Ector stony loam 0-9% slopes
EC VRM

ATS-09-625 LM

OCD Artesia

Form 3160-3
(August 2008)

RESUBMITTAL

1013

RECEIVED
DEC 15 2009
NMOCD ARTESIA

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

2-34
2-17
2-51

5. Lease Serial No	NM-100536
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.	Samuel Smith ~~BOU~~ Federal #4 (unit per C-102)
9. API Well No.	30-015-37815
10 Field and Pool, or Exploratory	Baldridge Canyon, Morrow
11 Sec , T , R , M , or Blk And Survey or Area	Section 25, T23S-R24E
12. County or Parish	Eddy
13 State	NM

1a Type of Work: [X] DRILL [ ] REENTER

1b Type of Well: [ ] Oil Well [X] 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: **960' FSL and 1550' FEL, Unit O-SWSE**
At proposed prod zone: **same as above**

14. Distance in miles and direction from the nearest town or post office*: **Approximately 30 miles southwest of Carlsbad, New Mexico**

15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drlg unit line, if any)	16 No. of acres in lease	17 Spacing Unit dedicated to this well
990'	320.00	S/2
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft	**19. Proposed Depth**	**20 BLM/ BIA Bond No. on file**
2310'	10,700'	NATIONWIDE BOND #NMB000434
21. Elevations (Show whether DF, KDB, RT, GL, etc)	**22 Aproximate date work will start***	**23. Estimated duration**
3842' GL	ASAP	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
		9/15/2009

Title: **Land Regulatory Agent**

Approved By *(Signature)*	Name *(Printed/ Typed)*	Date
/s/ Don Peterson		DEC 11 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

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 as the Samuel Smith Federal Unit #4

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
811 South First, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-102
Revised March 17, 1999
Instruction on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-37815	71420	Baldridge Canyon, Morrow

Property Code	Property Name	Well Number
36067	Samuel Smith Federal Unit	4

OGRID No.	Operator Name	Elevation
025575	Yates Petroleum Corporation	3842

Surface Location

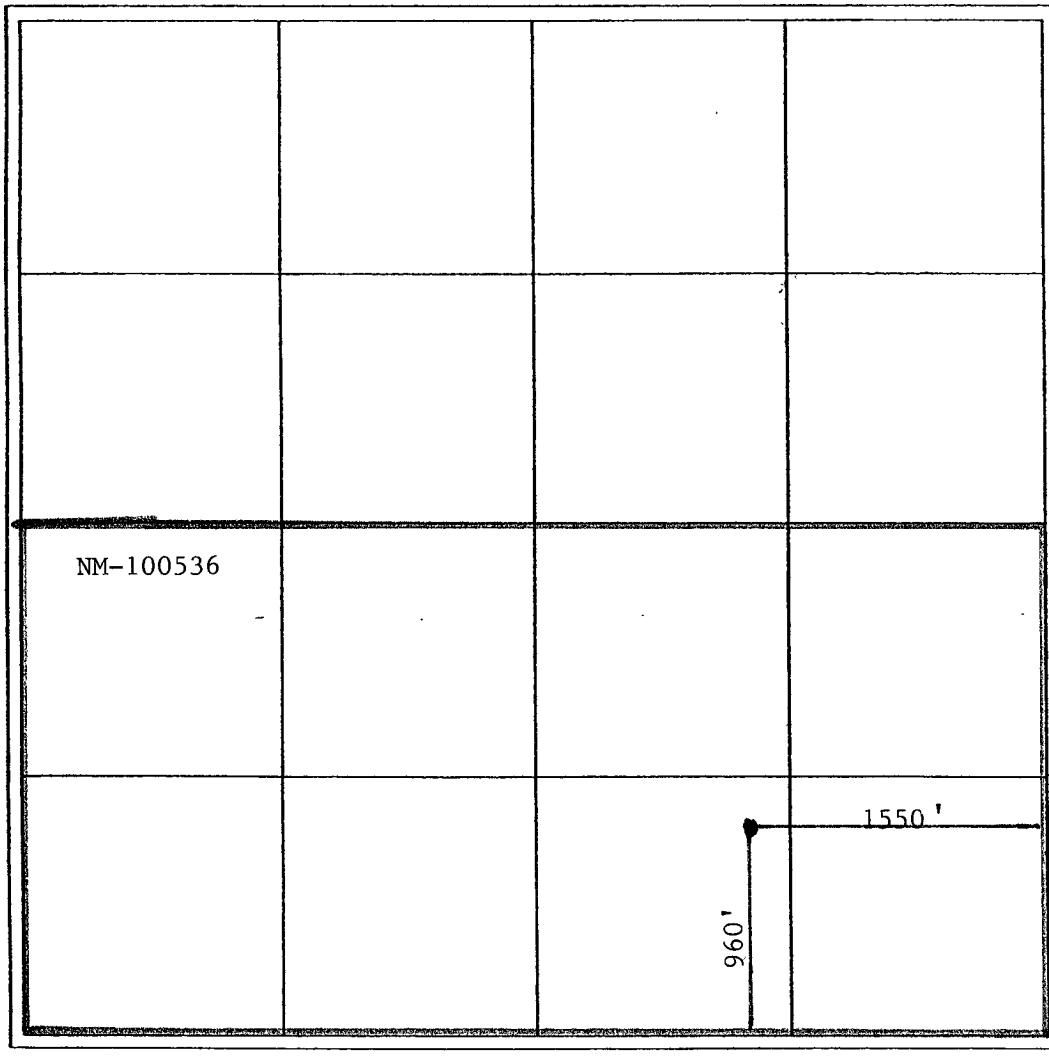
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
O	25	23S	24E		960	South	1550	East	Eddy

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

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320 S/2			

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 the the information contained herein is true and complete to the best of my knowledge and belief.

Signature

Cy Cowan
Printed Name

Land Regulatory Agent
Title

9/9/09
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 supervison, 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.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 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

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name

4 Property Code	5 Property Name	6 Well Number
	SAMUEL SMITH FEDERAL UNIT	4

7 OGRID No.	8 Operator Name	9 Elevation
025575	YATES PETROLEUM CORPORATION	3842

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
0	25	23-S	24-E		960	SOUTH	1650	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

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
320 S/2			

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-100536

LAT N32.27053
LON W104.44856

1650'

960'

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 unleased 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 a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature Date

Debbie L. Caffall
Printed Name

August 31, 2006

18 SURVEYOR CERTIFICATION

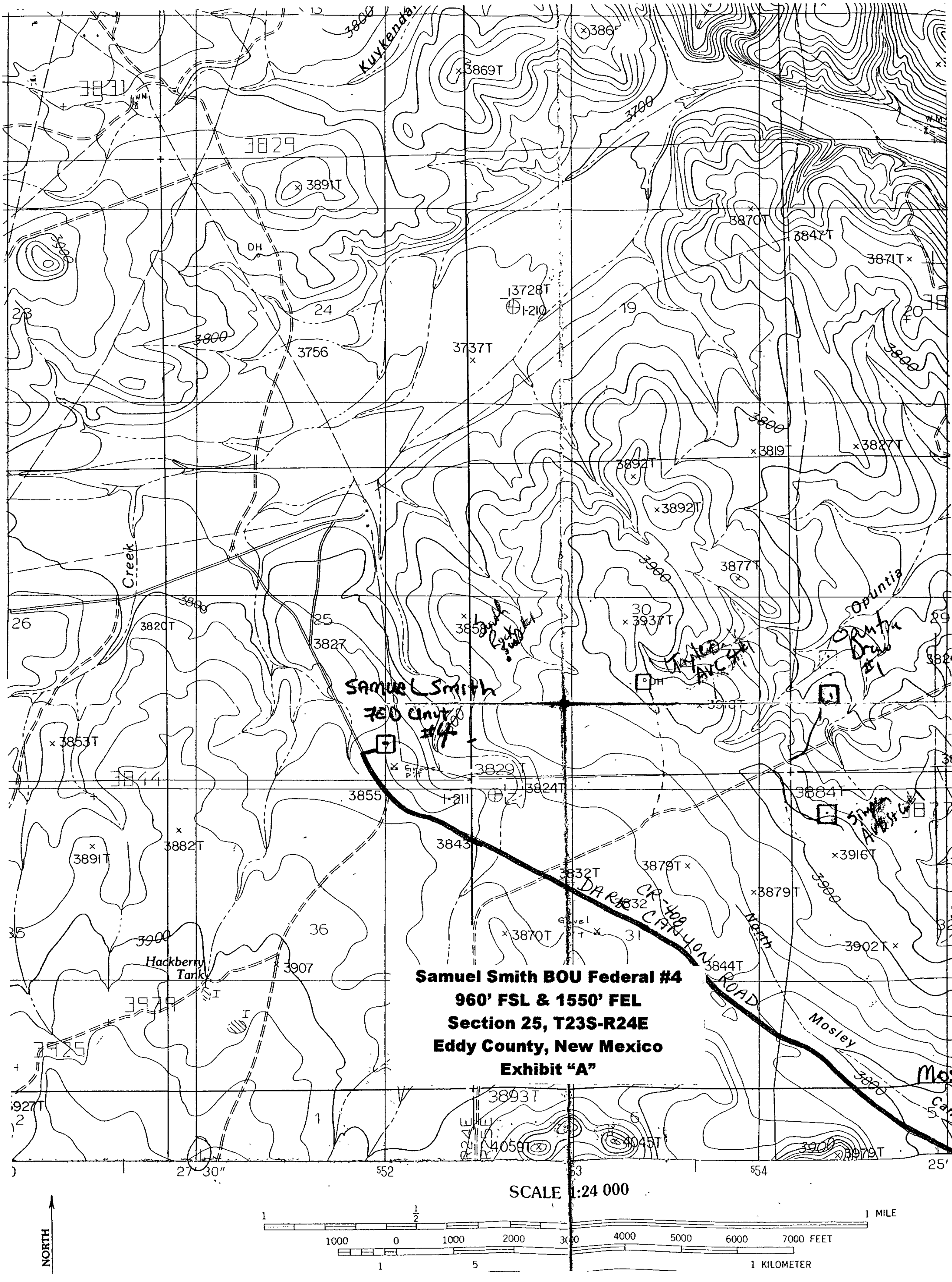
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

AUGUST 30, 2006
Date of Survey

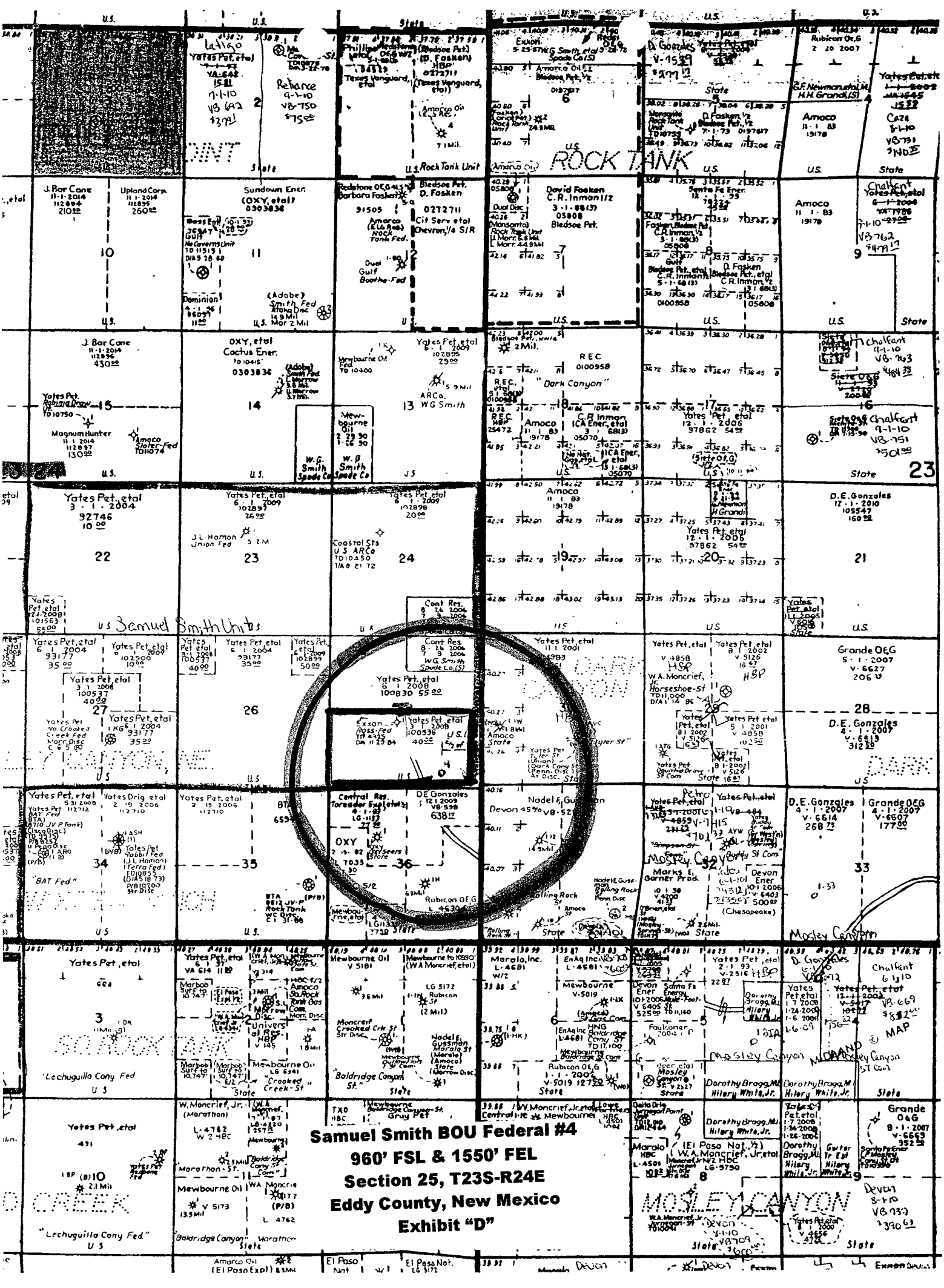
Signature and Seal of Professional Surveyor:

DAN R. REDDY
NEW MEXICO
5412
REGISTERED PROFESSIONAL LAND SURVEYOR ENGINEER

Certificate Number: DAN R. REDDY NM PE&PS 5412



Samuel Smith BOU Federal #4
960' FSL & 1550' FEL
Section 25, T23S-R24E
Eddy County, New Mexico
Exhibit "A"


Samuel Smith BOU Federal #4
960' FSL & 1550' FEL
Section 25, T23S-R24E
Eddy County, New Mexico
Exhibit "D"

YATES PETROLEUM CORPORATION
Samuel Smith BOU Federal #4
960' FSL and 1550' FEL
Section 25-T23S-R24E
Eddy County, New Mexico

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

Capitan Reef	675'		Cisco/Canyon	8395'	Oil/Gas
Cherry Canyon	2485'	Oil	Strawn	9025'	Gas
Brushy Canyon	2835'	Oil	Atoka	9305'	Gas
Bone Springs Lime	3415'		Morrow Upper	10050'	Gas
Bone Springs 1/SD	4755'	Oil	Morrow Middle	10140'	Gas
Bone Springs 2/SD	5715'	Oil	Morrow Lower	10365'	Gas
Bone Springs 3/SD	7545'	Oil	Base Morrow Clastic	10475'	Gas
Wolfcamp	7845'	Oil	TD	10700'	

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

   Water: 190' – 350'
   Oil or Gas: All potential zones.

3. Pressure Control Equipment: BOPE will be installed on the 13 3/8" and 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.

   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	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	0-2600'	2600'
8 3/4"	5 1/2"	17#	L-80	LT&C	0-~~1300'~~ 1400	~~1300'~~ 1400
8 3/4"	5 1/2"	17#	J-55	LT&C	~~1300'-8000'~~ 1400-8000	~~6700'~~ 6600
8 3/4"	5 1/2"	17#	L-80	LT&C	8000'-9100'	1100'
8 3/4"	5 1/2"	17#	HCP-110	LT&C	9100'-10700'	1600'

Per Operator

Per Operator 12/2/09 CRW

Please note attached for information regarding contingency casing program as requested in BLM letter dated 9/17/09.
*7" Casing may be set into the top of the Strawn if lost circulation is encountered. If 7" casing is set, drill out with 6 1/8" hole and set 4 ½" production casing at TD.

1. Minimum Casing Design Factors: Collapse 1.125, Burst 1.0, Joint Strength 1.8

2. 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

See COA

See COA ~~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.

B. CEMENTING PROGRAM:

Surface Casing: 425 sx 'C' (WT 14.8 YLD 1.32) + 2% CaCL2. TOC-Surface

Intermediate Casing: 700 sx Class 'C' Lite (WT 12.5 YLD 2.0), Tail in with 200 sx C 2% CACl2 (WT 14.8 YLD 1.32). TOC-Surface

Production Casing: 850 sx C Lite (WT 12.5 YLD 2.0). Tail in with 1000 sx Super 'H' (WT 13.0 YLD 1.67). ~~TOC-2100'~~ See COA

5. **MUD PROGRAM AND AUXILIARY EQUIPMENT:**

Interval	Type	Weight	Viscosity	Fluid Loss
0-400'	Fresh Water Gel	8.4-8.8	32-40	N/C
400'-2100'	Fresh Water Gel	8.4-8.8	32-40	N/C
2100'-9300'	Cut Brine	8.6-9.6	28	N/C
9300'-10700'	Salt Gel/Starch/4-6%	9.6-10.0	32-38	<12cc

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' samples from intermediate casing.
Logging: Platform Express/HRLA/NGT/FMI.
Coring: None.
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:	185	PSI
From:	400'	TO:	2600'	Anticipated Max.	BHP:	1190	PSI
From:	2600'	TO:	10700'	Anticipated Max.	BHP:	5565	PSI

No abnormal pressures or temperatures are anticipated.

Lost Circulation Zones Anticipated: None

H2S Zones Anticipated: None Anticipated

8. **ANTICIPATED STARTING DATE:**

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 25 days to drill the well with completion taking another 15 days.

Contingency Casing Design See COA

7" CASING MAY BE SET INTO THE TOP OF THE STRAWN IF LOST CIRCULATION IS ENCOUNTERED.
IF 7" CASING IS SET, DRILL OUT WITH 6 1/8" HOLE AND SET 4 1/2" PRODUCTION CASING AT TD.

2nd Intermediate

0 ft to 900 ft				Make up Torque ft-lbs			Total ft = 900
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
7 inches	26 #/ft	J-55	LT&C	3670	2750	4590	
Collapse Resistance	Internal Yield	Joint Strength		Body Yield		Drift	
4,320 psi	4,980 psi	367 ,000 #		415 ,000 #		6.151	

900 ft to 5,900 ft				Make up Torque ft-lbs			Total ft = 5,000
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	4,360 psi	313 ,000 #		366 ,000 #		6.25	

5,900 ft to 8,400 ft				Make up Torque ft-lbs			Total ft = 2,500
O.D.	Weight	Grade	Threads	opt.	min.	mx.	
7 inches	26 #/ft	J-55	LT&C	3670	2750	4590	
Collapse Resistance	Internal Yield	Joint Strength		Body Yield		Drift	
4,320 psi	4,980 psi	367 ,000 #		415 ,000 #		6.151	

8,400 ft to 9,100 ft				Make up Torque ft-lbs			Total ft = 700
O.D.	Weight	Grade	Threads	opt	min.	mx.	
7 inches	26 #/ft	L-80	LT&C	5110	3830	6390	
Collapse Resistance	Internal Yield	Joint Strength		Body Yield		Drift	
5,410 psi	7,240 psi	511 ,000 #		604 ,000 #		6.151	

DV tool placed at 7500'.
Stage I: Cemented w/300sx PVL (YLD 1.61 Wt 13.2) TOC= 7500'
Stage II: Cemented w/775sx Lite Crete (YLD 2.78 Wt 9.9), tail w/100sx H neat (YLD 1.18 Wt 15.65) TOC= 0'

Production

0 ft to 10,700 ft				Make up Torque ft-lbs			Total ft = 10,700
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	

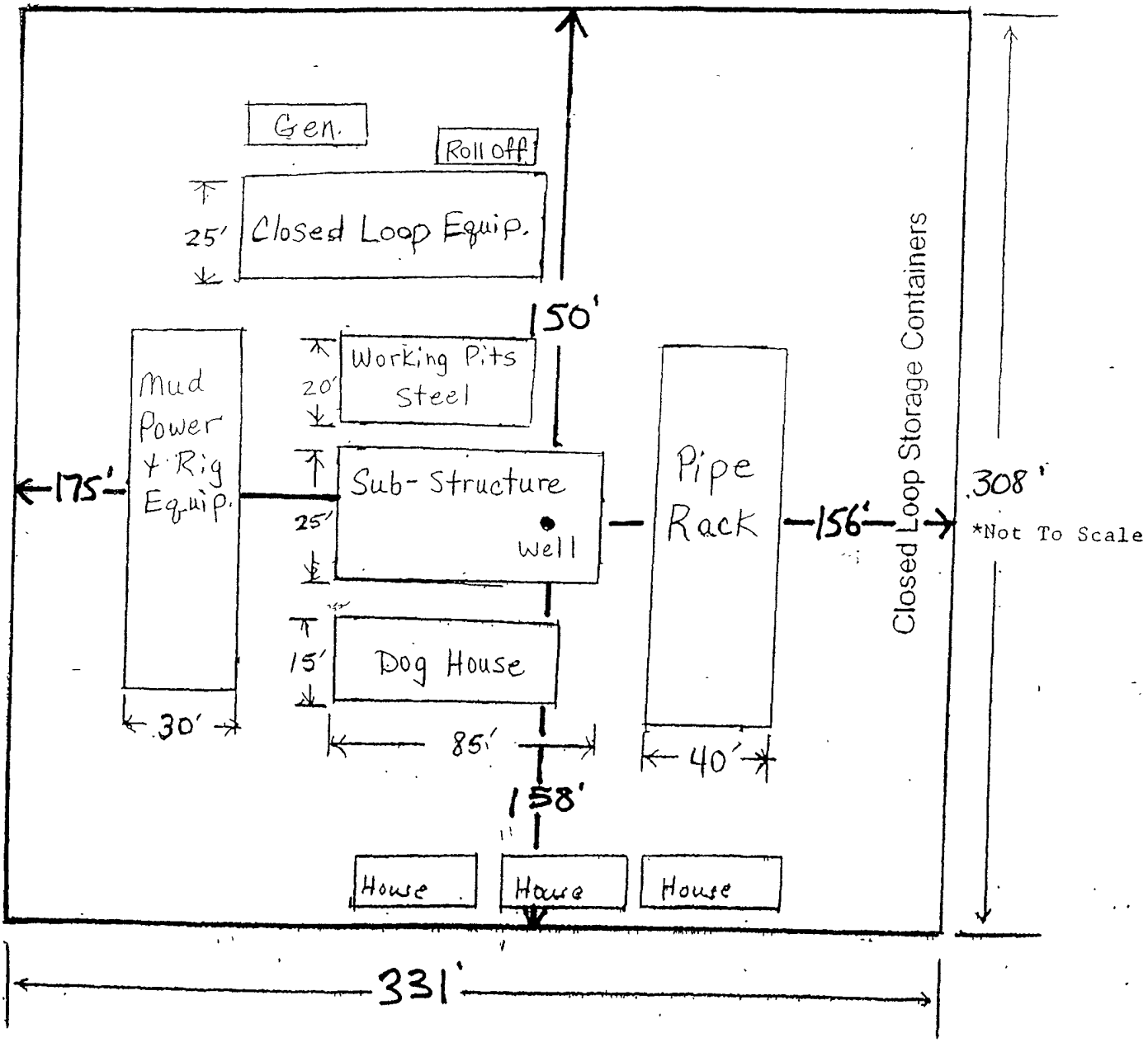
Cemented w/250sx Super H (YLD 1.67 Wt 13) TOC= 8600'

Yates Petroleum Corporation

Location Layout for Permian Basin

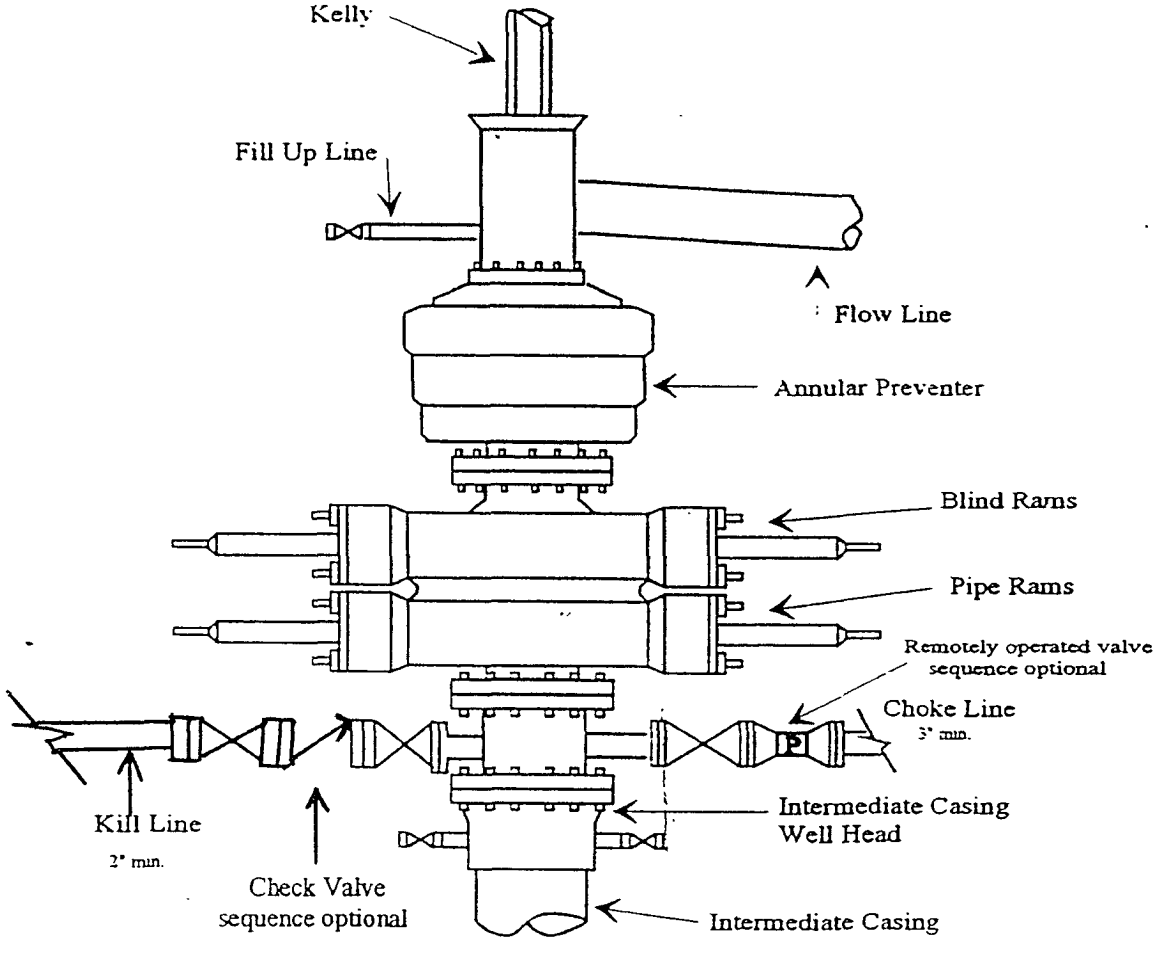
Closed Loop Design Plan

Samuel Smith BOU Federal #4
960' FSL & 1550' FEL
Section 25, T23S-R24E
Eddy County, New Mexico
Exhibit "C"

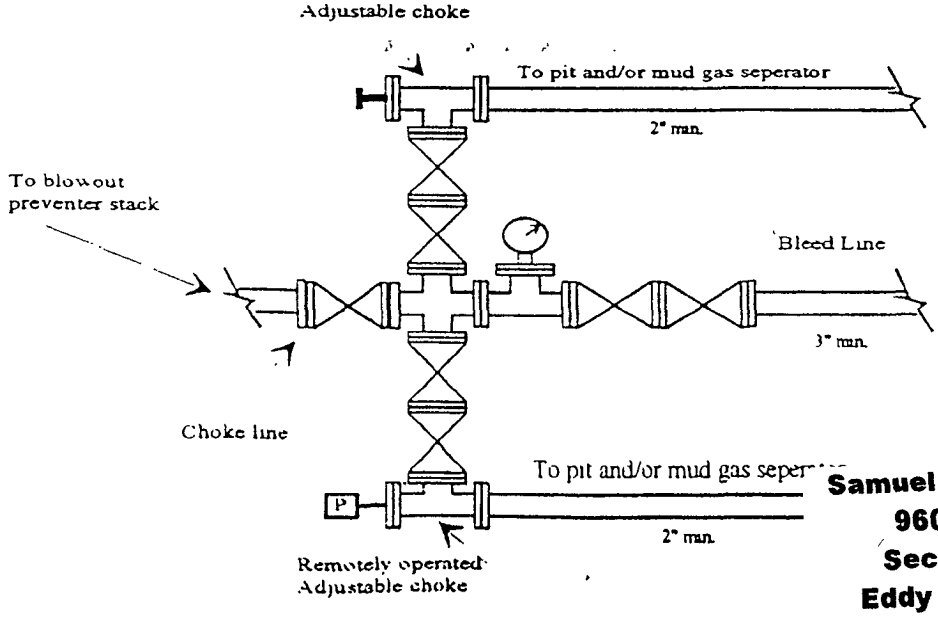


Yates Petroleum Corporation

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

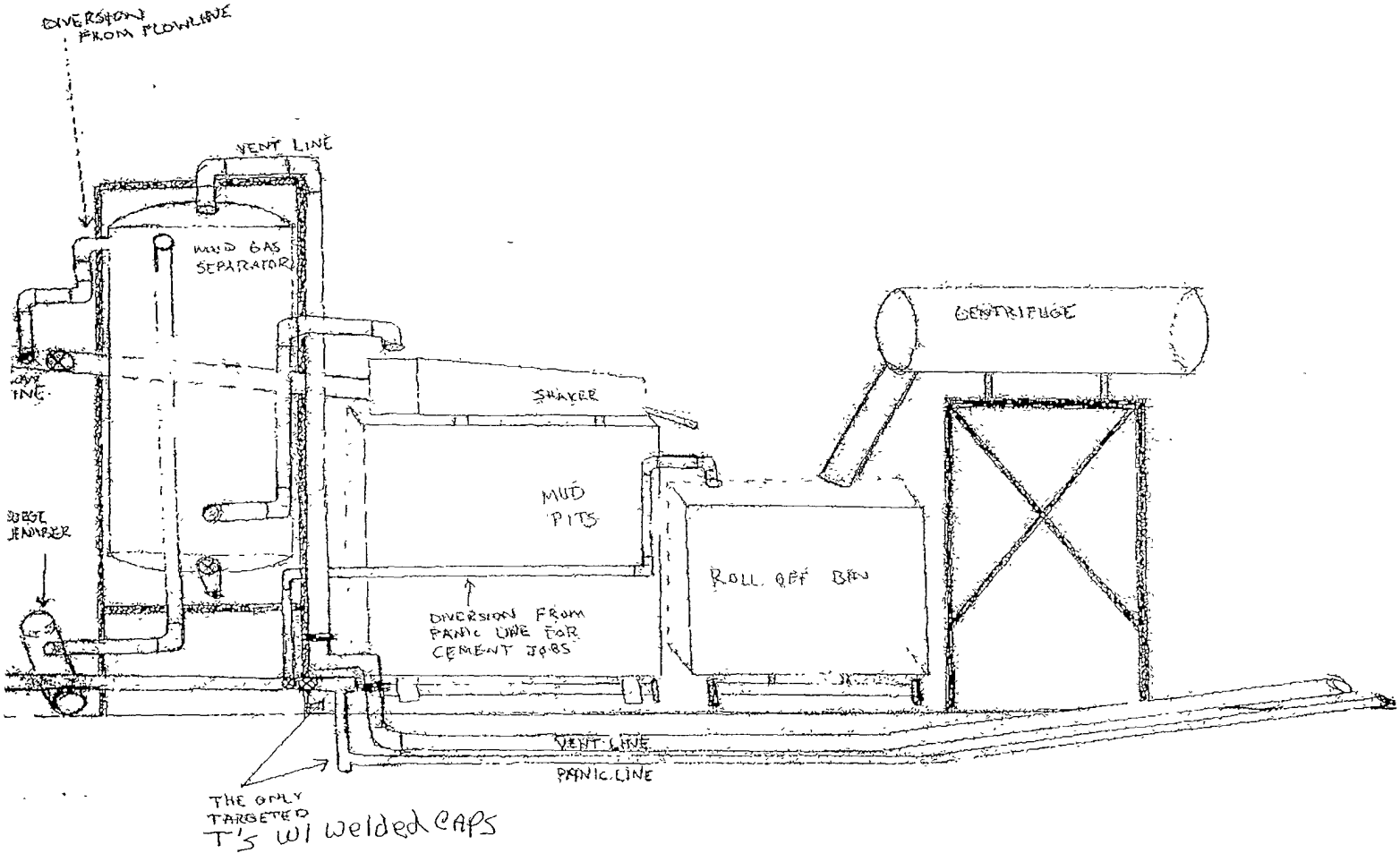


Typical 5,000 psi choke manifold assembly with at least these minimun features



Samuel Smith BOU Federal #4
960' FSL & 1550' FEL
Section 25, T23S-R24E
Eddy County, New Mexico
Exhibit "B"

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



Samuel Smith BOU Federal #4
960' FSL & 1550' FEL
Section 25, T23S-R24E
Eddy County, New Mexico
Exhibit "C-1"

MULTI-POINT SURFACE USE AND OPERATIONS PLAN
YATES PETROLEUM CORPORATION
Samuel Smith BOU Federal #4
960' FSL and 1550' FEL, Unit o-SWSE
Section 25, T23S-R24E
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 30 miles southwest of Carlsbad, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go south of Carlsbad approximately 18 miles from the intersection of Old Caver and US 62-180 (National Parks Hwy.) to County Road 408 (Dark Canyon). Turn west (right) on Dark Canyon Road and go approximately 11 miles, the proposed location is on the east (right) side of the road.

2. **PLANNED ACCESS ROAD:**

A. The access road will be approximately .1 of a mile going northeast to the southwest corner of the drilling pad.
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 existing access road will be bladed with drainage on one side. Some traffic turnouts will 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 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 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:

Dirt contractor will locate nearest pit and obtain any permits and materials needed for construction.

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 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.

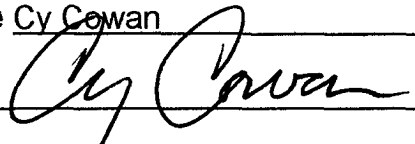
(Exhibits Attached)
Exhibit A Topographic Map and Road Plat
Exhibit B BOP Schematic
Exhibit C Location Layout
Exhibit C-1 Closed Loop System Diagram
Exhibit D One Mile Radius

CERTIFICATION
YATES PETROLEUM CORPORATION
Samuel Smith BOU Federal #4

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 15th day of September, 2009

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.:	NM100536
WELL NAME & NO.:	4 Samuel Smith BOU Federal
SURFACE HOLE FOOTAGE:	960' FSL & 1550' FEL
BOTTOM HOLE FOOTAGE	' F L & ' F L
LOCATION:	Section 25, T. 23 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.

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)

VRM

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 re-contoured 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 re-contoured and reseeded according to vegetation and soil type.

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, situating values 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 values, 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.

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 shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

C. RESERVE PITS

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.

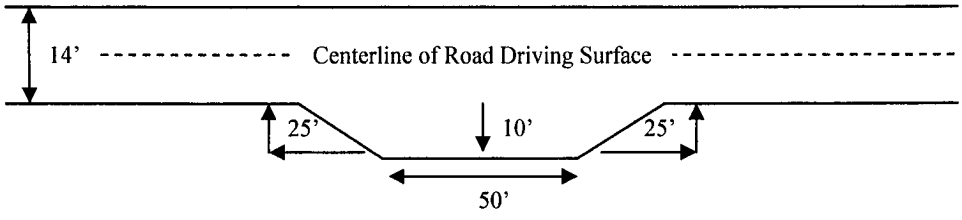
Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

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:

Standard Turnout – Plan View

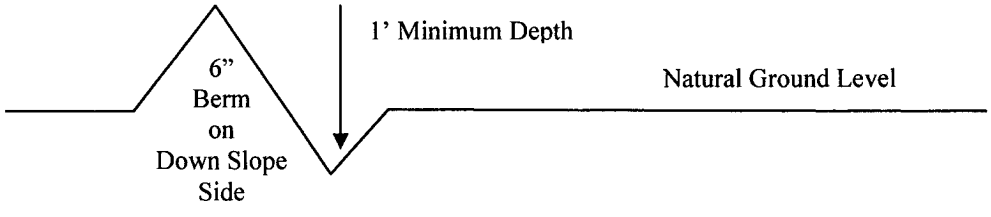


Drainage

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:

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

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.

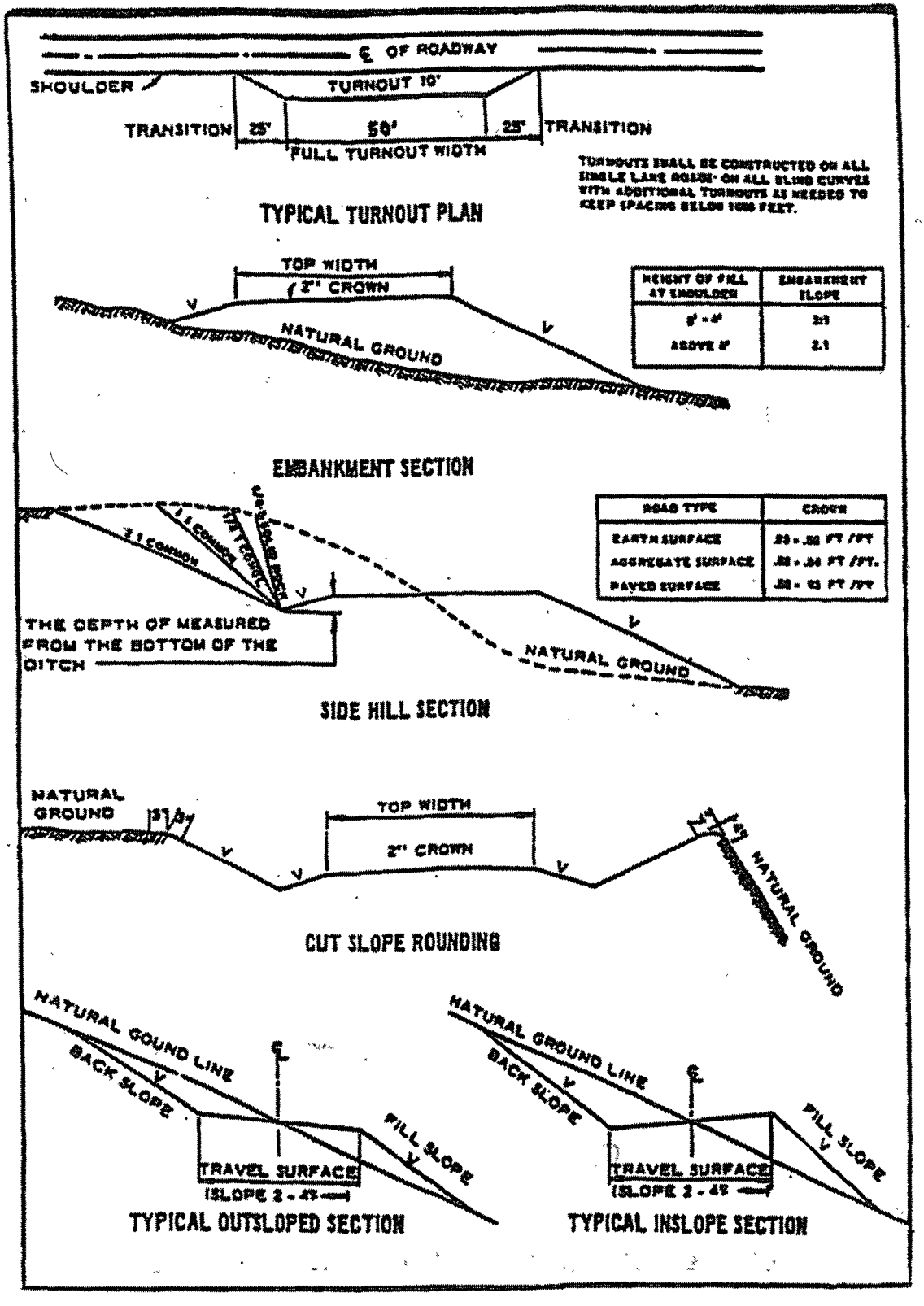
A gate shall be constructed and fastened securely to H-braces.

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 there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. If Hydrogen Sulfide is encountered, please provide measured values 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.

Critical cave/karst.
Possible lost circulation in the San Andres and Wolfcamp formation.
Possible high pressures in the Wolfcamp Formation and the Pennsylvanian Section.

1. The **13-3/8** inch surface casing shall be set at approximately 400 feet and cemented to the surface.

    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 a 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 **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.**

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 and the mud weight for the bottom of the hole. Report results to BLM office.

IF LOST CIRCULATION OCCURS WHILE DRILLING THE 8-3/4" HOLE, THE CEMENT PROGRAM FOR THE 5-1/2" OR 7" CONTINGENCY CASING WILL

NEED TO BE MODIFIED AND THE BLM IS TO BE CONTACTED PRIOR TO RUNNING THE CASING. A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN CRITICAL CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH THEREFORE, ONE INCH OPERATIONS WILL NOT BE PERMITTED. A DV TOOL WILL BE REQUIRED.

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

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Cement to surface due to critical cave/karst. Additional cement may be required to bring cement to surface.**

Contingency Casing:

Casing is to be kept fluid filled while running into hole.

4. The minimum required fill of cement behind the **7** inch second intermediate 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 DV tool, cement shall:

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Cement to surface due to critical cave/karst. Additional cement may be required to bring cement to surface.**

5. The minimum required fill of cement behind the **4-1/2** inch production casing is:

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

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. **Piping from choke manifold to flare to be as straight as possible.**

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.

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. 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.

    e. 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.

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

E. DRILL STEM TEST

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

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 & RESERVE PIT CLOSURE

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.

The 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.

Seed Mixture 3, for Shallow 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:

Species	lb/acre
Plains Bristlegrass (*Setaria magrostachya*)	1.0
Green Spangletop (*Leptochloa dubia*)	2.0
Side oats Grama (*Bouteloua curtipendula*)	5.0

*Pounds of pure live seed:

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

(Insert Seed Mixture Here)

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.