GW - 312

H_2S CONTINGENCY PLAN

H2S – 040

H2S Contingency Plan

2014

Chavez, Carl J, EMNRD

Subject: FW: CHEVRON Buckeye CO2 Plant H2S Contingency Plan (H2S-040)

H2S Contingency Plan Contact:

James A. Trujillo
Safety Specialist
JTRUJILLO@chevron.com
Office 575-396-4414 ext. 222
Mobile 575-650-3602
Fax 575-396-6913
Chevron N.A. Exploration Production Co.
56 Texas Camp
Lovington, NM 88260

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary Designate

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

Jami Bailey
Division Director
Oil Conservation Division

FEBRUARY 5, 2014

Mr. David A. Pagano
MCA Health & Environmental Specialist
56 Texas Camp Road
Lovington, NM 88260

RE: CHEVRON (H2S-040): "Buckeye CO2 Plant" H2S Contingency Plan dated January 27, 2012, in Lea County, New Mexico

Dear Mr. Pagano:

The Oil Conservation Division (OCD) is in receipt of Chevron's "Buckeye CO2 Plant" H2S Contingency Plan (plan) dated January 27, 2012.

OCD has completed its review of the plan and find that it appears to meet the intent of the OCD "Hydrogen Sulfide" Regulations (19.14.11 NMAC).

OCD hereby **accepts** the plan for record with the following conditions:

1. 19.15.11.9 (H) NMAC Annual Inventory: Please adhere to this section of the regulation. Place the name with contact address information of the appointed Chevron representative in the Contingency Plan.

2. 19.15.11.10 NMAC Signs, Markers: Please adhere to this section of the regulation. Signs should be placed at proper locations at the facility, and along buried pipelines with ROE_{100} transecting a public road or public area.

Please be advised that OCD acceptance of this plan does not relieve CHEVRON of responsibility should their operations fail to adequately investigate and remediate contamination that poses a threat to ground water, surface water, human health or the environment. In addition, OCD acceptance of this plan does not relieve CHEVRON of responsibility for compliance with any other federal, state, or local laws and/or regulations

If you have any questions, please contact Carl Chavez of my staff at (505) 476-3490, mail at the address below, or email at CarlJ.Chavez@state.nm.us. Thank you.

Sincerely,

Scott Dawson
Deputy Director

SD/cjc

cc: Mr. Daniel Sanchez, OCD Santa Fe
Mr. Glenn von Gonten, OCD Santa Fe
OCD Hobbs District Office

CHEVRON U.S.A Inc.

Vacuum FMT & Buckeye CO_2 Plant

H_2S Contingency Plan

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Background

Introduction

This H2S Contingency Plan is specifically for The Vacuum Field Management Team (FMT) & Buckeye CO2 Processing Plant (Plant). The Vacuum Field Management Team (FMT) is an oil production management office and the Buckeye CO_2 Processing facility is a natural gas processing plant both of which handles hydrogen sulfide and generates sulfur dioxide from combustion; therefore this Hydrogen Sulfide Contingency Plan has been developed to:

1. Satisfy the New Mexico Oil Conservation Division (NMOCD) Rules in NMAC 19.15.11.
2. Conform with paragraph 7.6 of guidelines in the API "Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide," RP 55.
3. Create a site-specific hydrogen sulfide contingency plan that outlines the emergency procedures that will be followed to ensure a coordinated, efficient and immediate action plan for alerting and protecting operating personnel and the public, and 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 11 of the New Mexico Administrative code (19.15.11.7- Definitions) unless otherwise defined herein.

Vacuum Field Management Team Description of Operations

Field Operations Overview: The Vacuum Field Management Team (FMT) manages oil production in 3 general areas in Southeast New Mexico.

The largest area, known as the Buckeye area/field, is just south of Buckeye, New Mexico and consists of approx. 230 active oil wells and approx. 200 injection wells. The Buckeye Area contains the Central Vacuum Unit (CVU), Vacuum Greyburg San Andreas Unit (VGSAU), Vacuum Glorietta West Unit (VGWU), NM QOBA State Unit (NQOBA), West Vacuum Unit (WVU), North Vacuum Abo West Unit (NVAWU), Abo Reef, Drinkard Battery and Koehane Battery. Most areas of the field are being water flooded and both the Central Vacuum Unit & Vacuum Greyburg San Andreas Units are Carbon Dioxide (CO_2) flooded.

The 2nd largest area, known as the Lovington area, is approx. 5 miles southeast of Lovington between Lovington and Hobbs and consists of approx. 90 active oil wells and approx 125 injection wells. The Lovington Area contains the Lovington San Andreas Unit (LSAU), Lovington Paddock Unit (LPU), West Lovington Unit (WLU), Lovington Deep Unit (LDU), Midway and Kriti State. The West Lovington & Paddock Units are being water flooded.

The 3rd area, known as the Skelly/Texmack area, is approx 5 miles west of Maljamar and 5 miles east of Loco Hills and consists of approx 75 active oil wells. There is also a small production area approx. 10 miles south of Maljamar known as the Spear, Lusk, Keel & Federal area with approx. 10 active oil wells. None of the producers are under water or CO_2 flood.

In total the FMT manages approx 450 active wells and approx 325 injection wells which produce approx 10,000 barrels of oil per day; 100,000 barrels of water per day; and 50 million standard cubic feet of gas per day (MMSCFD).

Buckeye CO_2 Plant Description of Operations

Buckeye CO2 Plant Operations Overview: The Plant operations include gas processing, conditioning and compression and Natural Gas Liquid production. The Plant gathers produced natural gas from the Chevron Operated Central Vacuum & Vacuum Greyburg San Andres Unit Leases in Lea County, New Mexico. These leases are under CO_2 flooding, a process whereby carbon dioxide is injected into an oil reservoir in order to increase output when extracting oil. Once gathered at the Plant, the produced CO_2 rich natural gas is compressed and dehydrated to remove the water content. The natural gas goes through a propane recovery column to extract the natural gas liquids. The remaining CO2 rich natural gas is then sent back to the field to be re-injected to facilitate ongoing oil production.

Buckeye CO2 Operations Detailed Description: CO_2 rich inlet gas from the Chevron Operated Central Vacuum Unit & Vacuum Greyburg San Andreas gathering systems enters the Buckeye CO_2 Plant at approximately one hundred (100) psig and ambient temperature through 2 lines provided by the field up to the plant fence line. The line from the CVU field is a fourteen (14) inch line and the line from the VGSAU field is an eight (8) inch line that both comingle at the North perimeter of the site, continuing underground until it reaches the two-phase Inlet Separator. Liquids dropped out in the Inlet Separator will be pumped back to the field facilities via a ten (10) inch pipeline. Vapor from the top of the Inlet Separator flows to an Inlet Feed Exchanger (which utilizes a side stream from the discharge of the first stage of compression to maintain a constant inlet gas temperature for cold weather operation), then to two Inlet Filter Separators. From the Inlet Filter Separators, the gas enters the Inlet Gas/TEG Contactor that utilizes triethylene glycol (TEG) to dehydrate the gas to less than one (1) part per million (ppm) of water. The glycol is regenerated in a licensed DRIZO TEG regeneration process that receives regeneration heat input from a hot oil system consisting of a Hot Oil Heater, Hot Oil Surge Drum, and Hot Oil Pumps.

From the Inlet Gas/TEG Contactor, the dehydrated gas stream flows on to the First Stage Suction Scrubbers, then to the first stage of the CO_2 Compressors. From the discharge of the first stage, the gas flows to the First Stage Discharge Coolers.

From the First Stage Discharge Coolers, the gas flows to the Propane Recovery Column (PRC) which is distillation column that uses hot oil as heat source and

propane refrigeration system for cooling to produce natural gas liquids (NGLs). It is possible to partially or fully by-pass the PRC if necessary, in which case the gas will go directly to second/third stage compression before being returned to the field.

The natural gas liquids are cooled and go through 2 treaters to remove H_2S prior to sale. The CO_2 rich residual gas goes through 2 stages of compression and cooling before it is returned to the field at approx 1850 psi on an 8" carbon steel line that branches off to the various CO_2 injection stations in the CVU & VGSAU Field. See appendix G for the Gas Gathering system.

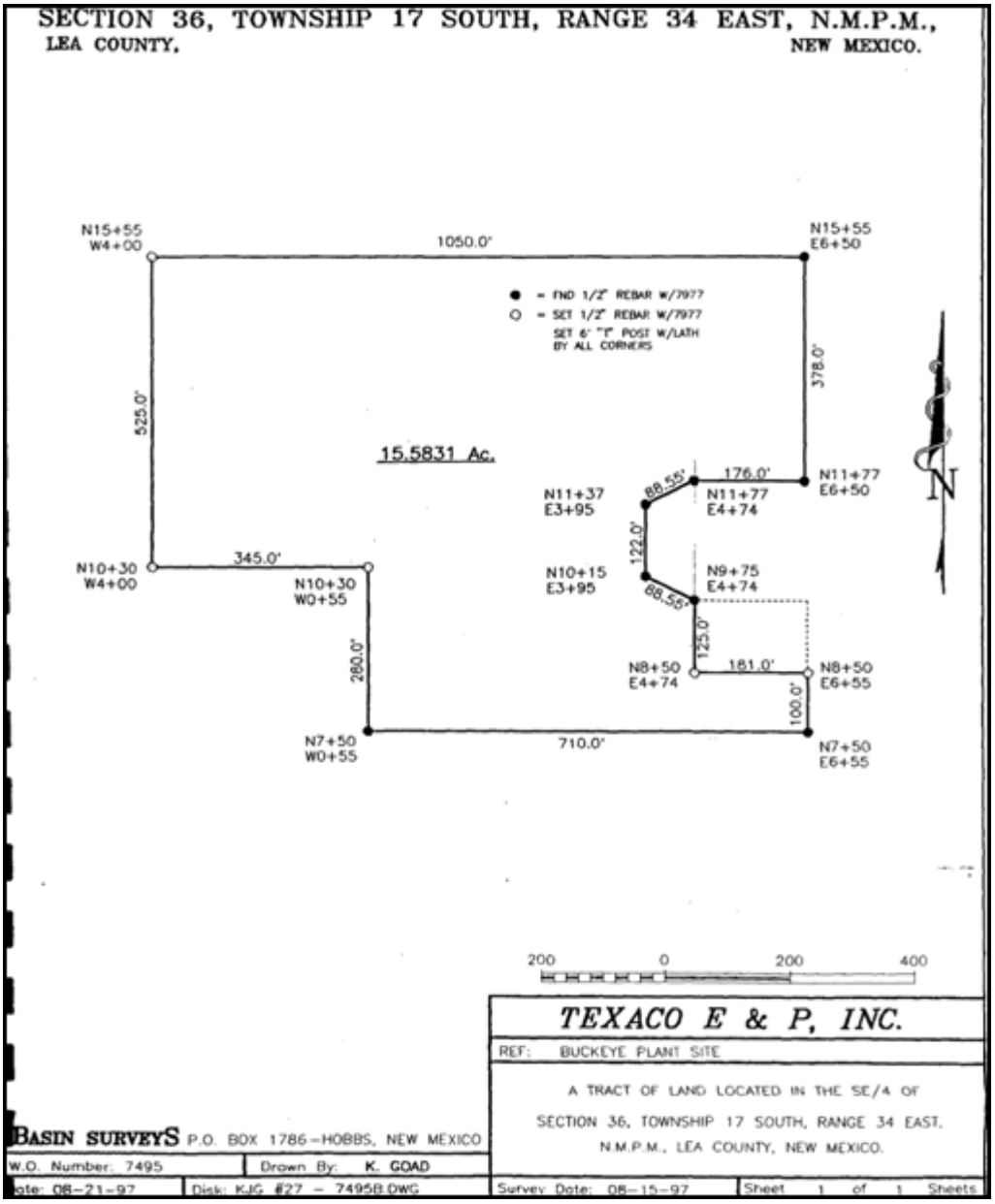
Vacuum Field Management Team (FMT) Office Location

The Vacuum FMT Field Office is located in the NE/4 of Section 36, Township 18 South, Range 34 East, NIVIPM, Lea County, New Mexico which is approx 25 driving miles to the northwest of Hobbs, New Mexico & 19.1 driving miles to the southwest of Lovington, NM.

Buckeye CO2 Plant Location, Landowner & Map

I. Plant Location: The Buckeye CO_2 Plant is located in the SE/4 of Section 36, Township 17 South, Range 34 East, NIVIPM, Lea County, New Mexico which is approx 25 driving miles to the northwest of Hobbs, New Mexico & 19.1 driving miles to the southwest of Lovington and encompasses 15+ acres. It is owned and operated by Chevron.

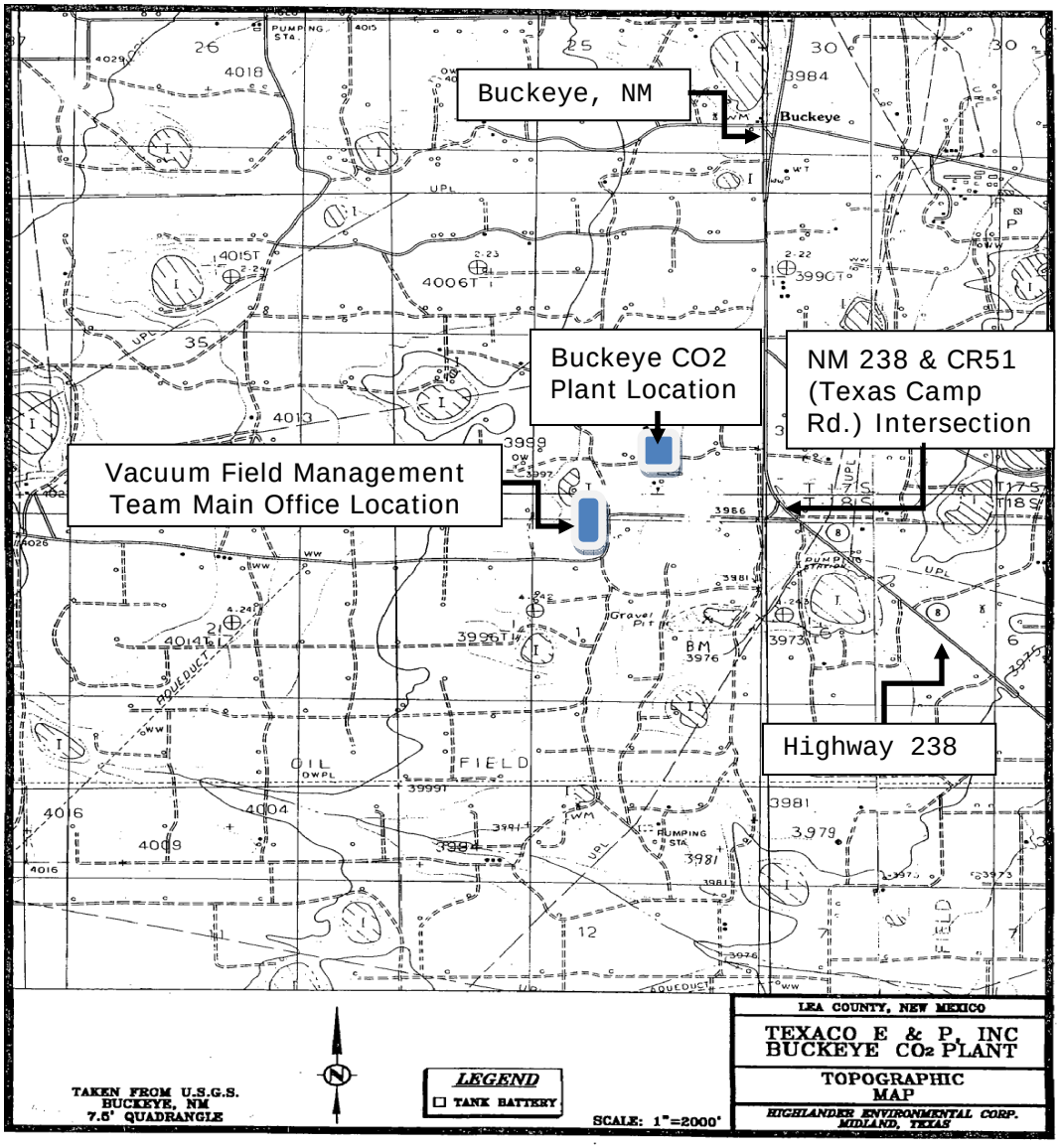
Buckeye CO_2 Plant Plot Plan



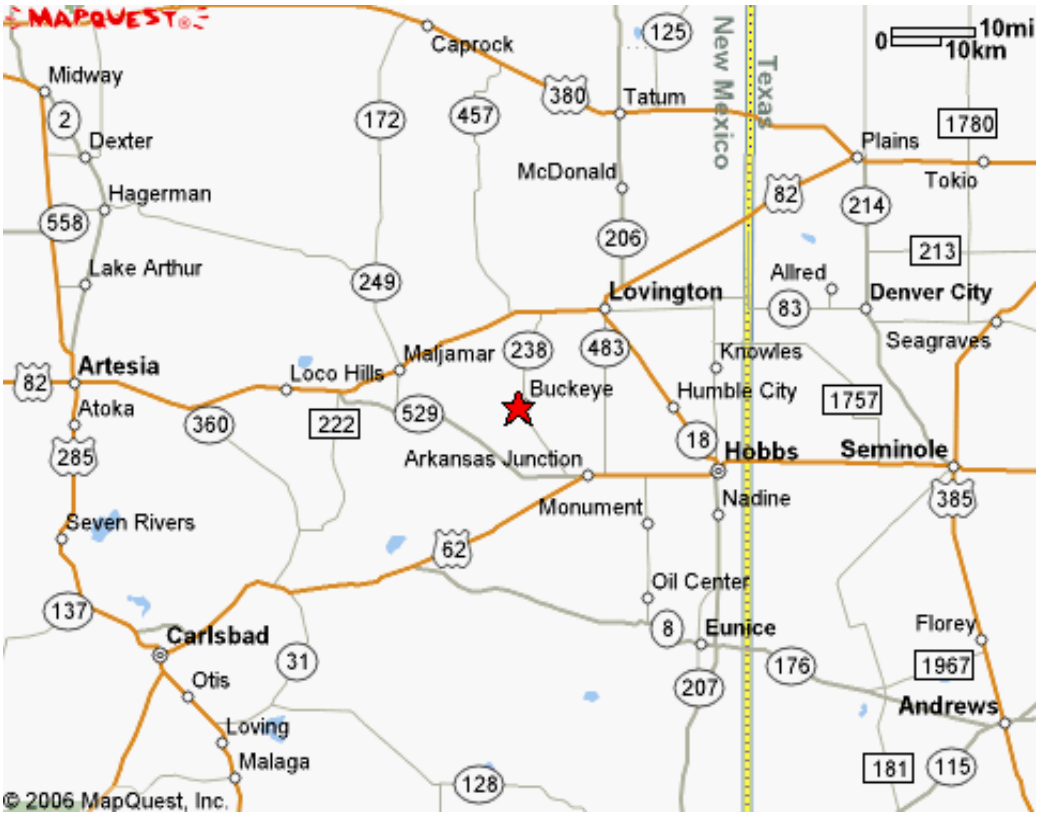
II. Plant coordinates:

Latitude: 32.78580905177838 / Longitude: -103.50888126742434

III. Physical Address: 40 Texas Camp Road (CR-51), Lovington, NM 88260-9661



Driving Directions



Driving Directions from Lovington, NM:

- Travel West on Highway 82 7 miles and turn left (South) on Highway 238.
- Travel 11.5 miles and turn right (West) on Texas Camp Rd.
- Travel ¼ miles and the Buckeye CO_2 Plant will be on the right.
- OR Travel ½ mile and the Vacuum FMT office is straight ahead.

Driving Directions from Lea County Regional Airport, Hobbs, NM:

- Travel west from Hobbs on Highway 62/180 (Carlsbad Hwy).
- Travel 9.9 miles and turn right (Northwest) on Highway 529.
- Travel 2.5 miles and turn right (North) on Highway 238.
- Travel 7.6 miles to the Chevron sign on the left side of the road and turn left (West).
- Travel ¼ miles and the Buckeye CO_2 Plant will be on the right.
- OR Travel ½ mile and the Buckeye FMT office is straight ahead.

H_2S Contingency Plan

Purpose

To provide an organized plan of action for alerting and protecting the public following the accidental release of a potentially hazardous volume of hydrogen sulfide which is defined as an H_2S concentration more than 100ppm in a public area, more than 500ppm at a public road or 100ppm more than 3000 feet from the site of the release.

Responsibility for conformance with the H_2S Contingency Plan

It is the responsibility of all personnel on-site to follow the safety and emergency procedures outlined in the H_2S Contingency Plan as well as the Chevron Vacuum Field Management Team & Buckeye CO_2 Plant Emergency Action Plans.

Revisions to the Plan

The H_2S Contingency Plan will be reviewed annually and revised as needed to address changes to the Field & Plant operations, facilities, training requirements, contact information and changes in public areas and public roads as they relate to the possible radius of exposures presented by our operations.

Availability of the H_2S Contingency Plan

The H_2S Contingency Plan is considered as part of the overall Emergency Action Plan (EAP) for both the Vacuum Field Management Team & Buckeye CO_2 Plant and will be included as an appendix to the EAP Plans. The H_2S Contingency 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 Vacuum Field Management Team Main Office, Lovington Office, the Buckeye Plant Control Room, & Plant Supervisors' Offices and online at the following link:

O:\NAU\MCBU\Oil\NewMexico\OS_VacuumCarlsbad\GRP-Vacuum\Buckeye CO_2 Plant\Buckeye Plant HES\PSM Buckeye CO_2 Plant\12.0 Emergency Planning and Response\H2S Contingency Plan

See Appendix M for the H2S Distribution List, which lists all the additional entities that have been provided a copy of the H_2S Contingency Plan.

Plan Design Considerations

1. Area of Potential Exposure

A potential major failure of any gas pipelines in the Buckeye Field gathering system or Buckeye CO_2 Plant or process equipment within the Buckeye CO_2 Plant containing Hydrogen Sulfide (H_2S) may create a hazardous area of potential exposure in the vicinity of the failure. Potential pipeline ruptures within the Buckeye Field gathering system or the Plant itself will require immediate action to protect the lives of

persons that may be in or who may enter into these areas.

In a potential catastrophic release scenario, the activation level areas of potential exposure in Appendix F include mainly public roads and a public area, a third-party owned building to the North of the Central Vacuum Unit Satellite #4 at the edge of the 100ppm ROE. No residences, schools, churches, or other public areas were identified within the ROE. The main course of action required in these areas will be to direct vehicular traffic out of the area and to block or detour other traffic that may attempt to enter these areas if gas is being released.

All H_2S bearing gas processed in the field or entering or leaving the Buckeye CO_2 Plant is heavier than air and if it is potentially released to atmosphere, it will tend to settle in the lower areas at the point it is released. Any H_2S gas potentially released will begin a dispersion process in the atmosphere, thereby becoming less concentrated both vertically and horizontally away from the point of release.

The rate of dispersion of the H_2S gas into the atmosphere varies with the temperature difference between the gas and atmosphere, the volume of gas, and the wind speed. The tables below shows the concentration of H_2S expressed in parts per million by volume in the various gas streams. Also, the table shows estimated H_2S dispersion expressed as the 100ppm radius of exposure, and the 500ppm radius of exposure for each gas stream. These latter figures are calculated distances downwind from the potential point of release at which the air may have an H_2S concentration of 100ppm or 500ppm by volume.

2. Activation Level Radius of Exposures (ROEs)

For the existing Buckeye Field operations, the "Activation Level Radius of Exposure" for both 500ppm and 100ppm of H_2S gas was determined using the "expected rate," which is calculated using the expected daily rate of the gaseous mixture that is handled by the CVU Sat 4 gathering line to the plant using the Pasquill-Gifford method. The rates and other variables used to calculate the ROE is discussed in greater detail in Appendix - F - RADIUS OF EXPOSURE CALCULATIONS

100ppm ROE 1163 feet
500ppm ROE 532 feet

Vacuum FMT Ops Activation Level ROE			Radius of Exposure [ft.]		Distance From Public Receptors	
	Volume [mscf / day]	H_2S Conc. [ppm]	100 ppm	500 ppm	Distance from Public Area	Distance from Public Road
CVU Sat 4 10"FG Gathering Line	15,574	3,200	1,163'	532'	1018' 3rd Party Bldg	Buried Line runs under HWY 238

Highlighted items signify ROEs that could pose a potentially hazardous H_2S release

For the Buckeye CO_2 Plant operations, the "Activation Level Radius of Exposure" for both 500ppm and 100ppm 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 using the Pasquill-Gifford method. The rates and other variables used to calculate the ROE is discussed in greater detail in Appendix - F - RADIUS OF EXPOSURE CALCULATIONS

100ppm ROE 3102 feet
500ppm ROE 1418 feet

Buckeye CO_2 Plant Activation Level ROE			Radius of Exposure [ft.]		Distance From Public Receptors	
	Volume [mscf / day]	H_2S Conc. [ppm]	100 ppm	500 ppm	Distance from Public Area	Distance from Public Road
Inlet Plant Combined Gas Stream – CVU BTY & VGSAU BTY	60,000	3,983	3102′	1418′	+5000′	1562′HWY 238 850′ CoRd 51

3. Other Potentially Hazardous Radius OF Exposures (ROEs)

Listed below are the additional known facilities and gathering lines that based on their gas volume and expected H_2S concentrations could create a hydrogen sulfide concentration of more than 500ppm at a public road.

Vacuum FMT Other Potentially Hazardous ROEs			Radius of Exposure [ft.]		Distance From Public Receptors	
	Volume [mscf / day]	H_2S Conc. [ppm]	100 ppm	500 ppm	Distance from Public Area	Distance from Public Road
CVU Sat 5 8″ FG Gathering Line	7,872	5,200	1028′	470′	+5000′	Buried Line runs under HWY 238
CVU Sat 1 Gathering Lines 1&2	795	9,000	345′	158′	2792′ Buckeye Store	Buried Line runs under HWY 238 & Line2 runs under Buckeye Rd
VGSAU Sat 2 Gathering Line	7,500	3,600	793′	362′		Buried Line runs under Co Rd 51
CVU Flare All Volume	33,000	3,346	1913′	875′	3034′ Buckeye Store	764′ HWY 238
VGSAU Well #148	1359	5,300	347′	158′	+5000′	100′ Co Rd 51
VGSAU Well #149	2550	5,300	514′	235′	+5000′	105′ Co Rd 51

4. Characteristics & Effects of Exposure to H_2S & SO_2

Characteristics of H_2S*

Hydrogen sulfide (H_2S) is a colorless, flammable gas which may be liquefied under pressure and which occurs in a variety of natural and industrial settings. Typically called "sour gas," hydrogen sulfide is soluble in water, crude oil or petroleum fractions, and is extremely corrosive. The gas can cause severe stress cracking of steel and other metals. Hydrogen sulfide burns with a blue flame to form sulfur dioxide, which is also a toxic gas. Hydrogen sulfide is slightly heavier than air and may accumulate to dangerous concentrations in low-lying areas and confined spaces. Wind movement or air currents can disperse the gas.

H_2S Properties*

• CAS No. = 7783-06-4	• Molecular Formula = H_2S
• Molecular Weight = 34.08	• TWA = 10ppm
• STEL = 15ppm	• IDLH = 100ppm
• Specific Gravity (air 1.0) = 1.189	• Boiling Point = -76.5°F

Effects from Exposure to H_2S*

The potential health effects associated with hydrogen sulfide exposure are primarily determined by the concentration of the gas in the individual's breathing zone, the length of the exposure period(s) and individual susceptibility to the contaminant. Typical characteristics and potential health effects for H_2S at different concentrations are given below:

Effects from Exposure to H_2S	
Concentration	Effect
1ppm	The odor of rotten eggs can be smelled clearly
10ppm	Because of wide variation in individual susceptibility, a small percentage of individuals may experience discomfort from H_2S at or below this concentration. The maximum time that an individual may be exposed to this concentration is eight hours.
15ppm	Short term exposure limit for 15 minutes
100ppm	At this level, it will kill the sense of smell within three to fifteen minutes and it may burn the eyes and throat. The effects will be a slight headache or upset stomach and an increase in the pulse rate with irritation of the eyes, throat and skin.
200ppm	Kills the sense of smell rapidly, burns eyes and throat.
500ppm	The gas attacks the nerve center in the brain, resulting in a loss of sense of reason and balance. This may lead to a stoppage of breathing with 15 minutes or less. At this stage the individual needs prompt artificial respiration.

700ppm	The individual will become unconscious quickly. Breathing will stop and death may result if not rescued promptly. Immediate artificial resuscitation is necessary.
1000ppm	The individual will become unconscious at once.

One of the most important characteristics of hydrogen sulfide gas is its ability to cause olfactory fatigue or a failure in the sense of smell. At concentrations approaching 100 PPM, exposure to hydrogen sulfide causes a loss of the sense of smell. This effect can result in an individual developing a false sense of security relative to the exposure conditions. High concentrations of hydrogen sulfide, especially those capable of causing death or serious physical injury, cannot be detected by the sense of smell.

Characteristics of SO_2*

Sulfur dioxide is produced as a by-product of H_2S combustion at the Chevron Buckeye CO_2 Plant Flare during planned maintenance and unplanned emergency events when the flare unit receives the residual hydrogen sulfide and carbon dioxide stream that is routed from the amine unit.

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

SO_2 Properties*

• CAS No. = 7446-09-5	• Molecular Formula = SO_2
• Molecular Weight = 64.07	• TWA = 2ppm
• STEL = 5ppm	• IDLH = 100ppm
• Specific Gravity (air 1.0) = 2.26	• Boiling Point = 14°F
• Freezing Point = -103.9°F	• Vapor Pressure = 49.1 psia
• Auto ignition Temperature = N/A	• Lower Flammability Limit = N/A
• Upper Flammability Limit = N/A	• Stability = Stable
• Corrosivity = Could form an acid rain in aqueous solutions	

Effects from Exposure to SO_2*

Effects from Exposure to SO_2	
Concentration	**Effect**
1ppm	Pungent odor, may cause respiratory changes (airway resistance)
2ppm	Permissible exposure limit; Safe for an 8 hour exposure
3-5ppm	Pungent odor; normally person can detect SO_2 in this range
5ppm	Short Term Exposure Limit (STEL); Safe for 15 minutes of exposure
12ppm	Throat irritation, coughing, chest constriction, eyes tear and burn

100ppm	Immediately Dangerous To Life & Health (IDLH)
150ppm	So irritating that it, can only be endured for a few minutes
500ppm	Causes a sense of suffocation, even with first breath
1,000ppm	Death may result if not rescued promptly.

*As Per American Petroleum Institute (API) Recommended Practice 55

Vacuum FMT Emergency Procedures and Action Plan

This section explains the procedures to be used in the event of an H_2S release in the Vacuum Field Management Team Area of Operations.

1. OBJECTIVE

All field employees shall be prepared to respond to an H_2S emergency. Emergency response actions may be taken for a variety of situations that may occur.

2. Activation of Plan & Immediate Response Actions & Responsibilities

The first employee on the scene will institute Chevron's Incident Command System (ICS) and assume role of on scene / on site commander). They will carefully survey the situation, note the wind direction, and proceed with the following:

A. Determine if the release is potentially hazardous. If practical, take immediate action to secure release using proper safety procedures and equipment.

B. Request assistance when and if needed. If release is potentially hazardous, activate the contingency plan. Notify the Vacuum FMT Operations Supervisor and provide the nature of the emergency, and the assistance needed. Provide information as to the location and source of the release, potential affected area (extent of public area, public road, etc.) and wind direction. At this point, OS may assume role as incident commander (IC).

The Chevron Vacuum Operations Supervisor (IC) should activate the Field Emergency Management Team (FEMT). Upon activation, the FEMT should develop objectives to help manage and mitigate the incident. The IC or delegate should request any necessary assistance from company personnel or outside agencies and obtain any safety equipment which might be required for company personnel, area residents, or the general public. Notification to the New Mexico Oil Conservation Division (OCD) and adjacent impacted Operators will be made in the event of a activation level release. As needed, the Vacuum FMT Operations Supervisor (IC) or delegate will contact emergency telephone number "911" for assistance from local emergency services.

C. Alert and/or evacuate people within the exposure area. The person first notified of leak observance should take immediate steps to cause notification of any affected residents, the general public or employees. In most cases this may be the

OS, whom may assume command as IC. Roles and responsibilities may then be delegated to members of the FEMT, if activated. The avoidance of injury or loss of life should be prime consideration and given top priority in all cases. Locations of residents, public areas, roads, etc. in relation to H_2S containing facilities are in this plan (see Activation Level ROE Section). Specific site radiuses of exposure (ROE) limits are tabulated and should be consulted to determine potentially hazardous areas relating to the release location. In all situations, consideration should be given to wind direction and weather conditions. H_2S is heavier than air and can settle in depressions or low lying areas in the terrain. Shifts in wind direction can also change the location of possible hazardous areas.

D. If a hazardous volume of H_2S is present, as defined in the Purpose Section on page 8, the Operations Supervisor (IC) or delegate will activate the H_2S Contingency Plan. This includes activating the FEMT (Incident Management System See Appendix L) and contacting the state police to establish road blocks to prevent entry to the potential exposure area. The Operations Supervisor (IC) or designee will be responsible for the execution of the H_2S Contingency Plan. The H_2S Contingency Plan includes establishing staging areas, barricades and/or warning signs at or beyond the "Safe Area." If barricades are staffed, the attending personnel must be equipped with H_2S personal monitors and a mobile phone system. A staging area should be established at a safe distance upwind of the release location. Safety, communication, first aid and evacuation equipment will be stored and accessible in the staging area. Mobile unit numbers are listed in the Emergency Response Plan and in this in this document in Appendix A.

E. In responding to an emergency situation, at least one backup person outfitted with the proper safety and rescue equipment is required. Emergency personnel and supervisors must be aware of the location and activities of personnel responding in the hazardous release areas at all times. If proper backup, equipment and notification are given to emergency personnel, qualified personnel are to plug the leak or isolate the source of the release. In some cases, clamps can be used to temporarily stop the release. Isolate the leak by closing the most readily accessible valves upstream and downstream.

> * Decision to ignite the escaping gas to reduce the toxicity hazard should be made only as a last resort. The common amount of SO_2 produced when gas is ignited must be considered. It must be determined if the gas can be safely ignited.

F. All Clear Status will be declared when the release of hydrogen sulfide and combustible gas is controlled or eliminated and the impacted area is confirmed safe by the Incident Commander or designee. After an All Clear is given, assigned personnel will remove all barricades and warning signs. They will also assist evacuees in returning to the impacted area if needed and advise all parties previously notified that the emergency has ended.

G. Post H_2S Contingency Plan Actions. Perform an H_2S Contingency Plan critique to

determine assess activation and implementation of H_2S Contingency Plan and evaluate response effectiveness. Approved changes will be added to the response plan. Retrain in emergency response and H_2S Contingency Plan procedures as needed.

H. Replace, repair, inspect and clean emergency equipment as needed and return it to the proper storage area.

Buckeye CO_2 Plant Emergency Procedures and Action Plan

This section explains the procedures to be used in the event of an H_2S release in or near the Buckeye CO_2 Plant.

1. OBJECTIVE

All Plant employees shall be prepared to respond to an H_2S release at the Plant. Emergency response actions may be taken for a variety of situations that may occur in the Plant. The H_2S Contingency Plan is activated in progressive levels based on the concentration of H_2S that has been released, the severity of the release and containment effort success. The Plant has 3 activation levels that are described below.

Level 1 — H_2S alarm, oscillating high low sounded and flashing amber beacons, activated indicating H_2S greater than 10ppm in the area of the activated monitor(s).

Level 2 — Initial Containment efforts are unsuccessful, the release is deemed to be substantial enough to warrant activating the plant Emergency Shut Down (ESD) and/or field shut in procedures are activated to contain the release. Examples of what could be considered a substantial release include:

- Multiple H_2S monitors going off in turn with rising H_2S concentrations indicating a growing and migrating gas cloud
- Sound or visual indications of a substantial, uncontrolled release from a failed vessel, pipe work or equipment

Level 3 — Catastrophic release; fire; explosion; a continuous release of maximum volume for 24 hours is possible or it is believed that the release may result in an H_2S concentration of 100ppm in any defined public area, 500ppm at any public road, or 100ppm at a distance greater than 3000 feet from the location of the release.

**Note that a Level 3 response would likely occur just before the escape of the 24 hour release volume due to the fact that there are no public areas within the 100ppm ROE distance, both Highway 238 & Country Road 51 are at the outer edge of the 500ppm ROE, and the general 100ppm ROE distance is slightly greater than 3000 ft from the site of release

2. Activation of H_2S Contingency Plan& Immediate Response Actions & Responsibilities

This H_2S Contingency Plan shall be activated immediately by plant operations personnel on duty upon the detection of a potentially hazardous volume concentration of hydrogen sulfide released to the atmosphere based on the criteria above. If the release is not from a Chevron operation, steps should be taken to notify the Operations Supervisor and the responsible party. As soon as the H_2S Contingency Plan has been activated, all non operator personnel have evacuated and an initial assessment completed, the Plant Supervisor, or his designee, should be notified.

Immediate Response Actions & Responsibilities:

A. When the H_2S alarm sounds, all non operator personnel in the plant shall stop work, check the prevailing wind direction and immediately proceed along designated evacuation routes and/or upwind to a safe area. If the plant evacuation siren is sounded all non-operator personnel shall proceed to the pre-designated Primary Evacuation Point immediately.

B. Plant Operators on duty at the time of the release shall take immediate steps to:

1. Ensure all non operator personnel in the plant move away from the release to a safe area. If the release is substantial, as determined by the operators on duty, they shall activate the emergency plant shutdown and sound the plant evacuation siren. The operators on duty shall take a headcount, using the plant sign in sheet, to ensure everyone is safe and accounted for.
2. If deemed necessary by the Senior Operator, contact local emergency response service providers for medical and/or other assistance.
3. Try to determine the source and extent of the release.
4. Provide an initial report of the release to the Plant Supervisor, or in his absence, to the Vacuum Field Management Team Operations supervisor, giving all pertinent details including:
    - The source and potential cause of release, if known
    - The extent of the release (amount of time release has occurred)
    - Preliminary estimated volume of release
    - The containment and removal action needed
    - Weather conditions and any other pertinent information
5. If safe to do so, attempt to fix or contain the release using proper safety procedures and Self Contained Breathing apparatus (SCBA).
6. Keep the operations/plant supervisor updated on the status of the situation so that he may initiate a Level 2 or Level 3 response as appropriate. In the event the operations/plant supervisor is absent, the Senior Operator shall initiate a Level 2 or Level 3 response as deemed necessary.

C. Plant Supervisor - When the H_2S Contingency Plan is put into effect, the Plant Operations Supervisor will:

1. Coordinate Level 1 & 2 response and all containment operations for the release.
2. Activate Level 2 Plant Emergency Plant Shut Down or Level 3 response if there is a catastrophic release; fire; explosion; a potential for a continuous release of maximum volume for 24 hours, or it is believed that the release may result in an H_2S concentration of 100ppm in any defined public area, or 500ppm at any public road, or 100ppm at a distance greater than 3000 feet from the location of the release.

D. Vacuum Field Management Team Operations Supervisor – If Level 3 response initiated, act as the incident commander and formally activate the FEMT to manage the event as detailed in the Appendix L. In a large event, command may be transferred to the Asset Emergency Management Team (AEMT) if, after notification to the Area Manager, he/she determines to activate the team. The FEMT would then be absorbed into the AEMT and serve as the Operations Section. Any local, state or national responding agencies may be included in a Unified Command Structure as per the National Incident Management System (NIMS).

If needed, the team can be supplemented by personnel available from other Asset Areas within the Mid Continent Alaska Strategic Business Unit (MCA SBU), other SBUs in Chevron Global Upstream, Chevron's worldwide emergency response resources [i.e., Advisory and Resource Team (ART), Worldwide Emergency Response Team (WWERT), Functional Teams, Regional Teams, and contractor resources located both inside and outside the MCA SBU.

Buckeye CO_2 Plant Prevailing Winds & Evacuation Points

Prevailing winds for the area are from the South 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 choose an alternate route upwind to the Evacuation Points

1. The Primary Evacuation Point is located on the dirt Road just east of the plant outside the Plant Main Parking.

2. The Secondary Evacuation point is located at intersection of Country Road 51 (Texas Camp Road) and the dirt road leading to plant main entrance.

3. The Primary Catastrophic Evacuation Point is located 300 feet south on HWY 238 at the first water injection well site on the West side of the road moving south, CVU water injection well #99. The alternate Catastrophic Evacuation Point is the CVU Battery north on HWY 238 just outside of the ROE.

See Appendix J for Evacuation Routes and Evacuation Point Locations.

Buckeye CO2 Plant LEVEL 1 Response Action Plan

The audible signal for a Plant emergency and evacuation is an intermittent horn (repeating off/on) activated when an H_2S concentration level of 10ppm is detected. In addition, a flashing amber/red light or beacon is activated at an H_2S concentration level of 10/15ppm. A control panel in the Plant control room establishes which H_2S monitor has activated the alarm and/or flashing red beacon.

1. At the initial sound of the intermittent H_2S alarm or the flashing amber/red beacon, all non operator personnel in the Plant complex shall immediately evacuate their work area on foot, move upwind towards the plant perimeter and onwards to the MEB or nearest plant exit point. They shall not resume normal duties until cleared to do so by operations.
2. If the release is substantial, as determined by the operators on duty, they shall immediately activate the emergency plant shutdown and sound the plant evacuation siren, effectively escalating to a Level 2 response.
3. The operators shall account for all personnel and shall help any persons in distress in the affected area if needed, evacuate to a safe area, donning their SCBA if necessary.
4. Once all personnel are accounted for, the operators will try to determine the source and extent of the release and provide an initial report of the release to the Plant Supervisor.
5. Wearing the SCBA if necessary, the operator(s) will attempt to contain the cause of the release. OSHA guidelines allow operators to work in areas with 10ppm for up to 8 hours. If the release is contained and monitored levels in the affect area are less than 10ppm, personnel may re-enter the area.

If the release is not resolved or if the H_2S level in the Primary Evacuation Point exceed 10ppm then Operations will initiate a Level 2 response.

Buckeye CO_2 Plant LEVEL 2 Response Action Plan

If the initial Level 1 response is unsuccessful at managing and containing the release, or the release is substantial, then the Level 2 response will be initiated and the following will occur:

1. The plant operators will initiate the Plant Emergency Shutdown system and sound the plant evacuation siren. “Field safety systems, i.e. flares are automatically activated.”
2. All non essential personnel will evacuate to the Primary Evacuation Point, moving on to the Secondary Evacuation Point if necessary.
3. The operators shall account for all personnel and shall help any persons in distress in the affected area evacuate if needed, donning their SCBA if necessary.
4. Once all personnel are accounted for they will try to determine the source and extent of the release and provide an initial report of the release to the Plant Supervisor.
5. Wearing the SCBA, the operator(s) will attempt to contain the cause of the release. OSHA guidelines allow operators to work in areas with 10ppm for up to 8 hours. The H_2S levels at the Primary Evacuation point will be monitored with a

hand held or personal monitor.

6. The plant supervisor or designee will notify all entities within the 500ppm ROE. The general nature of the release and status of containment will be conveyed. Parties will be notified to report the release 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 individuals should be instructed to leave the area and not to enter/re-enter area until further notice.

Operations will continue to monitor situation and will respond as follows:

1. If Plant Emergency Shut Down and/or Field Shut in efforts are successful at stopping the release and the monitored H_2S level in the affected area is less than 10ppm, personnel may return to Plant.

2. If the Plant ESD or Field Shut-in efforts do not contain or stop the release or the monitored H_2S Level is >10ppm at the Secondary Evacuation point, activation of the full H_2S Plan Level 3 response will occur.

All entities in the 500ppm radius of exposure will be notified once the release is contained and the monitored H_2S level is less than 10ppm.

Buckeye CO_2 Plant LEVEL 3 Response Action Plan

If the monitored H_2S level is at 10ppm or greater at the Secondary Evacuation Point, Plant and field emergency shutdown efforts at Level 2 are unsuccessful, activation level release and/or a catastrophic release has occurred, then a Level 3 response will be implemented.

1. As per the Plant Emergency Action Plan (EAP), the FEMT will be activated to coordinate emergency response activities, which may include outside agencies and/response resources as needed. See Appendix L for the Local Emergency Response Team Responsibilities.

2. Incident Commander will coordinate with county Sheriff's department to setup Road blocks at the following locations (see Appendix F for proposed road block locations)

A. Highway 238 in front of the CVU Battery
B. Highway 238 500 feet south of the Texas Camp Road & 238 intersection
C. On Texas Camp Road half way between the VGSAU Battery and the turn off to the main office.

3. All personnel, both at the Buckeye CO_2 Plant and Vacuum Field Management Team, will evacuate to the Catastrophic Evacuation Point located 1000 feet south on HWY 238 at the first injection well site on the West side of the road moving south, CVU water injection well #99.

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, Operations shall maintain communication with the Plant Supervisor & Incident Commander or their designees, to keep them up-to-date of the situation and the actions taken prior to their arrival at the location.

6. Operations will initiate and maintain a Chronological Record of Events log.

7. Incident Commander or his/her designee will, as soon as possible after the activation of the H_2S Contingency Plan Level 3 response, begin agency' notifications by contacting OCD, LEPC, National Response Center and law enforcement by phone or other appropriate means of communication and notify them of the release, provide a status of containment and inform them of the need for response assistance and roadblocks to protect the public.

8. The FEMT will establish a media staging area adjacent to the Catastrophic Evacuation Point and direct all media to it.

9. Under direction of the IC, once the release is contained/resolved, and the monitored H_2S level in the Plant and at Secondary Evacuation Point is less than 10ppm, roadblocks will be removed, and all entities otherwise located within the 100ppm ROE will be allowed to return. All entities previously notified will be informed they can return to working in the area.

Rescue and First Aid

Summon aid immediately for any type of incidents involving injuries. The prompt performance of specific rescue and emergency first aid procedures can very often result in the successful recovery of individuals overcome by hydrogen sulfide. These individuals shall be immediately removed from the location to an evacuation area upwind and away from the source of emission by a rescuer wearing full-face pressure-demand supplied air respiratory protection, e.g., SCBA or supplied air with egress unit. (Ideally a standby person will be present before rescue is attempted).

A Rescuer shall have proper emergency response/rescue training and proper respiratory protection.

Once the individual is removed to a safe area, the rescuer is to begin artificial respiration or administer oxygen if breathing has ceased. Caution must be taken during the application of artificial respiration not to inhale air directly from the individual's lungs, as this can also result in the rescuer being overcome. Depending on the length of exposure and concentration of hydrogen sulfide, heart failure may occur within 4 to 6 minutes. If the individual's heart has stopped, cardiopulmonary resuscitation (CPR) must be started immediately. If the individual does not respond to emergency aid, emergency medical aid must be summoned to the scene, and the

individuals taken, as soon as possible, to a hospital for further treatment. Regardless of apparent condition, all overexposure victims shall receive appropriate medical attention as soon as possible.

Training and Drills

The following H_2S specific safety training is required:

- Hydrogen Sulfide (H_2S) Safety Training – required for all personnel
- Hydrogen Sulfide (H_2S) Advanced-Level Training - Required for all field and plant operators
- SCBA training – Required for all field specialists and plant operators
- Training in fixed H_2S monitoring and alarm systems – required for plant personnel

Training:

1. General Orientation - All Field & Plant personnel, visitors, and contractors must attend a Field or Plant overview orientation prior to obtaining permission to work in the field or enter the Plant.

2. Respirator Training - All Field & Plant operations personnel, with the exception of the Operations & Plant Supervisors, 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 and they must have medical clearance to work in the Field or Plant.

The Vacuum FMT & Plant personnel complete annual emergency response/management training. The training topics for this annual training vary between numerous emergency management and response topics. Topics may include, but are not limited to:

- NIMS Incident Management System
- HAZWOPER Emergency Response Level Training
- Fire Extinguisher Training
- First Aid / CPR
- Spill Response Training
- Security and Confined Space Rescue

Documentation of annual training, including a roster of attending participants is contained in HES files in the Field & Plant Safety Specialist's offices and a copy of the roster is submitted the MCA Emergency Management/Response Specialist for tracking and verification purposes. The MCA Emergency Management/Response Specialist will audit 100% of the submitted records yearly to ensure 100% of all MCA Facilities have completed their required yearly emergency management / response training requirement. The Chevron Learning Management System (LMS) is utilized to track these reviews and participants.

2. Exercises / Drills:

Vacuum FMT & CO_2 Plant personnel conduct an emergency response/management tabletop exercise once a year in addition to any other regulatory required or mandated exercises or drills. For the annual emergency response/management tabletop exercise, local emergency response services (local police, fire, and EMS) are invited to attend and participate. This is in addition to any other interaction with local emergency services that might occur within the year.

Documentation of the annual tabletop exercise, including a roster of attending participants, is contained in HES files in the Field & Plant Safety Specialist's offices and a copy of the roster is submitted the MCA Emergency Management/Response Specialist for tracking and verification purposes. The MCA Emergency Management/Response Specialist will audit 100% of the submitted records yearly to ensure 100% of all MCA Facilities have completed their required yearly emergency management/response tabletop exercise requirement. The Chevron Learning Management System (LMS) is utilized to track these reviews and participants.

Appendix A – Emergency Management Teams

Vacuum FMT Management Team (FMT) Emergency Management Team

Vacuum FMT Emergency Management Team					
Name	**Position**	**Work Phone**	**Cell Phone**	**Home Phone**	**Email**
Incident Commanders (IC)					
Nick Moschetti	O/S	575-396-4414 ext 201	432-631-0646	432-631-0646	NMOS@chevron.com
Lloyd Booker	PTL	575-396-4414 ext 206	575-631-9121	575-392-7545	RBOO@chevron.com
Safety Officers					
Josie DeLeon	Safety Specialist	575-396-4414 ext 222	432-425-1528	432-425-1528	JDXD@chevron.com
David Pagano	HE Specialist	575-396-4414 ext. 275	505-787-9816	505-787-9816	DPGN@chevron.com
Donna Burt	Safety Specialist	575-396-4414 ext 330	575-631-2151	575-392-8124	DTBU@chevron.com
Operations Section Chiefs (Ops)					
Lloyd Booker	PTL	575-396-4414 ext 206	575-631-9121	575-392-7545	RBOO@chevron.com
Danny Acosta	ALCR	575-396-4414 ext 220	575-631-9033	575-396-5903	DNLC@chevron.com
Planning Section Chief (PSC)					
Kristian Svendsen	Gas Plant OS	575- 396-4916 ext 321	713-417-6213	575-942-2316	SVEK@chevron.com
Logistics & Finance					
David Brown	Maintenance Planner	575-396-4414 ext 213	575-631-9129		DBMA@chevron.com
Zan Cox	OA	575-396-4414 ext 223	NA		ZNUS@chevron.com
Key Field Operations Personnel (Operations Section Responders)					
Joseph Nevarez	Production Specialist	575-396-4414 ext 211	575-631-9125	575-631-9125	JQUG@chevron.com
Mike Holdridge	Field Specialist	575-396-4414	575-631-9124		HOLW@chevron.com
Neil Abernathy	Field Specialist	575-396-4414	575-390-2055		NAGR@chevron.com
Jarrett Hall	Field Specialist	575-396-4414 ext 208	575-631-1354		JKZC@chevron.com
Guadalupe Mendoza	Field Specialist	575-396-7503	575-390-8950		GMEJ@chevron.com

Buckeye CO_2 Plant Emergency Management Team

Vacuum FMT & Buckeye CO_2 Plant Emergency Management Team					
Name	**Position**	**Work Phone**	**Cell Phone**	**Home Phone**	**Email**
Incident Commanders (IC)					
Nick Moschetti	O/S	575-396-4414 ext 201	432-631-0646	432-631-0646	NMOS@chevron.com
Kristian Svendsen	Plant O/S	575-396-4916 ext 321	713-417-6213	575-942-2316	SVEK@chevron.com
Lloyd Booker	PTL	575-396-4414 ext 206	575-631-9121	575-392-5348	RBOO@chevron.com
Safety Officers					
Donna Burt	Plant Safety Specialist	575-396-4916 ext 330	575-631-2151	575-392-8124	DTBU@chevron.com
Josie DeLeon	Field Safety Specialist	575-396-4414 ext 222	432-425-1528	432-425-1528	JDXD@chevron.com
David Pagano	Health & Env. Spec.	575-396-4414 ext 275	505-787-9816	505-787-9816	DPGN@chevron.com
Eddy Gregory	HES Team Leader	432-687-7227	432-631-1820		EEGR@chevron.com
Operations Section Chiefs (Ops)					
On Shift Operator	Plant Board Operator	575-396-4916 ext 327 or ext 326			
Key Plant Operations Personnel					
Garcia, Mario	Plant E & I Tech	575-396-4916 ext 322	575-631-7465		MGDD@chevron.com
Clayton, Daymond	Plant Specialist	575-396-4916 ext 327			CDAY@chevron.com
Dziuk, Nathan	Plant Specialist	575-396-4916 ext 327			NDZI@chevron.com
Landreth, Dusty	Plant Specialist	575-396-4916 ext 327			DUSL@chevron.com
Larue, Gary	Plant Specialist	575-396-4916 ext 327			LGAW@chevron.com
Morris, Jeff	Plant Specialist	575-396-4916 ext 327			JUNZ@chevron.com
Roblez, Danny	Plant Specialist	575-396-4916 ext 327			DRVD@chevron.com
Woodard, Shawn	Plant Specialist	575-396-4916 ext 327			SWPM@chevron.com
Rick Rogge	Plant Mechanic	575-396-4916 ext 323	575-631-4402		RRGG@chevron.com
Planning Section Chief (PSC)					
Nick Moschetti	O/S	575-396-4414 ext 201	432-631-0646	432-631-0646	NMOS@chevron.com
Donna Burt	Plant Safety Specialist	575-396-414 ext 213	575-631-2151	575-392-8124	DTBU@chevron.com
Logistics & Finance					
Donna Burt	Plant Safety Specialist	575-396-4414 ext 213	575-631-2151	575-392-8124	DTBU@chevron.com
Zan Cox	OA	575-396-4414 ext 223	NA		ZNUS@chevron.com
Key Field Operations Personnel (Operations Section Responders)					
Lloyd Booker	FS	575-396-414 ext 206	575-631-9121	575-392-5348	RBOO@chevron.com

Appendix B – Emergency Contact Phone List

Law Enforcement	Location	Phone Number
New Mexico State Police	Hobbs / Carlsbad	(575) 392-5588 / (575) 885-3137
Lea County Sheriff		(575) 396-3611
Eddy County Sheriff		(575) 887-7551
Hobbs Police		(575) 397-9265
Carlsbad Police		(575) 855-2111
Lovington Police		(575)396-2811
Fire and Ambulance		
Carlsbad Fire Dept.		911 or (575) 236-6113
Lovington Fire Dept.		911 or (575) 396-2359
Hobbs Fire Dept.		911 or (575) 397-9308
Maljamar Fire Dept.		911 or (575) 676-4100
Hospitals		
Lea Regional Hospital (Hobbs)		(575) 392-1979
Columbia Hospital (Carlsbad		(575) 887-4100
Nor-Lea Hospital (Lovington)		(575) 396-3529
Government Agencies		
OCD	Hobbs /Artesia	(575) 393-6161 / (575) 748-1283
BLM		(575) 393-3612
National Response Center		1-800-424-8802
CHEMTREC		1-800-424-9300
OSHA, Lubbock, TX		1-800-692-4204
NMED (Santa FE)		(575) 955-8025
NMDOT		1-800-432-7845
Lea County Local Emergency Planning Committee	Jerry Reynolds	505-393-2870
Hazardous Spill Containment		
EPI		(575) 394-3737
Indian Fire and Safety		(575) 393-3093
Total Safety		(575) 392-2973
Contractors		
RWI		(575) 393-5005
RWI (David Fredrick)	David Fredrick	(575) 631-0170
Key Trucking (Hobbs) / (Carlsbad)		(575) 397-4994 /(575) 393-5807
Nabors Trucking (Hobbs)		(575) 392-2577
Nabors Trucking (Carlsbad)		(575) 885-3321

Public Contacts		
Rancher Living off of CR 51 (Texas Camp Rd)	DANNY VIGIL *pronounced Vhill	575-390-0888
(DCP) Charlie Joslin Primary Contact for BLDGS Near CVU Sat4 off of Buckeye Rd.	DCP Lynam Ranch Field Supervisor	Office phone: 575-370-7583 Cell Phone: 575-8020-5108
(DCP) Lynam Ranch Plant Secondary Contact for Bldgs Near CVU Sat4 off of Buckeye Rd.	(DCP) Lynam Ranch Plant	575-391-5781

Appendix C - Plant & Field Safety Equipment

Buckeye CO_2 Plant Fixed H_2S Monitoring and Alarm System

There are 19 continuous fixed area monitors permanently installed in locations where the sudden release of hydrogen sulfide is possible. The sensors are placed in proximity to potential sources of a hydrogen sulfide release. Several sensors are used throughout the plant, at points of possible gas emissions, and are connected to the Distributed Control System (DCS).

The H_2S alarm is an audible and visual alarm. The sound is an osculating high low sound. The visual alarms consist of an amber light for 10PPM of H_2S and a red light for 15PPM of H_2S. The lights are located in five areas of the plant. When alarms sound they are also seen in the Main Equipment Building (M.E.B) on the DCS monitors, which show the location of alarm. See Appendix I (Buckeye CO_2 Plant Safety System Location Plan) for the location of the H_2S monitors and alarms. Employees are instructed to follow established response procedures in the event that an alarm is activated.

In addition to fixed H_2S monitoring, survey measurements using portable hydrogen sulfide monitors are also required for certain applications such as the following:

- Monitoring of work areas prior to entry
- Monitoring of confined spaces
- Detection of leak sources
- Monitoring when lines, valves or vessels are opened

Vacuum FMT Field Fixed H_2S Monitoring and Alarm Systems

There are fixed area monitors permanently installed at 3 of the Vacuum FMT Batteries that work similar to the plant alarms. They are the Central Vacuum Unit, Vacuum Grayburg San Andreas Unit & Vacuum Glorietta West Unit Batteries.

Personal H_2S Monitors

When routine and maintenance tasks involve potential exposure to hydrogen sulfide above 10PPM, the use of continuous reading personal monitors with audible and/or visual alarms is required. This means that personal H_2S monitors are required at all times in the Vacuum FMT & Buckeye CO_2 plant. When a group of employees is working close together, it is not necessary that each employee wear a monitor. A portable monitor can be substituted for the personal type as long as it adequately samples the work area used by all potentially exposed employees.

Monitors shall be utilized for the complete duration of work activity. Monitors are set to alarm at 10ppm or less. If the personal H_2S monitor alarm sounds, indicating a concentration at/or above this level, workers shall immediately leave the area. Workers shall withdraw upwind to a position which is considered to be a safe distance from the source of the gas. The alarm will continue to sound until the detector-sensor is cleared of hydrogen sulfide. Depending on the type of monitor and the concentration of the gas, this can take several minutes, even though the monitor is removed to a hydrogen sulfide free atmosphere. Allowing workers to re-enter, and

work in the area shall be permitted only if they are wearing a full-face pressure-demand airline respirator with egress bottle or self-contained breathing apparatus (SCBA). This procedure shall be followed, until it has been established that the area is safe from hydrogen sulfide. (Less than 10ppm).

Respiratory Protection

Supplied-Air (airline or SCBA) respiratory protection against hydrogen sulfide exposure is required in the following situations:

- When routine or maintenance work tasks involve exposure to H_2S concentrations of 10ppm or greater.
- When a fixed monitor alarms, and re-entry to the work area is required to complete a job.
- During rescue of employees suspected of H_2S overexposure.
- For specific tasks identified with significant exposure potential and outlined in local program guidelines.

All respiratory protection equipment for hydrogen sulfide must be of the supplied-air type, equipped with pressure-demand regulators and operated in the pressure-demand mode only and meet the Standard of Industrial Hygiene Practice for Respiratory Protection. This is the only type of respiratory protection recommended for hydrogen sulfide application. If airline units are used, and egress bottle with at least a 5-minute supply shall also be carried. Gas masks or other air-purifying respirators must never be used for hydrogen sulfide due to the poor warning properties of the gas.

SCBA's are located in the following areas in the Buckeye CO_2 Plant:

- South end of Compressor Building
- North end of Compressor Building
- Main Equipment Building (M.E.B)
- Main Control Center (MCC)

Airline 5-minute escapes packs:

- West side of Compressor Building by cascade system.
- Warehouse by NGL Export Pumps

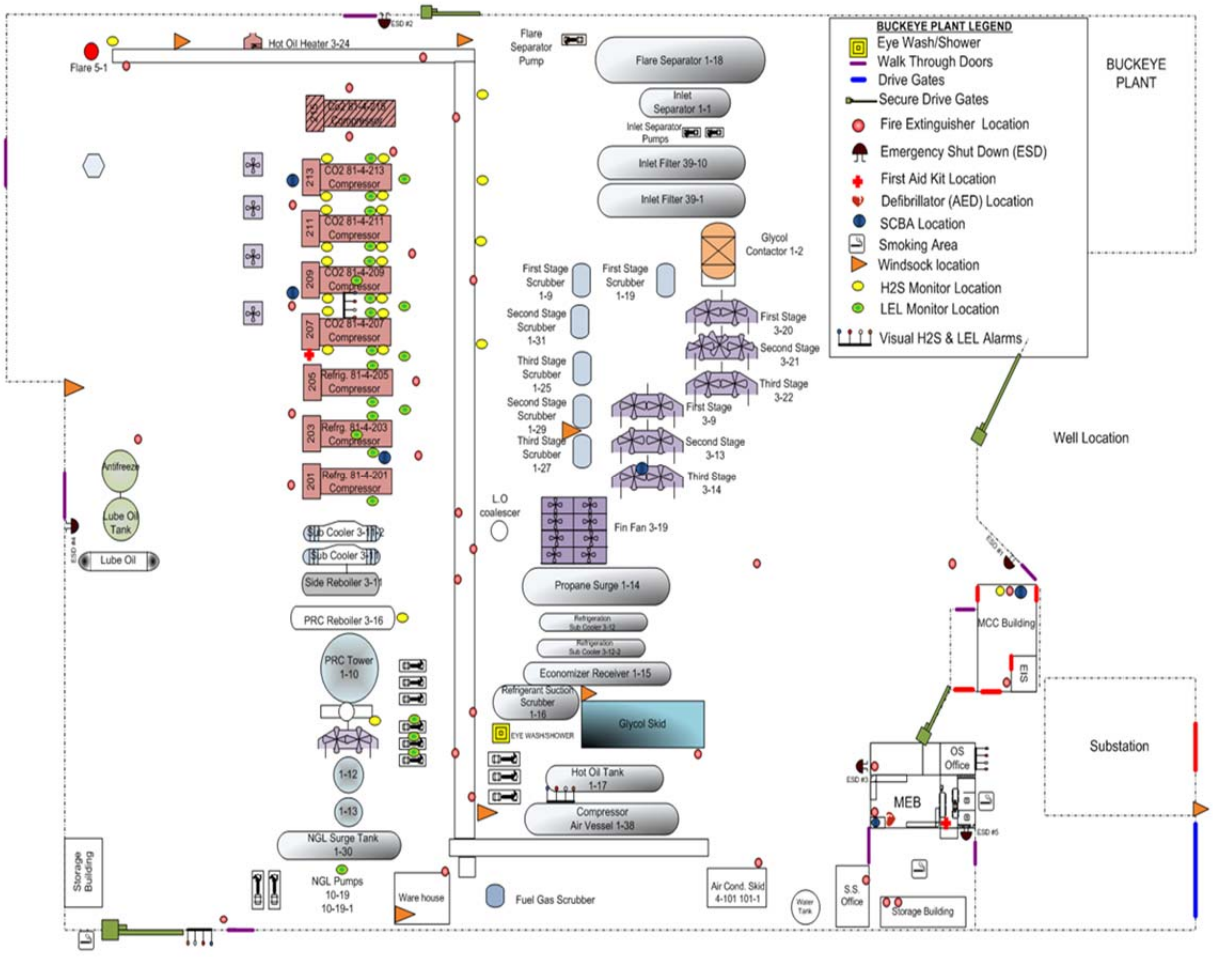
In addition, most of the Vacuum FMT field operators have their own personal SCBA

Wind Direction Indicators

Each Battery in the Vacuum FMT has at least one wind direction indicator "windsock" installed that is visible throughout the battery.

The Buckeye CO_2 Plant has wind direction indicators installed throughout the Plant and at least one wind direction indicator can be seen at any location within the Plant. There are 8 windsocks located in the Plant which are shown on the Plant Safety Equipment Diagram below.

Buckeye CO_2 Plant Safety Equipment Diagram



Appendix D – ACTIVATION LEVEL SCENARIOs

ACTIVATION LEVEL SCENARIO VACUUM FMT

The basis for activation level scenario calculations is as follows:

1. 3200 parts per million (ppm) or 0.3200 mole percent of hydrogen sulfide in the natural gas stream from the Central Vacuum Unit Satellite #4 into the Buckeye CO_2 Processing Facility; and
2. An expected maximum daily (24 hour) processing volume of 11,500 MMCF.
3. The activation level scenario radius of exposure (ROE) also assumes an uncontrolled instantaneous release from the Central Vacuum Satellite #4 10" Fiber Glass gathering line rupture next to HWY 238 that would cause the 500ppm ROE to cover the public road.

ACTIVATION LEVEL SCENARIO BUCKEYE CO_2 PLANT

The basis for activation level scenario calculations is as follows:

1. 3938 parts per million (ppm) or 0.3938 mole percent of hydrogen sulfide in the inlet natural gas stream into the Buckeye CO_2 Processing Facility; and
2. A maximum daily (24 hour) processing volume of 60,000 MCF.
3. The activation level scenario radius of exposure (ROE) also assumes an uncontrolled instantaneous release from the area around the inlet piping. Because the Plant is a throughput process plant there is no actual way that the entire throughput volume of the Plant could be released instantaneously as is assumed in the activation level scenario calculations of the ROE in Appendix D and shown in Appendix E; however, to comply with NMAC 19.15.11, we have used that assumption in our activation level scenario formulas/calculations provided in Appendix E.

It should further be noted that there are several reasons this rate, used in the activation level scenarios, could not be released over a 24 hour period.

1. The first is that the Plant's Emergency Shutdown (ESD) systems would be activated. The ESD would prevent the flow of gas into the Plant in the event of an emergency. The ESD system is discussed in greater detail in Appendix K.
2. The second reason it is extremely unlikely that the worst case scenario would ever be realized is the fact that in the case of a release, Chevron would divert the inlet gas from the field to the plant to be flared at the various satellite and batteries or shut in the producing wells that feed gas to the plant.

Appendix E – RADIUS OF EXPOSURE CALCULATIONS

VACUUM FMT RADIUS OF EXPOSURE CALCULATIONS

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

1. 500ppm Radius of Exposure Calculation: X = [(0.4546) (hydrogen sulfide concentration) (Q)] (0.6258)
2. 100ppm Radius of Exposure Calculation: X = [(1.589) (hydrogen sulfide concentration) (Q)] $^{(0.6258)}$

Where:

A. X = Radius of exposure in feet

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

*The source of the H_2S concentration is the based on the most recent gas analysis from gas purchaser at facility.

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

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 CVU Satellite 4 we are using for contingency planning purposes an "escape rate" equal to the highest daily volume in our system of record or 15,574 MCFD.

Using: Q = 15,574,000 & H_2S concentration = 5200pm or 0.5200 mole%

500ppm ROE Calculation = **500ppm ROE = 532 feet**

[(0.4546)*(H2S concentration)*(gas volume (Q))] $^{(0.6258)}$
[(0.4546)*(5200* .000001)*(15,574,000)] $^{(0.6258)}$ = 532

100ppm ROE Calculation = **100ppm ROE = 1,168 feet**

[(1.5 89)*(H_2S concentration)*(gas volume (Q))] $^{(0.6258)}$
[(1.589)*(5200* .000001)*(15,574,000)] $^{(0.6258)}$ = 1,168

BUCKEYE CO_2 PLANT RADIUS OF EXPOSURE CALCULATIONS

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

3. 500ppm Radius of Exposure Calculation: X = [(0.4546) (hydrogen sulfide concentration) (Q)] (0.6258)
4. 100ppm Radius of Exposure Calculation: X = [(1.589) (hydrogen sulfide concentration) (Q)] $^{(0.6258)}$

Where:

D. X = Radius of exposure in feet

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

*The source of the H_2S concentration is the highest value for the co-mingled inlet gas quarterly analysis from the last 4 quarters.

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

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. The Buckeye CO_2 Plant is using for contingency planning purposes an "escape rate" equal to the anticipated (maximum) inlet gas volume of 60,000 MCFD. The (actual) inlet gas volume at the Plant will be somewhat variable and is continuously metered. The Plant records daily inlet gas volumes and prepares a daily volume report. The assumed 60,000 MCFD inlet gas volume has been selected as the "escape rate" because it is the highest anticipated inlet volume that the Plant would handle under its current operations and is considered a conservative interpretation of the volume of gas. It should be noted that the plan will remain effective as long as the processed volume and H2S content equate to the same ROE, as shown below. As to hydrogen sulfide concentration of the inlet gas, daily monitoring data of current operations indicates variable concentrations, but concentration will not exceed 3983ppm or 0.3983 mole percent. Therefore, 3938ppm or 0.3938 mole percent has been used in the activation level scenario for contingency planning purposes.

Using: Q = 60,000,000 & H_2S concentration = 3938ppm or 0.3938 mole%

500ppm ROE Calculation = **500-ppm ROE = 1,418 feet**

[(0.4546)*(H_2S concentration)*(gas volume (Q))] $^{(0.6258)}$
[(0.4546)*(3983* .000001)*(60,000,000)] $^{(0.6258)}$ = 1,418

100ppm ROE Calculation = **100-ppm ROE = 3,102 feet**

[(1.5 89)*(H2S concentration)*(gas volume (Q))] $^{(0.6258)}$
[(1.589)*(3983* .000001)*(60,000,000)] $^{(0.6258)}$ = 3,102

Appendix F – Activation Level H_2S Radius of Exposure Extent

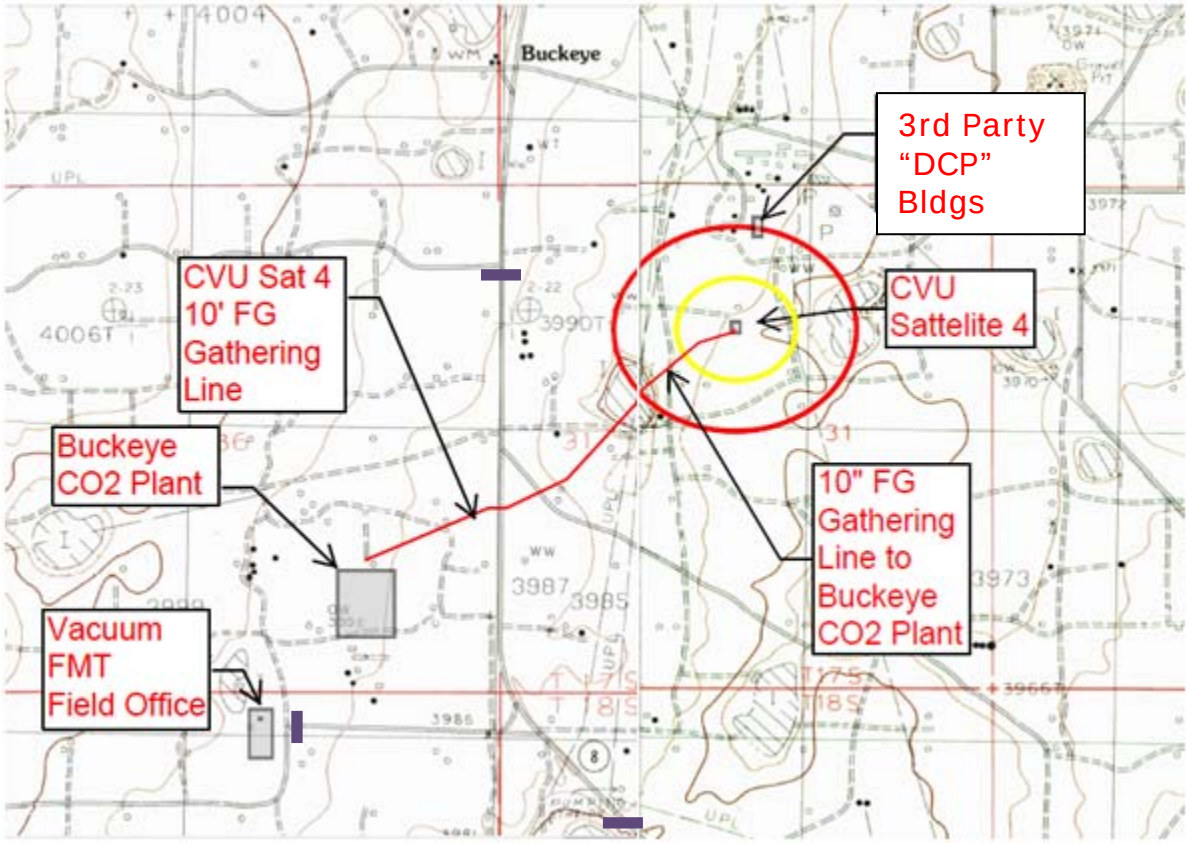
Vacuum Field Satellite 4 10" Gathering Line Rupture

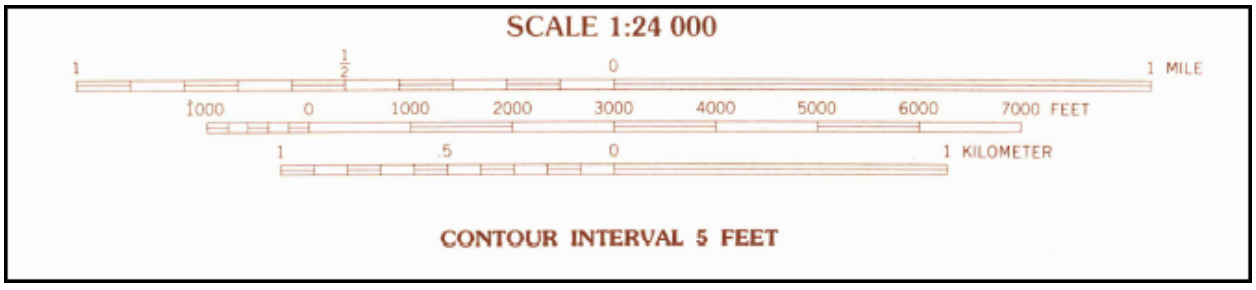
100ppm ROE =

500ppm ROE =

10" Gathering Line to Plant =

Proposed Level 3 Response Road Blocks =





Buckeye CO_2 Plant

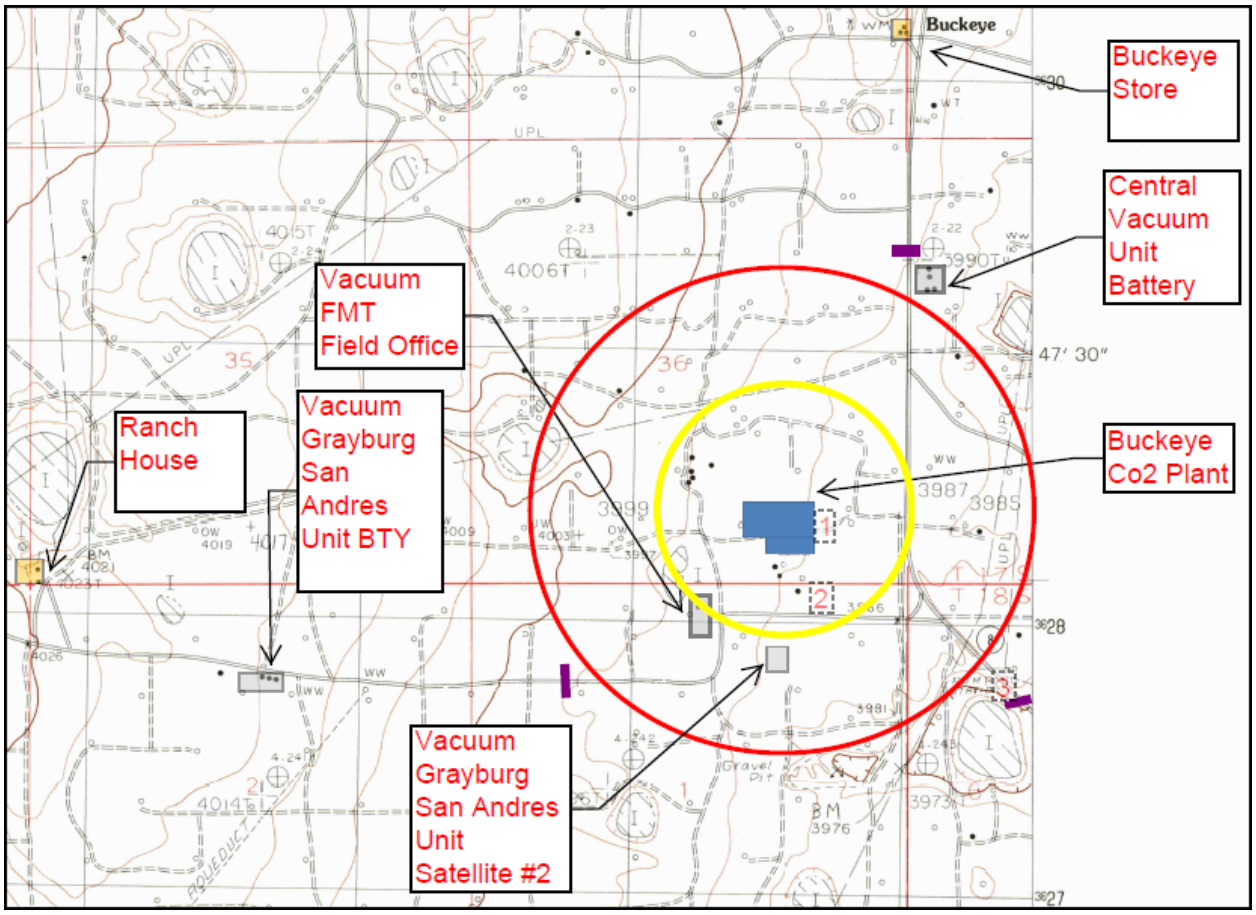
100ppm ROE =

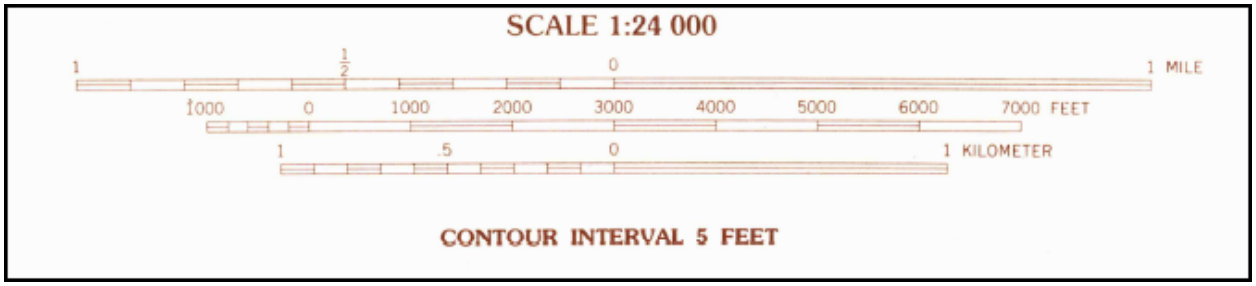
500ppm ROE =

Proposed Level 3 Response Road Blocks =

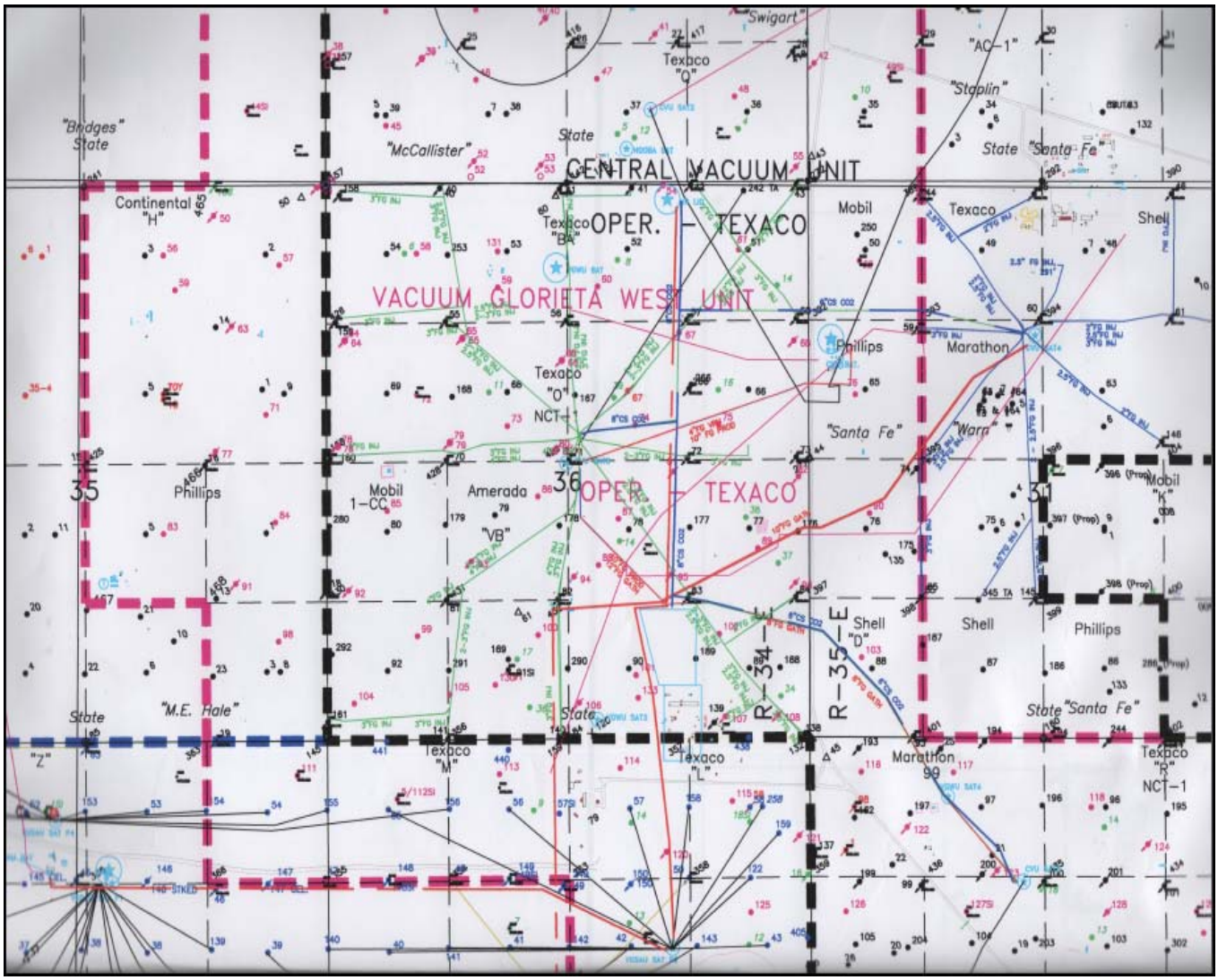
Evacuation Points: Primary/Level 1 [1] Secondary/Level 2 [2]

Catastrophic Level 3 [3]





Appendix G – Buckeye CO_2 Plant Gathering System



Appendix H - Prevailing Wind Directions

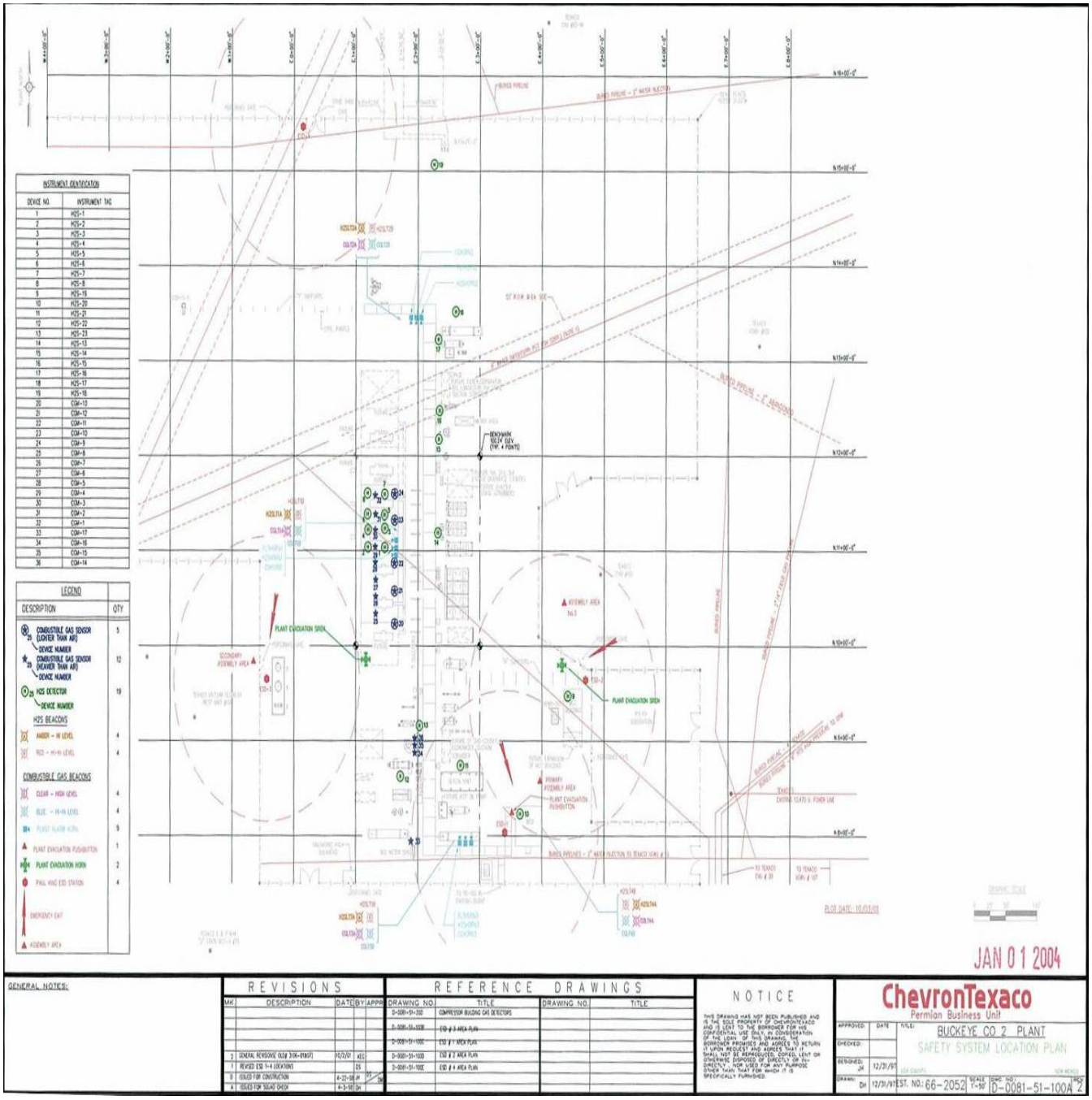
For a majority of the year, the prevailing wind direction for Hobbs, NM and the Buckeye CO_2 Plant is from the **SOUTH.**

NEW MEXICO

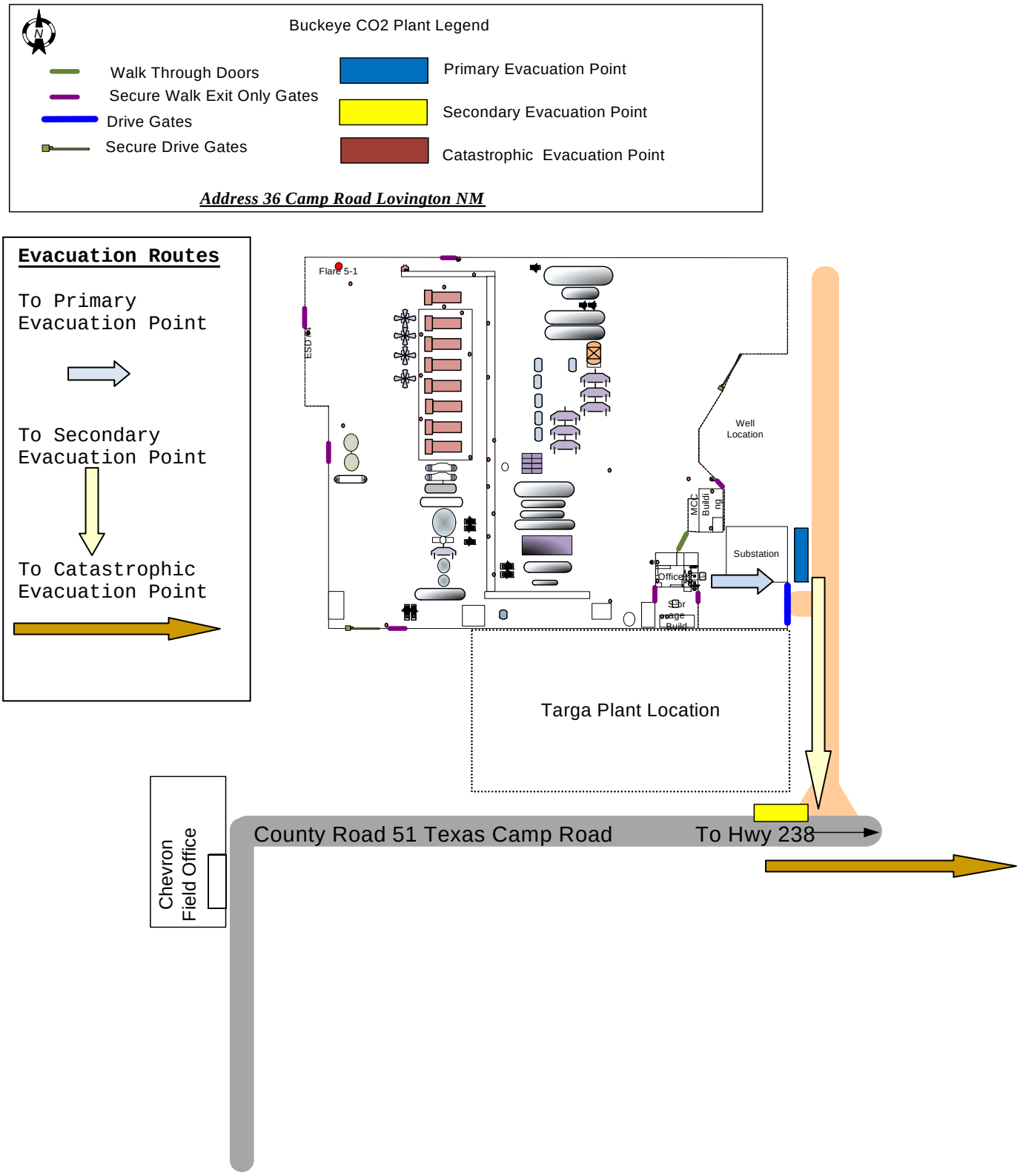
PREVAILING WIND DIRECTION

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ALAMOGORDO-HOLLOMAN AFB, NM	S	S	S	S	S	S	S	S	S	S	SSE	N	S
ALBUQUERQUE-DOUBLE EAGLE II	NNW	NW	W	W	W	S	S	S	NNW	S	NNW	NNW	W
ALBUQUERQUE INT'L AP, NM (KA	N	N	N	W	W	E	E	E	E	N	N	N	N
ARTESIA AP, NM (KATS). WIND	WSW	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	N	SSE
CARLSBAD AP, NM (KCNM). WIN	W	W	W	W	W	SSE	S	SSE	S	S	W	W	S
CLAYTON MUNI AP, NM (KCAO).	W	N	N	N	S	S	S	S	S	S	W	WSW	S
CLINES CORNERS, NM (KCQC).	WNW	WNW	W	W	W	W	W	W	W	W	WNW	WNW	W
CLOVIS MUNI AP, NM (KCVN).	W	W	W	W	S	S	S	S	S	S	W	W	S
CLOVIS-CANNON AFB, NM (KCVS)	W	W	W	W	S	S	S	S	S	W	W	W	W
DEMING AP, NM (KDMN). WIND	W	W	W	W	W	W	E	E	E	W	W	W	W
FARMINGTON AP, NM (KFMN). W	E	E	W	W	W	E	E	E	E	E	E	E	E
GALLUP AIRPORT, NM (KGUP).	WSW	WSW	WSW	WSW	WSW	WSW	WSW	S	WSW	WSW	WSW	SW	WSW
GRANTS AIRPORT, NM (KGNT).	NW	NW	NW	W	W	W	SE	SE	NW	NW	NW	NW	NW
HOBBS AIRPORT, NM (KHOB). W	WSW	S	S	S	S	S	S	S	S	S	S	S	S
LAS CRUCES AP, NM (KLRU). W	W	W	W	W	W	W	SE	W	SE	W	W	W	W
LAS VEGAS AP, NM (KLVS). WI	S	S	S	S	S	S	S	SSW	S	S	S	S	S
LOS ALAMOS AP, NM (KLAM). W	S	S	S	S	S	S	S	S	S	S	S	S	S
RATON MUNI AP, NM (KRTN). W	ENE	NE	N	W	S	S	N	N	N	S	ENE	NE	N
ROSWELL AIRPORT, NM (KROW).	N	SSE	SSE	S	S	SSE	SSE	SSE	SSE	SSE	N	N	SSE
RUIDOSO AIRPORT, NM (KSRR).	W	W	W	SSW	SSW	SSW	ESE	ESE	ESE	W	W	W	W
SANTA FE AIRPORT, NM (KSAF).	N	N	N	N	WSW	N	N	N	N	N	N	N	N
SILVER CITY AP, NM (KSVC).	W	W	W	W	W	W	WNW	NNW	W	NNW	NNW	NNW	W
TAOS MUNI AIRPORT, NM (KSKX)	N	N	N	W	W	W	N	N	N	N	N	N	N
TRUTH OR CONSEQUENCES AP, NM	NW	S	S	S	S	S	S	WNW	S	S	NW	N	S

Appendix I - Buckeye CO_2 Plant Safety System Location Plan



Appendix J - Buckeye CO_2 Plant Emergency Egress and Muster Points



Appendix K – Plant Emergency Shutdown Procedures

The emergency plant shut down system can be activated using push buttons which are located at strategic locations throughout the plant. When activated, this system will shut all hydrocarbon bearing lines into and out of the Plant as well as shut down all process equipment.

Utilities Isolation / Shutdown Procedures:

The following are utilities and/or shutdown procedures for equipment and machinery at Buckeye CO_2 Plant.

A. Buckeye CO_2 Plant: There no critical operations at Buckeye CO_2 Plant that would require personnel to remain behind and operate; however, to minimize the dangers associated with an emergency, any trained employee may shut off the following energy sources after evacuating:

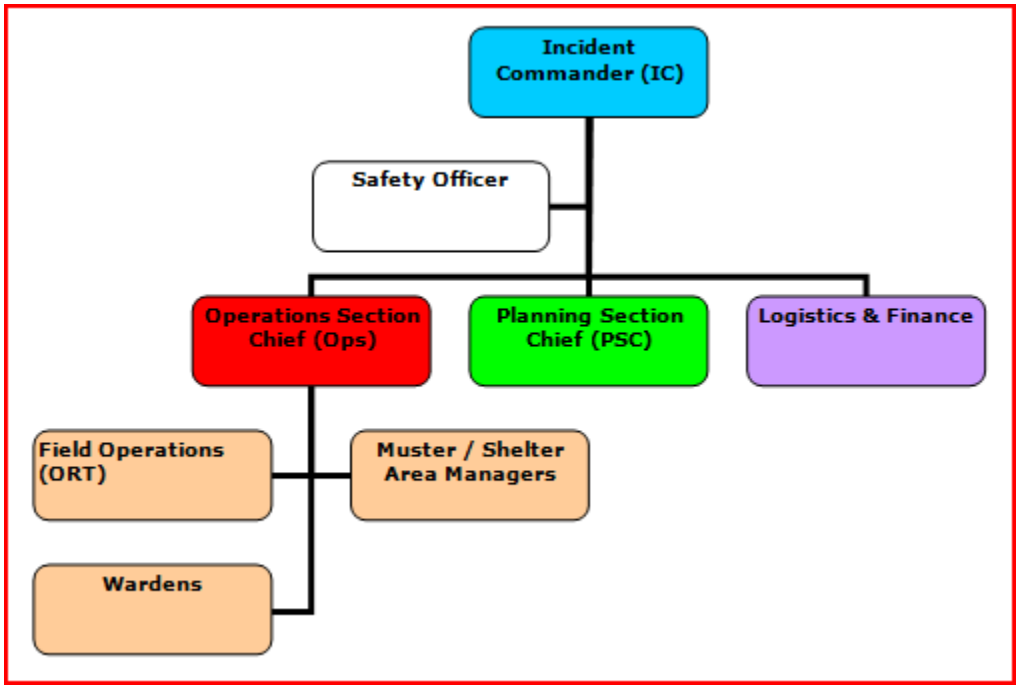
Building	Energy Type	Utility Shut-off Location
Main Equipment Building/Office	Electricity	Trip Main Breaker in the MCCB Breaker # LLC-102 and UPSLC-103
Mechanic Shop Building	Electricity	Main Breaker in the Shop Or 2 Main disconnects on power pole approximately 100 feet west of Building.
Plant Process area and compressors	Electricity	Activate Plant ESD and call Lea County Electric for main power shutdown
Motor Control Center Building	Electricity	Main Breaker on west wall (Gray Breaker Box) or Call Lea County Electric for Power shutdown

Appendix L - Chevron FMT & CO_2 Plant Emergency Response Team Responsibilities

Chevron utilizes a standard, National Incident Management System (NIMS) compliant, response team organization to respond to emergencies at their facilities and sites. This team is led by an Incident Commander, who is supported by a Safety Officer, Operations Section Chief, Planning Section Chief, and a Logistics and Finance Chief. This team is employed for significant emergency events or incidents to provide guidance and clear communication paths for all response team personnel involved. Refer to the Vacuum FMT Emergency Response Plan for further details on emergency response and Chevron interaction with local and state emergency responders during an incident. See Appendix A for the Emergency Response Team make up and contact information.

The Local Emergency Response Team will perform the following activities:

1. Where appropriate, 9-1-1 should be called to initiate public emergency response resources.
2. Follow internal incident reporting procedures to notify MCA Leadership and Emergency Management assistance, if necessary.
3. 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.



Buckeye CO_2 Plant Emergency Response Team Roles & Responsibilities:

Incident Commander – The Incident Commander's responsibility is the

overall management of the incident and the ensuring that operations are carried out safely, effectively, and efficiently.

Safety Officer – The Safety Officer's function is to develop and recommend measures for assuring personnel safety and to assess and/or anticipate hazardous and unsafe situations.

Operations Section Chief – The Operations Section Chief is responsible for the management of all operations directly applicable to the primary, response mission.

Planning Section Chief – The Planning Section Chief is responsible for the collection, evaluation, dissemination and use of incident information and maintaining status of assigned resources. Information is needed to: 1) understand the current situation; 2) predict the probable course of incident events; 3) prepare alternative strategies for the incident; and 4) submit required incident status reports.

Logistics and Finance Chief – The Logistics and Finance Section Chief is responsible for providing facilities, services, and material in support of the incident.

On-site Response Team (ORT) – The primary responsibilities of an ORT is to ensure at-the-scene tactical response operations are carried out in a safe, well-organized, effective fashion and identify, organize, and manage the work that must be done to address or mitigate incident-related problems.

Muster/Shelter Area Managers – Responsible for managing a Muster Area during mustering operations, including: taking a head-count, determining condition of mustered personnel, communicating with and receiving directions from the Operations Section Chief.

Wardens – Responsible for assisting in the movement of personnel to a Muster or Shelter Area.

Appendix M – Chevron Vacuum FMT & CO_2 Plant H_2S Contingency Plan Distribution List

New Mexico Oil & Gas Conservation Division
New Mexico Environment Department
New Mexico Department of Public Safety (Hobbs Office)
New Mexico Department of Public Safety (State Office)
Hobbs & Lovington Fire Departments
Hobbs & Lovington Police
Lea County Fire Department
Lea County Sheriff Department
Lea County Emergency Manager
Lea County LEPC
Lea County Regional Medical Center
Buckeye CO_2 Plant Office
Vacuum FMT Management Team Office
Vacuum FMT Engineer, Technology Team Lead, & Routine Well Work Lead
Chevron Mid-Continent Business Unit Office in Midland

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, February 02, 2012 10:22 AM
To: 'Pagano, David (David.Pagano)'
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

David:

Please send me any hardcopies so I can scan them into the OCD Online system. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Pagano, David (David.Pagano) [mailto:David.Pagano@chevron.com]
Sent: Tuesday, January 31, 2012 5:01 PM
To: Pagano, David (David.Pagano); Chavez, Carl J, EMNRD
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Carl,

As requested here is the updated Chevron Vacuum Field Management Team (FMT) & Buckeye CO2 Plant (GW-312) H2S Contingency Plan. I have also attached our Buckeye CO2 Plant Plot Plan which provides a detailed layout of the locations of the Plant Safety Equipment.

I will follow this email up with another email that includes 3 Portable Document Format (pdf) documents providing the full 7.5 MINUTE SERIES (TOPOGRAPHIC) Maps showing our Activation Level Radius of Exposures. Finally, note that the field and plant plans have been combined as you recommended during our original meeting last year.

Please let me know if you have any questions or concerns regarding our contingency plan and I will follow up with you later this week to discuss the next steps in regards to getting official OCD approval.

Regards,

David A. Pagano
MCA Health & Environmental Specialist (Oil Area – Vacuum/Buckeye, Dollarhide & Sundown)
56 Texas Camp. Rd., Lovington, NM 88260
☎ *Phone: 575-396-4414 x275*
☎ *Cell: 505-787-9816*
Fax: 575-396-6913
dpgn@chevron.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, December 14, 2011 6:59 AM
To: Pagano, David (David.Pagano)
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

David:

Good morning. Approved. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Pagano, David (David.Pagano) [mailto:David.Pagano@chevron.com]
Sent: Tuesday, December 13, 2011 4:36 PM
To: Chavez, Carl J, EMNRD
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Carl,

As we discussed on the phone this morning, I am the Health & Environmental Specialist for the Buckeye CO2 Plant and Field Management Team (FMT). I have been working on updating the plant and field H2S Contingency Plans per your guidance and instructions provided following our meeting in October and based on our current status and reasons provided below I would like to formally request a 32 day extension to the original deadline of COB 12/30/11 with a new due date of COB 1/31/12.

Buckeye Plant H2S Plan
As it stands to-date, the plant draft plan will be complete this week; however, only local management has had a chance to vet the plan and due to the holidays it will be difficult to schedule the additional internal reviews we desire prior to submission to the OCD; therefore, we would like to request a 32 day extension to the original December 31st deadline for the Buckeye Plant H2S Plan.

FMT H2S Plan (Field / Gathering System)

At the beginning of the month, I started updating the field plan and after reviewing the regulations for non-fixed facilities, I have come to the conclusion that the end of the month deadline provided by the OCD will not give us enough time to complete a thorough analysis on all of our wells, batteries and gathering lines as they relate to potentially hazardous volumes of H2S so that they are adequately addressed in our contingency plan. I am in the process of reviewing each producing well and battery to determine ROE and distances from public road/areas and with well over

400 producing wells this will take some time. This along with the difficulty of scheduling reviews during the holidays I would like to therefore also request an 32 day extension to the original December 31st deadline for the Field H2S Plan. Also please note that we have Indian Fire & Safety scheduled to come out tomorrow to conduct H2S tests at our batteries and the extension would allow us to incorporate their results into our plan.

Please let me know if have any question or concerns regarding this request.

Regards,

David A. Pagano
MCA Health & Environmental Specialist (Oil Area – Vacuum/Buckeye, Dollarhide & Sundown)
56 Texas Camp. Rd., Lovington, NM 88260
☎ *Phone: 575-396-4414 x275*
☎ *Cell: 505-787-9816*
Fax: 575-396-6913
dpgn@chevron.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, October 26, 2011 11:48 AM
To: Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); Pagano, David (David.Pagano); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: FW: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Kristian:

Re: Two issues pursuant to telephone conference call on 10/13/2011 related to the above subject

Good morning.

Please find below the two issues that we fleshed out during the recent telephone conference call.

Issue No. 1: The issue of different company personnel being responsible for the gas gathering lines feeding into the CO2 Plant (Plant) and a separate H2S Contingency Plan (CP) submittal separate from the Plant H2S CP. The H2S CPs can be submitted separately to the OCD, but OCD will file them both under the OCD Online "GW-312" thumbnail under "H2S Contingency Plans".

Issue No. 2: The issue of allowed period for revisions and resubmittal date of the CO2 Plant H2S CP to the OCD. The OCD requests that both H2S CPs (see No.1 above) be submitted by COB December 30, 2011. The H2S CP review "Checklist" is attached for you to pass along to your gas gathering line (GGL) personnel. The OCD requests that the Plant personnel working on the Plant H2S CP meet to debrief the GGL personnel on their H2S CP and OCD H2S Regulations.

I have attached the OCD H2S Contingency Plan "Checklist" for you to pass along to the GGL personnel. The GGL H2S CP contact may send me an existing H2S CP if they have one for our file, and should contact me to discuss their H2S CP after he/she has reviewed the H2S Regulations, which are applicable to a non-fixed facility (see "Regulations" link above).

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau

1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Chavez, Carl J, EMNRD
Sent: Friday, October 14, 2011 2:44 PM
To: 'Svendsen, Kristian'
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Kristian:

Good afternoon. Please find attached below the Oil Conservation Division H2S Contingency Plan (CP) checklist.

Regarding the 60-day request for the re-submittal of your CP, I will have to get back with you next Wednesday afternoon after the Environmental Bureau Meeting with the OCD Director. Similarly, the separate CP question for plant versus field will also be addressed.

During our conference call we looked over the submitted CP and focussd on the appendices, maps, etc. I think you understand what OCD is looking to receive for exhibits. We understand that we're working to protect public health and safety with Rule 11 (OCD Hydrogen Sulfide Gas) and I encourage you to read through the relatively short regulations to get a better feel for where OCD is coming from based on the conference call.

While the plant or facility (manned 24/7) can shut-down quickly in the event of any emergency, the field gathering lines handled under a separate contingency plan may take more time with gas flaring in the interim. Chevron will also look into Sulfur Dioxide in the plant CP due to the emergency flaring of H2S and SO2 emissions. Chevron understands the issue with activation level and implementation of the CP for the field gathering lines when there are no detectors and it may be relying on pressure differentials monitored by personnel on a SCADA System and shut-down at the plant would be performed manually.. Also, details of what exactly happens when the CP is implemented (the details of who does what, when, where and how). The public, if present within the ROEs, will need to know the critical elements of this so they will know what to expect in the event a any of Chevron's CPs are implemented. The references to ICS, NIMS and Vacuum FMT should be placed in appendices and personalized to Chevron responders, etc. Appendix A should include Chevron emergency responders trained to take corrective actions to prevent a catastrophe and/or make repairs that are possible within trained safety limits. The training section needs to include the LEPC and possibly the State Police so you can work out who does what and to familiarize the Fire Marshal with your operations to protect public safety.

Please contact me if you have questions or can't read parts of OCD H2S CP Checklist and we can communicate to make sure we understand each other.

I'll get back with you next Wednesday afternoon. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
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"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

-----Original Appointment-----
From: Svendsen, Kristian [mailto:Kristian.Svendsen@chevron.com]
Sent: Wednesday, October 05, 2011 7:14 AM
To: Chavez, Carl J, EMNRD
Subject: Accepted: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting
When: Thursday, October 13, 2011 3:30 PM-4:30 PM (GMT-07:00) Mountain Time (US & Canada).
Where: Telephone Conference Call

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, February 02, 2012 10:21 AM
To: 'Pagano, David (David.Pagano)'
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

David:

Please send me the hardcopies that can be scanned into the OCD Online system. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
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"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Pagano, David (David.Pagano) [mailto:David.Pagano@chevron.com]
Sent: Tuesday, January 31, 2012 5:02 PM
To: Pagano, David (David.Pagano); Chavez, Carl J, EMNRD
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Carl,

Here are the PDFs of the full 7.5 MINUTE SERIES (TOPOGRAPHIC) Maps showing our Activation Level Radius of Exposures.

Regards,

David A. Pagano
MCA Health & Environmental Specialist (Oil Area – Vacuum/Buckeye, Dollarhide & Sundown)
56 Texas Camp. Rd., Lovington, NM 88260
☎ *Phone: 575-396-4414 x275*
☎ *Cell: 505-787-9816*
Fax: 575-396-6913
dpgn@chevron.com

From: Pagano, David (David.Pagano)
Sent: Tuesday, January 31, 2012 5:01 PM
To: Pagano, David (David.Pagano); 'Chavez, Carl J, EMNRD'
Cc: 'VonGonten, Glenn, EMNRD'; 'Gonzales, Elidio L, EMNRD'; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O.

(Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Carl,

As requested here is the updated Chevron Vacuum Field Management Team (FMT) & Buckeye CO2 Plant (GW-312) H2S Contingency Plan. I have also attached our Buckeye CO2 Plant Plot Plan which provides a detailed layout of the locations of the Plant Safety Equipment.

I will follow this email up with another email that includes 3 Portable Document Format (pdf) documents providing the full 7.5 MINUTE SERIES (TOPOGRAPHIC) Maps showing our Activation Level Radius of Exposures. Finally, note that the field and plant plans have been combined as you recommended during our original meeting last year.

Please let me know if you have any questions or concerns regarding our contingency plan and I will follow up with you later this week to discuss the next steps in regards to getting official OCD approval.

Regards,

David A. Pagano
MCA Health & Environmental Specialist (Oil Area – Vacuum/Buckeye, Dollarhide & Sundown)
56 Texas Camp. Rd., Lovington, NM 88260
☎ *Phone: 575-396-4414 x275*
☎ *Cell: 505-787-9816*
🖷 *Fax: 575-396-6913*
dpgn@chevron.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, December 14, 2011 6:59 AM
To: Pagano, David (David.Pagano)
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

David:

Good morning. Approved. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Pagano, David (David.Pagano) [mailto:David.Pagano@chevron.com]
Sent: Tuesday, December 13, 2011 4:36 PM
To: Chavez, Carl J, EMNRD

Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Carl,

As we discussed on the phone this morning, I am the Health & Environmental Specialist for the Buckeye CO2 Plant and Field Management Team (FMT). I have been working on updating the plant and field H2S Contingency Plans per your guidance and instructions provided following our meeting in October and based on our current status and reasons provided below I would like to formally request a 32 day extension to the original deadline of COB 12/30/11 with a new due date of COB 1/31/12.

Buckeye Plant H2S Plan
As it stands to-date, the plant draft plan will be complete this week; however, only local management has had a chance to vet the plan and due to the holidays it will be difficult to schedule the additional internal reviews we desire prior to submission to the OCD; therefore, we would like to request a 32 day extension to the original December 31st deadline for the Buckeye Plant H2S Plan.

FMT H2S Plan (Field / Gathering System)

At the beginning of the month, I started updating the field plan and after reviewing the regulations for non-fixed facilities, I have come to the conclusion that the end of the month deadline provided by the OCD will not give us enough time to complete a thorough analysis on all of our wells, batteries and gathering lines as they relate to potentially hazardous volumes of H2S so that they are adequately addressed in our contingency plan. I am in the process of reviewing each producing well and battery to determine ROE and distances from public road/areas and with well over 400 producing wells this will take some time. This along with the difficulty of scheduling reviews during the holidays I would like to therefore also request an 32 day extension to the original December 31st deadline for the Field H2S Plan. Also please note that we have Indian Fire & Safety scheduled to come out tomorrow to conduct H2S tests at our batteries and the extension would allow us to incorporate their results into our plan.

Please let me know if have any question or concerns regarding this request.

Regards,

David A. Pagano
MCA Health & Environmental Specialist (Oil Area – Vacuum/Buckeye, Dollarhide & Sundown)
56 Texas Camp. Rd., Lovington, NM 88260
☎ *Phone: 575-396-4414 x275*
☎ *Cell: 505-787-9816*
Fax: 575-396-6913
dpgn@chevron.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, October 26, 2011 11:48 AM
To: Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); Pagano, David (David.Pagano); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: FW: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Kristian:

Re: Two issues pursuant to telephone conference call on 10/13/2011 related to the above subject

Good morning.

Please find below the two issues that we fleshed out during the recent telephone conference call.

Issue No. 1: The issue of different company personnel being responsible for the gas gathering lines feeding into the CO2 Plant (Plant) and a separate H2S Contingency Plan (CP) submittal separate from the Plant H2S CP. The H2S CPs can be submitted separately to the OCD, but OCD will file them both under the OCD Online "GW-312" thumbnail under "H2S Contingency Plans".

Issue No. 2: The issue of allowed period for revisions and resubmittal date of the CO2 Plant H2S CP to the OCD. The OCD requests that both H2S CPs (see No.1 above) be submitted by COB December 30, 2011. The H2S CP review "Checklist" is attached for you to pass along to your gas gathering line (GGL) personnel. The OCD requests that the Plant personnel working on the Plant H2S CP meet to debrief the GGL personnel on their H2S CP and OCD H2S Regulations.

I have attached the OCD H2S Contingency Plan "Checklist" for you to pass along to the GGL personnel. The GGL H2S CP contact may send me an existing H2S CP if they have one for our file, and should contact me to discuss their H2S CP after he/she has reviewed the H2S Regulations, which are applicable to a non-fixed facility (see "Regulations" link above).

Please contact me if you have questions. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Chavez, Carl J, EMNRD
Sent: Friday, October 14, 2011 2:44 PM
To: 'Svendsen, Kristian'
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Kristian:

Good afternoon. Please find attached below the Oil Conservation Division H2S Contingency Plan (CP) checklist.

Regarding the 60-day request for the re-submittal of your CP, I will have to get back with you next Wednesday afternoon after the Environmental Bureau Meeting with the OCD Director. Similarly, the separate CP question for plant versus field will also be addressed.

During our conference call we looked over the submitted CP and focussd on the appendices, maps, etc. I think you understand what OCD is looking to receive for exhibits. We understand that we're working to protect public health and safety with Rule 11 (OCD Hydrogen Sulfide Gas) and I encourage you to read through the relatively short regulations to get a better feel for where OCD is coming from based on the conference call.

While the plant or facility (manned 24/7) can shut-down quickly in the event of any emergency, the field gathering lines handled under a separate contingency plan may take more time with gas flaring in the interim. Chevron will also look into Sulfur Dioxide in the plant CP due to the emergency flaring of H2S and SO2 emissions. Chevron understands the issue with activation level and implementation of the CP for the field gathering lines when there are no detectors and it may be relying on pressure differentials monitored by personnel on a SCADA System and shut-down at the plant would be performed manually.. Also, details of what exactly happens when the CP is implemented (the details of who does what, when, where and how). The public, if present within the ROEs, will need to know the critical elements of this so they will know what to expect in the event a any of Chevron's CPs are implemented. The references to ICS, NIMS and Vacuum FMT should be placed in appendices and personalized to Chevron responders, etc. Appendix A should include Chevron emergency responders trained to take corrective actions to prevent a catastrophe and/or make repairs that are possible within trained safety limits. The training section needs to include the LEPC and possibly the State Police so you can work out who does what and to familiarize the Fire Marshal with your operations to protect public safety.

Please contact me if you have questions or can't read parts of OCD H2S CP Checklist and we can communicate to make sure we understand each other.

I'll get back with you next Wednesday afternoon. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

-----Original Appointment-----
From: Svendsen, Kristian [mailto:Kristian.Svendsen@chevron.com]
Sent: Wednesday, October 05, 2011 7:14 AM
To: Chavez, Carl J, EMNRD
Subject: Accepted: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting
When: Thursday, October 13, 2011 3:30 PM-4:30 PM (GMT-07:00) Mountain Time (US & Canada).
Where: Telephone Conference Call

Zan,

Please mail a copy of our H2S Contingency Plan to Carl Chavez at the NM OCD. Here is his mailing information.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

David A. Pagano
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☎ *Phone: 575-396-4414 x275*
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Fax: 575-396-6913
dpgn@chevron.com

CHEVRON U.S.A Inc.

Vacuum FMT & Buckeye CO_2 Plant

H_2S Contingency Plan

Table of Contents

Background

Introduction

This H2S Contingency Plan is specifically for The Vacuum Field Management Team (FMT) & Buckeye CO2 Processing Plant (Plant). The Vacuum Field Management Team (FMT) is an oil production management office and the Buckeye CO_2 Processing facility is a natural gas processing plant both of which handles hydrogen sulfide and generates sulfur dioxide from combustion; therefore this Hydrogen Sulfide Contingency Plan has been developed to:

1. Satisfy the New Mexico Oil Conservation Division (NMOCD) Rules in NMAC 19.15.11.
2. Conform with paragraph 7.6 of guidelines in the API "Recommended Practices for Oil and Gas Producing and Gas Processing Plant Operations Involving Hydrogen Sulfide," RP 55.
3. Create a site-specific hydrogen sulfide contingency plan that outlines the emergency procedures that will be followed to ensure a coordinated, efficient and immediate action plan for alerting and protecting operating personnel and the public, and 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 11 of the New Mexico Administrative code (19.15.11.7- Definitions) unless otherwise defined herein.

Vacuum Field Management Team Description of Operations

Field Operations Overview: The Vacuum Field Management Team (FMT) manages oil production in 3 general areas in Southeast New Mexico.

The largest area, known as the Buckeye area/field, is just south of Buckeye, New Mexico and consists of approx. 230 active oil wells and approx. 200 injection wells. The Buckeye Area contains the Central Vacuum Unit (CVU), Vacuum Greyburg San Andreas Unit (VGSAU), Vacuum Glorietta West Unit (VGWU), NM QOBA State Unit (NQOBA), West Vacuum Unit (WVU), North Vacuum Abo West Unit (NVAWU), Abo Reef, Drinkard Battery and Koehane Battery. Most areas of the field are being water flooded and both the Central Vacuum Unit & Vacuum Greyburg San Andreas Units are Carbon Dioxide (CO_2) flooded.

The 2nd largest area, known as the Lovington area, is approx. 5 miles southeast of Lovington between Lovington and Hobbs and consists of approx. 90 active oil wells and approx 125 injection wells. The Lovington Area contains the Lovington San Andreas Unit (LSAU), Lovington Paddock Unit (LPU), West Lovington Unit (WLU), Lovington Deep Unit (LDU), Midway and Kriti State. The West Lovington & Paddock Units are being water flooded.

The 3rd area, known as the Skelly/Texmack area, is approx 5 miles west of Maljamar and 5 miles east of Loco Hills and consists of approx 75 active oil wells. There is also a small production area approx. 10 miles south of Maljamar known as the Spear, Lusk, Keel & Federal area with approx. 10 active oil wells. None of the producers are under water or CO_2 flood.

In total the FMT manages approx 450 active wells and approx 325 injection wells which produce approx 10,000 barrels of oil per day; 100,000 barrels of water per day; and 50 million standard cubic feet of gas per day (MMSCFD).

Buckeye CO_2 Plant Description of Operations

Buckeye CO2 Plant Operations Overview: The Plant operations include gas processing, conditioning and compression and Natural Gas Liquid production. The Plant gathers produced natural gas from the Chevron Operated Central Vacuum & Vacuum Greyburg San Andres Unit Leases in Lea County, New Mexico. These leases are under CO_2 flooding, a process whereby carbon dioxide is injected into an oil reservoir in order to increase output when extracting oil. Once gathered at the Plant, the produced CO_2 rich natural gas is compressed and dehydrated to remove the water content. The natural gas goes through a propane recovery column to extract the natural gas liquids. The remaining CO2 rich natural gas is then sent back to the field to be re-injected to facilitate ongoing oil production.

Buckeye CO2 Operations Detailed Description: CO_2 rich inlet gas from the Chevron Operated Central Vacuum Unit & Vacuum Greyburg San Andreas gathering systems enters the Buckeye CO_2 Plant at approximately one hundred (100) psig and ambient temperature through 2 lines provided by the field up to the plant fence line. The line from the CVU field is a fourteen (14) inch line and the line from the VGSAU field is an eight (8) inch line that both comingle at the North perimeter of the site, continuing underground until it reaches the two-phase Inlet Separator. Liquids dropped out in the Inlet Separator will be pumped back to the field facilities via a ten (10) inch pipeline. Vapor from the top of the Inlet Separator flows to an Inlet Feed Exchanger (which utilizes a side stream from the discharge of the first stage of compression to maintain a constant inlet gas temperature for cold weather operation), then to two Inlet Filter Separators. From the Inlet Filter Separators, the gas enters the Inlet Gas/TEG Contactor that utilizes triethylene glycol (TEG) to dehydrate the gas to less than one (1) part per million (ppm) of water. The glycol is regenerated in a licensed DRIZO TEG regeneration process that receives regeneration heat input from a hot oil system consisting of a Hot Oil Heater, Hot Oil Surge Drum, and Hot Oil Pumps.

From the Inlet Gas/TEG Contactor, the dehydrated gas stream flows on to the First Stage Suction Scrubbers, then to the first stage of the CO_2 Compressors. From the discharge of the first stage, the gas flows to the First Stage Discharge Coolers.

From the First Stage Discharge Coolers, the gas flows to the Propane Recovery Column (PRC) which is distillation column that uses hot oil as heat source and

propane refrigeration system for cooling to produce natural gas liquids (NGLs). It is possible to partially or fully by-pass the PRC if necessary, in which case the gas will go directly to second/third stage compression before being returned to the field.

The natural gas liquids are cooled and go through 2 treaters to remove H_2S prior to sale. The CO_2 rich residual gas goes through 2 stages of compression and cooling before it is returned to the field at approx 1850 psi on an 8" carbon steel line that branches off to the various CO_2 injection stations in the CVU & VGSAU Field. See appendix G for the Gas Gathering system.

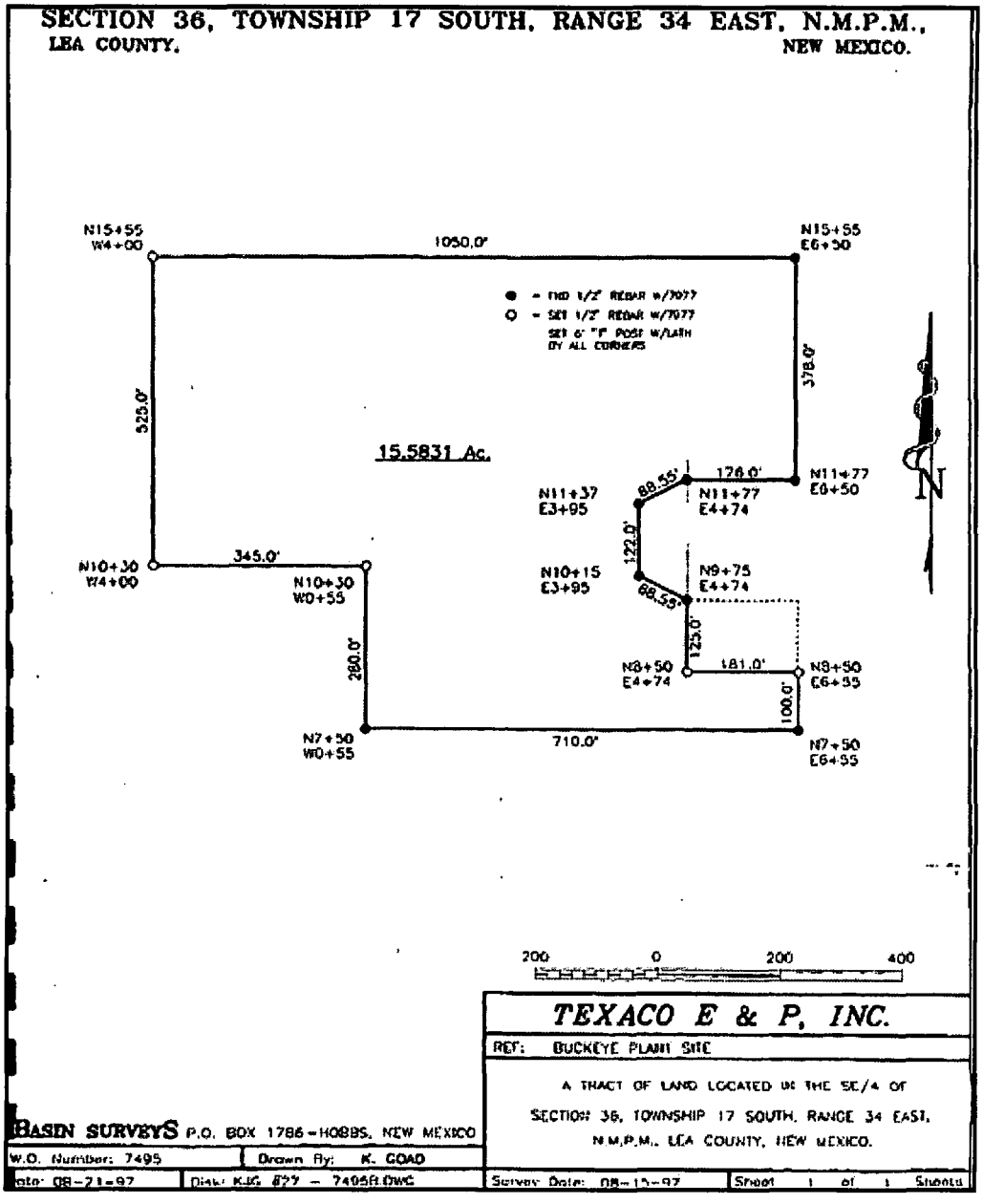
Vacuum Field Management Team (FMT) Office Location

The Vacuum FMT Field Office is located in the NE/4 of Section 36, Township 18 South, Range 34 East, NIVIPM, Lea County, New Mexico which is approx 25 driving miles to the northwest of Hobbs, New Mexico & 19.1 driving miles to the southwest of Lovington, NM.

Buckeye CO2 Plant Location, Landowner & Map

I. Plant Location: The Buckeye CO_2 Plant is located in the SE/4 of Section 36, Township 17 South, Range 34 East, NIVIPM, Lea County, New Mexico which is approx 25 driving miles to the northwest of Hobbs, New Mexico & 19.1 driving miles to the southwest of Lovington and encompasses 15+ acres. It is owned and operated by Chevron.

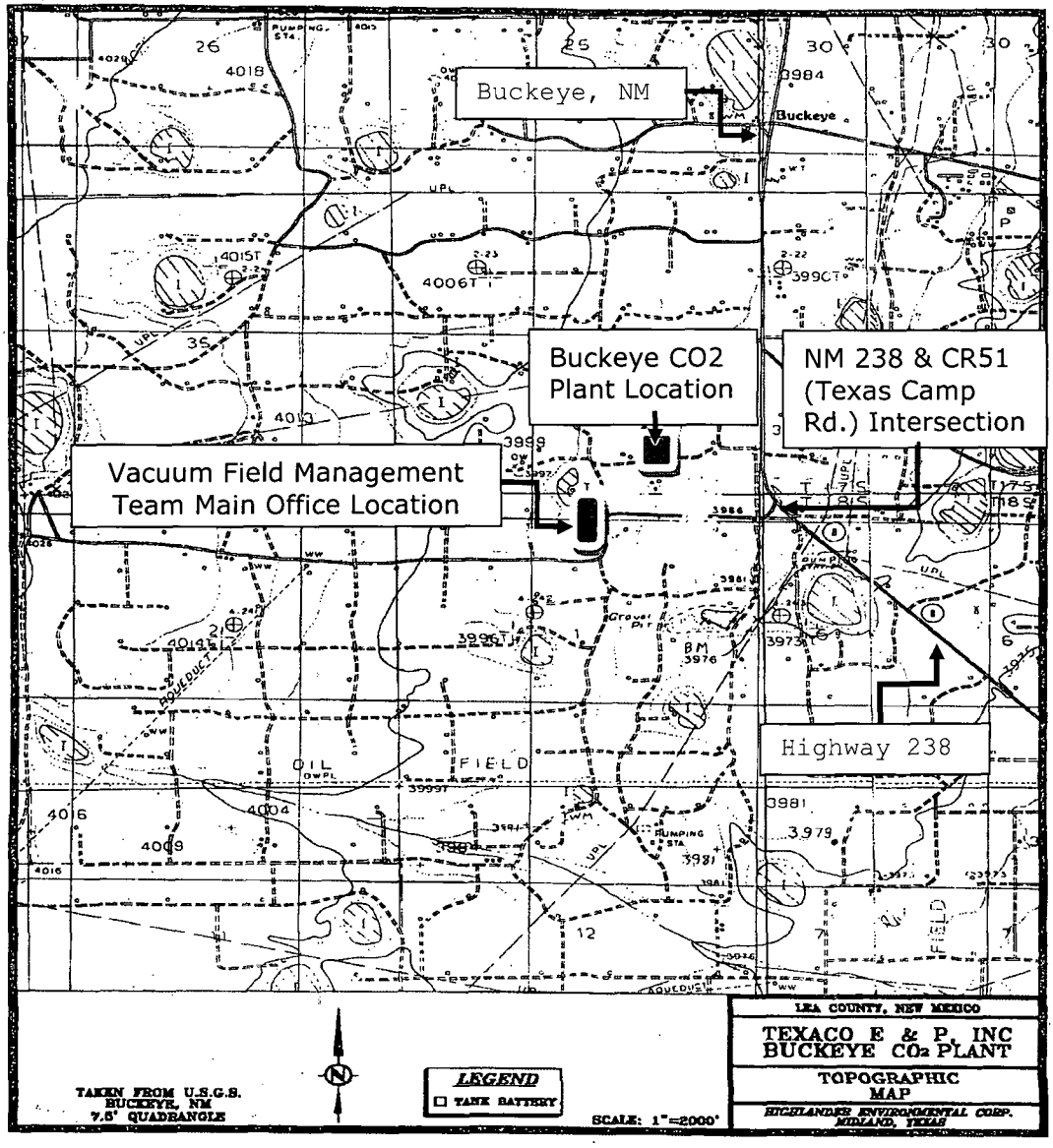
Buckeye CO_2 Plant Plot Plan



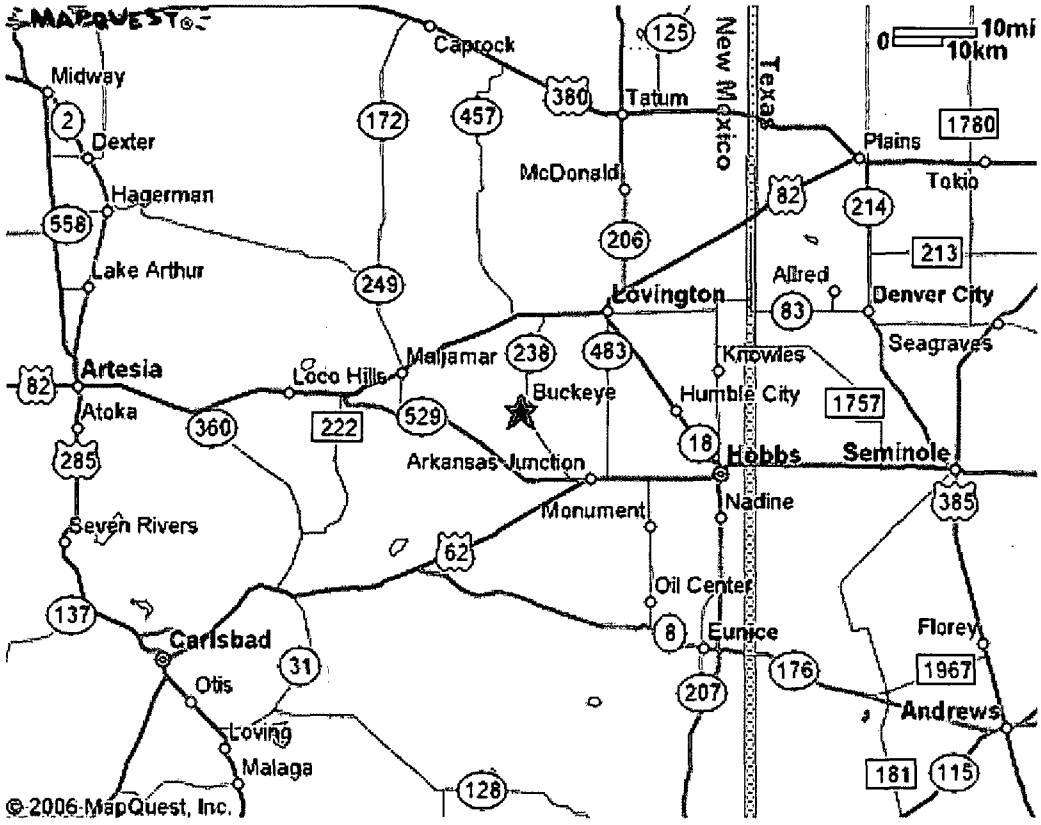
II. Plant coordinates:

Latitude: 32.78580905177838 / Longitude: -103.50888126742434

III. Physical Address: 40 Texas Camp Road (CR-51), Lovington, NM 88260-9661



Driving Directions



Driving Directions from Lovington, NM:

- Travel West on Highway 82 7 miles and turn left (South) on Highway 238.
- Travel 11.5 miles and turn right (West) on Texas Camp Rd.
- Travel ¼ miles and the Buckeye CO_2 Plant will be on the right.
- OR Travel ½ mile and the Vacuum FMT office is straight ahead.

Driving Directions from Lea County Regional Airport, Hobbs, NM:

- Travel west from Hobbs on Highway 62/180 (Carlsbad Hwy).
- Travel 9.9 miles and turn right (Northwest) on Highway 529.
- Travel 2.5 miles and turn right (North) on Highway 238.
- Travel 7.6 miles to the Chevron sign on the left side of the road and turn left (West).
- Travel ¼ miles and the Buckeye CO_2 Plant will be on the right.
- OR Travel ½ mile and the Buckeye FMT office is straight ahead.

H_2S Contingency Plan

Purpose

To provide an organized plan of action for alerting and protecting the public following the accidental release of a potentially hazardous volume of hydrogen sulfide which is defined as an H_2S concentration more than 100ppm in a public area, more than 500ppm at a public road or 100ppm more than 3000 feet from the site of the release.

Responsibility for conformance with the H_2S Contingency Plan

It is the responsibility of all personnel on-site to follow the safety and emergency procedures outlined in the H_2S Contingency Plan as well as the Chevron Vacuum Field Management Team & Buckeye CO_2 Plant Emergency Action Plans.

Revisions to the Plan

The H_2S Contingency Plan will be reviewed annually and revised as needed to address changes to the Field & Plant operations, facilities, training requirements, contact information and changes in public areas and public roads as they relate to the possible radius of exposures presented by our operations.

Availability of the H_2S Contingency Plan

The H_2S Contingency Plan is considered as part of the overall Emergency Action Plan (EAP) for both the Vacuum Field Management Team & Buckeye CO_2 Plant and will be included as an appendix to the EAP Plans. The H_2S Contingency 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 Vacuum Field Management Team Main Office, Lovington Office, the Buckeye Plant Control Room, & Plant Supervisors' Offices and online at the following link:

O:\NAU\MCBU\Oil\NewMexico\OS VacuumCarlsbad\GRP-Vacuum\Buckeye CO_2 Plant\Buckeye Plant HES\PSM Buckeye CO_2 Plant\12.0 Emergency Planning and Response\H2S Contingency Plan

See Appendix M for the H2S Distribution List, which lists all the additional entities that have been provided a copy of the H_2S Contingency Plan.

Plan Design Considerations

1. Area of Potential Exposure

A potential major failure of any gas pipelines in the Buckeye Field gathering system or Buckeye CO_2 Plant or process equipment within the Buckeye CO_2 Plant containing Hydrogen Sulfide (H_2S) may create a hazardous area of potential exposure in the vicinity of the failure. Potential pipeline ruptures within the Buckeye Field gathering system or the Plant itself will require immediate action to protect the lives of

persons that may be in or who may enter into these areas.

In a potential catastrophic release scenario, the activation level areas of potential exposure in Appendix F include mainly public roads and a public area, a third-party owned building to the North of the Central Vacuum Unit Satellite #4 at the edge of the 100ppm ROE. No residences, schools, churches, or other public areas were identified within the ROE. The main course of action required in these areas will be to direct vehicular traffic out of the area and to block or detour other traffic that may attempt to enter these areas if gas is being released.

All H_2S bearing gas processed in the field or entering or leaving the Buckeye CO_2 Plant is heavier than air and if it is potentially released to atmosphere, it will tend to settle in the lower areas at the point it is released. Any H_2S gas potentially released will begin a dispersion process in the atmosphere, thereby becoming less concentrated both vertically and horizontally away from the point of release.

The rate of dispersion of the H_2S gas into the atmosphere varies with the temperature difference between the gas and atmosphere, the volume of gas, and the wind speed. The tables below shows the concentration of H_2S expressed in parts per million by volume in the various gas streams. Also, the table shows estimated H_2S dispersion expressed as the 100ppm radius of exposure, and the 500ppm radius of exposure for each gas stream. These latter figures are calculated distances downwind from the potential point of release at which the air may have an H_2S concentration of 100ppm or 500ppm by volume.

2. Activation Level Radius of Exposures (ROEs)

For the existing Buckeye Field operations, the "Activation Level Radius of Exposure" for both 500ppm and 100ppm of H_2S gas was determined using the "expected rate," which is calculated using the expected daily rate of the gaseous mixture that is handled by the CVU Sat 4 gathering line to the plant using the Pasquill-Gifford method. The rates and other variables used to calculate the ROE is discussed in greater detail in Appendix - F - RADIUS OF EXPOSURE CALCULATIONS

100ppm ROE 1163 feet
500ppm ROE 532 feet

Vacuum FMT Ops Activation Level ROE			Radius of Exposure [ft.]		Distance From Public Receptors	
	Volume [mscf / day]	H_2S Conc. [ppm]	100 ppm	500 ppm	Distance from Public Area	Distance from Public Road
CVU Sat 4 10"FG Gathering Line	15,574	3,200	1,163'	532'	1018' 3rd Party Bldg	Buried Line runs under HWY 238

Highlighted items signify ROEs that could pose a potentially hazardous H_2S release

For the Buckeye CO_2 Plant operations, the "Activation Level Radius of Exposure" for both 500ppm and 100ppm 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 using the Pasquill-Gifford method. The rates and other variables used to calculate the ROE is discussed in greater detail in Appendix - F - RADIUS OF EXPOSURE CALCULATIONS

100ppm ROE 3102 feet
500ppm ROE 1418 feet

Buckeye CO_2 Plant Activation Level ROE			Radius of Exposure [ft.]		Distance From Public Receptors	
	Volume [mscf / day]	H_2S Conc. [ppm]	100 ppm	500 ppm	Distance from Public Area	Distance from Public Road
Inlet Plant Combined Gas Stream - CVU BTY & VGSAU BTY	60,000	3,983	3102′	1418′	+5000′	1562′HWY 238 850′ CoRd 51

3. Other Potentially Hazardous Radius OF Exposures (ROEs)

Listed below are the additional known facilities and gathering lines that based on their gas volume and expected H_2S concentrations could create a hydrogen sulfide concentration of more than 500ppm at a public road.

Vacuum FMT Other Potentially Hazardous ROEs			Radius of Exposure [ft.]		Distance From Public Receptors	
	Volume [mscf / day]	H_2S Conc. [ppm]	100 ppm	500 ppm	Distance from Public Area	Distance from Public Road
CVU Sat 5 8" FG Gathering Line	7,872	5,200	1028′	470′	+5000′	Buried Line runs under HWY 238
CVU Sat 1 Gathering Lines 1&2	795	9,000	345′	158′	2792′ Buckeye Store	Buried Line runs under HWY 238 & Line2 runs under Buckeye Rd
VGSAU Sat 2 Gathering Line	7,500	3,600	793′	362′		Buried Line runs under Co Rd 51
CVU Flare All Volume	33,000	3,346	1913′	875′	3034′ Buckeye Store	764′ HWY 238
VGSAU Well #148	1359	5,300	347′	158′	+5000′	100′ Co Rd 51
VGSAU Well #149	2550	5,300	514′	235′	+5000′	105′ Co Rd 51

4. Characteristics & Effects of Exposure to H_2S & SO_2

Characteristics of H_2S*

Hydrogen sulfide (H_2S) is a colorless, flammable gas which may be liquefied under pressure and which occurs in a variety of natural and industrial settings. Typically called "sour gas," hydrogen sulfide is soluble in water, crude oil or petroleum fractions, and is extremely corrosive. The gas can cause severe stress cracking of steel and other metals. Hydrogen sulfide burns with a blue flame to form sulfur dioxide, which is also a toxic gas. Hydrogen sulfide is slightly heavier than air and may accumulate to dangerous concentrations in low-lying areas and confined spaces. Wind movement or air currents can disperse the gas.

H_2S Properties*

• CAS No. = 7783-06-4	• Molecular Formula = H_2S
• Molecular Weight = 34.08	• TWA = 10ppm
• STEL = 15ppm	• IDLH = 100ppm
• Specific Gravity (air 1.0) = 1.189	• Boiling Point = -76.5°F

Effects from Exposure to H_2S*

The potential health effects associated with hydrogen sulfide exposure are primarily determined by the concentration of the gas in the individual's breathing zone, the length of the exposure period(s) and individual susceptibility to the contaminant. Typical characteristics and potential health effects for H_2S at different concentrations are given below:

Effects from Exposure to H_2S	
Concentration	Effect
1ppm	The odor of rotten eggs can be smelled clearly
10ppm	Because of wide variation in individual susceptibility, a small percentage of individuals may experience discomfort from H_2S at or below this concentration. The maximum time that an individual may be exposed to this concentration is eight hours.
15ppm	Short term exposure limit for 15 minutes
100ppm	At this level, it will kill the sense of smell within three to fifteen minutes and it may burn the eyes and throat. The effects will be a slight headache or upset stomach and an increase in the pulse rate with irritation of the eyes, throat and skin.
200ppm	Kills the sense of smell rapidly, burns eyes and throat.
500ppm	The gas attacks the nerve center in the brain, resulting in a loss of sense of reason and balance. This may lead to a stoppage of breathing with 15 minutes or less. At this stage the individual needs prompt artificial respiration.

700ppm	The individual will become unconscious quickly. Breathing will stop and death may result if not rescued promptly. Immediate artificial resuscitation is necessary.
1000ppm	The individual will become unconscious at once.

One of the most important characteristics of hydrogen sulfide gas is its ability to cause olfactory fatigue or a failure in the sense of smell. At concentrations approaching 100 PPM, exposure to hydrogen sulfide causes a loss of the sense of smell. This effect can result in an individual developing a false sense of security relative to the exposure conditions. High concentrations of hydrogen sulfide, especially those capable of causing death or serious physical injury, cannot be detected by the sense of smell.

Characteristics of SO_2*

Sulfur dioxide is produced as a by-product of H_2S combustion at the Chevron Buckeye CO_2 Plant Flare during planned maintenance and unplanned emergency events when the flare unit receives the residual hydrogen sulfide and carbon dioxide stream that is routed from the amine unit.

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

SO_2 Properties*

• CAS No. = 7446-09-5	• Molecular Formula = SO_2
• Molecular Weight = 64.07	• TWA = 2ppm
• STEL = 5ppm	• IDLH = 100ppm
• Specific Gravity (air 1.0) = 2.26	• Boiling Point = 14°F
• Freezing Point = -103.9°F	• Vapor Pressure = 49.1 psia
• Auto ignition Temperature = N/A	• Lower Flammability Limit = N/A
• Upper Flammability Limit = N/A	• Stability = Stable
• Corrosivity = Could form an acid rain in aqueous solutions	

Effects from Exposure to SO_2*

Effects from Exposure to SO_2	
Concentration	**Effect**
1ppm	Pungent odor, may cause respiratory changes (airway resistance)
2ppm	Permissible exposure limit; Safe for an 8 hour exposure
3-5ppm	Pungent odor; normally person can detect SO_2 in this range
5ppm	Short Term Exposure Limit (STEL); Safe for 15 minutes of exposure
12ppm	Throat irritation, coughing, chest constriction, eyes tear and burn

100ppm	Immediately Dangerous To Life & Health (IDLH)
150ppm	So irritating that it, can only be endured for a few minutes
500ppm	Causes a sense of suffocation, even with first breath
1,000ppm	Death may result if not rescued promptly.

*As Per American Petroleum Institute (API) Recommended Practice 55

Vacuum FMT Emergency Procedures and Action Plan

This section explains the procedures to be used in the event of an H_2S release in the Vacuum Field Management Team Area of Operations.

1. OBJECTIVE

All field employees shall be prepared to respond to an H_2S emergency. Emergency response actions may be taken for a variety of situations that may occur.

2. Activation of Plan & Immediate Response Actions & Responsibilities

The first employee on the scene will institute Chevron's Incident Command System (ICS) and assume role of on scene / on site commander). They will carefully survey the situation, note the wind direction, and proceed with the following:

A. Determine if the release is potentially hazardous. If practical, take immediate action to secure release using proper safety procedures and equipment.

B. Request assistance when and if needed. If release is potentially hazardous, activate the contingency plan. Notify the Vacuum FMT Operations Supervisor and provide the nature of the emergency, and the assistance needed. Provide information as to the location and source of the release, potential affected area (extent of public area, public road, etc.) and wind direction. At this point, OS may assume role as incident commander (IC).

The Chevron Vacuum Operations Supervisor (IC) should activate the Field Emergency Management Team (FEMT). Upon activation, the FEMT should develop objectives to help manage and mitigate the incident. The IC or delegate should request any necessary assistance from company personnel or outside agencies and obtain any safety equipment which might be required for company personnel, area residents, or the general public. Notification to the New Mexico Oil Conservation Division (OCD) and adjacent impacted Operators will be made in the event of a activation level release. As needed, the Vacuum FMT Operations Supervisor (IC) or delegate will contact emergency telephone number "911" for assistance from local emergency services.

C. Alert and/or evacuate people within the exposure area. The person first notified of leak observance should take immediate steps to cause notification of any affected residents, the general public or employees. In most cases this may be the

OS, whom may assume command as IC. Roles and responsibilities may then be delegated to members of the FEMT, if activated. The avoidance of injury or loss of life should be prime consideration and given top priority in all cases. Locations of residents, public areas, roads, etc. in relation to H_2S containing facilities are in this plan (see Activation Level ROE Section). Specific site radiuses of exposure (ROE) limits are tabulated and should be consulted to determine potentially hazardous areas relating to the release location. In all situations, consideration should be given to wind direction and weather conditions. H_2S is heavier than air and can settle in depressions or low lying areas in the terrain. Shifts in wind direction can also change the location of possible hazardous areas.

D. If a hazardous volume of H_2S is present, as defined in the Purpose Section on page 8, the Operations Supervisor (IC) or delegate will activate the H_2S Contingency Plan. This includes activating the FEMT (Incident Management System See Appendix L) and contacting the state police to establish road blocks to prevent entry to the potential exposure area. The Operations Supervisor (IC) or designee will be responsible for the execution of the H_2S Contingency Plan. The H_2S Contingency Plan includes establishing staging areas, barricades and/or warning signs at or beyond the "Safe Area." If barricades are staffed, the attending personnel must be equipped with H_2S personal monitors and a mobile phone system. A staging area should be established at a safe distance upwind of the release location. Safety, communication, first aid and evacuation equipment will be stored and accessible in the staging area. Mobile unit numbers are listed in the Emergency Response Plan and in this in this document in Appendix A.

E. In responding to an emergency situation, at least one backup person outfitted with the proper safety and rescue equipment is required. Emergency personnel and supervisors must be aware of the location and activities of personnel responding in the hazardous release areas at all times. If proper backup, equipment and notification are given to emergency personnel, qualified personnel are to plug the leak or isolate the source of the release. In some cases, clamps can be used to temporarily stop the release. Isolate the leak by closing the most readily accessible valves upstream and downstream.

> * Decision to ignite the escaping gas to reduce the toxicity hazard should be made only as a last resort. The common amount of SO_2 produced when gas is ignited must be considered. It must be determined if the gas can be safely ignited.

F. All Clear Status will be declared when the release of hydrogen sulfide and combustible gas is controlled or eliminated and the impacted area is confirmed safe by the Incident Commander or designee. After an All Clear is given, assigned personnel will remove all barricades and warning signs. They will also assist evacuees in returning to the impacted area if needed and advise all parties previously notified that the emergency has ended.

G. Post H_2S Contingency Plan Actions. Perform an H_2S Contingency Plan critique to

determine assess activation and implementation of H_2S Contingency Plan and evaluate response effectiveness. Approved changes will be added to the response plan. Retrain in emergency response and H_2S Contingency Plan procedures as needed.

H. Replace, repair, inspect and clean emergency equipment as needed and return it to the proper storage area.

Buckeye CO_2 Plant Emergency Procedures and Action Plan

This section explains the procedures to be used in the event of an H_2S release in or near the Buckeye CO_2 Plant.

1. OBJECTIVE

All Plant employees shall be prepared to respond to an H_2S release at the Plant. Emergency response actions may be taken for a variety of situations that may occur in the Plant. The H_2S Contingency Plan is activated in progressive levels based on the concentration of H_2S that has been released, the severity of the release and containment effort success. The Plant has 3 activation levels that are described below.

Level 1 — H_2S alarm, oscillating high low sounded and flashing amber beacons, activated indicating H_2S greater than 10ppm in the area of the activated monitor(s).

Level 2 — Initial Containment efforts are unsuccessful, the release is deemed to be substantial enough to warrant activating the plant Emergency Shut Down (ESD) and/or field shut in procedures are activated to contain the release. Examples of what could be considered a substantial release include:

- Multiple H_2S monitors going off in turn with rising H_2S concentrations indicating a growing and migrating gas cloud
- Sound or visual indications of a substantial, uncontrolled release from a failed vessel, pipe work or equipment

Level 3 — Catastrophic release; fire; explosion; a continuous release of maximum volume for 24 hours is possible or it is believed that the release may result in an H_2S concentration of 100ppm in any defined public area, 500ppm at any public road, or 100ppm at a distance greater than 3000 feet from the location of the release.

**Note that a Level 3 response would likely occur just before the escape of the 24 hour release volume due to the fact that there are no public areas within the 100ppm ROE distance, both Highway 238 & Country Road 51 are at the outer edge of the 500ppm ROE, and the general 100ppm ROE distance is slightly greater than 3000 ft from the site of release

2. Activation of H_2S Contingency Plan& Immediate Response Actions & Responsibilities

This H_2S Contingency Plan shall be activated immediately by plant operations personnel on duty upon the detection of a potentially hazardous volume concentration of hydrogen sulfide released to the atmosphere based on the criteria above. If the release is not from a Chevron operation, steps should be taken to notify the Operations Supervisor and the responsible party. As soon as the H_2S Contingency Plan has been activated, all non operator personnel have evacuated and an initial assessment completed, the Plant Supervisor, or his designee, should be notified.

Immediate Response Actions & Responsibilities:

A. When the H_2S alarm sounds, all non operator personnel in the plant shall stop work, check the prevailing wind direction and immediately proceed along designated evacuation routes and/or upwind to a safe area. If the plant evacuation siren is sounded all non-operator personnel shall proceed to the pre-designated Primary Evacuation Point immediately.

B. Plant Operators on duty at the time of the release shall take immediate steps to:

1. Ensure all non operator personnel in the plant move away from the release to a safe area. If the release is substantial, as determined by the operators on duty, they shall activate the emergency plant shutdown and sound the plant evacuation siren. The operators on duty shall take a headcount, using the plant sign in sheet, to ensure everyone is safe and accounted for.
2. If deemed necessary by the Senior Operator, contact local emergency response service providers for medical and/or other assistance.
3. Try to determine the source and extent of the release.
4. Provide an initial report of the release to the Plant Supervisor, or in his absence, to the Vacuum Field Management Team Operations supervisor, giving all pertinent details including:
    - The source and potential cause of release, if known
    - The extent of the release (amount of time release has occurred)
    - Preliminary estimated volume of release
    - The containment and removal action needed
    - Weather conditions and any other pertinent information
5. If safe to do so, attempt to fix or contain the release using proper safety procedures and Self Contained Breathing apparatus (SCBA).
6. Keep the operations/plant supervisor updated on the status of the situation so that he may initiate a Level 2 or Level 3 response as appropriate. In the event the operations/plant supervisor is absent, the Senior Operator shall initiate a Level 2 or Level 3 response as deemed necessary.

C. Plant Supervisor - When the H_2S Contingency Plan is put into effect, the Plant Operations Supervisor will:

1. Coordinate Level 1 & 2 response and all containment operations for the release.
2. Activate Level 2 Plant Emergency Plant Shut Down or Level 3 response if there is a catastrophic release; fire; explosion; a potential for a continuous release of maximum volume for 24 hours, or it is believed that the release may result in an H_2S concentration of 100ppm in any defined public area, or 500ppm at any public road, or 100ppm at a distance greater than 3000 feet from the location of the release.

D. Vacuum Field Management Team Operations Supervisor – If Level 3 response initiated, act as the incident commander and formally activate the FEMT to manage the event as detailed in the Appendix L. In a large event, command may be transferred to the Asset Emergency Management Team (AEMT) if, after notification to the Area Manager, he/she determines to activate the team. The FEMT would then be absorbed into the AEMT and serve as the Operations Section. Any local, state or national responding agencies may be included in a Unified Command Structure as per the National Incident Management System (NIMS).

If needed, the team can be supplemented by personnel available from other Asset Areas within the Mid Continent Alaska Strategic Business Unit (MCA SBU), other SBUs in Chevron Global Upstream, Chevron's worldwide emergency response resources [i.e., Advisory and Resource Team (ART), Worldwide Emergency Response Team (WWERT), Functional Teams, Regional Teams, and contractor resources located both inside and outside the MCA SBU.

Buckeye CO_2 Plant Prevailing Winds & Evacuation Points

Prevailing winds for the area are from the South 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 choose an alternate route upwind to the Evacuation Points

1. The Primary Evacuation Point is located on the dirt Road just east of the plant outside the Plant Main Parking.

2. The Secondary Evacuation point is located at intersection of Country Road 51 (Texas Camp Road) and the dirt road leading to plant main entrance.

3. The Primary Catastrophic Evacuation Point is located 300 feet south on HWY 238 at the first water injection well site on the West side of the road moving south, CVU water injection well #99. The alternate Catastrophic Evacuation Point is the CVU Battery north on HWY 238 just outside of the ROE.

See Appendix J for Evacuation Routes and Evacuation Point Locations.

Buckeye CO2 Plant LEVEL 1 Response Action Plan

The audible signal for a Plant emergency and evacuation is an intermittent horn (repeating off/on) activated when an H_2S concentration level of 10ppm is detected. In addition, a flashing amber/red light or beacon is activated at an H_2S concentration level of 10/15ppm. A control panel in the Plant control room establishes which H_2S monitor has activated the alarm and/or flashing red beacon.

1. At the initial sound of the intermittent H_2S alarm or the flashing amber/red beacon, all non operator personnel in the Plant complex shall immediately evacuate their work area on foot, move upwind towards the plant perimeter and onwards to the MEB or nearest plant exit point. They shall not resume normal duties until cleared to do so by operations.
2. If the release is substantial, as determined by the operators on duty, they shall immediately activate the emergency plant shutdown and sound the plant evacuation siren, effectively escalating to a Level 2 response.
3. The operators shall account for all personnel and shall help any persons in distress in the affected area if needed, evacuate to a safe area, donning their SCBA if necessary.
4. Once all personnel are accounted for, the operators will try to determine the source and extent of the release and provide an initial report of the release to the Plant Supervisor.
5. Wearing the SCBA if necessary, the operator(s) will attempt to contain the cause of the release. OSHA guidelines allow operators to work in areas with 10ppm for up to 8 hours. If the release is contained and monitored levels in the affect area are less than 10ppm, personnel may re-enter the area.

If the release is not resolved or if the H_2S level in the Primary Evacuation Point exceed 10ppm then Operations will initiate a Level 2 response.

Buckeye CO_2 Plant LEVEL 2 Response Action Plan

If the initial Level 1 response is unsuccessful at managing and containing the release, or the release is substantial, then the Level 2 response will be initiated and the following will occur:

1. The plant operators will initiate the Plant Emergency Shutdown system and sound the plant evacuation siren. "Field safety systems, i.e. flares are automatically activated."
2. All non essential personnel will evacuate to the Primary Evacuation Point, moving on to the Secondary Evacuation Point if necessary.
3. The operators shall account for all personnel and shall help any persons in distress in the affected area evacuate if needed, donning their SCBA if necessary.
4. Once all personnel are accounted for they will try to determine the source and extent of the release and provide an initial report of the release to the Plant Supervisor.
5. Wearing the SCBA, the operator(s) will attempt to contain the cause of the release. OSHA guidelines allow operators to work in areas with 10ppm for up to 8 hours. The H_2S levels at the Primary Evacuation point will be monitored with a

hand held or personal monitor.

6. The plant supervisor or designee will notify all entities within the 500ppm ROE. The general nature of the release and status of containment will be conveyed. Parties will be notified to report the release 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 individuals should be instructed to leave the area and not to enter/re-enter area until further notice.

Operations will continue to monitor situation and will respond as follows:

1. If Plant Emergency Shut Down and/or Field Shut in efforts are successful at stopping the release and the monitored H_2S level in the affected area is less than 10ppm, personnel may return to Plant.

2. If the Plant ESD or Field Shut-in efforts do not contain or stop the release or the monitored H_2S Level is >10ppm at the Secondary Evacuation point, activation of the full H_2S Plan Level 3 response will occur.

All entities in the 500ppm radius of exposure will be notified once the release is contained and the monitored H_2S level is less than 10ppm.

Buckeye CO_2 Plant LEVEL 3 Response Action Plan

If the monitored H_2S level is at 10ppm or greater at the Secondary Evacuation Point, Plant and field emergency shutdown efforts at Level 2 are unsuccessful, activation level release and/or a catastrophic release has occurred, then a Level 3 response will be implemented.

1. As per the Plant Emergency Action Plan (EAP), the FEMT will be activated to coordinate emergency response activities, which may include outside agencies and/response resources as needed. See Appendix L for the Local Emergency Response Team Responsibilities.

2. Incident Commander will coordinate with county Sheriff's department to setup Road blocks at the following locations (see Appendix F for proposed road block locations)

A. Highway 238 in front of the CVU Battery
B. Highway 238 500 feet south of the Texas Camp Road & 238 intersection
C. On Texas Camp Road half way between the VGSAU Battery and the turn off to the main office.

3. All personnel, both at the Buckeye CO_2 Plant and Vacuum Field Management Team, will evacuate to the Catastrophic Evacuation Point located 1000 feet south on HWY 238 at the first injection well site on the West side of the road moving south, CVU water injection well #99.

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, Operations shall maintain communication with the Plant Supervisor & Incident Commander or their designees, to keep them up-to-date of the situation and the actions taken prior to their arrival at the location.

6. Operations will initiate and maintain a Chronological Record of Events log.

7. Incident Commander or his/her designee will, as soon as possible after the activation of the H_2S Contingency Plan Level 3 response, begin agency' notifications by contacting OCD, LEPC, National Response Center and law enforcement by phone or other appropriate means of communication and notify them of the release, provide a status of containment and inform them of the need for response assistance and roadblocks to protect the public.

8. The FEMT will establish a media staging area adjacent to the Catastrophic Evacuation Point and direct all media to it.

9. Under direction of the IC, once the release is contained/resolved, and the monitored H_2S level in the Plant and at Secondary Evacuation Point is less than 10ppm, roadblocks will be removed, and all entities otherwise located within the 100ppm ROE will be allowed to return. All entities previously notified will be informed they can return to working in the area.

Rescue and First Aid

Summon aid immediately for any type of incidents involving injuries. The prompt performance of specific rescue and emergency first aid procedures can very often result in the successful recovery of individuals overcome by hydrogen sulfide. These individuals shall be immediately removed from the location to an evacuation area upwind and away from the source of emission by a rescuer wearing full-face pressure-demand supplied air respiratory protection, e.g., SCBA or supplied air with egress unit. (Ideally a standby person will be present before rescue is attempted).

A Rescuer shall have proper emergency response/rescue training and proper respiratory protection.

Once the individual is removed to a safe area, the rescuer is to begin artificial respiration or administer oxygen if breathing has ceased. Caution must be taken during the application of artificial respiration not to inhale air directly from the individual's lungs, as this can also result in the rescuer being overcome. Depending on the length of exposure and concentration of hydrogen sulfide, heart failure may occur within 4 to 6 minutes. If the individual's heart has stopped, cardiopulmonary resuscitation (CPR) must be started immediately. If the individual does not respond to emergency aid, emergency medical aid must be summoned to the scene, and the

individuals taken, as soon as possible, to a hospital for further treatment. Regardless of apparent condition, all overexposure victims shall receive appropriate medical attention as soon as possible.

Training and Drills

The following H_2S specific safety training is required:

- Hydrogen Sulfide (H_2S) Safety Training – required for all personnel
- Hydrogen Sulfide (H_2S) Advanced-Level Training - Required for all field and plant operators
- SCBA training – Required for all field specialists and plant operators
- Training in fixed H_2S monitoring and alarm systems – required for plant personnel

Training:

1. General Orientation - All Field & Plant personnel, visitors, and contractors must attend a Field or Plant overview orientation prior to obtaining permission to work in the field or enter the Plant.

2. Respirator Training - All Field & Plant operations personnel, with the exception of the Operations & Plant Supervisors, 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 and they must have medical clearance to work in the Field or Plant.

The Vacuum FMT & Plant personnel complete annual emergency response/management training. The training topics for this annual training vary between numerous emergency management and response topics. Topics may include, but are not limited to:

- NIMS Incident Management System
- HAZWOPER Emergency Response Level Training
- Fire Extinguisher Training
- First Aid / CPR
- Spill Response Training
- Security and Confined Space Rescue

Documentation of annual training, including a roster of attending participants is contained in HES files in the Field & Plant Safety Specialist's offices and a copy of the roster is submitted the MCA Emergency Management/Response Specialist for tracking and verification purposes. The MCA Emergency Management/Response Specialist will audit 100% of the submitted records yearly to ensure 100% of all MCA Facilities have completed their required yearly emergency management / response training requirement. The Chevron Learning Management System (LMS) is utilized to track these reviews and participants.

2. Exercises / Drills:

Vacuum FMT & CO_2 Plant personnel conduct an emergency response/management tabletop exercise once a year in addition to any other regulatory required or mandated exercises or drills. For the annual emergency response/management tabletop exercise, local emergency response services (local police, fire, and EMS) are invited to attend and participate. This is in addition to any other interaction with local emergency services that might occur within the year.

Documentation of the annual tabletop exercise, including a roster of attending participants, is contained in HES files in the Field & Plant Safety Specialist's offices and a copy of the roster is submitted the MCA Emergency Management/Response Specialist for tracking and verification purposes. The MCA Emergency Management/Response Specialist will audit 100% of the submitted records yearly to ensure 100% of all MCA Facilities have completed their required yearly emergency management/response tabletop exercise requirement. The Chevron Learning Management System (LMS) is utilized to track these reviews and participants.

Appendix A – Emergency Management Teams

Vacuum FMT Management Team (FMT) Emergency Management Team

Vacuum FMT Emergency Management Team					
Name	**Position**	**Work Phone**	**Cell Phone**	**Home Phone**	**Email**
Incident Commanders (IC)					
Nick Moschetti	O/S	575-396-4414 ext 201	432-631-0646	432-631-0646	NMOS@chevron.com
Lloyd Booker	PTL	575-396-4414 ext 206	575-631-9121	575-392-7545	RBOO@chevron.com
Safety Officers					
Josie DeLeon	Safety Specialist	575-396-4414 ext 222	432-425-1528	432-425-1528	JDXD@chevron.com
David Pagano	HE Specialist	575-396-4414 ext. 275	505-787-9816	505-787-9816	DPGN@chevron.com
Donna Burt	Safety Specialist	575-396-4414 ext 330	575-631-2151	575-392-8124	DTBU@chevron.com
Operations Section Chiefs (Ops)					
Lloyd Booker	PTL	575-396-4414 ext 206	575-631-9121	575-392-7545	RBOO@chevron.com
Danny Acosta	ALCR	575-396-4414 ext 220	575-631-9033	575-396-5903	DNLC@chevron.com
Planning Section Chief (PSC)					
Kristian Svendsen	Gas Plant OS	575- 396-4916 ext 321	713-417-6213	575-942-2316	SVEK@chevron.com
Logistics & Finance					
David Brown	Maintenance Planner	575-396-4414 ext 213	575-631-9129		DBMA@chevron.com
Zan Cox	OA	575-396-4414 ext 223	NA		ZNUS@chevron.com
Key Field Operations Personnel (Operations Section Responders)					
Joseph Nevarez	Production Specialist	575-396-4414 ext 211	575-631-9125	575-631-9125	JQUG@chevron.com
Mike Holdridge	Field Specialist	575-396-4414	575-631-9124		HOLW@chevron.com
Neil Abernathy	Field Specialist	575-396-4414	575-390-2055		NAGR@chevron.com
Jarrett Hall	Field Specialist	575-396-4414 ext 208	575-631-1354		JKZC@chevron.com
Guadalupe Mendoza	Field Specialist	575-396-7503	575-390-8950		GMEJ@chevron.com

Buckeye CO_2 Plant Emergency Management Team

Vacuum FMT & Buckeye CO_2 Plant Emergency Management Team					
Name	**Position**	**Work Phone**	**Cell Phone**	**Home Phone**	**Email**
Incident Commanders (IC)					
Nick Moschetti	O/S	575-396-4414 ext 201	432-631-0646	432-631-0646	NMOS@chevron.com
Kristian Svendsen	Plant O/S	575-396-4916 ext 321	713-417-6213	575-942-2316	SVEK@chevron.com
Lloyd Booker	PTL	575-396-4414 ext 206	575-631-9121	575-392-5348	RBOO@chevron.com
Safety Officers					
Donna Burt	Plant Safety Specialist	575-396-4916 ext 330	575-631-2151	575-392-8124	DTBU@chevron.com
Josie DeLeon	Field Safety Specialist	575-396-4414 ext 222	432-425-1528	432-425-1528	JDXD@chevron.com
David Pagano	Health & Env. Spec.	575-396-4414 ext 275	505-787-9816	505-787-9816	DPGN@chevron.com
Eddy Gregory	HES Team Leader	432-687-7227	432-631-1820		EEGR@chevron.com
Operations Section Chiefs (Ops)					
On Shift Operator	Plant Board Operator	575-396-4916 ext 327 or ext 326			
Key Plant Operations Personnel					
Garcia, Mario	Plant E & I Tech	575-396-4916 ext 322	575-631-7465		MGDD@chevron.com
Clayton, Daymond	Plant Specialist	575-396-4916 ext 327			CDAY@chevron.com
Dziuk, Nathan	Plant Specialist	575-396-4916 ext 327			NDZI@chevron.com
Landreth, Dusty	Plant Specialist	575-396-4916 ext 327			DUSL@chevron.com
Larue, Gary	Plant Specialist	575-396-4916 ext 327			LGAW@chevron.com
Morris, Jeff	Plant Specialist	575-396-4916 ext 327			JUNZ@chevron.com
Roblez, Danny	Plant Specialist	575-396-4916 ext 327			DRVD@chevron.com
Woodard, Shawn	Plant Specialist	575-396-4916 ext 327			SWPM@chevron.com
Rick Rogge	Plant Mechanic	575-396-4916 ext 323	575-631-4402		RRGG@chevron.com
Planning Section Chief (PSC)					
Nick Moschetti	O/S	575-396-4414 ext 201	432-631-0646	432-631-0646	NMOS@chevron.com
Donna Burt	Plant Safety Specialist	575-396-414 ext 213	575-631-2151	575-392-8124	DTBU@chevron.com
Logistics & Finance					
Donna Burt	Plant Safety Specialist	575-396-4414 ext 213	575-631-2151	575-392-8124	DTBU@chevron.com
Zan Cox	OA	575-396-4414 ext 223	NA		ZNUS@chevron.com
Key Field Operations Personnel (Operations Section Responders)					
Lloyd Booker	FS	575-396-414 ext 206	575-631-9121	575-392-5348	RBOO@chevron.com

Appendix B – Emergency Contact Phone List

Law Enforcement	**Location**	**Phone Number**
New Mexico State Police	Hobbs / Carlsbad	(575) 392-5588 / (575) 885-3137
Lea County Sheriff		(575) 396-3611
Eddy County Sheriff		(575) 887-7551
Hobbs Police		(575) 397-9265
Carlsbad Police		(575) 855-2111
Lovington Police		(575)396-2811
Fire and Ambulance		
Carlsbad Fire Dept.		911 or (575) 236-6113
Lovington Fire Dept.		911 or (575) 396-2359
Hobbs Fire Dept.		911 or (575) 397-9308
Maljamar Fire Dept.		911 or (575) 676-4100
Hospitals		
Lea Regional Hospital (Hobbs)		(575) 392-1979
Columbia Hospital (Carlsbad		(575) 887-4100
Nor-Lea Hospital (Lovington)		(575) 396-3529
Government Agencies		
OCD	Hobbs /Artesia	(575) 393-6161 / (575) 748-1283
BLM		(575) 393-3612
National Response Center		1-800-424-8802
CHEMTREC		1-800-424-9300
OSHA, Lubbock, TX		1-800-692-4204
NMED (Santa FE)		(575) 955-8025
NMDOT		1-800-432-7845
Lea County Local Emergency Planning Committee	Jerry Reynolds	505-393-2870
Hazardous Spill Containment		
EPI		(575) 394-3737
Indian Fire and Safety		(575) 393-3093
Total Safety		(575) 392-2973
Contractors		
RWI		(575) 393-5005
RWI (David Fredrick)	David Fredrick	(575) 631-0170
Key Trucking (Hobbs) / (Carlsbad)		(575) 397-4994 /(575) 393-5807
Nabors Trucking (Hobbs)		(575) 392-2577
Nabors Trucking (Carlsbad)		(575) 885-3321

Public Contacts		
Rancher Living off of CR 51 (Texas Camp Rd)	DANNY VIGIL *pronounced Vhill	575-390-0888
(DCP) Charlie Joslin Primary Contact for BLDGS Near CVU Sat4 off of Buckeye Rd.	DCP Lynam Ranch Field Supervisor	Office phone: 575-370-7583 Cell Phone: 575-8020-5108
(DCP) Lynam Ranch Plant Secondary Contact for Bldgs Near CVU Sat4 off of Buckeye Rd.	(DCP) Lynam Ranch Plant	575-391-5781

Appendix C - Plant & Field Safety Equipment

Buckeye CO_2 Plant Fixed H_2S Monitoring and Alarm System

There are 19 continuous fixed area monitors permanently installed in locations where the sudden release of hydrogen sulfide is possible. The sensors are placed in proximity to potential sources of a hydrogen sulfide release. Several sensors are used throughout the plant, at points of possible gas emissions, and are connected to the Distributed Control System (DCS).

The H_2S alarm is an audible and visual alarm. The sound is an osculating high low sound. The visual alarms consist of an amber light for 10PPM of H_2S and a red light for 15PPM of H_2S. The lights are located in five areas of the plant. When alarms sound they are also seen in the Main Equipment Building (M.E.B) on the DCS monitors, which show the location of alarm. See Appendix I (Buckeye CO_2 Plant Safety System Location Plan) for the location of the H_2S monitors and alarms. Employees are instructed to follow established response procedures in the event that an alarm is activated.

In addition to fixed H_2S monitoring, survey measurements using portable hydrogen sulfide monitors are also required for certain applications such as the following:

- Monitoring of work areas prior to entry
- Monitoring of confined spaces
- Detection of leak sources
- Monitoring when lines, valves or vessels are opened

Vacuum FMT Field Fixed H_2S Monitoring and Alarm Systems

There are fixed area monitors permanently installed at 3 of the Vacuum FMT Batteries that work similar to the plant alarms. They are the Central Vacuum Unit, Vacuum Grayburg San Andreas Unit & Vacuum Glorietta West Unit Batteries.

Personal H_2S Monitors

When routine and maintenance tasks involve potential exposure to hydrogen sulfide above 10PPM, the use of continuous reading personal monitors with audible and/or visual alarms is required. This means that personal H_2S monitors are required at all times in the Vacuum FMT & Buckeye CO_2 plant. When a group of employees is working close together, it is not necessary that each employee wear a monitor. A portable monitor can be substituted for the personal type as long as it adequately samples the work area used by all potentially exposed employees.

Monitors shall be utilized for the complete duration of work activity. Monitors are set to alarm at 10ppm or less. If the personal H_2S monitor alarm sounds, indicating a concentration at/or above this level, workers shall immediately leave the area. Workers shall withdraw upwind to a position which is considered to be a safe distance from the source of the gas. The alarm will continue to sound until the detector-sensor is cleared of hydrogen sulfide. Depending on the type of monitor and the concentration of the gas, this can take several minutes, even though the monitor is removed to a hydrogen sulfide free atmosphere. Allowing workers to re-enter, and

work in the area shall be permitted only if they are wearing a full-face pressure-demand airline respirator with egress bottle or self-contained breathing apparatus (SCBA). This procedure shall be followed, until it has been established that the area is safe from hydrogen sulfide. (Less than 10ppm).

Respiratory Protection

Supplied-Air (airline or SCBA) respiratory protection against hydrogen sulfide exposure is required in the following situations:

- When routine or maintenance work tasks involve exposure to H_2S concentrations of 10ppm or greater.
- When a fixed monitor alarms, and re-entry to the work area is required to complete a job.
- During rescue of employees suspected of H_2S overexposure.
- For specific tasks identified with significant exposure potential and outlined in local program guidelines.

All respiratory protection equipment for hydrogen sulfide must be of the supplied-air type, equipped with pressure-demand regulators and operated in the pressure-demand mode only and meet the Standard of Industrial Hygiene Practice for Respiratory Protection. This is the only type of respiratory protection recommended for hydrogen sulfide application. If airline units are used, and egress bottle with at least a 5-minute supply shall also be carried. Gas masks or other air-purifying respirators must never be used for hydrogen sulfide due to the poor warning properties of the gas.

SCBA's are located in the following areas in the Buckeye CO_2 Plant:

- South end of Compressor Building
- North end of Compressor Building
- Main Equipment Building (M.E.B)
- Main Control Center (MCC)

Airline 5-minute escapes packs:

- West side of Compressor Building by cascade system.
- Warehouse by NGL Export Pumps

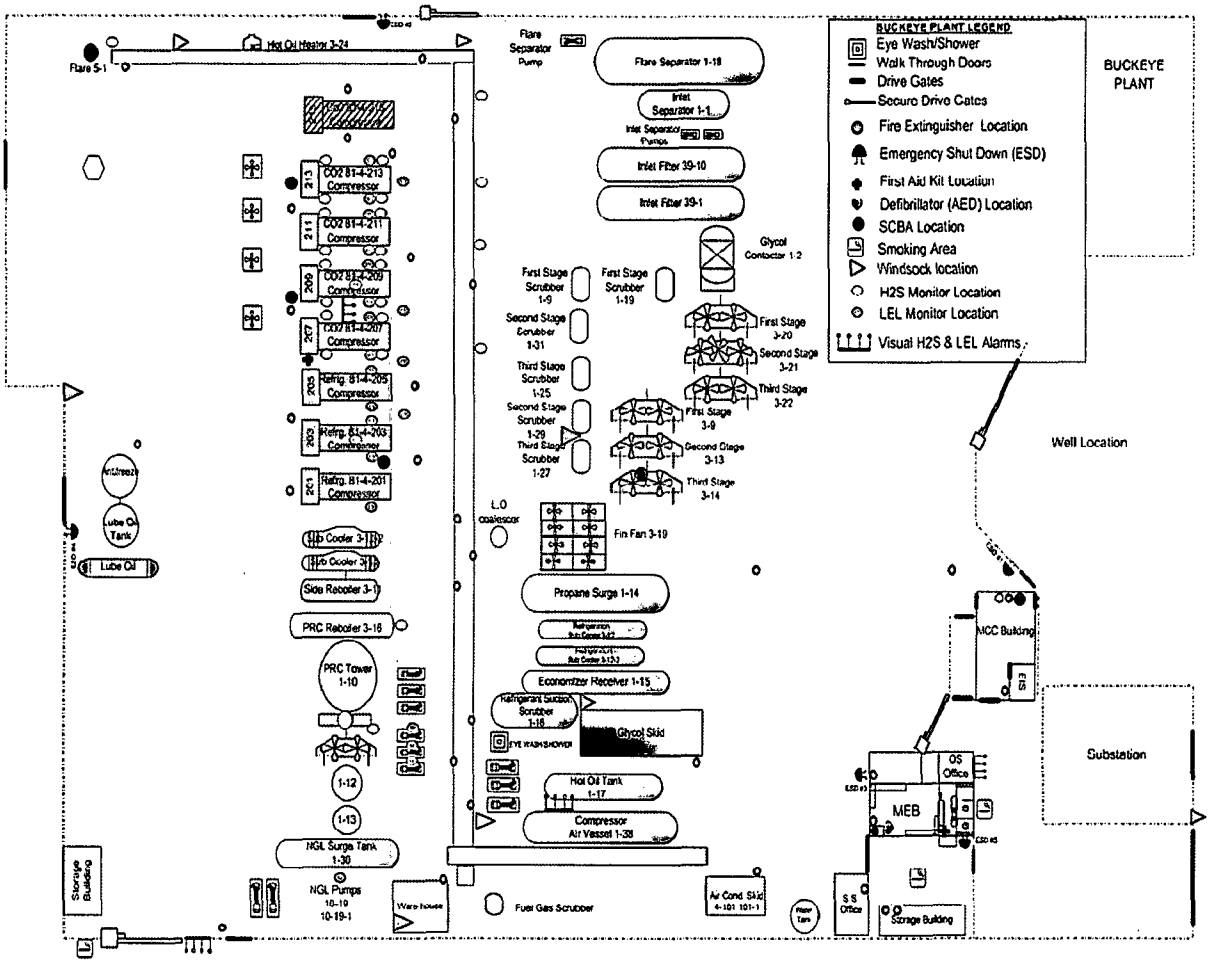
In addition, most of the Vacuum FMT field operators have their own personal SCBA

Wind Direction Indicators

Each Battery in the Vacuum FMT has at least one wind direction indicator "windsock" installed that is visible throughout the battery.

The Buckeye CO_2 Plant has wind direction indicators installed throughout the Plant and at least one wind direction indicator can be seen at any location within the Plant. There are 8 windsocks located in the Plant which are shown on the Plant Safety Equipment Diagram below.

Buckeye CO_2 Plant Safety Equipment Diagram



Appendix D – ACTIVATION LEVEL SCENARIOs

ACTIVATION LEVEL SCENARIO VACUUM FMT

The basis for activation level scenario calculations is as follows:

1. 3200 parts per million (ppm) or 0.3200 mole percent of hydrogen sulfide in the natural gas stream from the Central Vacuum Unit Satellite #4 into the Buckeye CO_2 Processing Facility; and
2. An expected maximum daily (24 hour) processing volume of 11,500 MMCF.
3. The activation level scenario radius of exposure (ROE) also assumes an uncontrolled instantaneous release from the Central Vacuum Satellite #4 10" Fiber Glass gathering line rupture next to HWY 238 that would cause the 500ppm ROE to cover the public road.

ACTIVATION LEVEL SCENARIO BUCKEYE CO_2 PLANT

The basis for activation level scenario calculations is as follows:

1. 3938 parts per million (ppm) or 0.3938 mole percent of hydrogen sulfide in the inlet natural gas stream into the Buckeye CO_2 Processing Facility; and
2. A maximum daily (24 hour) processing volume of 60,000 MCF.
3. The activation level scenario radius of exposure (ROE) also assumes an uncontrolled instantaneous release from the area around the inlet piping. Because the Plant is a throughput process plant there is no actual way that the entire throughput volume of the Plant could be released instantaneously as is assumed in the activation level scenario calculations of the ROE in Appendix D and shown in Appendix E; however, to comply with NMAC 19.15.11, we have used that assumption in our activation level scenario formulas/calculations provided in Appendix E.

It should further be noted that there are several reasons this rate, used in the activation level scenarios, could not be released over a 24 hour period.

1. The first is that the Plant's Emergency Shutdown (ESD) systems would be activated. The ESD would prevent the flow of gas into the Plant in the event of an emergency. The ESD system is discussed in greater detail in Appendix K.
2. The second reason it is extremely unlikely that the worst case scenario would ever be realized is the fact that in the case of a release, Chevron would divert the inlet gas from the field to the plant to be flared at the various satellite and batteries or shut in the producing wells that feed gas to the plant.

Appendix E – RADIUS OF EXPOSURE CALCULATIONS

VACUUM FMT RADIUS OF EXPOSURE CALCULATIONS

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

1. 500ppm Radius of Exposure Calculation: X = [(0.4546) (hydrogen sulfide concentration) (Q)] (0.6258)
2. 100ppm Radius of Exposure Calculation: X = [(1.589) (hydrogen sulfide concentration) (Q)] $^{(0.6258)}$

Where:

A. X = Radius of exposure in feet

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

*The source of the H_2S concentration is the based on the most recent gas analysis from gas purchaser at facility.

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

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 CVU Satellite 4 we are using for contingency planning purposes an "escape rate" equal to the highest daily volume in our system of record or 15,574 MCFD.

Using: Q = 15,574,000 & H_2S concentration = 5200pm or 0.5200 mole%

500ppm ROE Calculation = **500ppm ROE = 532 feet**

[(0.4546)*(H2S concentration)*(gas volume (Q))] $^{(0.6258)}$
[(0.4546)*(5200* .000001)*(15,574,000)] $^{(0.6258)}$ = 532

100ppm ROE Calculation = **100ppm ROE = 1,168 feet**

[(1.5 89)*(H_2S concentration)*(gas volume (Q))] $^{(0.6258)}$
[(1.589)*(5200* .000001)*(15,574,000)] $^{(0.6258)}$ = 1,168

BUCKEYE CO_2 PLANT RADIUS OF EXPOSURE CALCULATIONS

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

3. 500ppm Radius of Exposure Calculation: X = [(0.4546) (hydrogen sulfide concentration) (Q)] (0.6258)
4. 100ppm Radius of Exposure Calculation: X = [(1.589) (hydrogen sulfide concentration) (Q)] $^{(0.6258)}$

Where:

D. X = Radius of exposure in feet
E. Hydrogen Sulfide Concentration = Decimal equivalent of mole or volume fraction of hydrogen sulfide in the gaseous mixture

*The source of the H_2S concentration is the highest value for the co-mingled inlet gas quarterly analysis from the last 4 quarters.

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

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. The Buckeye CO_2 Plant is using for contingency planning purposes an "escape rate" equal to the anticipated (maximum) inlet gas volume of 60,000 MCFD. The (actual) inlet gas volume at the Plant will be somewhat variable and is continuously metered. The Plant records daily inlet gas volumes and prepares a daily volume report. The assumed 60,000 MCFD inlet gas volume has been selected as the "escape rate" because it is the highest anticipated inlet volume that the Plant would handle under its current operations and is considered a conservative interpretation of the volume of gas. It should be noted that the plan will remain effective as long as the processed volume and H2S content equate to the same ROE, as shown below. As to hydrogen sulfide concentration of the inlet gas, daily monitoring data of current operations indicates variable concentrations, but concentration will not exceed 3983ppm or 0.3983 mole percent. Therefore, 3938ppm or 0.3938 mole percent has been used in the activation level scenario for contingency planning purposes.

Using: Q = 60,000,000 & H_2S concentration = 3938ppm or 0.3938 mole%

500ppm ROE Calculation = **500-ppm ROE = 1,418 feet**

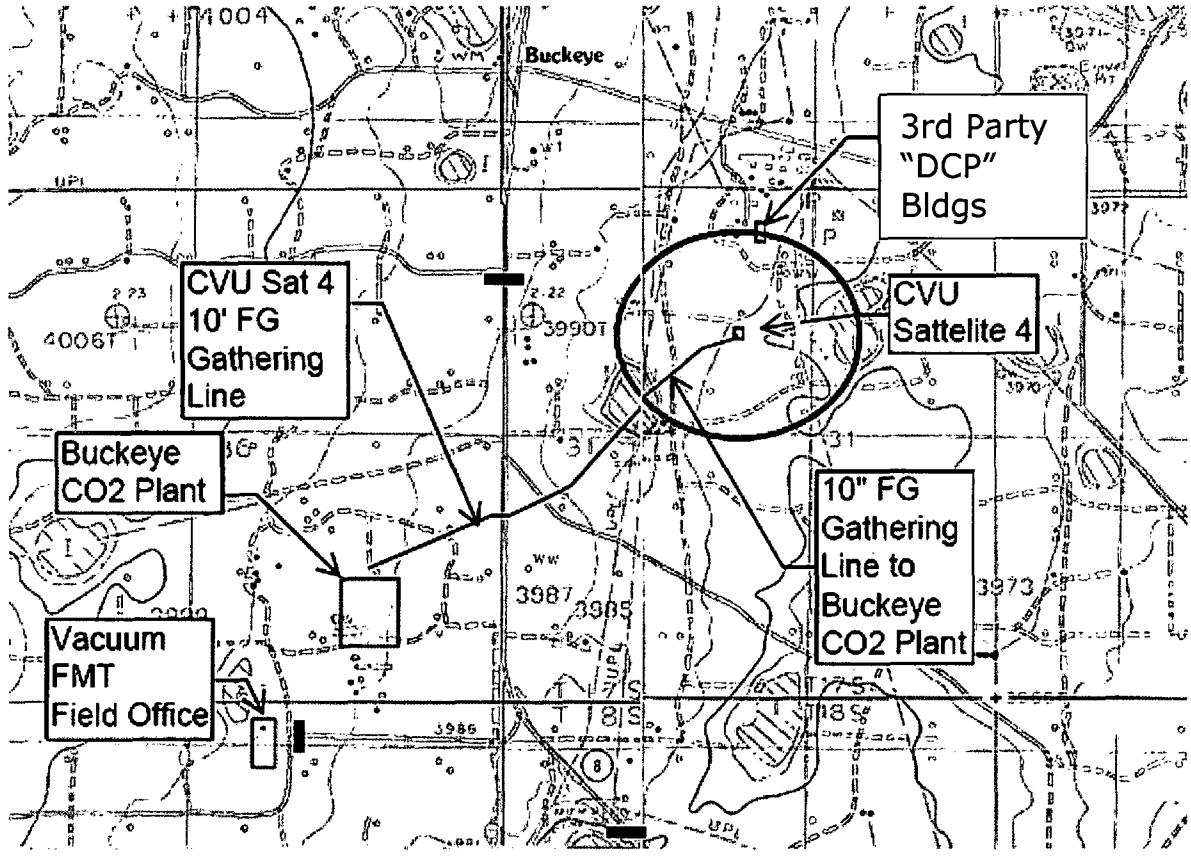
[(0.4546)*(H_2S concentration)*(gas volume (Q))] $^{(0.6258)}$
[(0.4546)*(3983* .000001)*(60,000,000)] $^{(0.6258)}$ = 1,418

100ppm ROE Calculation = **100-ppm ROE = 3,102 feet**

[(1.5 89)*(H2S concentration)*(gas volume (Q))] $^{(0.6258)}$
[(1.589)*(3983* .000001)*(60,000,000)] $^{(0.6258)}$ = 3,102

Appendix F – Activation Level H_2S Radius of Exposure Extent

Vacuum Field Satellite 4 10" Gathering Line Rupture
100ppm ROE = ▬▬▬
500ppm ROE =
10" Gathering Line to Plant = ▬▬▬▬
Proposed Level 3 Response Road Blocks = ▬



SCALE 1:24 000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

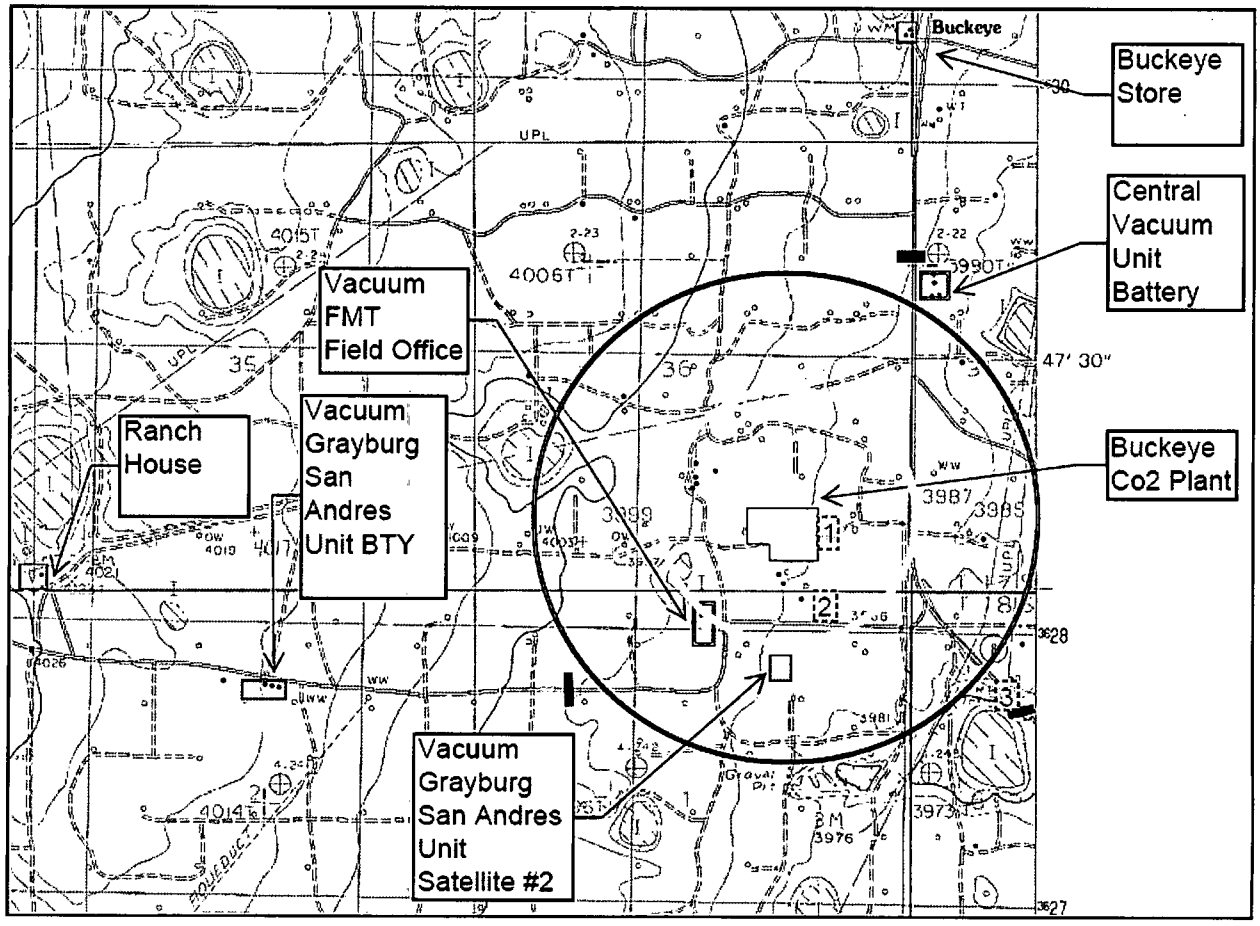
CONTOUR INTERVAL 5 FEET

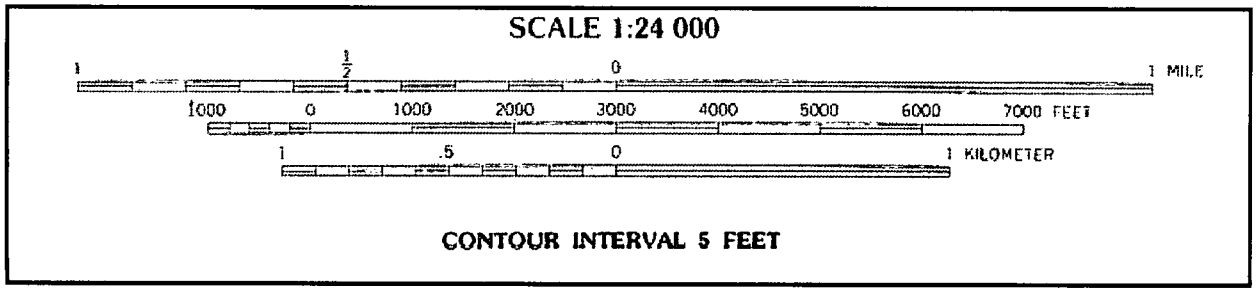
Buckeye CO_2 Plant
100ppm ROE = ▬▬▬
500ppm ROE =

Proposed Level 3 Response Road Blocks = ▬

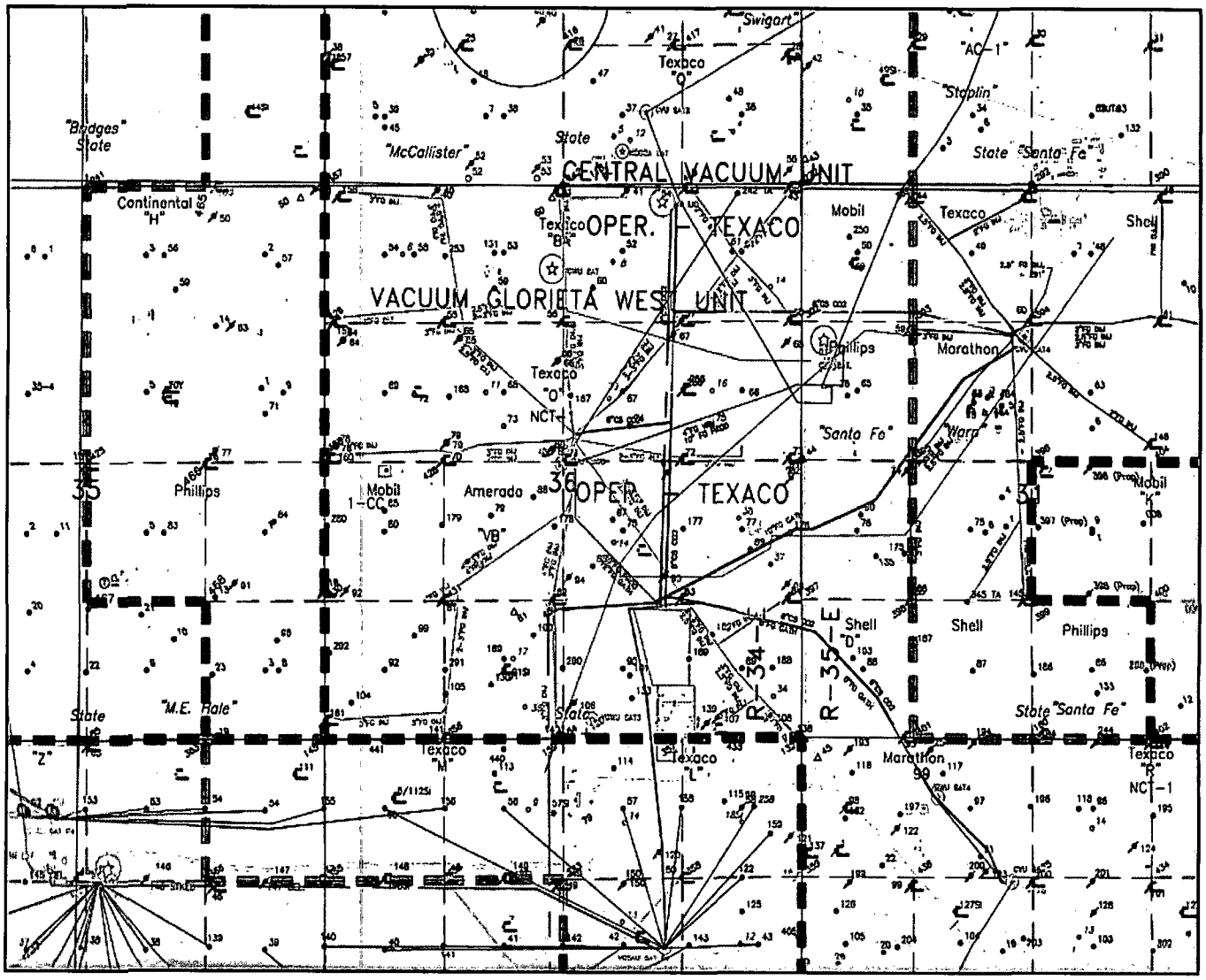
Evacuation Points: Primary/Level 1 [1] Secondary/Level 2 [2]

Catastrophic Level 3 [3]





Appendix G – Buckeye CO_2 Plant Gathering System



Appendix H - Prevailing Wind Directions

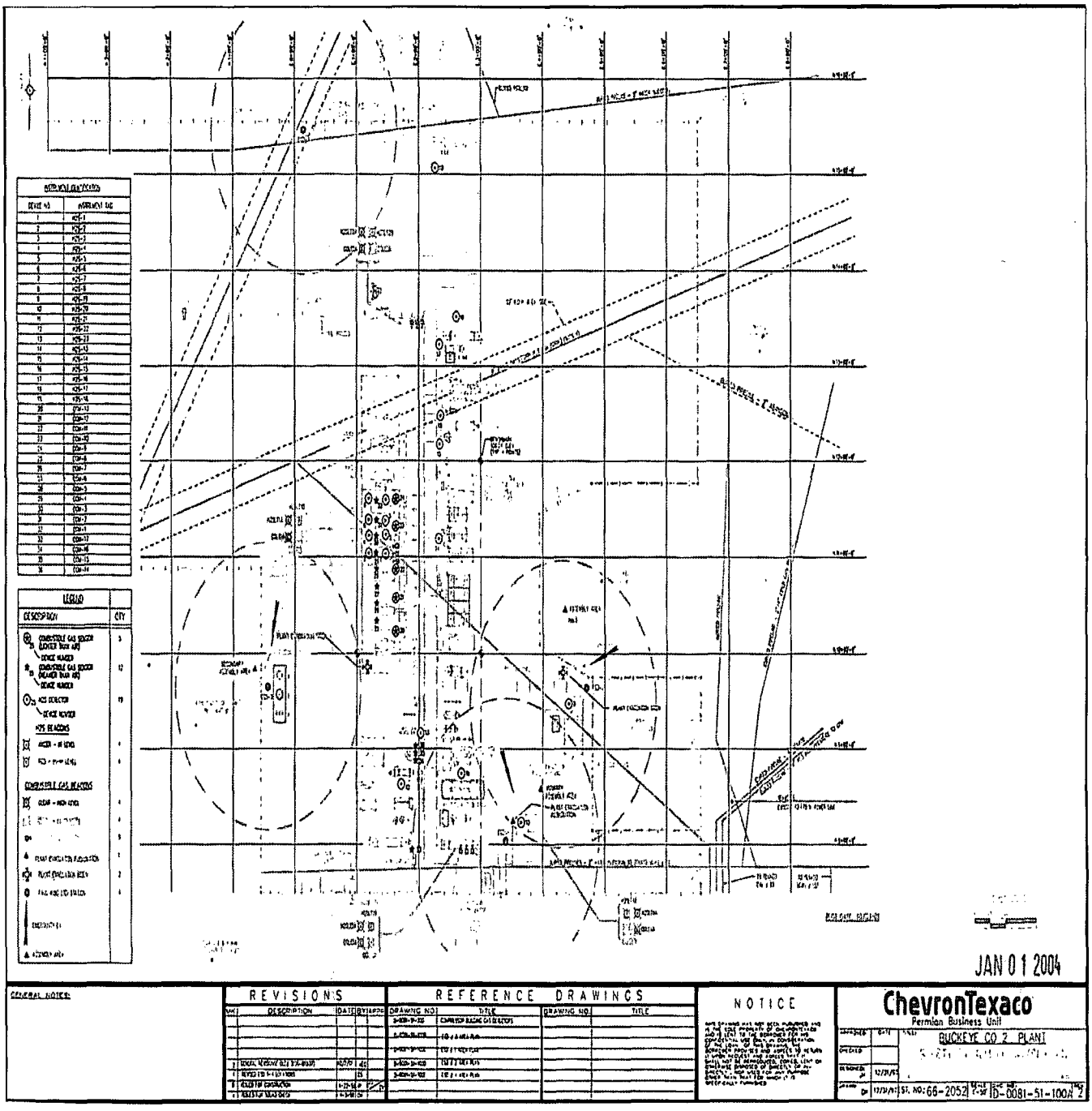
For a majority of the year, the prevailing wind direction for Hobbs, NM and the Buckeye CO_2 Plant is from the **SOUTH.**

NEW MEXICO

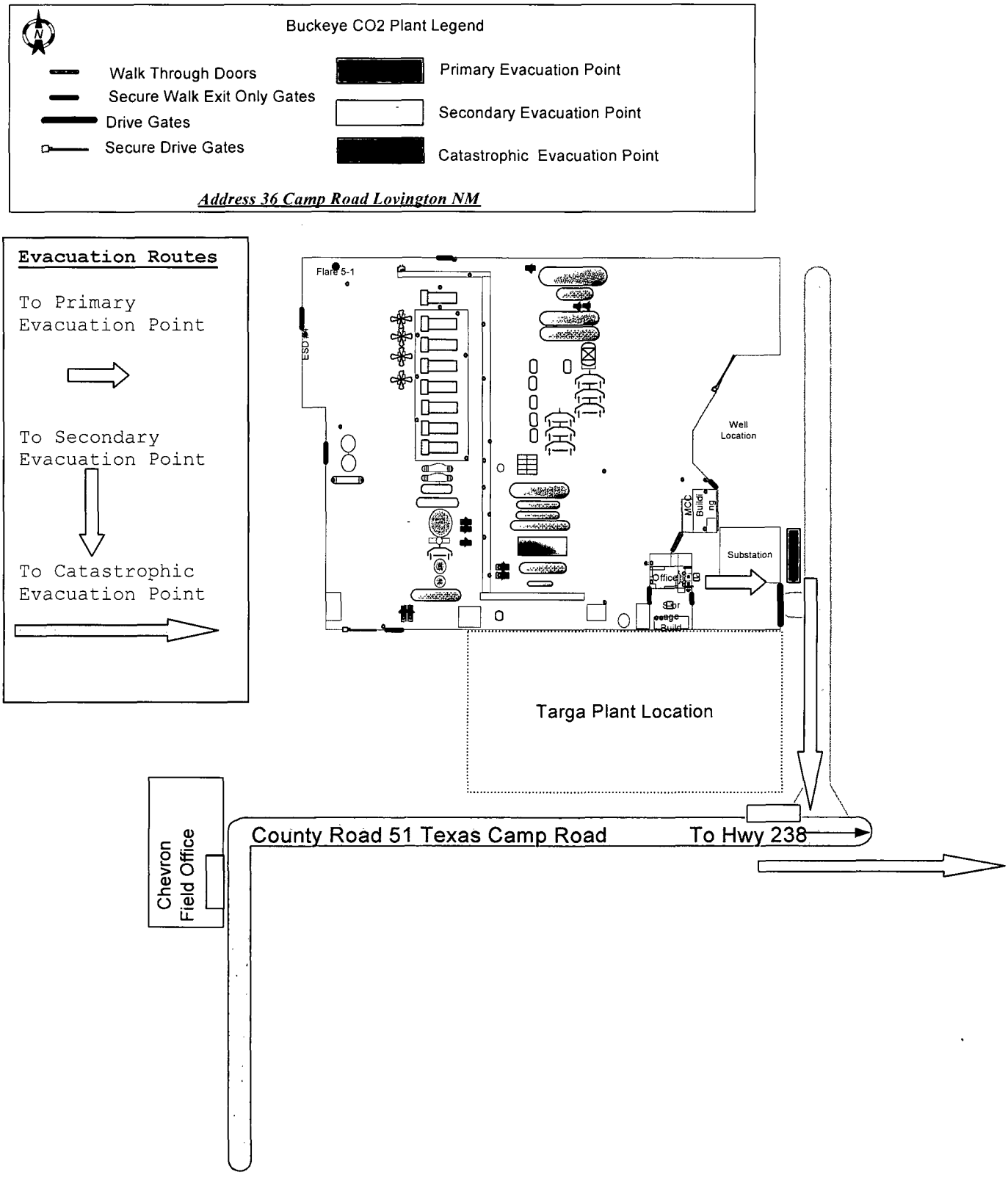
PREVAILING WIND DIRECTION

STATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
ALAMOGORDO-HOLLOMAN AFB, NM	S	S	S	S	S	S	S	S	S	S	SSE	N	S
ALBUQUERQUE-DOUBLE EAGLE II	NNW	NW	W	W	W	S	S	S	NNW	S	NNW	NNW	W
ALBUQUERQUE INT'L AP, NM (KA	N	N	N	W	W	E	E	E	E	N	N	N	N
ARTESIA AP, NM (KATS). WIND	WSW	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	N	SSE
CARLSBAD AP, NM (KCNM). WIN	W	W	W	W	W	SSE	S	SSE	S	S	W	W	S
CLAYTON MUNI AP, NM (KCAO).	W	N	N	N	S	S	S	S	S	S	W	WSW	S
CLINES CORNERS, NM (KCQC).	WNW	WNW	W	W	W	W	W	W	W	W	WNW	WNW	W
CLOVIS MUNI AP, NM (KCVN).	W	W	W	W	S	S	S	S	S	S	W	W	S
CLOVIS-CANNON AFB, NM (KCVS)	W	W	W	W	S	S	S	S	S	W	W	W	W
DEMING AP, NM (KDMN). WIND	W	W	W	W	W	W	E	E	E	W	W	W	W
FARMINGTON AP, NM (KFMN). W	E	E	W	W	W	E	E	E	E	E	E	E	E
GALLUP AIRPORT, NM (KGUP).	WSW	WSW	WSW	WSW	WSW	WSW	WSW	S	WSW	WSW	WSW	SW	WSW
GRANTS AIRPORT, NM (KGNT).	NW	NW	NW	W	W	W	SE	SE	NW	NW	NW	NW	NW
HOBBS AIRPORT, NM (KHOB). W	WSW	S	S	S	S	S	S	S	S	S	S	S	S
LAS CRUCES AP, NM (KLRU). W	W	W	W	W	W	W	SE	W	SE	W	W	W	W
LAS VEGAS AP, NM (KLVS). WI	S	S	S	S	S	S	S	SSW	S	S	S	S	S
LOS ALAMOS AP, NM (KLAM). W	S	S	S	S	S	S	S	S	S	S	S	S	S
RATON MUNI AP, NM (KRTN). W	ENE	NE	N	W	S	S	N	N	N	S	ENE	NE	N
ROSWELL AIRPORT, NM (KROW).	N	SSE	SSE	S	S	SSE	SSE	SSE	SSE	SSE	N	N	SSE
RUIDOSO AIRPORT, NM (KSRR).	W	W	W	SSW	SSW	SSW	ESE	ESE	ESE	W	W	W	W
SANTA FE AIRPORT, NM (KSAF).	N	N	N	N	WSW	N	N	N	N	N	N	N	N
SILVER CITY AP, NM (KSVC).	W	W	W	W	W	W	WNW	NNW	W	NNW	NNW	NNW	W
TAOS MUNI AIRPORT, NM (KSKX)	N	N	N	W	W	W	N	N	N	N	N	N	N
TRUTH OR CONSEQUENCES AP, NM	NW	S	S	S	S	S	S	WNW	S	S	NW	N	S

Appendix I - Buckeye CO_2 Plant Safety System Location Plan



Appendix J - Buckeye CO_2 Plant Emergency Egress and Muster Points



Appendix K – Plant Emergency Shutdown Procedures

The emergency plant shut down system can be activated using push buttons which are located at strategic locations throughout the plant. When activated, this system will shut all hydrocarbon bearing lines into and out of the Plant as well as shut down all process equipment.

Utilities Isolation / Shutdown Procedures:

The following are utilities and/or shutdown procedures for equipment and machinery at Buckeye CO_2 Plant.

A. Buckeye CO_2 Plant: There no critical operations at Buckeye CO_2 Plant that would require personnel to remain behind and operate; however, to minimize the dangers associated with an emergency, any trained employee may shut off the following energy sources after evacuating:

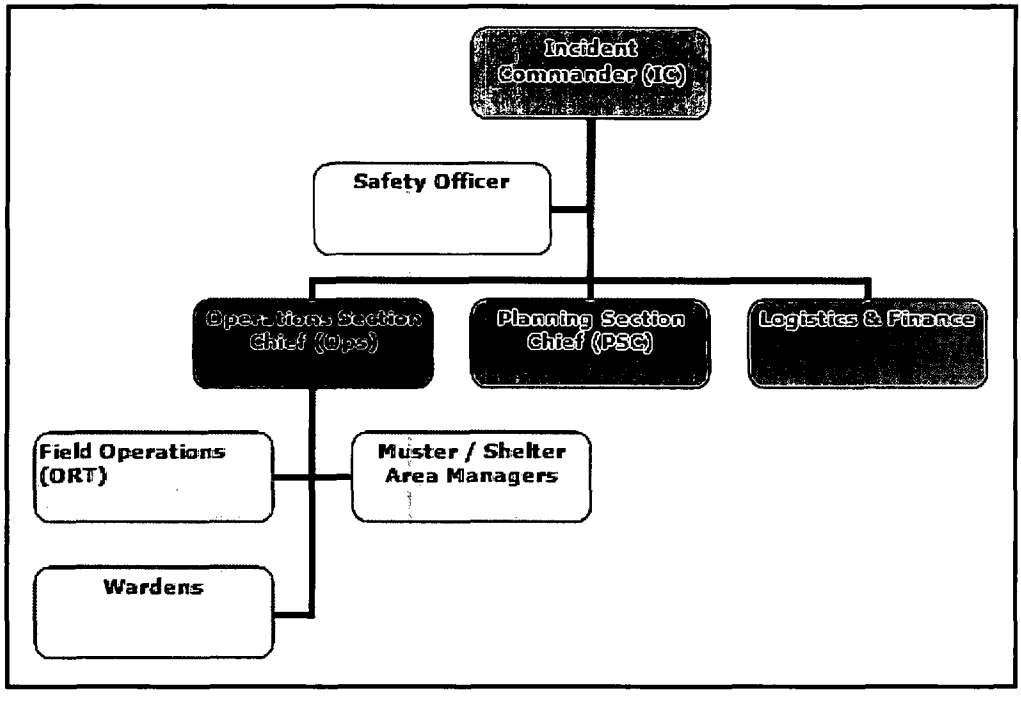
Building	Energy Type	Utility Shut-off Location
Main Equipment Building/Office	Electricity	Trip Main Breaker in the MCCB Breaker # LLC-102 and UPSLC-103
Mechanic Shop Building	Electricity	Main Breaker in the Shop Or 2 Main disconnects on power pole approximately 100 feet west of Building.
Plant Process area and compressors	Electricity	Activate Plant ESD and call Lea County Electric for main power shutdown
Motor Control Center Building	Electricity	Main Breaker on west wall (Gray Breaker Box) or Call Lea County Electric for Power shutdown

Appendix L - Chevron FMT & CO_2 Plant Emergency Response Team Responsibilities

Chevron utilizes a standard, National Incident Management System (NIMS) compliant, response team organization to respond to emergencies at their facilities and sites. This team is led by an Incident Commander, who is supported by a Safety Officer, Operations Section Chief, Planning Section Chief, and a Logistics and Finance Chief. This team is employed for significant emergency events or incidents to provide guidance and clear communication paths for all response team personnel involved. Refer to the Vacuum FMT Emergency Response Plan for further details on emergency response and Chevron interaction with local and state emergency responders during an incident. See Appendix A for the Emergency Response Team make up and contact information.

The Local Emergency Response Team will perform the following activities:

1. Where appropriate, 9-1-1 should be called to initiate public emergency response resources.
2. Follow internal incident reporting procedures to notify MCA Leadership and Emergency Management assistance, if necessary.
3. 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.



Buckeye CO_2 Plant Emergency Response Team Roles & Responsibilities:

Incident Commander – The Incident Commander's responsibility is the

overall management of the incident and the ensuring that operations are carried out safely, effectively, and efficiently.

Safety Officer – The Safety Officer's function is to develop and recommend measures for assuring personnel safety and to assess and/or anticipate hazardous and unsafe situations.

Operations Section Chief – The Operations Section Chief is responsible for the management of all operations directly applicable to the primary, response mission.

Planning Section Chief – The Planning Section Chief is responsible for the collection, evaluation, dissemination and use of incident information and maintaining status of assigned resources. Information is needed to: 1) understand the current situation; 2) predict the probable course of incident events; 3) prepare alternative strategies for the incident; and 4) submit required incident status reports.

Logistics and Finance Chief – The Logistics and Finance Section Chief is responsible for providing facilities, services, and material in support of the incident.

On-site Response Team (ORT) – The primary responsibilities of an ORT is to ensure at-the-scene tactical response operations are carried out in a safe, well-organized, effective fashion and identify, organize, and manage the work that must be done to address or mitigate incident-related problems.

Muster/Shelter Area Managers – Responsible for managing a Muster Area during mustering operations, including: taking a head-count, determining condition of mustered personnel, communicating with and receiving directions from the Operations Section Chief.

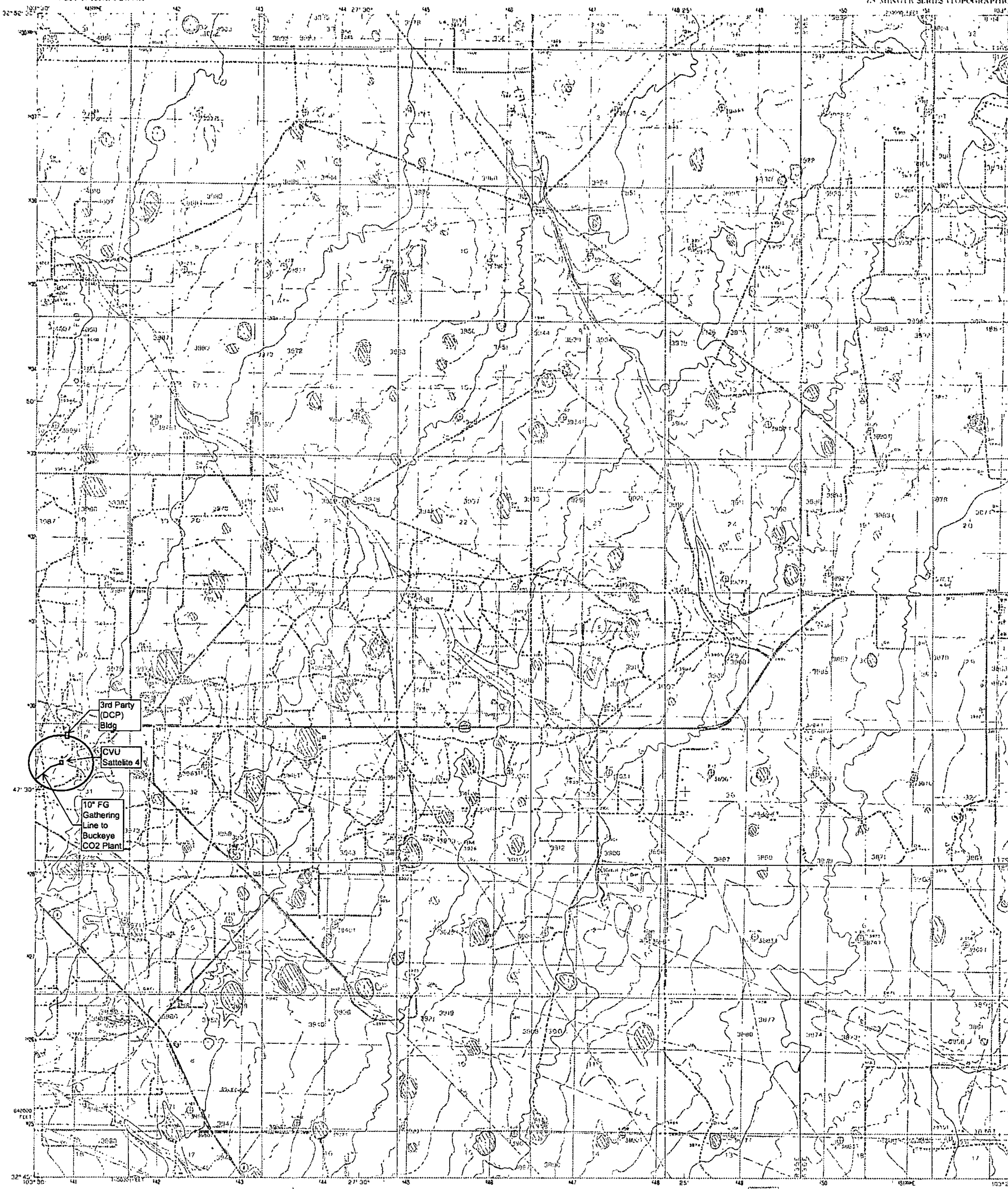
Wardens – Responsible for assisting in the movement of personnel to a Muster or Shelter Area.

Appendix M – Chevron Vacuum FMT & CO_2 Plant H_2S Contingency Plan Distribution List

New Mexico Oil & Gas Conservation Division
New Mexico Environment Department
New Mexico Department of Public Safety (Hobbs Office)
New Mexico Department of Public Safety (State Office)
Hobbs & Lovington Fire Departments
Hobbs & Lovington Police
Lea County Fire Department
Lea County Sheriff Department
Lea County Emergency Manager
Lea County LEPC
Lea County Regional Medical Center
Buckeye CO_2 Plant Office
Vacuum FMT Management Team Office
Vacuum FMT Engineer, Technology Team Lead, & Routine Well Work Lead
Chevron Mid-Continent Business Unit Office in Midland

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LOVINGTON SW QUADRANGLE
NEW MEXICO-LEA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



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CONTOUR INTERVAL 5 FEET

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OR RESTON, VIRGINIA 22092

QUADRANGLE LOCATION

ADJOINING 7.5' QUADRANGLE NAMES

ROAD LEGEND

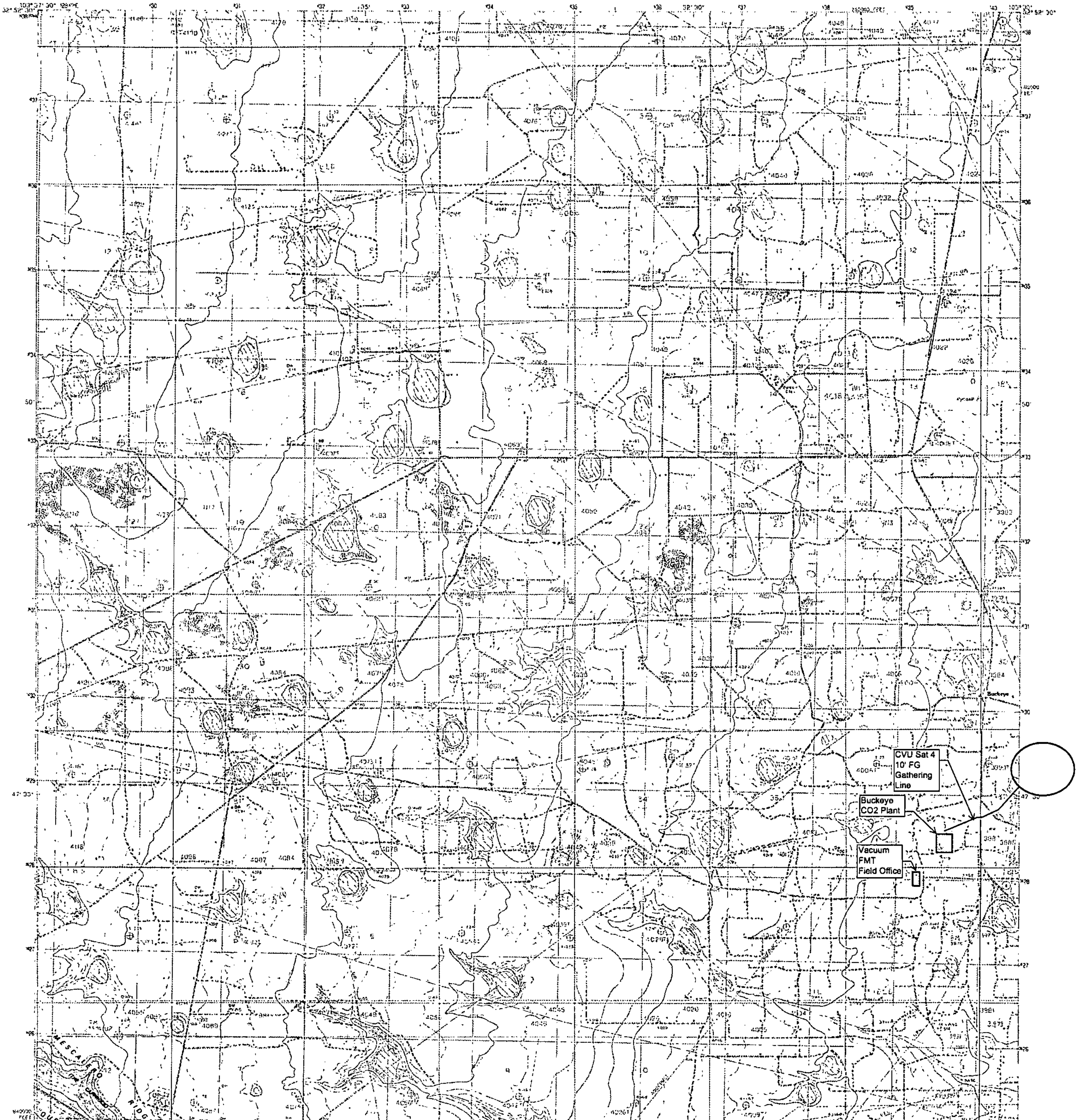
Improved Road
Unimproved Road
Trail

Interstate Route U.S. Route State Route

LOVINGTON SW, NEW MEXICO
PROVISIONAL EDITION 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BUCKEYE QUADRANGLE
NEW MEXICO–LEA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



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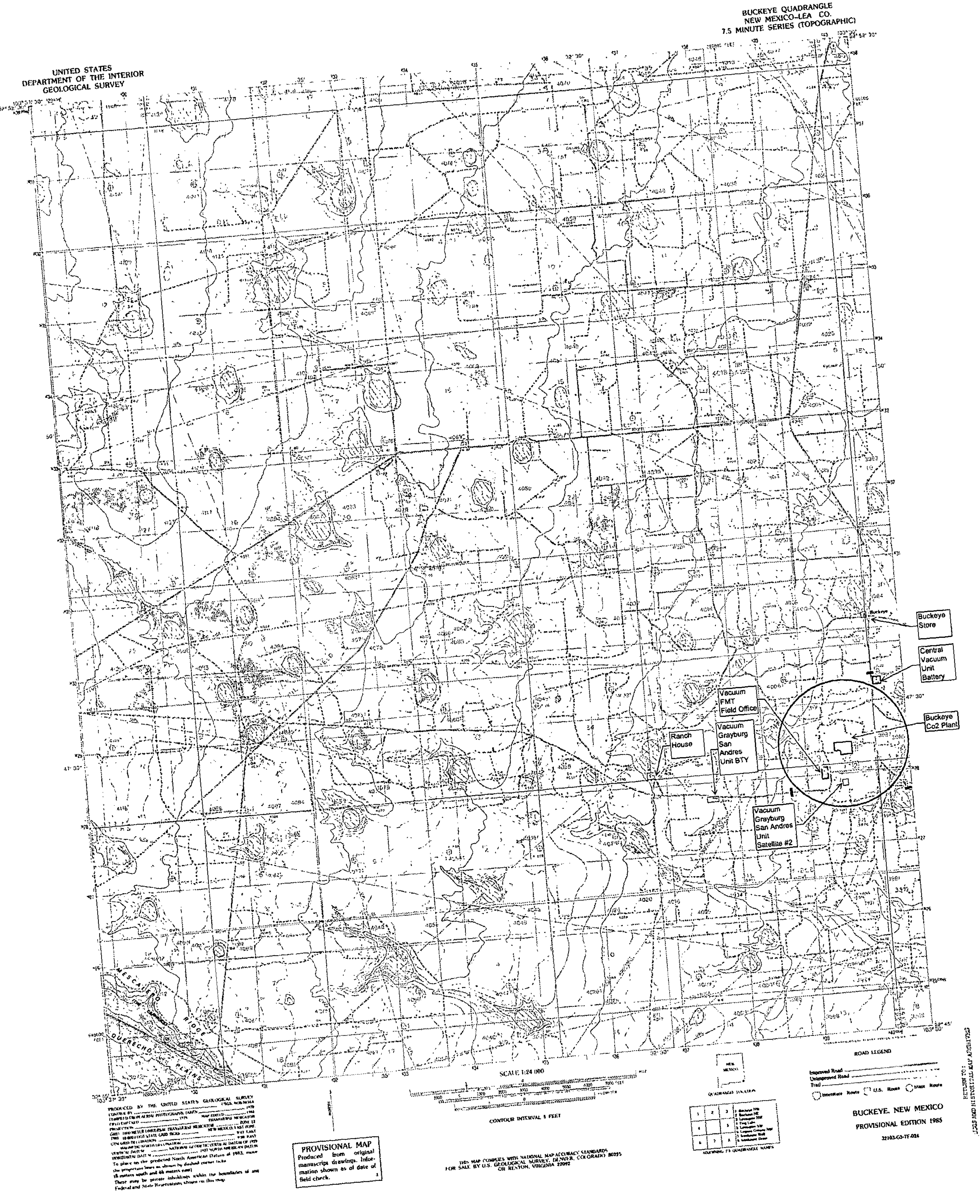
OR RESTON, VIRGINIA 22092

QUADRANGLE LOCATION

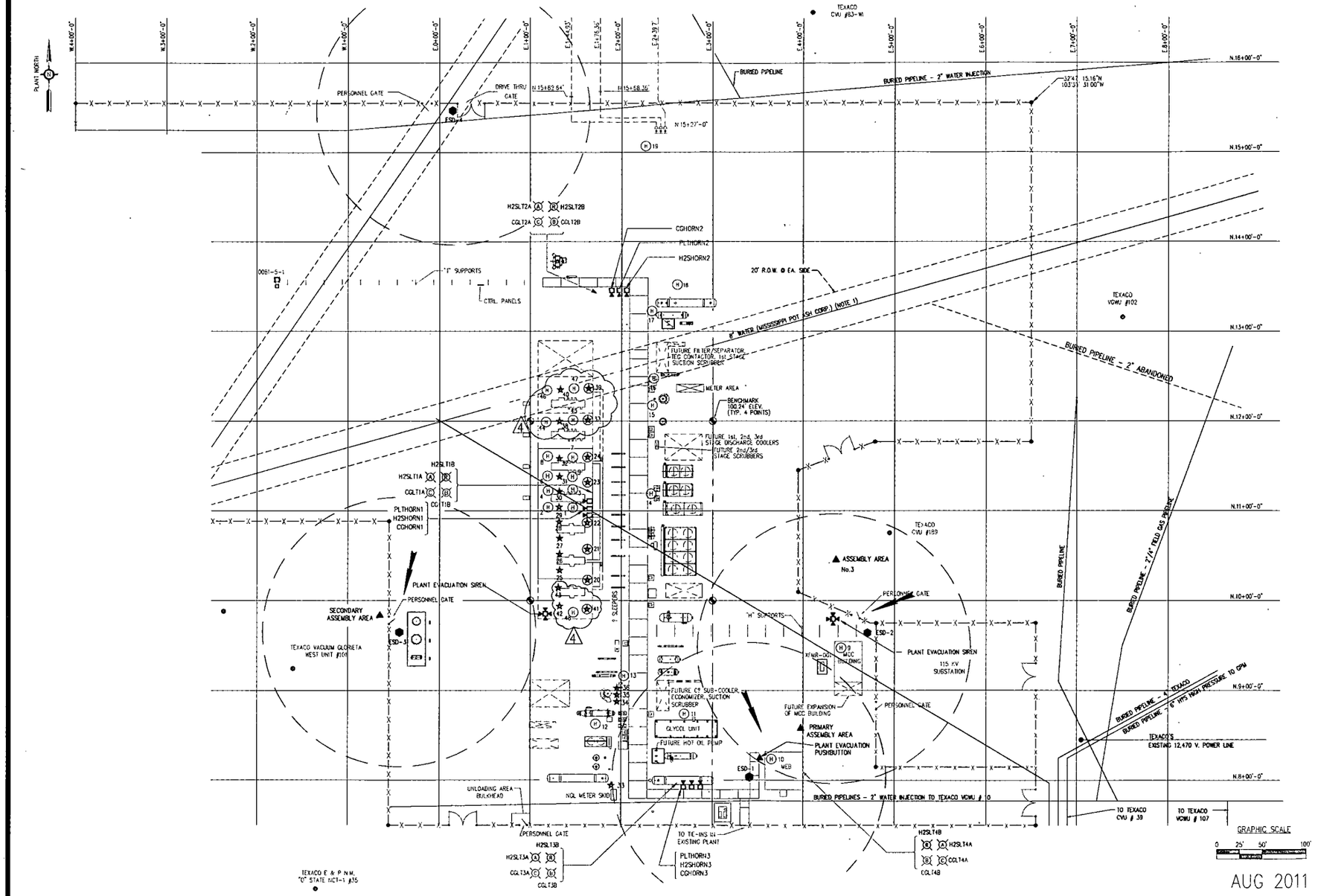
ADJOINING 7.5' QUADRANGLE NAMES

ROAD LEGEND
Improved Road
Unimproved Road
Trail
Interstate Route U.S. Route State Route

BUCKEYE, NEW MEXICO
PROVISIONAL EDITION 1985
32103-G5-TF-024



BUCKEYE QUADRANGLE
NEW MEXICO–LEA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
Buckeye Store
Central Vacuum Unit Battery
Vacuum FMT Field Office
Buckeye Co2 Plant
Ranch House
Vacuum Grayburg San Andres Unit BTY
Vacuum Grayburg San Andres Unit Satellite #2
MESCALERO RIDGE
QUERECHO PLAINS
SCALE 1:24 000
CONTOUR INTERVAL 5 FEET
PROVISIONAL MAP
Produced from original manuscript drawings. Information shown as of date of field check.
THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225
OR RESTON, VIRGINIA 22092
NEW MEXICO
QUADRANGLE LOCATION
ADJOINING 7.5' QUADRANGLE NAMES
ROAD LEGEND
Improved Road
Unimproved Road
Trail
Interstate Route
U.S. Route
State Route
BUCKEYE, NEW MEXICO
PROVISIONAL EDITION 1985
32103-G5-TF-024



INSTRUMENT IDENTIFICATION	
DEVICE NO.	INSTRUMENT TAG
1	H2S-1
2	H2S-2
3	H2S-3
4	H2S-4
5	H2S-5
6	H2S-6
7	H2S-7
8	H2S-8
9	H2S-19
10	H2S-20
11	H2S-21
12	H2S-22
13	H2S-23
14	H2S-13
15	H2S-14
16	H2S-15
17	H2S-16
18	H2S-17
19	H2S-18
20	CGM-13
21	CGM-12
22	CGM-11
23	CGM-10
24	CGM-9
25	CGM-8
26	CGM-7
27	CGM-6
28	CGM-5
29	CGM-4
30	CGM-3
31	CGM-2
32	CGM-1
33	CGM-17
34	CGM-16
35	CGM-15
36	CGM-14
37	CGM-18
38	CGM-19
39	CGM-20
40	CGM-21
41	CGM-22
42	CGM-23
43	CGM-24
44	H2S-24
45	H2S-25
46	H2S-26
47	H2S-27
48	H2S-28

LEGEND	
DESCRIPTION	QTY
25 COMBUSTIBLE GAS SENSOR (LIGHTER THAN AIR) — DEVICE NUMBER	8
25 COMBUSTIBLE GAS SENSOR (HEAVIER THAN AIR) — DEVICE NUMBER	16
25 H2S DETECTOR — DEVICE NUMBER	24
H2S BEACONS	
AMBER - HI LEVEL	4
RED - HI-HI LEVEL	4
COMBUSTIBLE GAS BEACONS	
CLEAR - HIGH LEVEL	4
BLUE - HI-HI LEVEL	4
PLANT ALARM HORN	9
PLANT EVACUATION PUSHBUTTON	1
PLANT EVACUATION HORN	2
PAUL KING ESD STATION	4
EMERGENCY EXIT	
ASSEMBLY AREA	

GENERAL NOTES:

REVISIONS

MK.	DESCRIPTION	DATE	BY	APPR
4	ADDED ASSENSOS & H2S DETECTORS	12/8/11	KEG	BS
3	CORRECTED LOCATION 0081-1-13	8/22/05	KEG	
2	GENERAL REVISIONS(OLD # 3106-01A07)	10/2/01	KEG	
1	REVISED ESD 1-4 LOCATIONS		DS	
0	ISSUED FOR CONSTRUCTION	4-22-98	JH	DS
A	ISSUED FOR SQUAD CHECK	4-3-98	DH	DM

REFERENCE DRAWINGS

DRAWING NO.	TITLE	DRAWING NO.	TITLE
D-0081-51-200	COMPRESSOR BUILDING GAS DETECTORS		
D-0081-51-100B	ESD # 3 AREA PLAN		
D-0081-51-100C	ESD # 1 AREA PLAN		
D-0081-51-100D	ESD # 2 AREA PLAN		
D-0081-51-100E	ESD # 4 AREA PLAN		

NOTICE

THIS DRAWING HAS NOT BEEN PUBLISHED AND IS THE SOLE PROPERTY OF CHEVRON AND IS LENT TO THE BORROWER FOR HIS CONFIDENTIAL USE ONLY, IN CONSIDERATION OF THE LOAN OF THIS DRAWING, THE BORROWER PROMISES AND AGREES TO RETURN IT UPON REQUEST AND AGREES THAT IT SHALL NOT BE REPRODUCED, COPIED, LENT OR OTHERWISE DISPOSED OF DIRECTLY OR IN-DIRECTLY, NOR USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS SPECIFICALLY FURNISHED.

Chevron
MidContinent Alaska Business Unit

APPROVED:	DATE	TITLE: BUCKEYE CO2 PLANT ESD # 4 AREA
CHECKED:		
DESIGNED:		
DRAWN: KEG	2/6/01	LEA COUNTY, NEW MEXICO
EST. NO: 65-2052	SCALE: NONE	DWG. NO. D-0081-51-100A REV. 4

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Wednesday, December 14, 2011 6:59 AM
To: 'Pagano, David (David.Pagano)'
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

David:

Good morning. Approved. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
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http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

From: Pagano, David (David.Pagano) [mailto:David.Pagano@chevron.com]
Sent: Tuesday, December 13, 2011 4:36 PM
To: Chavez, Carl J, EMNRD
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD; Gregory, Eddy E.; Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Carl,

As we discussed on the phone this morning, I am the Health & Environmental Specialist for the Buckeye CO2 Plant and Field Management Team (FMT). I have been working on updating the plant and field H2S Contingency Plans per your guidance and instructions provided following our meeting in October and based on our current status and reasons provided below I would like to formally request a 32 day extension to the original deadline of COB 12/30/11 with a new due date of COB 1/31/12.

Buckeye Plant H2S Plan

As it stands to-date, the plant draft plan will be complete this week; however, only local management has had a chance to vet the plan and due to the holidays it will be difficult to schedule the additional internal reviews we desire prior to submission to the OCD; therefore, we would like to request a 32 day extension to the original December 31st deadline for the Buckeye Plant H2S Plan.

FMT H2S Plan (Field / Gathering System)

At the beginning of the month, I started updating the field plan and after reviewing the regulations for non-fixed facilities, I have come to the conclusion that the end of the month deadline provided by the OCD will not give us enough time to complete a thorough analysis on all of our wells, batteries and gathering lines as they relate to potentially hazardous volumes of H2S so that they are adequately addressed in our contingency plan. I am in the process of reviewing each producing well and battery to determine ROI and distances from public road/areas and with well over 400 producing wells this will take some time. This along with the difficulty of scheduling reviews during the holidays I

would like to therefore also request an 32 day extension to the original December 31st deadline for the Field H2S Plan. Also please note that we have Indian Fire & Safety scheduled to come out tomorrow to conduct H2S tests at our batteries and the extension would allow us to incorporate their results into our plan.

Please let me know if have any question or concerns regarding this request.

Regards,

David A. Pagano
MCA Health & Environmental Specialist (Oil Area – Vacuum/Buckeye, Dollarhide & Sundown)
56 Texas Camp. Rd., Lovington, NM 88260
Phone: 575-396-4414 x275
Cell: 505-787-9816
Fax: 575-396-6913
dpgn@chevron.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, October 26, 2011 11:48 AM
To: Svendsen, Kristian; Wallis, Steven O. (Steven.Wallis); Pagano, David (David.Pagano); DeLeon, Josepha; Burt, Donna T (DonnaBurt)
Cc: VonGonten, Glenn, EMNRD; Gonzales, Elidio L, EMNRD
Subject: FW: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Kristian:

Re: Two issues pursuant to telephone conference call on 10/13/2011 related to the above subject

Good morning.

Please find below the two issues that we fleshed out during the recent telephone conference call.

Issue No. 1: The issue of different company personnel being responsible for the gas gathering lines feeding into the CO2 Plant (Plant) and a separate H2S Contingency Plan (CP) submittal separate from the Plant H2S CP. The H2S CPs can be submitted separately to the OCD, but OCD will file them both under the OCD Online "GW-312" thumbnail under "H2S Contingency Plans".

Issue No. 2: The issue of allowed period for revisions and resubmittal date of the CO2 Plant H2S CP to the OCD. The OCD requests that both H2S CPs (see No.1 above) be submitted by COB December 30, 2011. The H2S CP review "Checklist" is attached for you to pass along to your gas gathering line (GGL) personnel. The OCD requests that the Plant personnel working on the Plant H2S CP meet to debrief the GGL personnel on their H2S CP and OCD H2S Regulations.

I have attached the OCD H2S Contingency Plan "Checklist" for you to pass along to the GGL personnel. The GGL H2S CP contact may send me an existing H2S CP if they have one for our file, and should contact me to discuss their H2S CP after he/she has reviewed the H2S Regulations, which are applicable to a non-fixed facility (see "Regulations" link above).

Please contact me if you have questions. Thank you.

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From: Chavez, Carl J, EMNRD
Sent: Friday, October 14, 2011 2:44 PM
To: 'Svendsen, Kristian'
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Kristian:

Good afternoon. Please find attached below the Oil Conservation Division H2S Contingency Plan (CP) checklist.

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During our conference call we looked over the submitted CP and focussd on the appendices, maps, etc. I think you understand what OCD is looking to receive for exhibits. We understand that we're working to protect public health and safety with Rule 11 (OCD Hydrogen Sulfide Gas) and I encourage you to read through the relatively short regulations to get a better feel for where OCD is coming from based on the conference call.

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From: Svendsen, Kristian [mailto:Kristian.Svendsen@chevron.com]
Sent: Wednesday, October 05, 2011 7:14 AM
To: Chavez, Carl J, EMNRD
Subject: Accepted: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting
When: Thursday, October 13, 2011 3:30 PM-4:30 PM (GMT-07:00) Mountain Time (US & Canada).
Where: Telephone Conference Call

Chavez, Carl J, EMNRD

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H2S Contingency Plan checklist...

Please contact me if you have questions. Thank you.

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Chevron GW-312
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From: Svendsen, Kristian [mailto:Kristian.Svendsen@chevron.com]
Sent: Wednesday, October 05, 2011 7:14 AM
To: Chavez, Carl J, EMNRD
Subject: Accepted: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting
When: Thursday, October 13, 2011 3:30 PM-4:30 PM (GMT-07:00) Mountain Time (US & Canada).
Where: Telephone Conference Call

OIL CONSERVATION DIVISION

H2S CONTINGENCY PLAN REQUIRED BY OCD RULE 19.15.11 NMAC

<Company Name>
FACILITY NAME
<Date>

Contingency Plan Requirements Checklist				
19.15.11.9.B NMAC Requirement	**Included?**	**Page in Document?**		**Notes**
Emergency Procedures				
Responsibilities & duties of personnel during emergency				
Immediate action plan				
Evacuation and shelter in place plans				
Telephone numbers of emergency responders				
Telephone numbers of public agencies				
Telephone numbers of local government				
Telephone numbers of appropriate public authorities				
Location of potentially affected public areas Also see 19.15.11.12.B & D				
Location of potentially affected public roads				
Proposed evacuation routes, with locations of road blocks				
Procedures for notifying the public				
Availability and location of safety equipment and supplies Also see 19.15.11.12.C				
Characteristics of hydrogen sulfide and sulfur dioxide				
Discussion of characteristics				
Maps and Drawings				
Area of exposure				
Public areas within area of exposure				
Public roads within area of exposure				
Training and Drills				
Training of personnel to include responsibilities, duties, hazards, detection, personal protection and contingency procedure				
Periodic drills or exercises that simulate a release				
Documentation of training, drills, & attendance				
Training of residents on protective measures				
Briefing of public officials on evacuation or shelter-in-place plans				
Coordination with state emergency plans				
How emergency response actions will coordinate with OCD and the state police response plans				
Activation Levels				
Activation Levels and description of events which may lead to a release in excess of activation level				
Plan Activation				
Commitment to activate contingency plan whenever H2S concentration of more that 100 ppm in a public area or 500 ppm at a public road				
Commitment to activate contingency plAn whenever H2S concentration of more that 100 ppm 3000 feet from the site of release				

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Friday, October 14, 2011 2:44 PM
To: 'Svendsen, Kristian'
Subject: RE: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting

Kristian:

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Chevron GW-312
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Please contact me if you have questions or can't read parts of OCD H2S CP Checklist and we can communicate to make sure we understand each other.

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Where: Telephone Conference Call

GW-26 Sanbey
H2S CP
MJ? 4/1/06

OIL CONSERVATION DIVISION

H2S CONTINGENCY PLAN REQUIRED BY OCD RULE 19.15.11 NMAC

<Company Name>
FACILITY NAME
<Date>

Acronyms a problem...
Need map w/ all gathering lines & ROEs displayed
all gathering system w/ ...

Contingency Plan Requirements Checklist				
19.15.11.9.B NMAC Requirement	**Included?**	**Page in Document?**		**Notes**
Emergency Procedures				
Responsibilities & duties of personnel during emergency	N	2		Reference FMT ... ICS.
Immediate action plan	N	2		Need details
Evacuation and shelter in place plans	Y	2		No shelter in place discussion ...
Telephone numbers of emergency responders	Y*	Appx A		* but no responders from ...? Consulted ... H2S ...?
Telephone numbers of public agencies	Y	"		
Telephone numbers of local government	Y	"		
Telephone numbers of appropriate public authorities	Y	"		
Location of potentially affected public areas Also see 19.15.11.12.B & D	N	Appx C		Need map w/ USGS & all gathering line system for 100 ppm & residences?
Location of potentially affected public roads	Y	"		
Proposed evacuation routes, with locations of road blocks	N	Appx B		No road blocks - not clear who will do this in emergency? Refer to?
Procedures for notifying the public		2		N/A - Confirm w/ updated USGS map & map of ... gathering system
Availability and location of safety equipment and supplies Also see 19.15.11.12.C	Y	3-4		Acronyms? ... Equip. inventory list?
Characteristics of hydrogen sulfide and sulfur dioxide				
Discussion of characteristics	N	4		Didn't include SO_2 - ...
Maps and Drawings				
Area of exposure	N	1 & Appx C		No calc, ... flow rate vs. [H2S]? ... calc.
Public areas within area of exposure	N	"		~~...~~ Need updated USGS map
Public roads within area of exposure	Y	"		"
Training and Drills				
Training of personnel to include responsibilities, duties, hazards, detection, personal protection and contingency procedure	N	6		Not adequately addressed.
Periodic drills or exercises that simulate a release	N	6		Reference to ... FMT Emergency Response plan - not in CP.
Documentation of training, drills, & attendance ← not included	Y	6		Exact training period(s) not stipulated.
Training of residents on protective measures				N/A is ... 7.5' & 15' (QUAD) USGS ...
Briefing of public officials on evacuation or shelter-in-place plans				N/A
Coordination with state emergency plans				
How emergency response actions will coordinate with OCD and the state police response plans	N	2		References NIMS & FMT Emergency Response plans - both not included as appendices in CP.
Activation Levels				
Activation Levels and description of events which may lead to a release in excess of activation level	N	1 & 3		1) Not adequate. 2) should include under "activation level" section ... what triggers CP implementation?
Plan Activation				
Commitment to activate contingency plan whenever H2S concentration of more that 100 ppm in a public area or 500 ppm at a public road	N	1 & 2		100 ppm calc. ... SCF flow rate & [H2S]
Commitment to activate contingency plAn whenever H2S concentration of more that 100 ppm 3000 feet from the site of release	N	1 & 2		500 ppm calc.

Action steps appear to be incomplete -

Anywhere [H2S] ≥ 100 ppm in Pub Area

Chavez, Carl J, EMNRD

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Regarding the 60-day request for the re-submittal of your CP, I will have to get back with you next Wednesday afternoon after the Environmental Bureau Meeting with the OCD Director. Similarly, the separate CP question for plant versus field will also be addressed.

During our conference call we looked over the submitted CP and focussd on the appendices, maps, etc. I think you understand what OCD is looking to receive for exhibits. We understand that we're working to protect public health and safety with Rule 11 (OCD Hydrogen Sulfide Gas) and I encourage you to read through the relatively short regulations to get a better feel for where OCD is coming from based on the conference call.

While the plant or facility (manned 24/7) can shut-down quickly in the event of any emergency, the field gathering lines handled under a separate contingency plan may take more time with gas flaring in the interim. Chevron will also look into Sulfur Dioxide in the plant CP due to the emergency flaring of H2S and SO2 emissions. Chevron understands the issue with activation level and implementation of the CP for the field gathering lines when there are no detectors and it may be relying on pressure differentials monitored by personnel on a SCADA System and shut-down at the plant would be performed manually.. Also, details of what exactly happens when the CP is implemented (the details of who does what, when, where and how). The public, if present within the ROEs, will need to know the critical elements of this so they will know what to expect in the event a any of Chevron's CPs are implemented. The references to ICS, NIMS and Vacuum FMT should be placed in appendices and personalized to Chevron responders, etc. Appendix A should include Chevron emergency responders trained to take corrective actions to prevent a catastrophe and/or make repairs that are possible within trained safety limits. The training section needs to include the LEPC and possibly the State Police so you can work out who does what and to familiarize the Fire Marshal with your operations to protect public safety.

Please contact me if you have questions or can't read parts of OCD H2S CP Checklist and we can communicate to make sure we understand each other.

I'll get back with you next Wednesday afternoon. Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

-----Original Appointment-----
From: Svendsen, Kristian [mailto:Kristian.Svendsen@chevron.com]
Sent: Wednesday, October 05, 2011 7:14 AM

To: Chavez, Carl J, EMNRD
Subject: Accepted: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting
When: Thursday, October 13, 2011 3:30 PM-4:30 PM (GMT-07:00) Mountain Time (US & Canada).
Where: Telephone Conference Call

GW-26 Sanley
H2S CP
MJP 4/1/06

OIL CONSERVATION DIVISION

H2S CONTINGENCY PLAN REQUIRED BY OCD RULE 19.15.11 NMAC

<Company Name>
FACILITY NAME
<Date>

Acronyms a problem...
Need map of all gathering lines & ROEs displayed
All gathering system [illegible]

Contingency Plan Requirements Checklist				
19.15.11.9.B NMAC Requirement	**Included?**	**Page in Document?**		**Notes**
Emergency Procedures				
Responsibilities & duties of personnel during emergency	N	2		References FMT version & ICS.
Immediate action plan	N	2		Need details
Evacuation and shelter in place plans	Y	2		No shelter in place discussion [illegible]
Telephone numbers of emergency responders	Y*	Appx A		* but no responders from Co.? Contact w/ H2S [illegible]?
Telephone numbers of public agencies	Y	"		
Telephone numbers of local government	Y	"		
Telephone numbers of appropriate public authorities	Y	"		
Location of potentially affected public areas Also see 19.15.11.12.B & D	N	Appx C		Need map w/ USGS & all gathering line system for ROE circle & residences?
Location of potentially affected public roads	Y	"		
Proposed evacuation routes, with locations of road blocks	N	Appx B		No road blocks — who will do this in emergency? Defer to?
Procedures for notifying the public		2		N/A - Confirm w/ updated USGS map & map of [illegible] gathering system
Availability and location of safety equipment and supplies Also see 19.15.11.12.C	Y	3-4		Acronyms? where is they? Equip inventory list?
Characteristics of hydrogen sulfide and sulfur dioxide				
Discussion of characteristics	N	4		Didn't include SO_2 — [illegible]
Maps and Drawings				
Area of exposure	N	1 & Appx C		No calc, [illegible] flow vs. [H2S] for calc.
Public areas within area of exposure	N	"		~~[illegible]~~ Need updated USGS map
Public roads within area of exposure	Y	"		"
Training and Drills				
Training of personnel to include responsibilities, duties, hazards, detection, personal protection and contingency procedure	N	6		Not adequately addressed.
Periodic drills or exercises that simulate a release	N	6		Reference to [illegible] FMT Emergency Response plan — not in CP.
Documentation of training, drills, & attendance ← not included	Y	6		Exact training period(s) not stipulated.
Training of residents on protective measures				N/A [illegible] 7.5' & 15' QUAD / USGS [illegible]
Briefing of public officials on evacuation or shelter-in-place plans				N/A
Coordination with state emergency plans				
How emergency response actions will coordinate with OCD and the state police response plans	N	2		References NIMS & FMT Emergency Response plans — both not included as appendices in CP.
Activation Levels				
Activation Levels and description of events which may lead to a release in excess of activation level	N	1 & 3		1) Not adequate. 2) Should include under "Activation Levels" section [illegible] what triggers CP implementation?
Plan Activation				
Commitment to activate contingency plan whenever H2S concentration of more that 100 ppm in a public area or 500 ppm at a public road	N	1 & 2		180 ft calc [illegible] SCF flow rate & [H2S]
Commitment to activate contingency plAn whenever H2S concentration of more that 100 ppm 3000 feet from the site of release	N	1 & 2		110 ft calc

Action steps appear to be incomplete.

Anywhere [H2S] ≥ 100 ppm in Pub Area

Chevron

MIDCONTINENT/ALASKA BUSINESS UNIT

Buckeye CO_2 Plant – Vacuum FMT

H_2S Contingency Plan

PROGRAM CONTENTS

STATEMENT OF POLICY

Facility and personnel safety will always take precedence over maintaining operation. Personnel will not attempt to continue working on or remain at a location if the facility is in an unsafe condition. All personnel are authorized to stop work if an unsafe condition posing an immediate hazard occurs. All emergency response actions, processes, and procedures will follow and be conducted in accordance with the Chevron Way and Chevron Tenets of Operation. No reprimands will be given if the situation later proves less serious than thought. Hazards of a less serious nature should be brought to the attention of the supervisor who will assess the situation and initiate appropriate action.

Under emergency response conditions or drills, employees are expected to act only in accordance with their training, the Chevron Way, and the Chevron Tenets of Operation. At no time will any employee place themselves, or allow themselves to be placed, into a life-threatening situation.

The following priorities will govern our response to any emergency situation:

1. The safety of employees takes precedence over all other considerations.
2. We will minimize impact on the environment once the safety of all personnel has been secured.
3. We will endeavor to minimize damage to or loss of property and equipment, keeping safety and environmental concerns at the top of our priority list.

H_2S Contingency Plan

Purpose

To provide an organized plan of action for alerting and protecting the public following the accidental release of a potentially hazardous volume of hydrogen sulfide.

Activation of Plan

This plan shall be activated immediately by plant personnel on duty upon the detection of a potentially hazardous volume of hydrogen sulfide released to the atmosphere.

Area of Exposure

A major failure of any gas pipeline or process equipment containing Hydrogen Sulfide (H_2S) in the Buckeye CO_2 Plant will create a hazardous area of exposure in the vicinity of the failure. Pipeline ruptures within the plant area will require immediate action to protect the lives of persons that may be in or may enter into these areas.

The indicated areas of exposure in Appendix C include public roads only. They do not involve residences, schools, churches, etc. The main courses of action required in these areas will be: direct vehicular traffic out of the area and to block or detour other traffic that may attempt to enter these areas while gas is being emitted in the area.

All H_2S bearing gas entering or leaving the Buckeye CO_2 Plant is heavier than air and will tend to settle in the lower areas at the point it is released to the atmosphere. At the point the gas is released to the atmosphere it will begin a dispersion process within the atmosphere, thereby becoming less and less concentrated both vertically and horizontally away from the point of release.

The rate of dispersion of the gas into the atmosphere varies with the temperature difference between the gas and atmosphere, the volume of gas, and the wind speed. The table below shows the concentration of H_2S expressed in parts per million by volume in the gas streams entering the Buckeye CO_2 Plant. Also, the table shows estimated H2S dispersion expressed as the 100ppm radius of exposure, and the 500-PPM radius of exposure for each gas stream. These latter figures are calculated distances downwind from point of release at which the air would be expected to have H2S concentration of 100 PPM or 500 PPM by volume.

		Radius of Exposure [ft.]	
	H_2S Conc. [PPM]	100 ppm	500 ppm

Inlet Gas Stream - CVU	3,000-4,000	6055'	2767'

Emergency Procedures and Action Plan

Responsibilities of Employees

Personnel on duty at the time of an emergency shall take immediate steps to:

1. Eliminate the source of the release; which includes activating the emergency plant shut down if appropriate.
2. Report release to your immediate Supervisor, or in his absence, to the supervisor coordinating local field activities, giving all pertinent details including:
    - The source and cause of release
    - The extent of the release (amount of time release has occurred)
    - Estimated volume of release
    - The containment and removal action needed
    - Weather conditions and any other pertinent information
3. Evacuate personnel already in the area:
    - Personnel inside the Plant area should egress upwind towards the nearest staging area anytime the alarm sounds or when a release is encountered. See appendix B for evacuation routes to staging areas. Once everyone is at the staging areas, the plant sign in sheet/s will be used to account for everyone.
4. Block traffic from entering the area (Shut gates into plant or set up roadblocks on main roads into Plant as necessary).
5. Call for assistance from other Chevron personnel or city officials, if necessary. See appendix A for phone list.

Since there are no residences or public buildings in the area, all persons in the area will be transient.

Chevron utilizes a standard, National Incident Management System (NIMS) compliant, response team organization to respond to emergencies at their facilities and sites. This team is led by an Incident Commander, who is supported by a Safety Officer, Operations Section Chief, Planning Section Chief, and a Logistics and Finance Chief. This team is employed for significant emergency events or incidents to provide guidance and clear communication paths for all response team personnel involved. Refer to the Vacuum FMT Emergency Response Plan for further details on emergency response and Chevron interaction with local and state emergency responders during an incident.

Emergency Shut Down

The emergency plant shut down system can be activated using push buttons which are located at strategic locations throughout the plant. When activated, this system will shut all hydrocarbon bearing lines into and out of the plant as well as shut down all process equipment.

Safety Equipment

Fixed H_2S Monitoring and Alarm System

Continuous fixed area monitors are permanently installed in locations where the sudden release of hydrogen sulfide is possible. The sensors are placed in proximity to potential sources of a hydrogen sulfide release. Several sensors are used throughout the plant, at points of possible gas emissions, and are connected to the DCS.

The H2S alarm is an audible and visual alarm. The sound is an osculating high low sound. The visual alarms consist of a red light for 10 PPM of H2S and an amber light for 15 PPM of H2S. The lights are located in five areas of the plant. When alarms sound they are also seen in the M.E.B. on monitors, which show location of alarm. See Attachment III for Plot Plan for locations of alarms. Employees are instructed to follow established response procedures in the event that an alarm is activated.

In addition to fixed H2S monitoring, survey measurements using portable hydrogen sulfide monitors are also required for certain applications such as the following:

- Monitoring of work areas prior to entry
- Monitoring of confined spaces
- Detection of leak sources
- Monitoring when lines, valves or vessels are opened

Personal H_2S Monitors

When routine and maintenance tasks involve potential exposure to hydrogen sulfide above 10 PPM, the use of continuous reading personal monitors with audible and/or visual alarms is required. This means that personal H_2S monitors are required at all times in the Buckeye CO_2 plant. When a group of employees is working close together, it is not necessary that each employee wear a monitor. A portable monitor can be substituted for the personal type as long as it adequately samples the work area used by all potentially exposed employees.

Monitors shall be utilized for the complete duration of work activity. It is required that monitors be set to alarm at 10ppm or less. If the alarm sounds, indicating a concentration at/or above this level, workers shall immediately leave the area. Workers shall withdraw upwind to a position which is considered to be a safe distance from the source of the gas. The alarm will continue to sound until the detector-sensor is cleared of hydrogen sulfide. Depending on the type of monitor and the concentration of the gas, this can take several minutes, even though the monitor is removed to a hydrogen sulfide free atmosphere. Allowing workers to re-enter, and work in the area shall be permitted only if they are wearing a full-face pressure-demand airline respirator with egress bottle or self-contained breathing apparatus (SCBA). This procedure shall be followed, until it has been established that the area is safe form hydrogen sulfide. (Less than 10 PPM).

Respiratory Protection

Supplied-Air (airline or SCBA) respiratory protection against hydrogen sulfide exposure is required in the following situations:

- When routine or maintenance work tasks involve exposure to H2S concentrations of 10 PPM or greater.
- When a fixed monitor alarms, and re-entry to the work area is required to complete a job.
- During rescue of employees suspected of H2S overexposure.
- For specific tasks identified with significant exposure potential and outlined in local program guidelines.

All respiratory protection equipment for hydrogen sulfide must be of the supplied-air type, equipped with pressure-demand regulators and operated in the pressure-demand mode only and meet the Standard of Industrial Hygiene Practice for Respiratory Protection. This is the only type of respiratory protection recommended for hydrogen sulfide application. If airline units are used, and egress bottle with at least a 5-minute supply shall also be carried. Gas masks or other air-purifying respirators must never be used for hydrogen sulfide due to the poor warning properties of the gas.

SCBA's are located in the following areas in the Buckeye CO_2 Plant:

- South end of Compressor Building
- North end of Compressor Building
- M.E.B.
- MCC

AirLine 5-minute escapes packs:

- West side of Compressor Building by cascade system.

Characteristics of H_2S, effects of Exposure and First Aid

Characteristics of H_2S

Hydrogen sulfide (H2S) is a colorless, flammable gas which may be liquefied under pressure and which occurs in a variety of natural and industrial settings. Typically called "sour gas", hydrogen sulfide is soluble in water, crude oil or petroleum fractions, and is extremely corrosive. The gas can cause severe stress cracking of steel and other metals. Hydrogen sulfide burns with a blue flame to form sulfur dioxide, which is also a toxic gas. Hydrogen sulfide is slightly heavier than air and may accumulate to dangerous concentrations in low-lying areas and confined spaces. Wind movement or air currents can disperse the gas.

Effects from Exposure to H_2S

The health effects associated with hydrogen sulfide exposure are primarily determined by the concentration of the gas in the individual's breathing zone, the length of the exposure period(s) and individual susceptibility to the contaminant. Typical characteristics and health effects for H_2S at different concentrations are given below:

1 PPM: The odor of rotten eggs can be smelled clearly

10 PPM: Because of wide variation in individual susceptibility, a small percentage of individuals may experience discomfort from H2S at or below this concentration. The maximum time that an individual may be exposed to this concentration is eight hours.

15 PPM: Short term exposure limit for 15 minutes

100 PPM: At this level, it will kill the sense of smell within three to fifteen minutes and it may burn the eyes and throat. The effects will be a slight headache or upset stomach and an increase in the pulse rate with irritation of the eyes, throat and skin.

200 PPM: Kills smell rapidly, burns eyes and throat.

500 PPM: The gas attacks the nerve center in the brain, resulting in a loss of sense of reason and balance. This will lead to a stoppage of breathing with 15 minutes or less. At this stage the victim needs prompt artificial respiration.

700 PPM: The victim will become unconscious quickly. Breathing will stop and death will result if not rescued promptly. Immediate artificial resuscitation is necessary.

1000 PPM: The victim will become unconscious at once.

One of the most important characteristics of hydrogen sulfide gas is its ability to cause olfactory fatigue or a failure in the sense of smell. At concentrations approaching 100 PPM, exposure to hydrogen sulfide causes a loss of the sense of smell. This effect can result in an individual developing a false sense of security relative to the exposure conditions. High concentrations of hydrogen sulfide, especially those capable of causing death or serious physical injury, cannot be detected by the sense of smell.

Rescue and First Aid

Summon aid immediately for any type of incidents involving injuries. The prompt performance of specific rescue and emergency first aid procedures can very often result in the full recovery of victims overcome by hydrogen sulfide. These victims shall be immediately removed from the contaminated atmosphere upwind and away from the source of emission by a rescuer wearing full-face pressure-demand supplied air respiratory protection, e.g., SCBA or supplied air with egress unit. (Ideally a standby person will be present before rescue is attempted).

Rescue must never be attempted without proper respiratory protection. Many such attempts have resulted in the rescuer also becoming a victim.

Once the victim is safely removed from the contaminated atmosphere, the rescuer is

to begin artificial respiration or administer oxygen if breathing has ceased. Caution must be taken during the application of artificial respiration not to inhale air directly from the victim's lungs, as this could also result in the rescuer being overcome. Depending on the length of exposure and concentration of hydrogen sulfide, heart failure may occur within 4 to 6 minutes. If the victim's heart has stopped, cardiopulmonary resuscitation (CPR) must be started immediately. If the victim does not respond to emergency aid, emergency medical aid must be summoned to the scene, and the individuals taken, as soon as possible, to a hospital for further treatment. Regardless of apparent condition, all overexposure victims shall receive appropriate medical attention as soon as possible.

Training and Drills

All personnel working at the Buckeye CO2 plant are required to attend various safety training; further details are outlined in the Vacuum FMT Emergency Response Plan. The following H2S specific safety training is also required:

- Hydrogen Sulfide Safety Training – required for all personnel
- SCBA training – required for certain personnel
- Training in fixed H_2S monitoring and alarm systems – required for certain personnel

Refer to the Vacuum FMT Emergency Response Plan for details on exercises and drills conducted at the Buckeye CO_2 plant.

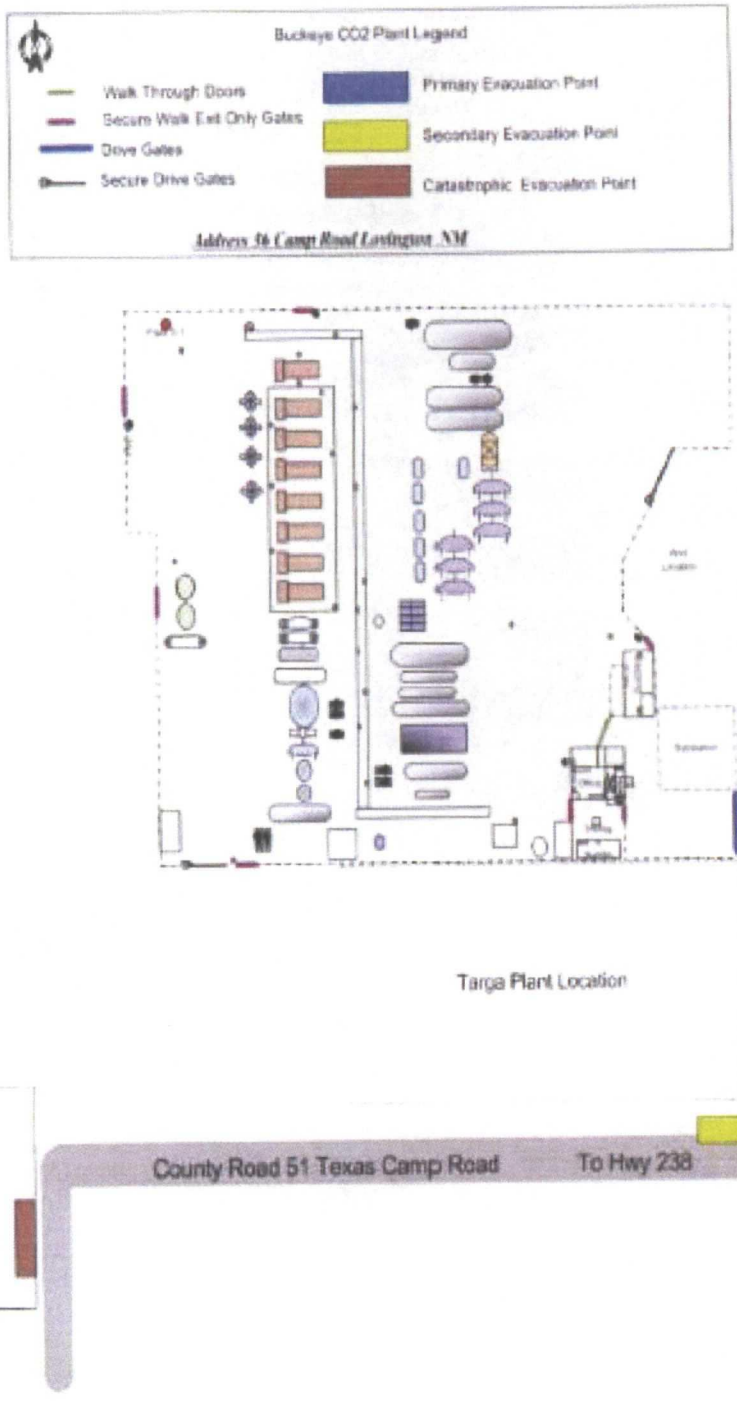
Appendix A

Phone List

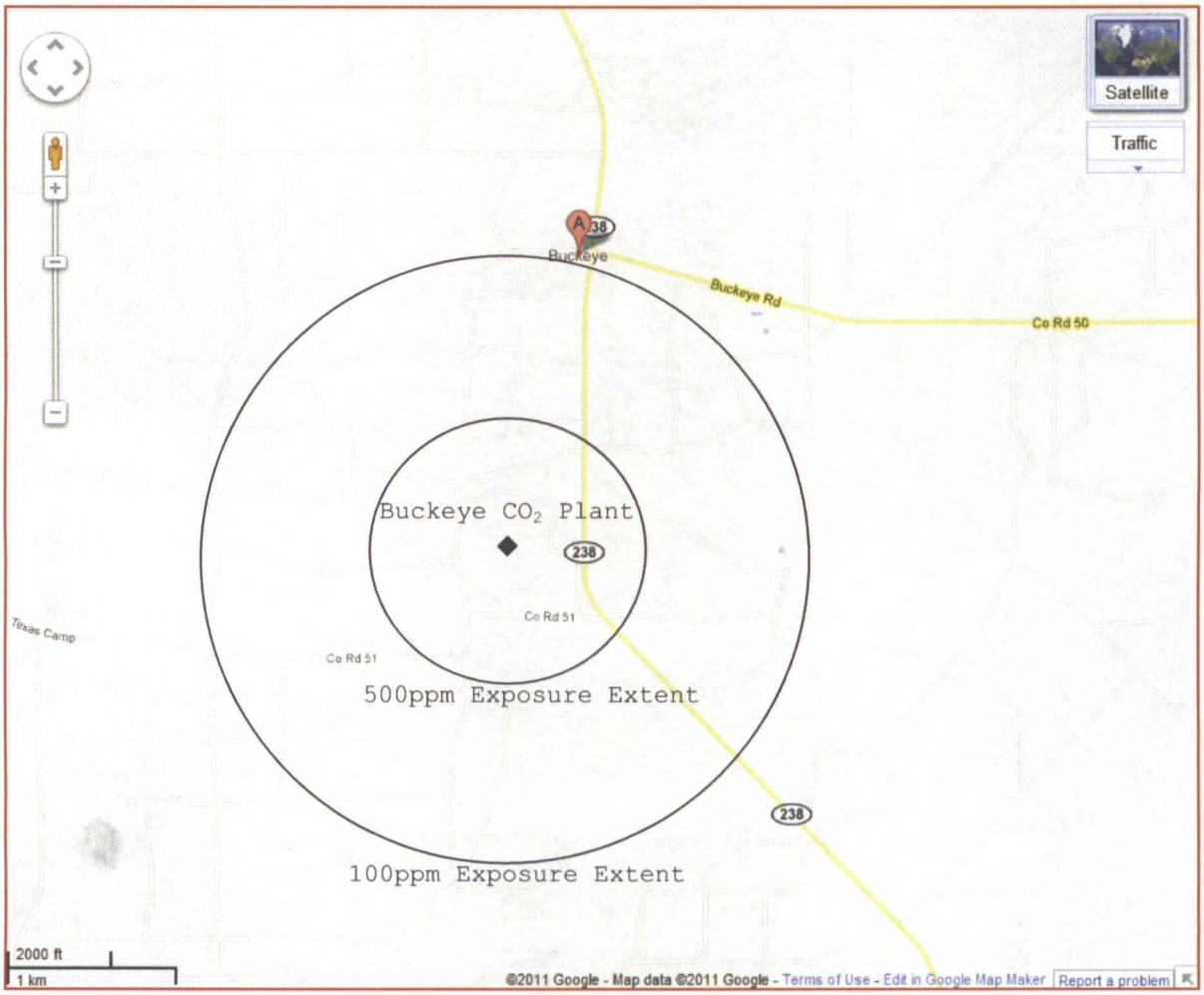
Chevron Personnel		
Kristian Svendsen	Plant Supervisor	(713) 417-6213
Nick Moschetti	Operations Supervisor	(432) 631-0640
Rick Rogge	Plant Mechanic	(575) 631-4402
Mario Garcia	Plant I&E Tech	(575) 631-7465
Larry Ridenour	Construction Rep.	(575) 631-9110
Donna Burt	Safety Specialist	(575) 631-2151
Steven Wallis	Oil Operations Manager	(325) 226-2800
Mike Rieken	Area Operations Manager	(432) 425-0252
AXIOM MEDICAL		(281) 419-7063 Ext. 1
Law Enforcement		
New Mexico State Police	Hobbs	(575) 392-5588
New Mexico State Police	Carlsbad	(575) 885-3137
Lea County Sheriff		(575) 396-3611
Eddy County Sheriff		(575) 887-7551
Hobbs Police		(575) 397-9265
Carlsbad Police		(575) 855-2111
Fire and Ambulance		
Carlsbad Fire Dept.		911 or (575) 236-6113
Lovington Fire Dept.		911 or (575) 396-2359
Hobbs Fire Dept.		911 or (575) 397-9308
Maljamar Fire Dept.		911 or (575) 676-4100
Hospitals		
Lea Regional Hospital (Hobbs)		(575) 392-1979
Columbia Hospital (Carlsbad		(575) 887-4100
Nor-Lea Hospital (Lovington)		(575) 396-3529
Government Agencies		
OCD	Hobbs	(575) 393-6161
OCD	Artesia	(575) 748-1283
BLM		(575) 393-3612
National Response Center		1-800-424-8802
CHEMTREC		1-800-424-9300
OSHA, Lubbock, TX		1-800-692-4204
NMED (Santa FE)		(575) 955-8025
NMDOT		1-800-432-7845
Hazardous Spill Containment		
EPI		(575) 394-3737
Indian Fire and Safety		(575) 393-3093
Total Safety		(575) 392-2973
Contractors		
RWI		(575) 393-5005

RWI (David Fredrick)		(575) 631-0170
Key Trucking (Hobbs)		(575) 397-4994
Key Trucking (Carlsbad)		(575) 393-5807
Nabors Trucking (Hobbs)		(575) 392-2577
Nabors Trucking (Carlsbad)		(575) 885-3321

Appendix B
Buckeye CO_2 Plant
Emergency Egress and Muster Points



Appendix C
H_2S Exposure Extent



Chavez, Carl J, EMNRD

Subject: Chevron Buckeye CO2 Plant (GW-312) H2S Contingency Plan Meeting
Location: Telephone Conference Call

Start: Thu 10/13/2011 8:30 AM
End: Thu 10/13/2011 9:30 AM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Chavez, Carl J, EMNRD
Required Attendees: kristian.svendsen@chevron.com; Chavez, Carl J, EMNRD; Gonzales, Elidio L, EMNRD

H2S Contingency Plan checklist...

Mr. Svendsen

Good morning. I'm writing to follow-up on telephone call this morning where we discussed Chevron's H2S Contingency Plan (CP) and a telephone call meeting scheduled for the above date and time.

This will allow Chevron to evaluate its existing CP in comparison with the OCD Regulations (OCD Part 11 Hydrogen Sulfide Gas (§ 19.15.11 NMAC)) and the attached review checklist that the OCD uses to evaluate CPs. Please contact me if you have questions on the regulations.

In addition, the OCD is providing a link to the San Juan River Gas Plant (GW-033) with approved CP to assist Chevron at . http://ocdimage.emnrd.state.nm.us/imaging/AEOrderFileView.aspx?appNo=pENV000GW00034. Please contact me if you need assistance viewing the thumbnails with "Approval".

Please send me your current H2S CP (Acrobat Reader File) for the OCD File.

I look forward to our telephone call to determine whether a new submittal is needed. Thank you.

Xc: File

****

Carl,

Good morning to you. I am no longer the Operations Supervisor at the Chevron Buckeye Gas Plant. Kristian Svendsen is the new Operations Supervisor. His contact information is below. If for some reason you have trouble contacting Kristian please let me know and I will do what I can to assist you in reaching him.

Kristian Svendsen
Office – (575)-396-4916 x321
Cell – (713)-417-6213
Email - kristian.svendsen@chevron.com

Regards,

Mark L. Garner
Operations Representative
Cabinda Gas Plant
Cabinda Gulf Oil Company Ltd.
Cabinda, Angola
Tel 345 1156
Tel US 925 842 1111 (Option 1, Option 2) Ext 1156
Tel Angola +244 222 692 600 Ext 1156
Fax +1 877 590 4010
email mgdk@chevron.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Friday, September 23, 2011 12:03 AM
To: Garner, Mark (mgdk) ** Shared acgpor02**
Cc: Gonzales, Elidio L, EMNRD
Subject: Chevron Buckeye CO2 Plant (GW-312) Lea County

Mark:

Good afternoon. The OCD is following up with facilities that may be subject to OCD Part 11 Hydrogen Sulfide Gas (§ 19.15.11 NMAC).

Could you please give me a call to discuss tomorrow. I'm in from 6 a.m. to 5 p.m. (GMT).

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3490
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/
"Why not Prevent Pollution; Minimize Waste; Reduce the Cost of Operations; & Move Forward with the Rest of the Nation?" To see how, go to "Pollution Prevention & Waste Minimization" at:
http://www.emnrd.state.nm.us/ocd/environmental.htm#environmental)

OIL CONSERVATION DIVISION

H2S CONTINGENCY PLAN REQUIRED BY OCD RULE 19.15.11 NMAC

<Company Name>
FACILITY NAME
<Date>

Contingency Plan Requirements Checklist				
19.15.11.9.B NMAC Requirement	Included?	Page in Document?		Notes
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Telephone numbers of appropriate public authorities				
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Proposed evacuation routes, with locations of road blocks				
Procedures for notifying the public				
Availability and location of safety equipment and supplies Also see 19.15.11.12.C				
Characteristics of hydrogen sulfide and sulfur dioxide				
Discussion of characteristics				
Maps and Drawings				
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Public areas within area of exposure				
Public roads within area of exposure				
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Briefing of public officials on evacuation or shelter-in-place plans				
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How emergency response actions will coordinate with OCD and the state police response plans				
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Activation Levels and description of events which may lead to a release in excess of activation level				
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