

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN  
Libby Berry Fee SWD #1  
Unit H , Section 26  
T20S, R34E, Lea County, NM

1. All personnel admitted to drilling location must be H2S certified:  
All Company and Contract personnel admitted on location must be trained by a qualified H2S instructor to the following:
  - A. Characteristics of H2S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems
  - D. Principle and operation of H2S detectors, warning system and briefing areas
  - E. Evacuation procedure, routes and first aid
  - F. Proper use of 30 minute pressure demand pack
  
2. H2S Detection and Alarm Systems:
  - A. H2S detectors and audio alarm system to be located at bell nipple, end of flowline (mud pit) and on derrick floor or doghouse.
  
3. Windssocks and wind streamers:
  - A. Windssock at mud pit should be high enough to be readily visible
  - B. Windssock at briefing area should be high enough to be readily visible
  
4. Condition Flags and Signs:
  - A. Warning signs on access road to location
  - B. Flags to be displayed on sign at entrance to location.
    - a. Green flag indicates normal safe condition.
    - b. Yellow flag indicates potential pressure and danger.
    - c. Red flag indicates danger (H2S present in dangerous concentration). Only emergency personnel admitted to location
  
5. Well control equipment:
  - A. See Exhibit E
  
6. Communication:
  - A. While working under masks, chalkboards will be used for communication
  - B. Hand signals will be used where chalkboard is inappropriate
  - C. Two way radio will be used to communicate off location in case emergency help is required. In most cases cellular telephones will be available at drilling foreman's trailer or living quarters.
  
7. Drillstem Testing:
  - A. No DST's nor cores are planned for this drilling program
  
8. Metallurgical effect of H2S:
  - A. Drilling contractor shall be required to be familiar with the effects of H2S on tubular goods and other mechanical equipment
  
9. Mud system changes to control H2S:
  - A. Should H2S be encountered, the mud system will be altered as necessary to maintain control of the formation. A mud gas separator will be placed in service along with H2S scavengers as needed.

## **Emergency Procedures**

In the event of a release of gas containing H<sub>2</sub>S, the first responders must:

- Isolate the area and prevent entry by other persons into the area;
- Evacuate any public places encompassed by the release area;
- Be equipped with H<sub>2</sub>S monitors and air packs in order to control the release;
- Use the “buddy system” to ensure that no injuries occur during the response;
- Take precautions to avoid personal injury during this operation;
- Contact operator and/or local officials to aid in the operation – a list of safety contact numbers is attached;
- Have received training in the:  
Detection of H<sub>2</sub>S, and  
Become trained in the measures for protection against the gas, and  
Become trained in the use of the equipment used for protection and emergency response.

## **Ignition of the Gas Source**

Should control of the well deteriorate or be considered lost and ignition is a possibility or is being considered, take care to protect against exposure to Sulphur Dioxide (SO<sub>2</sub>). Intentional ignition must be coordinated with the NMOCD, the operator, and both the State and Local officials. Once the State Police become involved, they shall be the Incident Command on scene. Take care to protect downwind during the release and during the ignition phase.

**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
Sulphur Dioxide	SO <sub>2</sub>	2.21 Air=1	2 ppm	N/A	1000 ppm

H2S Contingency Plan and Emergency Contacts

Libby Berry Fee SWD #1

3Bear Field Service, LLC

Unit H, Section 26, T20S, R34E

<b><u>Company Office:</u></b>		Office	Direct	Mobile
3Bear Energy, LLC		303/626-8290		
<b><u>Key Personnel</u></b>				
Name	Title	Office	Direct	Mobile
Scott Spicher	VP/CEO	303/626-8290	303/862-3962	720/202-2824
Mike Solomon	VP/COO	303/626-8290	303/862-3960	303/921-9117
Phelps White	Drilling Consultant			575/626-7660
Rory McMinn	Advisor			575/626-7100
<b><u>Eunice, NM</u></b>				
Ambulance			911	
State Police		575/392-5580		
City Police		575/394-2112		
Sheriff's Office		575/396-3611		
Fire Department		575/394-3258		
<b><u>Hobbs, NM</u></b>				
Ambulance			911	
State Police		575/392-5580		
City Police		575/397-9265		
Sheriff's Office		575/396-3611		
Fire Department		575/397-9311		
New Mexico Oil Conservation Division		575/393-6161		
<b><u>Carlsbad, NM</u></b>				
Ambulance			911	
State Police		575/885-3137		
City Police		575/885-2111		
Sheriff's Office		575/887-7551		
Fire Department		575/887-3798		
Local Emergency Planning		575/887-6544		
<b><u>Santa Fe, NM</u></b>				
New Mexico Emergency Response Commission		505/476-9600		
New Mexico Emergency Response Commission 24 hrs		505/827-9126		
New Mexico Emergency Operations Center		505/476-9635		
<b><u>National</u></b>				
National Emergency Response Center, Wash, DC		800/424-8802		
Medical				
Flight for Life - 4000 24th St., Lubbock, TX		806/743-9911		
Aerocare - R3, Box 49C, Lubbock, TX		806/747-8923		
Med Flight Air Amb - 2301 Yale Blvd. SE #D3, Albuquerque, NM		505-842-4433		
SB Air Med Service - 2505 Clark Carr Loop S.E., Albuquerque, NM		505/842-4949		
<b><u>Other</u></b>				
Boots & Coots IWC		800/256-9688		
Elite Well Service				
Cudd Pressure Control		432/699-0139		
Halliburton		575/746-2757		