GW - 010

H2S Safety Plan

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, June 19, 2008 1:36 PM
To: 'Alberto A. Gutierrez, RG'
Cc: Ezeanyim, Richard, EMNRD; Price, Wayne, EMNRD; Williams, Chris, EMNRD; Jones, William V., EMNRD
Subject: RE: Final revisions to R118 plan Jal 3 (GW-010) R-12921 Acid Gas Injection Well & Facility

Mr. Gutierrez:

Good afternoon. I am writing to confirm the NM Oil Conservation Division's (OCD) approval of the above H2S Safety Plan for the Jal #3 Natural Gas Processing Plant with an Acid Gas Injection (AGI) Well (Jal 3 AGI #001 - API# 30-025-38822) in Lea County.

The H2S Safety Plan may be viewed soon at OCD On-line (GW-10 or API#) at http://ocdimage.emnrd.state.nm.us/imaging/AEOrderFileView.aspx?appNo=pENV000GW00011 under "H2S Safety Plan."

Please contact me if you have questions. Thank you.

Please be advised that NMOCD approval of this plan does not relieve Southern Union Gas Services, Ltd. of responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Southern Union Gas Services, Ltd.) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Carl J. Chavez, CHMM
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Oil Conservation Division, Environmental Bureau
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Website: http://www.emnrd.state.nm.us/ocd/index.htm
(Pollution Prevention Guidance is under "Publications")

From: Alberto A. Gutierrez, RG [mailto:aag@geolex.com]
Sent: Tuesday, June 10, 2008 5:53 PM
To: Chavez, Carl J, EMNRD
Cc: 'Boyd, Ross'
Subject: Final revisions to R118 plan Jal 3 (GW-010)
Importance: High

Carl,
Thanks so much for spending an hour and a half with me today reviewing the SUGS R118 plan revisions. I am glad that you were pleased with my modifications. Pursuant to our conversation I am attaching the following:

1. Revised Cover Page referencing the approved DP GW-010 for the facility and Revised page 17 clarifying the plan activation provisions
2. Revised Attachment 3 showing an H_2S sign near the office
3. Revised Attachment 5 showing the approximate location of the AGI facility control room

Based on our conversation, it is my understanding that with these changes, you will approve the plan by week's end unless Wayne has any other concerns or issues. We can make a plan available to the Jal Public Library although they are not on the distribution list. Please call me right away if there is anything else you need. I look forward to OCD's approval notification.
Thanks again.

Alberto A. Gutiérrez, RG
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505-842-8000 Ext. 105
505-842-7380 Fax

GEOLEX®
INCORPORATED

Alberto A. Gutiérrez, C.P.G.

June 16, 2008

Mr. Carl Chavez
Environmental Engineer
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

VIA FEDERAL EXPRESS
PRIORITY OVERNIGHT

RE: COMPLETE FINAL RULE 118 PLAN FOR SOUTHERN UNION GAS SERVICES
JAL 3 PLANT AND AGI FACILITY (JAL 3 AGI #001; 30-025-38822)

Dear Mr. Chavez:

Pursuant to our telephone conversation this morning, attached is the complete final Rule 118 plan for the above-referenced facility. As we discussed, the copy I am sending is unbound to facilitate the scanning of the final approved plan into the file. You will see that all of the modifications we discussed, and you approved earlier, are incorporated into this copy along with all final attachments and maps. Please confirm receipt and approval of this final plan in writing as this is the final outstanding approval required for us to begin injection of acid gas and wastewater after the well and topside facilities are completed. Since the plan is also for the existing Jal #3 facility, we would like to immediately distribute the new approved plan to the distribution list in Attachment 10 and utilize it at the Jal #3 Plant.

I would like to personally thank you and Mr. Ezeanyim again for your prompt and professional review of the plan and your suggestions to make it a better overall document.

I look forward to your official transmittal of the approval this week. Please contact me at my office (505) 842-8000, if you have any questions. Thanks again.

Sincerely,
Geolex, Inc.®

Alberto A. Gutierrez, CPG
President

Enclosure: Final Rule 118 Plan for SUGS Jal 3 Plant and AGI Facility

cc (w/o enclosure): Herb Harless, SUGS – Ft. Worth, TX
Ross Boyd, SUGS – Midland, TX
Dwight Bennett, SUGS – Jal, NM

B:Projects\07-013\Correspondence\chavez003.ltr.doc

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Southern Union
Gas Services

H_2S Contingency Plan

Acid Gas Injection Facility
Jal #3 Gas Plant (GW-010)

JAL 3 AGI # 001 : API # 30-025-38822

Jal, New Mexico

June 2008

SOUTHERN UNION GAS SERVICES, LTD.
H_2S Contingency Plan
JAL #3 PLANT AGI WELL

TABLE OF CONTENTS

Southern Union Gas Services

Southern Union Gas Services, Ltd.
Acid Gas Injection Facility
Jal #3 Gas Plant
Hydrogen Sulfide (H_2S) Contingency Plan

I. INTRODUCTION

Southern Union Gas Services, Ltd. (SUGS) conducts its business responsibly by providing employees and any other person working or visiting, a safe work place. The Jal #3 Gas Plant Hydrogen Sulfide Contingency Plan for acid gas injection (AGI) was developed to satisfy the Oil Conservation Division Rule 118; and paragraph 7.6 of the guidelines published by the API in its publication entitled "Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide," RP-55.

This plan provides guidelines to assist in responding to and managing an emergency in the event of an H_2S release from a pipeline or facility. The goals of this plan are to provide tools to enable an efficient, coordinated and effective response to emergencies. This plan contains written guidelines to evaluate and respond to an incident, and to prevent or minimize personal injury or loss, to avoid environmental hazards, and to reduce damage to property.

The Jal #3 gas plant is located approximately 3.5 miles north of Jal, New Mexico, and encompasses approximately 80 acres in the western half of Section 33, T24S, R37E in Lea County, NM (see Figure 1).

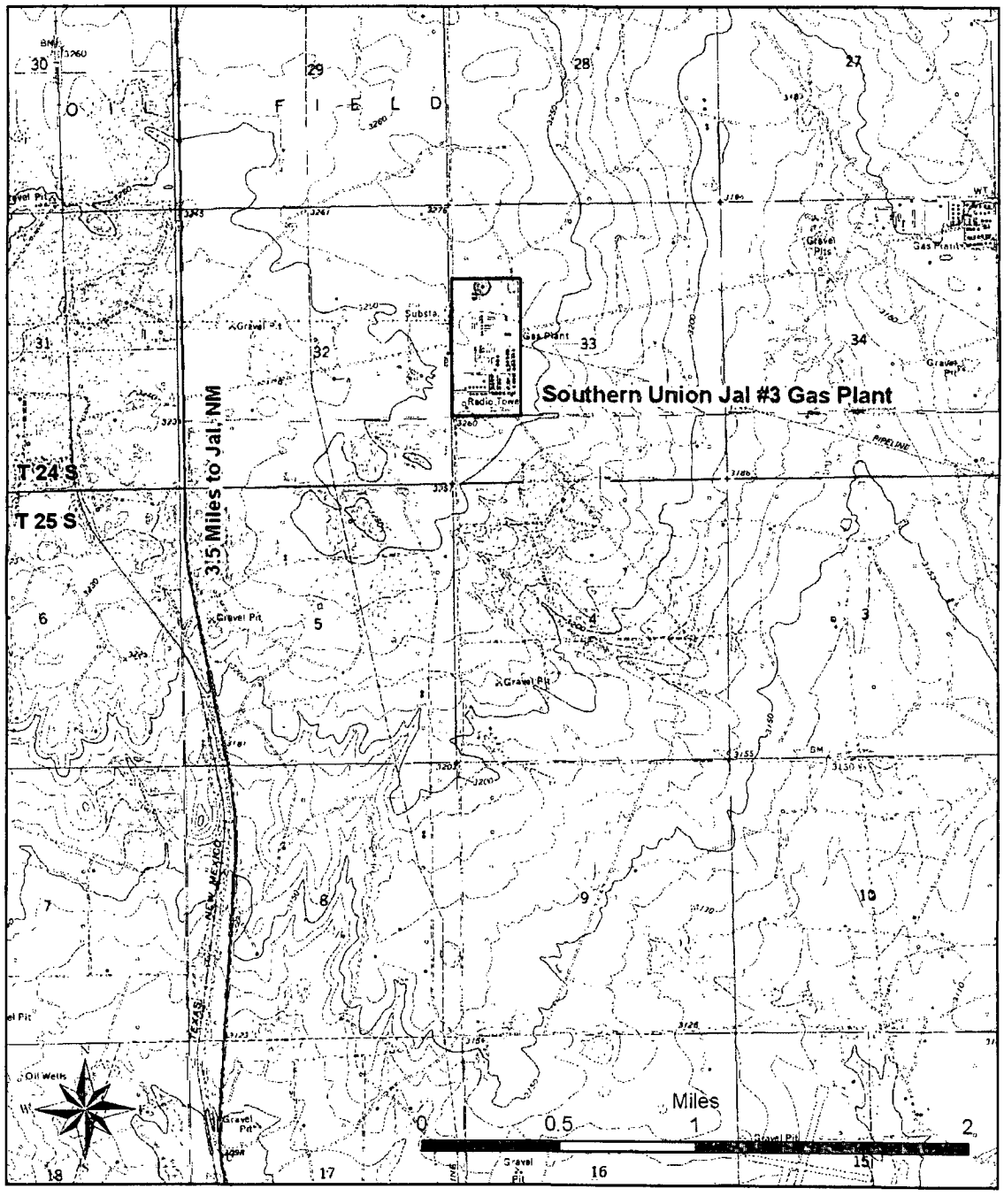


Figure 1:
Location of Southern Union Gas Services' Jal #3 Gas Plant

II. DEFINITIONS USED IN THIS PLAN

ANSI	The acronym "ANSI" means the American National Standards Institute.
API	The acronym "API" means the American Petroleum Institute.
Area of Exposure (AOE)	The phrase "area of exposure" means the area within a circle constructed with a point of escape at its center and the radius of exposure as its radius.
ASTM	The acronym "ASTM" means the American Society for Testing and Materials.
Dispersion Technique	A "dispersion technique" is a mathematical representation of the physical and chemical transportation characteristics, dilution characteristics and transformation characteristics of hydrogen sulfide gas in the atmosphere.
Division	The "division" return to the N.M. Oil Conservation Division.
Escape Rate	The "escape rate" is the maximum volume (Q) that is used to designate the possible rate of escape of a gaseous mixture containing hydrogen sulfide, as set forth herein. (a) For existing gas facilities or operations, the escape rate shall be calculated using the maximum daily rate of the gaseous mixture produced or handled or the best estimate thereof. For an existing gas well, the escape rate shall be calculated using the current daily absolute open flow rate against atmospheric pressure or the best estimate of that rate. (b) For new gas operations or facilities, the escape rate shall be calculated as the maximum anticipated flow rate through the system. For a new gas well, the escape rate shall be calculated using the maximum open flow rate of offset wells in the pool or reservoir, or the pool or reservoir average of maximum open flow rates. (c) For facilities or operations not mentioned, the escape rate shall be calculated using the actual flow of the gaseous mixture through the system or the best estimate thereof.
GPA	The acronym "GPA" means the Gas Processors Association.
LEPC	The acronym "LEPC" means the Local Emergency Planning Committee established pursuant to the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. Section 11001.
NACE	The acronym "NACE" means the National Association of Corrosion Engineers.
PPM	The acronym "ppm" means "parts per million" by volume.
PHV	Potentially Hazardous Volume means the volume of hydrogen sulfide gas of such concentration that: (a) the 100-ppm radius of exposure includes any public area; (b) the 500-ppm radius of exposure includes any public road; or (c) the 100-ppm radius of exposure exceeds 3,000 feet.
Public Area	A "public area" is any building or structure that is not associated with the well, facility or operation for which the radius of exposure is being calculated and that is used as a dwelling, office, place of business, church, school, hospital, or government building, or any portion of a park, city, town, village or designated school bus stop or other similar area where members of the public may reasonably be expected to be present.
Public Road	A "public road" is any federal, state, municipal or county road or highway.

Radius of Exposure (ROE)

The radius of exposure is that radius constructed with the point of escape as its starting point and its length calculated using the following Pasquill-Gifford derived equation, or by such other method as may be approved by the division:

(a) For determining the 100-ppm radius of exposure: $X= [(1.589)(\text{hydrogen sulfide concentration})(Q)]^{(0.6258)}$, where "X" is the radius of exposure in feet, the "hydrogen sulfide concentration" is the decimal equivalent of the mole or volume fraction of hydrogen sulfide in the gaseous mixture, and "Q" is the escape rate expressed in cubic feet per day (corrected for standard conditions of 14.73 psia and 60 degrees F).

(b) For determining the 500-ppm radius of exposure: $X=[(0.4546)(\text{hydrogen sulfide concentration})(Q)]^{(0.6258)}$, where "X" is the radius of exposure in feet, the "hydrogen sulfide concentration" is the decimal equivalent of the mole or volume fraction of hydrogen sulfide in the gaseous mixture, and "Q" is the escape rate expressed in cubic feet per day (corrected for standard conditions of 14.73 psia and 60 degrees F).

Regulatory Threshold

(1) Determination of Hydrogen Sulfide Concentration.

(a) Each person, operator or facility shall determine the hydrogen sulfide concentration in the gaseous mixture within each of its wells, facilities or operations either by testing (using a sample from each well, facility or operation), testing a representative sample, or using process knowledge in lieu of testing. If a representative sample or process knowledge is used, the concentration derived from the representative sample or process knowledge must be reasonably representative of the hydrogen sulfide concentration within the well, facility or operation.

(b) The tests used to make the determination referred to in the previous subparagraph shall be conducted in accordance with applicable ASTM or GPA standards or by another method approved by the division.

(c) If a test was conducted prior to the effective date of this section that otherwise meets the requirements of the previous subparagraphs, new testing shall not be required.

(d) If any change or alteration may materially increase the concentration of hydrogen sulfide in a well, facility or operation, a new determination shall be required in accordance with this section.

(2) Concentrations Determined to be Below 100 ppm. If the concentration of hydrogen sulfide in a given well, facility or operation is less than 100 ppm, no further actions shall be required pursuant to this section.

(3) Concentrations Determined to be Above 100 ppm.

(a) If the concentration of hydrogen sulfide in a given well, facility or operation is determined to be 100 ppm or greater, then the person, operator or facility must calculate the radius of exposure and comply with applicable requirements of this section.

(b) If calculation of the radius of exposure reveals that a potentially hazardous volume is present, the results of the determination of the hydrogen sulfide concentration and the calculation of the radius of exposure shall be provided to the division. For a well, facility or operation existing on the effective date of this section, the determination, calculation and submission required herein shall be accomplished within 180 days of the effective date of this section; for any well, facility or operation that commences operations after the effective date of this section, the determination, calculation and submission required herein shall be accomplished before operations begin.

(4) Recalculation. The person, operator or facility shall calculate the radius of exposure if the hydrogen sulfide concentration in a well, facility or operation increases to 100 ppm or greater. The person, operator or facility shall also recalculate the radius of exposure if the actual volume fraction of hydrogen sulfide increases by a factor of twenty-five percent in a well, facility or operation that previously had a hydrogen sulfide concentration of 100 ppm or greater. If calculation or recalculation of the radius of exposure reveals that a potentially hazardous volume is present, the results shall be provided to the division within sixty (60) days.

III. CHARACTERISTICS OF HYDROGEN SULFIDE (H_2S) AND SULFUR DIOXIDE (SO_2)

Hazards of Hydrogen Sulfide

At normal atmospheric conditions, hydrogen sulfide (H_2S) is a colorless gas. It is commonly referred to by other names such as Rotten Egg Gas, Acid Gas, Sour Gas, Sewer Gas, Poison Gas and Sulfur Gas. It has a characteristic "rotten egg" smell at low concentrations. At higher concentrations, it has a sweet odor. At still higher concentrations, an odor cannot be detected at all due to olfactory nerve anesthesia. Odor must *not* be used as means of determining the concentration of H_2S gas! Hydrogen sulfide can form explosive mixtures at concentrations between 4.3% and 46%, by volume. Its auto-ignition temperature is 500 degrees F (260 degrees C). When burning, its flame is practically invisible. It is denser than air (1.19 times heavier than air) and may accumulate in low places. Hydrogen sulfide gas tends to interact with high carbon steel, causing embitterment and fine fractures in metal components and piping.

H_2S acts as a chemical asphyxiate, preventing the body from utilizing oxygen in the tissue. Breathing may stop after a few seconds of exposure to H_2S gas in concentrations of 600-700 ppm. This produces symptoms such as panting, pallor, cramps, dilation of eye pupils and loss of speech. This is generally followed by immediate loss of consciousness. Death may occur quickly from respiratory paralysis and cardiac arrest. The table below illustrates the physical effects of hydrogen sulfide on a healthy adult.

Table 1 Effect of exposure to Hydrogen Sulfide Gas on a Healthy Adult

Concentration			Physical Effects
percent (%)	ppm	grains per ft^3	
0.001	10	0.65	Obvious and unpleasant odor. Safe for 8 hours exposure.
0.01	100	6.48	Kills smell in 3 to 15 minutes; may sting eyes and throat.
0.02	200	12.96	Kills smell shortly; stings eyes and throat.
0.05	500	32.96	Dizziness; breathing ceases in a few minutes; artificial respiration / oxygen must be given promptly.
0.07	**700**	45.36	**Unconscious quickly; death will result if not rescued promptly.**
0.10	**1000**	64.80	**Unconscious at once; followed by death within minutes.**

Properties of H_2S

COLOR	Colorless.
ODOR	Very offensive, commonly referred to as the odor of rotten eggs.
VAPOR DENSITY	1.189 (Air=1.0) H_2S is heavier than air.
BOILING POINT	-76 degrees F (-24 degrees C).
EXPLOSIVE LIMITS	4.3 to 46% by volume in air.
IGNITION TEMPERATURE	500 degrees F (260 degrees C).
WATER SOLUBLE	Yes (4 volumes gas in 1 volume water at 32 degrees F (0 degrees C).
FLAMMABILITY CORROSIVE	Forms explosive mixtures with air or oxygen.

Toxicity Table – H_2S

1 ppm = .0001% (1/10,000 of 1%)	Can smell (rotten egg odor).
10 ppm = .001% (1/1000 OF 1%)	Allowable for 8 hours exposure. (PEL & TLV)
100 ppm = .01% (1/100 of 1%)	Kills smell in 3-15 minutes. May burn eyes and throat. Considered to be IDLH atmosphere (Immediately Dangerous to Life and Health).
200 ppm = .03% (2/100 of 1%)	Kills smell rapidly. Burns eyes and throat.
500 ppm = .05% (5/100 of 1%)	Loses sense of reasoning and balance. Respiratory disturbances in 2-15 minutes. Needs prompt artificial resuscitation.
700 ppm = .07% (7/100 of 1%)	Will become unconscious quickly. Breathing will stop and death will result if not rescued promptly. Immediate artificial resuscitation is required.
1000 ppm = .1% (1/10 OF 1%)	Unconscious at once. PERMANENT BRAIN DAMAGE MAY RESULT UNLESS RESCUED PROMPTLY.
	ppm=parts of gas per million parts of air by volume. 1% = 10,000 ppm.

Properties of Sulfur Dioxide SO_2

Sulfur Dioxide - SO_2	Physical and Chemical Properties
Chemical Formula	SO_2
Molecular Weight	64
Boiling Point	14 degrees Fahrenheit
Non-Combustible	Produced by burning of H_2S Gas
Vapor Pressure	>1 atm @ 68 degrees Fahrenheit
Melting Point	-104 degrees Fahrenheit
Specific Gravity	Heavier than air, 2.26 degrees gravity
Colorless gas	SO_2 is colorless gas, very irritating to the eyes and lungs
Odor	Pungent odor and can cause injury or death to persons exposed to it
Reactions	Reacts with water or steam to produce toxic and corrosive gases
Hazards of Sulfur Dioxide	
Toxicity	The physiological effects on humans when inhalation of SO_2 occurs, varies at different levels of concentration and may be as follows
Concentrations SO_2	Physiological Effects SO_2
0.3-1 ppm	Detection level – pungent odor
2 ppm	Threshold Limit Value (TLV) Time Weighted Average (TWA)
5 ppm	15 minute Short Term Exposure Limit (STEL) permitted by OSHA
6 – 12 ppm	Irritation of the throat and nose
20 ppm	Eye irritation
100 ppm	Immediately Dangerous to Life or Health (IDLH) set by NIOSH

IV. EMERGENCY RESPONSE POLICY AND AUTHORITY

It is the policy of SUGS to take the necessary actions required to safeguard SUGS personnel and the public from emergency incidents. Such emergency incidents may include fires, hazardous materials releases, and incidents resulting from natural hazards such as tornadoes.

In the event of an emergency incident, SUGS personnel will take prompt action within their immediate work area to ensure that all appropriate SUGS personnel, corporate personnel, and the public are alerted or notified that an emergency incident exists.

Whenever possible, SUGS personnel will take immediate action to limit the effects of the emergency. Four objectives will be considered when developing an appropriate emergency response. These objectives are:

- Life safety.
- Environmental protection.
- Protection of company and public property.
- Preventing interruption of business and public services such as highway access, water, and utilities.

While all four of the above objectives are important, life safety will always remain the first and highest priority.

All SUGS personnel have the responsibility, if necessary, to immediately alert other SUGS personnel that an emergency condition exists and to take appropriate action to protect life, property, and the environment. All emergency response actions by SUGS personnel are voluntary. Emergency response actions taken by individuals should be within the limitations of their training, experience, and physical abilities. At no time will Jal #3 Gas Plant personnel assume an unreasonable risk during an emergency response. An unreasonable risk exists when:

- The task exceeds the physical abilities of the individual.
- The individual is not properly trained to complete the task.
- The individual does not have adequate experience to complete the task.

V. RESPONSE PROCEDURES FOR UNINTENTIONAL (ACCIDENTAL) RELEASES (SEE ATTACHMENT 9 FOR SIMPLIFIED FLOW CHART

If an H_2S leak is detected as a result of an accidental release, the following emergency plan of action should be put into effect to adequately ensure the safety of SUGS employees, contractors and the public. These response sequences should be altered to fit the prevailing situation and event/site-specific requirements.

1. Upon detecting a leak, assess wind direction and immediately move away from the source and attempt to get out of the affected area by moving upwind, or cross wind if travel upwind is not possible.

2. Alert other personnel in the area. Assist personnel in distress if this can be done without endangering yourself. Proceed to the designated emergency assembly area.

3. If injury or death has occurred, immediately call emergency services (911).

4. If possible, take immediate measures by shutting manual valve on AGI line to control present or potential discharge and to eliminate possible ignition sources. Auto control valve may have already activitated to shut down flow of acid gas to compressor.

5. Notify the supervisory foreman (this may have occurred via the control room alarm system). The supervisor or their designee will formally assume the role of the Incident Commander (IC). Until relieved by the supervisor, the senior employee having initially discovered the leak should fill the role of IC.

6. If the IC deems it necessary, ensure that steps are taken to stop traffic through the area, most importantly, highway traffic. Roadblocks must be set up at the 10-ppm H_2S boundary. The H_2S boundary shall be delineated by using a calibrated H_2S monitor. Call emergency services (911) for assistance in quarantining the area, if needed. Refer to maps in Section XVII for highway and pipeline locations.

7. The IC will assess the situation and direct further actions to be taken. If assistance is required from law enforcement, safety or medical agencies, consult the emergency services telephone listing under Section XIII. The Division Operations Vice-President or his designee should also be notified.

8. Personnel equipped with self-contained breathing apparatus (SCBA) and portable H_2S monitoring equipment will determine the cause and extent of the leak. Personnel should enter the area from upwind of the site. If a reading of 10 ppm or higher of H_2S is obtained, then backup personnel equipped with SCBA will also be required.

9. Initiate evacuation of employees or any nearby residents, if deemed necessary. Coordinate with emergency services.

10. No one will be intentionally exposed to H_2S concentrations in excess of 10 ppm without proper personal protection equipment (PPE), IC authorization and backup personnel.

11. If possible, de-energize all sources of ignition, using lockout/tagout procedures.

12. If needed, perform shutdown on appropriate equipment and systems.

13. Trained personnel will continuously monitor H_2S concentrations, wind direction and area of exposure and will advise public safety and emergency personnel on current conditions.

14. Protective measures shall be maintained until the threat of injury from H_2S poisoning has been eliminated. The area must be checked with monitoring equipment and cleared below 10 ppm before allowing entry without proper PPE.

15. Notify the Division Health & Safety Manager. See Section XIII Assistance will be provided to ensure all proper notifications and reporting requirements are made to local, state and federal agencies.

16. As soon as possible, **but no more than one hour after plan activation,** notify the New Mexico Oil Conservation Division – Lea County (See Section XIII). At a minimum, the following information will be needed:

    - The company name.
    - Facility name.
    - Your name and telephone number for them to contact you.
    - The location and source of the discharge.
    - A description of the area affected by the discharge, the probable concentration of H_2S in the region and the wind direction/velocity.
    - If necessary, request additional assistance from the agency.
    - If necessary, and if it is determined that a reportable quantity of H_2S (excess of 100 lbs) has been released, contact the National Response Center a 1-800-424-8802 and report the release.

    Note: A simplified version of these steps is shown on a flowchart included as Attachment 9.

VI. EMERGENCY INCIDENT MANAGEMENT

Emergency incident management will follow the Incident Command System (ICS) as described by the Federal Emergency Management Act (FEMA). The intent of using ICS for all emergency incidents provides automatic continuity with outside agencies and assists in establishing a "unified command" of the incident. SUGS provides instruction and training on the ICS, which is beyond the scope of this contingency plan. However a brief overview of the system is provided below.

The Incident Command System (ICS) utilizes a flexible, modular approach to organizing resources to effectively respond to emergency events. FEMA suggests that the basic Incident Command System has five functional areas:

- Command;
- Operations;
- Planning;
- Logistics; and,
- Finance.

However, for incidents such as those described in this plan, it seems more likely that the basic Incident Command System would be comprised of: 1) Command; 2) Operations Chief; and, 3) Safety Officer. Larger incidents may require additional positions such as Public Information Officer, Logistics Chief, Planning Chief, Finance Chief, Staging Manager, Medical Group Supervisor and Environmental Group Supervisor. The exact number and combination of positions will vary depending upon the type, size and duration of the incident.

In every incident, command must first be established. The first person to discover the problem is, by default, the Incident Commander (IC) until this responsibility is transferred to someone else. This responsibility should be formally transferred to the Facility/Field Supervisor as soon as practical. Who is acting as the IC should be clear and apparent at all times.

The Incident Commander (IC) is responsible for the overall management of the incident. Where the IC does not delegate or assign a position, the IC retains that responsibility. The IC should be careful to have no more than 5 to 8 people reporting directly to him. The IC establishes the strategy and goals for the incident and is ultimately responsible for the safety and success of the response activities.

An Operations Chief (OPS) is responsible for implementing the strategy to accomplish the goals defined by the IC. OPS directs all tactical operations, oversees response personnel and may assist the IC in the development of the action plan.

The Safety Officer is assigned by and reports directly to the IC. This position is responsible for identifying hazardous or unsafe situations, and developing measures necessary to assure the safety of response personnel and any victims of the incident. He/she should ensure that any personnel responding to the incident are using the proper PPE and have adequate training. The Safety Officer has the authority and responsibility to terminate or suspend operations that is believed to be unsafe or will place people in imminent danger.

VII. PERSONNEL VEHICLES AND EQUIPMENT

Plant personnel are equipped with personal H_2S monitors and portable gas detection devices.

The plant has a fully equipped mobile breathing air system with work units. Also, there are self contained breathing apparatus (SCBA's) located strategically throughout the facility (see Attachment 3 for locations). The AGI facility itself has additional H_2S monitoring and alarm monitoring systems, which are integrated with the plant H_2S alarm systems. These systems are described in Attachment 6 and are shown on a map of the AGI facility withing the Jal #3 Plant on Attachment 5.

An Emergency Response Kit and Road Block Kits are located at the egress stations for easy access if the facility is evacuated.

Personnel have cellular phones for communication, as well as two-way radios for inter-company communication.

All SUGS personnel are equipped with personal H_2S monitors and portable gas detection devices are available at the plant site. A detailed description of the H_2S monitoring systems are is included as Attachment 6.

Communications to SUGS field personnel is via mobile cellular telephones or two-way radios.

Each SUGS field truck is also equipped with a fire extinguisher in order to enable assistance as needed.

Company vehicles are equipped with two-way radios, roadblock kits and mobile phones.

Emergency Equipment on site at the Jal #3 Plant

Quantity	Description
5	**Ansul 30# Fire Extinguishers**
9	**Wind Socks**
1	**150# Fire Extinguisher – Wheeled Units**
48	**Fixed Ambient H_2S Monitors**
13	**SCBA – 30-Minute Breathing Air Packs (level A or B)**
10	**First Aid Kits**
2	**Fire Blankets (wool)**
5	**Eye Wash Stations**
4	**Emergency Showers**
3	**PPE Boxes**

The location of this equipment is shown on Attachment 3.

VIII. EVACUATION PROCEDURE

Evacuation may become necessary to protect personnel and the public from hazards associated with an incident. Orderly evacuation is essential to protect the general public as well as SUGS personnel and property.

SUGS personnel have reviewed the affected area for this plan and have determined the safe evacuation routes and assembly areas to reduce confusion if evacuation becomes necessary. The SUGS Facility Operator may assign employees to direct evacuation and account for personnel during emergencies. (See Section XIV and Attachment 8 for evacuation routes).

Designated Assembly Areas shall be at a safe distance from the incident in an appropriate direction (upwind, upstream, and upgrade). If the Assembly Areas do not provide adequate shelter, transportation to a central shelter should be arranged after all personnel are accounted for. As the incident progresses, the IC must continuously evaluate the adequacy of the assembly area and necessity of the shelter.

SUGS personnel evacuating their work areas should evacuate the facility and initiate the plant ESD system, and proceed to the Designated Assembly Area (Attachment 8). Facility personnel will account for all personnel, ensure the evacuated area is secured and report the status of the evacuation to the IC. Evacuated personnel shall remain at the assembly area or shelter until directed otherwise by the IC.

- Local law enforcement and/or emergency management authority must be notified in conjunction with any community evacuation or public protective measures initiated.
- Emergency Response Plan initiated.
- Assess the scene; protect yourself.
- Summon EMS to the scene; provide information on the nature and number of injuries.
- If trained, provide First Aid/CPR as necessary, until EMS arrives at the scene; injured personnel should not be moved unless the situation is life threatening.
- Evacuate unnecessary personnel from the area.
- Establish a secure perimeter around the area to prevent unauthorized entry.
- Initiate the site security plan.
- Notify Facility Supervisor and make appropriate notifications to local Fire and EMS.
- Make other internal management contact as appropriate.

In case of a fatality:

- Do not move the victim.
- Do not release name of victim(s).
- Contact local law enforcement.
- Contact local medical examiner.
- Preserve the accident site.
- Restrict all unauthorized communications concerning the incident.

Make appropriate government agency notification and conduct post-incident activities.

IX. COORDINATION WITH STATE EMERGENCY PLANS

The Hydrogen Sulfide Contingency Plan as described will be coordinated with the New Mexico Oil Conservation Division (NMOCD) and with the New Mexico State Police consistent with the New Mexico Hazardous Materials Emergency Response Plan (HMER). A copy of this plan will be submitted to the New Mexico State Police and Local Emergency Planning Committee for Lea County.

LEPC
505-396-8521

NEW MEXICO STATE POLICE
505-392-5588

LEA COUNTY SHERIFF'S OFFICE
505-396-3611

STATE EMERGENCY RESPONSE COMMISSION
(SERC)
(505) 393-6161

NEW MEXICO OFFICE OF EMERGENCY MANAGEMENT
(505) 476-9600

NATIONAL RESPONSE CENTER
(800) 424-8802

X. NOTIFICATION OF THE OIL CONSERVATION DIVISION

The person, operator or facility shall notify the New Mexico Oil Conservation Division (NMOCD) upon a release of hydrogen sulfide requiring activation of the Hydrogen Sulfide Contingency Plan as soon as possible, but no more than one hour after plan activation, recognizing that a prompt response should supercede notification. The person, operator or facility shall submit a full report of the incident to the NMOCD on Form C-141 no later than fifteen (15) days following the release.

OIL CONSERVATION DIVISION
LEA COUNTY

(DURING WORKING HOURS)
575-393-6161

EMERGENCY BEEPER
(AFTER WORKING HOURS)
575-370-7106

DISTRICT SUPERVISOR MOBILE
(AFTER WORKING HOURS)
575-370-3182

XI. PLAN ACTIVATION

If a 10 ppm alarm is activated at any monitor within the plant, the supervisory foreman will determine the cause of the alarm and determine if a release has occurred. In the event of an actual release, the supervisory foreman will coordinate with the Incident Commander (IC) to provide them the data necessary to assess the situation. Consistent with the requirements of Rule 118, the Hydrogen Sulfide Contingency Plan shall be activated when the Incident Commander (IC) believes that a release creates a concentration of hydrogen sulfide that exceeds or is likely to exceed the following activation levels:

- 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.

As soon as this determination is made, the IC will activate and initiate the H_2S Contingency Plan.

XII. TRAINING AND DRILLS

Training for all affected SUGS personnel will be conducted prior to completion of the project and introduction of product. Training will then be given as needed for any personnel who may later be affected by this project.

This training will include:

- Training on the responsibilities and duties of essential SUGS personnel.
- On-site or classroom tabletop drills which simulate a release or other situation affecting the facility.
- Annual H_2S Hazard Training.

Initial training is to take place upon employment with the company and refresher training is to be conducted annually – or sooner if there is a change in the plan or the need for training is determined.

All training will be documented and training records will be maintained on file at the Monahans EHS office.

All drills will be evaluated and documented including any recommendations resulting from findings. Recommendations will be assigned to SUGS personnel for completion by an established date. Upon completion, the action plan will be documented and records will be filed at the Jal #3 Gas Plant.

Only trained and certified personnel from responding agencies will participate in any rescue exercise.

The Hydrogen Sulfide Contingency Plan will also provide for training of noted residents in this plan as appropriate on the proper protective measures to be taken in the event of a release, and shall provide for briefing of public officials on issues such as evacuation or shelter-in-place plans. Literature will be passed out to the noted residents with emergency numbers to be utilized in the event of an incident associated with this facility or any SUGS equipment and/or piping.

XIII. EMERGENCY SUGS CONTACT PHONE NUMBERS

Use the following phone number in the event of a catastrophic release and/or emergency situation at the Jal #3 Acid Gas Injection facility.

Telephone Numbers of SUGS Personnel

24 HOUR TELEPHONE NUMBER 800-435-1679

Then Call:

JAL #3 PLANT		(505) 395-2068	
NAME	TITLE	HOME	CELLULAR
Dwight Bennett	Plant Manager	(505) 395-2471	(505) 390-6033
I. A. Olivas	Operations Supervisor	(505) 395-2445	(505) 390-6034
Bobby Tuck	Technical Supervisor	(432) 586-6144	(505) 631-7741
Clarence Rasco	Maintenance Foreman	(432) 523-7116	(505) 390-6032

FORT WORTH		(817) 302-9400		
NAME	TITLE	OFFICE	HOME	CELLULAR
Bruce Williams	VP Gas Operations	(817) 302-9421	(817) 441-9613	(817) 946-0761
Bob Milam	VP Engineering	(817) 302-9408		(432) 661-5958
Herb Harless	Dir. EH&S	(817) 302-9425	(817) 885-8779	(817) 692-9374

West Texas Area Safety				
NAME	TITLE	OFFICE	HOME	CELLULAR
John Crossman	Regulatory Comp.	(432) 943-1115	(432) 943-7482	(432) 940-5074
Rose Slade	EHS Coordinator	(432) 943-1116	(432) 943-7714	(432) 940-5147
Tony Savoie	Envir. Supervisor	(505) 395-2116	(505) 395-3336	(505) 631-9376
Jim Payne	EHS Coordinator	(432) 943-1155	(432) 586-3501	(432) 940-5123
Mike Magee	PSM Coordinator	(432) 943-1160		(432) 208-0753

WEST TEXAS AREA OFFICE - MIDLAND		(432) 570-6031		
NAME	TITLE	OFFICE	HOME	CELLULAR
Curtis Clark	Mgr Engineering	(432) 571-4926	(432) 520-5333	(432) 553-8129
Ross Boyd	Asset Op. Engr.	(432) 571-4927	(432) 687-5717	(432) 553-7280
Bill Webb	Mgr. Plant Op.	(432) 571-4939	(432) 684-4430	(432) 770-4204
Mary Valencia	Environmental Sup	(432-571-4925	(432) 687-1464	(432) 940-1939

Remember – Our FOUR Objectives in an Emergency Are:

1. Life Safety.
2. Environmental Protection.
3. Protection of Company and Public Property.
4. Preventing interruption of business and public services such as Highway Access, Water & Utilities.

Life Safety Will Always Remain the First and Highest Priority!

In case of an emergency at the Jal #3 Gas Plant requiring assistance for fire, ambulance, medical authorities or HazMat issues – immediately call:

911

Responder Emergency Numbers:

Facility		Jal, New Mexico
Fire Department		911 or 575-395-2221
Medical Facility		575-395-2221
State Police		575-392-5588
Sheriff Department		575-395-2121
LEPC		575-396-8521

Telephone Numbers of Public Agencies

Oil Conservation Division – Lea County	575-393-6161
State Emergency Response Commission (SERC)	505-393-6161
New Mexico Office of Emergency Management	505-476-9600
Bureau of Land Management - Hobbs	575-392-8736

Telephone Numbers of Emergency Resources

Organization	Phone Number
Environmental Consultants	
Geolex, Inc. – Alberto Gutierrez or James Hunter	505-842-8000
ESI, Inc. – Sam Cudney	505-266-6611
Spill – Cleanup Contractors	
Contact Tony Savoie – SUGS	575-631-9376
Ocotillo Environmental – Hobbs NM	575-393-6371
Ecological Environmental – Midland TX	800-375-0100
GET #'S FROM JAL 3 DP	
Heavy Equipment Contractors	
Merryman Construction – Jal NM	575-395-2592
B&H Construction – Eunice NM	575-394-2588
Transportation Services	
FULCO – Jal NM	575-395-2650
Riverside Transportation – Jal NM	575-395-3504

XIV. DETAIL INFORMATION - POTENTIALLY HAZARDOUS AREAS

Jal #3 Gas Plant and Jal #3 AGI #1

DRIVING DIRECTIONS:
From Hobbs: Take Highway 18 South towards Jal 35 miles to Sid Richardson Road, turn east and go 1 mile to entrance to Jal #3 plant
Location: Section 33 T 24 S, R 37 E, Lea County, NM
Latitude: 32.1738 N
Longitude: 103.1740 W

EVACUATION ROUTE:

At all times note the wind direction before evacuating procedures begin. The primary evacuation assembly area will be the south west entrance to the plant off of Sid Richardson Road.

Evacuation for all persons inside of the AGI Facility fences would be west to the west side dirt road and then south to the plant entrance (wind conditions permitting) group assembly area #1 to account for all employees including any visitors (see Attachment 8). Visitor sign in sheet shall be used to account for all visitors.

ROAD BLOCKS:

In emergencies involving a large acid gas pipeline leak near the Jal #3 Gas Plant, US Highway 18 will be blocked at approximately one mile north and south of the plant.

The unpaved access roads around the Jal #3 Plant shall be secured in the event of a release that is likely to cause an exceedance of 10ppm H2S in the road area. In this event, appropriate roadblock locations will be established on these roads.

COMMAND POST:

The Command Post will be established at one of the roadblock locations. The site will be dependent of the wind direction.

The Incident Commander, after arriving at the scene, has the authority to assess the situation and determine the severity level of the incident. The Incident Commander may determine that the Contingency Plan as written cannot be activated effectively. The Emergency Response Plan may then be activated depending on the Incident Commander's evaluation of the situation.

PUBLIC RECEPTORS LOCATED INSIDE RADIUS OF EXPOSURE (ROE):

There are no public receptors located within either the 500ppm or the 100ppm radii of exposure. The radii as calculated in Attachment 2 and shown in Attachments 4a and 4b are contained within the plant or adjacent unoccupied land.

XV. SUGS PUBLIC AWARENESS PROGRAM

SUGS participates in an extensive annual Public Awareness Program and Damage Prevention Program.

SUGS installs pipeline markers and signs at all facilities and road crossings to identify our underground pipelines and maintains these markers on an annual schedule. SUGS installs poison gas signs at periodic intervals on the fence surrounding the Jal #3 Plant.

XVI. EMERGENCY SHUTDOWN EQUIPMENT

SUGS has an installed automatic and manually activated emergency shutdown system (ESD) at the Acid Gas Injection Facility at the Jal #3 Gas Plant. The plant operator and/or Incident Commander (IC) may use these systems to shutdown and isolate the equipment in the facility. This is a fail safe system that will shut valves and equipment if any portion of the system fails. The Acid Gas Injection system will be normally controlled from the Jal #3 Plant Control Room and shutdown of equipment and ESD valves at the well-site may be accomplished from this system as well as at the well-site.

When activated the ESD shuts an automatic valve on the inlet acid gas feed stream, shuts an automatic valve on the compressed acid gas to the acid gas injection well, and sends a signal to the wellhead panel to shut down automatic valves on the wellhead. The major equipment is shutdown. The specific major equipment items at injection well site that are shutdown in an ESD include the acid gas compressors and associated coolers and pumps. The fuel gas, which is used for flare fuel and purge gas is left on-line; however an automatic valve is provided in this line at the well-site that can be actuated separately in the control system to close this valve.

In the wellhead control panel there is a separate shutdown for the subsurface safety valve (SSSV). The SSSV can be closed if required. The SSSV will close automatically upon detection of high pressure in the wellhead piping. The SSSV will shut if there is a fault in the wellhead control panel.

In addition to these systems the well-site facility contains portable fire extinguishers that may be used in an emergency. The well-site facility also has air packs used for escape or rescue located throughout the facility at key locations. The facility also has a breathing air system at the compressor units consisting of air bottles, tubing, and a manifold to connect 5 minute air packs. These are primarily used when performing maintenance work on the compressor units; however, they can also be used during an emergency if required. Refer to the "Emergency Equipment Location Plan" (See Attachment #5) for the location of this equipment.

SUGS has also installed hydrogen sulfide detectors throughout the Well-Site Facility in key locations to detect possible leaks. Upon detection of hydrogen sulfide at 10 ppm levels at any detector a visible beacon is activated at that detector and an alarm is sounded. Pursuant to the procedures described in sections V, XI and Attachment 9, the supervisory foreman will investigate the alarm and determine if the plan should be activated. In the event of a detection of hydrogen sulfide at 50 ppm levels at any detector, an evacuation alarm is sounded throughout the Facility. All personnel proceed immediately to a designated area near the Facility office outside the fence (or alternate area south of the plant depending on wind direction and their location in the well-site facility).

In addition to sounding evacuation alarm sirens, at concentrations of 50 ppm in the acid gas compressor area the acid gas compressor is shutdown and isolation valves upstream and downstream of the unit are closed, including the wellhead automatic wing valve. Refer to Attachment 5 for the locations of the hydrogen sulfide detectors.

During shutdowns of the well-site compression or the injection well the acid gas will be processed through the SRU or, if necessary, flared at the Jal #3 Plant.

The above described system satisfies all requirements under Rule 118 regarding downhole conditions in the AGI. The subsurface safety valve (SSV) and the packer and inert fluid filling the annular space, combined with pressure monitoring will ensure safety and Rule 118 compliance.

XVII. ATTACHMENTS

LISTING OF ATTACHMENTS

1. Description of Worst Case Scenario of H_2S Release
2. Standard Calculations of Radius of Exposure (ROE)
3. Map of Entire SUGS Jal #3 Plant Showing H_2S Monitoring System and Emergency Equipment Locations and Exits
4. A & B: Maps Showing Calculated Radius of Exposure for 100 and 500 ppm H_2S
5. Blowup of AGI Well Area Showing H_2S Monitoring System and Emergency Equipment Locations
6. Description of H_2S Monitoring and Alarm Systems at Jal #3 Plant, including AGI Facility
7. Hazardous Material Incident Notification Information Checklist
8. Map Showing Evacuation Routes and Assembly Areas (Wind Conditions Permitting)
9. Simplified H_2S Continency Plan Flowchart
10. Distribution List

ATTACHMENT 1 Description of Worst Case Scenario of H_2S Release

The basis for worst case calculations is 20% hydrogen sulfide in the acid gas from the Jal #3 Gas Plant, which is at typical maximum concentration observed at the plant.

Note that essentially all of the hydrogen sulfide in the plant feed gas is separated from the processed gas and becomes the acid gas stream. Therefore, the worst case calculated radius of exposure will be the same for the Acid Gas Injection Facility and for the Jal #3 Gas Plant as a whole. Furthermore, the worst case scenario is being assumed in the standard calculations since it would be a rupture that results in release of all of the hydrogen sulfide from the acid gas. Calculations using the Pasquill-Gifford equations as described in OCD Rule 118 are presented on the following page (Attachment 2). Also included below is a diagrammatic representation of the AGI system (Figure 2b from C-108 Application).

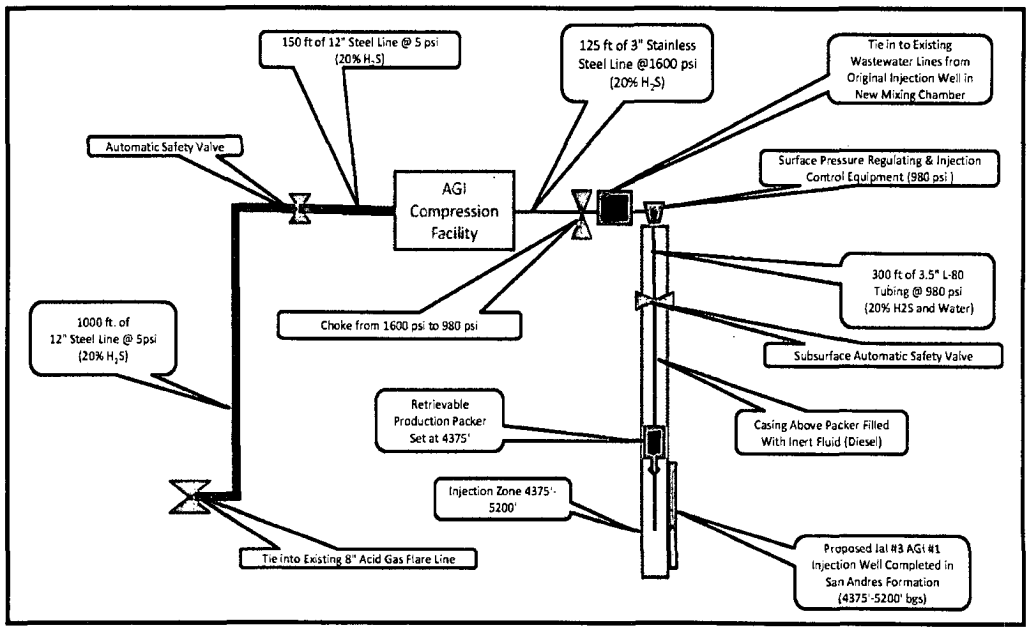


Figure 2b Schematic of SUGS Jal #3 Gas Plant Acid Gas Injection System Components

JAL 3 AGI #001: 30-025-38822

ATTACHMENT 2 STANDARD CALCULATIONS OF RADIUS OF EXPOSURE

Southern Union Gas Services, Jal #3 Plant H_2S Radius of Exposure Calculations

Calculate Volume of Release

Pipe Section	Length of Pipe ft	diameter of pipe ft	volume of pipe ft3	Pipe Section Pressure psi	Pipe Section Temperature F
1	1000	1	785.398163	5	83.86
2	150	1	117.809725	5	112.00
3a	125	0.25	6.13592315	1600	112.00
3b	300	0.29166667	20.0440156	980	112.00

Pipe length, diameter, pressure and temperature are actual values

Standarization *Per OCD, release parameters must be standardized to 60F and 14.7 psi*

Elevation	3260	3260	ft		
concentration	100	500	ppm		Concentrations of concern selected by OCD
corrected	124971.4	624856.9	µg/m^3	χ	Concentration corrected for Elevation, using NMED method
χ	0.124971389	0.62485695	g/m^3	χ	1x10^6 µg/g
Specific Volume	11.136	11.136	ft^3/lb		Specific Volume of H_2S

Pipe Section	P1 psi	P2 psi	V1 ft^3	T1 K	T2 K	Standardized Pipe Release Volume V2 ft^3	H2S Concentration %	H2S Release Volume ft^3	H2S Release Mass lb	Time of Release min	Release Concentration Q g/s
1	19.7	14.7	785.3981634	302.1	288.7	1005.81674	20%	201.1633476	18.06423739	10	13.65656347
2	19.7	14.7	117.8097245	255.5	288.7	178.380813	20%	35.67616268	3.203678402	10	2.421980872
3a	1614.7	14.7	6.135923152	255.5	288.7	761.504599	20%	152.3009197	13.67644753	10	10.33939434
3b	994.7	14.7	20.04401563	255.5	288.7	1532.41934	20%	306.4838677	27.52189904	10	20.80655567

Notes

1 Pipeline Volume calculated using ideal gas law, (P1V1)/T1 = (P2V2)/T2, where:
- P1 = Actual pressure + standard pressure (14.7 psi)
- P2 = Standard pressure (14.7 psi)
- V1 = Volume of the pipe section to be released
- V2 = Release volume at standard conditions - equation is solved for this
- T1 = Temperature of gas in pipeline (in Kelvin)
- T2 = Standard Temperature (60F, expressed in Kelvin = 288.7K)
- °C = (°F - 32) x 5/9
- K = C + 273.3

2 H2S Release volume is H2S Concentration * Standardized Pipe Release Volume
3 H2S Release Mass is H2S Release Volume * Specific Volume of H2S
4 Time of Release is 10 minutes, as a conservative estimate
5 Release Concentration, Q, is H2S Mass (lb) * 453 .6 g/lb / (10 min * 60 sec/min)

Distance Calculation *Calculated radius of impact is estimated from equations found in the Workbook of Atmospheric Dispersion Estimates (D. Bruce Turner).*

$\sigma_y \sigma_z = Q / \pi u \chi_{LOC}$ D. Bruce Turner, *Workbook of Atmospheric Dispersion Estimates*, Equation 2.6

u = Windspeed, conservative estimate
Q = Pollutant emission rate
χ_{LOC} = Level-of-Concern concentration
x = distance from source

Based on the above calculation, x is interpolated from Table 2.5 (assuming Stability Class F), for the resulting $\sigma_y \sigma_z$. Values for $\sigma_y \sigma_z$

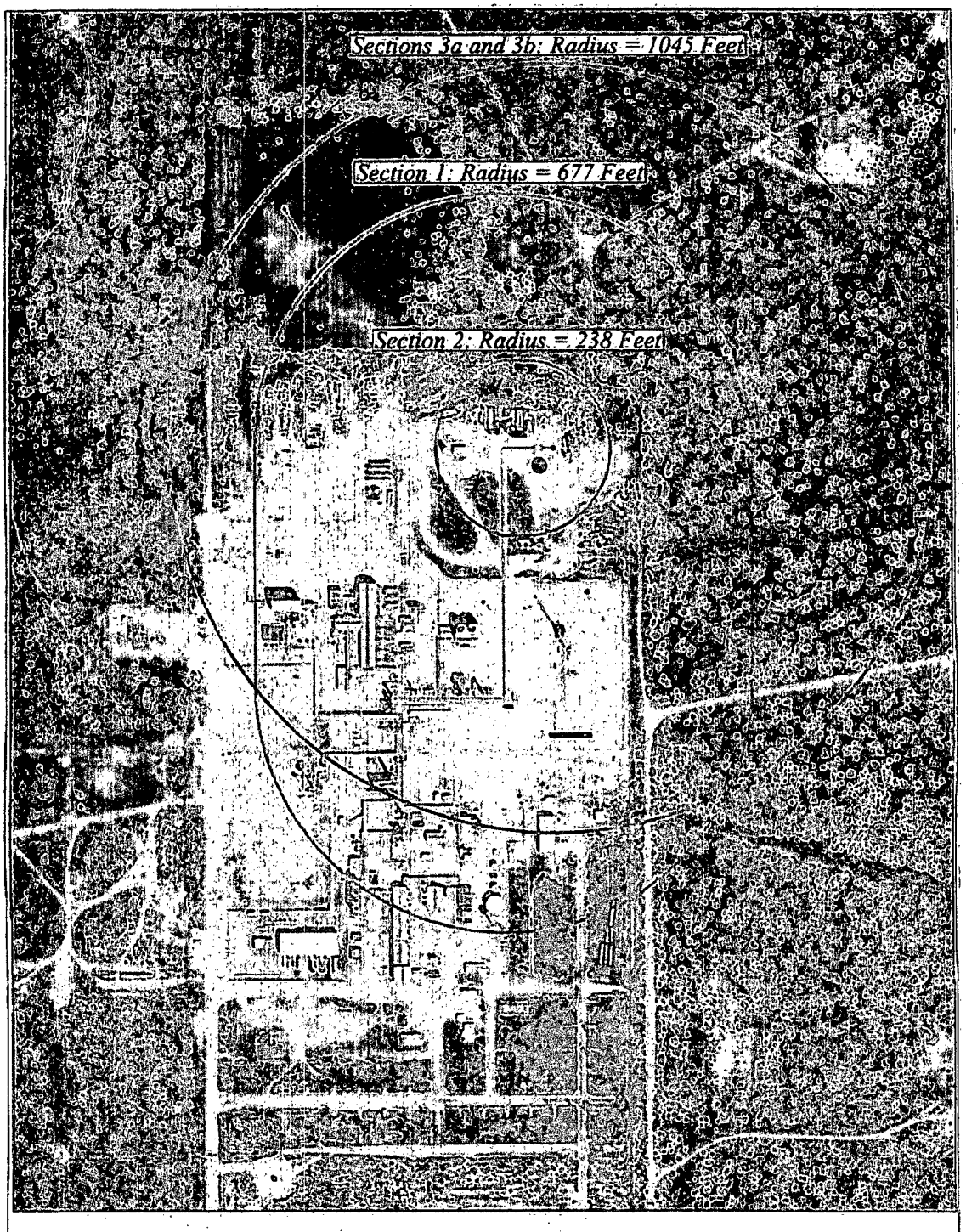
Pipe Section	Exposure Concentration ppm	u m/s	Q g/s	χ_{LOC} g/m^3	$\sigma_y \sigma_z$ m^2	x km	**Radius of Exposure** x m	x ft
1	100	1	13.66	0.12	34.78	0.22	**222**	**677**
	500	1	13.66	0.62	6.96	0.084	**84**	**255**
2	100	1	2.42	0.12	6.17	0.078	**78**	**238**
	500	1	2.42	0.62	1.23	0.031	**31**	**94**
3	100	1	31.15	0.12	79.33	0.34	**343**	**1045**
	500	1	31.15	0.62	15.87	0.135	**135**	**410**

In case 3, the emission rate Q is comprised of emission rates from both pipe sections 3a and 3b added together

Linear Interpolation of Distance vs. Sigma y times Sigma Z

Distance x (km)	sigma y * sigma z	
0.13	14.90	
0.1346	**15.87**	
0.14	17.00	

ATTACHMENTS 4a and 4b Maps Showing Calculated Radius of Exposure for 100 and 500 ppm H_2S
(Maps Prepared with calculated ROE from Pasquill-Gifford Equations as specified in OCD Rule 118 shown in Attachment 2)

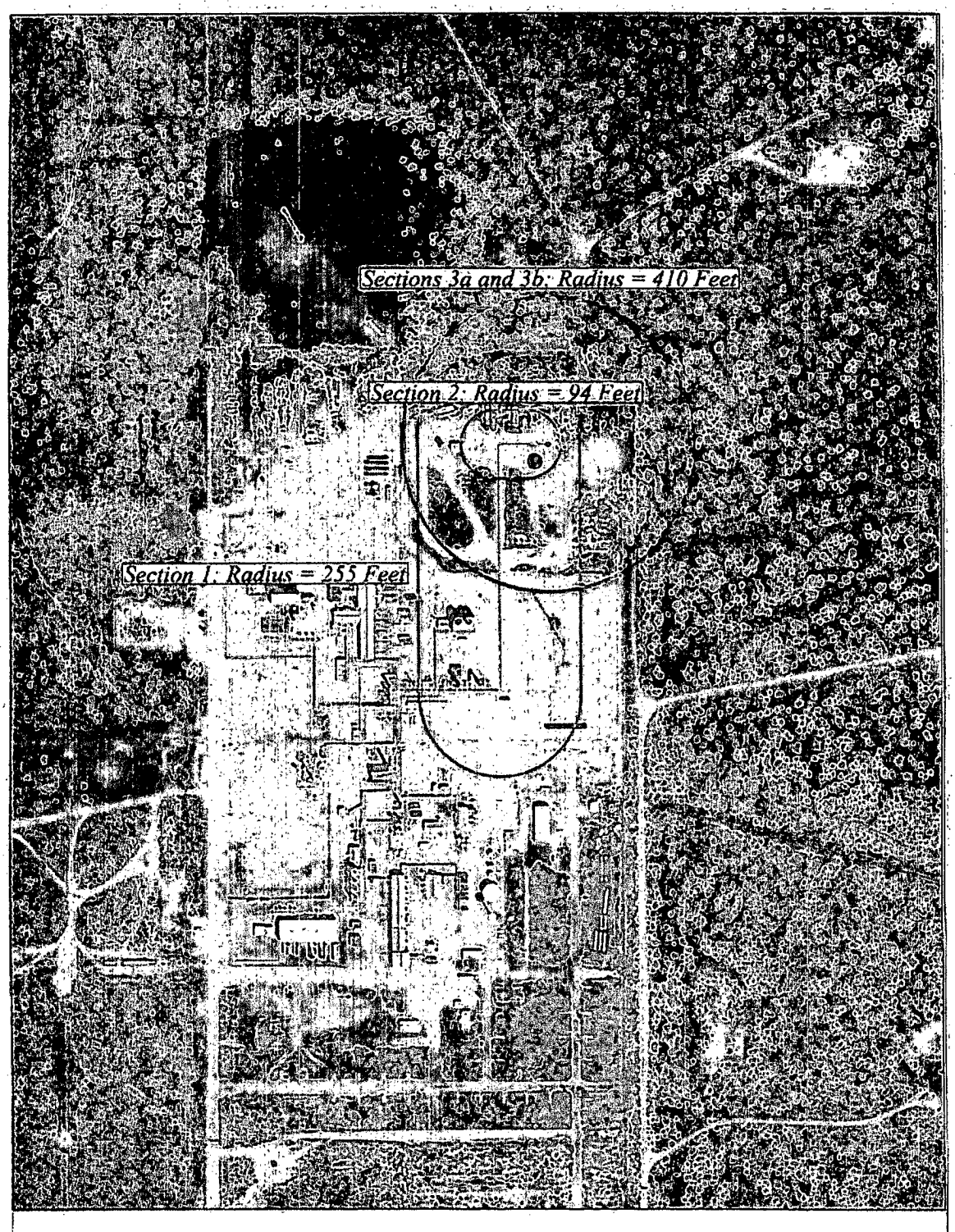


Attachment 4A
Radii of Hydrogen Sulfide Exposure at 100 Parts Per Million

Segment 1: 1000' x 12" Steel Line at 5 psi From Flare Line to Auto Safety Valve

Segment 2: 150' x 12" Steel Line at 5 psi From Auto Safety Valve to Compressor

Segment 3: 125' x 3" Stainless Steel Line at 1600 psi from Compressor to Well Head and 300' of 3.5" L-80 Tubing at 980 psi in Well



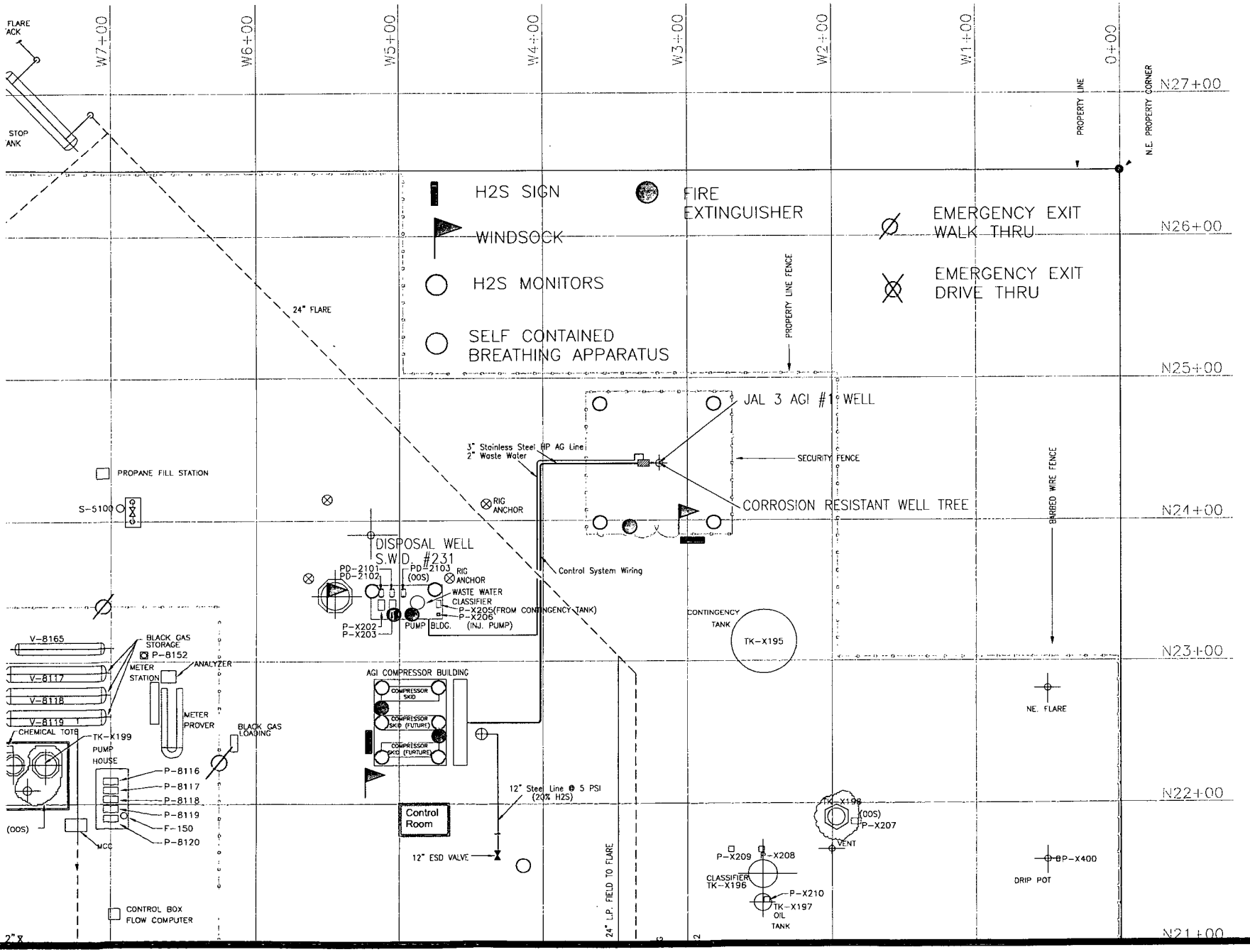
Attachment 4B
Radii of Hydrogen Sulfide Exposure at 500 Parts Per Million

Segment 1: 1000' x 12" Steel Line at 5 psi From Flare Line to Auto Safety Valve

Segment 2: 150' x 12" Steel Line at 5 psi From Auto Safety Valve to Compressor

Segment 3: 125' x 3" Stainless Steel Line at 1600 psi from Compressor to Well Head and 300' of 3.5" L-80 Tubing at 980 psi in Well

Attachment 5 Blowup of AGI Well Area Showing Location of H_2S Monitoring System and Emergency Equipment Locations



ATTACHMENT 6

SUMMARY DESCRIPTION OF JAL #3 PLANT AND AGI FACILITY H_2S MONITORING AND ALARM SYSTEMS

The Jal #3 Plant has an established network of H_2S gas monitors and an alarm system in place for the entire plant. In addition, the AGI facility has a separate H_2S monitoring and alarm system that is designed to focus on the AGI facility within the plant and will be integrated to the overall operational H_2S monitoring for the plant. This attachment (in conjunction with Attachments 3 and 5) provides a brief description of the location of H_2S monitors and the associated alarm systems for all of the Jal #3 Plant and the new AGI facility.

There are five separate zones that comprise the H_2S monitoring and alarm systems at the Jal #3 Plant. These are:

1. Sulfur Recovery Unit (SRU) System
2. Treating Plant (Zone 2) System
3. "S" Plant System
4. "B" and "C" Plant System
5. AGI Well Facility System

Each of these systems is shown on Attachment 3 and described below. There is a detailed drawing of the AGI Facility system, which is Attachment 5. All of the systems use the Otis OI-850 gas monitors calibrated for H_2S detection, with alarms set at 10 ppm. These monitors are connected to PLCs that are located in control rooms central to each zone being monitored. The PLC controls both visual (rotating beacon) and audible alarms and plant component system shutdowns. Once an alarm is triggered, it requires the specific attention of the control room employees to resolve the situation that created the alarm prior to allowing the alarm to be reset. Copies of the data sheets for the H_2S monitors and the PLC are included at the end of this attachment.

1. **SRU H_2S MONITORING AND ALARM SYSTEM SUMMARY:** The H_2S monitoring and alarm system located at the SRU at the central west portion of the Jal #3 Plant consists of 6 Otis H_2S monitors tied to an Otis monitoring system, which is controlled from the plant process control room located just southeast of the SRU unit and just west of the treating plant. In addition, this system monitors and controls four additional H_2S monitors (labeled 3, 4, 5 and 6 on Attachment 3) located around the "A" compressor building in the south central area of the plant. The monitors for this zone are set to alarm at an H_2S concentration of 10 ppm and require specific action by plant personnel in the control room to identify and resolve the cause of the alarm prior to reset. The location of the H_2S monitoring system for the SRU zone is shown on Attachment 3.

2. **TREATING PLANT (ZONE 2) H_2S MONITORING AND ALARM SYSTEM SUMMARY:** The H_2S monitoring and alarm system for the central portion of the plant (gas treating area) is comprised of a network of 8 Otis H_2S monitors tied to an Otis monitoring system, which is located in the treating plant control room located between the treating plant and the "A" compressor building. The monitors for this zone are set to alarm at an H_2S concentration of

10 ppm and require specific action by plant personnel in the control room to identify and resolve the cause of the alarm prior to reset. The location of the H_2S monitoring system for the treating plant is shown on Attachment 3. The monitors are labeled Z2. 1 -Z2.8 on Attachment 3.

3. **"S" PLANT H_2S MONITORING AND ALARM SYSTEM SUMMARY:** The H_2S monitoring and alarm system for the new engine and compressor area located in the southwest corner of Jal #3 ("S" Plant) is comprised of 10 Otis H_2S monitors tied to a PLC, which is monitored from the "MCC" control room located on the southwest boundary of the Jal #3 Plant northwest of the "S" Plant new engine room. The monitors for this zone are set to alarm at an H_2S concentration of 10 ppm and require specific action by plant personnel in the control room to identify and resolve the cause of the alarm prior to reset. The location of the H_2S monitoring system for the "S" Plant is shown on Attachment 3.

4. **"B" AND "C" PLANT H_2S MONITORING AND ALARM SYSTEM SUMMARY:** The H_2S monitoring and alarm system for the "B" and "C" Plant is located north of the SRU and treating plant on the west side of Jal #3 ("B" and "C" Plant). The "B" Plant area is monitored through the use of 5 Otis H_2S Monitors (labeled 1-5 on Attachment 3 in the "B" Plant area). The "C" Plant monitoring system is comprised of 3 Otis H_2S monitors (labeled 6, 7, and 8 on Attachment 3 in the "C" Plant area) tied to an Otis monitoring system, which are controlled out of the "MCC" control room located in the "C" Plant area. The monitors for this zone are set to alarm at an H_2S concentration of 10 ppm and require specific action by plant personnel in the control room to identify and resolve the cause of the alarm prior to reset. The location of the H_2S monitoring system for the "B" and "C" Plant zone is shown on Attachment 3.

5. **AGI WELL FACILITY H_2S MONITORING AND ALARM SYSTEM SUMMARY:** The H_2S monitoring and alarm system for the new AGI well facility located in the northeast corner of the Jal #3 consists of 12 Otis H_2S monitors controlled by a PLC located in a control room to be located south of the AGI compressor building. These monitors are shown on Attachment 3 and detailed locations are shown on the enlarged plot plan of the AGI facility included as Attachment 5. The monitors are centered around the AGI well, compressors, and in the area of the current SWD located between the AGI compressors and the AGI well. The monitors for this zone are set to alarm at an H_2S concentration of 10 ppm and require specific action by plant personnel in the control room to identify and resolve the cause of the alarm prior to reset. The location of the H_2S monitoring system for the new AGI facility zone is shown on Attachment 3 and a detailed plot plan included as Attachment 5.

Data Sheet

Model OI-850 & OI-850-O_2 Notis Stand Alone Monitor

***OTIS INSTRUMENTS INC.

DESCRIPTION

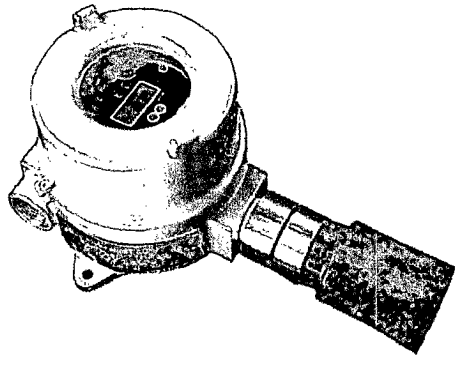
The Otis Instruments, Inc. Model OI-850 and OI-850-O_2 Notis are stand alone gas monitors, each equipped with an EC or Oxygen Sensor.

The key feature of the OI-850s is non-intrusive calibration. With all adjustments made at the monitor, one-man non-intrusive calibration is quick, easy, and allows the device to remain Class I, Div.1, Group C and D certified while in the field. Non-intrusive calibration is made possible by using an Otis Instruments, Inc. distributed magnet to activate the buttons.

The OI-850s both feature a 4-digit display and are equipped with two NO 5 Amp alarm relays that are full-scale adjustable. The devices are powered by 12-24 Volts DC and include both 4-20mA and RS-485 RTU signal outputs.

The OI-850's flexibility-provided by the EC or Oxygen Sensor that grants the user the ability to specify which gas needs to be sensed-combined with other features, makes the devices convenient and reliable tools, suitable for a wide-ranee of •as-hosting environments.

PRODUCT PHOTO



SPECIFICATIONS

Power Input:	12-24 Volts DC 4-20mA
Signal Output:	and RS-485 Killark HKB
Enclosure:	(expl. proof) CSA Certified: Class I & II Groups C & D CSA: Class I, Div. 1 Groups C & D EC
Sensor Encl. Cert.:	or Oxygen +/- 5% of full scale
Sensor Type:	
Accuracy:	
Operating Temp:	-17.5 to 75° C (0-167° F)
Relays:	Two N.O.; 12-24 Volts DC 1.6 Amp DC power input 5 Amp Low/High relays
Fuses:	
Warranty:	Hardware: 2 year (ltd.) Sensor: 1-2 years (ltd.)

FEATURES

- Non-instrusive calibration with MENU, ADD and SUB
- 4-20mA and RS-485 signal outputs
- Glass lid for for viewing amplifier display
- Explosion and weather proof Moore enclosure
- Rapid response and clearing time
- Rain/splashguard for sensor protection

Otis Instruments, Inc.
2200 E. Villa Maria Dr
Bryan, TX 77802
979.776.7700
Fax: 979.776.7719
i nfo@otisi nstru ments.com
www.otisi nstru ments.com

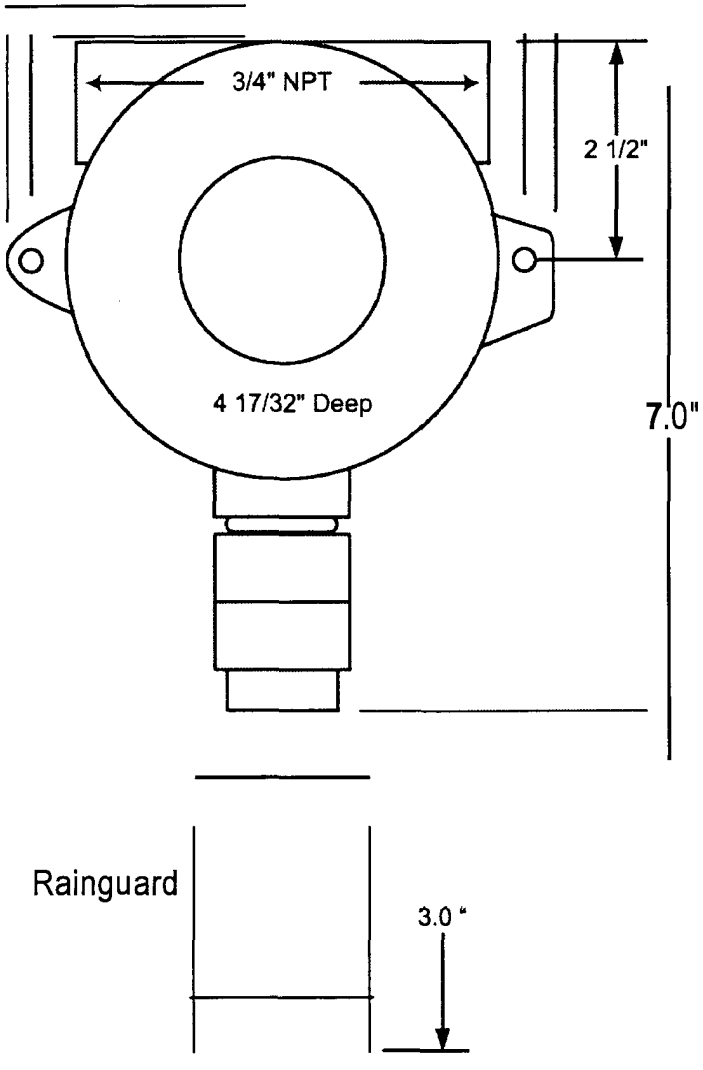
Data Sheet

Model 0I-850 & 0I-850-0_2 Notis Stand Alone Monitor

***OTIS INSTRUMENTS INC.

DIMENSIONS

6 1/8" 5 1/2"



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Revision 1.0

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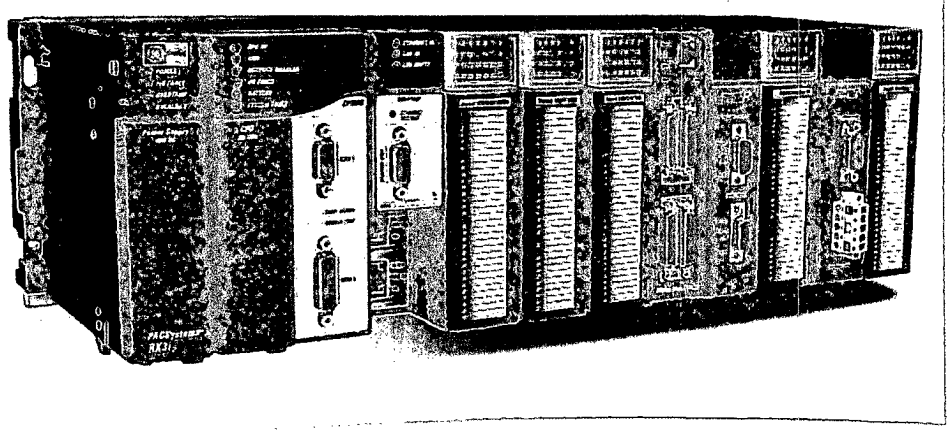

The new PACSystems™ RX3i controller is the latest addition to the innovative PACSystems family of programmable automation controllers (PACs). Like the rest of the family, the PACSystems RX3i features a single control engine and universal programming environment to provide application portability across multiple hardware platforms and deliver a true convergence of control choices. Using the same control engine as the PACSystems RX7i, the new PACSystems RX3i offers a high level of automation functionality in a compact, cost-effective package. The PACSystems portable control engine provides high performance on several different platforms, allowing OEMs and end users with application variability to choose the exact control system hardware that best suits their needs.

The innovative technology of the PACSystems RX3i enables users to:

- Address major engineering and business issues, such as higher productivity and tighter cost control
- Boost the overall performance of their automation systems
- Reduce engineering and commissioning costs
- Easily integrate new technology into installed base systems
- Significantly decrease concerns regarding short- and long-term migration and platform longevity

- High-speed processor and patented technology for faster throughput without information bottlenecks
- Dual backplane bus support per module slot:
  - High-speed, PCI-based for fast throughput of new advanced I/O
  - Serial backplane for easy migration of existing Series 90-30 I/O
- Celeron (Pentium® III) 300 mHz CPU for advanced programming and performance with 10Mbytes memory
- Memory for ladder logic documentation and machine documentation (Word, Excel, PDF, CAD and other files) in the con-troller to reduce downtime and improve trouble shooting.
- Open communications support including Ethernet, GENIUS®, Profibus™, DeviceNet™ and serial
- Supports high density discrete I/O, universal analog (TC, RTD, Strain Gauge, Voltage and Current configurable per channel), isolated analog, high-density analog, high-speed counter, and motion modules
- Expanded I/O offering with extended features for faster processing, advanced diagnostics and a variety of configurable interrupts
- Hot insertion for both new and migrated modules
- Isolated 24VDC terminal for I/O modules and a grounding bar that reduces user wiring

Like the rest of the PACSystems family, the PACSystems RX3i is designed for easy integration with installed hardware systems

- Seamless migration path for GE Fanuc customers
- Protection for each user's investment in both I/O and applications development
- Power for users of all control systems to leverage as much of their installed automation investment as possible

The common software platform across all of GE Fanuc control lers, award-winning CIMPLICITY® Machine Edition™ software provides the universal engineering development environment for programming, configuration and diagnostics

for the entire PACSystems family.

- Programming tools such as tag-based programming, a library of reusable code and a test edit mode for improved online troubleshooting
- User-friendly environment that can increase design flexibility and improve engineering efficiency and productivity

imagination at work

	Part Number	Description	Part Number	Description
Controllers	IC695CPU310*	300Mhz CPU, 10Mbytes of memory, two serial ports (requires 2 slots)		
Controller Bases	IC695CHS012	System Base, 12 Universal Slots	IC695CHS016	System Base, 16 Universal Slots
Expansion Bases	IC694CHS392	Base, Expansion, 10 Slots	IC694CHS399	Base, Remote Expansion, 5 Slots (700 ft.)
Controller Power Supplies	IC695PSA040*	Power Supply, AC, 40 Watts (requires 2 slots)	IC695PSD040*	Power Supply, 24VDC, 40 Watts (requires 1 slot)
Expansion Power Supplies	IC694PWR321	Power Supply, 120/240 VAC, 125 VDC, Standard, 30 Watts (Use with Expansion Base)	IC693ACC340	Redundant Power Supply Base (RPSB) with 0.1 meter cable to connect to Power Supply Adapter Module (Use with Expansion Base)
	IC694PWR330	Power Supply, 120/240 VAC, 125 VDC, High Capacity, 30 Watts (Use with Expansion Base)	IC693ACC341	Redundant Power Supply Base with 0.5 meter cable to connect to Power Supply Adapter Module (Use with Expansion Base)
	IC694PWR331	Power Supply, 24 VDC, High Capacity, 30 Watts (Use with Expansion Base)	IC693ACC350	Redundant Power Supply Adapter (RPSA) Module. The RPSA replaces the power supply on a CPU base or expansion base and connects to a Redundant Power Supply Base. (Use with Expansion Base)
Discrete Input Modules	IC694MDL231	240 VAC Isolated Input (8 Points)	IC694MDL646	24 VDC Input, Neg/Pos Logic, 1 msec Filter (16 Points)
	IC694MDL240	120 VAC Input (16 Points)	IC694MDL654	5/12 VDC (TTL) Input, Neg/Pos Logic, (32 Points)
	IC694MDL241	24 VAC/VDC Input (16 Points)	IC694MDL655	24 VDC Input, Neg/Pos Logic, 1 ms, (32 Points)
	IC694MDL632	125 VDC Input (8 Points)	IC694ACC300	Input Simulator Module (8 Points)
	C694MDL260	120 VAC Input (32 Points)	IC694MDL660	24 VDC Input (32 Points)
	IC694MDL634	24 VDC Input, Neg/Pos Logic (8 Points)		
	IC694MDL230	120 VAC Isolated Input (8 Points)	IC694MDL645	24 VDC Input, Neg/Pos Logic (16 Points)
Discrete Output Modules	IC694MDL310	120 VAC Output, 0.5 Amp (12 Points)	IC694MDL740	12/24 VDC Output, 0.5 Amp, Positive Logic (16 Points)
	IC694MDL330	120/240 VAC Output, 2 Amp (8 Points)	IC694MDL741	12/24 VDC Output, 0.5 Amp, Negative Logic (16 Points)
	IC694MDL340	120 VAC Output, 0.5 Amp (16 Points)	IC694MDL742	12/24 VDC Output, 1 Amp, Positive Logic (16 Points), Fused
	IC694MDL390	120/240 VAC Isolated Output, 2 Amp (5 Points)	IC694MDL752	5/12/24 VDC (TTL) Output, Negative Logic, (32 Points)
	C694MDL730	12/24 VDC Output, 2 Amp, Positive Logic (8 Points)	IC694MDL753	12/24 VDC Output, Positive Logic (32 Points)
	IC694MDL732	12/24 VDC Output, 0.5 Amp, Positive Logic (8 Points)	IC694MDL754	24 VDC Output w/ ESCP, 0.75 Amp (32 Points)
	IC694MDL734	125 VDC Output (6 Points)		
Relay Output Modules	C694MDL916	Relay Output, Isolated, 4 Amp (16 Points)	IC694MDL931	Relay Output, 8 Amp Form B/C contacts, Isolated in 2 Groups of 4 (8 Points)
	IC694MDL924	Relay Output, 2 Amp (24 Points)	IC694MDL940	Relay Output, 2 Amp (16 Points)
	IC694MDL930	Relay Output, Isolated, 4 Amp (8 Points)		
Analog Input Modules	IC694ALG220	Analog Input, Voltage/Current, 4 Channels	IC695ALG225*	Analog Input, Non-Isolated, Voltage/Current, 16 Channels
	IC694ALG221	Analog Input, Current, 4 Channels	IC695ALG240*	Analog Input, Isolated, Voltage/Current, 12 Channels
	IC694ALG223	Analog Input, Current, 16 Single Channels		
Analog Output Modules	IC695ALG331*	Analog Output, Isolated, Voltage/Current, 12 Channels	IC694ALG392	High Density Analog Output (8 Channels)
	IC694ALG222	Analog Input, Voltage 16 Single/8 Differential Channels	IC695ALG600*	Analog Input, Universal, Voltage/Current/RTD/TC/Strain Gauge, 8 Channels
	IC694ALG390	Analog Output, Voltage, 2 Channels	**IC695ALG335***	**Analog Output, Non-Isolated, Voltage/Current, 8 Channels**
Mixed Analog Modules	IC694ALG391	Analog Output, Current, 2 Channels		
Motion Modules	IC694APU300	High Speed Counter (HSC)	IC694DSM314	Digital Servo Motion Controller, 1-2 Axis of Digital Servo or 1-4 Axis Analog Servo
	IC694APU305	High Speed Counter with Gray Code Encoder or an A QUAD B Encoder Input		
Communications Modules	IC694BEM331	Genius Bus Controller (Supports I/O and Datagrams)	IC695ETM001*	Ethernet Module, 10/100 base T/TX ports (requires 1 slot)
	IC694ALG442	Analog Combo Module 4IN/2OUT		
Expansion Modules	IC695PBM001*	Profibus Master Module	IC693NIU004	**Ethernet Remote I/O Interface for IC694CHSxxx Expansion Racks**
Terminal Blocks	IC695LRE001*	Local Expansion Module (requires no universal slots)		
Accessories	IC694TBB032	High Density Terminal Block Box Style (36 Terminals)	**IC694TBS032**	**High Density Terminal Block Spring Style (36 Terminals)**
	IC693CBL300	Rack to Rack Expansion Cable, 1 Meter	IC693CBL313	Rack to Rack Expansion Cable, 8 Meters
	IC693CBL301	Rack to Rack Expansion Cable, 2 Meters	IC693CBL314	Rack to Rack Expansion Cable, 15 Meters, Shielded
	IC693CBL302	Rack to Rack Expansion Cable, 15 Meters		
Programming and Troubleshooting Tools	IC693ACC302	High Capacity Battery Pack (mounts externally)	IC693CBL312	Rack to Rack Expansion Cable, 0.15 Meters, Shielded
	IC646MPP001	Logic Developer - PLC Professional	IC646M PH 101	Logic Developer PDA Software Tool with Cable Adapter
	IC646MPS001	Logic Developer - PLC Standard		

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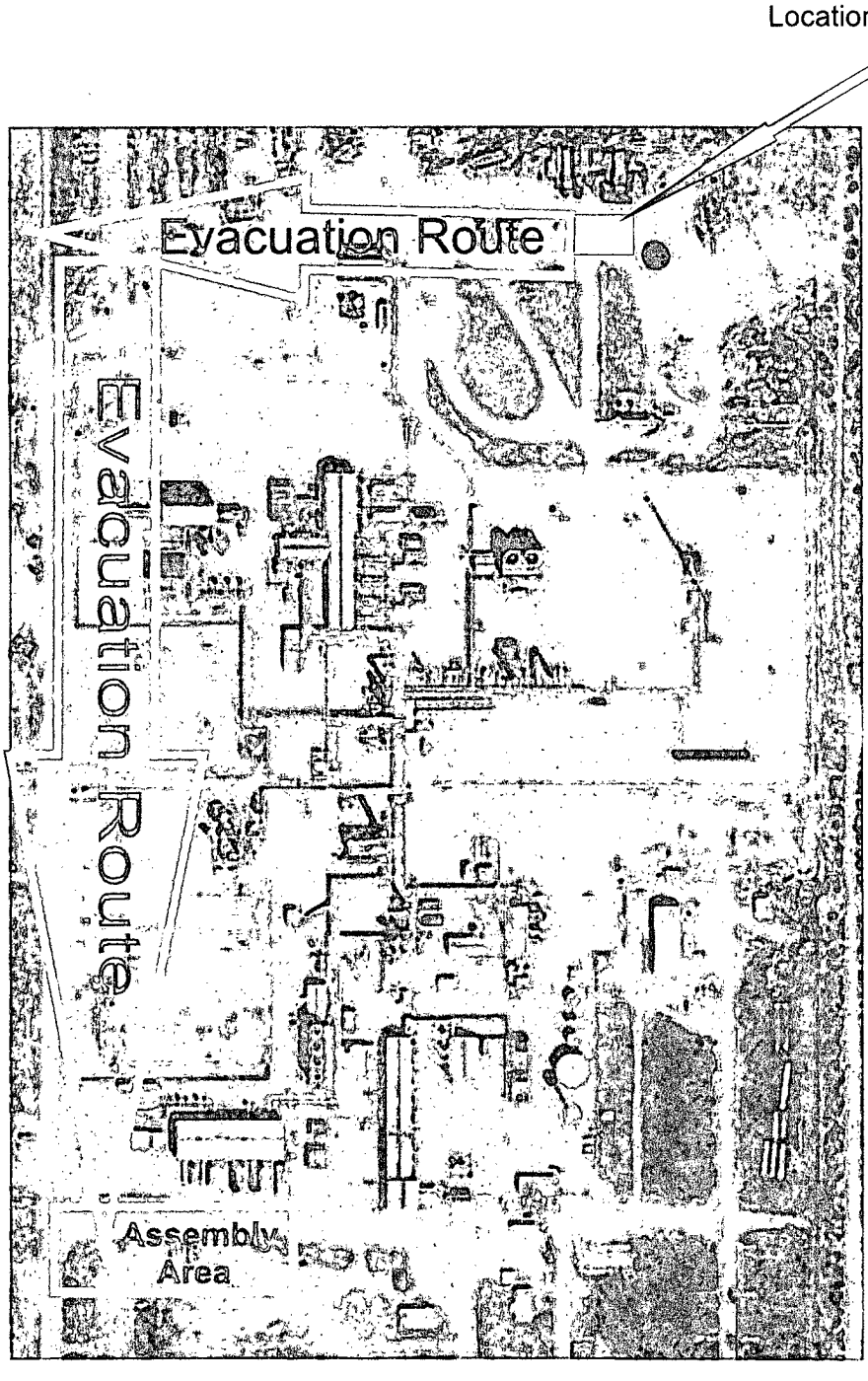
For detailed technical specifications and product ordering information, please visit the GE Fanuc website at:

GFA-559
01/04 5M

ATTACHMENT 7 Hazardous Materials Incident Notification Information Checklist

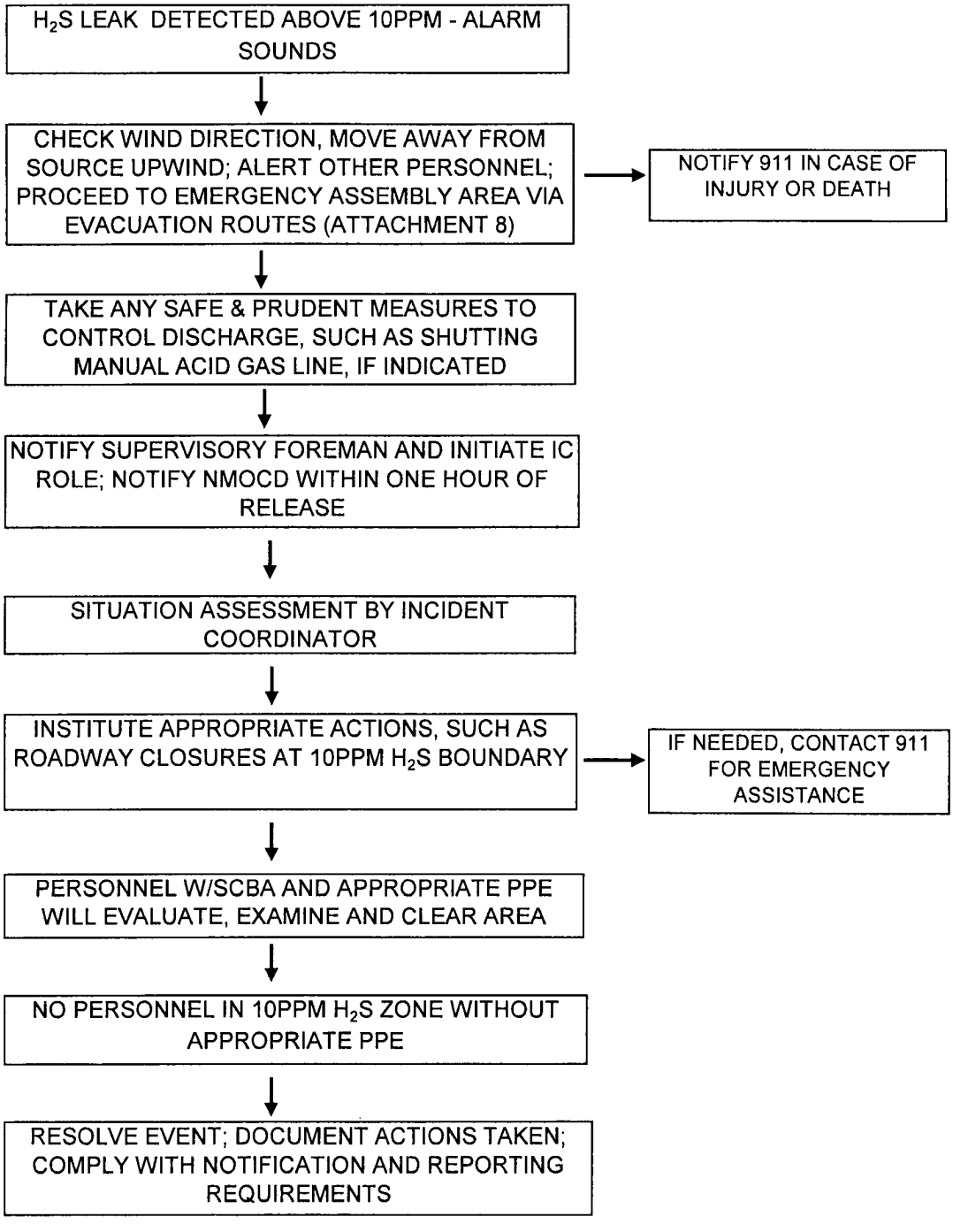
The following information should be given to dispatch. Dispatch should be instructed to give all information received to response agencies.

Notification	Time Dispatch Notified: Date: _____
Caller	Caller Name: _____ Caller Location: _____ Caller Phone Number: _____
Hazardous Materials Information	Incident location _____ (Address or Nearest Milepost or Exit) Time Incident Occurred _____ Container Type _____ (Truck, train car, drum storage, Tank, pipeline, etc.) Substance _____ UN Identification Number _____ Other Identification _____ (Placards, shipping papers, etc.) Amount of material spilled/released _____ Current condition of material _____ (Flowing, on fire, vapors present, etc.)
Scene Description	Weather conditions _____ (i.e., sunny, overcast, wet, dry, etc.) Wind direction _____ Wind speed _____ Terrain _____ (i.e., valley, stream bed, depression, asphalt, etc.) Environmental Concerns _____ (Streams, sewers, etc.)
Affected Population	Number of people affected _____ Condition of people affected _____
Resources	Resources required _____ (EMS, HazMat Team, Fire Department, etc.)
Response	Response actions anticipated And/or in progress (i.e., rescue, fire suppression, containment, etc.)
Comments	_____ _____ _____



Attachment 8
Map Showing Evacuation Routes and Assembly Areas (Wind Conditions Permitting)

ATTACHMENT 9
SIMPLIFIED H_2S CONTINGENCY PLAN FLOWCHART



ATTACHMENT 10:
DISTRIBUTION LIST

NEW MEXICO OIL & GAS CONSERVATION DIVISION	1 COPY
NEW MEXICO DEPARTMENT OF PUBLIC SAFETY (Hobbs or Jal Office) STATE POLICE	1 COPY
NEW MEXICO DEPARTMENT OF PUBLIC SAFETY STATE POLICE	1 COPY
JAL FIRE DEPARTMENT	1 COPY
MEDICAL FACILITY (Eunice)	1 COPY
MEDICAL FACILITY (JAL)	1 COPY
LEA COUNTY SHERIFF DEPARTMENT (Eunice)	1 COPY
LEA COUNTY SHERIFF DEPARTMENT (JAL)	1 COPY
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