

GW-33

**H2S Contingency
Plan**

**Date:
3/2013**



H₂S CONTINGENCY PLAN

RCVD APR 2 '13
OIL CONS. DIV.
DIST. 3

**San Juan River Gas Plant
Kirtland, New Mexico**

**WESTERN GAS RESOURCES ASSET HOLDING COMPANY,
LLC, a wholly owned subsidiary of Anadarko Petroleum
Corporation**

(March 2013)

TABLE OF CONTENTS

Description	Page
I. INTRODUCTION	1
A. PLANT DESCRIPTION & MAP (Figure 1)	
B. DESCRIPTION OF OPERATIONS	
II. THE PLAN	4
A. RESPONSIBILITY FOR CONFORMANCE WITH THE H ₂ S PLAN	
B. REVISIONS TO THE PLAN	
C. AVAILABILITY OF THE H ₂ S PLAN	
D. CONTENT OF THIS PLAN	
III. PLAN DESIGN CONSIDERATIONS	5
A. CHARACTERISTICS OF HYDROGEN SULFIDE, SULFUR DIOXIDE AND CARBON DIOXIDE	
1. Hydrogen Sulfide	
2. Sulfur Dioxide	
3. Carbon Dioxide	
B. RADII OF EXPOSURE (ROE)	
IV. EMERGENCY ACTION PROCEDURES	10
A. EMERGENCY RESPONSE ORGANIZATION	
B. EMERGENCY RESPONSE	
1. Objective	
2. Plant Evacuation and Emergency Assembly Areas	
3. Immediate Action Plan	
4. Emergency Shut Down System	
5. Notifications and Reports	
6. Site Security	
7. Sign & Markers	
8. First-Aid Station	
9. Media Site	
10. Emergency and Safety Equipment	
C. IMMEDIATE ACTION PLAN	
V. TRAINING AND DRILLS	21

APPENDICES

Appendix A – Worst Case Scenario for H₂S Release

Appendix B – Calculation for Radius of Exposure

Appendix C – Radius of Exposure (ROE) Map

Appendix D – Plant Diagram - Evacuation Routes, H₂S Monitoring and Alarm Locations

Appendix E – Description of Emergency Response Equipment

Appendix F – H₂S Contingency Plan - Response Flow Diagram(s)

Appendix G – Emergency Call List

Appendix H – H₂S Plan Distribution List

I. INTRODUCTION

The San Juan River Gas Plant (hereinafter the "Plant") is a natural gas processing plant which handles and/or generates hydrogen sulfide and/or sulfur dioxide; therefore this Hydrogen Sulfide Contingency Plan (the "H₂S Plan" or "the Plan") has been developed: 1) to satisfy the New Mexico Oil Conservation Division Rule 11, 2) to conform with API "Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide," RP 55, and 3) to create a site-specific hydrogen sulfide contingency plan that outlines the emergency response procedures that will be implemented to ensure a coordinated, efficient and immediate action plan for alerting and protecting operating personnel and the public as well as to prevent or minimize environmental hazards and damage to property. The terms used in this Plan are to be used in the same manner as defined in Title 19 Chapter 15 Part II of the New Mexico Administrative code (19.15.11.7- Definitions) unless otherwise defined herein.

A. PLANT DESCRIPTION & MAP (Figure 1)

The Plant is located in Kirtland, San Juan County, New Mexico and encompasses 300+ acres. It is owned and operated by Western Gas Resources Asset Holding Company LLC, which is a wholly owned subsidiary of Anadarko Petroleum Corporation (hereinafter collectively referred to as the Company).

More specifically, the Plant is located in Section 1, Township 29 S, Range 15 W in Kirtland, San Juan County, New Mexico.

1. Its coordinates are:

Latitude: 36.453 N Longitude: 108.220 W

2. Its physical address is:

99 County Road 6500, Kirtland, New Mexico 87417

3. Its mailing address is:

P. O. Box 70, Kirtland, New Mexico 87417

4. Driving Directions from Farmington, New Mexico to the Plant:

From the intersection of US Highway 64 and the LaPlata Highway (New Mexico Highway 170), travel west on US Highway 64 approximately 6.2 miles to the intersection of US Hwy 64 and County Road 6500 in Kirtland, New Mexico. Turn right on County Road 6500 and travel north approximately 1.7 mile to the entrance to the San Juan River Gas Plant.

The location of the Plant is illustrated herein on Figure 1.



Approximate Boundaries of Western Gas Resource Asset Holding Company Property
Anadarko San Juan River Natural Gas Processing Plant

Figure 1 Anadarko San Juan River Plant Location

B. DESCRIPTION OF OPERATIONS

1. The Plant operations include gas processing, conditioning and compression, as well as flow lines and storage tanks. The Plant gathers produced natural gas from San Juan County, New Mexico, as well as, from Southwestern Colorado, Northeastern Arizona, and Southeastern Utah. Once gathered at the Plant, the produced natural gas is compressed; treated in an amine process for the removal of carbon dioxide and hydrogen sulfide; and dehydrated to remove the water content; The processed natural gas is then sold and shipped to various customers.
2. Because the natural gas that gathered at the Plant contains hydrogen sulfide ("sour gas"), it must be treated or processed to remove these and other impurities. The carbon dioxide and hydrogen sulfide (H₂S) stream that is removed from the natural gas in the amine treating process is then sent to the Acid Gas Injection Well via the Acid Gas Compression (AGI). Any residual H₂S is routed to an incinerator where it is combusted into sulfur dioxide.

II. THE PLAN

A. RESPONSIBILITY FOR CONFORMANCE WITH THE H₂S PLAN

It is the responsibility of all personnel on-site to follow the safety and emergency procedures outlined in the Hydrogen Sulfide Contingency Plan (the H₂S Plan) as well as the following documents:

- Anadarko Petroleum Corporation Safety & Health Manual
- Anadarko Petroleum Corporation Emergency Response & Oil Spill Contingency Plan; and
- Anadarko Petroleum Corporation Environmental Policies and Programs.
- San Juan Gas Plant Emergency Response Plan required by OSHA 1910.119 Process Safety Management Standard.

B. REVISIONS TO THE PLAN

The H₂S Plan will be reviewed annually and revised at this time as necessary to address changes to the Plant facilities, operations, or training requirements, contact information and the public areas including roads, businesses, or residents potentially affected by the operations of the Plant, specifically those areas within the radii-of-exposure.

C. AVAILABILITY OF THE H₂S PLAN

The H₂S Plan shall be available to all personnel responsible for implementation, regardless of their normal location assignment. A copy of the Plan will be maintained at the Plant in the Superintendent's office and at the Anadarko Corporate Headquarters in The Woodlands, Texas. **See Appendix H for the H₂S Distribution List, which** lists all the additional entities that have been provided a copy of the H₂S Plan.

D. CONTENT OF THE PLAN

At a minimum, the H₂S Plan will contain information regarding: 1) the emergency procedures to be followed in the event of an H₂S or SO₂ release that may pose a threat to the Plant, public or public areas, 2) the characteristics of H₂S and SO₂, 3) a facility description, map and/or drawings, and 4) information regarding training and drills to be conducted related to this Plan.

III. PLAN DESIGN CONSIDERATIONS

A. CHARACTERISTICS OF H₂S, SO₂ AND CARBON DIOXIDE

1. Hydrogen Sulfide (H₂S)

The inlet gas streams into the Plant may contain approximately 6,000 ppm (or 0.60 mole percent) of hydrogen sulfide based on data generated from the sampling of the inlet gas at least three times daily.

Hydrogen sulfide is a colorless, toxic and flammable gas, and has the odor of rotten eggs. Hydrogen sulfide gas is heavier than air.

Hydrogen sulfide presents a significant health hazard by paralyzing the respiratory system resulting in serious injury or death.

Hydrogen Sulfide Properties & Characteristics		
CAS No.	7783-06-4	
Molecular Formula	H ₂ S	
Molecular Weight	34.082	
TWA	10 ppm	
STEL	15 ppm	
IDLH	100 ppm	
Specific Gravity (air = 1.0)	1.189	
Boiling Point	-76.5°F	
Freezing Point	-121.8°F	
Vapor Pressure	396 psia	
Autoignition Temperature	518°F	
Lower Flammability Limit	4.3%	
Upper Flammability Limit	46.0%	
Stability	Stable	
pH in water	3	
Corrosivity	Reacts with metals, plastics, tissues & nerves	
Physical Effects of Hydrogen Sulfide		
Concentration		
ppm	%	Physical Effect
1	.00010	Can be smelled (rotten egg odor)
10	0.0010	Obvious & unpleasant odor; Permissible Exposure Limit; Safe for 8-hour exposure
15	0.0015	Short Term Exposure Limit

		(STEL); Safe for 10 minutes of exposure without respirator
50	0.0050	Loss of sense of smell in 15 minutes
100	0.0100	Immediately Dangerous to Life & Health (IDLH); Loss of sense of smell in 3-15 minutes; Stinging in eyes & throat; Altered breathing
200	0.0200	Kills smell rapidly; Stinging in eyes & throat
500	0.0500	Dizziness; Unconscious after short exposure; Need artificial respiration
700	0.0700	Unconscious quickly; death will result if not rescued promptly
1,000	0.1000	Instant unconsciousness; followed by death within minutes

2. Sulfur Dioxide (SO₂)

Sulfur dioxide is produced as a by-product of H₂S combustion at the incinerator. The incinerator unit receives the residual hydrogen sulfide and carbon dioxide stream that is routed from the amine unit.

It is colorless, transparent, and is non-flammable, with a pungent odor associated with burning sulfur.

Sulfur dioxide is heavier than air, but will be picked up by a breeze and carried downwind at elevated temperatures. Sulfur dioxide can be extremely irritating to the eyes and mucous membranes of the upper respiratory tract.

Sulfur Dioxide Properties & Characteristics	
CAS No.	7446-09-5
Molecular Formula	SO ₂
Molecular Weight	64.07
TWA	2 ppm
STEL	5 ppm
IDLH	100 ppm
Specific Gravity (air = 1.0)	2.26
Boiling Point	14°F
Freezing Point	-103.9°F
Vapor Pressure	49.1 psia.
Autoignition Temperature	N/A
Lower Flammability Limit	N/A
Upper Flammability Limit	N/A
Stability	Stable
Corrosivity	Could form an acid rain in aqueous solutions

Physical Effects of Sulfur Dioxide	
Concentration	Effect
1 ppm	Pungent odor, may cause respiratory changes
2 ppm	Permissible exposure limit; Safe for an 8 hour exposure
3-5 ppm	Pungent odor; normally a person can detect sulfur dioxide in this range
5 ppm	Short Term Exposure Limit (STEL); Safe for 15 minutes of exposure
12 ppm	Throat irritation, coughing, chest constriction, eyes tear and burn
100 ppm	Immediately Dangerous To Life & Health (IDLH)
150 ppm	So irritating that it can only be endured for a few minutes
500 ppm	Causes a sense of suffocation, even with first breath
1,000 ppm	Death may result unless rescued promptly.

3. Carbon Dioxide

The inlet gas streams to the Plant may contain approximately 8% carbon dioxide which will be confirmed with inlet gas monitoring readings. Carbon dioxide gas is colorless, odorless, and non-flammable. Carbon dioxide is heavier than air.

Carbon Dioxide Properties & Characteristics	
CAS No.	124-38-9
Molecular Formula	CO ₂
Molecular Weight	44.010
TWA	5,000 ppm
STEL	30,000 ppm
IDLH	40,000 ppm
Specific Gravity (air = 1.0)	1.5197
Boiling Point	-109.12°F
Freezing Point	-69.81°F
Vapor Pressure	830 psia
Autoignition Temperature	N/A
Lower Flammability Limit	N/A
Upper Flammability Limit	N/A
Stability	Stable
pH in saturated solution	3.7
Corrosivity	dry gas is relatively inert & not corrosive; can be corrosive to mild steels in aqueous solutions

Physical Effects of Carbon Dioxide	
Concentration	Effect
1.0 %	Breathing rate increases slightly
2.0 %	Breathing rate increases to 50% above normal level. Prolonged exposure can cause headache, tiredness
3.0 %	Breathing rate increases to twice normal rate and becomes labored. Weak narcotic effect. Impaired hearing, headache, increased blood pressure and pulse rate
4 – 5 %	Breathing increases to approximately four times normal rate, symptoms of intoxication become evident, and slight choking may be felt
5 – 10 %	Characteristic sharp odor noticeable. Very labored breathing, headache, visual impairment, and ringing in the ears. Judgment may be impaired, followed within minutes by loss of consciousness
10 – 100 %	Unconsciousness occurs more rapidly above 10% level. Prolonged exposure to high concentrations may eventually result in death from asphyxiation

B. RADII OF EXPOSURE (ROE)

For the existing operations, the “Radius of Exposure” for both 500-ppm and 100-ppm of H₂S gas was determined using the “escape rate”, which is calculated using the maximum daily rate of the gaseous mixture that is handled by the Plant. The rates and other variables used to calculate the ROE is discussed in greater detail in **Appendix B - ROE calculations**. Also refer to **Appendix C - map showing 500-ppm ROE and the 100-ppm ROE**.

500-ppm ROE	1634 feet
100-ppm ROE	3576 feet

IV. EMERGENCY ACTION PROCEDURES

A. EMERGENCY RESPONSE ORGANIZATION

The Plant uses the Incident Command System (ICS) for emergency response. The ICS structure used is based on the National Interagency Incident Management System (NIIMS), and is consistent with the National Contingency Plan (NCP).

In the event of an accidental release that results in the activation of the H₂S Plan and all personnel have been evacuated out of the affected area, the Superintendent, or his designee, will be the On-Scene Incident Commander (IC in this Plan). The IC will contact and coordinate with Anadarko's management in corporate office. If the severity of the response requires activation of the Emergency Response Center in The Woodlands, Texas office, the ICS structure will be staffed per the Anadarko Southern Region Emergency Response & Oil Spill Contingency Plan Manual. The staffing will not change the H₂S Plan contained herein.

The Superintendent or his designee shall determine:

- 1) Plant Shutdowns
- 2) Isolation of pipeline segments
- 3) Repairs, tests or restarts as required

If an emergency occurs, the Superintendent, or his designee, shall be notified first. The Superintendent, or his designee, shall notify Anadarko's Office in The Woodlands, Texas

B. EMERGENCY RESPONSE

This section explains the procedures and decision to be used in the event of an H₂S release; much of which has been pre-determined to ensure a coordinated, efficient and immediate action plan for alerting and protecting operating personnel and the public as well as to prevent or minimize environmental hazards and damage to property.

1. OBJECTIVE

All Plant employees shall be prepared to respond to an H₂S or SO₂ emergency at the Plant. Emergency response actions may be taken for a variety of situations that may occur in the Plant. The Plan is activated in progressive levels based on the concentration of H₂S that has been released. The Plant has three (3) activation levels that are described below and in detail in the Response Flow Diagram in Appendix F.

Level 1 – Intermittent alarm sounded and/or flashing red beacons activated for H₂S greater than 10 ppm.

Level 2 – Continuous alarm sounded and/or flashing red beacons activated for H₂S greater than 20 ppm.

Level 3 – Catastrophic release; fire; explosion; a continuous release of maximum volume for 24 hours; or Rule 11 Mandatory Activation for 100 ppm in any defined public area; 500 ppm at any public road; or 100 ppm at a distance greater than 3000 feet from the site of the release. Because the 100 ppm ROE boundary is greater than 3000 feet from the site of the release, a Level 3 response would occur before the escape of the 24-hour release volume.

As soon as the Plan has been activated based on the criteria above, the Superintendent, or his designee, should be notified.

2. PLANT EVACUATION AND EMERGENCY ASSEMBLY AREAS

- A. Plant evacuation for all visitors and Plant personnel that are not operators begins at the 10 ppm H₂S intermittent alarm and/or flashing beacon. The Plant operators are to put on the 30-min SCBA and first determine if any personnel are in distress and assist any distressed personnel evacuate to the Emergency Assembly Area 1. Emergency services (911) will be contacted if there are injuries or as otherwise deemed necessary. BHP Mines, Praxair and the unmanned facilities within the 500 ppm radius of exposure (**Appendices C and G**) are also to be notified. The operators will then, wearing the SCBA, investigate the cause of the release. At the sound of the alarm and/or flashing red beacons, all other personnel in the Plant are to stop work, check the prevailing wind direction and immediately proceed along designated evacuation and/or upwind to the pre-designated Emergency Assembly Area(s) that are described in **Appendix F**.

Prevailing winds in the area are from the east and evacuation along the designated routes should be upwind. If the designated evacuation route is downwind of the release, (based on the windsock), then all evacuees should proceed upwind to the Emergency Assembly Areas.

The Plant evacuation diagram showing evacuation routes is attached in **Appendix D** and the Emergency Assembly Areas are shown in the attachment in **Appendix C**.

The Emergency Assembly Area 1 is:

**Parking Area on the eastside of the Superintendent's Office
Building (see Appendix C & D)**

The Emergency Assembly Area 2 is:

**Area at Plant Rd and Hwy 6500
(see Appendix C)**

The Emergency Assembly Area 3 is:

**Kirtland Elementary School Parking Lot , 30 Road 6446
(see Appendix C)**

- B. Roll call shall be conducted at the Emergency Assembly Area to assure all personnel have evacuated safely. This facility is a PSM facility and requires all visitors check in before entering the Plant, thus the check-in sheet will be used at the Emergency Assembly Areas to make a full accounting of all personnel and visitors.

3. IMMEDIATE ACTION PLAN/INITIAL RESPONSE

The following outlines the immediate action plan that is illustrated by the flow diagram in **Appendix F**. This is to be used when responding to an H₂S release. Additional or long term response actions will be determined on a case-by-case basis, if needed, once the Incident Command Center and System is established following the immediate response.

LEVEL 1 RESPONSE

1. The audible signal for a Plant H₂S emergency and evacuation is an intermittent horn (repeating on/off) activated when levels of H₂S or 10 ppm are detected. The frequency of the intermittent alarm will increase as the concentration of H₂S increases. In addition, a flashing red light or beacon will be activated at 10 ppm H₂S. A control panel in the plant control room establishes which H₂S monitor has activated the alarm and flashing red beacon, be it a plant monitor or perimeter monitor. At the initial sound of the intermittent alarm or the flashing red beacon, each operator (2 per shift) will put on a 30 minute SCBA and all other personnel in the Plant complex shall immediately evacuate the Plant using the evacuation routes to the Emergency Assembly Area 1 (see **Appendix D**). A fixed H₂S perimeter monitor at the Emergency Assembly Area 1 has an H₂S concentration read out to assure safety or further evacuation to Emergency Assembly Area 2 (>10ppm). The operators, upon donning the SCBA, will first help with any persons in distress evacuate to the Emergency Assembly Area. If deemed necessary by the Senior Operator, local emergency response service providers will be contacted by Plant personnel designated by the Senior Operator.
2. All entities within the 500 ppm ROE (see **Appendices C and G**) and BHP Mines, Praxair and unmanned facilities will be notified of a release by personnel designated by the Superintendent or his designee. The nature of the release and status of containment will be conveyed. Both will be advised to report the incident to employees working near the Plant and to alert any third party contractors or service companies working in the Plant vicinity or imminently scheduled to work in the Plant vicinity, of the release. All should be instructed to leave the area and not to enter/re-enter the area until further notice.

3. Wearing the SCBA, the operator(s) will attempt to fix the cause of release. OSHA guidelines allow operators to work in areas with 10 ppm up to 8 hours. The H₂S levels at the Emergency Assembly Area 1 will be monitored with a hand held or personal monitor as well as with the fixed monitor.
4. The Senior Operator will set up secondary re-entry team(s) with 30 minute SCBA to re-enter and resolve the situation. Re-entry will occur in 15 minute shifts at the direction of the IC until the problem is resolved or the ESD is activated. If H₂S levels in the Emergency Assembly Area 1 exceed 10 ppm, evacuate to Emergency Assembly Area 2 and continue to monitor Assembly Area H₂S level. In addition, a fixed H₂S perimeter monitor at the Emergency Assembly Area 2 has an H₂S concentration read out. If release is resolved and monitored levels in the Plant are less than 10 ppm, personnel may re-enter the Plant. BHP, Praxair and the unmanned facilities within the 500 ppm radius of exposure (see **Appendices C and G**) will be notified once the release is contained and monitored H₂S levels are less than 10 ppm. The OCD shall be notified within one hour of any release that activates the Plan. If the release is not resolved and H₂S levels continue to increase, Level 2 Response is indicated.

LEVEL 2 RESPONSE

1. The continuous alarm indicates the detection of H₂S greater than 20 ppm. Flashing red beacons indicate an H₂S release of 10 ppm or greater and they will continue for a release of 20 ppm or greater. A control panel in the plant control room establishes which H₂S monitor has activated the alarm and flashing red beacon, be it a plant monitor or perimeter monitor. At the initial sound of the continuous alarm and observance of the flashing red lights and/or beacons, the operators will immediately put on a 30 minute SCBA and all other personnel will put on emergency escape packs, if they are wearing them, and evacuate along with all other personnel using the evacuation routes to the Emergency Assembly Area 2 (see **Appendix D**). The operators, upon donning the SCBA, will first help any persons in distress evacuate to the Emergency Assembly Area. If deemed necessary by the Senior Operator, local emergency response service providers will be contacted by Plant personnel designated by the Senior Operator.
2. Praxair is trained to evacuate at continuous alarm sounds. Praxair, BHP Mines and all other entities within the 500ppm ROE (see **Appendices C and G**) will be contacted by phone and notified of release and asked to evacuate, if they have not already. All entities within the 100 ppm ROE (see **Appendices C and G**) will be contacted by phone and notified of the release. The nature of the release and the status of containment will be conveyed. Depending on release status and the prevailing wind conditions, some entities within the 100 ppm ROE may be asked to shelter in place or evacuate. Notifications will include, but are not limited to the following:

- Praxair, BHP and all unmanned businesses will be instructed to alert all company personnel, third party contractors and/or service companies working in the area and those imminently scheduled to work in the area, of the release and evacuation status of the Plant. They should be instructed to immediately leave and/or not enter/re-enter the Plant vicinity until further instructed.
 - BHP will be advised to check ventilation shaft status within the 500 and 100 ppm ROE and take internal company pre-emptive safety action(s) as deemed appropriate.
 - Riverview Golf Course will be instructed to clear the course of both employees and golfers until further notices.
 - San Juan College will be notified of the release and depending on prevailing wind conditions may be requested to shelter in place or evacuate.
 - Other entities within the 100 ppm ROE, depending on release status and prevailing wind conditions, will be asked to shelter in place. Those entities will be instructed to close any doors and windows and shut off any air conditioning and heating until further notice. In addition, they will be instructed to contact other employees/residents not currently present to not enter/reenter the area until further instruction.
3. The LEPC and law enforcement will be contacted by phone and notified of the release and status of containment. The Superintendent or his designee will assign personnel notification responsibility.
 4. Operator(s) with 30 minute SCBA will access the release and attempt to resolve it. If after 15 minutes there is no resolution, the operator(s) will activate the ESD and will evacuate to Emergency Assembly Area 2.
 5. If monitored H₂S levels at Emergency Assembly Area 2 exceed 10 ppm, evacuate to Emergency Assembly Area 3, Kirtland Elementary School parking lot. If deemed necessary, local emergency response providers will be contacted by the operator.
 - a) Re-entry will occur in full SCBA and in 15 minute shifts at the direction of the IC until IC determines problem has been resolved or additional ESD (pipeline) are activated.
 - b) If release is resolved and monitored levels of H₂S in the Plant are less than 10 ppm, personnel may return to the plant. The OCD shall be notified within one hour of any release that activates this Plan. All businesses previously notified will be informed that the release has been resolved and advised of the current monitored H₂S levels at the Plant.
 - c) No resolution requires activation of the full H₂S Plan with notification and reporting of per Plan. If the release is not resolved and/or H₂S levels continue to increase, Level 3 Response is indicated.

LEVEL 3 RESPONSE

1. For H₂S levels at 20 ppm or greater at Emergency Assembly Area 2, repair efforts at Level 2 unsuccessful, worst case scenario, and/or catastrophic release have occurred, then implement a Level 3 response.
2. Road blocks will be set up at the intersection of County Road 6500 and County Roads 6446 and 6480. In addition, a road block will be set up at the intersection of County Road 6520 and County Road 6257 on the west, and where 6520 turns south on the east. A road block will also be set up on the Indian Service Route outside the 100 ppm ROE (approximately 4000 feet north of the Plant, see **Appendix C**).
3. All personnel shall have evacuated to Emergency Assembly Area 3, Kirtland Elementary School. Evacuation of all entities within the 500 ppm ROE will have been confirmed. Implement full H₂S plan with all notification and public agency involvement. Notifications to all entities within the 100 ppm ROE will include the nature of the release and status of containment. Notifications will include, but are not limited to. The following:
 - All businesses with the 100 ppm ROE will be instructed to immediately alert all company personnel, third party contractors and/or service companies working in the area and those imminently scheduled to work in the area, of the release and evacuation status of the Plant. They will be instructed to immediately leave and/or not enter/reenter the area within the road blocks until further instructions.
 - All other entities within the 100 ppm ROE will be instructed to shelter in place. Those entities will be instructed to close any doors and windows and shut off any air conditioning and heating until further notice. In addition, they will be instructed to contact other employees/residents not currently present to not enter/reenter the area until further instruction.
 - BHP will be advised to check ventilation shaft status with the Plant vicinity and take internal company pre-emptive safety action(s) as deemed appropriate.
 - Riverview Golf Course will be instructed to immediately clear the course of both employees and golfers and shelter in-place at the club house. Those entities will be instructed to close any doors and windows and shut off any air conditioning and heating until further notice. In addition, they will be instructed to contact other employees/residents not currently present to not enter/reenter the area until further instruction.
 - San Juan College will be notified of the release and advised to shelter in-place until otherwise advised. Those entities will be instructed to close any doors and windows and shut off any air conditioning and heating until further notice. In addition, they will be instructed to contact other employees not currently present to not enter/reenter the area until further instruction. Depending on the event circumstances, the IC commander will make a summary judgment, based on but not limited to H₂S concentration and wind direction, whether a safe evacuation should be implemented and advise on the evacuation route.

4. If escaping vapors have been ignited, the vapors should be allowed to continue to burn, unless the fire endangers personnel, other property or other equipment.
5. When applicable: Maintain communication with the Superintendent, or his designee, to keep him up-to-date of the situation and the action taken prior to his arrival at the location.
6. Initiate and maintain a Chronological Record of Events Log.
7. Within one hour after the activation of the H₂S Plan, begin agency notification by calling the OCD and NRC.
8. Establish media staging area adjacent to Assembly Area 3 and direct all media to it.
9. Once resolved and monitored levels in the Plant and at Assembly Area 2 are less than 10 ppm, road blocks will be removed, and all entities within the 100 ppm ROE will be allowed to return. All entities previously notified will be informed that the release had been resolved and advised of the current monitored H₂S levels at the Plant.
10. Agency reports to be submitted as required.

4. EMERGENCY SHUTDOWN SYSTEM

The Plant has an extensive Emergency Shut Down (ESD) system that is located within the plant and in various locations along the pipelines that feed the Plant. The ESD is designed to prevent a Level 3 response. See **Appendix E** for a more detailed description of the ESD.

5. NOTIFICATIONS AND REPORTS

The Plant has various notification and reporting obligations. Some are related to its state air quality permit that is overseen by NMED as well as state and federal spill reporting obligations. In addition to the regulatory obligations noted above, Plant personnel also have internal and external notification and reporting obligations associated with the activation of this Plan.

A. DISCOVERY AND INTERNAL REPORTING

1. If the response action needed to resolve the issue is more than simply closing a valve or stopping a small leak, the Plant personnel shall notify the Superintendent, or his designee and convey, at a minimum, the following information:
 - Name, telephone number, and location of person reporting the situation; and
 - Type and severity of the emergency; and
 - Location of the emergency (area/block, mile markers, latitude & longitude, or building), and the distance to surrounding equipment and/or structures; and

- The cause of the spill or leak, name and quantity of material released, and extent of the affected area including the degree of environmental hazard; and
 - Description of injuries and report of damage to property and structures; and
 - Initiate and maintain a Chronological Record of Events log. This record should record the time, date, and a summary of the event.
2. If the Plant personnel detects H₂S levels of greater than 10 ppm on the Plant intermittent alarm and/or red flashing beacons, Plant operators are to contact their immediate supervisor for assistance and put on the 30-min SCBA so they can attempt to resolve the issue. All non-essential personnel shall be notified of the release and evacuate from the area. Operators wearing SCBA are to first assist any persons requiring assistance during the evacuation, then attempt to resolve the issue. The immediate supervisor is then responsible for notifying the Superintendent, or his designee, so that the IC system can be implemented and the H₂S Plan activated, if necessary.
 3. Once the Superintendent is contacted, he or his designee is to notify the appropriate corporate management, EHS personnel, Plant emergency response personnel, and advise them of the existing emergency situation. Corporate management will then conduct the reporting up that is necessary based on the situation.
 4. Plant personnel are to advise any contractor, services company and all others on-site or attempting to enter the Plant that the H₂S Plan has been activated.

B. PUBLIC AWARENESS AND COMMUNICATION

Public awareness and communication is a primary function of the H₂S Plan. The company has compiled a list of various public, private, state, local contacts that are to be notified at various phases during the activation of the Plan. Refer to the Flow diagram in **Appendix F** that indicates when certain entities are to be contacted in event of activation of this Plan. **Appendix G** is a listing of the entities to be contacted and **Appendix H** is a list of community organizations that have received a copy of the Plan. Company will inform all state and local response organizations on its Plan as well as those businesses that fall within its 500-ppm and 100-ppm ROE as illustrated in **Appendix C**.

C. PUBLIC AREAS, NEARBY BUSINESSES AND RESIDENTS

The contact information for all residents, businesses and public areas is contained in **Appendix G**. All entities within the 500 ppm and 100 ppm radius of exposure will be contacted by Plant personnel as designated by the Superintendent, or his designee, if the Plan is activated and based on response level as described in the Immediate Action Plan and advised of the following:

- The nature and extent of the release/emergency at the Plant and recommendations for protective actions, such as evacuation or shelter-in-place
- Any other event specific information that is necessary to protect the public; and
- Updates as to the status of the release and continued safety measures to be taken, including but not limited to, when to evacuate and/or when it is safe to return to the area.

1. Residences or Public Roads:

Public Road 6500 is within the 100 ppm radius of exposure, and portions of Public Roads 6520, 6257 and Cemetery Road are slightly within the southernmost portion of the 100 ppm radius of exposure. Similarly, a small portion of Public Roads 6448 and 6480 are within the eastern portions of the 100 ppm radius of exposure. (see **Appendix C**). The specific residences included within the 100 ppm radius of exposure are listed on **Appendix G** along with addresses and contact phone numbers.

2. Businesses or Other Public Areas:

All businesses included in **Appendix G** on this list will be provided with a copy of the H₂S Plan and will be contacted about participation when local emergency response training events or drills occur.

Within the 100 ppm ROE:

There public areas within the 100 ppm radius of exposure are identified in **Appendix G**.

BHP Mining will be contacted when the Plan is activated to ensure that the out of service vent pipes have not been activated. Currently, there are active BHP Mining ventilation pipe ducts are within the 100 ppm ROE and inactive ventilation pipe ducts within the 500 ppm radius of exposure.

Additional businesses within the 100 ppm radius of exposure are listed in **Appendix G** and they will be notified if the Plan is activated as per the various levels of the immediate action Plan described above. These businesses or their corporate offices (in the case of the unmanned facilities) will be notified if the Plan is activated as per the immediate action Plan.

Within the 500 ppm ROE:

One manned business (Praxair) within the 500-ppm ROE (see **Appendix G**). Praxair, BHP Mine and all other entities within the 500 ppm ROE (see **Appendices C and G**) will be contacted by phone and notified of release and to evacuate. The corporate offices of the four unmanned businesses will also be notified immediately if the Plan is activated according to the level specific procedures described above.

Riverview Golf Course will be instructed to clear the course of both employees and golfers until further notice.

6. SITE SECURITY

- A. In order to have an accurate listing of all personnel on-site in the event of an emergency, a daily sign-in log sheet shall be utilized. The sign-in log sheet shall include at a minimum the person's name, the company name, the time of arrival, and the time of departure.
- B. The Incident Commander, shall be responsible to assure that all personnel sign-in upon arrival and sign-out upon departure from the job site.
- C. The Incident Commander may, at his discretion, assign the responsibilities for the daily sign-in log sheet to the individual designated as the Record Keeper or another designee.
- D. At the discretion of the Incident Commander, a security coordinator and/or a security team may be established, and the access to the job site restricted.
- E. For any evacuation to Emergency Assembly Area 2, a road block at the Plant entrance will be established to prevent further entrance to the Plant.
- F. For a level 3 release Road blocks will be set up at the intersection of County Road 6500 and County Roads 6446 and 6480. In addition, a road block will be set up at the intersection of County Road 6520 and County Road 6257 on the west, and where 6520 turns south on the east. A road block will also be set up on the Indian Service Route outside the 100 ppm ROE (approximately 4000 feet north of the Plant)

7. SIGNS & MARKERS

The Plant has warning signs indicating the presence of "H₂S/Poisonous Gas" and "High Pressure Gas" at the entrance to the Plant. Emergency response phone numbers are posted at the entrance to the Plant. Signs are located at the Plant gate entrance indicating that all visitors are to sign in.

8. FIRST-AID STATION

The first aid station will be located at the Emergency Assembly Area.

FIRST AID KITS are located:

- **Superintendent Office Building,**
- **Maintenance/Safety Office Building, and**
- **Each company vehicle.**

9. MEDIA SITE

- 1) If a Level 2 or 3 Response occurs, the Media Site will be located adjacent to Emergency Assembly Area 3.
- 2) At no time shall any unescorted representative from the media be allowed any closer to the plant than the Media Site location, unless approved by the Incident Commander, the Safety Officer, and the Media Relations Officer.

10. EMERGENCY AND SAFETY EQUIPMENT

Refer to **Appendix E and Appendix D** for information pertaining to the Plant's emergency and Safety equipment. In addition, see **Appendix C** for the location of additional H₂S sensors that are installed outside the plant boundary.

V. TRAINING/DRILLS/EDUCATION

A. TRAINING

1. Training on the H₂S Plan
 - Inclusion of local officials and LEPC
 - Public areas and businesses (within the ROE)
 - Those on the Plan distribution list
2. Other Emergency Response Related Training

Anadarko/Western has an extensive safety training program and addresses various aspects of job related hazards. All training records for the Plant are maintained at the Plant. The following is a limited list and summary of the training programs that relate to the H₂S Plan and Emergency Response:

- Plant Orientation Training - All Plant personnel, visitors, and contractors must attend a Plant overview orientation prior to obtaining permission to enter the Plant. A refresher course on this training is required annually for all persons. This training also complies with the requirements of the Anadarko and Plant's Process Safety Management Program and Procedures Manuals.
- Hydrogen Sulfide and Sulfur Dioxide Training – All Plant personnel receive annual refresher training on hydrogen sulfide and sulfur dioxide, which is conducted by Anadarko personnel. If an individual is unable to attend, they may be required to attend a third party training session. Hydrogen sulfide training cards are issued as documentation of this training. All contract employees and visitors are required to have had hydrogen sulfide training and to provide the Plant a copy of their certification card prior to obtaining permission to enter the plant.
- Respirators - All Plant personnel, with the exception of the Plant Operations Specialist, are trained annually on the proper use of respirators. In addition to the annual training, all Plant personnel with the exception noted above are fit tested annually on the respirators. Except for the Plant Operations Specialist, all Plant personnel must have medical clearance to work in the Plant. Medical clearance is mandatory for H₂S certification. Medical clearance review for work in a H₂S environment is conducted on a bi-annual basis unless the individual has experienced medical problems within that two year interval that requires updating the medical clearance.
- Hazard Communication - All Plant personnel are trained annually on Hazard Communication and SARA Title III Right-to-Know information. The annual training includes, at a minimum, a review of material safety data sheets (MSDS) for those materials that are present at the Plant and labeling.
- Personal Protective Equipment (PPE) - All Plant personnel are trained annually on the Anadarko requirements for personal protective equipment (PPE). The training includes,

at a minimum, a review of all the types and levels of personal protective equipment and how to select the correct equipment for the job.

B. EMERGENCY RESPONSE DRILLS

1. The Plant will conduct, at least, a tabletop drill annually. Multiple drills during the year may be scheduled at the discretion of the Superintendent or as part of the Emergency Response Center in The Woodlands.
2. The annual drill will exercise this Plan and include, at a minimum, contacting the entities that are identified as being within the 500-ppm ROE and the Local Emergency Response contacts identified on **Appendix G**. The drills will also include briefing of public officials on issues such as evacuation or shelter-in-place plans.
3. Drill training will be documented and those records will be maintained at the Plant. The documentation shall include at a minimum the following:
 - a. Description or scope of the drill, including date and time
 - b. Attendees and Participant to the drill
 - c. Summary of activities and responses
 - d. Post drill de-brief and reviews

C. EDUCATION

1. All businesses and residents within the 100 ppm ROE will be educated at to the plant alarms, when they will be contacted and what it means to shelter in place.
2. All businesses and residents that could be asked to evacuate will be advised as to the best evacuation routes.

APPENDIX A

WORST CASE SCENARIO

The basis for worst case calculations is 6000 parts per million (ppm) or 0.60 mole percent of hydrogen sulfide in the inlet gas to the San Juan River Gas Plant and a maximum daily (24 hour) processing volume of 50 mmscf/d. The ROE assumes an uncontrolled instantaneous release from the area around the amine contact towers of the referenced volume and concentration. Calculations using the ROE formula pursuant to NMAC 19.15.11 are provided in **Appendix B**.

It should be noted that this rate, though used as worst case, would unlikely be released due to the plant emergency shut down (ESD) systems that when activated shuts down the plant. ESD valves on the inlet receivers to the plant act as secondary control to prevent gas from entering the plant. In addition, each inlet pipeline (Aneth and Barker) have manual block valves 2 miles from the plant as well as manual block valves another 6 and 8 miles down respectively.

APPENDIX B

RADIUS OF EXPOSURE CALCULATIONS

The formulas for calculating the two ROEs (as specified by the regulations) are as follows:

500-ppm RADIUS OF EXPOSURE CALCULATION

$$X = [(0.4546)(\text{hydrogen sulfide conc.})(Q)]^{0.6258}$$

Where:

X = Radius of exposure in feet

Hydrogen Sulfide Conc = Decimal equivalent of mole or volume fraction of hydrogen sulfide in the gaseous mixture

Q = Escape rate expressed in million cubic feet per day (corrected for standard conditions of 14.73 psi absolute and 60 degrees Fahrenheit)

- a) For existing facilities or operations, the escape rate (Q) is the maximum daily rate of the gaseous mixture produced or handled or the best estimate thereof. For the San Juan River Gas Plant the Company is using for contingency planning purposes an "escape rate" equal to the inlet gas volume of 50 mmcf/d. The (actual) inlet gas volume at the Plant is somewhat variable and is continuously metered. The Plant records daily inlet gas volumes and prepares a daily volume report. 50 mmcf/d has been selected as the escape rate since it is the highest volume that the Plant would handle under its current operations and is considered worst case interpretation of the volume of gas.

As to hydrogen sulfide concentration of the inlet gas, daily monitoring data indicates variable concentrations, however 6000 ppm (0.60 mole percent) is a worst case scenario. Thus, the Plant has used a hydrogen sulfide concentration of 6000 ppm for its contingency planning purposes.

Using:

Q = 50

H2S conc = 6000 ppm or 0.60 mole%

$$\frac{[(0.4546)(\text{H2S concentration}) * (\text{gas volume } (Q))]^{0.6258}}{[(0.4546)(6000) * (50)]^{0.6258}}$$

500-ppm ROE = 1634 feet

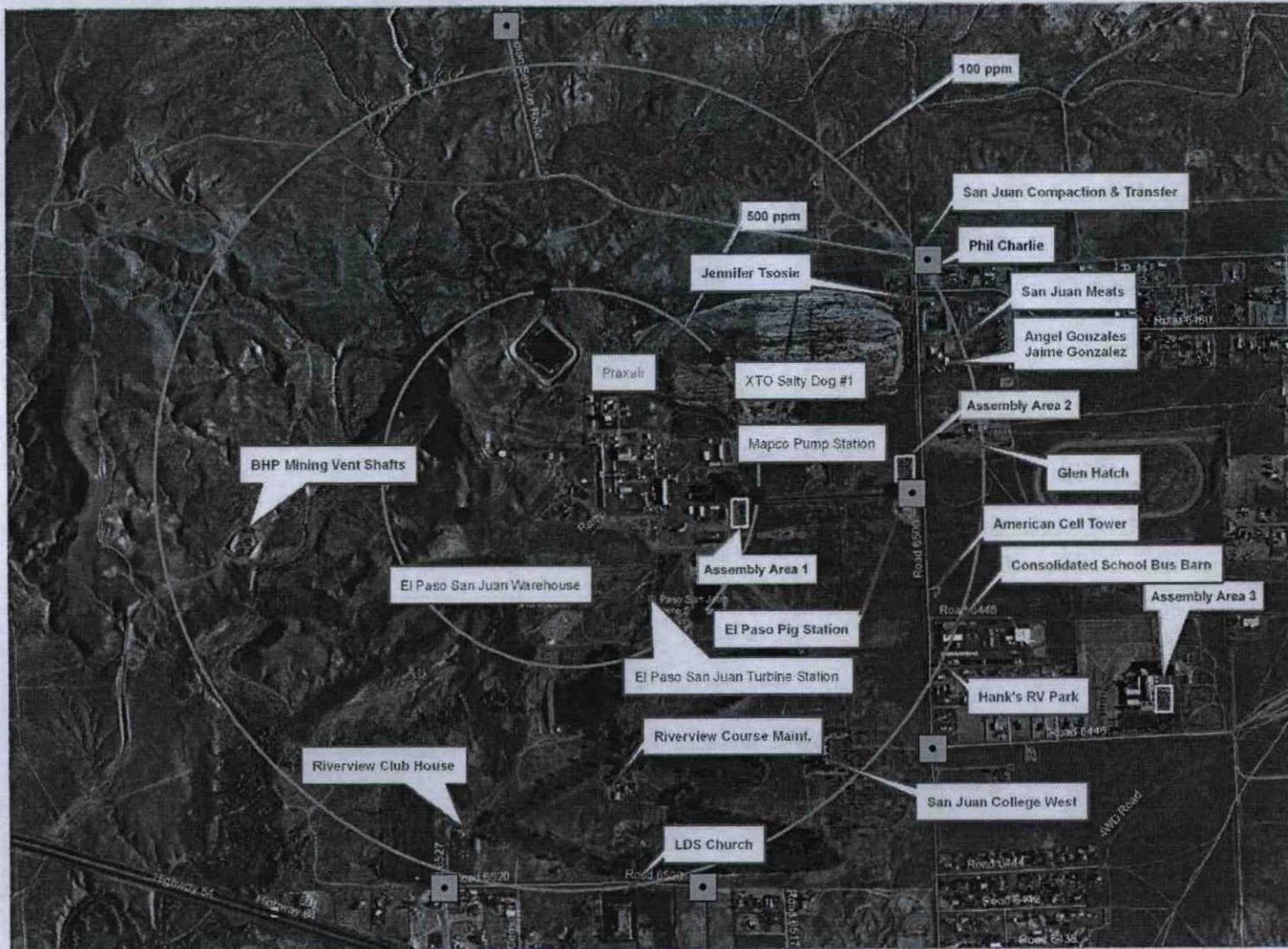
100-ppm RADIUS OF EXPOSURE CALCULATION

$$\frac{[(1.589)(\text{H2S concentration}) * (\text{gas volume})]^{0.6258}}{[(1.589)(6000) * (50)]^{0.6258}}$$

100-ppm ROE = 3576 feet

APPENDIX C

100-PPM AND 500-PPM
RADIUS OF EXPOSURE MAP



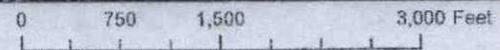
San Juan River Gas Plant
Hydrogen Sulfide Contingency Plan
Radius of Exposure

PROPOSED OPERATIONS

- AGI Well *
- Radius of Exposure
- 1634 ft (500 ppm)
- 3576 ft (100 ppm)
- Assembly Area
- Business

*Based on 60 MMscfd @ 6000 ppm H₂S

- H₂S Monitors
- Road Blocks



APPENDIX D

PLANT DIAGRAM WITH
EVACUATION ROUTES & EMERGENCY
EQUIPMENT LOCATIONS

APPENDIX E

DESCRIPTION OF H₂S MONITORING & ALARM SYSTEMS

A. EMERGENCY SHUTDOWN SYSTEM

There are (8) ESD manual stations located at various points in the facility (**Appendix D**). **The plant ESD can be activated at any time by Plant personnel at their discretion, or by direction of the Superintendent or the Incident Commander and is to be activated based on this Plan after 20 ppm H₂S has been detected in the Plant and efforts to resolve the issue for 15 minutes have failed.**

When anyone of the eight (8) manual stations is activated, the system will be shutdown and the natural gas inlets and outlets will be blocked. The operators are also able to auto close the two (2) main blocks on the incoming gas lines to the Plant. Activating these should allow the Plant to avoid a Level 3 response. Two miles north of the Plant on the Barker Dome line and the Aneth line, there are isolating block valves (manual) that can prevent further gas flow into the Plant pipeline system. Also, further upstream on the Barker and Aneth lines there are additional isolating block valves at 6 miles and 8 miles upstream on their respective lines. These block valves furthest upstream, isolate the entire system from the field gathering lines coming into the Plant.

B. PLANT ALARMS & WIND INDICATORS

1. Colored beacons, horns, and wind directions indicators are located in various locations throughout the plant and are indicated on **Appendix D**.
2. The audible signal for an emergency response and plant evacuation is a repeating intermittent on/off horn that sounds at 10 ppm H₂S. The frequency of this on/off horn will increase as the concentration of the H₂S release increases. The horn will become continuous when the concentration of the H₂S release is 20 ppm or higher. At the initial sound of the intermittent alarm, the plant operator will put on a SCBA and all personnel in the plant complex shall immediately proceed in a safe manner to the Emergency Assembly Areas as prescribed by the Emergency Action Plan beginning on page 10 of this plan and/or the H₂S Contingency Plan – Response Flow Diagrams in **Appendix F**.
3. A flashing red beacon signifies an H₂S release of 10 ppm and all personnel in the Plant complex shall immediately proceed in a safe manner to the Emergency Assembly Area 1 located east of the main office. If this area is not determined to be safe all will move to Emergency Assembly Area 2, which is on road 6500 at the main gate on the east side of the facility. Evacuation routes and Emergency Assembly Area 1 are indicated on **Appendix D**.

4. A routine process alarm will cause a horn to sound. This horn is a wavering siren sound that is used to alert the Plant Operator to return to the Control Room. No emergency response or evacuation is required when this siren sounds. Flashing beacons are located throughout the Plant and are utilized to assist the Plant Operator in identifying the location of the Plant alarm or upset. Any beacon colors other than red do not identify an emergency response or evacuation.
5. Wind direction indicators are installed throughout the plant and at the Plant Office Building. At least one wind direction indicator can be seen at any location within the plant complex, as well as, from any point on the perimeter of the plant. There are 10 windsocks located in the plant.
6. Additional permanent off-site H₂S monitors will be placed on the perimeter of the Plant coincident with the calculated radii of exposure as shown on Appendix C. These monitors will assist Anadarko in appropriate notification of potentially affected entities in the vicinity of the Plant within the calculated 100 ppm radius of exposure. The perimeter monitors give the operators an indication of H₂S leaving the plant boundaries. The perimeter monitors will activate the plant horn and flashing red beacon as described above. A control panel in the Plant control room/operators building indicates which monitor has triggered the alarm be it a plant monitor or perimeter monitor. All perimeter monitors have an external read out of H₂S concentration. Perimeter monitors can only be monitored from the Plant control room or by a walk up visual reading. In the event the control room is evacuated, the plant ESD system will be activated, substantially reducing the ROE, where perimeter monitors can be safely manually read.

C. GAS DETECTION EQUIPMENT

1. The San Juan Plant uses remote H₂S Sensors. These sensors are a fixed point monitor to detect the presence of hydrogen sulfide in ambient air. The sensors are connected to a process logic computer (PLC). There are indicators in the Plant control room so that the operators can identify where the H₂S has been detected. The red flashing beacon is activated at 10 ppm. The horn is activated with a wobble sound at 10 ppm and changes to a steady alarm at 20 ppm.
2. The fixed hydrogen sulfide monitors are strategically located throughout the plant to detect an uncontrolled released of hydrogen sulfide. The SRU has 4 sensors and the treating plant area has 4 sensors. There are two sensors at the east side of the plant. There is one sensors located at the liquid stabilizer skid. This is the center of the process area. The compressor building has eight methane sensors, these shut the compressors down at 50% LEL. The compressor building also is equipped with fire eyes that will also shut the units down. The plant operators are able to monitor the ppm level of H₂S of all the plant sensors on their control/monitor PLC located in the operators building. These sensors are all located on the plot plan on Appendix D. These sensors all have to be acknowledged and will not clear themselves. This requires immediate action for any occurrence or malfunction. The plant sensors are calibrated quarterly.
3. Hand held gas detection monitors are available to plant personnel to check specific areas and equipment prior to initiating maintenance or work on the process or equipment. There are 2 handheld and 9 personal monitors that are used by individuals for special projects and field work. The detectors have sensors for oxygen, LEL (explosive hydrocarbon atmospheres),

hydrogen sulfide, and carbon dioxide. They indicate the presence H₂S with a beeping sound at 10 ppm. The beeps change in tone as H₂S increases to 20 ppm. The personal monitors are set to alarm (beep) at 10 ppm with the beeps becoming closer together as the H₂S concentration increases to 20 ppm. Both the hand held and personal monitors have digital read outs of H₂S ppm concentration.

D. RESPIRATORS

1. The Plant has 30 minute Self-Contained Breathing Apparatus (SCBA) respirators and 5 minute escape packs strategically located throughout the Plant.
2. The respirator containers are identified in the process area and the locations are identified on **Appendix D.**
3. All Plant personnel with the exception of the Plant Operations Specialist are certified to use the SCBA respirators.

E. FIRE FIGHTING EQUIPMENT

1. The Plant personnel are trained only for insipient stage fire fighting.
2. The fire extinguishers located in the Plant process areas, compressor buildings, process buildings, and company vehicles are typically a 20# Ansul dry chemical fire extinguisher. **See Appendix D.**
3. The Plant does not have a fire water system, but only a utility water system that is not designed for fire fighting.

APPENDIX F

SIMPLIFIED H₂S CONTINGENCY PLAN FLOW DIAGRAM LEVEL 1 RESPONSE

H₂S DETECTED GREATER THAN 10 PPM &/OR INTERMITTENT ALARM SOUNDS

- OPERATORS PUT ON RESPIRATORS (30 minute SCBA) TO ASSESS & RESOLVE PROBLEM
(Operators are allowed under OSHA to work for up to 8 hours in 10ppm H₂S environment)
- ALL OTHERS EVACUATE TO ASSEMBLY AREA 1
- NOTIFY BHP MINES

AT ASSEMBLY AREA 1

- MONITOR H₂S LEVELS AT ASSEMBLY AREA VIA FIXED H₂S MONITOR READ OUT OR HAND HELD
- OPERATORS WILL SET UP SECONDARY ENTRY TEAMS W/ 30-MIN SCBA TO TRY TO RE-ENTER AND RESOLVE
- RE-ENTRY WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE IC UNTIL IC DETERMINES PROBLEM HAS BEEN RESOLVED OR ESD IS ACTIVATED

**CALL 911
IF INJURY OR DEATH
FOR EMERGENCY
ASSISTANCE**

**ONCE RESOLVED & MONITORED LEVELS
IN PLANT ARE LESS THAN 10 PPM
RETURN TO PLANT**

**IF H₂S LEVELS AT ASSEMBLY AREA 1
EXCEED 10PPM**

EVACUATE TO ASSEMBLY AREA 2

**NOTIFY NMOC D WITHIN ONE HOUR
MAKE AGENCY REPORTS AS
NECESSARY**

AT ASSEMBLY AREA #2

- ESTABLISH ROAD BLOCK OF PLANT ENTRANCE
- MONITOR H₂S LEVELS AT ASSEMBLY AREA
- FOLLOW LEVEL 2 RESPONSE ACTIONS

LEVEL 2 RESPONSE

H₂S LEAK DETECTED GREATER THAN 20 PPM &/ CONTINUOUS ALARM SOUNDS

- OPERATORS PUT ON RESPIRATORS (30-MIN SCBA) TO ASSESS & RESOLVE PROBLEM

(Operators have 15 minutes to resolve after which they must evacuate to Assembly Area #2 and begin rotational entry to Plant)

- ALL OTHERS EVACUATE TO ASSEMBLY AREA #2
- ESTABLISH ROAD BLOCK TO PLANT ENTRANCE
- EVACUATE PRAXAIR, BHP AND ALL OTHERS WITHIN 500 PPM ROE
- NOTIFY PRAXAIR, BHP AND ALL OTHER BUSNISSES WITHIN THE 100 AND 500 PPM ROE.
- NOTIFY LEPC AND OTHER PUBLIC OFFICIALS AND EMERGENCY SUPPORT SERVICES.

AT ASSEMBLY AREA #2

- MONITOR H₂S LEVELS AT ASSEMBLY AREA VIA FIXED H₂S MONITOR READ OUT OR HAND HELD
- IF MONITORED LEVELS EXCEED 10 PPM EVACUATE TO ASSEMBLY AREA 3 (KIRTLAND ELEMENTARY SCHOOL PARKING LOT)
- RE-ENTRY WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE IC UNTIL IC DETERMINES PROBLEM HAS BEEN RESOLVED OR ESD IS ACTIVATED)

**CALL 911
IF INJURY OR DEATH
FOR EMERGENCY
ASSISTANCE**

**ONCE RESOLVED & MONITORED LEVELS
IN PLANT ARE LESS THAN 10 PPM
RETURN TO PLANT**

**NOTIFY NMOCD WITHIN ONE HOUR
MAKE OTHER AGENCY REPORTS AS
PER H₂S PLAN**

IF CONSTANT ALARM SOUNDS FOR 15 MINUTES

- ACTIVATE PLANT EMERGENCY SHUT DOWN (ESD)
- ACTIVATE FULL H₂S PLAN WITH NOTIFICATIONS & REPORTING (FOLLOW LEVEL 3 RESPONSE)

LEVEL 3 RESPONSE

WORST CASE SCENERIO AND/OR CATASTROPHIC RELEASE FROM FIRE AND/OR EXPLOSION

- ALL PERSONNEL EVACUATE TO ASSEMBLY AREA 3
- ESTABLISH ROAD BLOCKS AS PER IMMEDIATE ACTION PLAN
- EVACUATE PRAXAIR AND ALL ENTITIES WITHIN 500 PPM ROE.
- IMPLEMENT FULL H₂S PLAN WITH ALL NOTIFICATIONS
- NOTIFY LOCAL FIRE, POLICE AND EMERGENCY SERVICES

ONCE RESOLVED & MONITORED LEVELS
IN PLANT ARE LESS THAN 10 PPM
RETURN TO PLANT

IF CONSTANT ALARM SOUNDS FOR 15 MINUTES

- ACTIVATE PLANT EMERGENCY SHUT DOWN (ESD)
- RE-ENTRY WILL OCCUR IN 15 MINUTE SHIFTS AT THE DIRECTION OF THE INCIDENT COMMANDER (IC) UNTIL IC DETERMINES PROBLEM HAS BEEN IDENTIFIED OR REPAIRED

APPENDIX G

EMERGENCY CALL LIST

SAN JUAN GAS PLANT EMERGENCY CALL LIST

ENTITIES WITH IN THE 500- PPM ROE

Name	Address	Contact Person	Phone Number
Riverview Golf Course	#64 County Road 6520 Kirtland, NM 87417	Steve Schoch	505-598-0140
BHP Mining	16 Miles West of Farmington, NM San Juan County Road RD6800	Main Guard Shack Dave Hales, Safety Manager	505-598-2000 505-486-1612
Kinder Morgan	81 County Road 4900 Bloomfield, NM 87413	Hale Burch	505-632-6042
Kinder Morgan - Gas Control	2 North Nevada Avenue Colorado Spring, Colorado 80903	Kevin Johnson	800-334-8047
Mid-America Pipeline Co. (Enterprise)	3621 East Main Farmington, NM 87402		505-599-3276 505-599-3277 800-546-3482
Praxair	101 County Rd 6500 Kirtland, NM 87414	Justin Stone	505-215-8331 505-598-0549 800-598-0549
XTO Energy	382 County Rd 3100 Aztec, NM 87417	Pat Roark	505-333-3100
San Juan College West	69 County Road 6500 Kirtland, NM 87417	Angie Riemer	505-598-5897

While BHP has no active vent shafts within the 500ppm ROE, they will be notified along with others entities contained within the 500ppm ROE to assure that no vents have been activated that would be affected.

ENTITIES WITH IN THE 100- PPM ROE

Name	Address	Contact Person	Phone Number
San Juan Co. Compaction and Transfer	141 County Rd 6500 Kirtland, NM 87417	Rusty Smith	505-334-4520
Phil Charlie	2 County Rd 6480 Kirtland, NM 87417	To Be Determined	505-860-0602
Jennifer Tsosie	136 County Rd 6500 Kirtland, NM 87417	Diego Tsosie	505-608-9542 505-809-5145
San Juan Meats	118 County Rd 6500 Kirtland, NM 87417	Doyle Hodgens	505-598-5060
Jaime Gonzales	118 County Rd 6500 Kirtland, NM 87417	Jaime Gonzales	505-793-6610
Myra Gonzales	118 County Rd 6500 Kirtland, NM 87417	Myra Gonzales	505-409-0594
San Juan College West	69 County Road 6500 Kirtland, NM 87417	Angie Riemer	505-598-5897
Kinder Morgan	81 County Road 4900 Bloomfield, NM 87413	Hale Burch	505-632-6042
BHP Mining	16 Miles West of Farmington, NM San Juan County Road RD6800	Dave Hales, Safety Manager	505-598-2311 505-486-1612
Central Consolidated School Bus Barn	76 County Rd 6500 Kirtland, NM 87417	Gloria Henderson	505-598-0132
Mid-America Pipeline Co. (Enterprise)	3621 East Main Farmington, NM 87402		505-599-3276 505-599-3277 800-546-3482
BHP Control Room (Emergency Notification)	300 County Rd 6900 Kirtland, NM 87417	Stephen Elsbury Steve Jones Billy Phillips	505-598-5558 505-598-2029 505-330-1684 (Cell) 505-598-2119 505-330-2570 (Cell)
Riverview Golf Course	#64 County Rd 6520 Kirtland, NM 87417	Steve Schoch	505-598-0140

**COMPANY INTERNAL NOTIFICATIONS
SAN JUAN RIVER PLANT PERSONNEL**

NAME	TITLE	OFFICE No.	CELLULAR No.	HOME No.
Kent McEvers	Superintendent	505-598-5601 ext. 15523	505-860-7208	505-326-4054
Arlyn Thorson	Area Supervisor	505-598-5601 ext. 15524	505-947-2417	505-326-6718
Bob McClain	Plant Operator	505-598-5601 ext. 15542	505-330-1966	505-325-8715
Tiffany Garcia	Operations Specialist	505-598-5601 ext. 15521	505-419-2733	
Andrew Adame	Plant Operator	15526		505-360-7051
Ted Francis	Plant Operator	15526		505-564-2999
Frank Hale	Plant Operator	15526	505-860-5897	505-598-9091
Bobby James	Plant Operator	15526		505-598-5314
Charlie Barr	Plant Operator	15526	505-324-1100	505-330-2614
Kent Galyon	Fieldman		505-860-1875	970-565-1006
William Golbe	Mechanic		505-215-2517	505-598-9716
Charlie Medders	Operator		505-947-7039	505-598-5573
Corwyn Yazzie	Measurement Technician	15546	505-793-2567	505-486-0260
Jay Kibel	Fieldman		505-787-0107	
Monty Pete	Operator	15526	505-409-0484	
Stan Pelt	Automation Technician	15522		505-947-2416
Ryan Kelly	Plant Operator	15526		505-402-5606
Aaron Lasley	Plant Operator	15526		505-793-1586
Jody Garner	Plant Operator	15526		970-749-7318
Norman Watchman	Plant Operator	15526		505-486-5566

**A. COMPANY INTERNAL NOTIFICATIONS
CORPORATE PERSONNEL – THE WOODLANDS, TEXAS**

NAME	TITLE	OFFICE No.	CELLULAR No.	HOME No.
Chuck Griffie	Operations Mgr	832-636-8694	303-618-5020	
Dan Altena	General Mgr	832-636-2343	281-216-9812	
David Harris	Engineering Mgr	832-636-3907	281-705-8430	
Chuck Johnson	Commercial Develop. Mgr	832-636-7119	832-636-7090	
Alan Henne	EHS Analyst	620-544-6213	620-544-6948	
David Ponikvar	S&H Mgr	832-636-3414	281-732-7887	281-374-8334
Sharon Hill	Env & Reg Anal	832-636-7387	713-253-4129	
Cheryl Bommarito	EHS Analyst	620-544-6236	620-544-6774	
Mike Gray	Director, EHS	832-636-2454	281-415-6964	936-271-9869

B. COUNTY & LOCAL LAW ENFORCEMENT

AGENCY	DAYTIME / 24 HR. PHONE No.
Law Enforcement Dispatch	911
San Juan County Sheriff	505-334-6622
Farmington Police	505-327-0222
Navajo Tribal Police	505-368-4333
Ute Mountain BIA	303-565-8471
New Mexico Highway Patrol	505-325-7547
New Mexico FBI	505-325-8631
San Juan County LEPC	505-334-1180
BLM Farmington Office	505-599-8900

C. MEDICAL SERVICES

AGENCY	EMERGENCY SERVICE	PHONE No.
Emergency Dispatch	Fire & Ambulance	911
San Juan County Fire Marshall	Fire Department	505-334-9431
San Juan Regional Medical Center	Hospital	505-325-5011
Emergency Trauma Lifeline Service - Farmington		505-325-5602
Farmington Family Practice	Clinic	505-327-4867
Reliance Medical Group	Urgent Care	505-566-1915
San Juan Air Care Farmington	Air Ambulance	800-452-9990

D. FEDERAL NOTIFICATIONS

AGENCY	DAYTIME / 24 HR. PHONE No.
National Response Center	800-424-8802
EPA Region 8	800-227-8917
OSHA	800-321-6742
OSHA Area Office New Mexico	505-827-4230
DOT	800-424-8802
BLM Farmington	505-599-8900

E. NEW MEXICO STATE NOTIFICATIONS

AGENCY	DAYTIME / 24 HR. PHONE No.
New Mexico One Call	800-321-2537
New Mexico Oil Conservation Division	505-334-6178
New Mexico Environmental Department	505-476-4300
New Mexico Emergency Response Commission	505-476-9681
New Mexico Public Utilities Commission	505-490-2375
New Mexico State Patrol	505-325-7547

F. CONTRACTORS

CONTRACTOR	CONTACT	OFFICE No.	CELLULAR No.
Contractors - General			
IMI Construction		505-325-5005	
Weeminuche Construction	Tommy Samora	970-749-1237	
TRC Construction Inc.	Beebe Carter	505-334-8220	505-320-7754
Service Companies Supplies			
MRC		505-325-2271	505-327-7754
ESSO Pipe & Supply		505-325-7568	
Air Gas		505-325-6660	
DXP	Steve Martinez	505-326-3333	
Hi-Tech Tools-Rental	Water Truck	505-334-2266	
Emergency Response & Safety Services			
ChemTrec		800-424-9300	
Hands On Safety Service		505-325-4218	
Electrical Services			
IMI Electrical	Zach Baca	505-325-5005	505-330-0518
Resource Automation	Ray Chavez	505-320-2671	
Cygnat	Henry Hickey	505-215-1940	Contract

Cygnet Cygnet Anadarko IT	Allan Spicer Steven Begnaud Blaine Zainhofsky	832-636-1153 832-636-4346 720-929-6265	Anadarko Anadarko Anadarko
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G. OTHER PRODUCERS

COMPANY	CONTACT	OFFICE No.	CELLULAR No.
Huntington Energy	Ron Lackey Randy Merrion	505-793-7063 505-947-4330	
Conoco/Burlington	Tim Ferguson Richard Lopez		505-787-6089 505-320-9539
Conoco/Burlington	Main Office	505-326-9700	
DJ Simmons Company	Rod Seale	505-326-3753	505-486-9710
Elm Ridge Exploration	Nicole Alley Terry Lindeman	505-632-3476	972-749-6941
Kinder Morgan	Hale Burch	505-632-6000	
El Paso Natural Gas	Emergency Number	800-334-8047	
Resolute Energy Services	Jeff Roedell	970-564-5200 Ext 2325	970-646-6696
Resolute Energy Services Safety Coordinator	Montezuma Creek James Madison	970-564-5200 Ext 3265 or 4335	970-529-0973
Resolute Energy Services	Roger Atcitty	435-651-3254 Ext 5150	435-860-6213
	George Phillips	435-651-3277 Ext 3135	435-363-6527
Safety Coordinator	Troy Begay	Ext 3230	970-260-9239
XTO Energy Inc.	Office	505-333-3100	
XTO Energy Inc.	Pete Morrow	505-333-3162	505-330-0351

H. OTHER RESOURCES

COMPANY	OFFICE No.	Website
National Weather Service Albuquerque, New Mexico	505-243-0702	
Farmington Four Corners Regional Airport – National Weather Service		<a href="http://weather.noaa.gov/weather/current/KF
MN.html">http://weather.noaa.gov/weather/current/KF MN.html
Additional Weather Sites		www.accuweather.com www.wunderground.com www.weather.com

APPENDIX H

H₂S PLAN DISTRIBUTION LIST

New Mexico Oil & Gas Conservation Division

New Mexico Environmental Department

New Mexico Department of Public Safety (Farmington Office)

New Mexico Department of Public Safety (State Office)

Farmington Fire Department

San Juan County Fire Department

San Juan County Sheriff Department

San Juan County Emergency Manager

San Juan County LEPC

Farmington Police

San Juan Regional Medical Center

San Juan Plant Office

Anadarko Petroleum Corporate Office