BP

ENERGEN RESOURCES SAN JUAN BASIN San Juan 30-4 #300

30-039-30031

The Oil Conservation Division has requested a Hydrogen Sulfide Contingency plan for well location San Juan 30-4 #300. The well is being drilled on an adjoining well pad. The former well San Juan 30-4 #55 was drilled on 7/11/2004. No hydrogen sulfide gas was encountered on the previous well, therefore indicating the absence of H2S is in the immediate vicinity of the San Juan 30-4 #300. Energen Resources considers this a low risk situation and according to OSHA standards and API recommendations the following precautions will be taken.

∧ TOP API Condition I - Low Hazard

Work locations where atmospheric concentrations of H₂S are less than 10ppm.

Recommended for Area:

- · Hydrogen Sulfide warning sign with green flag warning device present.
- Keep all safety equipment in adequate working order.
- Store the equipment in accessible locations.

In addition to the above, we will have 4 audible alarms located throughout the location, training of all employees, wind socks, and a back up contingency plan to be implemented if H2S is encountered.

If the audible alarms indicate the presence of H2S, all personnel will evacuate the site until Energen's H2S safety contractor has been established.

All personnel are trained and aware of the initial and back up contingency plan.

If at anytime H2S is encountered and the contingency plan is implemented, required regulatory agencies will be notified.

For any additional information or questions, please contact Kellie Skelton at 505-793-7611.

Emergency Phone Numbers

SAN JUAN COUNTY, NEW MEXICO Ambulance, Police, Fire: 911 Non-emergency dispatch:505-334-6622 **HOSPITALS** FARMINGTON, NM San Juan Regional Medical Center......505-325-5011 801 W. Maple CORTEZ, CO 1311 N. Mildred Road SHIPROCK, NM

Northern Navajo Medical Center800-549-5644

U.S. Hwy 666 N

DURANGO, CO

Mercy Medical Center970-247-4311

375 East Park Ave.

Doctor:

Other Important Numbers

Bureau of Land Management, Farmington, NM	505-599-8900
Colorado State Highway Patrol, Montrose, CO (SW Colorado)	
Jicarilla Police Department, Dulce, NM	505-759-3222
Navajo Police Department, Shiprock, NM	505-368-1350
NM Oil Conservation, Aztec, NM	505-334-6178
NM Poison Control	800-432-6866
NM State Game & Fish, Farmington, NM	
NM State OSHA (Occupational Safety Health Administration), Santa Fe, NM	505-476-0900
"One Call", Statewide ("Call Before You Dig")	800-321-ALERT
Poison Control	800-432-6866
San Juan County, NM Sheriff, Aztec, NM	505-334-6107
San Juan County, UT Sheriff, Monticello, UT	435-587-2237
Utah State Highway Patrol, Moab, UT	435-259-5441
CHEMTREC	800-724-9300
San Juan Regional Air Care	505-599-6064
ENVIROSOLVE (Bio-hazard clean-up and disposal) 24hrs	877-927-8311

SAFETY ALLIANCE, INC.

"Partnerships for Safe Working Environments"

505-325-SAFE (7233) 300-925-2519 1673 Bloomfeld Blvd. PO Box 15147 Ferningian, RM 37401

HYDROGEN SULFIDE CONTINGENCY PLAN

Hydrogen Sulfide Contingency Plan Page 2

Valid Only at Time of Printing Dated 10/10/2006

Company Operation Manager

- 1. The Company Operation Manager will be responsible for notifying and maintaining contact with company managers and supervisory personnel.
- 2. Maintain communication with the location supervisor to proceed with any other assistance that might be required.
- 3. Travel to well location is appropriate.
- 4. Assist location supervisor with all other notifications-both company and regulatory.

Well Specialist (Location Supervisor)

- 1. The location supervisor will confirm that all personnel on location at any time are trained in Hydrogen Sulfide Safety Awareness, are clean shaven and are familiar with safety equipment on-site and have personal Hydrogen Sulfide monitor for their protection.
- 2. Ensure that all safety and emergency procedures are observed by all personnel.
- 3. Make an effort to keep the number of personnel on location to a minimum and to ensure that only essential personnel are on location during critical operations.
- 4. Conduct weekly hydrogen sulfide emergency mock drill.
- 5. Should extreme danger condition exist, the location supervisor will:
 - a. Assess the situation and advise all personnel by appropriate means of communication.
 - b. Be responsible for determining that the extreme danger condition is warranted and the red flag shall be posted at location entrance.
 - c. Go to safe briefing area and give clear instructions relative to hazard on location, and actions for personnel to follow.
 - d. Notify company and regulatory groups of current situation as outlined in company protocol. Follow appropriate emergency procedures for emergency services notification.
 - e. Proceed to rig floor and supervise operations with rig supervisor. Take action to control and reduce the hydrogen sulfide hazard.
 - f. Ensure that essential personnel are properly protected with supplied air breathing equipment and that non-essential personnel are in a muster station free hydrogen sulfide.
 - g. Be responsible for authorizing evacuation of persons/residents in area surrounding the drilling location.

Rig Supervisor-Tool Pusher

- 1. If the Location Supervisor is unable to perform his/her duties, and the alternate representative is also unable or unavailable to perform his/her duties, the rig supervisor-tool pusher will assume command of well site operations and all responsibilities listed above for rig personnel.
- 2.Ensure that all rig personnel are properly trained to work in Hydrogen Sulfide environment and fully understand the purpose of hydrogen sulfide monitors and alarms, and the action to take when alarms visual/audible initiate. Ensure that all crew members that all crew personnel understand the buddy system, safe briefing areas, muster stations, emergency evacuation procedures and individual duties.
- 3. Should an extreme danger operational condition arise, the rig supervisor-tool pusher shall assist the Location Supervisor by:
 - a. Proceeding to the rig floor and assist in supervising rig operations.
 - b. Ensure that only essential personnel remain in the hazardous areas.
 - c. Ensure that all personnel that remain in hazardous area, wear supplied air breathing equipment until notified all is "CLEAR" of any toxic gases.
 - d. Assign rig crew member or other service representative to block entrance to location. No unauthorized personnel will be allowed entry to location.
 - e. Help to determine hazardous "danger zones" on location using portable detection equipment.
 - f. Position electric fans to move gas in any high concentration areas with Continuous monitoring of the area.

SAFETY CONSULTANT

- 1. During NORMAL operations (no hydrogen sulfide present), the safety consultant will be responsible for the following:
 - a. Ensure that all well site safety equipment is in place and operational.
 - b. Ensure that all well site personnel are familiar with location safety layout and operation of all safety equipment.
 - c. Ensure that all well site personnel are adequately trained in Hydrogen Sulfide Safety Awareness and are cleaned shaven.
 - c. Assist location supervisor with weekly hydrogen sulfide emergency mock drill.
- 2. When an operational condition is classified as extreme danger, the safety consultant will be responsible for the following:
 - a. Account for all well site personnel.
 - b. Assess any injuries and direct first aid measure.

- c. Ensure that all safety and monitoring equipment is functioning properly and available.
- d. Monitor the safety of well site personnel.
- e. Maintain a close communication with the location supervisor.
- f. Be prepared to assist location supervisor with support of rig crew or other personnel using supplied air breathing equipment.
- g. Be prepared to assist location supervisor with emergency procedures.
- h. Be prepared to assist with evacuation of any area residents or other personnel working in the immediate area.

All Personnel

- 1. Always be alert for possible Hydrogen Sulfide visual/audible alarms.
- 2. Be familiar with location of Safe Briefing Areas and Muster Stations.
- 3. Be familiar with location of and operation of all air supplied breathing equipment.
- 4. Familiarize yourself with nearest escape routes for safe evacuation
- 5. Be aware of prevailing wind direction, any changes in wind direction, or absence of wind by checking the wind socks placed around location, and be aware of uphill direction.
- 6. If hydrogen sulfide lights and/or siren initiates "STAY CALM" don escape breathing systems and follow directions of person in charge and proceed to briefing area/muster station. Do not initiate rescue until directed by person in charge.
- 7. Essential personnel shall don Self-Contained Breathing Apparatus (SCBA) and work using the "BUDDY SYSTEM" will rescue any victims and work to control Hydrogen Sulfide Release.
- 8. Non-essential personnel shall evacuate to the appropriate safe briefing area using escape breathing systems. Wait there for further instructions from person in charge.

RIG LAYOUT

Location

- 1. All supplied air breathing equipment and hydrogen sulfide monitors will be rigged up prior to starting any operation suspected to encounter hydrogen sulfide. The rig crews and other service personnel will be trained at this time. This will allow sufficient time for all rig crews to be trained and all safety equipment in place and functioning when the first sour zone is actually encountered.
- 2. The rig will be situated on location to allow for the prevailing winds to blow across the rig toward the circulation tanks or at right angles to the lines from the B.O.P. s to the circulation tanks.
- 3. The entrance to the location is designed so that it can be barricaded if a hydrogen sulfide emergency condition arises. An auxiliary exit route will be available so that in case of an emergency, a shift in wind direction would not prevent escape from the location.
- 4. A minimum of 2 safe briefing areas/muster stations shall be designated for assembly of personnel during emergency conditions. These will be located at least 150 feet or as practical, from the well bore and in such a location that at least one area will be upwind of the well at all times. Upon recognition of an emergency situation, all personnel will be trained to assemble at the designated briefing area for instructions.
- 5. Smoking areas will be established and "NO SMOKING" signs will be posted around the location.
- 6. Reliable 24 hour radio or telephone communications will be available.
- 7. A hydrogen sulfide sensor will be rigged up at the manifold to the choke system.
- 8. All equipment that might come into contact with hydrogen sulfide drill pipe/work strings, test tools, blowout preventer, casing, choke system will meet metallurgy requirements for hydrogen sulfide service.
- 9. The rig will have a continuous electronic hydrogen sulfide detection system that automatically will activate visible and audible alarms if hydrogen sulfide is detected. The visible light will activate at 10 ppm H₂S, and audible siren will activate if 15 ppm or higher concentration is present. There will be at least 4 H₂S sensors in place on the rig. They will be located to detect the presence of hydrogen sulfide in areas where it is most likely to come to the surface. The sensor head locations will be: 1) rig floor by driller's

console, 2) substructure area near the bell nipple, 3) two additional sensors will be positioned at the discretion of the location supervisor. At least one light and one siren will be placed on the rig so that the presence of hydrogen sulfide. The light and siren will be strategically placed to be visible to all personnel on the location site. Additional alarm lights & sirens may be added to ensure that all personnel on the drill site are able to visibly see the lights from anywhere on location.

- 10. The H₂S detection equipment will be calibrated as recommended by the manufacturer.
- 11. At least 2 windsocks will be placed around the location site to ensure that everyone on the location can readily determine wind direction. One windsock will be mounted on or near the rig floor to be readily visible to rig crews when tripping pipe.
- 12. All respiratory protective equipment will be NIOSH/MSHA approved positive pressure type and maintained according to manufacturer's guidelines. All breathing air used for this equipment must be tested every 6 months and approved GRADE D compressed breathing air.
- 13. Both 30 minute self-contained breathing apparatus (SCBA) and work units with escape cylinders will be available on location. There will be sufficient numbers of this supplied air breathing equipment on location to ensure that all personnel on location have 1 piece of equipment available to them. All respiratory protective equipment will use nose cups to prevent fogging in temperatures below 32 degrees F. Spectacle kits will be available for personnel that require corrective lenses when working under mask.
- 14. Hydrogen Sulfide mock drills will be conducted at least weekly to ensure that all well site personnel are competent in emergency donning procedures. These drills will be recorded in the daily log.

SAFETY PROCEDURES

Training

All personnel who come on the location must be properly trained in hydrogen sulfide safety awareness. Must be clean shaven and have a Hydrogen Sulfide Safety Awareness card that has not expired.

Training topics shall include at a minimum:

- a. hazards and characteristics of hydrogen sulfide, nitrogen, and oxygen deficient atmospheres and symptoms of exposure to these gases.
- b. proper use, care and limitation of respiratory protective equipment with hands on practice.

- c. use of both fixed and portable detection monitors.
- d. work practices to reduce opportunities for hydrogen sulfide exposure as well as confined space procedures.
- e. first aid for toxic gas exposure and resuscitation equipment.
- f. the buddy system
- g. emergency evacuation procedures
- h. a review of the contingency plan for the well

In addition to hydrogen sulfide safety awareness personnel need to be currently trained in adult CPR/First Aid/Bloodborne Pathogens.

OPERATING CONDITIONS

Operating Conditions

A sign with three color flag warning system will be used to notify personnel approaching the location under what condition the location is operating at. This system will be in compliance with BLM standards 00#6 and industry standards both state and federal.

Green Flag – potential danger

Yellow Flag – moderate danger

Red flag – extreme danger –do not approach if red flag is flying.

Evacuation Plan

If there is residents/business/work going on within a 2 mile radius of the location site, they will be notified and asked to evacuate.

Evacuations will be initiated by the company managers/supervisors and coordinated with appropriate emergency services.

All regulatory agencies will be notified as soon as possible.

Emergency Rescue Procedures

Well site personnel should not attempt emergency rescues unless they have been properly trained. a trained person who discovers another person overcome by hydrogen sulfide should not attempt **RESCUE** without donning a self-contained breathing apparatus (SCBA). When making an emergency rescue always use the following procedures:

- 1. Don self-contained breathing apparatus (SCBA) before attempting a rescue.
- 2. Remove the victim using the buddy system, from the contaminated area to an area free of toxic gas by going upwind or cross wind and personal monitors have stopped alarming before removing your SCBA.

- 3. Check victims Airway, Breathing, and Circulation (ABC's) and provide appropriate care using barrier devices such as micro-shield, resuscitation pocket mask, or a Bag-valve-mask w/oxygen if available and appropriately trained.
- 4. As soon as emergency personal arrive patient care will be given to them.
- 5. Any personnel who experienced hydrogen sulfide exposure will be transported via appropriate transportation to the closest hospital/clinic/doctors office for further testing and observation. And release of patient will be under written advisement of physician in charge.
- 6. All contract companies will be advised and will cooperate and work with the accident investigation and be notified of any accident investigation results.

HYDROGEN SULFIDE SAFETY EQUIPMENT

QUANITY	DESCRIPTION
1	Safety trailer with cascade system consisting of (8) 347 cu.ft. compressed
	air tanks with high-pressure regulators. certificate available.
1	1000 ft. low pressure airline hose with Hanson locking fittings, rigged-up
	with manifolds to supply breathing air to the personnel on the rig floor,
	substructure, derrick, shale shaker area, and mud mixing areas.
6	Self-contained breathing apparatus (SCBA)
6	Emergency Escape Breathing Apparatus (EEBA)
1	4-channel continuous electronic hydrogen sulfide monitor with
	visual/audible alarm. Span and set at 10-15 ppm by a certified technician
	and calibration sheet available as well as sticker on unit.
1	Gastec and/or detection pump unit with tubes to test for hydrogen
	sulfide and sulfur dioxide.
1	First aid kit
1	Backboard with straps and headblocks, C-collar and tape
2	Windsocks with poles
1	Well condition sign with 3 flag system
2	Safe briefing area/muster station signs
1	Fire blanket
_2	20# fire extinguishers
1	LEL/O2 handheld monitor calibration sheet available as well as sticker on
	unit. •
1	Eyewash station
1	Microsheild/resesitation pocket mask/bag-valve mask with O2 inlet
2	Tanks oxygen with tubing and adult nasal cannulas, adult non-rebreathers.
1	Local emergency phone numbers for police/fire/ems with township and
	range, longitude and latitude posted inside the trailer on the wall in plain
-	view.
1	Bloodborne pathogen kit

A drawing of the location will be inserted in this page showing the actual placement of all safety equipment relative to other equipment on location.	
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Fossil Federal # 4-14 Hydrogen Sulfide Contingency Plan

LOCATION INFORMATION

Location Name:	Fossil Federal # 4-14	
Rig Name and Number:	Unit Rig # 134	
Company Phone Number (location):	254-241-1736	
Location Supervisor:	Dave Moore/Lee Vaughn	
Rig supervisor/Tool Pusher:	(Tool Pusher) Mel Blanke/Bobby Perkins	
Safety Consultant:	Safety Alliance, Inc. 505-325-7233	
Township and Range:	Sec. 14-T44N-R17W (NW/4 NE/4)	
Latitude and Longitude:	Lat: 38.081157 Long: 108.709609	

LIST OF EMERGENCY COMPANY CONTACT NUMBERS

Contacts	Cabot Oil & Gas Corporation Title:	Work Phone	Home Phone	Cell Phone

CHECK LIST

List of Emergency Numbers:	
Daily Weather Reports:	
Radius of Exposure:	
Topography of the Area:	
List of Residents and Businesses within a two mile radius.	

Emergency Phone Numbers

SAN JUAN COUNTY, NEW MEXICO Ambulance, Police, Fire: 911 Non-emergency dispatch:505-334-6622 **HOSPITALS FARMINGTON, NM** San Juan Regional Medical Center.....505-325-5011 801 W. Maple CORTEZ, CO Southwest Memorial Hospital......970-565-6666 1311 N. Mildred Road SHIPROCK, NM Northern Navajo Medical Center800-549-5644 U.S. Hwy 666 N DURANGO, CO Mercy Medical Center970-247-4311 375 East Park Ave.

Doctor:

Other Important Numbers

Bureau of Land Management, Farmington, NM	505-599-8900
Colorado State Highway Patrol, Montrose, CO (SW Colorado)	970-249-4392
Jicarilla Police Department, Dulce, NM	505-759-3222
Navajo Police Department, Shiprock, NM	505-368-1350
NM Oil Conservation, Aztec, NM	505-334-6178
NM Poison Control	800-432-6866
NM State Game & Fish, Farmington, NM	
NM State OSHA (Occupational Safety Health Administration), Santa Fe, NM	505-476-0900
"One Call", Statewide ("Call Before You Dig")	.800-321-ALERT
Poison Control	800-432-6866
San Juan County, NM Sheriff, Aztec, NM	505-334-6107
San Juan County, UT Sheriff, Monticello, UT	435-587-2237
Utah State Highway Patrol, Moab, UT	435-259-5441
CHEMTREC	800-724-9300
San Juan Regional Air Care	. 505-599-6064
ENVIROSOLVE (Bio-hazard clean-up and disposal) 24hrs	

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HYDROGEN SULFIDE CONTINGENCY PLAN

Hydrogen Sulfide Contingency Plan Page 1

Valid Only at Time of Printing Dated 10/10/2006

Company Operation Manager

- 1. The Company Operation Manager will be responsible for notifying and maintaining contact with company managers and supervisory personnel.
- 2. Maintain communication with the location supervisor to proceed with any other assistance that might be required.
- 3. Travel to well location is appropriate.
- 4. Assist location supervisor with all other notifications-both company and regulatory.

Well Specialist (Location Supervisor)

- 1. The location supervisor will confirm that all personnel on location at any time are trained in Hydrogen Sulfide Safety Awareness, are clean shaven and are familiar with safety equipment on-site and have personal Hydrogen Sulfide monitor for their protection.
- 2. Ensure that all safety and emergency procedures are observed by all personnel.
- 3. Make an effort to keep the number of personnel on location to a minimum and to ensure that only essential personnel are on location during critical operations.
- 4. Conduct weekly hydrogen sulfide emergency mock drill.
- 5. Should extreme danger condition exist, the location supervisor will:
 - a. Assess the situation and advise all personnel by appropriate means of communication.
 - b. Be responsible for determining that the extreme danger condition is warranted and the red flag shall be posted at location entrance.
 - c. Go to safe briefing area and give clear instructions relative to hazard on location, and actions for personnel to follow.
 - d. Notify company and regulatory groups of current situation as outlined in company protocol. Follow appropriate emergency procedures for emergency services notification.
 - e. Proceed to rig floor and supervise operations with rig supervisor. Take action to control and reduce the hydrogen sulfide hazard.
 - f. Ensure that essential personnel are properly protected with supplied air breathing equipment and that non-essential personnel are in a muster station free hydrogen sulfide.
 - g. Be responsible for authorizing evacuation of persons/residents in area surrounding the drilling location.

Rig Supervisor-Tool Pusher

- 1. If the Location Supervisor is unable to perform his/her duties, and the alternate representative is also unable or unavailable to perform his/her duties, the rig supervisor-tool pusher will assume command of well site operations and all responsibilities listed above for rig personnel.
- 2.Ensure that all rig personnel are properly trained to work in Hydrogen Sulfide environment and fully understand the purpose of hydrogen sulfide monitors and alarms, and the action to take when alarms visual/audible initiate. Ensure that all crew members that all crew personnel understand the buddy system, safe briefing areas, muster stations, emergency evacuation procedures and individual duties.
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 - b. Ensure that only essential personnel remain in the hazardous areas.
 - c. Ensure that all personnel that remain in hazardous area, wear supplied air breathing equipment until notified all is "CLEAR" of any toxic gases.
 - d. Assign rig crew member or other service representative to block entrance to location. No unauthorized personnel will be allowed entry to location.
 - e. Help to determine hazardous "danger zones" on location using portable detection equipment.
 - f. Position electric fans to move gas in any high concentration areas with Continuous monitoring of the area.

SAFETY CONSULTANT

- 1. During NORMAL operations (no hydrogen sulfide present), the safety consultant will be responsible for the following:
 - a. Ensure that all well site safety equipment is in place and operational.
 - b. Ensure that all well site personnel are familiar with location safety layout and operation of all safety equipment.
 - c. Ensure that all well site personnel are adequately trained in Hydrogen Sulfide Safety Awareness and are cleaned shaven.
 - c. Assist location supervisor with weekly hydrogen sulfide emergency mock drill.
- 2. When an operational condition is classified as extreme danger, the safety consultant will be responsible for the following:
 - a. Account for all well site personnel.
 - b. Assess any injuries and direct first aid measure.

- c. Ensure that all safety and monitoring equipment is functioning properly and available.
- d. Monitor the safety of well site personnel.
- e. Maintain a close communication with the location supervisor.
- f. Be prepared to assist location supervisor with support of rig crew or other personnel using supplied air breathing equipment.
- g. Be prepared to assist location supervisor with emergency procedures.
- h. Be prepared to assist with evacuation of any area residents or other personnel working in the immediate area.

All Personnel

- 1. Always be alert for possible Hydrogen Sulfide visual/audible alarms.
- 2. Be familiar with location of Safe Briefing Areas and Muster Stations.
- 3. Be familiar with location of and operation of all air supplied breathing equipment.
- 4. Familiarize yourself with nearest escape routes for safe evacuation
- 5. Be aware of prevailing wind direction, any changes in wind direction, or absence of wind by checking the wind socks placed around location, and be aware of uphill direction.
- 6. If hydrogen sulfide lights and/or siren initiates "STAY CALM" don escape breathing systems and follow directions of person in charge and proceed to briefing area/muster station. Do not initiate rescue until directed by person in charge.
- 7. Essential personnel shall don Self-Contained Breathing Apparatus (SCBA) and work using the "BUDDY SYSTEM" will rescue any victims and work to control Hydrogen Sulfide Release.
- 8. Non-essential personnel shall evacuate to the appropriate safe briefing area using escape breathing systems. Wait there for further instructions from person in charge.

RIG LAYOUT

Location

- 1. All supplied air breathing equipment and hydrogen sulfide monitors will be rigged up prior to starting any operation suspected to encounter hydrogen sulfide. The rig crews and other service personnel will be trained at this time. This will allow sufficient time for all rig crews to be trained and all safety equipment in place and functioning when the first sour zone is actually encountered.
- 2. The rig will be situated on location to allow for the prevailing winds to blow across the rig toward the circulation tanks or at right angles to the lines from the B.O.P. s to the circulation tanks.
- 3. The entrance to the location is designed so that it can be barricaded if a hydrogen sulfide emergency condition arises. An auxiliary exit route will be available so that in case of an emergency, a shift in wind direction would not prevent escape from the location.
- 4. A minimum of 2 safe briefing areas/muster stations shall be designated for assembly of personnel during emergency conditions. These will be located at least 150 feet or as practical, from the well bore and in such a location that at least one area will be upwind of the well at all times. Upon recognition of an emergency situation, all personnel will be trained to assemble at the designated briefing area for instructions.
- 5. Smoking areas will be established and "NO SMOKING" signs will be posted around the location.
- 6. Reliable 24 hour radio or telephone communications will be available.
- 7. A hydrogen sulfide sensor will be rigged up at the manifold to the choke system.
- 8. All equipment that might come into contact with hydrogen sulfide drill pipe/work strings, test tools, blowout preventer, casing, choke system will meet metallurgy requirements for hydrogen sulfide service.
- 9. The rig will have a continuous electronic hydrogen sulfide detection system that automatically will activate visible and audible alarms if hydrogen sulfide is detected. The visible light will activate at 10 ppm H₂S, and audible siren will activate if 15 ppm or higher concentration is present. There will be at least 4 H₂S sensors in place on the rig. They will be located to detect the presence of hydrogen sulfide in areas where it is most likely to come to the surface. The sensor head locations will be: 1) rig floor by driller's

console, 2) substructure area near the bell nipple, 3) two additional sensors will be positioned at the discretion of the location supervisor. At least one light and one siren will be placed on the rig so that the presence of hydrogen sulfide. The light and siren will be strategically placed to be visible to all personnel on the location site. Additional alarm lights & sirens may be added to ensure that all personnel on the drill site are able to visibly see the lights from anywhere on location.

- 10. The H₂S detection equipment will be calibrated as recommended by the manufacturer.
- 11. At least 2 windsocks will be placed around the location site to ensure that everyone on the location can readily determine wind direction. One windsock will be mounted on or near the rig floor to be readily visible to rig crews when tripping pipe.
- 12. All respiratory protective equipment will be NIOSH/MSHA approved positive pressure type and maintained according to manufacturer's guidelines. All breathing air used for this equipment must be tested every 6 months and approved GRADE D compressed breathing air.
- 13. Both 30 minute self-contained breathing apparatus (SCBA) and work units with escape cylinders will be available on location. There will be sufficient numbers of this supplied air breathing equipment on location to ensure that all personnel on location have 1 piece of equipment available to them. All respiratory protective equipment will use nose cups to prevent fogging in temperatures below 32 degrees F. Spectacle kits will be available for personnel that require corrective lenses when working under mask.
- 14. Hydrogen Sulfide mock drills will be conducted at least weekly to ensure that all well site personnel are competent in emergency donning procedures. These drills will be recorded in the daily log.

SAFETY PROCEDURES

Training

All personnel who come on the location must be properly trained in hydrogen sulfide safety awareness. Must be clean shaven and have a Hydrogen Sulfide Safety Awareness card that has not expired.

Training topics shall include at a minimum:

- a. hazards and characteristics of hydrogen sulfide, nitrogen, and oxygen deficient atmospheres and symptoms of exposure to these gases.
- b. proper use, care and limitation of respiratory protective equipment with hands on practice.

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- c. use of both fixed and portable detection monitors.
- d. work practices to reduce opportunities for hydrogen sulfide exposure as well as confined space procedures.
- e. first aid for toxic gas exposure and resuscitation equipment.
- f. the buddy system
- g. emergency evacuation procedures
- h. a review of the contingency plan for the well

In addition to hydrogen sulfide safety awareness personnel need to be currently trained in adult CPR/First Aid/Bloodborne Pathogens.

OPERATING CONDITIONS

Operating Conditions

A sign with three color flag warning system will be used to notify personnel approaching the location under what condition the location is operating at. This system will be in compliance with BLM standards 00#6 and industry standards both state and federal.

Green Flag - potential danger

Yellow Flag – moderate danger

Red flag – extreme danger –do not approach if red flag is flying.

Evacuation Plan

If there is residents/business/work going on within a 2 mile radius of the location site, they will be notified and asked to evacuate.

Evacuations will be initiated by the company managers/supervisors and coordinated with appropriate emergency services.

All regulatory agencies will be notified as soon as possible.

Emergency Rescue Procedures

Well site personnel should not attempt emergency rescues unless they have been properly trained. a trained person who discovers another person overcome by hydrogen sulfide should not attempt **RESCUE** without donning a self-contained breathing apparatus (SCBA). When making an emergency rescue always use the following procedures:

- 1. Don self-contained breathing apparatus (SCBA) before attempting a rescue.
- 2. Remove the victim using the buddy system, from the contaminated area to an area free of toxic gas by going upwind or cross wind and personal monitors have stopped alarming before removing your SCBA.

- 3. Check victims Airway, Breathing, and Circulation (ABC's) and provide appropriate care using barrier devices such as micro-shield, resuscitation pocket mask, or a Bag-valve-mask w/oxygen if available and appropriately trained.
- 4. As soon as emergency personal arrive patient care will be given to them.
- 5. Any personnel who experienced hydrogen sulfide exposure will be transported via appropriate transportation to the closest hospital/clinic/doctors office for further testing and observation. And release of patient will be under written advisement of physician in charge.

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6. All contract companies will be advised and will cooperate and work with the accident investigation and be notified of any accident investigation results.

HYDROGEN SULFIDE SAFETY EQUIPMENT

QUANITY	DESCRIPTION
1	Safety trailer with cascade system consisting of (8) 347 cu.ft. compressed
	air tanks with high-pressure regulators. certificate available.
1	1000 ft. low pressure airline hose with Hanson locking fittings, rigged-up
	with manifolds to supply breathing air to the personnel on the rig floor,
	substructure, derrick, shale shaker area, and mud mixing areas.
6	Self-contained breathing apparatus (SCBA)
6	Emergency Escape Breathing Apparatus (EEBA)
1 .	4-channel continuous electronic hydrogen sulfide monitor with
	visual/audible alarm. Span and set at 10-15 ppm by a certified technician
	and calibration sheet available as well as sticker on unit.
1	Gastec and/or detection pump unit with tubes to test for hydrogen
	sulfide and sulfur dioxide.
. 1	First aid kit
1	Backboard with straps and headblocks, C-collar and tape
2	Windsocks with poles
1	Well condition sign with 3 flag system
2	Safe briefing area/muster station signs
1	Fire blanket
2	20# fire extinguishers
1	LEL/O2 handheld monitor calibration sheet available as well as sticker on
	unit.
1	Eyewash station
1	Microsheild/resesitation pocket mask/bag-valve mask with O2 inlet
2	Tanks oxygen with tubing and adult nasal cannulas, adult non-rebreathers.
1	Local emergency phone numbers for police/fire/ems with township and
	range, longitude and latitude posted inside the trailer on the wall in plain
	view.
1	Bloodborne pathogen kit