

HOBBS OCD

OCD Hobbs

14-951

Form 3160-3  
(March 2012)

OCT 27 2016

R-111-POTASH

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

RECEIVED

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT


## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM 112933 <sup>9</sup>	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name N/A	
2. Name of Operator NADEL AND GUSSMAN PERMIAN, L.L.C. (155615)		7. If Unit or CA Agreement, Name and No. N/A	
3a. Address 601 NORTH MARIENFELD, SUITE 508 MIDLAND, TX 79701		8. Lease Name and Well No. TONTO FEDERAL COM #2H (717070)	
3b. Phone No. (include area code) (432) 682-4429		9. API Well No. 30-025-43466	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 1865' FSL, 2276' FEL - UL J - Section 32, T19S, R33E At proposed prod. zone 1865' FSL, 2310' FWL - UL K - Section 33, T19S, R33E		10. Field and Pool, or Exploratory GEM; BONE SPRING (27220)	
14. Distance in miles and direction from nearest town or post office* 17 MILES SOUTH OF MALJAMAR		11. Sec., T. R. M. or Blk. and Survey or Area SEC. 32 & 33, T19S, R33E	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1865' FT		12. County or Parish LEA	
16. No. of acres in lease 160		13. State NM	
17. Spacing Unit dedicated to this well 160		18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 110 Ft - Tonto State #1	
19. Proposed Depth TVD - 10,012' MD - 14,392'		20. BLM/BIA Bond No. on file NM #2812	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3567' GL		22. Approximate date work will start* 10/01/2014	
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.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification   |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM.             |

25. Signature 	Name (Printed/Typed) JASON GOSS	Date 07/02/2014
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Title  
DRILLING ENGINEER

Approved by (Signature) 	Name (Printed/Typed) /s/George MacDonell	Date OCT 25 2016
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to 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)

\*(Instructions on page 2)

Capitan Controlled Water Basin

KZ  
10/27/16Approval Subject to General Requirements  
& Special Stipulations AttachedSEE ATTACHED FOR  
CONDITIONS OF APPROVAL

**DRILLING AND OPERATIONS PLAN  
NADEL AND GUSSMAN PERMIAN, L.L.C.  
TONGO FEDERAL COM #2H**

Surface: 1865' FSL & 2276' FEL, UL J  
BHL: 1865' FSL & 2310' FWL, UL K  
Sec 32 & 33, T-19-S, R-33-E  
Lea County, New Mexico.

1. Geological Surface Formation: **Quaternary Alluvium deposits**
2. Drill with rotary drilling rig, Horizontal Oil well. No pilot hole. Depth to Fresh Water 200'.  
**Proposed total depth: 14,392'**  
**Elevation 3,567' GL**

3. **TOPS OF IMPORTANT GEOLOGICAL MARKERS: TVD**

Rustler	1200'
Top Salt	1350'
BX (base salt)	2665'
Capitan Reef	3450'
Seven Rivers	4150'
Delaware Mountain Group	5300'
Bone Springs	7890'
1 <sup>st</sup> Bone Springs Sand	7226'
2 <sup>nd</sup> Bone Springs Sand	9000'
Bone Springs Target	<b>10,012'</b>
3 <sup>rd</sup> Bone Spring Carbonate	10920'

4. **Estimated Depth of Anticipated/Possible Water, Oil or Gas:**

Rustler/Castile	0-200'	possible fresh Water
Capitan Reef	3450'	possible water
Delaware Sands	5300'	Oil, gas and water
Bone Springs	7890	Oil, gas and water

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water will be protected by setting 20" casing at 1250' and circulating cement back to surface, all other intervals will be isolated by the 13-3/8", 9 5/8" intermediate casing and 5-1/2" production casing.



**5. Proposed Casing Program***→ See COA*

HOLE SIZE	CASING SIZE	WT./GRADE	THREAD/COLLAR	SETTING DEPTH	TOP CEMENT
20"	16" (new)	84# J-55	8rd BTC	<del>1,250'</del> <b>1325'</b>	Surface
14.75"	11-3/4" (new)	54# J-55	8rd STC	<del>3,000'</del> <b>3400'</b>	Surface
10.625"	8-5/8" (new)	32# J-55	8rd LTC	<del>5,300'</del> <b>5000'</b>	2500'
*8.75" & 7.875"	5-1/2" (new)	17# P-110	8rd BTC	14,392'	4800'

7.875" hole in lateral from 10,300 - 14,392

MINIMUM SAFETY FACTORS:

BURST 1.125

COLLAPSE 1.125

TENSION 1.8

**ALL CASING WILL BE NEW API APPROVED****CEMENT PROGRAM-ALL CEMENT BLENDS WILL MEET BLM MINIMUM REQUIREMENTS.***→ See COA*

<i>Low Cement - See COA -</i>	A. 16"	SURFACE	CEMENT TO SURFACE	100% EXCESS OVER CALCULATED
	=	=	850 SACKS CLASS "C" + 2% CaCl <sub>2</sub> + .25# CELLO-FLAKE + .25% DEFOAMER, 14.8 PPG, 1.35 YIELD, 6.34 GAL/SK	
	B. 11-3/4"	INTERMEDIATE	CEMENT TO SURFACE	50% EXCESS OVER CALCULATED
	=	=	LEAD: 800 SACKS CLASS "C" 35/65 + 6% BENTONITE + 5% SALT + .25% DEFOAMER 12.8 PPG, 1.9 YIELD, 11.2 GAL/SK TAIL: 250 SACKS CLASS "C" + 2% CaCl <sub>2</sub> + .25# CELLO-FLAKE + .25% DEFOAMER, 14.8 PPG, 1.35 YIELD, 6.34 GAL/SK	
<i>Low Cement - See COA -</i>	C. 8-5/8"	2 <sup>ND</sup> INTERMEDIATE	CEMENT TO <del>2,500'</del> <b>Surface - See COA</b>	50% EXCESS OVER CALCULATED
			LEAD 790 SACKS CLASS "C" 35/65 + 6% BENTONITE + 5% SALT + .25% DEFOAMER 12.8 PPG, 1.9 YIELD, 11.2 GAL/SK	
			TAIL 200 SACKS CLASS "C" + .25% DEFOAMER, 14.8 PPG, 1.33 YIELD, 6.34 GAL/SK	
	D. 5-1/2"	PRODUCTION	CEMENT TO <del>4,800'</del> <b>3400'</b>	50% OVER CALCULATED.
			LEAD: 1400 sks 50/50 P/H + 5% PF44 (BWOW) + 10% PF20 + .4% PF153 + .2% PF13 + 3 pps PF42 + .125 pps PF29 + .4 pps PF46, 11.9#, Yield 2.48 H <sub>2</sub> O 13.876	
			TAIL: 600 Sks PVL AcidSolid + 30% PF151 + 5% PF174 + .7% PF606 + .2% PF153 + .4% PF813 + .4 pps PF46, 13.0#, Yield 1.87 H <sub>2</sub> O 9.517	

SPECIFICATIONS FOR PRESSURE CONTROL EQUIPMENT: (EXHIBIT #5)

→ See COA

A 2000# WP Annular will be installed after running the 16" casing. A 3,000# WP Double Ram BOP and 3,000 annular will be installed after running the 11-3/4" and 8-5/8" casing. Pressure test will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use. 11-3/4" and 8-5/8" BOP will be tested to 3000# and the annular to 1500# with a third party testing company before drilling below each shoe. If operations last more than 30 days from 1<sup>st</sup> test, will test again as per BLM Onshore Oil and Gas order #2.

MUD PROGRAM:

→ See COA

Spud and drill 20" surface hole with **fresh water (8.4 to 8.7 ppg)** to a depth of approx. ~~1250'~~ <sup>1325'</sup> Control lost circulation with paper and LCM pills. Viscosity 28-55, no fluid loss control. Fresh water gel sweeps.

Drill 14 3/4" hole from ~~1250' to 3,000'~~ <sup>1325' to 3400'</sup> with **Brine (10.0 ppg)**. Control lost circulation with paper and LCM pills. Viscosity 28-30, no fluid loss control. Salt water gel sweeps.

Drill 10-5/8" hole from ~~3,000' to 5,300'~~ <sup>3400' to 5000'</sup> with **fresh water (8.4 to 8.7 ppg)**. Control lost circulation with paper and LCM pills. Control filtrate LCM. Clean hole with pre-hydrated freshwater sweeps as necessary. System properties: viscosity 28-34, fluid loss no control.

Drill 7 7/8" production hole from ~~5,300'~~ <sup>5000'</sup> -14,392' with **cut brine (9.0 to 9.4 ppg)**, control filtrate and increase viscosity with Xanthan gum and Poly Anionic Cellulose. Clean hole with high viscosity sweeps and lubricants as necessary. System Properties viscosity 32-40, fluid loss <20 ml/30min. LCM as necessary to control losses.

All necessary mud products for weight addition and fluid loss control will be on location at all times. Mud program subject to change due to hole conditions.

**Mud monitoring system:** Mud will be maintained and checked daily for mud weight, viscosity, API water loss, pH, etc. Additional electronic monitoring will include a pit volume totalizer to monitor mud volume in active system, pump rate, and mud return flow percentage. H2S monitors and alarms will be located on rig floor, shale shakers, and mud tanks (see rig plat). Gas chromatograph with monitor hydrocarbon gas content of mud from 5,300' to TD. Third party corrosion company will utilize H2S/oxygen scavengers to monitor for corrosion and limit damage to tubulars.

Auxiliary Equipment

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times
- C. Hydrogen Sulfide detection equipment will be in operation after drilling out the 16" casing shoe until the 5 1/2" casing is ran and cemented.

LOGGING & CORING PROGRAM:

→ See COA

- a. Testing: No DST's will be conducted.
- b. Open hole logs are possible at TD of Vertical hole (+/- 9,534 MD/TVD)
  - 1. Halliburton Triple Combo: Dual lateral log and gamma ray, compensated neutron, caliper log.
- c. Mud logging will take place from 5,300ft to TD 10ft samples
- d. Gyro survey will be run at KOP of 9,534
- e. MWD (directional) and LWD (gamma) surveys will be taken from KOP (9534') to TD 14,392ft



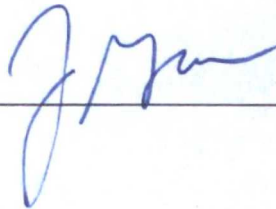
**POTENTIAL HAZARDS:**

No significant hazards are expected, no abnormal pressures or temperatures are expected, **Expected pressure gradient will be that of .433 psi/ft or 4335 psi at 10,012 TVD**, Temperature gradient typical in this region is .015 degrees F/ ft, expected temperature at TD is **150 deg F**. Lost circulation may occur, no H<sub>2</sub>S is expected, but the operator will utilize a 3<sup>rd</sup> party H<sub>2</sub>S monitoring package from 1250' to TD. If H<sub>2</sub>S is encountered the operator will comply with the provisions of onshore oil and gas order no 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well.

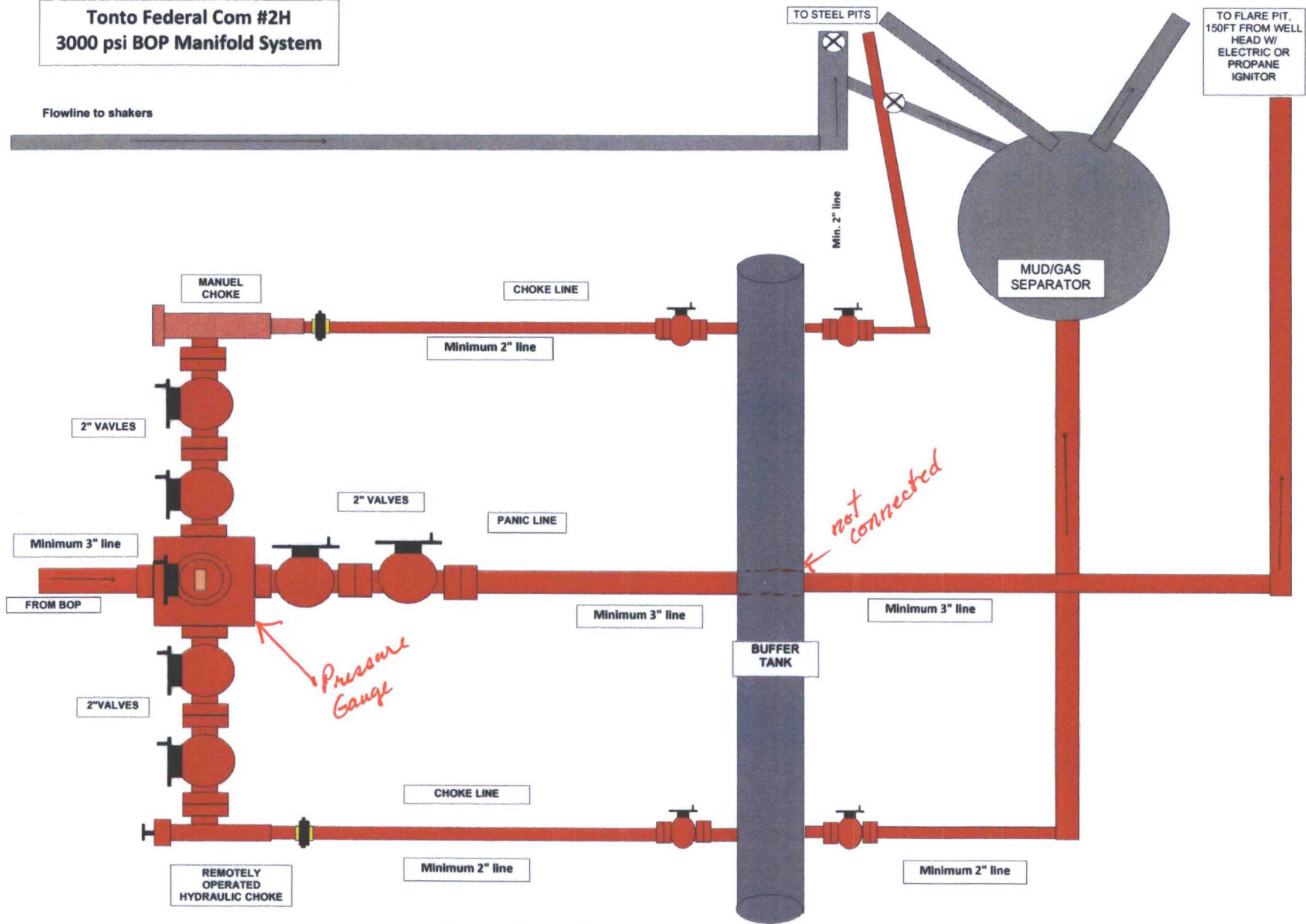
**ANTICIPATED STARTING DATE & DURATION:**

Nadel & Gussman Permian, LLC anticipates drilling operations to begin around October 1, 2014 and completed in approximately 45 days. An additional 15 days will be needed for completion activities. Road and location construction will begin after the BLM has approved the APD.

\_\_\_\_\_  
Jason Goss, Drilling Engineer  
Nadel & Gussman Permian, LLC

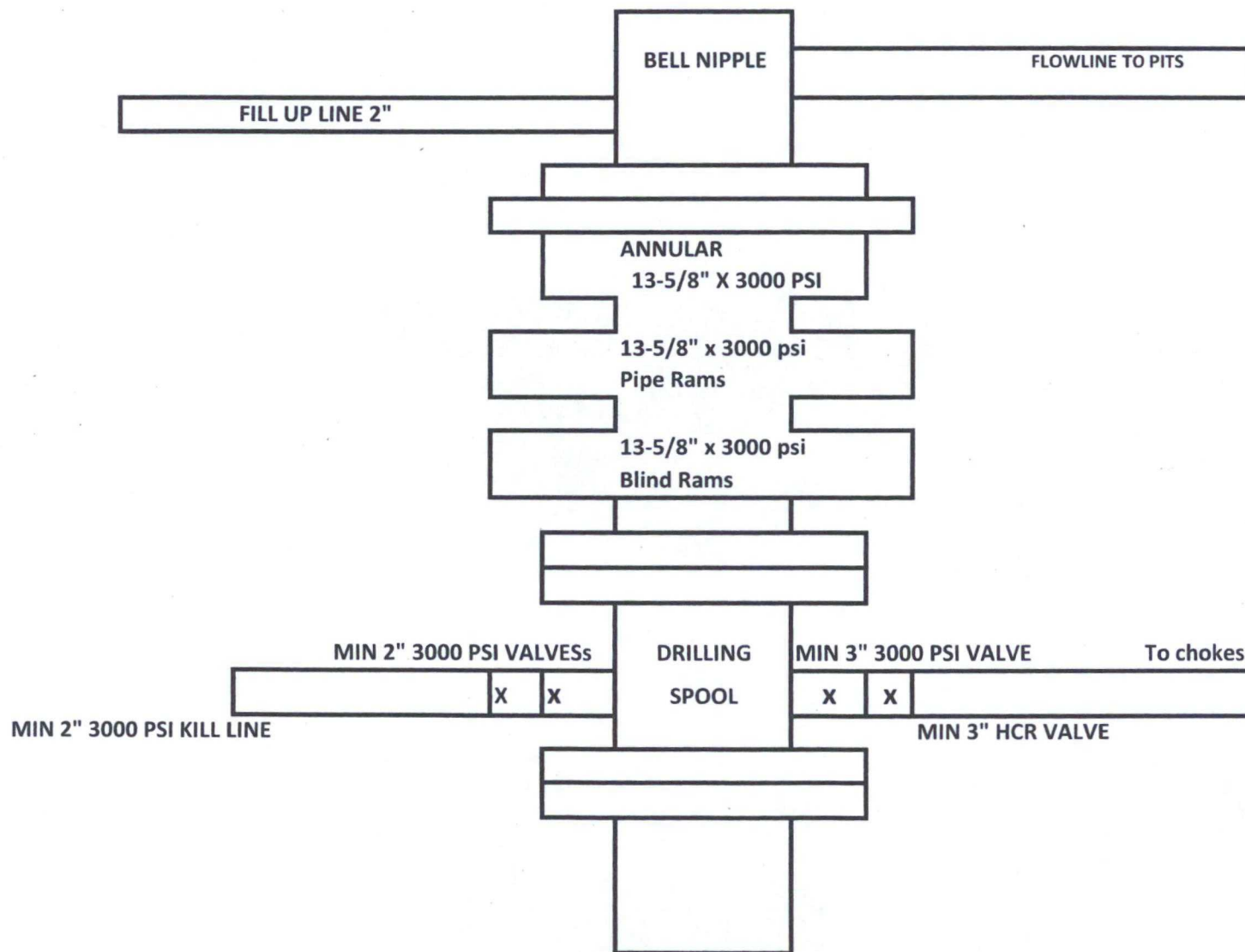


**Tonto Federal Com #2H  
3000 psi BOP Manifold System**



Well: Tonto Federal Com #2H  
1865' FSL, 2276' FEL, Sec. 32-T19S-R33E  
Lea County, New Mexico

Nadel and Gussman Permian, L.L.C.  
BOP Schematic 10.625" & 7.875" hole



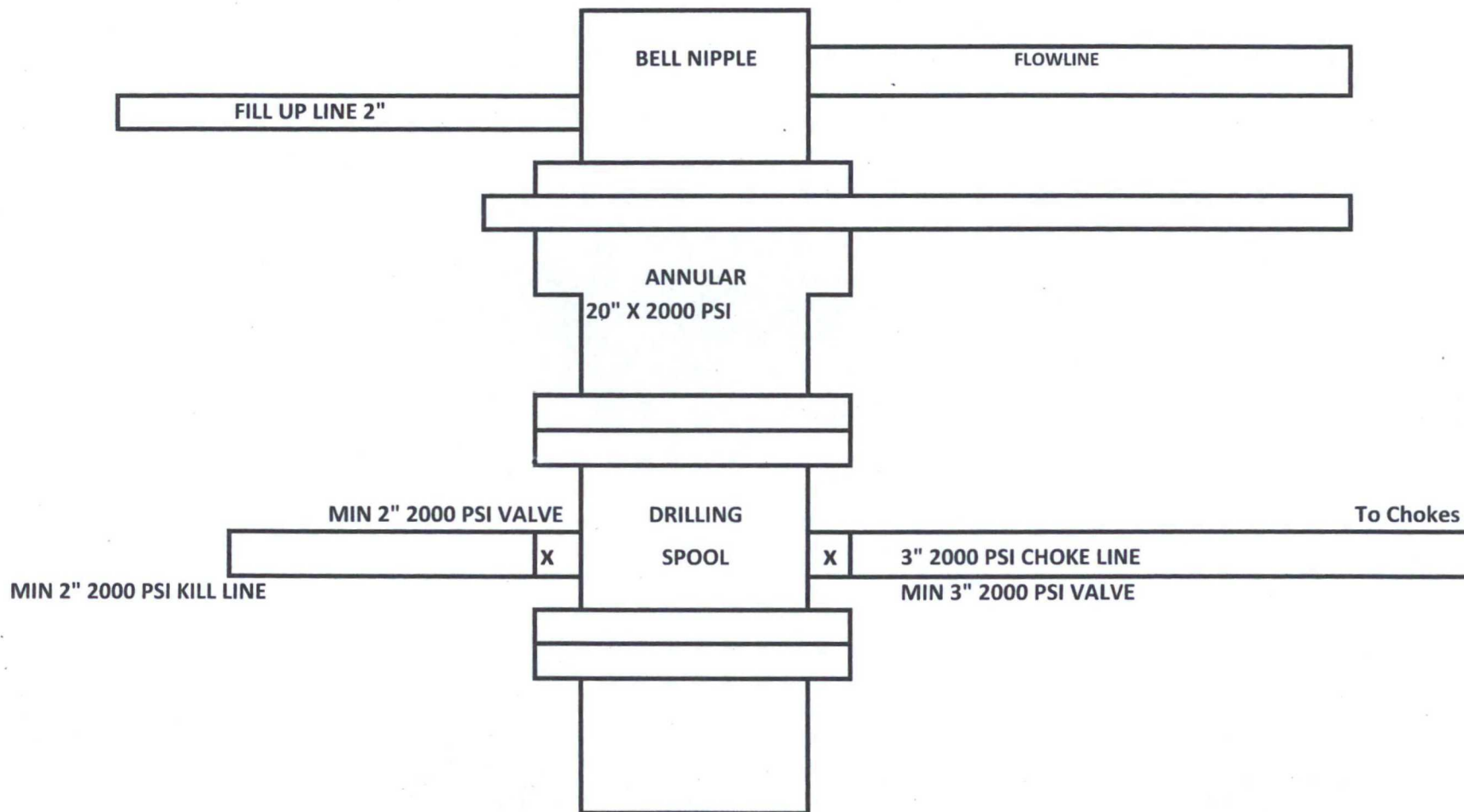
Well: Tonto Federal Com #2H

1865' FSL, 2276' FEL, Sec. 32-T19S-R33E

Lea County, New Mexico

Nadel and Gussman Permian, L.L.C.

BOP Schematic 14.75" hole

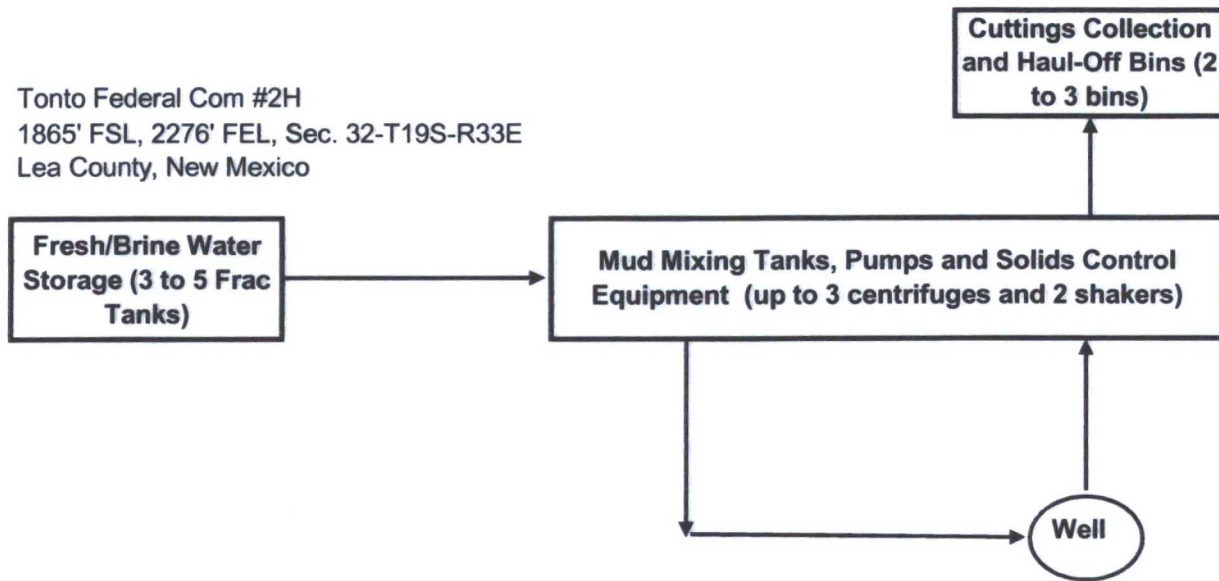




# **CLOSED-LOOP SYSTEM**

## **Design Plan:**

Tonto Federal Com #2H  
1865' FSL, 2276' FEL, Sec. 32-T19S-R33E  
Lea County, New Mexico



## **Operating and Maintenance Plan:**

During drilling operations, third party service companies will utilize solids control equipment to remove cuttings from the drilling fluid and collect it in haul-off bins. Equipment will be closely monitored at all times while drilling by the derrick man and the service company employees.

## **Closure Plan:**

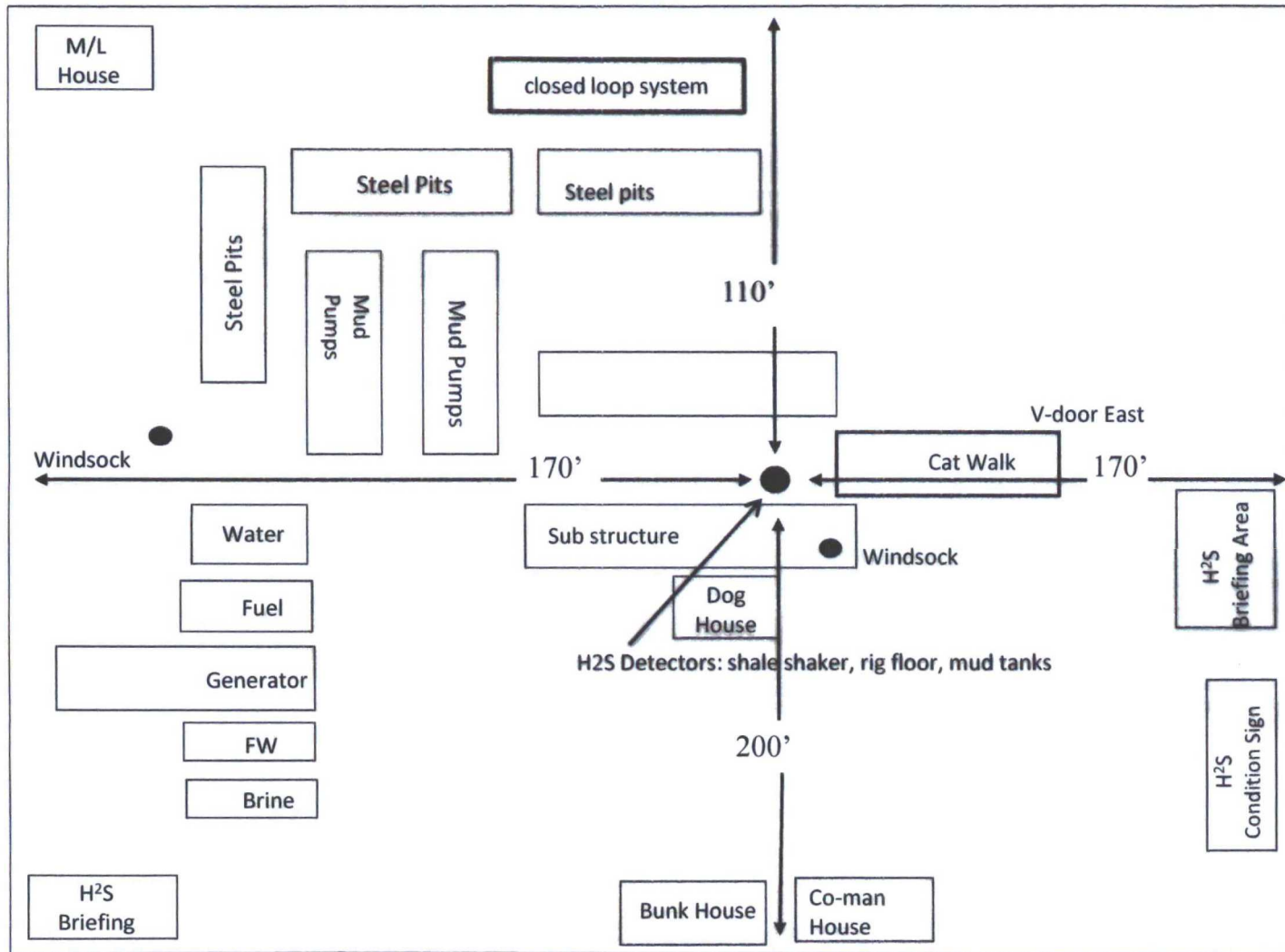
During drilling operations, third party service companies will haul-off drill solids and fluids to an approved disposal facility. At the end of the well, all closed loop equipment will be removed from the location.

Closed loop system will but up to the steel pits.  
Secondary Egress: East to lease road and travel Southeast to Smith Ranch Road

Prevailing wind out of SW

# RIG 5

## Patriot Drilling



Terrain: Slightly  
Sandy Soil, Relatively  
Flat with Light  
Vegetation

Tonto Federal Com #2H  
Sec. 32, T19S, R33E  
Lea County NM