8800'-10000'	SW/Gel/Starch/4-6%KCL	9.6-9.8	30-32	<6cc

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blow out will be available at the well site during drilling operations. Mud will be checked hourly by rig personnel.

6. EVALUATION PROGRAM: See COA

Samples: 10' out from under intermediate casing to TD.

Logging: Platform Express/HALS/NGT/FMI.

Coring: None Anticipated.

DST's: Possible from Wolfcamp to TD.

7. ABNORMAL CONDITIONS, BOTTOM HOLE PRESSURE AND POTENTIAL HAZARDS:

Anticipated BHP:

From: O	TO: 400'	Anticipated Max.	BHP: 180	PSI
From: 400'	TO: 3500'	Anticipated Max.	BHP: 1550	PSI
From: 3500'	TO: 10000'	Anticipated Max.	BHP: 5100	PSI

Abnormal pressures or temperatures are anticipated: None

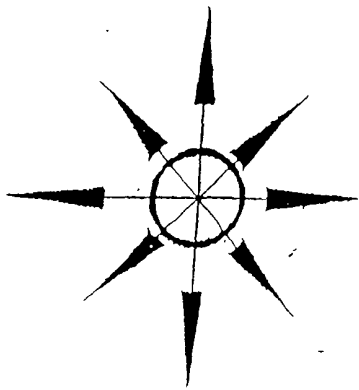
Lost Circulation Zones Anticipated: None.

H₂S Zones Anticipated: None

Maximum Bottom Hole Temperature: 198° F

8. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 30 days to drill the well with completion taking another 15 days.

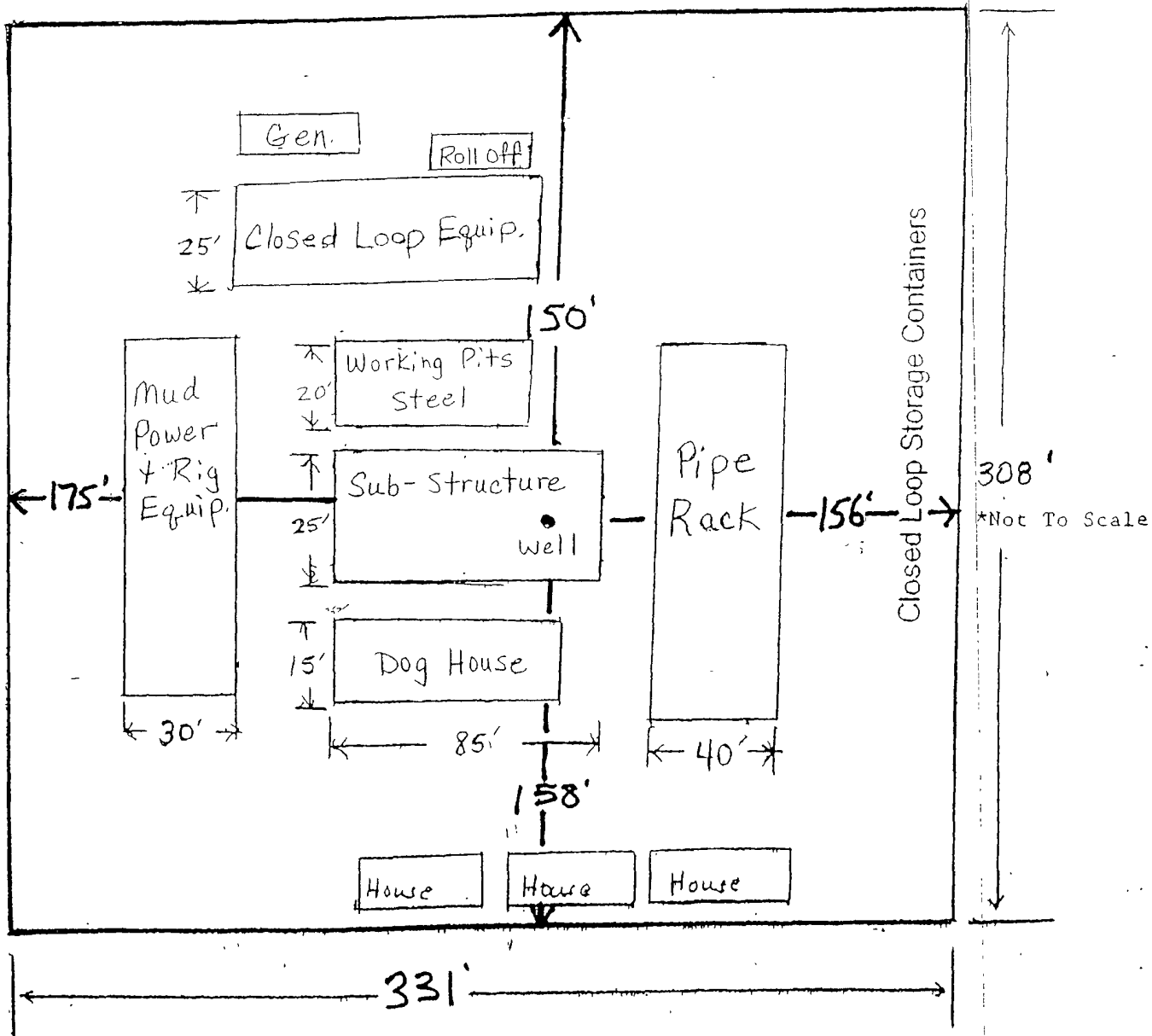


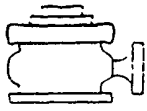
Yates Petroleum Corporation

Location Layout for Permian Basin

Closed Loop Design Plan

Mystery AYM Federal #2
1150' FSL and 1980' FEL
Section 33-T20S-R25E
Eddy County, New Mexico
Exhibit "C"

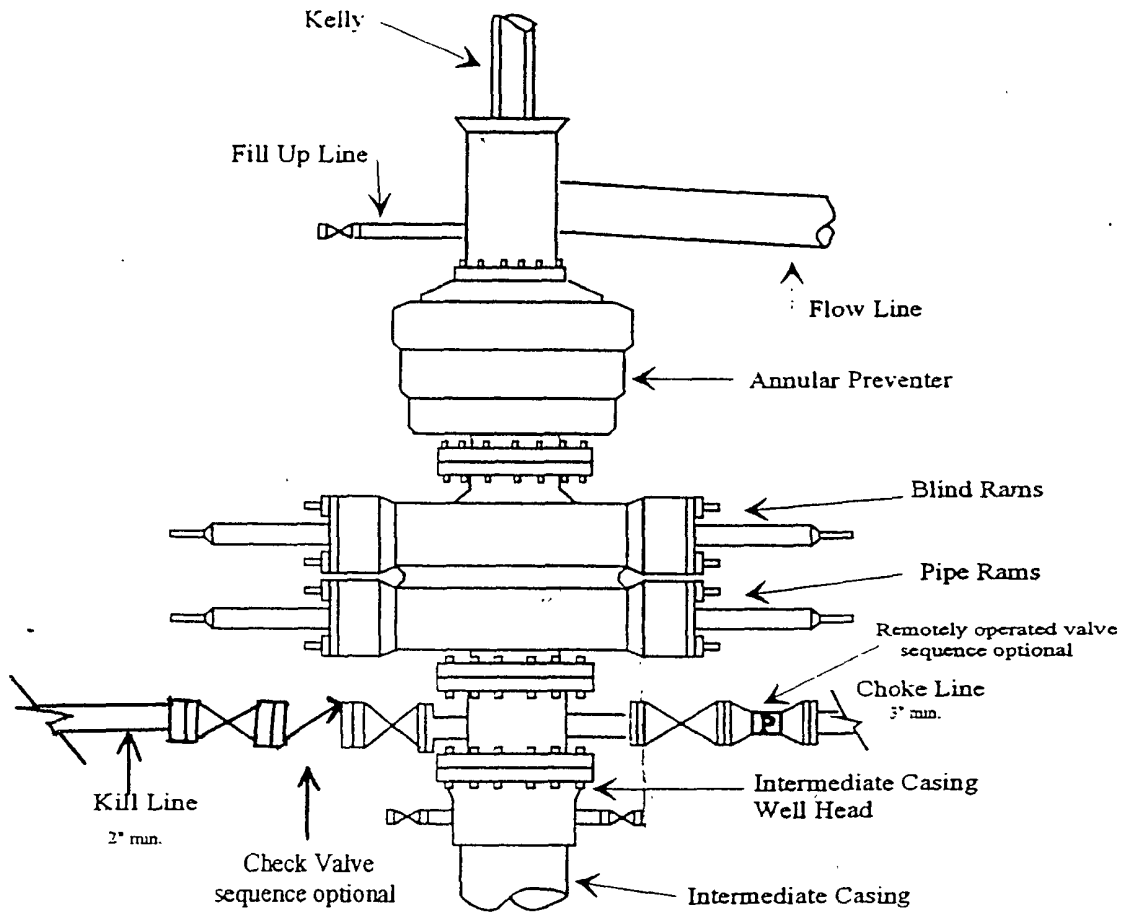




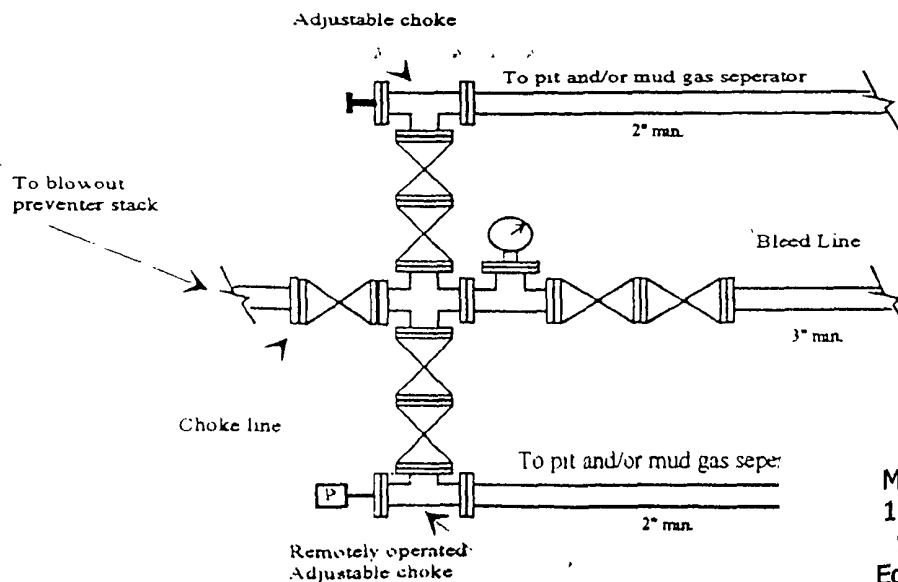
Yates Petroleum Corporation

BOP-4

Typical 5,000 psi Pressure System Schematic Annular with Double Ram Preventer Stack

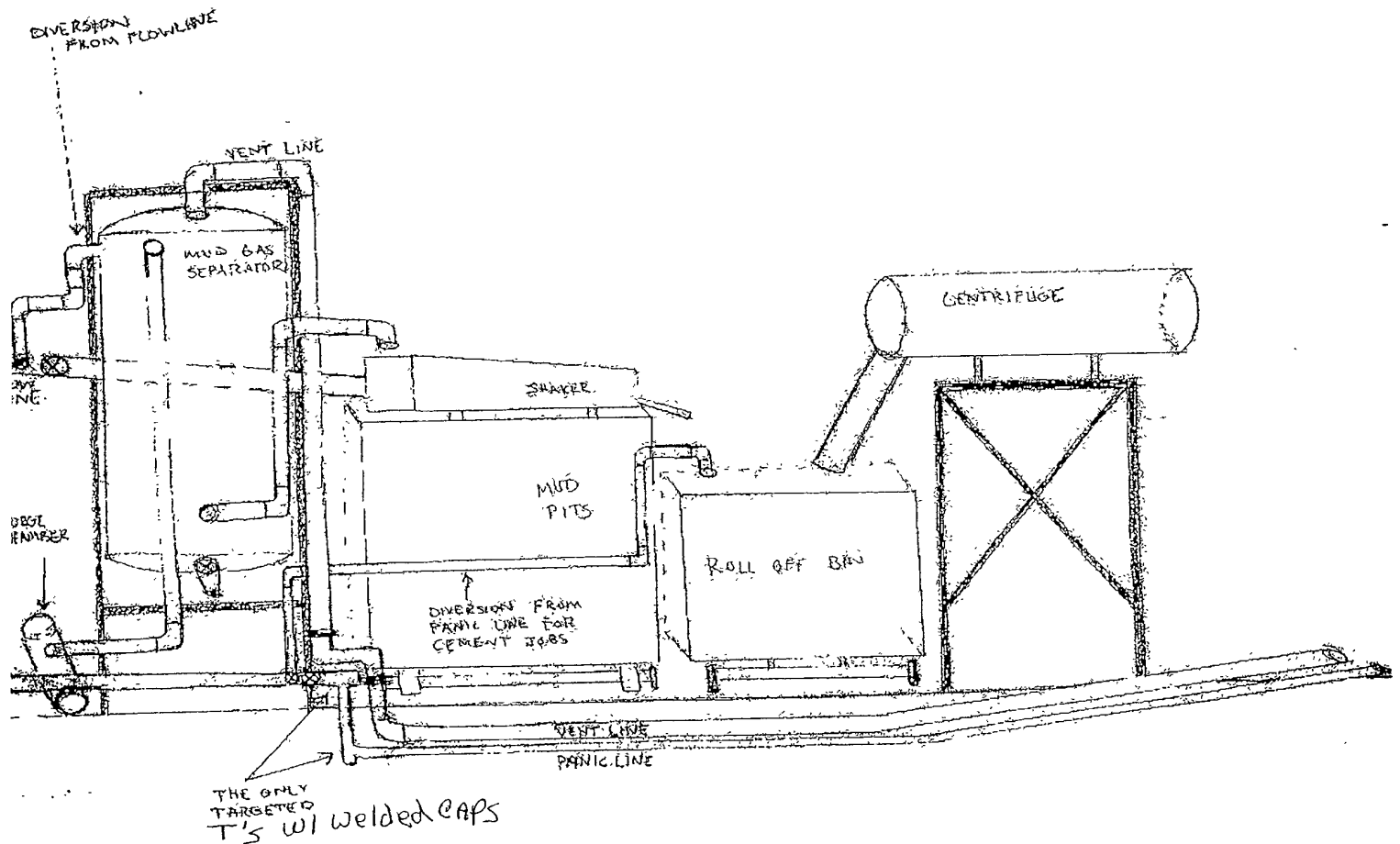


Typical 5,000 psi choke manifold assembly with at least these minimum features



Mystery AYM Federal #2
1150' FSL and 1980' FEL
Section 33-T20S-R25E
Eddy County, New Mexico
Exhibit "B"

YATES PETROLEUM CORPORATION
Piping from Choke Manifold
to the Closed-Loop Drilling Mud System



Mystery AYM Federal #2
1150' FSL and 1980' FEL
Section 33-T20S-R25E
Eddy County, New Mexico
Exhibit "C-1"

MULTI-POINT SURFACE USE AND OPERATIONS PLAN
Yates Petroleum Corporation
Mystery AYM Federal #2
1150' FSL and 1980' FEL
Section 33, T20S-R25E
Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

Exhibit A is a portion of the BLM map showing the well and roads in the vicinity of the proposed location. The proposed wellsite is located approximately 16 miles northwest of Carlsbad, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go south of Artesia of Highway 285 to White Pine Road. (CR 28) Turn right on White Pine Road and go approx. 6.2 miles. Turn left here and go to the Mystery AYM Federal #1 well location. From the southeast corner of the Mystery AYM Federal #1, go east on existing lease road for approx. 0.3 of a mile. Turn right here on lease road and go south for approx. .4 of a mile. The new road will start here going east for approximately 300 feet to the northwest corner of the proposed well location.

2. PLANNED ACCESS ROAD:

- A. The proposed new access will be approximately .7 of a mile in length from the point of origin to the northwest corner of drilling pad. The road will lie in a northeasterly then southern direction.
- B. The new road will be 14 feet in width (driving surface) and will be adequately drained to control runoff and soil erosion.
- C. The new road will be bladed with drainage on one side. Traffic turnouts may be built.
- D. The route of the road is visible.
- E. Existing roads will be maintained in the same or better condition.

3. LOCATION OF EXISTING WELL

- A. There is drilling activity within a one-mile radius of the wellsite.
- B. Exhibit D shows existing wells within a one-mile radius of the proposed wellsite.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

- A. There are no production facilities on this lease at the present time.
- B. In the event that the well is productive, the necessary production facilities will be installed on the drilling pad. If the well is productive oil, a gas or diesel self-contained unit will be used to provide the necessary power. No power will be required if the well is productive of gas.

5. LOCATION AND TYPE OF WATER SUPPLY:

- A. It is planned to drill the proposed well with a fresh water system. The fresh water will be obtained from commercial sources and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit A.

6. SOURCE OF CONSTRUCTION MATERIALS:

The dirt contractor will be responsible for finding a source of material for construction of road and pad and will obtain any permits that may be required.

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. A closed loop system will be used to drill this well.
- B. The closed loop system will be constructed, maintained, and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division – the "Pit Rule" 19.15.17 NMAC.
- C. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
- D. Oil produced during operations will be stored in tanks until sold.
- E. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- F. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary land fill. Burial on site is not approved.

8. ANCILLARY FACILITIES: None

9. WELLSITE LAYOUT:

- A. Exhibit C shows the relative location and dimensions of the well pad, the reserve pits, the location of the drilling equipment, rig orientation and access road approach.
- B. The closed loop system will be constructed, maintained, and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division – the "Pit Rule" 19.15.17 NMAC.
- C. A 600' x 600' area has been staked and flagged.

10. PLANS FOR RESTORATION

- A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave the wellsite in as aesthetically pleasing a condition as possible.
- B. Unguarded pits, if any, containing fluids will be fenced until they have dried and been leveled.
- C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled level after they have evaporated and dried.

11. SURFACE OWNERSHIP: Federal surface, Administered by the Bureau of Land Management, Carlsbad, New Mexico.

12. OTHER INFORMATION:

- A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
- B. The primary surface use is for grazing.

(Exhibits Attached)

Exhibit A	Topographic Map and Road Plat
Exhibit B	BOP Schematic
Exhibit C	Location Layout
Exhibit C-1	Closed Loop System Diagram
Exhibit D	One Mile Radius

YATES PETROLEUM CORPARTION
Mystery AYM Federal #2, Lease NM 108454
1150' FSL & 1980' FEL
Section 33-T20S-R25E
Eddy County, New Mexico

Plans for Interim and Final Surface Reclamation.

1. Well location will be reshaped and contoured to resemble the original topography as closely as possible. During the surface reclamation measures will be taken to avoid new erosion on and off the location and supporting facilities caused by the reclamation. These measures will be overseen by Yates' construction personnel following a structured plan for the reclamation of each individual site.
2. Major drainage systems will be avoided as determined at the onsite with the BLM. Minor drainages may be rerouted around the well site within the 600' x 600' cleared area to avoid moving the well location.
3. Segregation of topsoil or like soil will be placed in low lift rows rather than stockpiles just off the caliche well pad. Placement of these lifts will be determined at the time of construction.
4. Yates will use prudent oil field practices when constructing well locations and related facilities. Keeping in mind the size of the needed area will determine the safety of the working personnel during all aspects on the drilling and production process.
5. Back fill requirements. Waiting on what this means.
6. All topsoil will be spread over the area reclaimed during interim reclamation using a front end loader. This will allow soils to remain viable for producing plant growth. For final reclamation enough topsoil will be removed from the interim reclaimed area to cover by spreading over the rest of the pad area.
7. Soil treatments will be determined at the time of final reclamation by Yates' Soil Specialist to meet BLM Best Management Practices for reclamation.
8. Reseeding of disturbed areas will be according to BLM Conditions of Approval attached to the approved Application For Permit to Drill. Also time of planting and soil preparation will be covered at this time.
9. Yates' personnel or a third party may be in charge of weed control after reclamation of disturbed areas. Yates' also has the option to participate in the Chaves Soil and Water District program to pool monies for weed control. The final option for weed control will be determined at the time of reclamation.
10. Well pads, road and related facilities with caliche or other surfacing material will be picked up at the time of final abandonment and will be used on other projects in the area if possible or placed back in the caliche pit or other designated site. Buried pipelines will be left in place after being bled down and flushed out. Above surface support equipment will be removed or cut down below plow depth and removed. Pipeline right-of-ways will be reseeded according to BLM Best Management Practices.

CERTIFICATION
YATES PETROLEUM CORPORATION
Mystery AYM Federal #2

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

Executed this 1st day of March, 2010

Printed Name Cy Cowan

Signature 

Position Title Land Regulatory Agent

Address 105 South Fourth Street, Artesia, NM 88210

Telephone 575-748-4372

E-mail (optional) cy@yatespetroleum.com

Field Representative (if not above signatory) Tim Bussell

Address (if different from above) Same

Telephone (if different from above) 575-748-4221

E-mail (optional) _____

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Yates Petroleum Corp
LEASE NO.:	NM108454
WELL NAME & NO.:	2 Mystery AYM Federal
SURFACE HOLE FOOTAGE:	1150' FSL & 1980' FEL
BOTTOM HOLE FOOTAGE	' F L & ' F L
LOCATION:	Section 33, T. 20 S., R 25 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

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

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
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 - Cave/Karst
- ☐ **Construction**
 - Notification
 - V-Door Direction
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
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- ☒ **Drilling**
 - Casing/Cement
 - High Cave/Karst
 - Logging Requirements.
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☒ **Interim Reclamation**
- ☒ **Final Abandonment & Reclamation**

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. SPECIAL REQUIREMENT(S)

Pad Restrictions

V-door southwest

Cave and Karst

****** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

The pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the pad. All sides will be bermed.

Tank Battery Liners and Berms:

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION**A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 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. V-DOOR DIRECTION: southwest**C. TOPSOIL**

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

D. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

E. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

F. 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.

G. 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

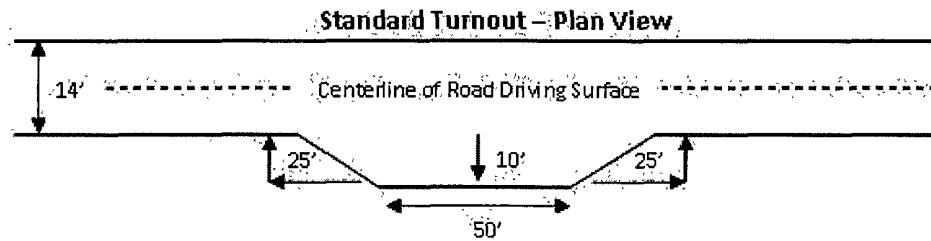
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

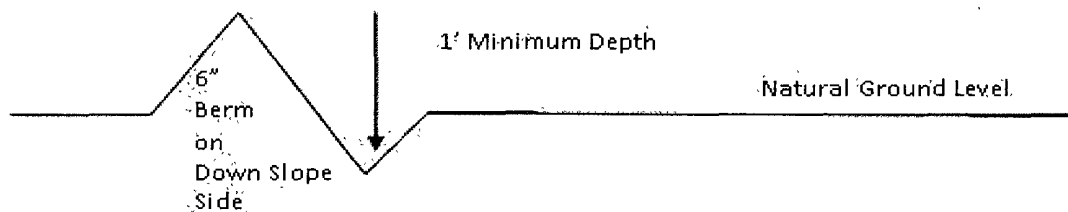


Drainage

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:

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

Culvert Installations

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

Cattleguards

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

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

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

Fence Requirement

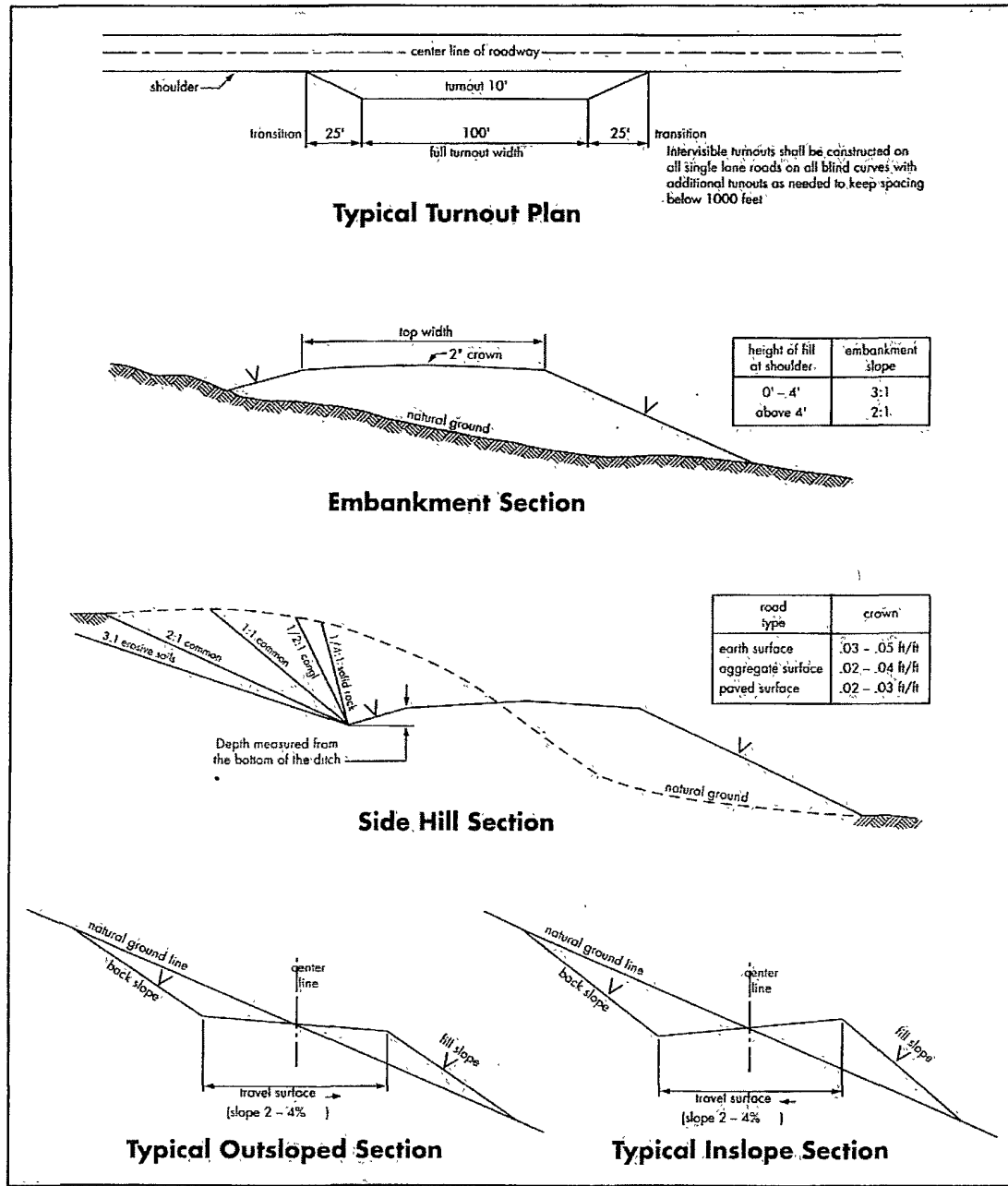
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

Public Access

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☒ **Eddy County**

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

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the CAL/GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies.**

B. CASING

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

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

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

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

HIGH CAVE/KARST

Possible high fresh water flow rates in the San Andres due to vugs and fractures.

Possible lost circulation in the San Andres, Goat Seep Reef, Wolfcamp, and Strawn formations.

Possible over pressure in the Strawn, Atoka and Morrow formations.

1. The 13-3/8 inch surface casing shall be set at **approximately 400 feet** and cemented to the surface. **Set casing within the Seven Rivers, avoiding the Bowers Sand.**
 - 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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:
 - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst. Set casing at the bottom of the Goat Seep Reef at approximately 2650 feet, avoiding drilling into the San Andres.**

If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

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

☒ Cement should tie-back at least 450 feet into previous casing string. Operator shall provide method of verification.

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

C. PRESSURE CONTROL

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

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

a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8 intermediate casing shoe shall be **5000 (5M) psi. 5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

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

a. Casing cut-off and BOP installation will not be initiated until the cement has had a minimum of 8 hours setup time for a water basin. The casing shall remain stationary and under pressure for at least eight hours after the operator places the cement. In the potash area, the minimum time is 12 hours and the casing shall remain stationary and under pressure during this time period. Casing shall be under pressure if the operator uses some acceptable means of holding pressure or if the operator employs one or more float valves to hold

the cement in place. Testing the BOP/BOPE against a plug can commence after meeting the above conditions plus the BOP installation time.

- b. The tests shall be done by an independent service company utilizing a test plug.
- c. The results of the test shall be reported to the appropriate BLM office.
- d. 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.**
- e. 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.
- f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

D. DRILLING MUD

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

Proposed mud weight may not be adequate for drilling through Atoka.

E. DRILL STEM TEST

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

DHW 040910

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities

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

Containment Structures

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

Painting Requirement

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

B. PIPELINES (not applied for in APD)

C. ELECTRIC LINES (not applied for in APD)

IX. 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.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation 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 that is free of contaminants 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.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared; these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1, for Loamy 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 regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/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:

<u>Species</u>	<u>lb/acre</u>
Plains lovegrass (<i>Eragrostis intermedia</i>)	0.5
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sideoats grama (<i>Bouteloua curtipendula</i>)	5.0

*Pounds of pure live seed:

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