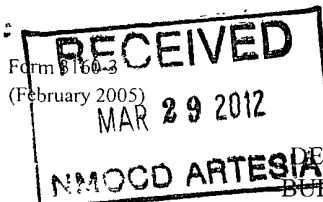


OCD-ARTESIA

R-111-9 Potash



Form 8160-3

(February 2005)

UNITED STATES

DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED

OMB NO 1004-0137

Expires March 31, 2007

Lease Serial No **NM 61358**  
**X-3717**6 If Indian, Allottee or Tribe Name  
N/A7 If Unit or CA Agreement, Name and No.  
N/A8 Lease Name and Well No  
**Kera AKR State Com #3H [39140]**9 API Well No  
**30-015-40128**10 Field and Pool, or Exploratory  
**LOST TANK; Delaware [40299]**11 Sec, T, R, M, or Blk And Survey or Area  
**Sec. 24-T21S-R31E**

12 County or Parish

**Eddy**

13 State

**NM**1a Type of Work ☒ DRILL ☐ REENTER1b Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2 Name of Operator

**Yates Petroleum Corporation 025575**

3a Address

**105 South Fourth Street, Artesia, NM 88210**

3b. Phone No (include area code)

**575-748-1471**

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

At surface

**600' FSL & 330' FEL, Surface Hole**

At proposed prod zone

**660' FSL & 330' FWL, Bottom Hole**

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

**38 miles northeast of Loving, NM**15 Distance from proposed\*  
location to nearest  
property or lease line, ft  
(Also to nearest drilg unit line, if any)**330**

16 No of acres in lease

**160.00**

17 Spacing Unit dedicated to this well

**S2SW, SWSE**18 Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft19. Proposed Depth  
**8270** **Pilot Hole**  
**8497**  
**8510' VD & 12676' MD**

20 BLM/ BIA Bond No on file

**NATIONWIDE BOND #NMB000434**

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

**3634' GL**

22 Approximate date work will start\*

**ASAP**

23. Estimated duration

**50 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

**Clifton May**

Printed Name

**Clifton May**

Date

**5/17/2010**

Title

**Land Regulatory Agent**

Approved By (Signature)

**/s/ Jesse J. Juen**

Name (Printed/ Typed)

Date

**MAR 22 2012**

Title

**STATE DIRECTOR**

Office

**NM STATE 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

\* (Instructions on page 2)

**Carlsbad Controlled Water Basin****CONDITIONS OF APPROVAL****Approval Subject to General Requirements  
& Special Stipulations Attached**

CERTIFICATION  
YATES PETROLEUM CORPORATION  
Kera AKR State Com. #3H  
600' FSL & 330' FEL, Surface Hole  
660' FSL & 330' FWL. Bottom Hole  
Section 24-T21S-R31E  
Eddy County, New Mexico

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 17th day of May, 2010.

Printed Name Clifton May

Signature Clifton May

Position Title Land Regulatory Agent

Address 105 South Fourth Street, Artesia, NM 88210

Telephone 575-748-4347

E-mail (optional) cliff@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) \_\_\_\_\_

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

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

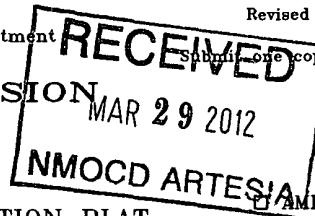
DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 15, 2009

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505



Submit one copy to appropriate  
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number 30-015-40128	Pool Code 40299	Pool Name Lost Tank Delaware
Property Code 39140	Property Name KERA "AKR" STATE COM	Well Number 3H
OGRID No. 025575	Operator Name YATES PETROLEUM CORP.	Elevation 3634'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	24	21 S	31 E		600	SOUTH	330	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
M	24	21 S	31 E		660	SOUTH	330	WEST	EDDY

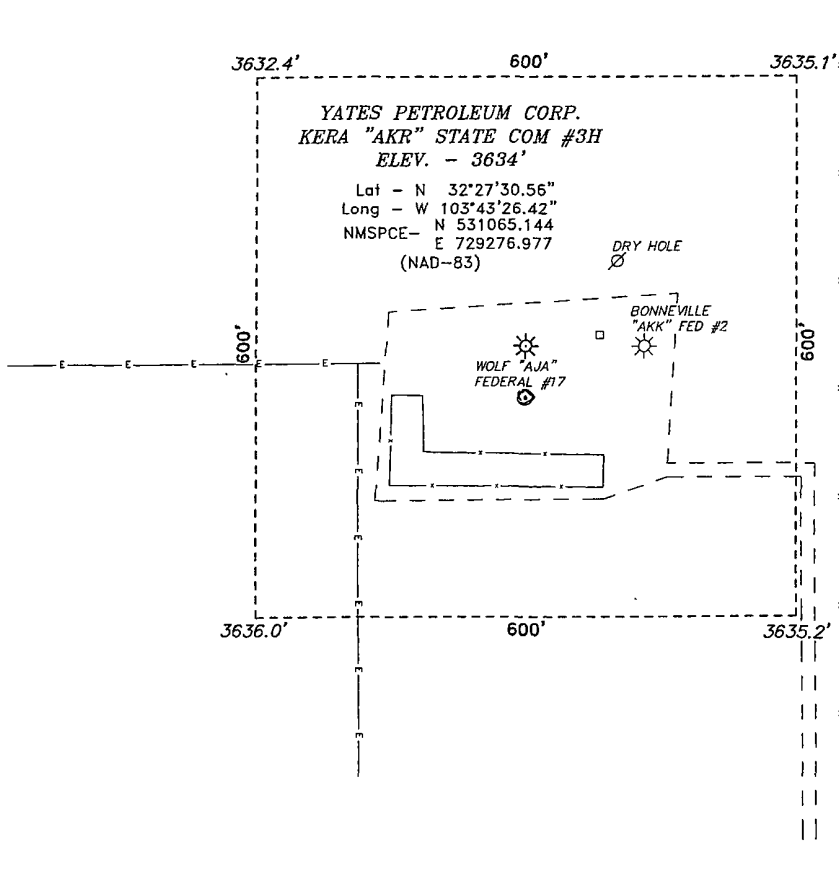
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
120			

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

<p><b>PROPOSED BOTTOM HOLE LOCATION</b> Lat - N 32°27'31.13" Long - W 103°44'20.29" NMSPCE- N 531097.560 E 724661.160 (NAD-83) Project Area</p>	<p><b>SURFACE LOCATION</b> Lat - N 32°27'30.56" Long - W 103°43'26.42" NMSPCE- N 531065.144 E 729276.977 (NAD-83)</p>	<p><b>OPERATOR CERTIFICATION</b> 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.  Clifton May 5/17/10 Signature Date Clifton May Printed Name</p>
<p><b>PRODUCING ZONE</b> V-3717</p>	<p><b>PENETRATION</b> Point 617' FSL &amp; 1650' FEL</p>	<p><b>SURVEYOR CERTIFICATION</b> 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.  Date Surveyed Signature &amp; Seal of Professional Surveyor Certificate No. Gary L. Jones 7977 BASIN SURVEYS</p>

SECTION 24, TOWNSHIP 21 SOUTH, RANGE 31 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.

YATES PETROLEUM CORPORATION  
Kera AKR State Com. #3H  
600' FSL and 330' FEL SHL  
660' FSL and 330' FWL BHL  
Section 24, T21S-R31E  
Eddy County, New Mexico



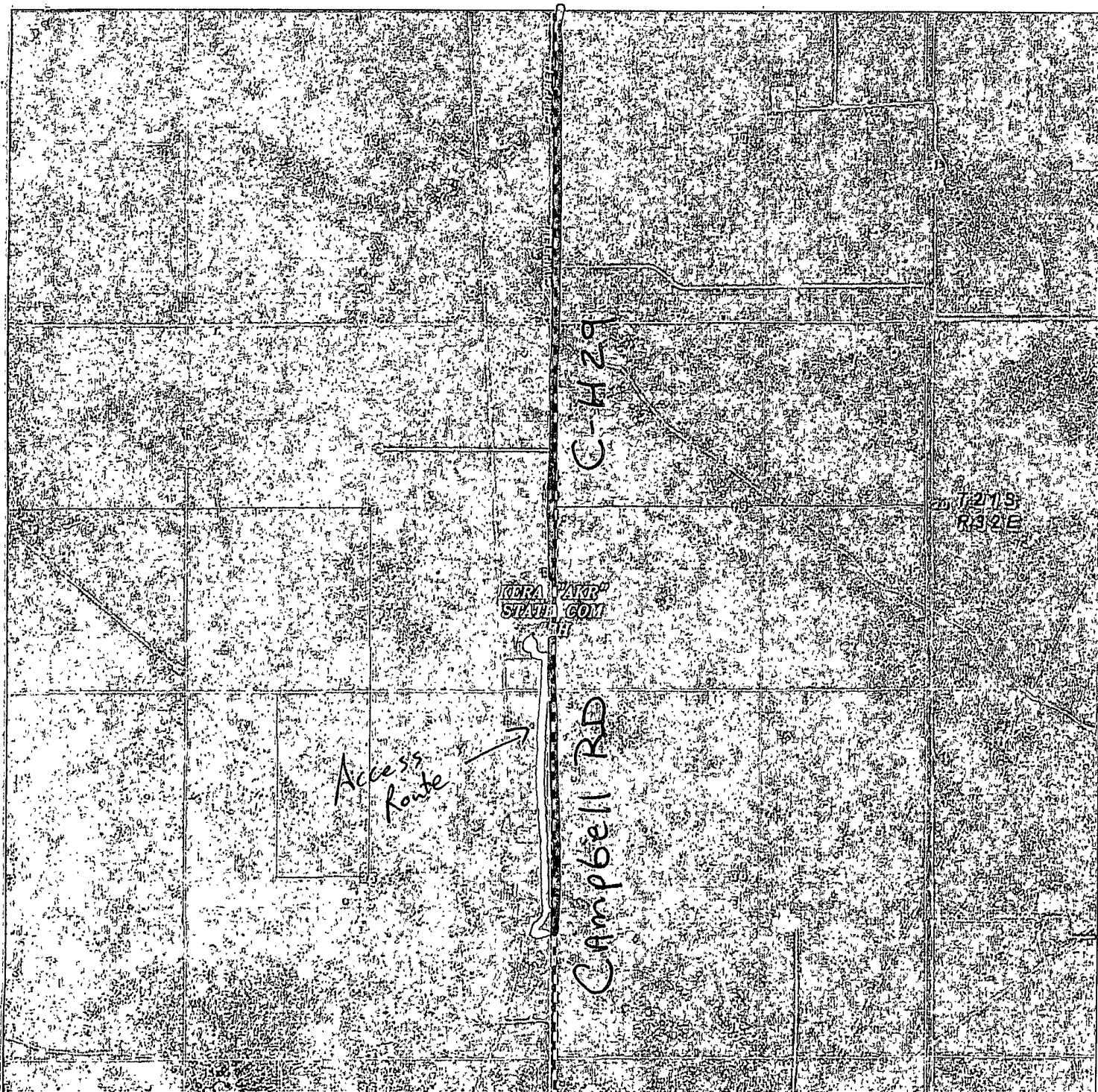
= Wolf AJA Fed. 17  
 = Center Hole of Well Site Proposed

200 0 200 400 FEET  
SCALE: 1" = 200'

YATES PETROLEUM CORP.	
REF: KERA "AKR" STATE COM #3H / WELL PAD TOPO	
THE KERA "AKR" STATE COM #3H LOCATED 600'	
FROM THE SOUTH LINE AND 330' FROM THE EAST LINE OF	
SECTION 24, TOWNSHIP 21 SOUTH, RANGE 31 EAST,	
N.M.P.M., EDDY COUNTY, NEW MEXICO.	
W.O. Number: 22496	Drawn By. J. SMALL
Date: 04-19-2010	Disk: ERB 22496
Survey Date: 03-29-2010	Sheet 1 of 1 Sheets

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

TEN 2/13/12



KERA "AKR" STATE COM #3H **ACCESS ROAD**  
 Located 600' FSL and 330' FEL  
 Section 24, Township 21 South, Range 31 East,  
 N.M.P.M., Eddy County, New Mexico.

**basin**  
**surveys**  
 focused on excellence  
 in the oilfield

P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (575) 393-7316 - Office  
 (575) 392-2206 - Fax  
 basinsurveys.com

W.O. Number: ERB 22496

Scale: 1" = 2000'

YELLOW TINT - USA LAND  
 BLUE TINT - STATE LAND  
 NATURAL COLOR - FEE LAND

**YATES**  
**PETROLEUM**  
**CORP.**

YATES PETROLEUM CORPORATION  
Kera AKR State Com. #3H  
600' FSL and 330' FEL Surface Hole Location  
660' FSL and 330' FWL Bottom Hole Location  
Section 24-T21S-R31E  
Eddy County, New Mexico

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

Rustler	830'	Brushy Canyon Mkr	8106'
Top of Salt	1152'	Target-Basal Sand	8270'-Oil
Bottom of Salt	4200'	Bone Springs	8397'-Oil
Bell Canyon	4506'	TD (Pilot Hole)	8497'
Cherry Canyon	5390'-Oil	MTD (Lateral)	12676'
Brushy Canyon	6680'-Oil		
2. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

Water: 150'  
Oil or Gas: Oil Zones: 5390', 6680', 8270' & 8397'.

3. Pressure Control Equipment: BOPE will be installed on the 13 3/8" and the 9 5/8" casing and rated for 3000# BOP System. Pressure tests will be conducted before drilling out from under all casing strings, which are set and cemented in place. Blowout Preventer controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventers 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.
4. 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.
5. THE PROPOSED CASING AND CEMENTING PROGRAM:

A. Casing Program: All new casing to be used

<u>Hole Size</u>	<u>Casing Size</u>	<u>Wt./Ft</u>	<u>Grade</u>	<u>Coupling</u>	<u>Interval</u>	<u>Length</u>
17 1/2"	13 3/8"	48#	H-40	ST&C	0-900'	900'
12 1/4"	9 5/8"	40#	J-55	ST&C	0-100'	100'
12 1/4"	9 5/8"	36#	J-55	ST&C	100'-3300'	3200'
12 1/4"	9 5/8"	40#	J-55	ST&C	3300'-4250'	950'
12 1/4"	9 5/8"	40#	HCK-55	ST&C	4250'-4600'	350'
8 3/4" Pilot Hole						
7 7/8"	5.1/2"	17#	P- 110	LT&C	0'-12676'	12676'

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

B. CEMENTING PROGRAM:

Surface Casing: Lead with 600 sacks C Lite (Yld. 1.64 Wt. 14.80). Tail in with 250 sacks Class C (Yld. 1.34 Wt. 14.80). TOC surface.

Intermediate Casing: Lead with 1475 sacks of Poz C (Yld 1.96 Wt 12.60). Tail in with 100 sacks Class C (Yld. 1.34 Wt. 14.80) TOC surface.

Production cement to be done in two stages with stage tools at approx. 6000'.

Production Casing: Stage One: Cement with 1650 sacks Pecos Valley Lite (Yld. 1.41 Wt 13.00). TOC 6000'.

Stage Two: Lead with 250 sacks Lite Crete (Yld. 2.66 Wt 9.90). Tail in with 75 sacks Pecos Valley Lite (Yld. 1.41 Wt 13.00). TOC 4100'.

*See COA* Pilot hole drilled vertically to 8497'. Well will be plugged back with a 400'-500' kick off plug, then kicked off at 7784' and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 9377' MD (8270' TVD). 7 7/8" hole will then be drilled to 12676' (MD 8270' TVD) where 5 1/2" casing will be run and cemented in place. Penetration point of producing zone will be encountered at 617' FSL & 1650' FEL, 24-21S-31E. Deepest TVD in the pilot hole is ~~8510'~~ *8497'*. Deepest TVD in the lateral will be 8270'.

#### 6. MUD PROGRAM AND AUXILIARY EQUIPMENT:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0-900'	Fresh Water	8.60-9.20	29-36	N/C
900'-4600'	Brine Water	10.00-10.20	28-30	N/C
4600'-8497'	Cut Brine (Pilot Hole)	8.90-9.10	28-29	N/C
7384'-12676'	Cut Brine (Lateral Section)	9.00-9.30	28-34	<=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. Rig personnel will check mud hourly.

#### 7. EVALUATION PROGRAM:

*See COA*  
 Samples: 30' samples to 4400'. 10' samples from 4400' to TD. Mudloggers on at surface casing  
 Logging: Platform Hals, CMR (DLWR), NGT  
 Coring: None anticipated  
 DST's: None Anticipated

#### 8. ABNORMAL CONDITIONS, BOTTOM HOLE PRESSURE, AND POTENTIAL HAZARDS:

Maximum Anticipated BHP:

0'-900'	431 PSI
900'-4600'	2440 PSI
4600'-8497'	4021 PSI

Abnormal Pressures Anticipated: None

Lost Circulation Zones Anticipated: None.

H2S Zones Anticipated: None Anticipated

Maximum Bottom Hole Temperature: 150 F

#### 9. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 60 days to drill the well with completion taking another 20 days.

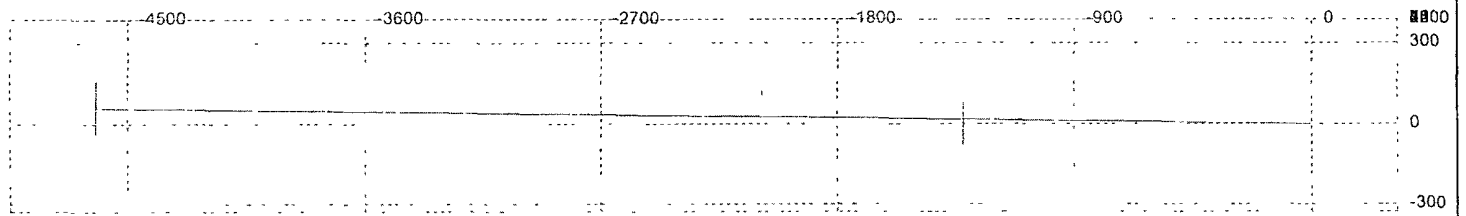
M'D	Inclination	Azimuth	T.V/D	N/S	E/W	D'LS	ToolFace	T-F Ref.(HS/GN)	
0	0	0	0	0	0	0			
830	0	0	830	0	0	0			RUSTLER
1,152	0	0	1,152	0	0	0			TOP OF SALT
4,200	0	0	4,200	0	0	0			BASE OF SALT
4,506	0	0	4,506	0	0	0			BELL CANYON
5,390	0	0	5,390	0	0	0			CHERRY CANYON
6,680	0	0	6,680	0	0	0			BRUSHY CANYON
7784	0	0	7784	0	0	12	271	GN	KOP
7800	1 92	270 74	7800	0	-0 27	12	360	HS	
7825	4 92	270 74	7824 95	0 02	-1 76	12	360	HS	
7850	7 92	270 74	7849 79	0 06	-4 55	12	0	HS	
7875	10 92	270 74	7874 45	0 11	-8 64	12	360	HS	
7900	13 92	270 74	7898 86	0 18	-14 02	12	360	HS	
7925	16 92	270 74	7922 96	0 27	-20 67	12	360	HS	
7950	19 92	270 74	7946 68	0 37	-28 56	12	360	HS	
7975	22 92	270 74	7969 95	0 49	-37 69	12	360	HS	
8000	25 92	270 74	7992 71	0 62	-48 03	12	360	HS	
8025	28 92	270 74	8014 9	0 77	-59 54	12	360	HS	
8050	31 92	270 74	8036 45	0 93	-72 19	12	0	HS	
8075	34 92	270 74	8057 32	1 11	-85 96	12	360	HS	
8100	37 92	270 74	8077 43	1 3	-100 8	12	0	HS	
8125	40 92	270 74	8096 74	1 5	-116 67	12	360	HS	
8138	42 48	270 74	8106 45	1 61	-125 32	12	0	HS	BRUSHY CANYON MKR
8150	43 92	270 74	8115 2	1 72	-133 53	12	0	HS	
8175	46 92	270 74	8132 74	1 95	-151 33	12	360	HS	
8200	49 92	270 74	8149 33	2 19	-170 03	12	360	HS	
8225	52 92	270 74	8164 92	2 44	-189 57	12	360	HS	
8250	55 92	270 74	8179 46	2 7	-209 9	12	0	HS	
8275	58 92	270 74	8192 92	2 97	-230 96	12	0	HS	
8300	61 92	270 74	8205 26	3 25	-252 7	12	0	HS	
8325	64 92	270 74	8216 45	3 54	-275 05	12	360	HS	
8350	67 92	270 74	8226 45	3 84	-297 96	12	360	HS	
8375	70 92	270 74	8235 23	4 14	-321 36	12	360	HS	
8400	73 92	270 74	8242 78	4 45	-345 19	12	360	HS	
8425	76 92	270 74	8249 08	4 76	-369 38	12	360	HS	
8450	79 92	270 74	8254 1	5 07	-393 86	12	0	HS	
8475	82 92	270 74	8257 82	5 39	-418 58	12	360	HS	
8500	85 92	270 74	8260 26	5 71	-443 46	12	0	HS	
8525	88 92	270 74	8261 38	6 03	-468 43	12	0	HS	
8529 18	89 42	270 74	8261 44	6 09	-472 6	12	0	HS	
9376 69	89 42	270 74	8270	17	-1320	10			TARGET-BASAL SAND
9381 52	90	270 75	8270 02	17 06	-1324 83	12	1	HS	
12655 74	90	270 75	8269 97	59 75	-4598 77	0			
12675	90	270 36	8270	59 97	-4618 03	2	270	HS	
12676 97	90	270 32	8270	59 98	-4620	2	270	HS	
12676 97	90	270 37	8270	60	-4620	0			LATERAL TD

Pilot hole drilled vertically to 8510' Well will be plugged back with a 400'-500' kick off, then kicked off at approx 7784' and directionally drilled at 12 degrees per 100' with a 7 7/8" hole to 9377' MD (8270' TVD)  
7-7/8" hole will then be drilled to 12,677' MD (8270' TVD) where 5-1/2" casing will be run and cement in place  
Penetration point of producing zone will be encountered at 617' FSL and 1650' FEL, 24-21S-31E  
Deepest TVD in the pilot hole is 8510' Deepest TVD in the lateral will be 8270'



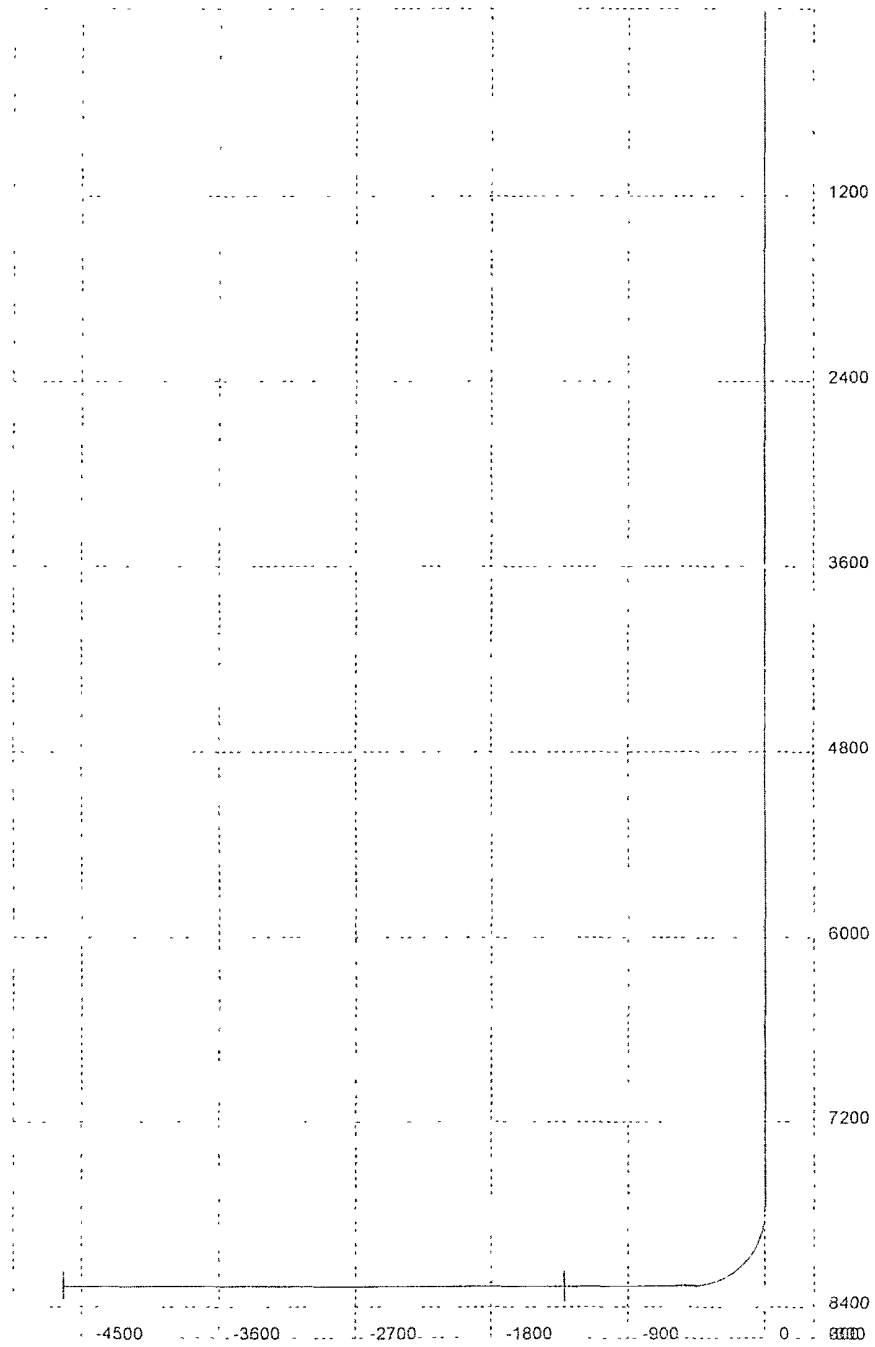
# 3D<sup>3</sup> Directional Drilling Planner - 3D View

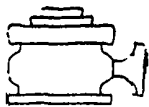
Company Yates Petroleum Corporation  
Well Kera AKR State Com. #3H



# 3D<sup>3</sup> Directional Drilling Planner - 3D View

Company: Yates Petroleum Corporation  
Well: Kera AKR State Com. #3H

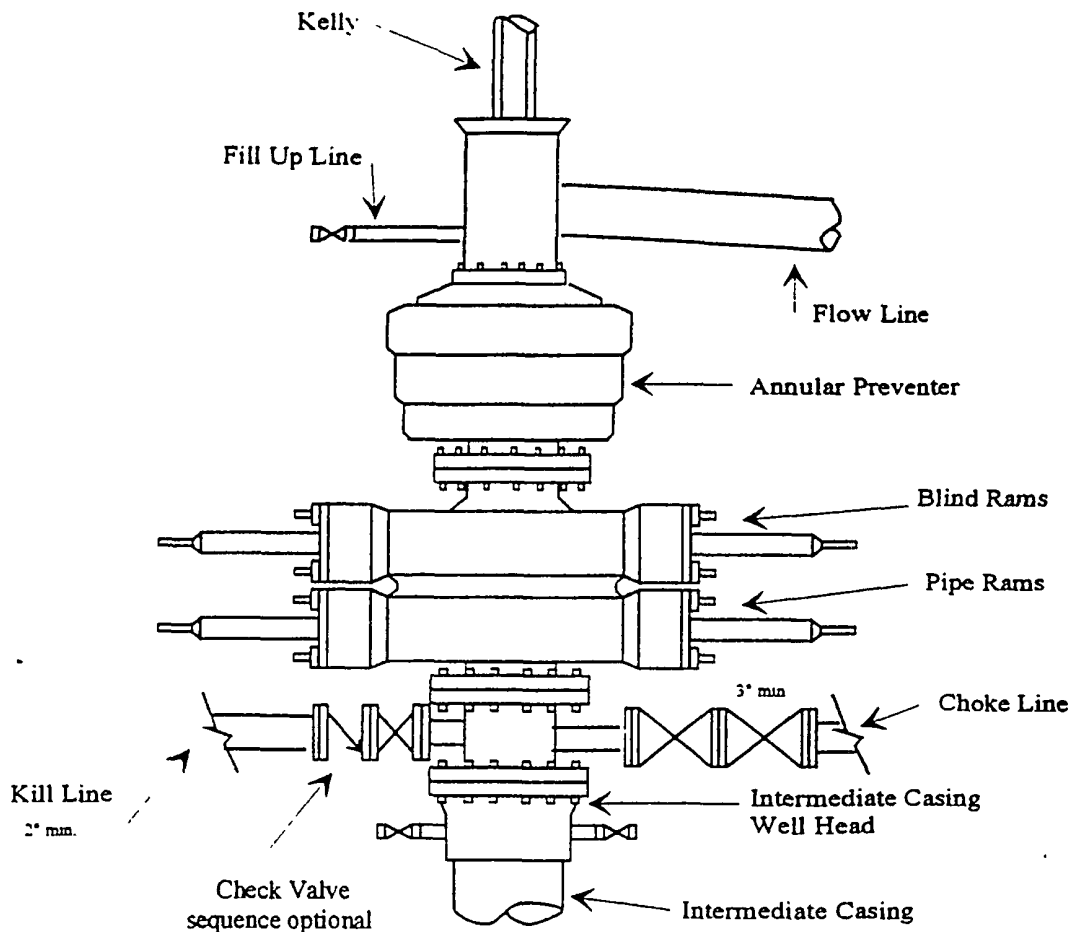




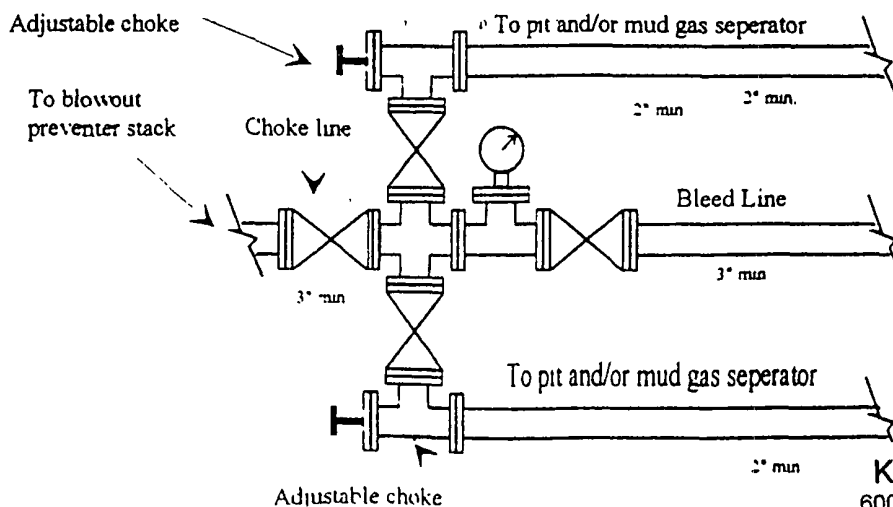
# Yates Petroleum Corporation

BOP-3

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

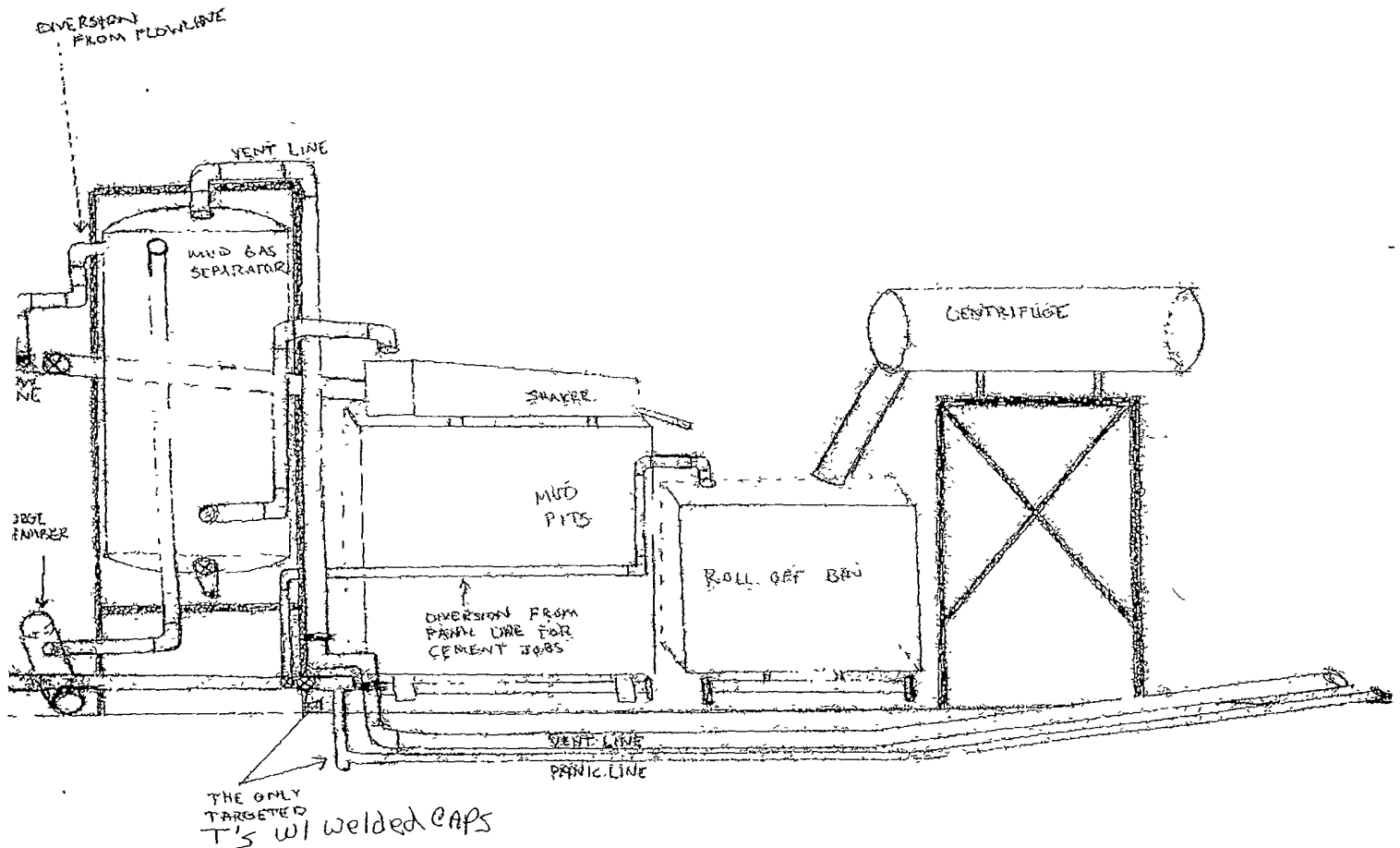


## Typical 3,000 psi choke manifold assembly with at least these minimum features



**Kera AKR State Com #3H**  
600' FSL and 330' FEL, Surface Hole  
660' FSL and 330' FWL, Bottom Hole  
Section 24, T21S-R31E  
Eddy County, New Mexico  
Exhibit "B"

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

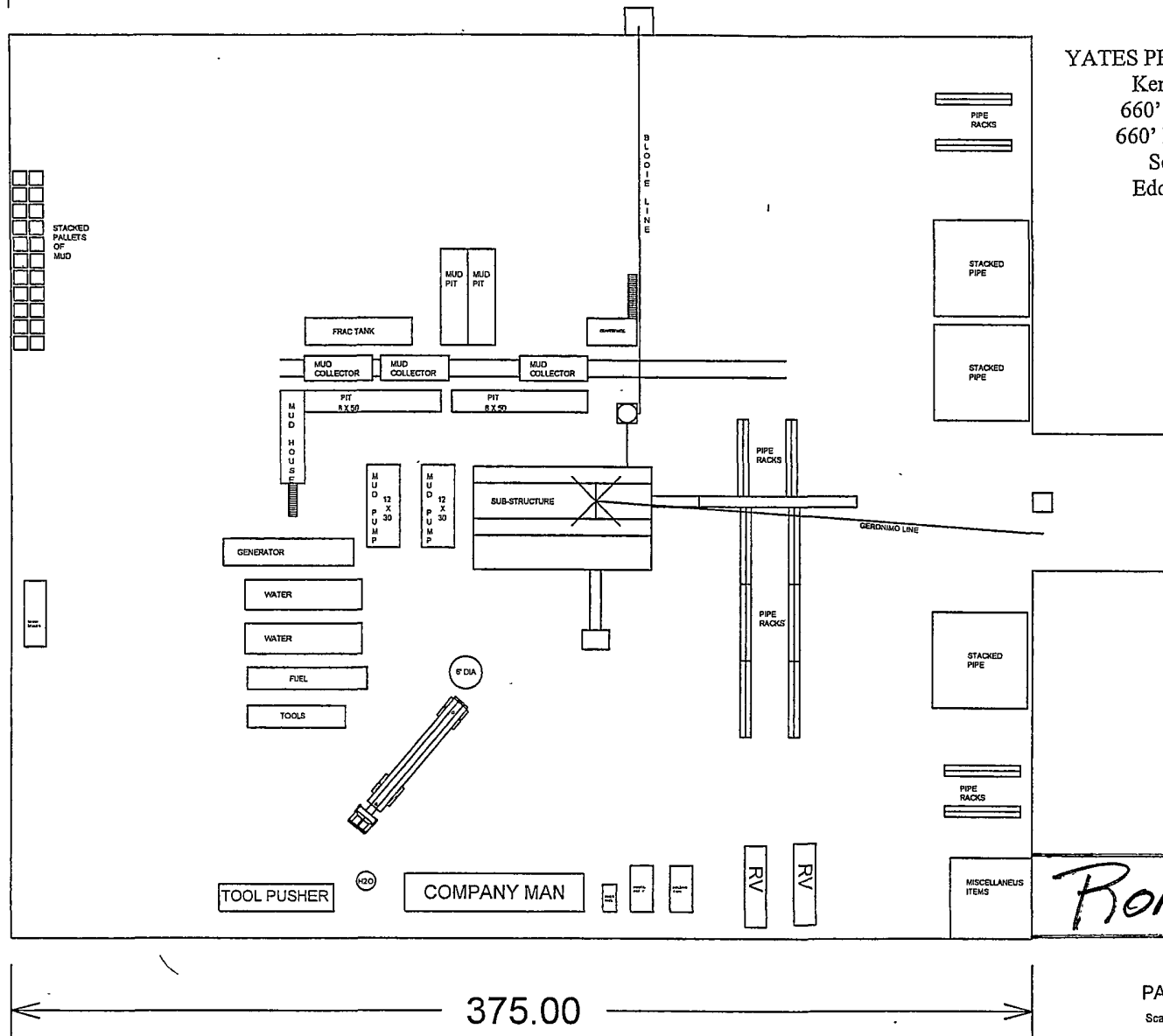


Kera AKR State Com #3H  
600' FSL and 330' FEL, Surface Hole  
660' FSL and 330' FWL, Bottom Hole  
Section 24, T21S-R31E  
Eddy County, New Mexico  
Exhibit "C-1"

# YATES PETROLEUM CORPORATION

425.00

330.00



YATES PETROLEUM CORPORATION  
Kera AKR State Com. #3H  
660' FSL and 330' FEL SHL  
660' FSL and 330' FWL BHL  
Section 24, T21S-R31E  
Eddy County, New Mexico



*ROAD*

375.00

PAD-LAYOUT

Scale: 1 inch = 60 feet

**Yates Petroleum Corporation  
105 S. Fourth Street  
Artesia, NM 88210**

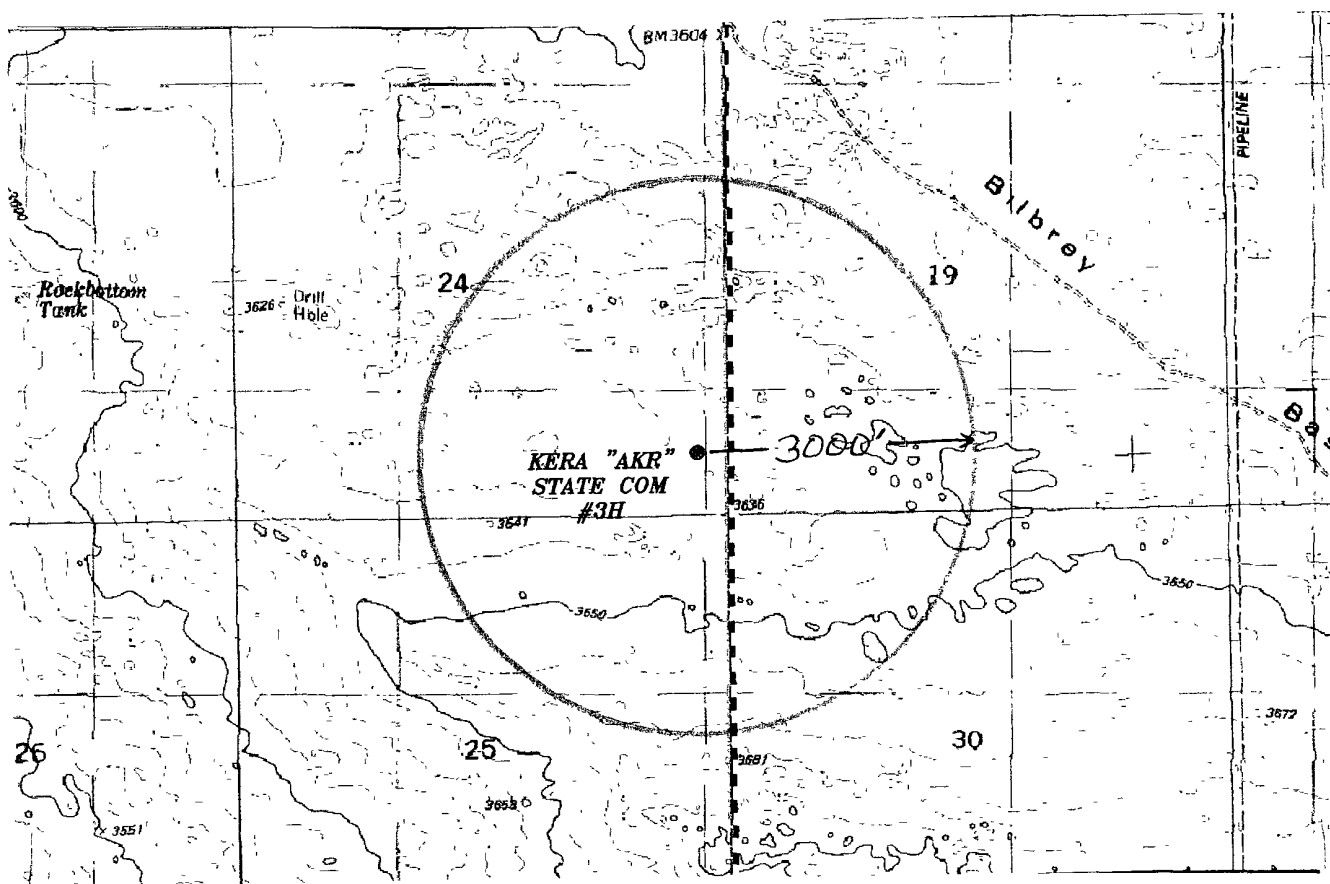
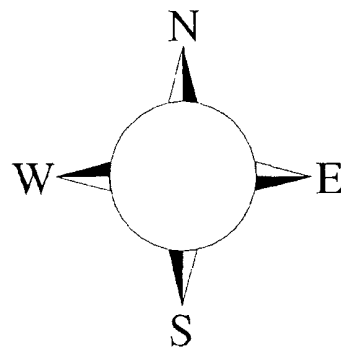
## **Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan**

**For**

**Kera AKR State Com. #3H  
600' FSL and 330' FEL Surface Hole Location  
660' FSL and 330' FWL Bottom Hole Location  
Section 24, T-21S, R-31E  
Eddy County NM**

## Kera AKR State Com. #3H

This is an open drilling site. H<sub>2</sub>S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H<sub>2</sub>S, including warning signs, wind indicators and H<sub>2</sub>S monitor.



**Assumed 100 ppm ROE = 3000'**  
**100 ppm H<sub>2</sub>S concentration shall trigger activation of this plan.**

## Emergency Procedures

In the case of a release of gas containing H<sub>2</sub>S, the first responder(s) must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the first responder(s) must evacuate any public places encompassed by the 100 ppm ROE. First responder(s) must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of H<sub>2</sub>S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H<sub>2</sub>S monitors and air packs in order to control the release. Use the “buddy system” to ensure no injuries during the response.

## Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

## Characteristics of H<sub>2</sub>S and SO<sub>2</sub>

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21 Air = 1	2 ppm	N/A	1000 ppm

## Contacting Authorities

YPC personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. YPC Company response must be in coordination with the State of New Mexico’s ‘Hazardous Materials Emergency Response Plan’ (HMER)



### ***Yates Petroleum Corporation Phone Numbers***

---

YPC Office .....(575) 748-1471  
Darrick Stallings/Operations Manager .....(575) 748-4198  
Wade Bennett/Prod Superintendent .....(575) 748-4236  
LeeRoy Richards/Assistant Prod Superintendent .....(575) 748-4228  
Mike Larkin/Drilling .....(575) 748-4222  
Paul Hanes/Prod Foreman/Roswell .....(575) 624-2805  
Tim Bussell/Drilling Superintendent .....(575) 748-4221  
Artesia Answering Service .....(575) 748-4302  
(During non-office hours)

### **Agency Call List**

#### **Eddy County (575)**

##### **Artesia**

State Police .....746-2703  
City Police..... 746-2703  
Sheriff's Office ..... 746-9888  
Ambulance ..... 911  
Fire Department ..... 746-2701  
LEPC (Local Emergency Planning Committee) ..... 746-2122  
NMOCD..... 748-1283

##### **Carlsbad**

State Police .....885-3137  
City Police..... 885-2111  
Sheriff's Office ..... 887-7551  
Ambulance .....911  
Fire Department .....885-2111  
LEPC (Local Emergency Planning Committee) ..... 887-3798  
US Bureau of Land Management.....887-6544  
New Mexico Emergency Response Commission (Santa Fe) (505)476-9600  
24 HR .....(505) 827-9126  
New Mexico State Emergency Operations Center..(505) 476-9635  
National Emergency Response Center (Washington, DC) ...(800) 424-8802

##### **Other**

Boots & Coots IWC ..... 1-800-256-9688 or (281) 931-8884  
Cudd Pressure Control.....(915) 699-0139 or (915) 563-3356  
Halliburton .....(575) 746-2757  
B. J. Services ... ..(575) 746-3569

Flight For Life -4000 24th St, Lubbock, TX . . . . .(806) 743-9911  
Aerocare -Rr 3 Box 49f , Lubbock, TX . . . . .(806) 747-8923  
Med Flight Air Amb 2301 Yale Blvd SE #D3, Albuq, NM . . . . .(505) 842-4433  
S B Air Med Svc 2505 Clark Carr Loop SE, Albuq, NM . . . . .(505) 842-4949

N



# YATES PETROLEUM CORPORATION

YATES PETROLEUM CORPORATION

Kera AKR State Com. #3H

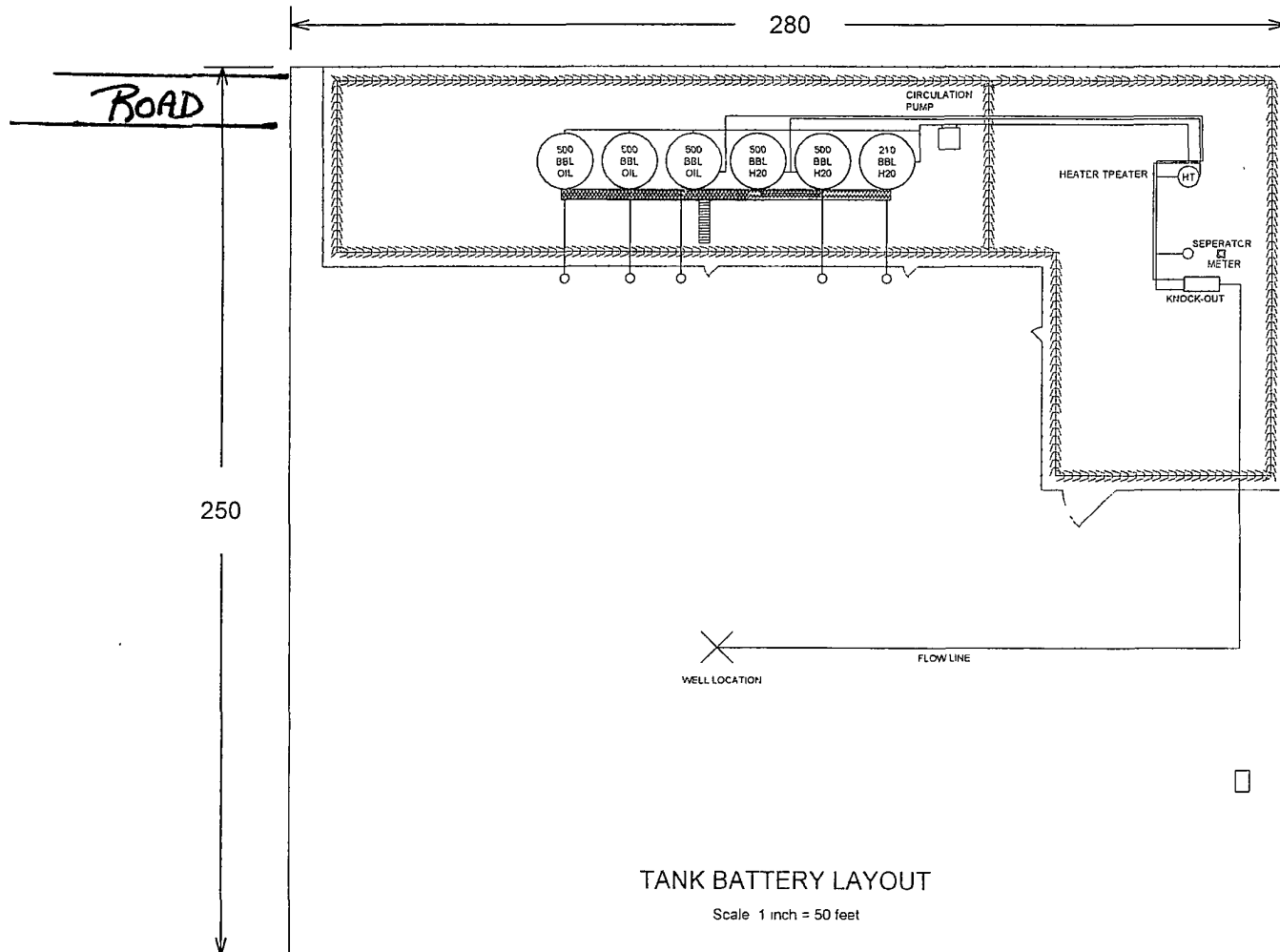
660' FSL and 330' FEL SHL

660' FSL and 330' FWL BHL

Section 24, T21S-R31E

Eddy County, New Mexico

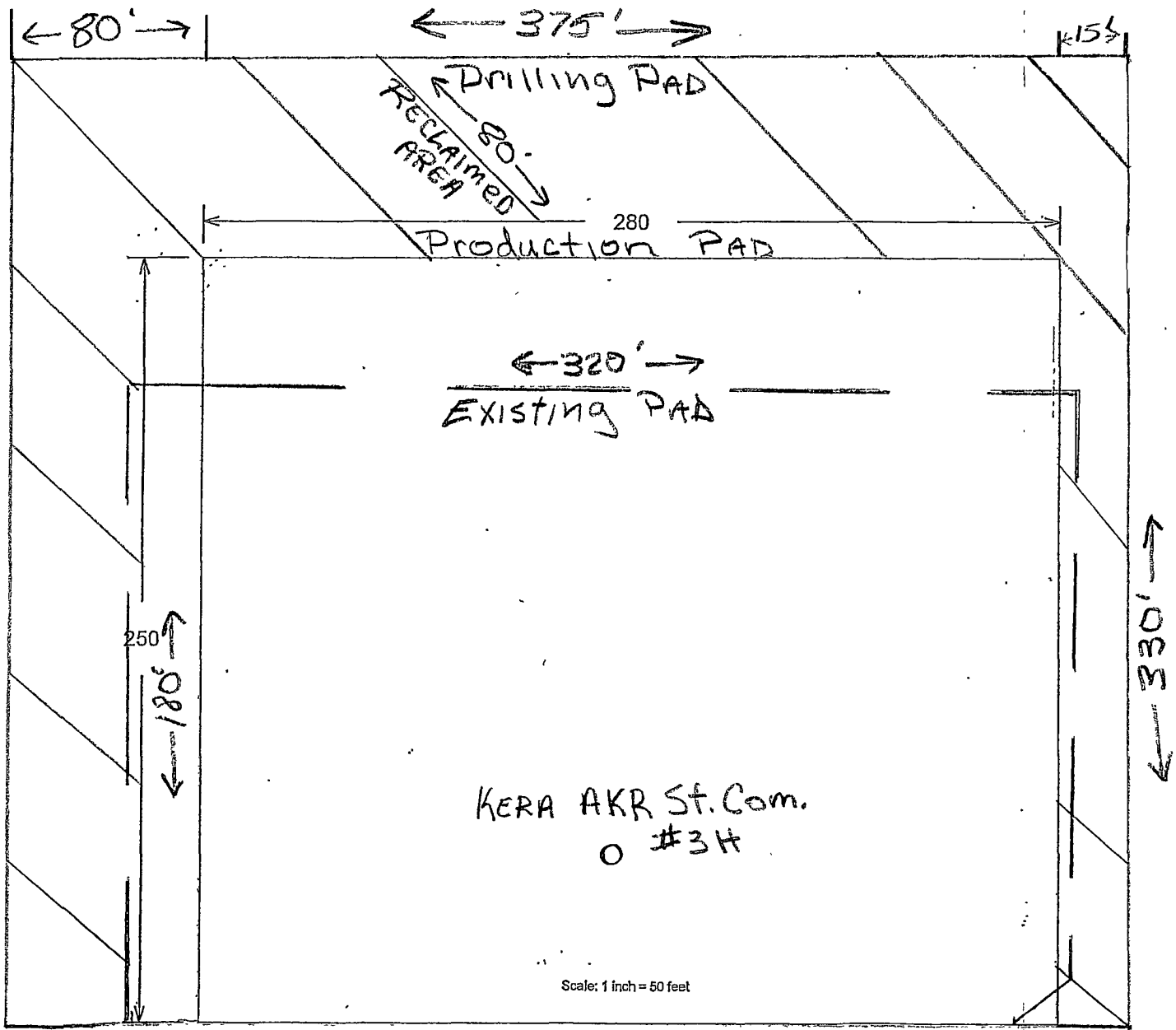
~~Exhibit~~ Exhibit 1



# YATES PETROLEUM CORPORATION

YATES PETROLEUM CORPORATION  
Kera AKR State Com. #3H  
660' FSL and 330' FEL 'SHL  
660' FSL and 330' FWL BHL  
Section 24, T21S-R31E  
Eddy County, New Mexico

Exhibit 2



# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	YATES PETROLEUM CORP
LEASE NO.:	NM61358
WELL NAME & NO.:	3H-KERA AKR STATE COM
SURFACE HOLE FOOTAGE:	600' FSL & 0330' FEL
BOTTOM HOLE FOOTAGE:	660' FSL & 330' FWL
LOCATION:	Section 24, T. 21 S., R 31 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**
  - Constructing over a Reserve Pit
  - Interim Reclamation
  - Painting Requirement
  - Frac Pond Pipeline
  - Lesser Prairie-Chicken Timing Stipulations
  - Ground-level Abandoned Well Marker
  - Communitization Agreement
- ☒ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - H<sub>2</sub>S – Onshore Order 6
  - Logging Requirements
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
- ☐ **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.

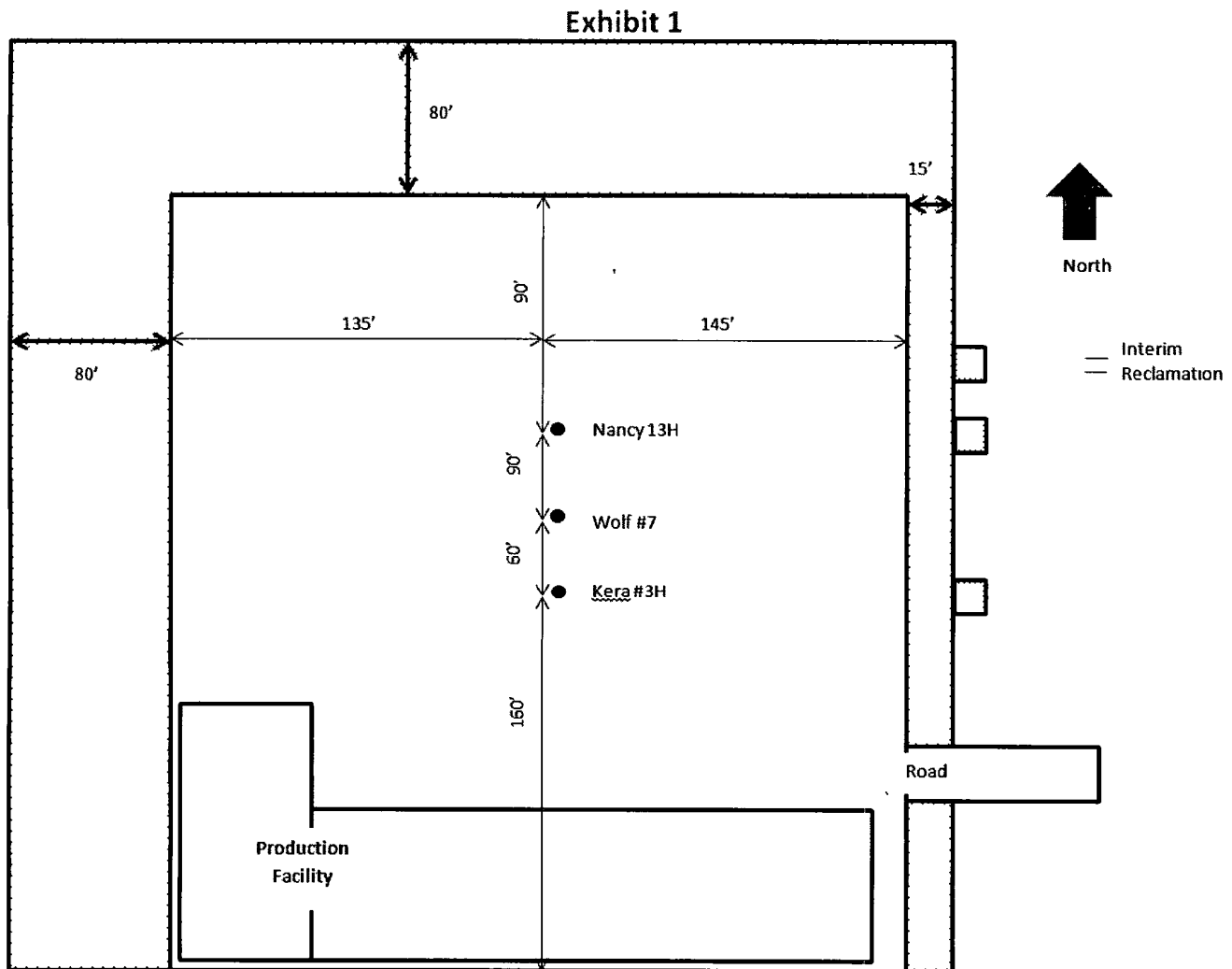
## V. SPECIAL REQUIREMENT(S)

### Constructing over a Reserve Pit

Yates shall not excavate any portion of the existing reserve pit area. No topsoil shall be stripped from the reserve pit area. Reclamation over the reserve pit area during interim reclamation or final reclamation must be satisfactory to the authorized officer. Yates must comply with OCD rules when drilling over a reserve pit.

### Interim Reclamation

Yates shall perform the maximum amount of interim reclamation on this location. Exhibit 1 of this document shows the minimum amount of interim reclamation the operator must perform. If it is discovered that the well pad can be downsized further, Yates is responsible for performing the task.



**Painting Requirement:**

All new and old 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

**Frac Pond Pipeline:**

Temporary Freshwater Pipelines (Fracturing Operations) CONDITIONS OF APPROVAL

Maintain a copy of your temporary permit and your approved route diagram on location. BLM personnel may request to see a copy of your permit during construction to ensure compliance with all conditions of approval.

Holder agrees to comply with the following conditions of approval to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this permit.
2. Standard Conditions of Approval:
  - Temporary pipelines must be removed within 30-45 days from this route unless granted in writing by the authorized officer.
  - Temporary pipelines flowing from the frac pond to the target well(s) will be laid along existing roadways.
  - Areas impacted (disturbed greater than vegetation compaction) by your project may require full reclamation.
  - Pipelines will be empty before disassembly. Flow water back to the pond whenever possible.
  - Do not restrict traffic on existing roads. Place ramps where needed.
  - Pipe will be placed not more than 2 feet off the edge of existing lease roads.
  - All pumps will be placed on existing disturbance (pads, roads, etc.).
3. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer.

**Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken:**

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00



am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leaks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

**Ground-level Abandoned Well Marker to avoid raptor perching:** Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

### **Communitization Agreement**

**A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.**

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

### **C. CLOSED LOOP SYSTEM**

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**

Payment shall be made to the BLM prior to removal of any federal mineral materials. 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**

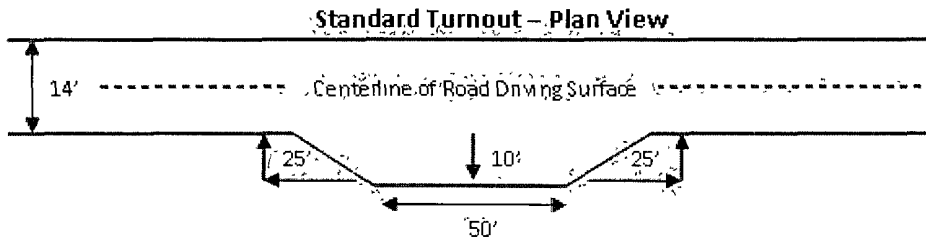
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

##### **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:

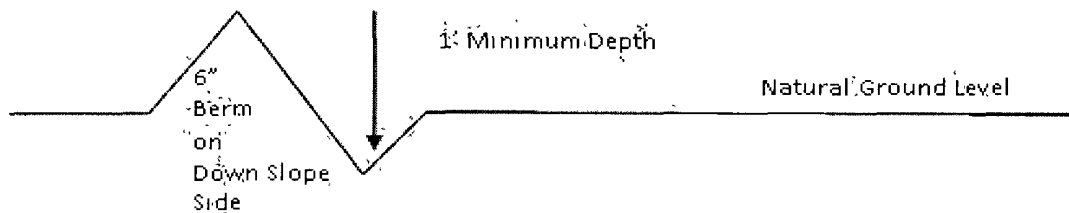


### Drainage

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

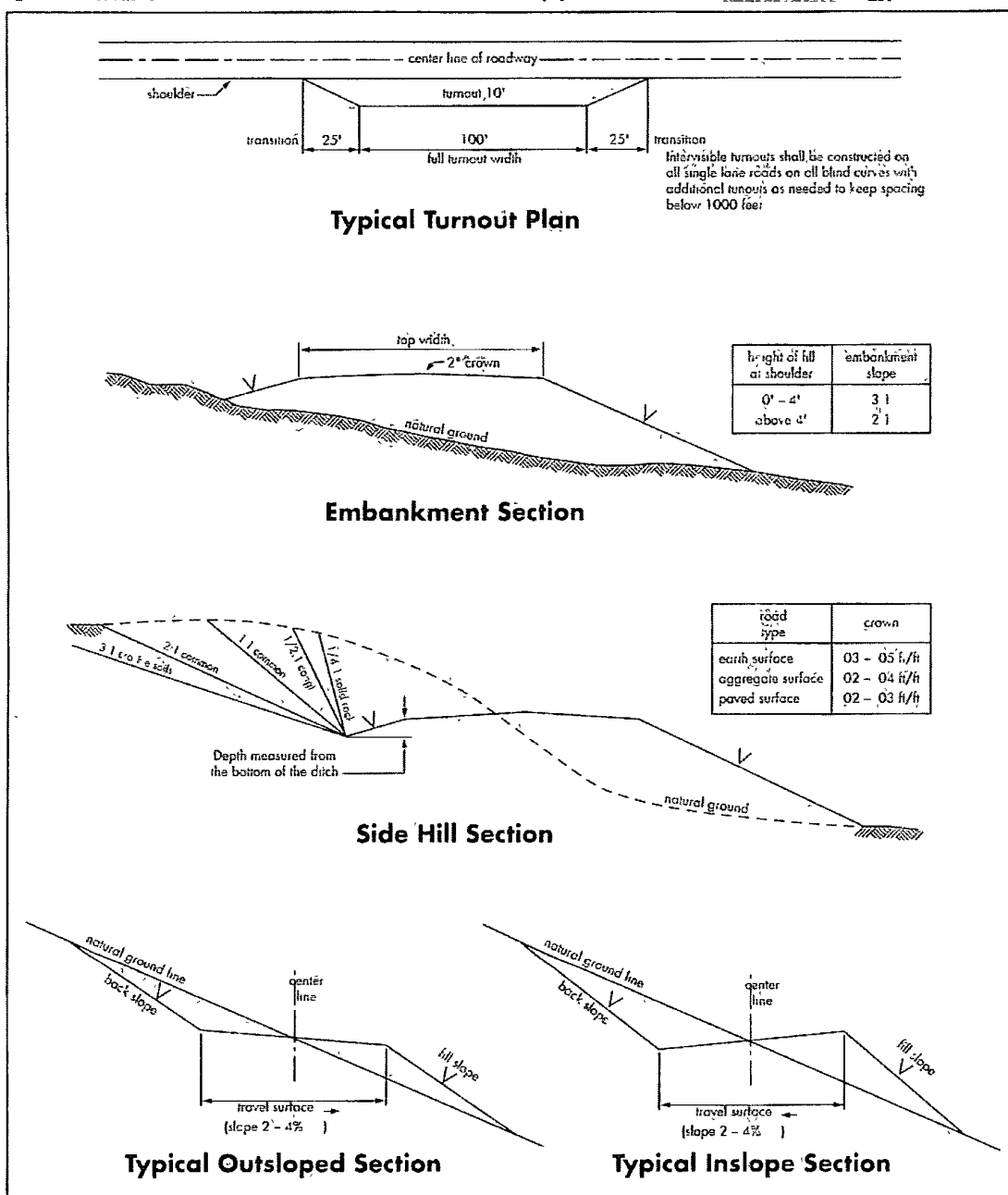
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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. **Due to recent H2S encounters in the salt formation, it is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide prior to drilling out the surface shoe. If Hydrogen Sulfide is encountered, please report measurements 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.**

**R-111-P Potash**

**Possible lost circulation within the Glorietta formation.**

**Possible water flows in the Blinebry formation.**

1. The **13-3/8** inch surface casing shall be set at **approximately 900 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** 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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

**Pilot hole is required to have a plug at the bottom of the hole. If two plugs are set, the BLM is to be contacted (575-361-2822) prior to tag of bottom plug, which must be a minimum of 190' in length. Operator can set one plug from bottom of pilot hole to kick-off point and save the WOC time for tagging the first plug.**

**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. Operator should have plans as to how they will achieve circulation on the next stage.
  - b. Second stage above DV tool, cement shall:
    - ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.
4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

**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. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
  - 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) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

- 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.

#### **D. DRILL STEM TEST**

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

#### **E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**DHW 072210**

## **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

## **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).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

## 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