

ATS-09-476
RM

RESUBMITTAL

OCD-ARTESIA

09-808

SEP 24 2009

Form 3160-3
(August 2008)

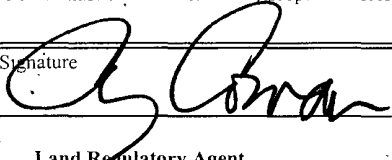
UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

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

1a Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No NM-88136
1b Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name N/A
2 Name of Operator Yates Petroleum Corporation 025575		7 If Unit or CA Agreement, Name and No. N/A
3a Address 105 South Fourth Street, Artesia, NM 88210	3b. Phone No. (include area code) 575-748-1471	8 Lease Name and Well No Corral Draw AQH Federal #3H
4 Location of well (Report location clearly and in accordance with any State requirements *) At surface 330' FSL and 2310' FWL, Surface Hole Location 330' FNL and 1980' FWL Bottom Hole Location At proposed prod zone same as above		9 API Well No 30-015-37.306
14 Distance in miles and direction from the nearest town or post office* Approximately 36 miles east of Malaga, New Mexico		10 Field and Pool, or Exploratory Pierce Crossing Bone Spring East
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any) .3 of a mile		11 Sec, T., R., M., or Blk. And Survey or Area Section 13, T24S-R29E
16 No. of acres in lease 320.00		12. County or Parish Eddy
17. Spacing Unit dedicated to this well NE/NW		13 State NM
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft .3 of a mile		19. Proposed Depth 9250'
20 BLM/ BIA Bond No on file NATIONWIDE BOND #NMB000434		21 Elevations (Show whether DF, KDB, RT, GL, etc) 3078' GL
22 Aproximate 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 | 4 Bond to cover the operations unless covered by existing bond on file (see item 20 above) |
| 2 A Drilling Plan | 5 Operator certification |
| 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) | 6 Such other site specific information and/ or plans as may be required by the BLM |

25. Signature 	Cy Cowan	Date 6/30/2009
Title Land Regulatory Agent		
Approved By (Signature) 15/ Jeanette Martinez	Name (Printed/ Typed) JEANETTE MARTINEZ	Date SEP 22 2009
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

Title 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

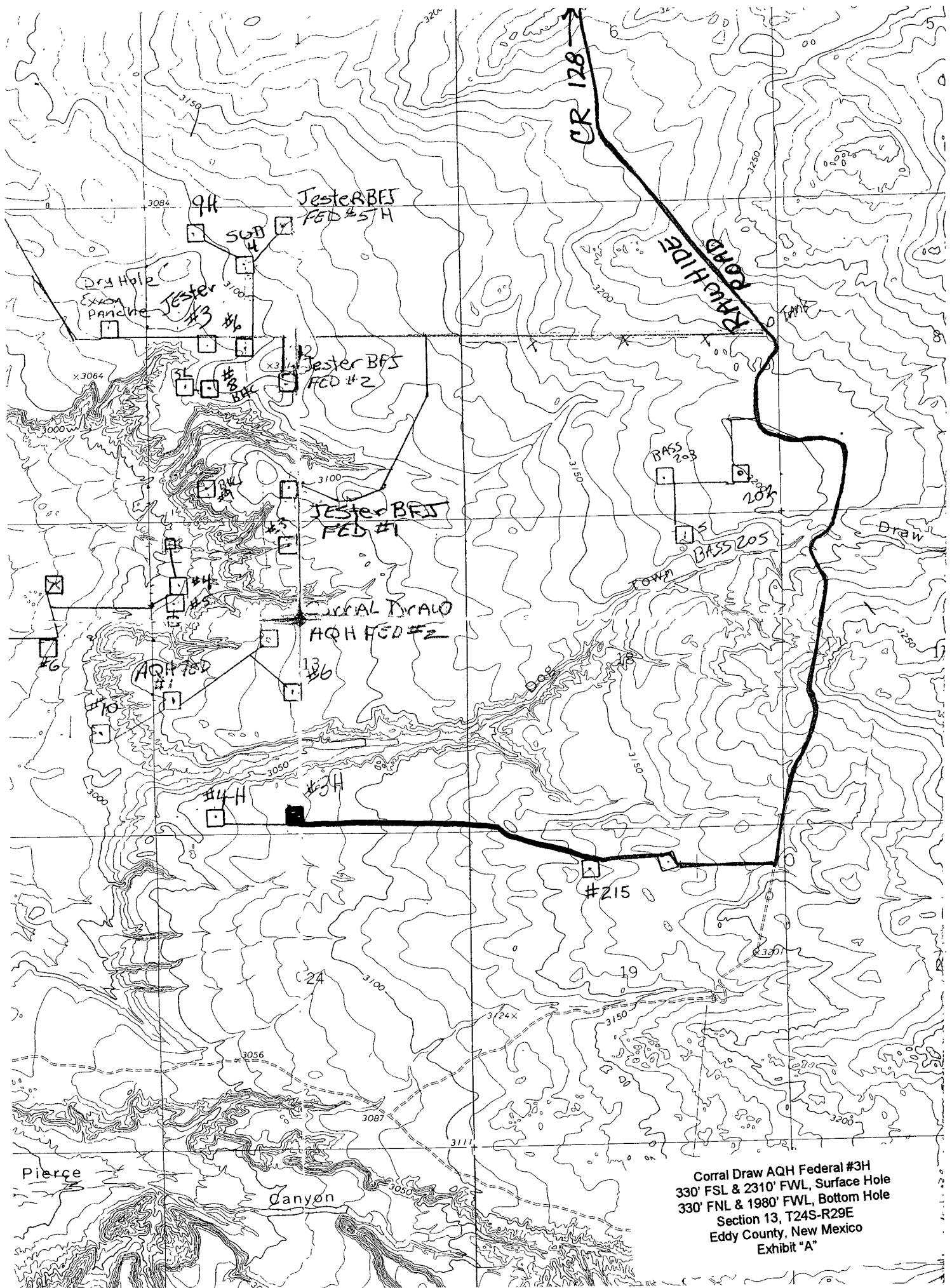
Previously Approved

APPROVAL FOR TWO YEARS

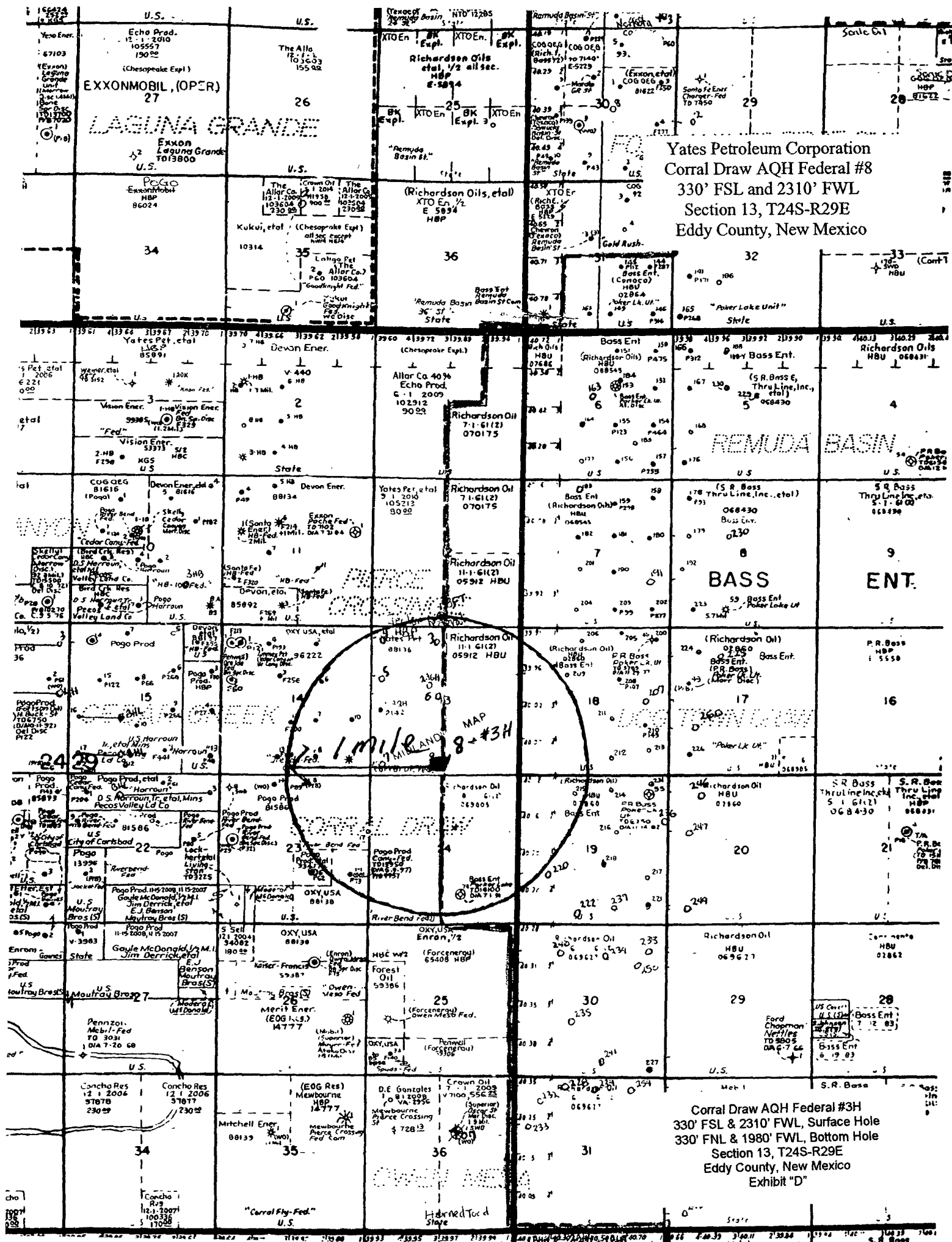
Carlsbad Controlled Water Basin
Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

BASIN SURVEYS



Corral Draw AQH Federal #3H
330' FSL & 2310' FWL, Surface Hole
330' FNL & 1980' FWL, Bottom Hole
Section 13, T24S-R29E
Eddy County, New Mexico
Exhibit "A"



YATES PETROLEUM CORPORATION
Corral Draw AQH Federal #3H
 330' FSL and 2310' FWL (Surface)
 330' FNL and 1980' FWL (Bottom Hole)
 Section 13-T24S-R29E
 Eddy County, New Mexico

1. The estimated tops of geologic markers are as follows:

Rustler	330'	Brushy Canyon MKR	6,700'
Top of Salt	450'	Bone Springs (Oil)	6,970'
Bottom of Salt	3,015'	Kick off @ 12°/100'	7,693'
Bell Canyon (Oil)	3,220'	Bone Springs 1 /SD/ (Oil)	8,096' (MD)
Cherry Canyon (Oil)	4,090'	TVD	8,170' (TVD)
Brushy Canyon (Oil)	5,360'	Bone Springs 1 PAY (Oil)	8,443' (MD)
		TD	12,597' (MD)

Well will be drilled vertically to 7,693'. At 7,693' well will be kicked off and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 12,597' MD (8,170' TVD) where 5 1/2" casing will be set and cemented. Penetration point of producing zone will be encountered at 806' FSL and 2,276' FWL Section 4, T24S-R29E. Deepest TVD in the well is 8,170' in the lateral.

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

Water: 118'+
 Oil or Gas: All potential zones

- 3. Pressure Control Equipment:** A 3000 psi system will be nipped up and tested on 13 3/8" casing. 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:

A. Casing Program: (All New)

<u>Hole Size</u>	<u>Casing Size</u>	<u>Wt./Ft</u>	<u>Grade</u>	<u>Thread</u>	<u>Interval</u>	<u>Length</u>
17 1/2"	13 3/8"	48#	H-40	ST&C	0-500'	500' - See POA
11"	8 5/8"	32#	J-55	ST&C	0-100'	100'
11"	8 5/8"	24#	J-55	ST&C	100-2200'	2100'
11"	8 5/8"	32#	J-55	ST&C	2200-3200'	1000'
7 7/8"	5 1/2"	17#	HCP-110	LT&C	0-12597'	12597'

- Minimum Casing Design Factors: Burst 1.0, Tensile Strength 1.8, Collapse 1.125
- A 3,000 psi BOP will be nipped up on the 13 3/8" casing and tested to 3000 psi.

B. Cementing Program:

Surface Casing: Cement with 225 sx C Lite (WT 12.6 YLD 1.98). Tail in with 200 sx class "C" w/CaCl₂ (WT 14.8 YLD 1.36) TOC-Surface

Intermediate Casing: 625 sx C Lite (Wt 12.4 YLD 2.18). Tail in with 200 sx class "C" w/CaCl₂ (WT 14.80 YLD 1.31) TOC - surface.

Production Casing: Stage 1--955 sx PecosVILt (WT 13.0 Yld 1.85). TOC - 7500'.
 Stage 2--725 sx LiteCrete (WT 9.90 YLD 2.34). Tail in 100 sx H (Wt 15.6 YLD 1.18). TOC - 4150'.
 Stage 3--555 sx LiteCrete (WT 9.90 YLD 2.34). Tail in 100 sx H (Wt 15.6 YLD 1.18). TOC - surface.

DV tools will be placed at approximately 7500' and 4150' on production casing, production casing will be cemented in three stages.

5. Mud Program and Auxiliary Equipment:

Interval	Type	Weight	Viscosity	Fluid Loss
0-500'	Fresh Water	8.6-9.2	29-32	N/C
500'-3200'	Brine Water	10.0-10.20	28-28	N/C
3200'-7693'	Cut Brine	8.9-9.1	28-29	N/C
7693'-12597'	Cut Brine (lateral section)	8.9-9.1	28-32	<15

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:

Samples: 30' samples to 3000; Samples from 3000' to TD
 Logging: Platform HALS, CMR
 Coring: None anticipated.
 DST's: As warranted.

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

Anticipated BHP:

From: 0 TO 500'	Anticipated Max. BHP:	240	PSI
From: 500' TO 3200'	Anticipated Max. BHP:	1700	PSI
From: 3200' TO 8170'	Anticipated Max. BHP:	3865	PSI

Abnormal Pressures Anticipated: None
 Lost Circulation Zones Anticipated: None
 H₂S Zones Anticipated: None
 Maximum Bottom Hole Temperature: 152° F

8. ANTICIPATED STARTING DATE:

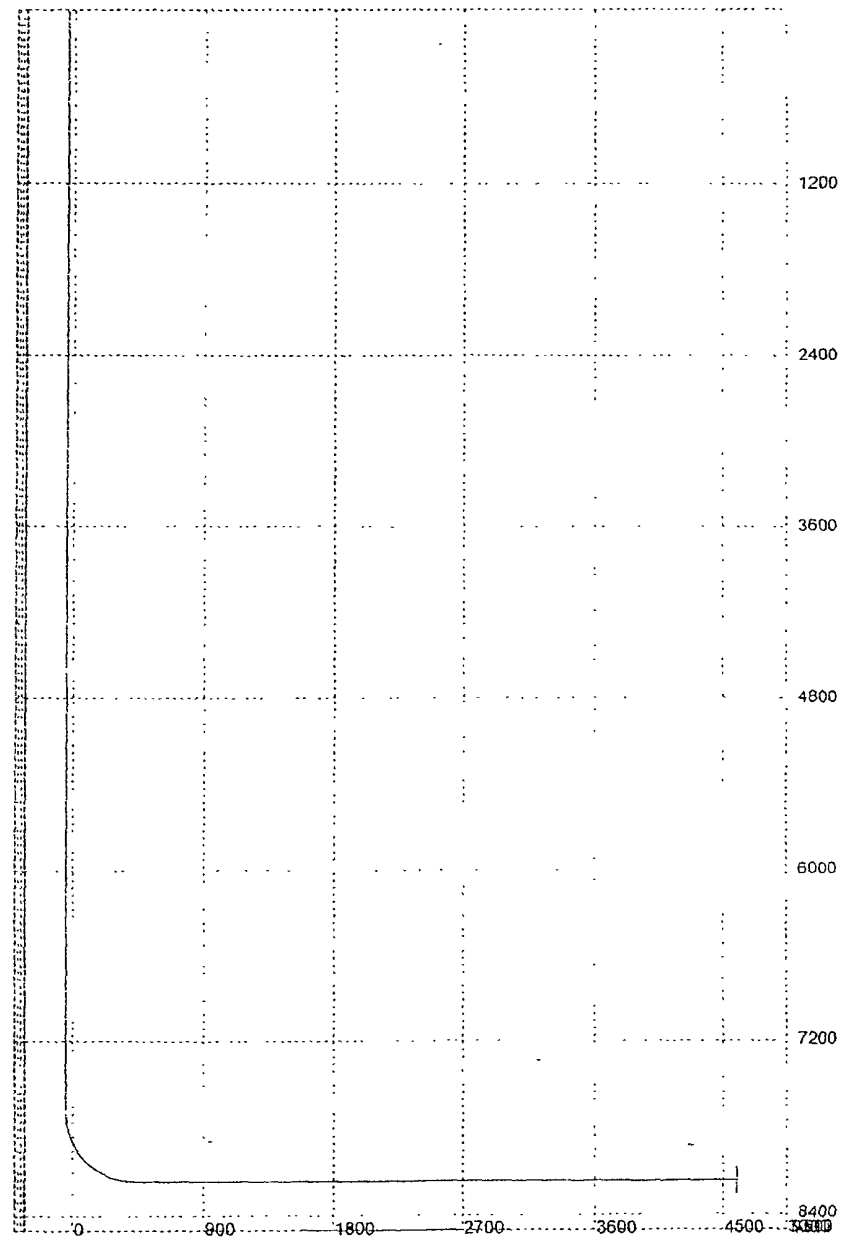
Plans are to drill this well as soon as possible after receiving approval. It should take approximately 40 days to drill the well with completion taking another 40 days.

M.D.	Inclination	Azimuth	T.V.D.	N/S	F.W.	D.S.	Tool Face	T.F. Ref HS/GN	
0	0	0	0	0	0	0			
330	0	0	330	0	0	0			RUSTLER
450	0	0	450	0	0	0			TOP OF SALT
3,015	0	0	3,015	0	0	0			BASE OF SALT
3,220	0	0	3,220	0	0	0			BELL CANYON
4,090	0	0	4,090	0	0	0			CHERRY CANYON
5,360	0	0	5,360	0	0	0			BRUSHY CANYON
6,700	0	0	6,700	0	0	0			BRUSHY CANYON MARKER
6,970	0	0	6,970	0	0	0			BONE SPRINGS
7693	0	0	7693	0	0	12	358	GN	KOP
7700	0.84	355.91	7700	0.05	0	12	0	HS	
7725	3.84	355.91	7724.98	1.07	-0.08	12	0	HS	
7750	6.84	355.91	7749.86	3.39	-0.24	12	360	HS	
7775	9.84	355.91	7774.6	7.01	-0.5	12	0	HS	
7800	12.84	355.91	7799.11	11.91	-0.85	12	360	HS	
7825	15.84	355.91	7823.33	18.08	-1.29	12	360	HS	
7850	18.84	355.91	7847.19	25.52	-1.82	12	0	HS	
7875	21.84	355.91	7870.83	34.18	-2.44	12	360	HS	
7900	24.84	355.91	7893.58	44.06	-3.15	12	360	HS	
7925	27.84	355.91	7915.98	55.12	-3.94	12	0	HS	
7950	30.84	355.91	7937.77	67.34	-4.81	12	360	HS	
7975	33.84	355.91	7958.89	80.68	-5.76	12	360	HS	
8000	36.84	355.91	7979.28	95.1	-6.79	12	360	HS	
8025	39.84	355.91	7998.89	110.57	-7.9	12	0	HS	
8050	42.84	355.91	8017.65	127.04	-9.07	12	0	HS	
8075	45.84	355.91	8035.53	144.46	-10.32	12	360	HS	
8096.6	48.42	355.91	8050.18	160.18	-11.44	12	360	HS	1ST BONE SPRINGS
8100	48.84	355.91	8052.47	162.8	-11.63	12	360	HS	
8125	51.84	355.91	8068.43	181.99	-13	12	360	HS	
8150	54.84	355.91	8083.35	202	-14.43	12	0	HS	
8175	57.84	355.91	8097.21	222.75	-15.91	12	360	HS	
8200	60.84	355.91	8109.95	244.2	-17.44	12	0	HS	
8225	63.84	355.91	8121.56	266.28	-19.02	12	360	HS	
8250	66.84	355.91	8131.99	288.94	-20.64	12	360	HS	
8275	69.84	355.91	8141.21	312.11	-22.29	12	0	HS	
8300	72.84	355.91	8149.21	335.74	-23.98	12	0	HS	
8325	75.84	355.91	8155.96	359.75	-25.7	12	0	HS	
8350	78.84	355.91	8161.44	384.07	-27.43	12	0	HS	
8375	81.84	355.91	8165.63	408.65	-29.19	12	360	HS	
8400	84.84	355.91	8168.53	433.42	-30.96	12	360	HS	
8425	87.84	355.91	8170.13	458.3	-32.74	12	360	HS	
8443.06	90.01	355.91	8170.47	476.31	-34.02	12	0	HS	1ST BONE SPRINGS PAY
12597.31	90.01	355.91	8170	4620	-330	0			LATERAL TD

Well will be drilled vertically to 7693'. At 7693' well will be kicked off and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 12,597' MD (8,170' TVD) where 5 1/2" casing will be set and cemented. Penetration point of producing zone will be encountered at 808' FSL and 2,276' FWL. Section 4-24S-29E. Deepest TVD in the well is 8170' in the lateral.

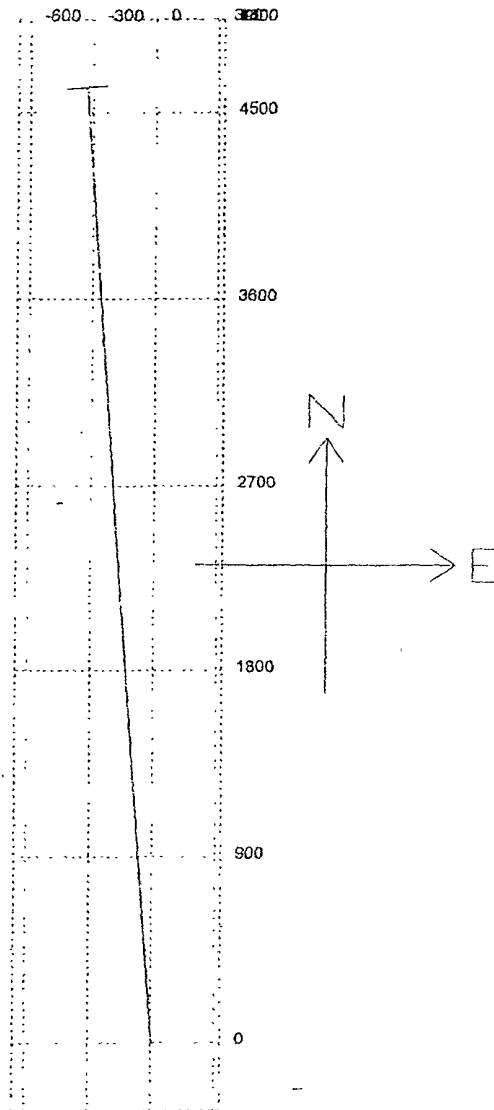
3D Directional Drilling Planner - 3D View

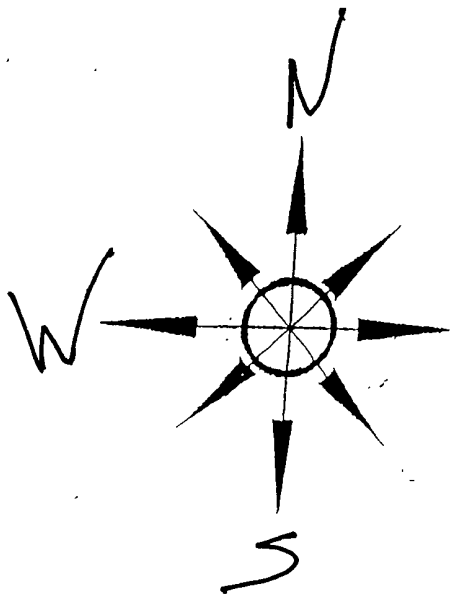
Company: Yates Petroleum Corporation
Well: Corral Draw AQH Federal #3H



3D Directional Drilling Planner - 3D

Company: Yates Petroleum Corporation
Well: Corral Draw AQH Federal #3H

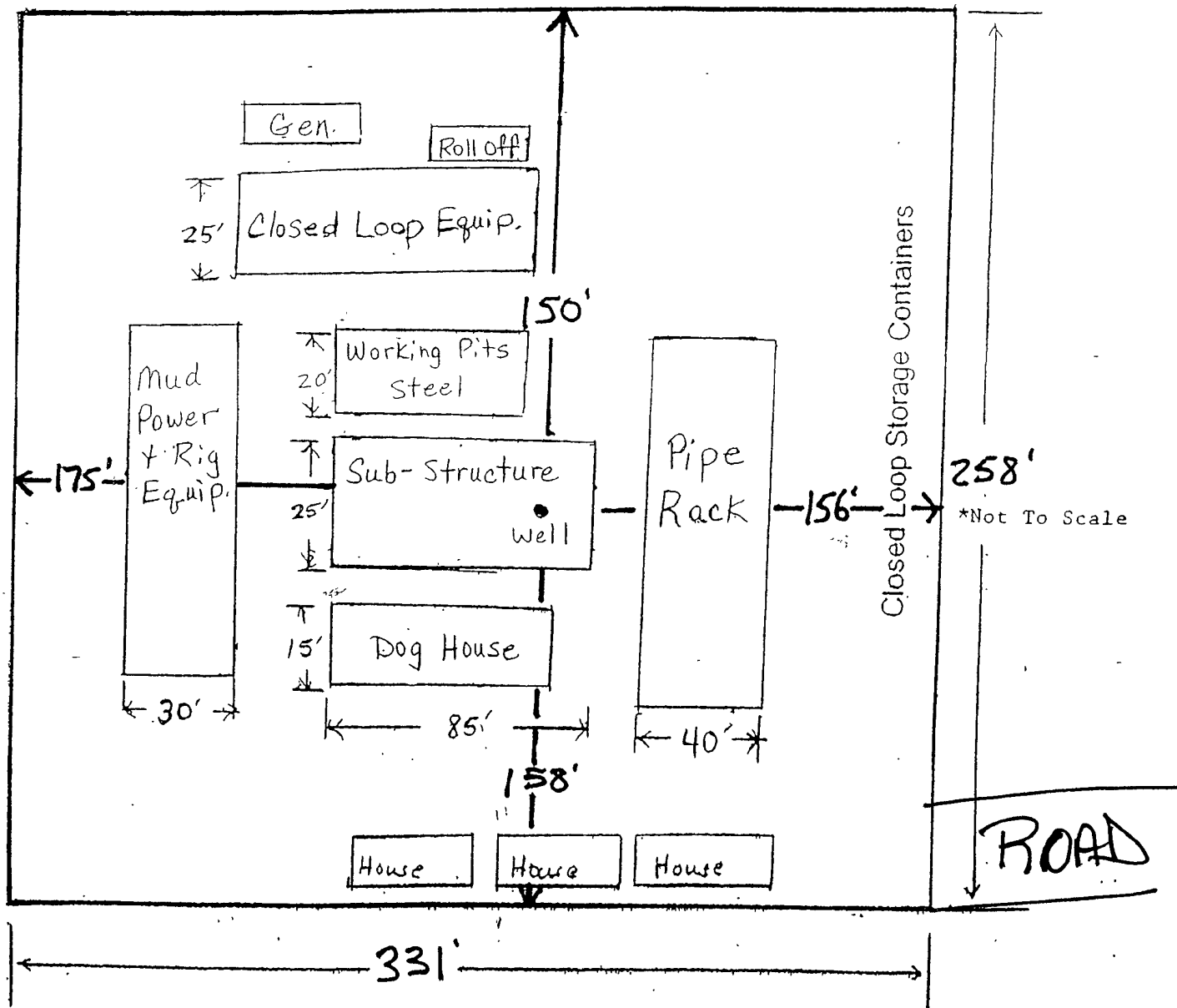




Yates Petroleum Corporation
Location Layout for Permian Basin

Closed Loop Design Plan

Corral Draw AQH Federal #3H
330' FSL & 2310' FWL, Surface Hole
330' FNL & 1980' FWL, Bottom Hole
Section 13, T24S-R29E
Eddy County, New Mexico
Exhibit "C"





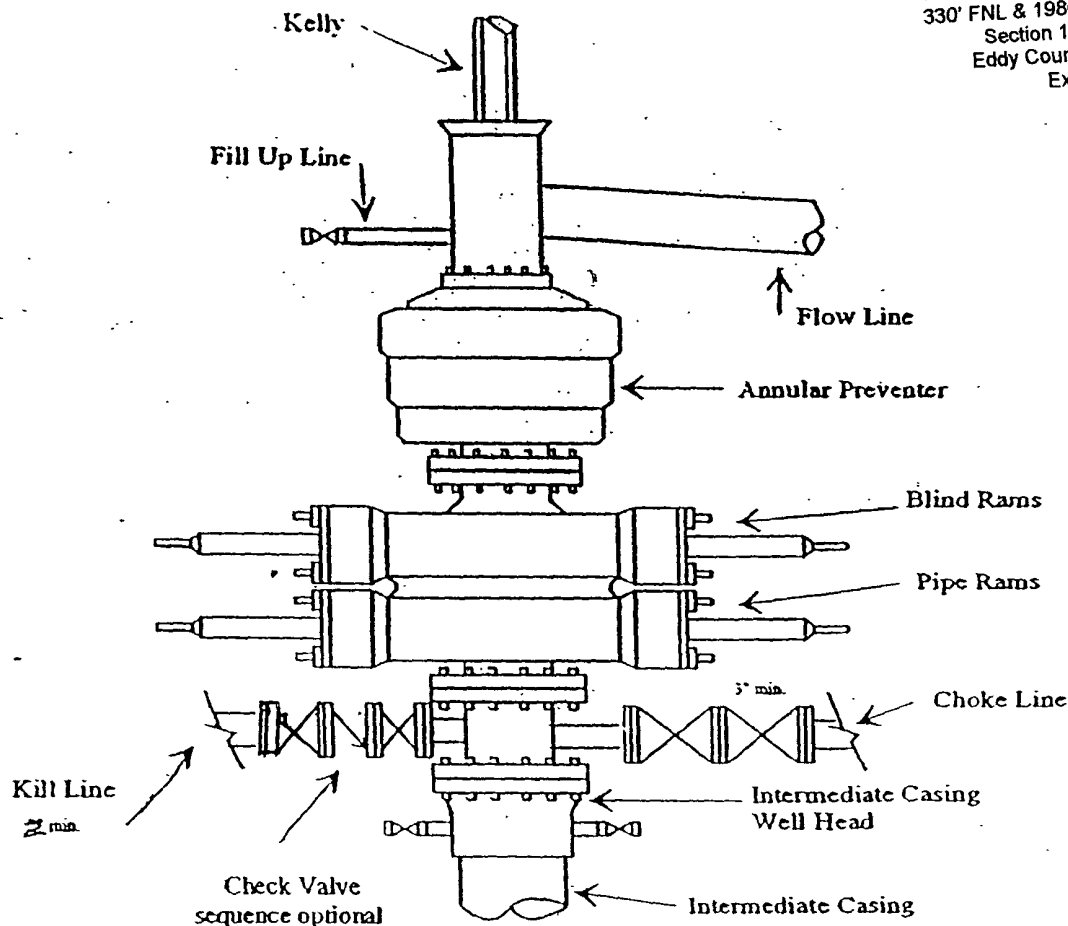
Yates Petroleum Corporation

BOP-3

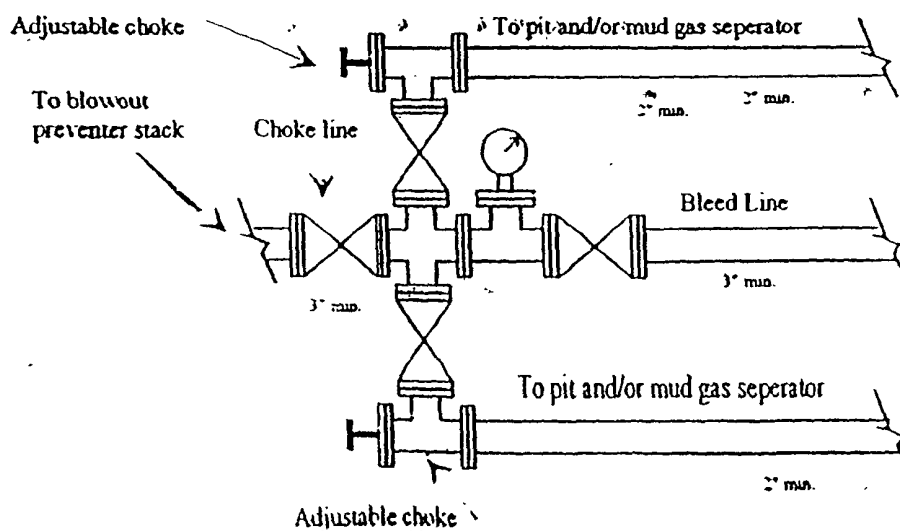
Typical 3,000 psi Pressure System Schematic

Annular with Double Ram Preventer Star

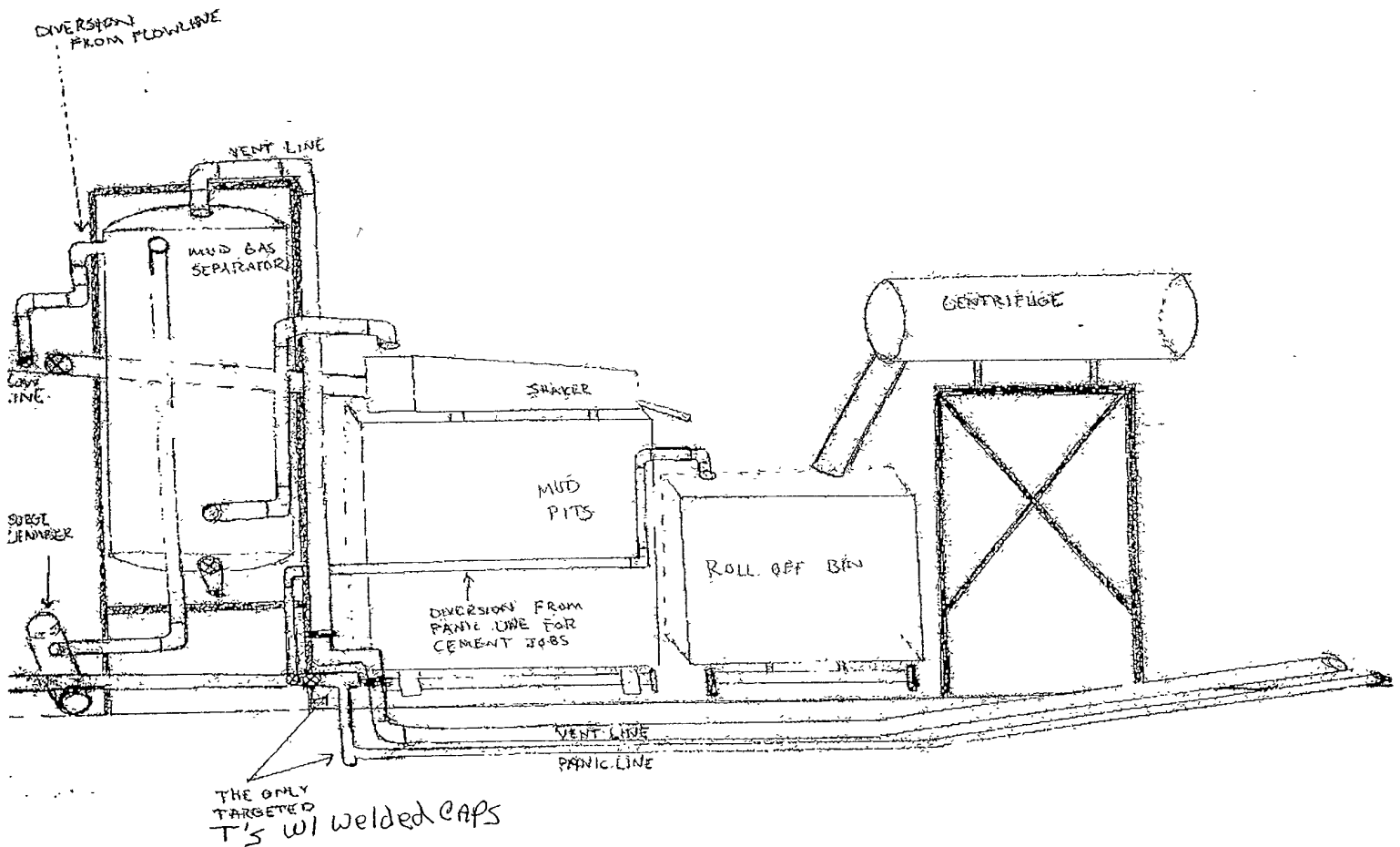
Corral Draw AQH Federal #3H
330' FSL & 2310' FWL, Surface Hole
330' FNL & 1980' FWL, Bottom Hole
Section 13, T24S-R29E
Eddy County, New Mexico
Exhibit "B"



Typical 3,000 psi choke manifold assembly with at least these minimum features



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



Corral Draw AQH Federal #3H
330' FSL & 2310' FWL, Surface Hole
330' FNL & 1980' FWL, Bottom Hole
Section 13, T24S-R29E
Eddy County, New Mexico
Exhibit "C-1"

MULTI-POINT SURFACE USE AND OPERATIONS PLAN
Yates Petroleum Corporation
Corral Draw AQH Federal #3H
330' FSL and 2310' FWL (Surface)
330' FNL and 1980' FWL (Bottom Hole)
Section 13-T24S-R29E
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 well site is located approximately 36 miles east of Malaga, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go east of Carlsbad on Highway 62-180 to State Road 31. Turn south on 31 and go to Highway 128 (Jal Highway). Turn left on Hwy 128 and go approximately 4 miles to Rawhide Road (CR-793) Mississippi Potash Mine Shaft #5 is here. Turn south here on CR-793 and go approximately 3.4 miles. Follow County road to the left and go east for approx. .2 of a mile. Turn south on county road and follow it for approx. 5.4 miles. Turn west on lease road and go approx. .5 of a mile to Bass' Poker Lake Unit #215 well location. The new road will start here going west for approx. .9 of a mile to the southeast corner of the proposed well location.

2. PLANNED ACCESS ROAD:

- A. The proposed new access will be approximately .9 of a mile in length going west to the southeast corner of the drilling pad. The road will lie in a westerly 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 both sides. One traffic turnout may be needed.
- 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 no drilling activity within a one-mile radius of the well site.
- B. Exhibit D shows existing wells within a one-mile radius of the proposed well site.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

- A. There are 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 until electric power can be brought in if needed. No power will be required if the well is productive of gas.

5. LOCATION AND TYPE OF WATER SUPPLY:

It is planned to drill the proposed well with a fresh water system. The 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 acquire any materials from the closest source at the time of construction of the 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 sytem 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 landfill. 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 and the location of the drilling equipment, rig orientation and access road approach.
- B. The closed loop sytem 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. Form C-144 attached.
- 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 well site 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.

11. SURFACE OWNERSHIP:

Federal lands administered by the Bureau of Land Management, Carlsbad, NM.

12. OTHER INFORMATION:

- A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, and 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

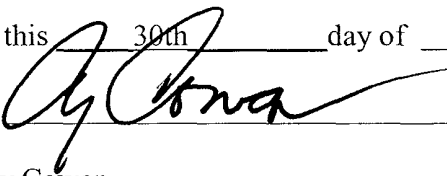
CERTIFICATION
YATES PETROLEUM CORPORATION

Corral Draw AQH Federal #3H

I hereby certify that I, or the company I represent, have inspected the drill site and access route proposed herein; am familiar with the conditions which currently exist; that have full knowledge of state and federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package. 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 30th day of June, 2009.

Signature



Name Cy Cowan

Position Title Land Regulatory Agent

Address 105 South Fourth Street, Artesia, New Mexico, 88210

Telephone (575) 748-4372 Fax: (575) 748-4572

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 Corporation
LEASE NO.:	NM-88136
WELL NAME & NO.:	Corral Draw AQH Federal #3H
SURFACE HOLE FOOTAGE:	330' FSL & 2310' FWL
BOTTOM HOLE FOOTAGE:	330' FNL & 1980' FWL
LOCATION:	Section 13, T. 24 S., R 29 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**
 - Cave/Karst
 - VRM
- ☒ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Medium cave/karst
 - Logging requirements
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☒ **Reseeding Procedure /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)

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.

Directional Drilling:

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. 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.

Visual Resources Management

To minimize the visual impacts the following COA(s) will apply:

Above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color Shale Green, Munsell Soil Color No. 5Y 4/2"

Low-profile tanks not greater than eight feet high shall be used to minimize visual impacts to the natural features of the landscape.

The proposed construction will be limited to the approved pad size.

Any existing tanks will be replaced with a low profile tank and painted the same color as the proposed tanks.

Upon completion of the well and installation of the production facilities (if the well is a producer) the pad will be reclaimed back to a size necessary for production operations only. The edges will be recontoured and the extra caliche and pad material will be hauled off-site. The BLM may require additional reclamation depending upon vegetation recovery.

The reclaimed area will be recontoured and reseeded according to vegetation and soil type.

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. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Although this is a closed loop system and no reserve pits will be utilized at this time, the v-door will be on the east side of the location.

Tanks are required for drilling operations: No Pits.

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

D. FEDERAL MINERAL MATERIALS PIT

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

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

Road Width

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

Surfacing

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

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

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

Crowning

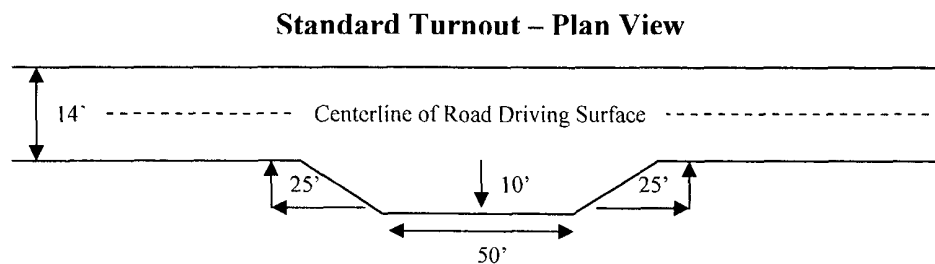
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching

Ditching shall be required on both sides of the road.

Turnouts

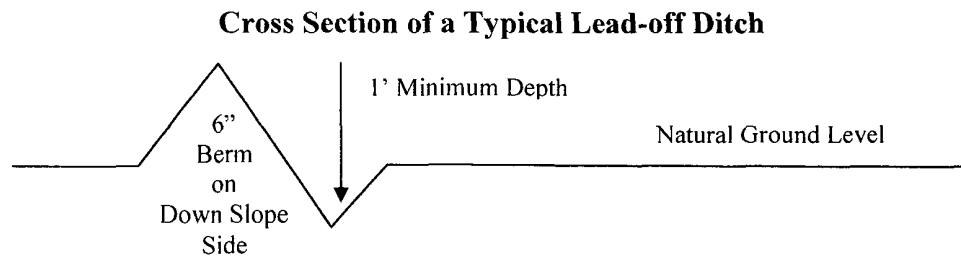
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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.



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

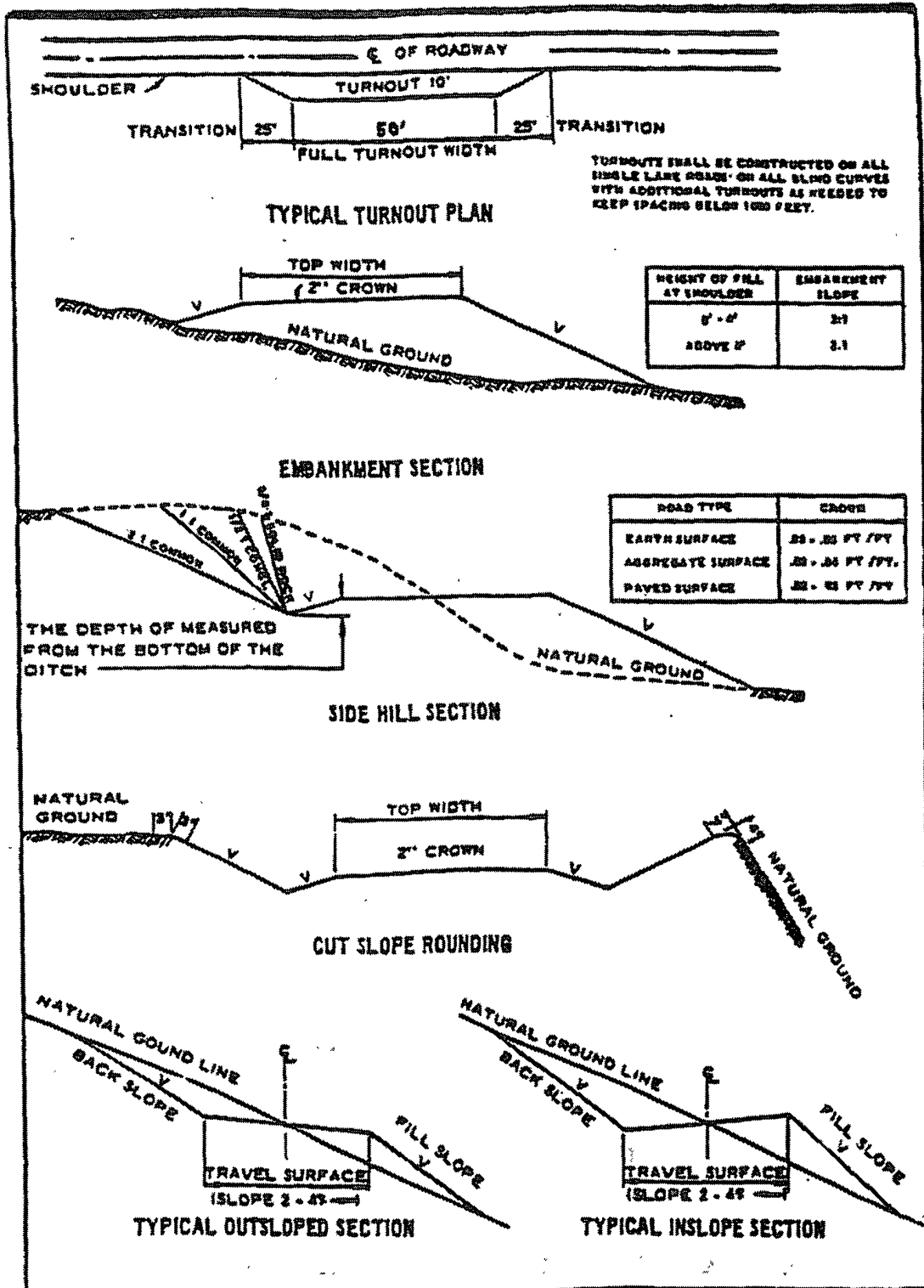
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 the area, 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 is 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. The Rustler top and top and bottom of Salt is to be recorded on the Completion Report.**

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.

Medium cave/karst.

Possible lost circulation in the Delaware and Bone Spring formations.

1. The 13-3/8 inch surface casing shall be set **at approximately 500 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If the salt is encountered at a shallower depth, the casing must be set 25' above the top of the salt.**
 - 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.
 - 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 8-5/8 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.

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

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - a. First stage to DV tool, cement shall:
 - ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above first DV tool, cement shall:
 - ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with third stage cement job.
 - c. Third stage above second DV tool, cement shall:
 - ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.
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 **3000 (3M)** psi.
3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. The tests shall be done by an independent service company.
 - b. The results of the test shall be reported to the appropriate BLM office.
 - c. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
 - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

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

RGH 080109

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

VRM Facility Requirement

Low-profile tanks not greater than eight-feet-high shall be used.

IX. INTERIM RECLAMATION & RESEEDING PROCEDURE

A. INTERIM RECLAMATION

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

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

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

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

A. RESEEDING PROCEDURE

Once the well is drilled, all completion procedures are accomplished, and all trash removed, reseed the entire location and all surrounding disturbed areas as follows:

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed (<i>Sporobolus cryptandrus</i>)	1.0
Sand love grass (<i>Eragrostis trichodes</i>)	1.0
Plains bristlegrass (<i>Setaria macrostachya</i>)	2.0

*Pounds of pure live seed:

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

X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

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

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