

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**OCD Artesia**

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

5. Lease Serial No.  
NM-80645

6. If Indian, Allottee or Tribe Name  
N/A

1a. Type of work:  DRILL  REENTER

1b. Type of Well:  Oil Well  Gas Well  Other  Single Zone  Multiple Zone

7. If Unit or CA Agreement, Name and No.  
N/A

8. Lease Name and Well No.  
Lily ALY Federal #9H (15209)

2. Name of Operator YATES PETROLEUM CORPORATION (25575)

9. API Well No.  
30-015-41427

3a. Address 105 South Fourth Street Artesia, NM 88210  
3b. Phone No. (include area code)  
575-748-4372

10. Field and Pool, or Exploratory  
Ingle Wells Delaware (33745)

4. Location of Well (Report location clearly and in accordance with any State requirements.)\*  
At surface 330' FSL and 2000' FEL  
At proposed prod. zone 330' FNL and 1650' FEL

11. Sec., T. R. M. or Blk. and Survey or Area  
① - Section 3, T24S-R31E

14. Distance in miles and direction from nearest town or post office\*  
Approximately 24 miles east of Loving, New Mexico.

12. County or Parish  
Eddy County

13. State  
NM

15. Distance from proposed\* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)  
330'

16. No. of acres in lease  
320.11

17. Spacing Unit dedicated to this well  
NW/4/NE/4

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft.  
200'

19. Proposed Depth  
8453' TVD & 12613' TMD

20. BLM/BIA Bond No. on file  
NMB-000434 & NMB-000920

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3452' GL 3467'

22. Approximate date work will start\*  
05/01/2013

23. Estimated duration  
45 days

24: Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 an 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.

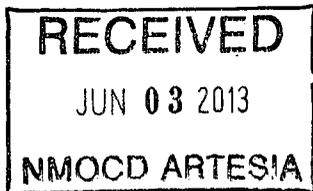
25. Signature *Cy Cowan* Name: (Printed/Typed) Cy Cowan Date 01/10/2013  
Title Land Regulatory Agent

Approved by (Signature) *Aden L Seidlitz* Name (Printed/Typed) NM STATE OFFICE Date MAY 21 2013  
Title STATE DIRECTOR 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 conduct 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 willfully 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.

(Continued on page 2)



Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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

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

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

DISTRICT IV  
220 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

Submit one copy to appropriate  
District Office

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number 30-015- <b>41427</b>	Pool Code 33745	Pool Name Ingle Wells Delaware
Property Code 15209	Property Name LILY "ALY" FEDERAL	Well Number 9H
OGRID No. 025575	Operator Name YATES PETROLEUM CORPORATION	Elevation 3467

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	3	24 S	31 E		330	SOUTH	2000	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
B	3	24 S	31 E		330	NORTH	1650	EAST	EDDY

Dedicated Acres 160.08	Joint or Infill	Consolidation Code	Order No.
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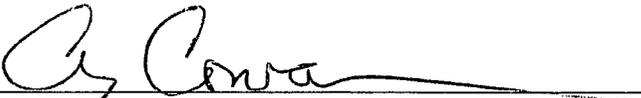
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	<p><b>BOTTOMHOLE LOCATION</b> Lat - N 32°15'09.93" Long - W 103°45'44.87" NMSPCE- N 456156.014 E 717814.586 (NAD-83)</p> <p>Project Area</p> <p>Producing Area</p>	<p>NM-80645</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>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.</p> <p><i>Cy Cowan</i> 1/11/13 Signature Date</p> <p>Cy Cowan Printed Name</p>
	<p>Penetration Point 806' FSL and 1964' FEL</p> <p><b>SURFACE LOCATION</b> Lat - N 32°14'24.17" Long - W 103°45'49.01" NMSPCE- N 451530.131 E 717483.044 (NAD-83)</p>		<p><b>SURVEYOR CERTIFICATION</b></p> <p>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.</p> <p>DECEMBER 10 2009 Date Surveyed</p> <p><i>Gary L. Jones</i> Signature &amp; Seal of Professional Surveyor 7977</p> <p>Certificate No. Gary L. Jones 7977</p> <p>BASIN SURVEYS</p>

CERTIFICATION  
YATES PETROLEUM CORPORATION  
Lily ALY Federal #9H

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; and an someone under employment of Yates Petroleum Corporation has 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 I, or the company I represent, am 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 10<sup>th</sup> day of JANUARY 20 13

Signature 

Name Cy Cowan

Position Title Land Regulatory Agent

Address 105 South Fourth Street, Artesia, New Mexico 88210

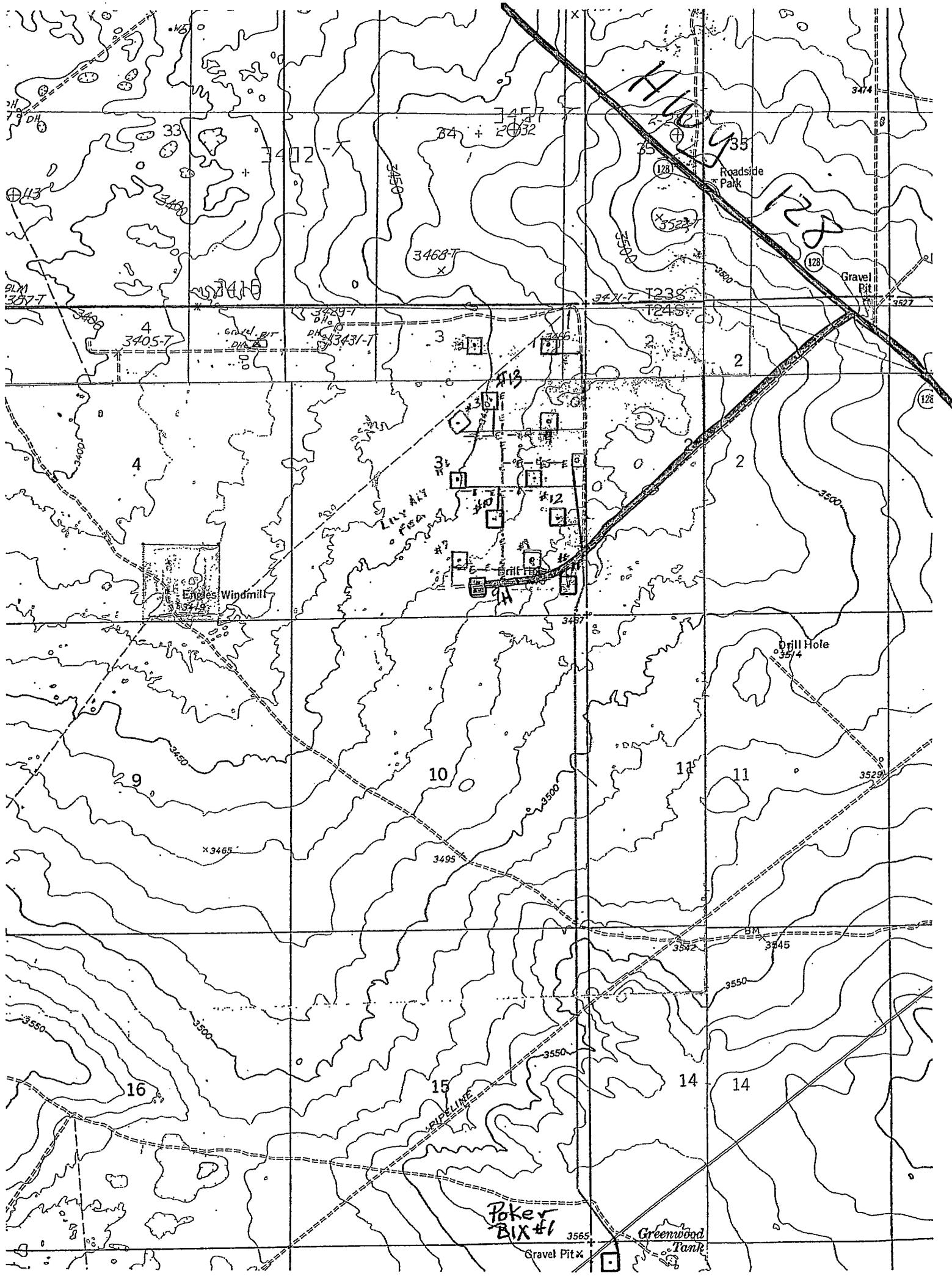
Telephone (505) 748-4372

Field Representative (if not above signatory) Tim Bussell, Drilling Supervisor

Address (if different from above) Same as above.

Telephone (if different from above) (505) 748-4221

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



Hills

Roadside Park

Gravel Pit

Engles Windmill

Drill Hole

Poker Box #1

Greenwood Tank

PIPELINE

128

128

10

11

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16

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14

14

3468-T

3405-7

3431-T

T238

T245

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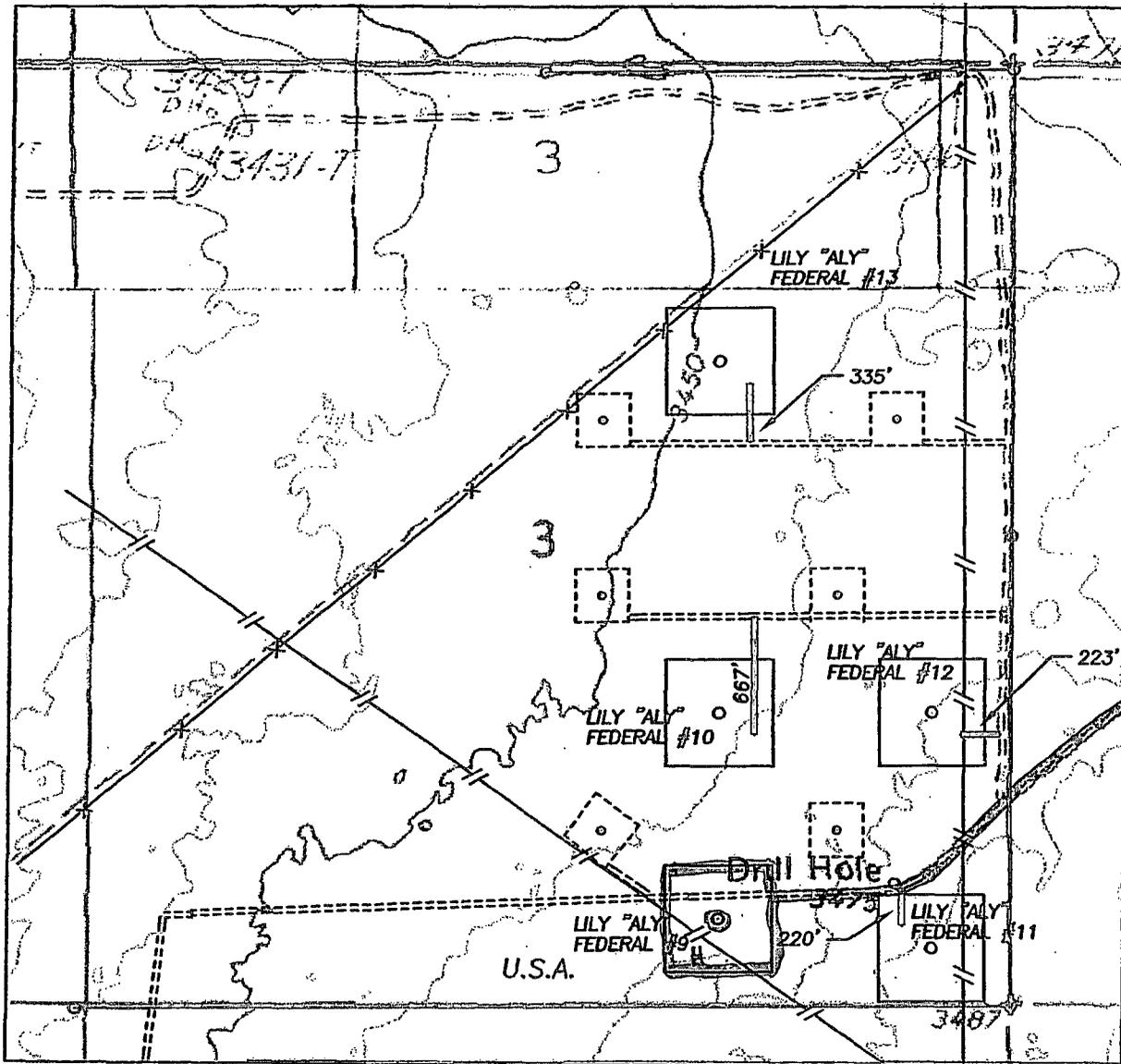
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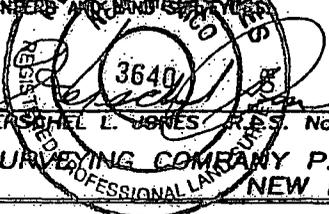
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SECTION 3, TOWNSHIP 24 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO.



THE PREPARATION OF THIS PLAT AND THE PERFORMANCE OF THE SURVEY UPON WHICH IT IS BASED WERE DONE UNDER MY DIRECTION AND THE PLAT ACCURATELY DEPICTS THE RESULTS OF SAID SURVEY AND MEET THE REQUIREMENTS OF THE STANDARDS FOR LAND SURVEYS IN NEW MEXICO AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS.



GENERAL SURVEYING COMPANY P.O. BOX 1928  
LOVINGTON, NEW MEXICO 88260

1000' 0 1000' 2000'  
Scale 1" = 1000'

**YATES PETROLEUM CORP.**

LEASE ROAD TO ACCESS THE YATES LILY "ALY" FEDERAL #0, 10, 11, 12, & 13 WELLS, LOCATED IN SECTION 3, TOWNSHIP 24 SOUTH, RANGE 31 EAST, NMPM, EDDY COUNTY, NEW MEXICO.

Survey Date: 8/01/2006	Sheet 1 of 1 Sheets
Drawn By: Ed Blovins	W.O. Number
Date: 8/01/06	Scale 1" = 1000' LILY WELLS



**YATES PETROLEUM CORPORATION**  
**Lily ALY Federal #9H**  
 330' FSL & 2000' FEL, Surface Hole  
 330' FNL & 1650' FEL, Bottom Hole  
 Section 3-T24S-R31E  
 Eddy County, New Mexico

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

Rustler	650'	Brushy Canyon	7050' oil
Top of Salt	990'	Brushy Canyon Marker	8172'
Base of Salt	4140'	Target Formation	8453' oil
Bell Canyon	4410' oil	TD	12609' TMD
Cherry Canyon	5320' oil		

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

Water: Approximately 168'

Oil or Gas: See above.

3. Pressure Control Equipment: BOP with a minimum opening of 13 5/8" will be installed on the 13 3/8" and 9 5/8" casing and rated for 3000 BOP systems will be consistent with API RP 53. Pressure tests to 3000 PSI and held for 30 minutes 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.

Auxiliary Equipment:

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

4. THE PROPOSED CASING AND CEMENTING PROGRAM:

A. Casing Program: (All New)

<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	0-675'	675'
12 1/4"	9 5/8"	40#	J-55	LT&C	0-80'	80'
12 1/4"	9 5/8"	36#	J-55	LT&C	80'-3200'	3120'
12 1/4"	9 5/8"	40#	J-55	LT&C	3200'-4200'	1000'
12 1/4"	9 5/8"	40#	HCK-55	LT&C	4200'-4510' <sup>430'</sup>	310'
8 3/4"	5 1/2"	17#	P-110	Buttress	0-12613'	12613" TMD

*See COA*

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

Well will be drilled vertically to TD at 7703'. Well will be kicked off at 12 degrees per 100' with a 8 3/4" hole to (8453') MD (8180' TVD) where 5 1/2" casing will be set and cemented with a DV /Stage Packer tool between 4550' and 5050 and a DV/Stage Packer tool between 7200' and 7700'. If the DV/Stage tools are moved the cement will be adjusted proportionately. Penetration point of producing zone will be encountered at 806" FSL & 1966' FEL, Section 3-24S-32E. Deepest TVD in the well is 8180' in the lateral.

**B. CEMENTING PROGRAM:**

Surface casing: 385 sack Class "C" with CaCl<sub>2</sub> (Wt 13.50 Yld 1.71), Tail in w/ 200 sacks Class "C" with CaCl<sub>2</sub> (YLD Wt 14.80 Yld 1.34). Cement designed with 100% excess. TOC will be surface.  
*13 3/4*

Intermediate Casing: 1285 sacks 35:65:6PzC (WT 12.50 Yld 2.00); Tail in w/ 200 sacks Class "C" with CaCl<sub>2</sub> (WT. 14.8 Yld 1.34). Cement designed with 100% excess. TOC will be surface.  
*9 5/8*

Production Casing Stage 1: 160 sacks of 35:65:6PzC. Tail in 1020 sacks PecosVILt with Fresh Water=9.297 gal/sack; D151-CaCO<sub>3</sub> weight=30% BWOC; D174-Expanding Ce=1.5% BWOC; D046-Antifoam=.2% BWOC; D800-Retarder=.6% BWOC; D112-Fluid Loss=.5% BWOC; D208-Viscosifer=.1% BWOC (Wt 13.00 Yld 1.41). Cement designed with 35% excess. TOC will be approximately 7450'. DV Tool at approximately 7450'. If the DV tool is moved the cement will be adjusted proportionally.  
*5 1/2*

Production Casing Stage 2: Lead with 385 sacks of 35:65:6PzC (Wt 12.50 Yld 2.00). Tail in with 100 sacks PecosVILt with Fresh Water=9.297 gal/sack; D151-CaCO<sub>3</sub> weight=30% BWOC; D174-Expanding Ce=1.5% BWOC; D046-Antifoam=.2% BWOC; D800-Retarder=.6% BWOC; D112-Fluid Loss=.5% BWOC; D208-Viscosifer=.1% BWOC (Wt 13.00 Yld 1.41). Cement designed with 35% excess. TOC will be 4800'. DV Tool at approximately 4800'. If the DV tool is moved the cement will be adjusted proportionally.

Production Casing Stage 3: Lead with 750 sacks of 35:65:6PzC (Wt. 12.50 Yld. 2.00). Tail in with 100 sacks Class C with CaCl<sub>2</sub> (Wt. 14.80 Yld. 1.34). Cement designed with 35% excess. TOC will be surface.

5. Mud Program and Auxiliary Equipment:

<u>Interval</u>	<u>Type</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0-675'	Fresh Water	8.60-9.20	35-40	N/C
675'-4510' <i>4300'</i>	Brine	10.00-10.20	28-28	N/C
4510'-12613''	Cut Brine	8.70-9.00	28-29	<15cc

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. The slow pump speed will be recorded on the daily drilling report after mudding up. A mud test will be performed every 24 hours after mudding up to determine, as applicable: density, viscosity, gel strength, filtration, and pH. After surface casing is set an electronic PVT system will be installed as our primary mud level monitoring system. A secondary system will also be implemented as to insure the PVT system is functioning properly. The secondary system will be comprised of the derrick hand visually checking the fluid level in the pits periodically using a nut on the end of a rope hanging just above the fluid level in the pit.

6. EVALUATION PROGRAM:

Samples: Samples every 30' to 4510', 10' samples to 4510'-TD.  
Logging: Gamma Ray Neutron TD to surface; Density TD to intermediate casing (4510'); Laterolog TD to intermediate casing (4510'); CMR TD to intermediate casing (4510').  
Coring: None Anticipated.  
DST's: As warranted.  
Mudlogging surface casing (675) to TD.

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

From:	0	TO:	675'	Anticipated Max.	BHP:	323	PSI
From:	675'	TO:	4510' <sup>4300</sup>	Anticipated Max.	BHP:	2392	PSI
From:	4510' <sup>4300</sup>	TO:	8180'	Anticipated Max.	BHP:	3828	PSI

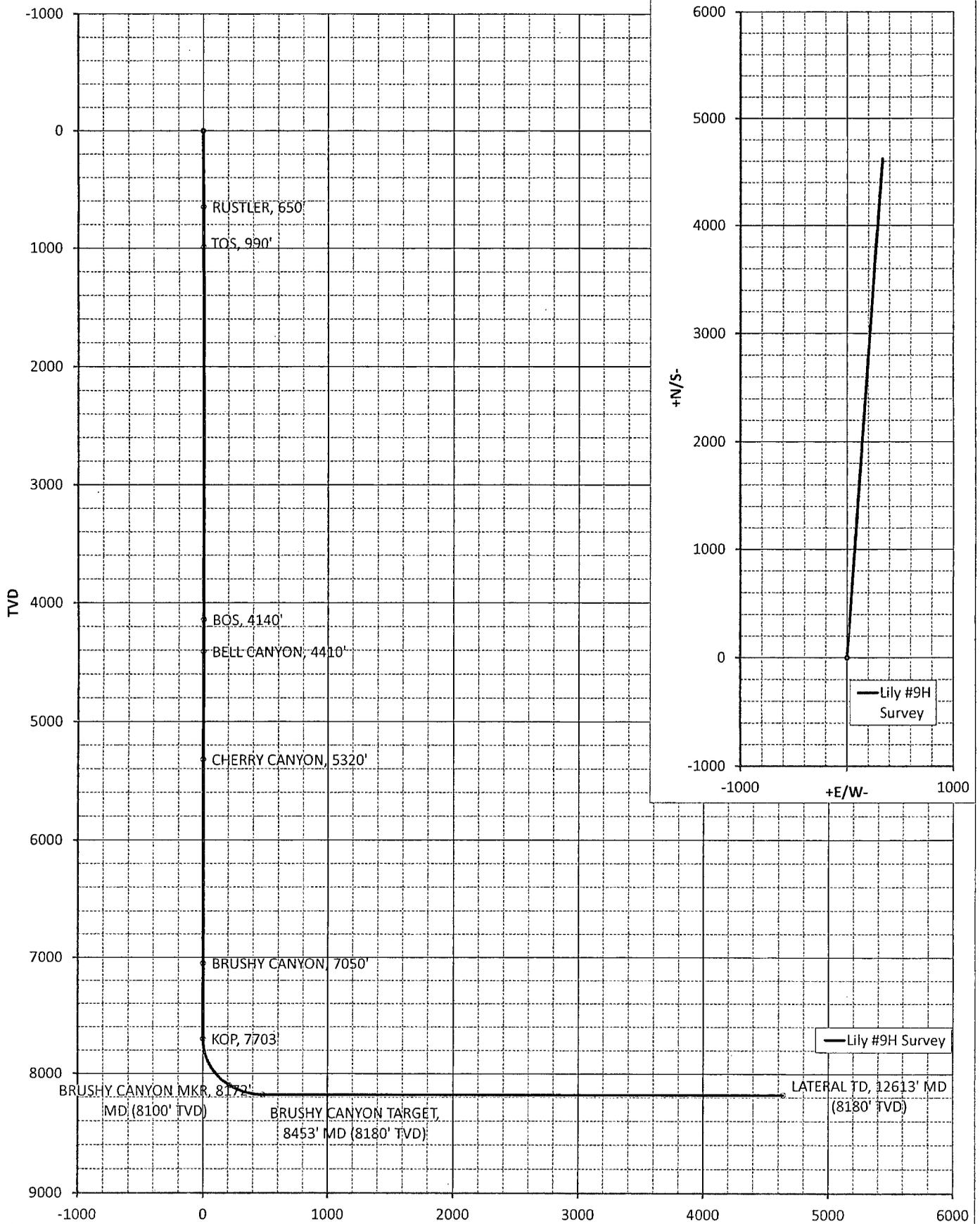
No abnormal pressures or temperatures are anticipated.  
Lost Circulation Zones Anticipated: None.  
H2S Zones Anticipated: None  
Maximum Bottom Hole Temperature: 168 F

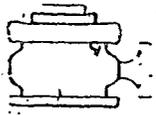
8. ANTICIPATED STARTING DATE:

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

Survey/Planning Report										
Operator	Yates Petroleum Corp.			Northing				Date	10-Jan-13	
Dir. Co.	Yates Petroleum Corp.			Easting				System	2 - St. Plane	
Well Name	Lily #9H Survey			Elevation				Datum	1983 - NAD83	
Location	Sec. 3, 24S-31E			Latitude				Zone	4302 - Utah Central	
Rig				Longitude				Scale Fac.		
Job				Units	Feet			Converg.		
MD	INC	AZI	TVD	N/S	E/W	VS@4:1°	ER	TR	DLS	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
650.00	0.00	0.00	650.00	0.00	0.00	0.00	0.00	0.00	0.00	
650 RUSTLER, 650'										
990.00	0.00	0.00	990.00	0.00	0.00	0.00	0.00	0.00	0.00	
990 TOS, 990'										
4140.00	0.00	0.00	4140.00	0.00	0.00	0.00	0.00	0.00	0.00	
4140 BOS, 4140'										
4410.00	0.00	0.00	4410.00	0.00	0.00	0.00	0.00	0.00	0.00	
4410 BELL CANYON, 4410'										
5320.00	0.00	0.00	5320.00	0.00	0.00	0.00	0.00	0.00	0.00	
5320 CHERRY CANYON, 5320'										
7050.00	0.00	0.00	7050.00	0.01	0.00	0.01	0.00	0.00	0.00	
7050 BRUSHY CANYON, 7050'										
7702.54	0.00	4.10	7702.54	0.01	0.00	0.01	0.00	0.05	0.00	
7702.54 KOP, 7703'										
7800.00	11.70	4.10	7799.32	9.89	0.71	9.92	12.00	0.00	12.00	
7900.00	23.70	4.10	7894.42	40.16	2.88	40.26	12.00	0.00	12.00	
8000.00	35.70	4.10	7981.13	89.48	6.41	89.71	12.00	0.00	12.00	
8100.00	47.70	4.10	8055.66	155.71	11.16	156.11	12.00	0.00	12.00	
8172.12	56.35	4.10	8099.99	212.36	15.22	212.91	12.00	0.00	12.00	
8172.12 BRUSHY CANYON MKR, 8172' MD (8100' TVD)										
8200.00	59.70	4.10	8114.75	235.95	16.91	236.55	12.00	0.00	12.00	
8300.00	71.70	4.10	8155.84	326.68	23.41	327.52	12.00	0.00	12.00	
8400.00	83.70	4.10	8177.11	423.96	30.39	425.05	12.00	0.00	12.00	
8452.53	90.00	4.10	8180.00	476.25	34.13	477.47	12.00	0.00	12.00	
8452.53 BRUSHY CANYON TARGET, 8453' MD (8180' TVD)										
12612.82	90.00	4.10	8180.01	4625.89	331.54	4637.75	0.00	0.00	0.00	
12612.82: LATERAL TD, 12613' MD (8180' TVD)										



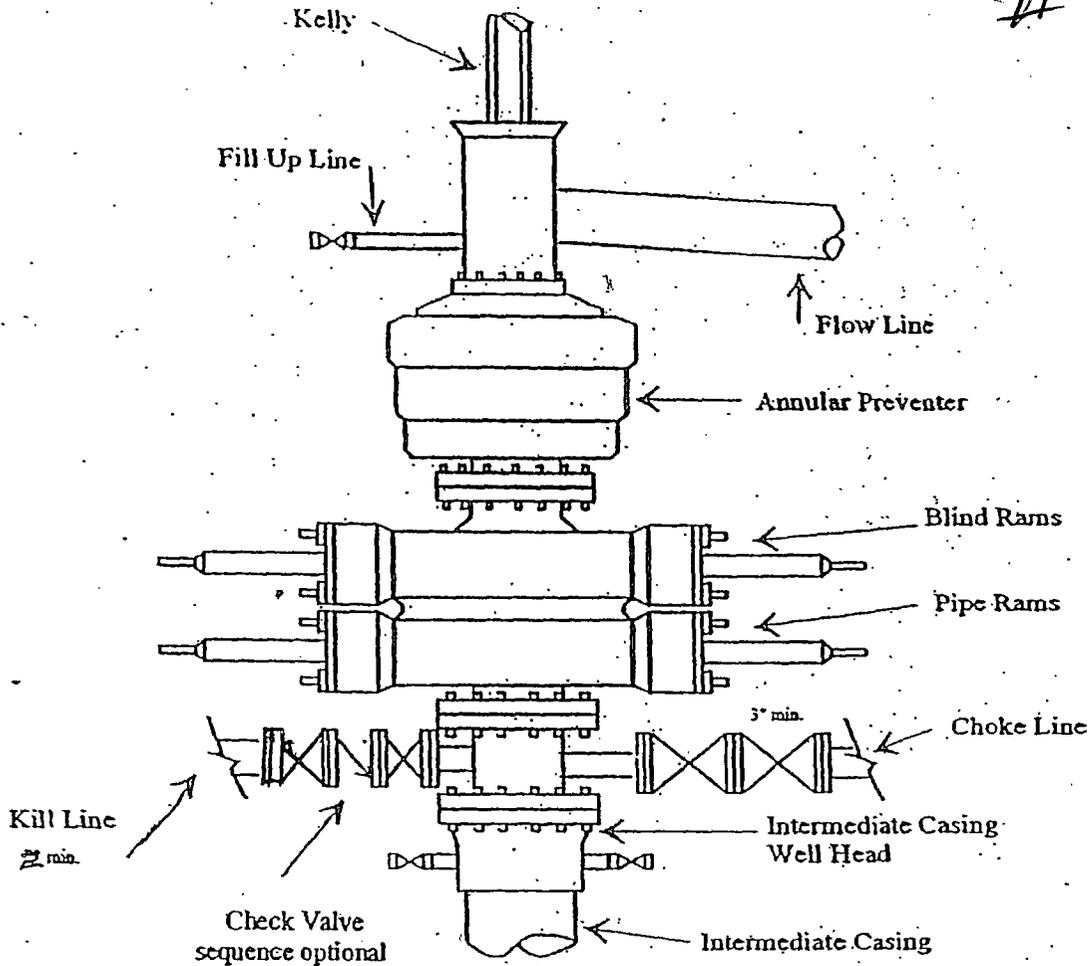




Yates Petroleum Corporation  
 Typical 3,000 psi Pressure System  
 Schematic  
 Annular with Double Ram Preventer Stack

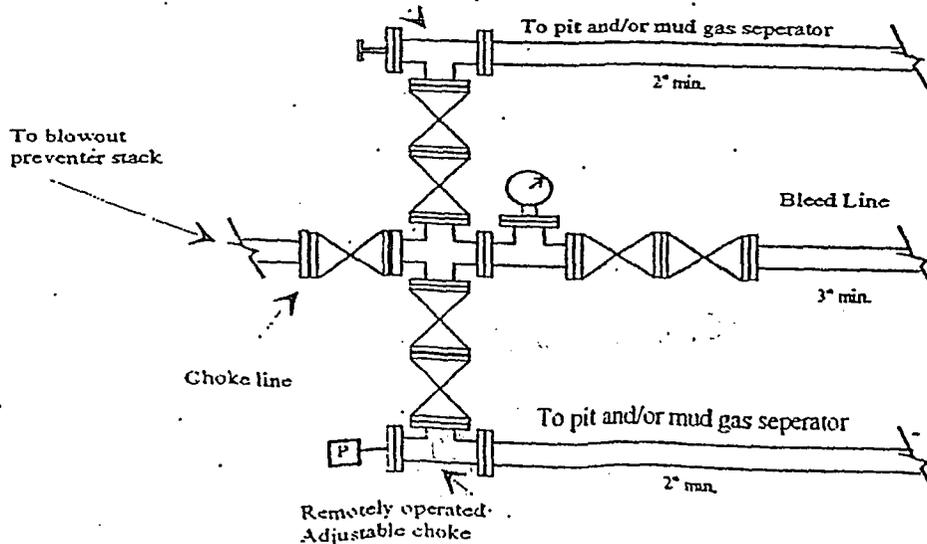
BOP-3

*Lily Aly Fed  
 # 9H*



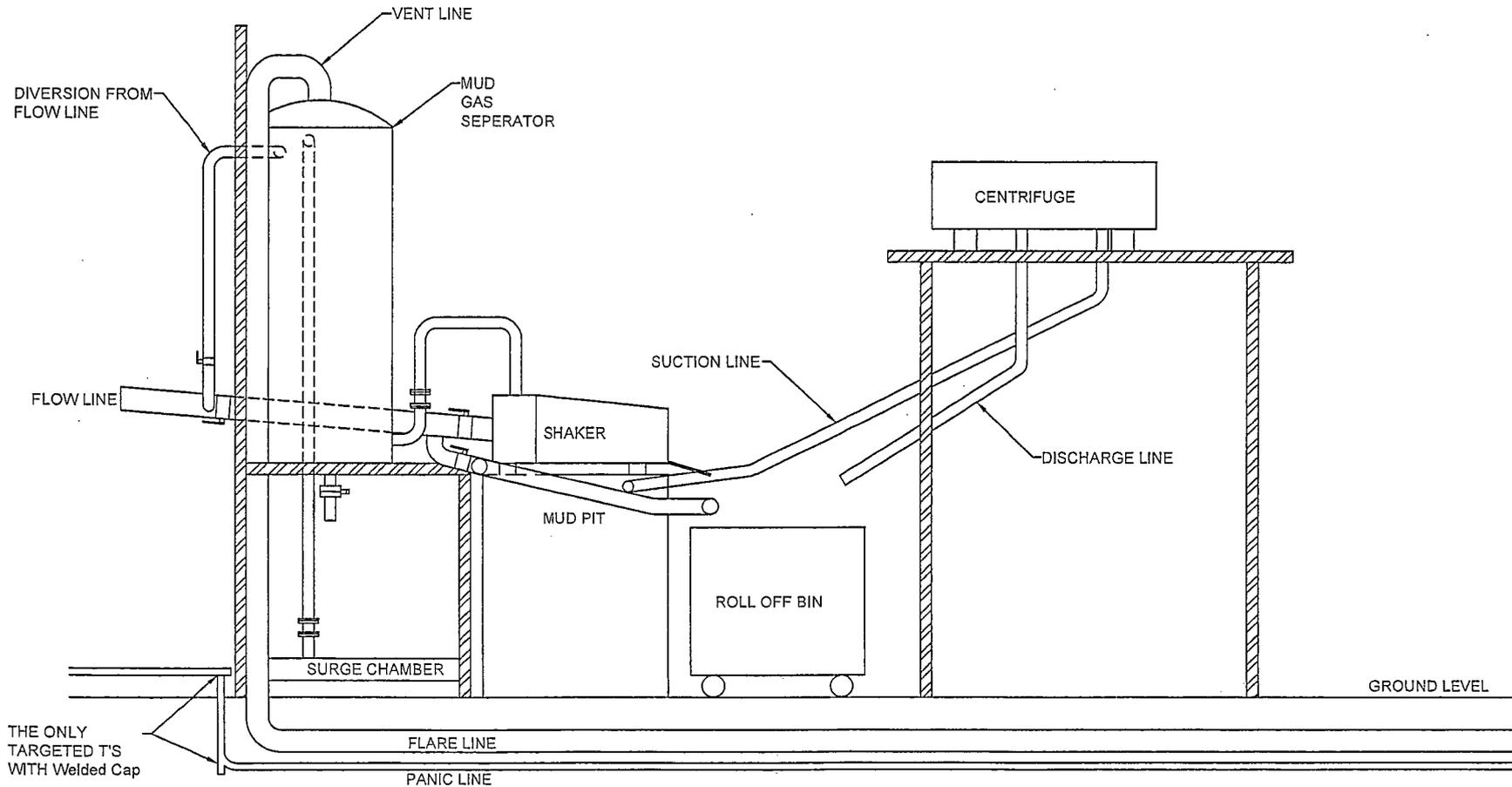
Typical 3,000 psi choke manifold assembly with at least these minimum features

Adjustable choke



# YATES PETROLEUM CORPORATION

## Piping from Choke Manifold to the Closed Loop Drilling Mud System



The flare discharge must be 100' from wellhead for non H2S wells and 150' from wellhead for wells expected to encounter H2S.

# Yates Petroleum Corporation Closed Loop System

## Equipment Design Plan

Closed Loop System will consist of:

1 – double panel shale shaker

1 – (minimum ) Centrifuge, certain wells and flow rates may require 2 centrifuges

On certain wells, the Centrifuge will be replaced by a Clackco Settling Tank System

1 – minimum centrifugal pump to transfer fluids

2- 500 bbl. FW Tanks

1 – 500 bbl. BW Tank

1 – half round frac tank – 250 bbl. capacity as necessary to catch cement / excess mud returns generated during a cement job.

1 Set of rail cars / catch bins

Certain wells will use an ASC Auger Tank

## Operation Plan

All equipment will be inspected at least hourly by rig personnel and daily by contractors' personnel.

Any spills / leaks will be reported to YPC, NMOCD, and cleaned up without delay.

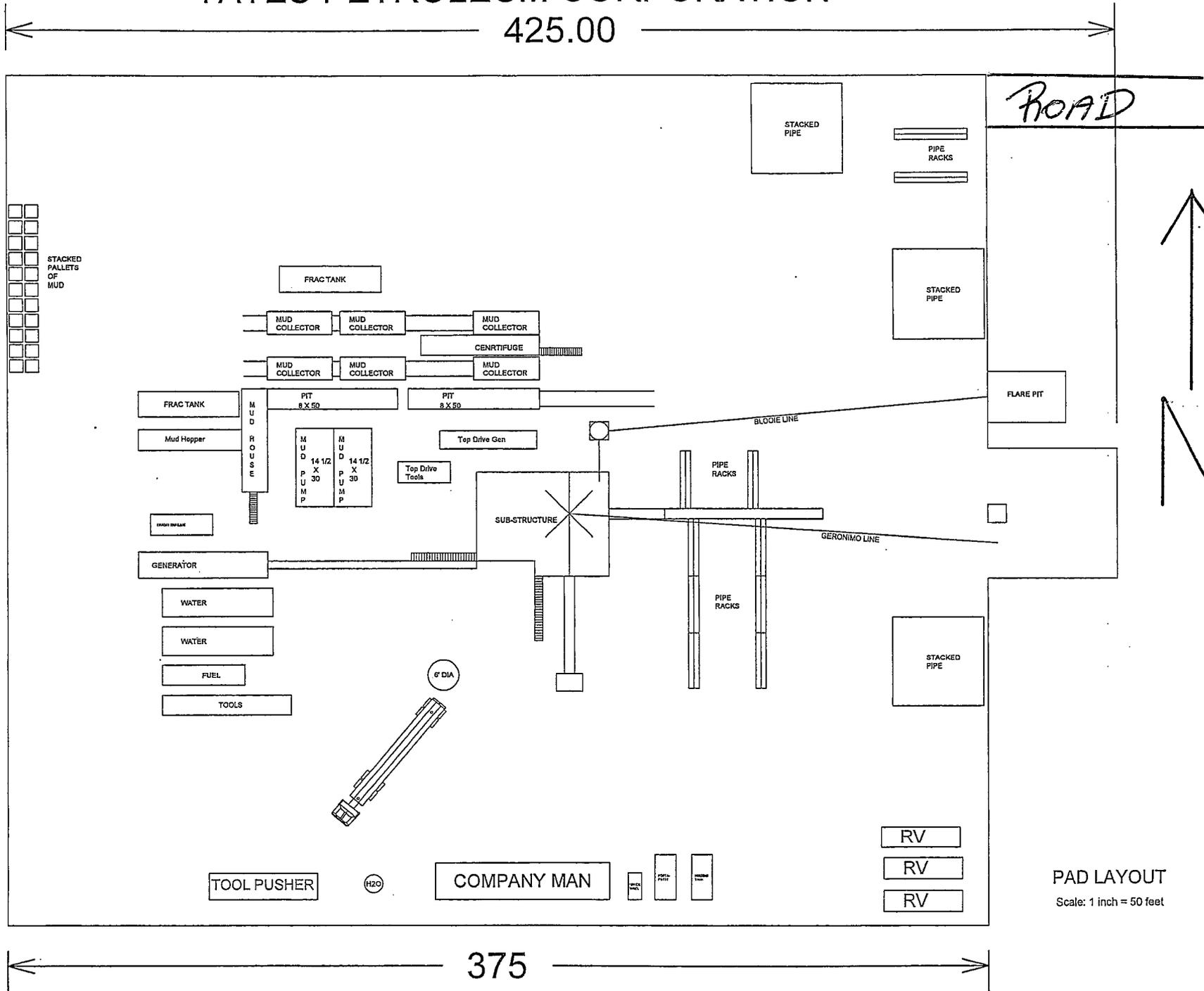
## Closure Plan

Drilling with Closed Loop System, haul off bins will be taken to Gandy Marley, Lea Land Farm, CRI or Sundance Services Inc.

# YATES PETROLEUM CORPORATION

425.00

330



PAD LAYOUT  
Scale: 1 inch = 50 feet

375

# Yates Petroleum Corporation

105 S. Fourth Street  
Artesia, NM 88210

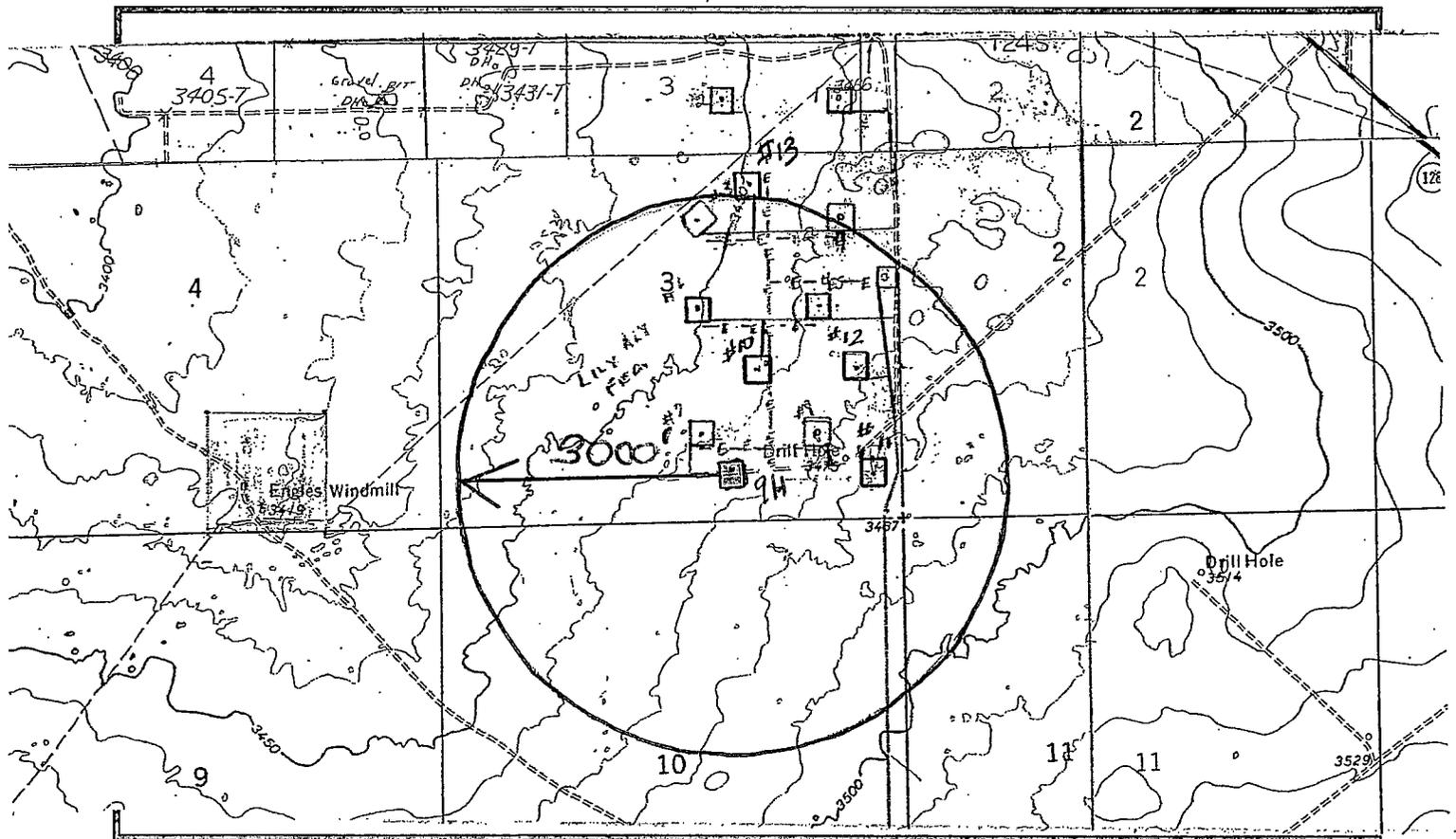
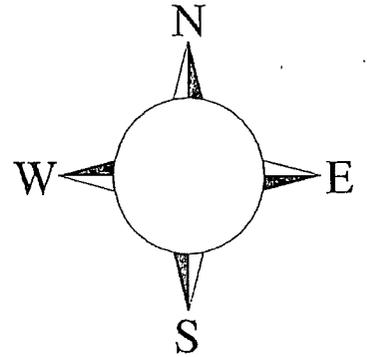
## Hydrogen Sulfide (H<sub>2</sub>S) Contingency Plan

For

Lily ALY Federal #9H  
330' FSL and 2000' FEL  
Section 3, T-24-S, R-31-E  
Eddy County, NM

## Lily ALY Federal #9H

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***

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YPC Office .....	(575) 748-1471
Pinson McWhorter/Operations Manager .....	(575) 748-4189
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

# Yates Petroleum Corporation

## Hydrogen Sulfide Drilling Operation Plan

### I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H<sub>2</sub>S on metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and H<sub>2</sub>S Contingency Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operation Plan and the H<sub>2</sub>S Contingency Plan. **The location of this well does not require a Public Protection Plan.**

## II. H2S SAFETY EQUIPMENT AND SYSTEMS

NOTE: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S.

### 1. Well Control Equipment:

- A. Flare line
- B. Choke manifold
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

### 2. Protective equipment for essential personnel:

- A. Mark II Survive Air (or equivalent) 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

### 3. H2S detection and monitoring equipment:

- A. 3 portable H2S monitors positioned at: Shale Shaker, Bell Nipple, and Rig Floor. These units have warning lights and audible sirens when H2S levels of 10 PPM are reached.

### 4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram (attached).
- B. Caution/Danger signs (attached) shall be posted on roads providing direct access to location. Signs will be painted with high visibility yellow with black lettering of a sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

### 5. Mud program:

- A. The mud program has been designed to minimize the volume of H2S circulated to the surface. Proper mud weight, safe drilling practices and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

### 6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- B. All elastomers used for packing and seals shall be H2S trim.

**7. Communication:**

- A. Cellular communications in company vehicles.
- B. Land line (telephone) communication at the Office.

**8. Well testing:**

- A. There will be no drill stem testing.

**EXHIBIT**

**DANGER  
POISONS GAS  
HYDROGEN SULFIDE  
NORMAL OPERATIONS**

(GREEN)

 **CAUTION POTENTIAL DANGER**

(YELLOW)

**DANGER POISONS GAS ENCOUNTERED**

(RED) **AUTHORIZED PERSONAL ONLY.**

 **LOCATION SECURED.**

**1-575-746-1096  
1-877-879-8899**

EDDY COUNTY EMERGENCY NUMBERS

ARTESIA FIRE DEPT. 575-746-5050  
9308  
ARTESIA POLICE DEPT. 575-746-5000  
9285  
EDDY CO. SHERIFF DEPT. 575-746-9888  
396-1196

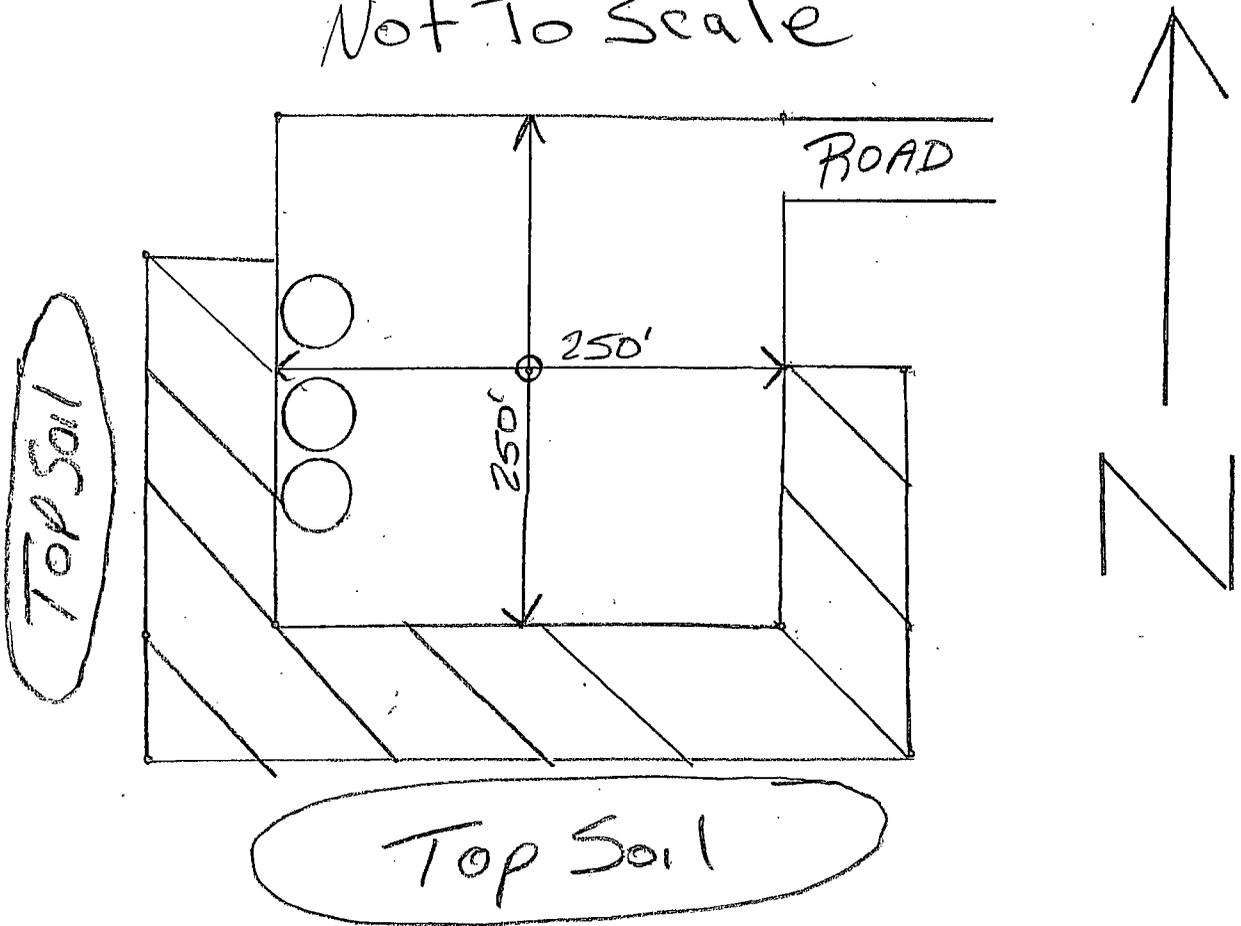
LEA COUNTY EMERGENCY

HOBBS FIRE DEPT. 575-397-  
HOBBS POLICE DEPT. 575-397-  
LEA CO. SHERIFF DEPT. 575-

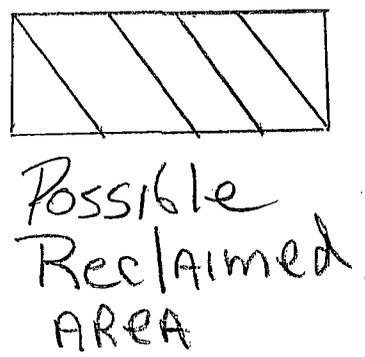


Lily ALY  
FED #9H

Not To Scale



Final Reclamation  
May look Different  
than this Plan.



**MULTI-POINT SURFACE USE AND OPERATIONS PLAN**  
**Yates Petroleum Corporation**  
**Lily ALY Federal #9H**  
330' FSL & 2000' FEL Surface Hole Location  
330' FNL and 1650' FEL Bottom Hole Location  
Section 3-T24S-R31E  
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 24 miles east of Loving, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go east of Carlsbad on Highway 62-180 to State Road 31. Turn south on 31 and go to Highway 128 (Jal Highway). Turn left on HWY 128 and go approximately 16.3 miles to just before Red Road (CR-798). Turn right here on lease road with a cattleguard going south and go approximately 1.2 miles. No new road will be necessary as the existing road will go to the northeast corner of the proposed well location.

2. PLANNED ACCESS ROAD.

- A. No new access road will be constructed since the existing lease road goes through the location.
- B. The existing road will be 14 feet in width (driving surface) and will be adequately drained to control runoff and soil erosion.
- C. The existing road may be bladed with drainage on one side. Traffic turnouts may be built.
- D. The route of the road is visible.
- E. Existing roads will be maintained in the same or better condition.

3. LOCATION OF EXISTING WELL

- A. There is drilling activity within a one-mile radius of the wellsite.
- B. The exhibit 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 fresh water will be obtained from commercial sources and will be hauled to the location by truck over the existing and proposed roads shown in the exhibit.

6. SOURCE OF CONSTRUCTION MATERIALS:

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

7. METHODS OF HANDLING WASTE DISPOSAL:

- A. This well will be drilled with a closed loop system
- 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. Drilling fluids will be removed after drilling and completions are completed.
- D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
- E. Oil produced during operations will be stored in tanks until sold.
- F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- G. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not approved.

8. ANCILLARY FACILITIES: None

9. WELLSITE LAYOUT:

- A. Exhibit C shows the relative location and dimensions of the well pad, location of the drilling equipment, pulling unit orientation and access road approach. 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.
- B. 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:

Surface Estate Bureau of Land Management  
620 East Greene Street, Carlsbad, NM 88220.

Mineral Estate: Bureau of Land Management  
620 East Greene Street, Carlsbad, NM 88220

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.

# PECOS DISTRICT CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Yates Petroleum Corporation
<b>LEASE NO.:</b>	NMNM-80645
<b>WELL NAME &amp; NO.:</b>	Lily ALY Federal 9H
<b>SURFACE HOLE FOOTAGE:</b>	0330' FSL & 2000' FEL
<b>BOTTOM HOLE FOOTAGE:</b>	0330' FNL & 1650' FEL
<b>LOCATION:</b>	Section 3, T. 24 S., R 31 E., NMPM
<b>COUNTY:</b>	Eddy County, New Mexico

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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.

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## **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)

### **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 leks 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.

## **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) 234-5909 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 twenty-five (25) 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**

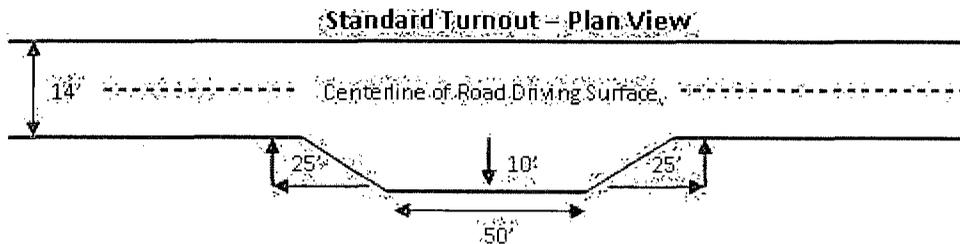
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**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:

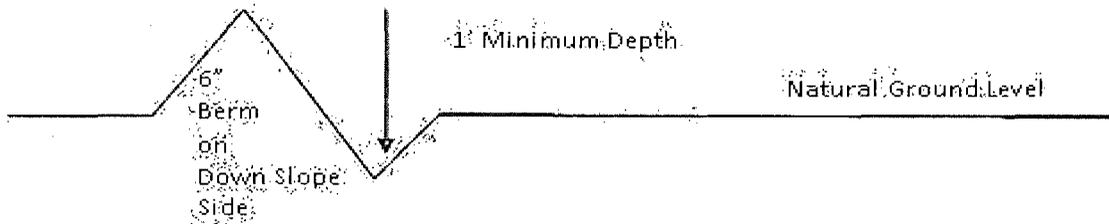


**Drainage**

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

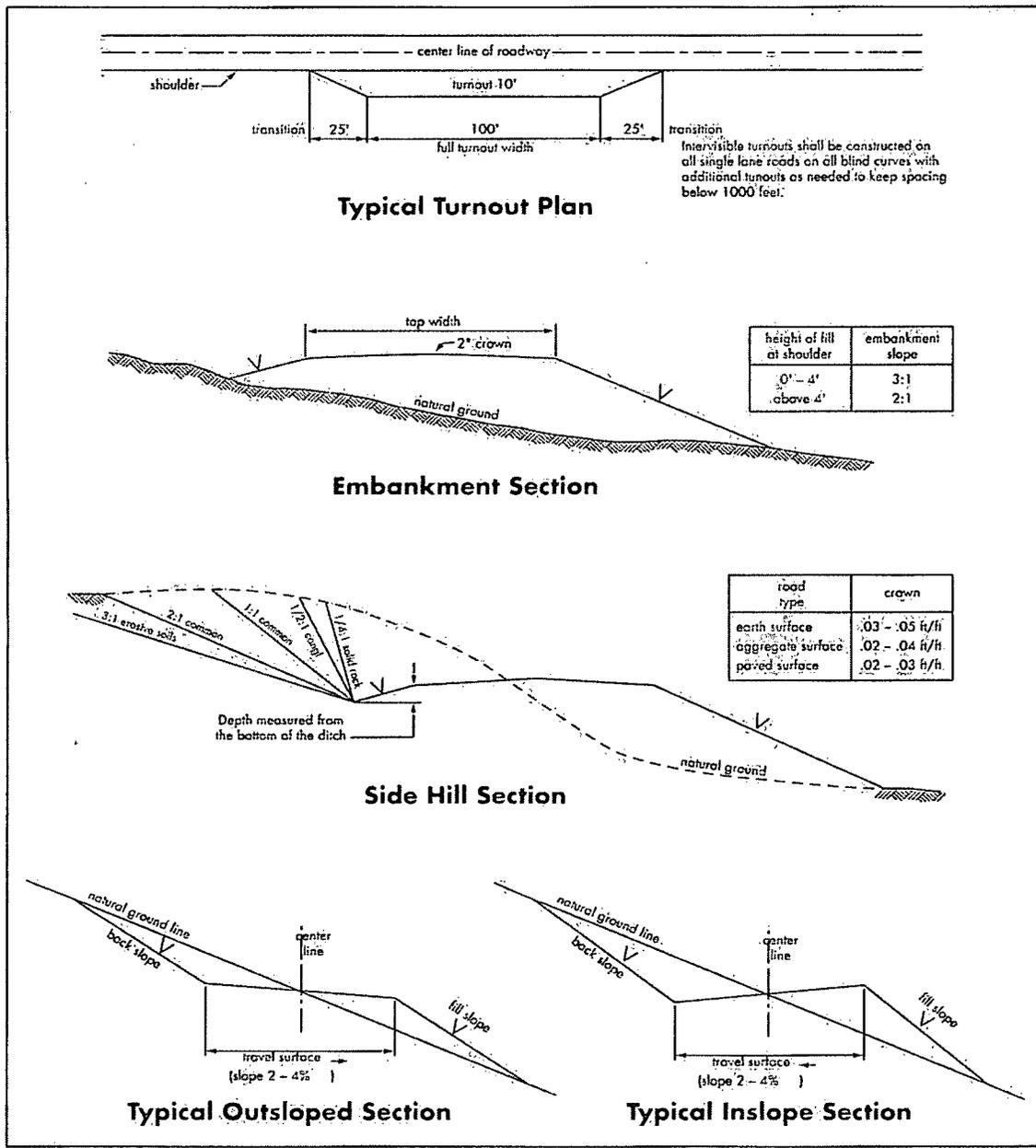
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

**Eddy County**

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

1. **Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is encountered in quantities greater than 10 PPM the well shall be shut in and H<sub>2</sub>S equipment shall be installed and flare line must be extended pursuant to Onshore Oil and Gas Order #6. After detection, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items.**
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 shall 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 program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).**

**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**

**Possibility of water and brine flows in the Salado, Castile, Delaware, and Bone Spring.**

**Possibility of lost circulation in the Delaware and Bone Spring.**

1. The **13-3/8** inch surface casing shall be set at approximately **675** feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler**) 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 **8-5/8** inch intermediate casing, which shall be set at approximately **4300** feet, is:

Cement to surface. If cement does not circulate see B.1.a, c-d above.

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

**Operator has proposed two DV tools at depths of 7450' and 4800', but will adjust cement proportionately if moved. The first DV tool shall be set between the KOP and below or at the top of the Brushy Canyon. The second shall be set a minimum of 50' below the previous casing shoe with no specified bottom depth. Operator shall submit a sundry if either DV tool cannot be set within its range.**

- a. First stage to DV tool:

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 to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with third stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

- c. Third stage above DV tool:

Cement to surface. If cement does not circulate see B.1.a, c-d above.

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.
  - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
3. 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 test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.
  - d. The results of the test shall be reported to the appropriate BLM office.
  - e. 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.**
  - f. 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. This test shall be performed prior to the test at full stack pressure.

#### **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.

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## **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 from the BLM Standard Environmental Color Chart (CC-001: June 2008).

### **B. PIPELINES**

Not applied for in resubmittal.

### **C. ELECTRIC LINES**

Not applied for in resubmittal.

## **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 1, for Loamy Sites

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

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

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

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