

## HYDROGEN SULFIDE (H2S) CONTINGENCY PLAN

## Assumed 100 ppm ROE = 3000'

100 ppm H2S concentration shall trigger activation of this plan.

### **Emergency Procedures**

**HOBBS OCD** 

In the event of a release of gas containing H<sub>2</sub>S, the first responder(s) must  $I_{JUL} 30 2015$ 

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
  RECEIVED
- 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 occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
  - o Detection of H<sub>2</sub>S, and
  - o Measures for protection against the gas,
  - o Equipment used for protection and emergency 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 this is an ignition of the gas.

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

**Contacting Authorities** 

XTO Energy Inc's 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 including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

# JUL 3 1 2015

## **EUNICE OFFICE – EDDY & LEA COUNTIES**

EMSU @ Oil Center, NM, 8/10ths mile west of Hwy 8 on Hwy 175 Eunice, NM

575-394-2089

<b>XTO ENERGY INC PERSONNEL:</b>	
Boogie Armes, Sr. Drilling Superintendent Bob Chance, Drilling Superintendent Chip Amrock, Sr. Drilling Engineer Jeff Raines, Construction Foreman Dudley McMinn, EH & S Manager Rick Wilson, Production Foreman	432-556-7403 432-296-3926 432-638-8372 432-557-3159 432-557-7976 575-441-1147
SHERIFF DEPARTMENTS:	•
Eddy County Lea County	575-887-7551 575-396-3611
NEW MEXICO STATE POLICE:	575-392-5588
FIRE DEPARTMENTS:	
Carlsbad Eunice Hobbs Jal Lovington	911 575-885-2111 575-394-2111 575-397-9308 575-395-2221 575-396-2359
HOSPITALS:	
Carlsbad Medical Emergency Eunice Medical Emergency Hobbs Medical Emergency Jal Medical Emergency Lovington Medical Emergency	911 575-885-2111 575-394-2112 575-397-9308 575-395-2221 575-396-2359
AGENT NOTIFICATIONS:	
Bureau of Land Management New Mexico Oil Conservation Division Mosaic Potash - Carlsbad	575-393-3612 575-393-6161 575-887-2871
CONTRACTORS:	
ABC Rental – Light Towers Bulldog Services – Trucking/Forklift Champion – Chemical Indian Fire & Safety Key – Dirt Contractor Key Tools – Light Towers Sweatt – Dirt Contractor RWI – Contract Gang	575-394-3155 575-391-8543 575-393-7726 575-393-3093 575-393-3180 575-393-2415 575-397-4541 575-393-5305

### Hydrogen Sulfide Drilling Plan Summary For DrillinglWorkoverlFacility

- A. All personnel shall receive proper H2S training in accordance with Onshore Order 6 III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:
  - Well control equipment
    - a. Flare line 150' from wellhead to be ignited by flare gun.
    - b. Choke manifold with a remotely operated choke.
    - c. Mud/gas separator
  - Protective equipment for essential personnel.

Breathing apparatus:

- a. Rescue Packs (SCBA) 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- b. Work/Escape packs 4 packs shall be stored on the rig floor th sufficient air hose not to restrict work activity.
- c. Emergency Escape Packs —4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

- a. Stretcher
- b. Two OSHA full body harness
- c. 100 ft 5/8 inch OSHA approved rope
- d. 1-20# class ABC fire extinguisher

#### H2S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.

(Gas sample tubes will be stored in the safety trailer)

Visual warning systems.

- a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
- c. Two wind socks will be placed in strategic locations, visible from all angles.

#### Mud program:

The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.

#### 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.

### Communication:

Communication will be via two way radio in emergency and company vehicles. Cell phones and land lines where available.



March 08, 2014

Chip Amrock XTO Energy Inc. 200 N. Loraine St., Ste. 800 Midland, TX 79701 432-620-4323 chip\_amrock@xtoenergy.com

Bureau of Land Management 620 E. Greene Carlsbad, NM 88220 575-887-6544

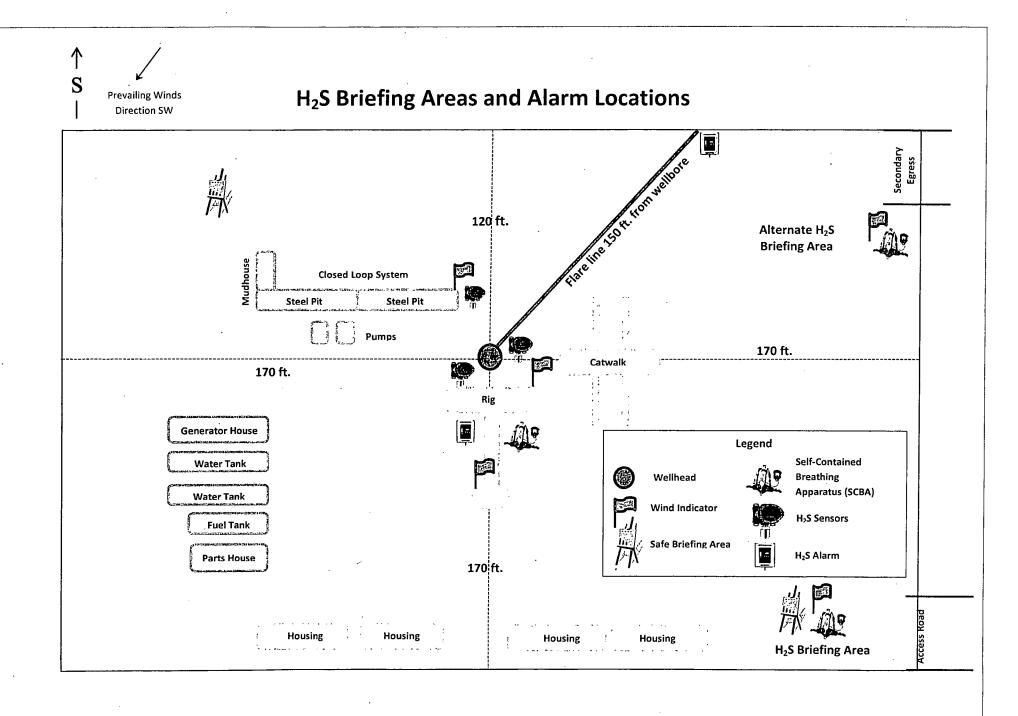
Dear Sirs:

XTO Energy Inc. does not anticipate encountering H2S while drilling the Perla Negra Fed Com #2H located in Section 24, T19S, R34E, in Lea County, New Mexico. As a precaution, I have attached an H2S contingency plan along with a gas analysis of our well stream. If you need anything further, please contact me at the telephone number or email listed above.

Thank you,

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Chip Amrock Sr. Drilling Engineer



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