

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

5. Lease Serial No.
NMNM2386A

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
NMNM70796X

8. Well Name and No.
BRINNINSTOOL UNIT 4H

9. API Well No.
30-025-41803-00-X1

10. Field and Pool, or Exploratory
CRUZ

11. County or Parish, and State
LEA COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
COG OPERATING LLC

Contact: MAYTE X REYES
E-Mail: mreyes1@concho.com

3a. Address
ONE CONCHO CENTER 600 W ILLINOIS AVENUE
MIDLAND, TX 79701-4287

3b. Phone No. (include area code)
Ph: 575-748-6945

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 20 T23S R33E SESE 0330FSL 0752FEL
32.283741 N Lat, 103.587757 W Lon

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG Operating LLC, respectfully requests approval for the following changes to the original approved APD.

See attached.

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct. Electronic Submission #275981 verified by the BLM Well Information System For COG OPERATING LLC, sent to the Hobbs Committed to AFMSS for processing by JENNIFER MASON on 11/06/2014 (15JAM0015SE)	
Name (Printed/Typed) MAYTE X REYES	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 11/04/2014
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By	Title
Conditions of approval, if any, are attached. Approval of this notice 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.	Office

APPROVED

NOV 6 2014

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

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.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

NOV 12 2014

COG Operating LLC. Request to change our **Pilot Hole Depth from the original depth of 12,500' to 14,200'** which will drill into the Strawn formation.

Geologic Markers: Previously Submitted Markers plus **Strawn 13,900' Atoka 14,250.**

Casing Program

Hole Size	Depths	Section	OD Casing	New/Used	Wt.	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor	Comments
17-1/2"	0-1400'	Surface	13-3/8"	New	54.5#	STC	J-55	1.85	1.95	7.73	No Change
12-1/4"	0-4300'	1st Intermediate	9-5/8"	New	40#	LTC	J-55	1.149	1.91	3.57	No Change
12-1/4"	4300-5100	1st Intermediate	9-5/8"	New	40#	LTC	N-80	1.13	2.79	4.07	Per COA
8-3/4"	0 - 12,500	2nd Intermediate / Production	7"	New	29#	LTC	HCP-110	1.49	1.125	2.63	Request Change
6-1/8"	10,200 - 15,538	Production Liner - Curve/Lateral	4-1/2"	New	13.5#	BTC	P-110	1.95	1.59	6.15	Request Change

Cementing Program

Surface – No Change

1st Intermediate – No Change

Cementing Program for 7" 2nd Intermediate at 12,500'

Lead: 725 sx. 50:50:10 C + Salt + Gilsonite + CFR-3 + HR601 (11.9 ppg, 2.5 cuft/sx, 14.2 gal/sx)

Tail: 395 sx. 50:50:2 H + Salt + HR601 + CFR-3 (14.4, 1.24, 5.7 gal/sx)

(Calculated on 30% Excess in OH and 5% excess in casing)

See COA

Cementing Program for 4-1/2" Liner from 10,200' to 15,538' (5338')

Lead: None

Tail: 470 sx. 50:50:2 H + Salt + HR601 + CFR-3 (14.4, 1.24, 5.7 gal/sx)

(Calculated on 15% Excess)

See COA

6-1/8" Pilot Hole will be plugged back with the following cement plugs:

14,200' to 13,300' – 190 sx. Class H @ 17.2 ppg/0.98 cuft/sx yield

13,300' to 12,200' – 230 sx. Class H @ 17.2 ppg / 0.98 cuft/sx yield

CIBP set for Cased Hole Whipstock at appx. 10,700' (Subject to adjustment)

Specifications for Pressure Control

No Change – 0-1400'

No Change – 1400' – 5100'

No Change – 5100' – 12,500'

Pilot Hole Drilling Interval 12,500' – 14,200' Minimum Specifications for Pressure Control

The rig slated to drill this well will have a 10M system as it pertains to the BOP. The BOP stack will be assembled and tested to the 10M requirements indicated in Onshore Order 2 and will consist of a 5M Annular, 10M Double Ram Preventer, Drilling Spool (2 10M side outlets), 10M Single Ram Preventer (RSRRA) (See Attachment 1 BOP Stack Schematic).

A Maximum Anticipated Surface Pressure (MASP) has been calculated to be 6156 psi. based on Drill Stem Test Data from the offset Brinninstool Unit #2 (DST 13,022' - 13,335' FSIP 9021 psi).

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A 2" kill line and a minimum 3" choke line will be included in the drilling spool located below the Double Ram BOP. (See Attachment 2 Choke Manifold Schematic) Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 10,000 psi WP rating.

All casing strings below the conductor shall be pressure tested to 0.22 psi per foot of casing string depth or 1500 psig, whichever is greater, but not to exceed 70 percent of casing's minimum internal yield. If pressure declines more than 10 percent in 30 minutes, corrective action will be taken.

H2S is not anticipated.

Estimated BHP & BHT

BHP Lateral TD = 4822 psi (No Change)

BHT Lateral TD = 159 deg. F (No Change)

BHP Pilot Hole Drilling Interval 12,500' – 14,200' = 9021 psi (DST Brinninstool Unit #2)

BHT Pilot Hole Drilling Interval 12,500' – 14,200' = 190 deg (DST Brinninstool Unit #1)

Mud Program

0' – 1400' - No Change – Fresh Water

1400' – 5100' - No Change - 10.0 Brine

5100' – 12,500' – No Change – 8.9 - 9.2 Cut Brine

12,500' – 14,200' – Pre-Hydrated Salt Water Based Mud

MW 9.5 – 13.5 ppg Vis 38 – 50 Water Loss 6 – 10 cc

Barite on Location to weight up 2 ppg over current mud weight.

Testing, Logging and Coring Program

No DSTs Planned

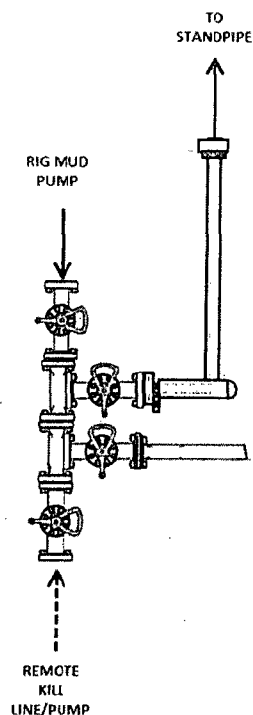
Open Hole Logs – No Change

Sidewall Cores will be obtained in selected intervals in the Pilot Hole from 12,500' to 14,200'.

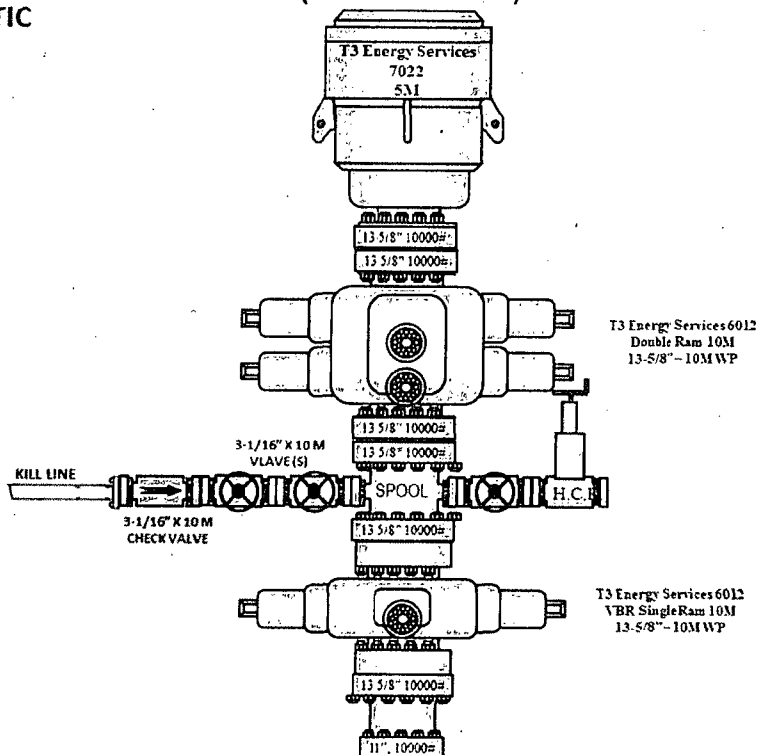
Attachments: (1) 10M BOP Stack Schematic
(2) 10 M Choke Manifold Schematic

COG - Brinninstool 4H Sundry
Attachment 1 - 10M BOP Stack

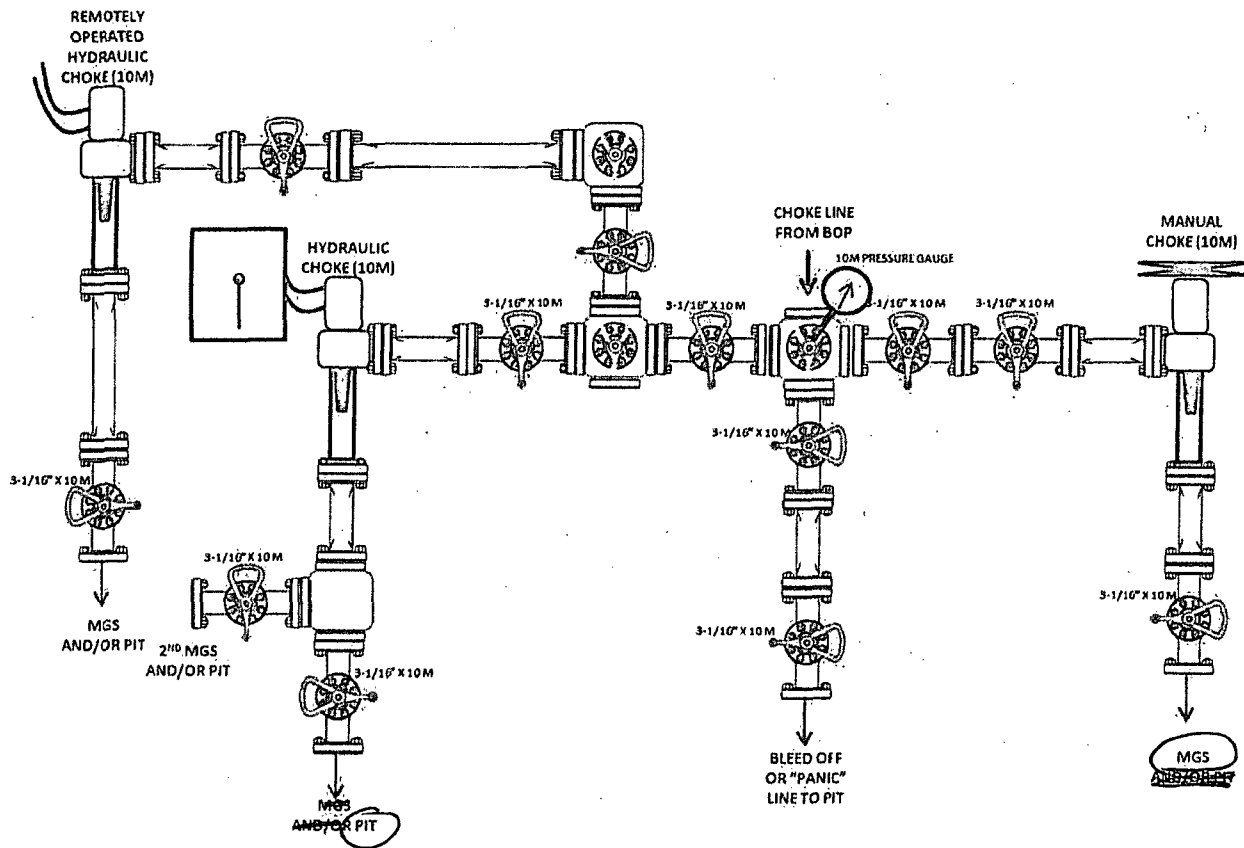
10M REMOTE KILL SCHEMATIC



10M BOP Stack
(5M Annular)



COG - Brinninstool 4H Sundry
ATTACHMENT 2
10M CHOKE MANIFOLD CONFIGURATION



**PECOS DISTRICT
CONDITIONS OF APPROVAL**

OPERATOR'S NAME:	COG Operating LLC
LEASE NO.:	NMNM-2386A
WELL NAME & NO.:	Brinninstool Unit 4H
SURFACE HOLE FOOTAGE:	0330' FSL & 0752' FEL
BOTTOM HOLE FOOTAGE	0330' FNL & 0752' FEL
LOCATION:	Section 20, T. 23 S., R 33 E., NMPM
COUNTY:	Lea County, New Mexico
API:	30-025-41803

The original COAs still stand with the following drilling modifications:

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified 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)

☒ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 393-3612

1. A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe.**
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 (horizontal well – vertical portion of hole) 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 or are Non-API. 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.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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.

Possibility of water flows in the Salado and Castile.

Possibility of lost circulation in the Rustler and Delaware.

Abnormal pressures may be encountered in the 3rd Bone Spring and Wolfcamp formations.

1. The **13-3/8** inch surface casing shall be set at approximately **1400** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
 - 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, which shall be set at approximately **5100** feet, is:

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

Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

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 (575-393-3612) prior to tag of bottom plug, which must be a minimum of 200' 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.

3. The minimum required fill of cement behind the **7** inch production casing is:

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

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

☒ Cement as proposed by operator. Operator shall provide method of verification. **Excess calculates to 13% - Additional cement may be required.**

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi.**
4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8 intermediate casing shoe shall be **10,000 (10M) psi. 10M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
- 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. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two 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.
- g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

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.

JAM 110614