

OCD Artesia

ATS-10-229
EA-10-334

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

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

5. Lease Serial No	NM-106674
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.	Madcap BET Federal #1H 37028
9. API Well No	30-015-38096
10. Field and Pool, or Exploratory	COLLINS RANCH <96623> Wildcat Wolfcamp, NE (GAS)
11. Sec., T, R, M., or Blk. And Survey or Area	Section 13, T17S-R24E

1a. Type of Work:	<input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER
1b. Type of Well:	<input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone
2. Name of Operator	Yates Petroleum Corporation (025575) Split Estate
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 1680' FNL & 510' FEL Surface Hole (H) 1980' FNL & 1980' FNL & 660' FWL Bottom Hole At proposed prod zone same as above

14. Distance in miles and direction from the nearest town or post office	Approximately 6.8 miles west of Artesia, New Mexico	12. County or Parish	Eddy 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)	512'	16. No. of acres in lease	320.00	17. Spacing Unit dedicated to this well	N2
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	1 mile	19. Proposed Depth	5200'	20. BLM/ BIA Bond No. on file	NATIONWIDE BOND #NMB000434
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	3659' 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. | 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	1/18/2010		
Title	Land Regulatory Agent				
Approved By (Signature)	/s/ Don Peterson	Name (Printed/ Typed)	/s/ Don Peterson	Date	AUG 06 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

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

Roswell Controlled Water Basin

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

**Approval Subject to General Requirements
& Special Stipulations Attached**

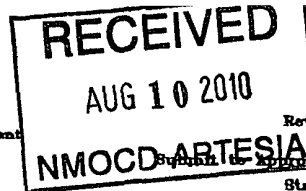
DISTRICT I
1625 N. French Dr., Hobbs, NM 88340

DISTRICT II
811 South First, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Artesia, NM 87410

DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department



Form C-102
Revised March 17, 1989
Instruction on back
Submit to appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 70-0455096	Pool Code 96623	COLLINS RANCH - Pool Name Wildcat Wolfcamp, NE (GAS)
Property Code 37028	Property Name Madcap BET Federal	
OCRID No. 025575	Operator Name Yates Petroleum Corporation	
		Well Number 1H
		Elevation 3659'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	13	17S	24E		1680	North	510	East	Eddy

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	13	17S	24E		1980	North	660	West	Eddy

Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature: <i>[Signature]</i> Cy Cowan Printed Name Land Regulatory Agent Title 1-18-10 Date	
	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. REFER TO ORIGINAL PLAT Date Surveyed Signature & Seal of Professional Surveyor	
	Certificate No.	

Madcap BET Federal #1H
1680' FNL and 510' FEL
Section 13, T17S-R24E
Eddy County, New Mexico

Yates Petroleum Corporation has a surface use agreement in place with Albert P. Bach and Wilma R. Bach, husband and wife as Joint Tenants owners of the surface on which Yates Petroleum Corporation's Madcap BET Federal #1H well shall be drilled upon being in the SE/NE/4 at the footages of 1680' FNL and 510' FEL, Section 13, T17S-R24E, Eddy County, New Mexico. It is also agreed that the owners guarantee the Department of the Interior, including the Bureau of Land Management access to the non-federal lands to perform all necessary surveys and inspections of this well location.

Cy Cowan
Land Regulatory Agent
Yates Petroleum Corporation

RECEIVED

AUG 10 2010

ANMOCD ARTESIA

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

District I
1625 N. French Dr., Hobbs, NM 88240

District II
1501 W. Grand Avenue, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, NM 87505

☐ AMENDED REPORT**WELL LOCATION AND ACREAGE DEDICATION PLAT**

1 API Number	2 Pool Code	3 pool Name Wildcat Wolfcamp
4 Property Code	5 Property Name MADCAP BET FEDERAL	6 Well Number 1H
7 OGRD No. 025575	8 Operator Name YATES PETROLEUM CORPORATION	9 Elevation 3659

10 Surface Location


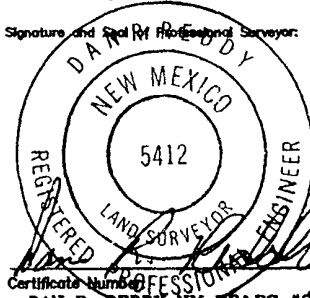
UL or lot no.	Section	Township	Range	Lot idn	Feet from the	North/South line	Feet from the	East/West line	County
H	13	17-S	24-E		1680	NORTH	510	EAST	EDDY

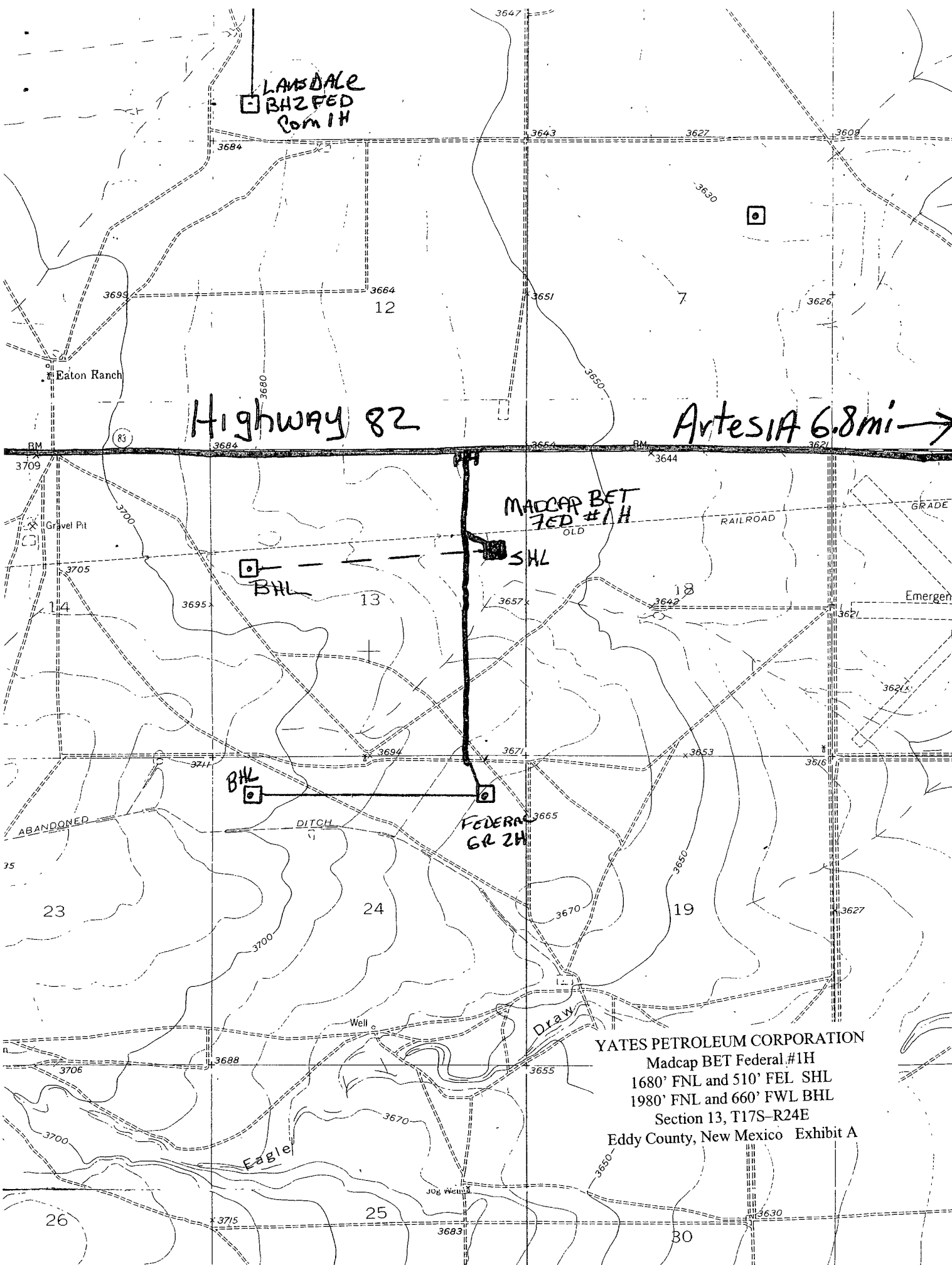
11 Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot idn	Feet from the	North/South line	Feet from the	East/West line	County
E	13	17-S	24-E		1980	NORTH	660	WEST	EDDY

12 Dedicated Acres 320	13 Joint or Infill	14 Consolidation Code	15 Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

NM 106674				17 OPERATORS CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or undivided mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.  Signature Date Cy Cowan Printed Name Regulatory Agent	
1980' 660' BHL				1680' 510' LAT N32.83841 LON W104.53513	
18 SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. AUGUST 31, 2006 Date of Survey Signature and Seal of Registered Surveyor:  Certificate Number 5412 DAN R. REDDY NM PE&PS #5412					



LANSDALE
BHZFED
Com 1H

Highway 82

Artesia 6.8mi ->

MADCAP BET
FED #1H

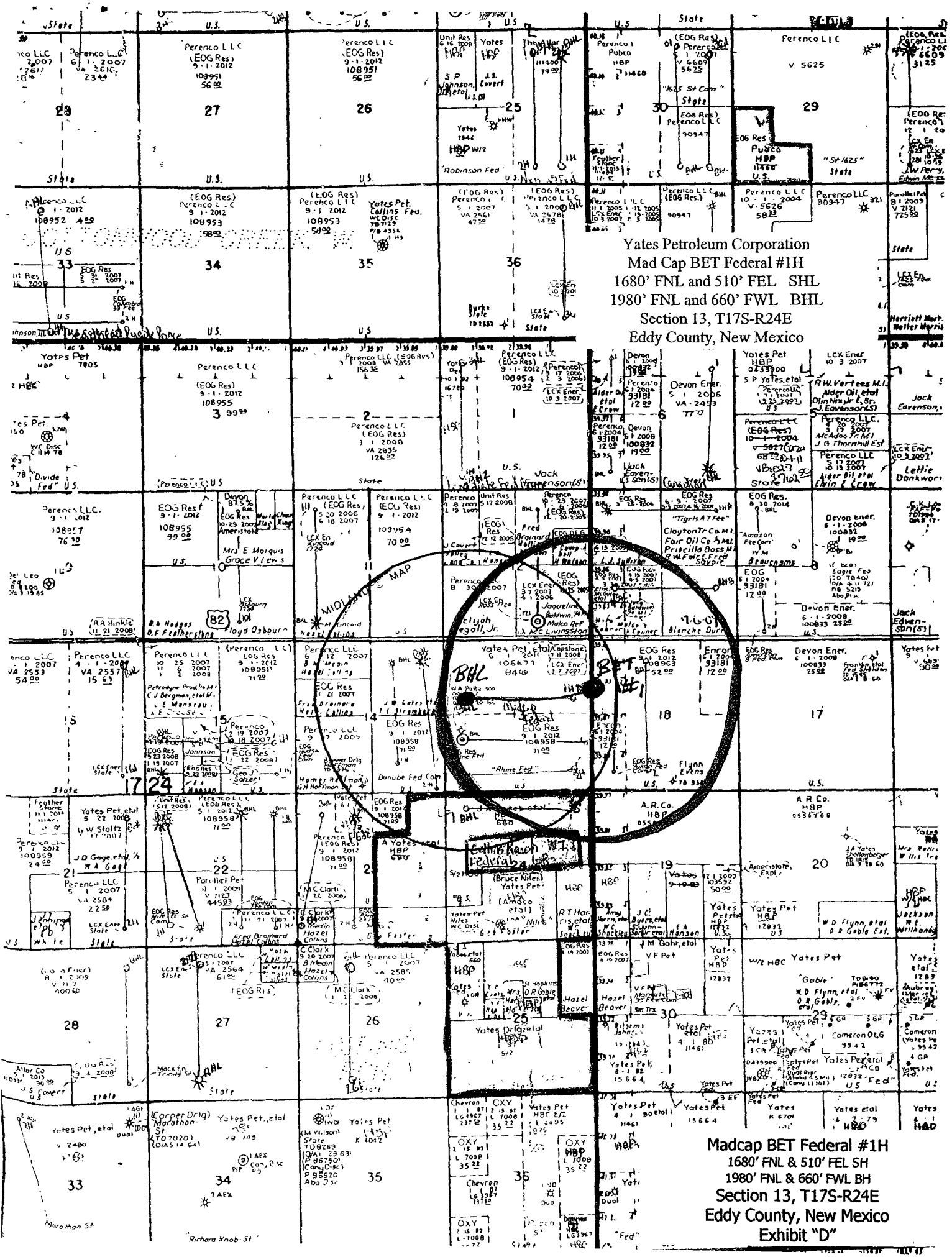
SHL

BHL

BHL

FEDERAL
GR 2H

YATES PETROLEUM CORPORATION
Madcap BET Federal #1H
1680' FNL and 510' FEL SHL
1980' FNL and 660' FWL BHL
Section 13, T17S-R24E
Eddy County, New Mexico Exhibit A



Yates Petroleum Corporation
Mad Cap BET Federal #1H
1680' FNL and 510' FEL SHL
1980' FNL and 660' FWL BHL
Section 13, T17S-R24E
Eddy County, New Mexico

Madcap BET Federal #1H
1680' FNL & 510' FEL SH
1980' FNL & 660' FWL BH
Section 13, T17S-R24E
Eddy County, New Mexico
Exhibit "D"

YATES PETROLEUM CORPORATION
Madcap BET Federal #1H
 1680' FNL and 510' FEL (Pilot Hole)
 1980' FNL and 660' FWL (Bottom Hole)
 Section 13, T17S-R24E
 Eddy County, New Mexico

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

San Andres	714'	Wolfcamp	4986'
Glorietta	1934'	Base Wolfcamp Pay	5059'
Upper Yeso	2064'	Wolfcamp Shale	5104'
Tubb	3244'	TD (Pilot Hole)	5200'
Lower Yeso	3384'	TD (Lateral)	8793'
Abo	3884'		

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

Water: 308'
 Oil or Gas: San Andres-Oil; Glorieta-Gas; Tubb-Oil; Lower Yeso-Oil; Abo-Gas; Wolfcamp-Gas/Oil.

13 3/8" - See COA

3. Pressure Control Equipment: BOPE will be installed on the 9 5/8" casing and rated for 3000 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:

A. 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)

Hole Size	Casing Size	Wt./Ft	Grade	Thread	Interval	Length
17 1/2"	13 3/8"	48#	H-40	ST&C	0-350'	350'
12 1/4"	9 5/8"	36#	J-55	ST&C	0-1500'	1500'
8 3/4"	Pilot Open Hole	----	----	LT&C	0-5200' TVD	5200'
* 8 3/4"	7"	23# ± 26#	J-55	ST&C	0-5115' MD	5115'
7 7/8"	5 1/2"	17#	HCP-110	LT&C	0-8793' MD	8793'

* 7" will only be set if hole conditions dictate.

per operator

See COA

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 500# 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: Collapse 1.125, Burst 1.0, Tensile Strength 1.8

B. CEMENTING PROGRAM:

Surface Casing: 250 sx Lite "C" (YLD 2.1 WT 12.6) tail in w/ 200 sx "C" w/ 2% CaCl₂ (YLD 1.32 WT 14.8).

Intermediate Casing: 450 sx Lite "C" (YLD 2.10 WT 12.6) Tail in w/200 sx Class "C" +2% CaCl₂ (YLD 1.32 WT 14.8).

Production Casing: TOC 1000', Lead w/ 775 sx Lite "C" (YLD 2.05 WT 12.5) Tail in w/ 1200 sx Magne Plus (YLD 1.05 WT 13.0).

5. Mud Program and Auxiliary Equipment:

Interval	Type	Weight	Viscosity	Fluid Loss
Spud to 350'	FW/Spud Mud	8.4-8.9	32-36	N/C
350'-1500'	FWGel/Air Mist	8.4-8.9	28-34	N/C
1500'-8793'	Cut Brine	8.8-9.2	28	N/C

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/FMI.
 Coring: Rotary Sidewall Cores (Pilot Hole).
 DST's: Not anticipated.

7. Abnormal Conditions, Bottom hole pressure and potential hazards:

Anticipated BHP:

From: 0 TO 350' TVD Anticipated Max. BHP: 162 PSI
 From: 350' TO 1500' Anticipated Max. BHP: 695 PSI
 From: 1500' TO 5200' TVD Anticipated Max. BHP: 2490 PSI

Abnormal Pressures Anticipated: None

Lost Circulation Zones Anticipated: None

H₂S Zones Anticipated: None

Maximum Bottom Hole Temperature: 168° 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.

Madcap BET Federal #1H

Contingency Casing Design

If hole conditions dictate, 7" casing will be set at 5,115' MD. A 6 1/8" hole will then be drilled to 8,793' MD where 4 1/2" casing will be set and cemented.

2nd Intermediate

0 ft to 5,115 ft		Make up Torque ft-lbs			Total ft = 5,115
O.D.	Weight	Grade	Threads	opt. min. mx.	
7 inches	23 #/ft	J-55	LT&C	3130 2350 3910	
Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift	
3,270 psi	4,360 psi	313,000 #	366,000 #	6.25"	

Cemented w/500sx C Lite (YLD 2.0 Wt 12.5), tail with 200sx Class C (YLD 1.34 Wt. 14.8) TOC=1000'

Production

0 ft to 8,793 ft		Make up Torque ft-lbs			Total ft = 8,793
O.D.	Weight	Grade	Threads	opt. min. mx.	
4.5 inches	11.6 #/ft	HCP-110	LT&C	3020 2270 3780	
Collapse Resistance	Internal Yield	Joint Strength	Body Yield	Drift	
8,650 psi	10,690 psi	279,000 #	367,000 #	3.875"	

DV tool placed at approx. 4500' and cemented with one stage up to dv tool. After completion procedures, the 4 1/2" casing will be cut and pulled at 4500'.

Cemented w/575sx PVL (YLD 1.41 Wt 13) TOC= 4500'

Note: The surface and 1st intermediate casing strings will both be cemented to surface.

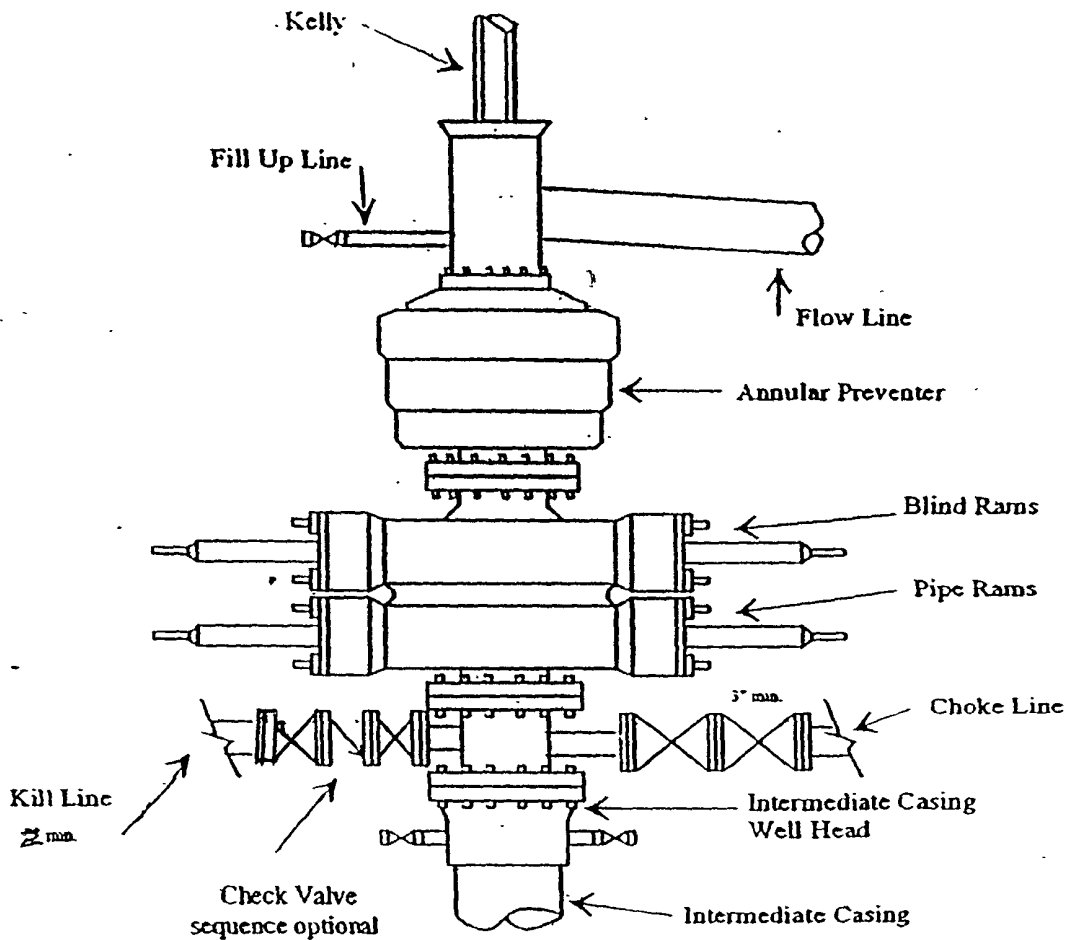
This well will be plugged back with a 400'-500' kick off plug and kicked off at approx. 4,615'.



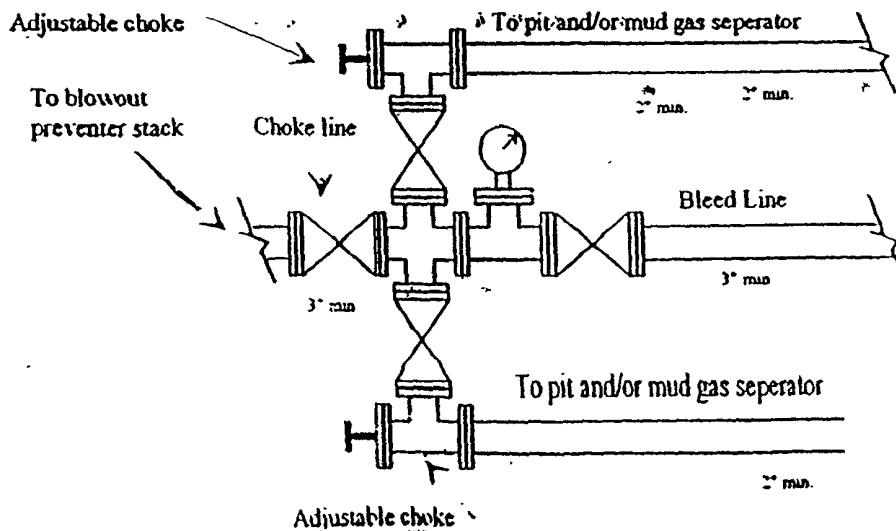
Yates Petroleum Corporation

BOP-3

Typical 3,000 psi Pressure System Schematic Annular with Double Ram Preventer Stack



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



Madcap BET Federal #1H
1680' FNL & 510' FEL SH
1980' FNL & 660' FWL BH
Section 13, T17S-R24E
Eddy County, New Mexico
Exhibit "B"

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Yates Petroleum Corp
LEASE NO.:	NM106674
WELL NAME & NO.:	1H Madcap BET Federal
SURFACE HOLE FOOTAGE:	1680' FNL & 510' FEL
BOTTOM HOLE FOOTAGE:	1980' FNL & 660' FWL
LOCATION:	Section 13, T. 17 S., R 24 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**
 - Aplomado Falcon Stipulations
- ☐ **Construction**
 - Notification
 - V-Door Direction
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - 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)

In order to minimize impacts to aplomado falcon, the following Conditions of Approval will apply:

- No yuccas or trees over 5 feet in height will be damaged, to protect nesting structures.
- All active raptor nests will be avoided by a minimum of 400 meters by all activities or curtail activities until fledging is complete. All inactive raptor nests will be avoided by a minimum of 200 meters by all activities.
- Well pad size will not exceed 300 ft. x 390 ft.
- All roads associated with well development will not exceed 30 ft in width
- Reserve pits for drilling and disposal are not allowed unless the pit can be effectively netted to the satisfaction of the BLM. Steel tank circulation system must be used if the reserve pit is not netted.
- All unused portions of the well pad associated with producing wells will be reclaimed following the abandoned well protocol below
- Final abandonment protocol: Remove all caliche from well pads and roads that are plugged and abandoned. Reclamation will consist of disking, mulching, seeding with a drill (See seed mixture below), and application of water to encourage seed germination.

Buffalograss (<i>Buchloe dactyloides</i>)	4 lbs/acre
Blue grama (<i>Bouteloua gracilis</i>)	1 lbs/acre
Cane bluestem (<i>Bothriochloa barbinodis</i>)	5 lbs/acre
Sideoats grama (<i>Bouteloua curtipendula</i>)	5 lbs/acre
Plains bristlegrass (<i>Setaria macrostachya</i>)	6 lbs/acre

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: Not stipulated

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 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

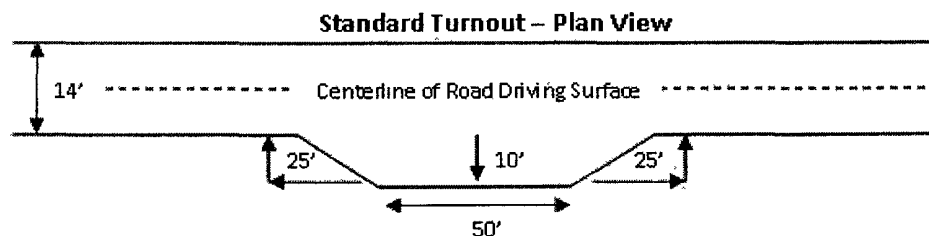
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

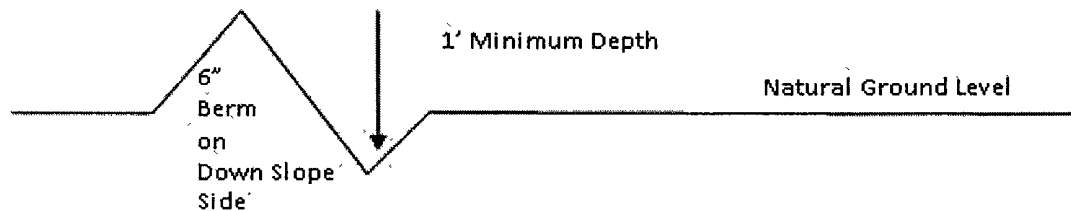


Drainage

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

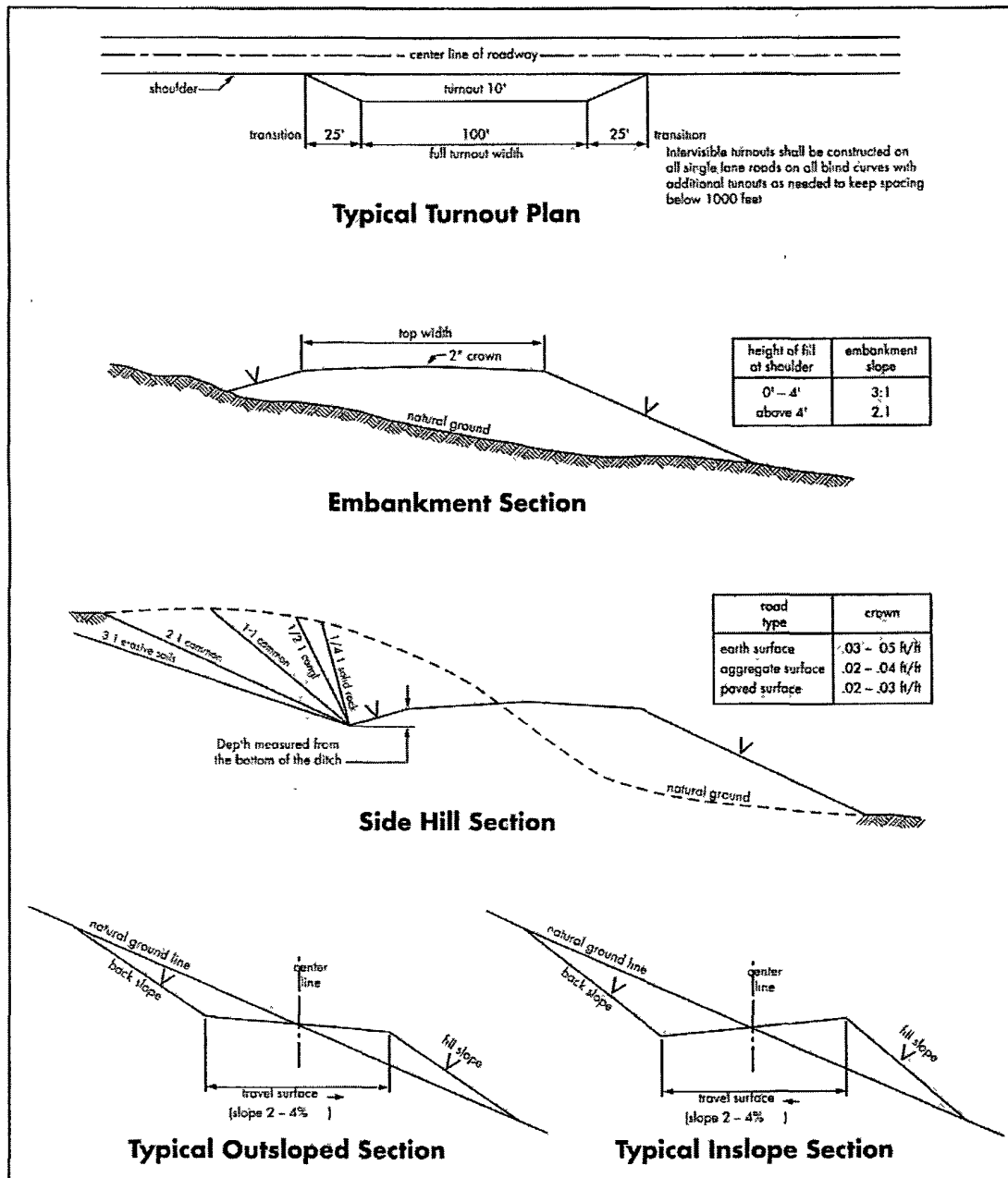
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
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 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. The Rustler top and top and bottom of Salt are 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 prior to drilling out 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. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. 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.

**Possible lost circulation in the Grayburg and San Andres formations.
Possible high pressures in the Wolfcamp.**

1. The 13-3/8 inch surface casing shall be set at approximately 630 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.
Freshwater mud to be used to setting depth.
 - 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.

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.

Pilot hole plug is approved as is, but the bottom plug must be tagged and depth reported on the Subsequent Sundry detailing the casing activity.

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:

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

Contingency Casing

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

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

Formation below the 7" 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.

5. The minimum required fill of cement behind the 4-1/2 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.

6. 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. Piping from choke manifold to flare to be as straight as possible.**
 - 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 **3000 (3M) psi.**
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips or where the float does not hold, the minimum wait time before cut-off is eight hours after bumping the plug or when the cement reaches 500 psi compressive strength, whichever is greater. BOP/BOPE testing can begin after the above conditions are satisfied.
 - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) prior to initiating the test.
 - 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. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

- g. **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 **Wolfcamp** formation, and shall be used until production casing is run and cemented.

Approved for aerated mud, but not air drilling.

E. DRILL STEM TEST

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

RGH 073010

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

C. ELECTRIC LINES

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).

Aplomado Falcon Habitat Seed Mixture

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>
Buffalograss (Buchloe dactyloides)) -----	4 lbs/acre
Blue grama (Bouteloua gracilis) -----	1 lb/acre
Cane bluestem (Bothriochloa barbinodis) -----	5 lbs/acre
Sideoats grama (Bouteloua curtipendula) -----	5 lbs/acre
Plains bristlegrass (Setaria macrostachya) -----	6 lbs/acre