



# **HYDROGEN SULFIDE (H<sub>2</sub>S) OPERATIONS**

**REACTION CONTINGENCY PLAN  
FOR  
East Vacuum CO<sub>2</sub> Reinjection/EVLRP and Buckeye,  
NM Production Areas**

**AS SPECIFIED BY OCD OF NEW MEXICO  
RULE 118**

**CONOCOPHILLIPS COMPANY  
MID AMERICA BUSINESS UNIT  
PERMIAN ASSET AREA**

September 3, 2003

Transmittal of  
East Vacuum CO<sub>2</sub> ReInjection/EVLRP  
H<sub>2</sub>S Reaction Contingency Plan Revision

East Vacuum CO<sub>2</sub> ReInjection/EVLRP  
H<sub>2</sub>S Contingency Plan Book Holders:

Attached is a revised H<sub>2</sub>S Contingency Plan according to the East Vacuum CO<sub>2</sub>  
ReInjection/EVLRP operated by ConocoPhillips Company.

If you have any questions regarding this plan, please call Sean Robinson at  
ConocoPhillips Company, (505) 396-7939.

Sean Robinson  
HSE Specialist

ConocoPhillips Company

Lower 48/LA Division

Mid America BU

Permian Basin Asset Area

## East Vacuum CO<sub>2</sub> Reinjection/EVLRP

### **H<sub>2</sub>S REACTION CONTINGENCY PLAN**

**IN COMPLIANCE WITH NEW MEXICO OIL CONSERVATION COMMISSION  
RULE 118**

**DISTRIBUTION LIST FOR EAST VACUUM PLANT/BUCKEYE AREA**

<b>NEW MEXICO OIL CONSERVATION DIVISION – HOBBS</b>	<b>1</b>
<b>NEW MEXICO ENVIRONMENTAL DEPARTMENT</b>	<b>1</b>
<b>NEW MEXICO STATE POLICE</b>	<b>1</b>
<b>LEA COUNTY SHERIFF DEPARTMENT HOBBS AND LOVINGTON</b>	<b>2</b>
<b>LEA REGIONAL HOSPITAL</b>	<b>1</b>
<b>HOBBS FIRE DEPARTMENT</b>	<b>1</b>
<b>LOVINGTON FIRE DEPARTMENT</b>	<b>1</b>
<b>CONOCOPHILLIPS – ODESSA SAFETY DEPARTMENT</b>	<b>1</b>
<b>CONOCOPHILLIPS – PERMIAN ASSET MANAGER</b>	<b>1</b>
<b>CONOCOPHILLIPS – BUCKEYE SUPERVISOR</b>	<b>3</b>
<b>CONOCOPHILLIPS – EAST VACUUM PLANT SUPERVISOR</b>	<b>6</b>



## TABLE OF CONTENTS

### Section

- I. PURPOSE
- II. SCOPE
- III. PROCEDURES
- IV. EMERGENCY EQUIPMENT AND MAINTENANCE
  - Emergency Equipment Suppliers
  - Fresh Air Breathing Equipment Available (Phillips)
  - Fire Protection
  - General Information
- V. EMERGENCY CALL LIST
  - Emergency Response Outside Equipment Suppliers
  - Local Supervisory Personnel
  - Regulatory Agencies
- VI. PUBLIC/MEDIAL RELATIONS
- VII. PUBLIC NOTIFICATION/EVACUATION
- VIII. CERTIFICATE OF COMPLIANCE (H<sub>2</sub>S REPORTING FORM)
- IX. PLAT OF RADIUS OF EXPOSURE
- X. FORMS/REPORTS

## **I. PURPOSE**

The purpose of the Contingency Plan is to provide an organized plan of action for alerting and protecting the public following the release of a potentially hazardous volume of hydrogen sulfide. This plan prescribes mandatory safety procedures to be followed in case of a release of H<sub>2</sub>S into the atmosphere from exploration and production operations included in the scope of this plan. The extent of action taken will be determined by the supervisor and will depend on the severity and extent of H<sub>2</sub>S release as defined by current New Mexico Oil Conservation Division Rule 118 and New Mexico Environmental Regulations. Release of H<sub>2</sub>S must be reported and the Incident Log maintained.

## II. SCOPE

This Reaction Contingency plan shall cover the East Vacuum CO<sub>2</sub> ReInjection/EVLRP and surrounding area, which contains gas with the specified H<sub>2</sub>S content (refer to Section VIII: H<sub>2</sub>S Reporting Form) and could result in the listed maximum radius of exposure. Radius of exposure is defined as the maximum distance from the source of release that a specified calculated average concentration of H<sub>2</sub>S could exist under specific weather conditions.

### III. PROCEDURES

#### First Employee on Scene

—— Assess the incident and ensure your own safety.

Note the following:

- Location of the incident.
- Nature of the incident.
- Wind direction and weather conditions.
- Other assistance that may be needed.

—— Call local supervisory personnel (refer to Section V: Emergency Call List) until personal contact is made with a person on the list.

—— Perform emergency assessment and response as needed (refer to Section IX: Plat of Radius of Exposure.) The response may include rescue and/or evacuation of personnel, shutting in a system and/or notification of nearby residents/public (refer to Section VII: Public Notification/Evacuation).

—— Secure the site.

—— Follow the direction of the On-scene Incident Commander (first ConocoPhillips supervisor arriving on-scene).

#### First Supervisor on Scene (ConocoPhillips On-scene Incident Commander)

—— Becomes ConocoPhillips' On-scene Incident Commander upon arrival to location.

—— Follow the principles of the **D.E.C.I.D.E.** process below to assess the incident. (Note wind direction and weather conditions and ensure everyone's safety).

**DETECT** the problem  
**ESTIMATE** likely harm without intervention  
**CHOOSE** response objectives  
**IDENTIFY** action options  
**DO** the best option  
**EVALUATE** the progress

—— Complete the Preliminary Emergency Information Sheet (refer to Section X: Forms/Reports).

- Call your supervisor (refer to Section V: Emergency Call List).
- Perform emergency response as necessary. (This may include notification & evacuation of all personnel and/or nearby residents/public (refer to Section VII: Public Notification/Evacuation), requesting assistance from ConocoPhillips personnel or outside agencies (refer to Section V: Emergency Call List) and obtaining any safety equipment that may be required (refer to Section IV: Emergency Equipment and Maintenance).
- Notify appropriate local emergency response agencies of the incident as needed (refer to Section V: Emergency Call List).
- Ensure site security.
  - Set barricades and /or warning signs at or beyond the calculated 100 ppm H<sub>2</sub>S radius of exposure (ROE). All manned barricades must be equipped with an H<sub>2</sub>S monitor and a 2-way radio.
  - Set roadblocks and staging area as shown on the “Radius of Exposure Plats” (refer to Section IX: Plat of Radius of Exposure).

- Establish the Incident Command Structure by designating appropriate on-scene response personnel as follows:

Recording Secretary	_____
Public Information Officer	_____
Safety/Medical Officer	_____
Decontamination Officer	_____

- Have the “Recording Secretary” begin documenting the incident on the “Incident Log” (refer to Section X: Forms/Reports).
- If needed, request radio silence on all channels that use your radio tower stating that, until further notice, the channels should be used for emergency communications only.
- Perform a Site Characterization and designate the following:

Hot Zone	--	Hazardous Area
Warm Zone	--	Preparation & Decontamination Area
Cold Zone	--	Safe Area

AND

On-Scene Incident Command Post	(Cold Zone)
Public Relations Briefing Area	(Cold Zone)
Staging Area	(Cold Zone)
Triage Area	(Cold Zone)
Decontamination Area	(Warm Zone)

\_\_\_\_\_ Refer all media personnel to ConocoPhillips' On-Scene Public Information Officer (refer to Section VI: Public Media Relations).

\_\_\_\_\_ Coordinate the attempt to stop the release of H<sub>2</sub>S. You should consider closing upstream and downstream valves to shut-off gas supply sources, and/or plugging or clamping leaks. Igniting escaping gas to reduce the toxicity hazard should be used **ONLY AS A LAST RESORT**. (It must first be determined if the gas can be safely ignited, taking into consideration if there is a possibility of a widespread flammable atmosphere.)

\_\_\_\_\_ Once the emergency is over, return the situation to normal by:

Confirming the absence of H<sub>2</sub>S and combustible gas throughout the area,

Discontinuing the radio silence on all channels, stating that the emergency incident is over,

Removing all barricades and warning signs,

Allowing evacuees to return to the area, and

Advising all parties previously notified that the emergency has ended.

\_\_\_\_\_ Ensure the proper regulatory authorities/agencies are notified of the incident (refer to Section V: Emergency Call List).

\_\_\_\_\_ Clean up the site. (Be sure all contractor crews have had appropriate HAZWOPER training.)

\_\_\_\_\_ Report completion of the cleanup to the Region Environmentalist. (He will report this to the proper State and/or Federal agencies.)

\_\_\_\_\_ Fill out all required incident reports and send originals to the Safety Department. (Keep a copy for your records.)

- Company employee receiving occupational injury or illnesses.
- Company employee involved in a vehicle accident while driving a company vehicle.
- Company property that is damaged or lost.
- Accident involving the public or a contractor; includes personal injuries, vehicle accidents, and property damage. Also includes any situation, which could result in a claim against the Company.
- Hazardous Material Spill/Release Report Form
- Emergency Drill Report

\_\_\_\_\_ Assist the Safety Department in the investigation of the incident. Review the factors that caused or allowed the incident to occur, and modify operating, maintenance, and/or surveillance procedures as needed. Make appropriate repairs and train or retrain employees in the use and operation of the system.

\_\_\_\_\_ If this incident was simulated for practice in emergency response, complete the Emergency Drill Report found in Section X: Forms/Reports and submit a copy to the Operations Manager. (Keep one copy in area files to document exercising of the plan.)

## IV. EMERGENCY EQUIPMENT and MAINTENANCE

### Emergency Equipment Suppliers

#### **Vallen Safety Supply, Odessa**

(915) 561-8419

(915) 557-5751

H<sub>2</sub>S monitors (personal & fixed)  
Breathing air including cascade systems  
Safety Equipment  
First aid and medical supplies

#### **Callaway Safety Equipment Co., Inc.**

(915) 561-5049 Odessa

(505) 392-2973 Hobbs

(505) 885-5799 Carlsbad

H<sub>2</sub>S monitors  
Breathing air includes cascade systems  
Fire fighting equipment  
First aid and medical supplies  
Safety equipment

#### **Leek Fire & Equipment Company, Odessa**

(915) 362-1207

(915) 332-7645

H<sub>2</sub>S monitors  
Breathing air  
Fire fighting equipment  
First aid and medical supplies  
Safety equipment

#### **Thompson Specialties, Odessa**

(915) 337-3891

H<sub>2</sub>S monitors  
Breathing air  
Fire fighting equipment  
First aid and medical supplies  
Safety equipment

#### **Donaldson Fire & Safety, Odessa**

(915) 334-8523

H<sub>2</sub>S monitors  
Breathing air including trailer-mounted cascade refill tanks  
Fire fighting equipment

#### **Indian Fire & Safety, Hobbs**

(505) 393-3093

H<sub>2</sub>S monitors (personal & fixed)  
Breathing air including cascade systems trailer mounted  
30 minute air paks  
Safety Equipment

## **Emergency Equipment and Maintenance (continued)**

### **Fire Protection**

Available for use in fighting incipient stage fires at various locations covered by this plan are approximately 60 ConocoPhillips employees who have been trained in fire-fighting techniques common to the industry. These employees may be called for duty from maintenance, field, and production groups throughout the Permian Basin South Eastern New Mexico Area.

Personnel of the facility experiencing the fire emergency will use the fire equipment in the capacity in which they have been trained. The only exception to this rule would be when a fire truck or pumping unit is dispatched to the scene and the driver or operator of this equipment will remain the operator of said under direction of the ConocoPhillips' supervisor.

### **General Information**

Materials used for repair should be suitable for use where H<sub>2</sub>S concentrations exceed 100 ppm. In general, carbon steels having low-yield strengths and a hardness below RC-22 are suitable. The engineering staff should be consulted if any doubt exists on material specifications.

Appropriate signs should be maintained in good condition at lease entrances, wells, tank batteries, flow lines, gas lines, and other locations as specified in NMOCD Rule 118.

All notification lists should be kept current with changes in names, telephone numbers, etc.

All shutdown devices, alarms, monitors, breathing air systems, etc., should be maintained in accordance with applicable regulations.

All personnel working in H<sub>2</sub>S areas shall have received training on the hazards, characteristics, and properties of H<sub>2</sub>S, and on procedures and safety equipment applicable for use in H<sub>2</sub>S areas.

## Emergency Equipment and Maintenance (continued)

Quantity	<u>Equipment Description</u>
2	Fixed H <sub>2</sub> S monitors are located on the south side of Vacuum Glorieta East Unit East Battery.
1	Fixed H <sub>2</sub> S monitor is located on the north side of Vacuum Glorieta East Unit West Battery.
1	Fixed H <sub>2</sub> S monitor is located on the Vacuum Abo Battery number 4.
4	30-minute Scott Air-Paks at EVGSAU CO <sub>2</sub> Plant.
5	30-minute Scott Air-Paks at field production office.
2	Unit mounted equipped with 300 cu. ft. breathing air cylinder w/50' air hose w/dual connection.
6	300 cu. Ft. cylinders with the above safety trailer.
2	Scott hoseline units with 5-min. Ska-Paks with the above safety trailer.
3	II-A, 30-minute Scott Air-Paks with the above safety trailer.
	30 min. Scott Air Pak available in each vehicle unit.

Note: Industrial Scientific HS-110, T-80, HS-560 single gas, HMX-271, TMX-410 and TMX-412 multi gas monitors and the BW Technologies H<sub>2</sub>S ToxyClip personal monitor are available to field personnel working within the S.E. New Mexico Area.

**EMERGENCY EQUIPMENT AND MAINTENANCE (Continued)**

Fresh Air Breathing Equipment Available (ConocoPhillips)

Below is a list of safety equipment available to the East Vacuum CO<sub>2</sub> Reinjection/EVLRP.

<b>Equipment</b>	<b>Location</b>	<b>Telephone</b>
1 - 300 cu. ft. breathing air cylinder w/50' air hose with dual connections.	<b>Vacuum Glorieta East Unit</b>	<b>Emergency Contact Tommy Brooks</b>
1 - 300 cu. ft. breathing air cylinders w/50' air hose with dual connections.	<b>Vacuum Glorieta East Unit West Battery.</b>	<b>Office (505) 396-7909 Cellular (505) 390-3275 Home (505) 397-2660</b>
Fixed H <sub>2</sub> S Monitors w/sensor head (County Rd. No. 50)	<b>Vacuum Glorieta East Unit Vacuum Abo Battery #4</b>	
1 - cascade breathing air system containing:  4 - 300 cu. ft. cylinders. 1 - Portable airline system (without cylinder) 1 - Spare 30 min cylinder 4 - 2.2-30 min. Scott Air Paks 2 - Scott 5 minute Ska-Paks. 1 - 25' air hose 1 - 100' extension cord	<b>Safety Air Trailer  Located at Buckeye New Mexico Field Office</b>	<b>Steve Wilson  Office: (505) 396-7962  Cellular: (505) 390-3106  Home: (505) 392-1877</b>

## V. EMERGENCY CALL LIST: ConocoPhillips Personnel

The following is a priority list of personnel to contact in an emergency situation:

Local Supervisory Personnel	Office No.	Home	Pager/Cellular/ Mobile Overdial
<b>H.L. Owens, Supervisor Plant Process</b> (After normal duty hours, call East Vacuum CO2 Plant @ (505) 396-7923 for emergency calls)	(505) 396-7934	(505) 392-8638	C (505) 390-8300 M 1234 / 2F P 1-800 585-4572
<b>Tommy Brooks</b> Production Supervisor	(505) 396-7909	(505) 397-2660	C (505) 390-3275  P 1-800 588-8773
<b>Sean Robinson</b> SHEAR Specialist	(505) 396-7937	(505) 396-3256	C (505) 390-8873  P 1-800 348-4620
<b>Steve Wilson</b> Environmentalist	(505) 396-7962	(505) 392-1877	C (505) 390-3106
<b>Greg Ashdown</b> NM Operations Manager	(505) 391-3124	(505) 397-2467	P 1-888 385-1908 C (505) 390-1710
<b>Jack Drake</b> Production Engineer	(432) 368-1459	(432) 699-6713	C (505) 390-3414
<b>Tad Buchanan</b> Safety and Environmental Coordinator	(432) 368-1384	(432) 697-6500	C (432) 631-0039 P (432) 499-5625

To reach the mobile tower, dial Hobbs (505) 397-5599 or (505) 397-5502, Maljamar Tower (505)396-7953; at the tone, dial the 4 digit tower over-dial number. Note: If unable to notify above personnel, call the **24 Hour Emergency Telephone Number: EVLRP/CO<sub>2</sub> Control Room (505) 396-7923**

**EMERGENCY CALL LIST: State Officials**

**Regulatory Agencies**

**New Mexico Oil Conservation Commission**

P. O. Box 1980  
Hobbs, New Mexico 88240-1980

Office: (505) 393-6161

**New Mexico Environmental Improvement Board**

1190 St. Francis Drive  
Santa Fe, New Mexico 87504

Office: (505) 827-0042

**New Mexico Environment Department**

Office: (505) 393-4302

**New Mexico One Call**

Office: (800) 321-2537  
Fax: (800) 260-0950

**EMERGENCY CALL LIST: Local Officials**

**Local Emergency Calls:**

**Law Enforcement Agencies**

New Mexico State Police  
P. O. Box 1980  
Hobbs, New Mexico 88240-1980

Hobbs: (505) 392-5588

**New Mexico Environment Department**

Office: (505) 393-4302

**EMERGENCY CALL LIST: Support Services**

Note: This is also the distribution list for  
East Vacuum CO<sub>2</sub> Reinjection/EVLRP  
Reaction Type Contingency Plan

**New Mexico Environmental Improvement Board**  
1190 St. Francis Drive  
Santa Fe, New Mexico 87504

**Lt. Jerry Cottrell**  
New Mexico State Police  
P. O. Box 1069  
Hobbs, New Mexico 88240

**W. N. Braswell, M.D.**  
1801 Dal Paso  
Hobbs, New Mexico 88240

**Lovington Fire Department**  
Perry Williams, Fire Chief  
213 S. Love Street  
Lovington, New Mexico 88260

**Lovington Emergency Medical Service**  
213 S. Love Street  
Lovington, New Mexico 88260

**Lea Regional Hospital**  
Lovington Highway  
Hobbs, New Mexico 88240

Attachment 2

NOTIFICATION OF OFFSET OPERATIONS

East Vacuum CO2/EVLRP

ChevronTexaco  
205 East Bender  
Hobbs, NM 88240

ExxonMobil  
717 West Sanger  
Hobbs, NM 88240

Marathon Oil Company  
2350 West Marland Blvd  
Hobbs, NM 88240

Shell Western E & P  
P.O. Box 1950  
Hobbs, NM 88240

Oxy USA, Inc  
P.O. Box 50250  
Midland, TX 79710

BP Amoco  
1017 West Stanolind Road  
Hobbs, NM 88240

Arco Oil & Gas Company  
P.O. Box 1710  
Hobbs, NM 88240

Yates Petroleum Company  
105 South 4<sup>th</sup> Street  
Artesia, NM 88210

## VI. Public Media Relations

The **Public Information Officer** becomes the ConocoPhillips on-scene contact (once designated by the Phillips On-Scene Incident Commander).

Confers with Houston Office's Human Relations Representative, who is responsible for assisting in the coordination of local public relations duties.

Answer media questions honestly and **only with facts**, do not speculate about the cause, amount of damage, or the potential impact of the incident of the community, company, employees, or environment. (This information will be formally determined in the incident investigation.)

If you are comfortable answering a question or if you are unsure of the answer, use terms such as the following:

- "I do not know. I will try to find out."
- I am not qualified to answer that question, but I will try to find someone who can."
- "It is under investigation."

**Note:**

**Do Not Say "No Comment."** (This implies a cover-up.)

**Do Not Disclose Names of Injured or Dead!** Confer with the Houston Office's Human Relations Representative, who is responsible for providing that information.

## VII. Public Notification/Evacuation

### Alert and/or Evacuate People Within the Exposure Area

1. Public Notification – If the escape of gas could result in a hazard to area residents, the general public, or employees, the person **first** observing the leak should take **immediate** steps to cause notification of any nearby residents as noted in Section IX: Plat of Radius of Exposure. The avoidance of injury or loss of life should be of prime consideration and given top priority in all cases. The map in Section IX indicates areas of public dwellings or public areas, which are in the radius of exposure covered by this Reaction Contingency Plan. If the incident is of such magnitude or at such location as to create a hazardous situation, local authorities will be requested to assist in the evacuation and roadblocks of the designated area until the situation can be returned to normal. If such evacuation procedure is implemented or public roads require blockage (refer to Section IX), the applicable New Mexico Oil Conservation Commission and the New Mexico Environment Department will be notified immediately.

Note: Bilingual employees may be needed to assist in notification of residents.

2. Evacuation Procedures – Evacuation will proceed upwind from the source of the release of H<sub>2</sub>S. Extreme caution should be exercised in order to avoid any depressions or low-lying areas in the terrain. The public area within the radius of exposure should be evacuated in a southwesterly and southeasterly direction so as to avoid the prevailing southern wind direction.

Roadblocks and the staging area should be established as shown on the Radius of Exposure area should be established as show on the Radius of Exposure Map in Section IX, modified as necessary for current wind conditions.

At all times, note the wind direction before evacuation procedures begin. Listed below are the annual percentiles of prevailing wind directions in the Permian Basin Area:

At all times, note the wind direction before evacuation procedures begin. Listed below are the annual percentiles of prevailing wind directions in the Permian Basin Area:

Due South	24%
Southeast	15%
Due North	12%
Northeast	11%
Southeast	10%
Northwest	10%
Due East	8%
Due West	8%
Calm	3%

**Note:** In all situations, consideration should be given to wind direction and weather conditions. H<sub>2</sub>S is heavier than air and can settle in low spots. Shifts in wind direction can also change the location of possible hazardous areas.

Submit 1 copy to Appropriate  
 District Office  
**DISTRICT I**  
 P.O. Box 1980, Hobbs, NM 88241-1980  
**DISTRICT II**  
 P.O. Drawer DD, Artesia, NM 88211-0719  
**DISTRICT III**  
 1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico  
 Energy, Minerals and Natural Resources Department  
**OIL CONSERVATION DIVISION**  
 P.O. Box 2088  
 Santa Fe, New Mexico 87504-2088

Form Adopted 1987  
 Form Revised 1990  
 File in Accordance  
 With Rule 118

**H<sub>2</sub>S REPORTING FORM**

OPERATOR Phillips Petroleum Company East Vacuum Unit - CO<sub>2</sub> Reinjection/EVLRP  
 ADDRESS 4001 Penbrook, Odessa, TX 79762 (Pool, Plant, or Facility Name) 2

Lease, Plant or Facility	Well No.	Sampling Point (Tank, Separator, etc.)	Location UL-S-T-R	Name of Tester	Test Method	Test Date	H <sub>2</sub> S Concentration (Report in PPM Volume if Available)
Facility		Plant Inlet	A&B S33, 17S, 35E Lea County	Laboratory Services	Tutweiler	9/18/96	12,243 ppm

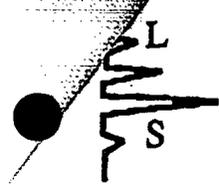
REMARKS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Signature David Unger/per attachment  
 Printed Name and Title Production Tech.  
 Date 9/18/96 Telephone No. (915) 368-1461

### Laboratory Services, Inc.

4016 Flesta Drive  
Hobbs, New Mexico 88240

Telephone: (505) 397-3713



FOR: ConocoPhillips  
Attention: Mr. Lee Owens  
HC 60 Box 450  
Lovington, New Mexico 88260

SAMPLE: IDENTIFICATION: Plant Inlet  
COMPANY: ConocoPhillips  
LEASE:  
PLANT: E. Vacuum CO2 Plant

SAMPLE DATA: DATE SAMPLED: 8/14/03 10:45 am  
ANALYSIS DATE: 8/14/03  
PRESSURE - PSIG  
SAMPLE TEMP. °F  
ATMOS. TEMP. °F 78

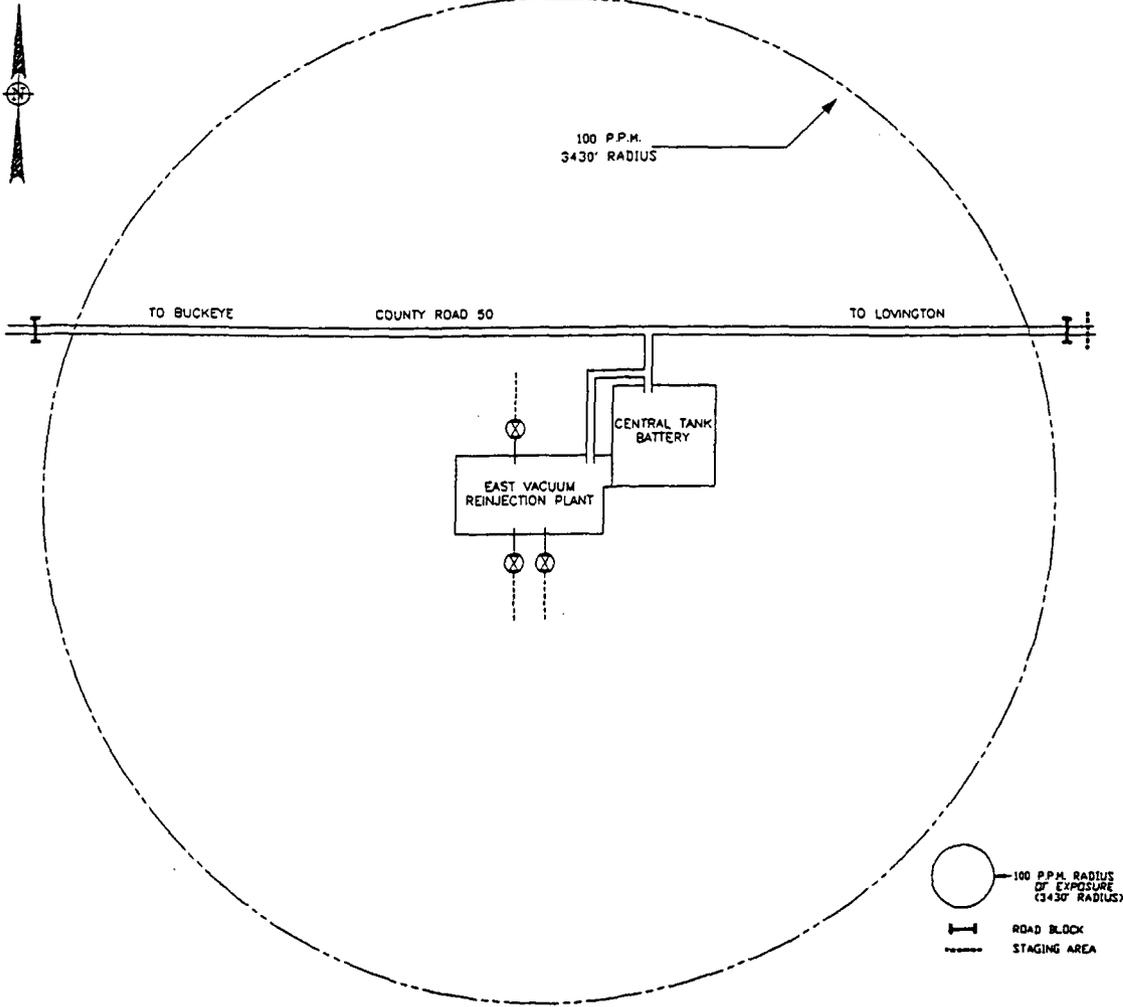
GAS (XX) LIQUID ( )  
SAMPLED BY: Rolland Perry  
ANALYSIS BY: Vickie Biggs

REMARKS: H2S = 11,743 PPM

#### COMPONENT ANALYSIS

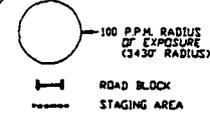
COMPONENT		MOL PERCENT	GPM
Hydrogen Sulfide	(H2S)	1.174	
Nitrogen	(N2)	1.726	
Carbon Dioxide	(CO2)	76.086	
Methane	(C1)	8.771	
Ethane	(C2)	4.645	1.239
Propane	(C3)	3.671	1.009
I-Butane	(IC4)	0.489	0.160
N-Butane	(NC4)	1.380	0.434
I-Pentane	(IC5)	0.463	0.169
N-Pentane	(NC5)	0.519	0.188
Hexane Plus	(C6+)	1.076	0.467
		<u>100.000</u>	<u>3.666</u>
BTU/CU.FT. - DRY		422	MOLECULAR WT. 41.5813
AT 14.650 DRY		421	
AT 14.650 WET		413	
AT 14.73 DRY		423	
AT 14.73 WET		416	
SPECIFIC GRAVITY -			
CALCULATED		1.434	
MEASURED			

VALVE LOCATIONS FOR EMERGENCY SHUTDOWNS  
H<sub>2</sub>S RADIUS OF EXPOSURE  
— EAST VACUUM CO<sub>2</sub> REINJECTION PLANT/EVLRP —



INSTRUCTIONS-TO BE FOLLOWED DURING EMERGENCY

- ① In case of fire or other emergencies, sound the alarms and then notify Operations Superintendent, or Maintenance Foreman.
- ② The operator on duty in the area where the emergency occurs will be in charge until he is relieved by a supervisor.
- ③ The operator who is not working in the emergency area will see that all gates are closed - then he will assist where needed.
- ④ The operators should proceed to make any changes in operation that are deemed necessary.
- ⑤ When fires occur, boilers should be left operating if at all possible to assist in combating the emergency.
- ⑥ When notified of emergency, all personnel should report to plant fire house and aid in the combating of the emergency.
- ⑦ Road blocks, if necessary, will be set up to adequately clear company property. Only authorized personnel will be admitted through the road blocks.  
 Authorized personnel will include Exploration and Production Dept. personnel and emergency vehicles (ambulances, municipal fire fighting equipment, and law enforcement personnel.)
- ⑧ Plant personnel will not attempt to give out information pertaining to the emergency to any non-employees. The Plant Superintendent or personnel so designated in the Phillips Emergency Procedure (PEP) are the only ones who should provide news information to outsiders. News provided by those authorized should be in accord with procedures outlined in PEP.
- ⑨ In event of injuries or loss of life, the names will be withheld until next of kin are notified by proper company officials.
- ⑩ All radio-equipped vehicles should report to plant office for assignment.
- ⑪ Persons to be notified in event of an emergency:  
 PRODUCTION SUPERINTENDENT                      ENGINEERING DIRECTOR  
 PRODUCTION MANAGER                              SAFETY SECTION
- ⑫ Personnel who are fighting a fire must consider the safety of themselves and others. The following is a list of safety precautions to be taken:  
 A. Avoid being trapped by the fire.  
 B. Fight the fire from an up-wind position.  
 C. Take note of any flame impingement on vessels.  
 D. If there is a possibility of vessel or line failure, evacuate the danger area. Vessels containing flammables under pressure that have been absorbing heat from an intense fire (without being cooled) are considered to be extremely hazardous.



NOTES

NUMBER	REFERENCE DRAWING	REV.	DATE	REVISION	DRAWN	CHECK'D	APPR.
		▲	11/28/90	ADDITIONAL ROADBLOCKS	RTS		
		▲	5/18/93	UPDATED H <sub>2</sub> S RADIUS EXPOSURE	LVT		
		▲					
		▲					
		▲					



PHILLIPS  
**66**  
 PHILLIPS PETROLEUM COMPANY  
 PERMAN BASIN REGION  
 ODESSA, TEXAS

SCALE: SEE SCALE BAR  
 CHECKED: \_\_\_\_\_  
 DRAWING DEPT.  
 DATE: 8/19/90

VALVE LOCATIONS FOR  
 EMERGENCY SHUTDOWNS  
 H<sub>2</sub>S RADIUS OF EXPOSURE  
 EAST VACUUM CO<sub>2</sub> REINJECTION PLANT

GWD-427-M36

E:\0002.DWG

## X. FORMS & REPORTS

I. Incident Log

II. Preliminary Emergency Information Sheet

III. Emergency Drill Report

IV. Onshore Hazardous Material Spill/Release Report Form

V. Immediate Report of Occupational Injury or Illness  
Report of Accident-Public Contractor"  
Report of Loss or Damage to Company Property

VI. Vehicle Accident Report



**PRELIMINARY  
EMERGENCY INFORMATION SHEET**

1. Type of emergency: \_\_\_\_\_

2. Facility: \_\_\_\_\_

3. Time of occurrence: \_\_\_\_\_

4. Location

Nearest town: \_\_\_\_\_

Directions to location: \_\_\_\_\_

Nearest airport: \_\_\_\_\_

Shore base: \_\_\_\_\_

Water depth: \_\_\_\_\_

5. Present Dangers

Fire: \_\_\_\_\_

Explosion: \_\_\_\_\_

Hydrogen Sulfide: \_\_\_\_\_

Pollution: \_\_\_\_\_

Other: \_\_\_\_\_

6. Casualties: Dead: \_\_\_\_\_ Injured: \_\_\_\_\_

7. Person in charge: \_\_\_\_\_ City: \_\_\_\_\_

Home phone: \_\_\_\_\_

Office phone: \_\_\_\_\_

8. Remarks: (Reg. Agencies Notified, Actions to be Taken, Specialists Called, etc.)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

EMERGENCY DRILL REPORT

Location: \_\_\_\_\_

Date of Drill: \_\_\_\_\_ Time Started: \_\_\_\_\_ Time Completed: \_\_\_\_\_  
A.M./P.M. A.M./P.M.

Simulated Emergency (describe briefly): \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Emergency Equipment Used: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Did Emergency Equipment Operate Properly: \_\_\_\_\_ If not, list any problems  
and Corrective Action: \_\_\_\_\_

Elapsed Time from Start of Drill Until:

Fire Pump Started: \_\_\_\_\_

Water or Fire Extinguisher Put in Use: \_\_\_\_\_

Valves Operated and Tagged: \_\_\_\_\_

Other (describe): \_\_\_\_\_

Were you Satisfied with Drill? \_\_\_\_\_ Explain Answer: \_\_\_\_\_  
\_\_\_\_\_

What Changes, if any, Do You Plan or Recommend in the Next Drill? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List Any valves that were Inoperable: \_\_\_\_\_  
\_\_\_\_\_

List of Personnel Participating: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Supervisor

\_\_\_\_\_  
District Manager

cc: Region Safety Office  
Region Manager

# Spill Report

Facility	Wellhead / Header	
Always identify the Facility (single well / battery) that a spill would be associated with. If release occurred from a pipeline, in addition to identifying the facility, also identify the Wellhead or Header to which it is connected.		Lease
County	Date and Time Discovered	
Person Generating Report	Discharge Discovered By:	
Date and Time Discharge Began (if known)	Date and Time Discharge Ended (if known)	

Substance and Volume						
This spill involved <input type="checkbox"/> Liquid <input type="checkbox"/> Gas (check both if needed)						
Gas Volume Released		MCF from leak		MCF from blowdown		
Substance Spilled	Amount Spilled	Units mark one		Amount Recovered	Units mark one	
Oil (cond. or crude)		<input type="checkbox"/> bbls	<input type="checkbox"/> gal		<input type="checkbox"/> bbls	<input type="checkbox"/> gal
Produced Water		<input type="checkbox"/> bbls	<input type="checkbox"/> gal		<input type="checkbox"/> bbls	<input type="checkbox"/> gal
Oil-based Mud		<input type="checkbox"/> bbls	<input type="checkbox"/> gal		<input type="checkbox"/> bbls	<input type="checkbox"/> gal
Water-based Mud		<input type="checkbox"/> bbls	<input type="checkbox"/> gal		<input type="checkbox"/> bbls	<input type="checkbox"/> gal
Chemical		<input type="checkbox"/> bbls	<input type="checkbox"/> gal		<input type="checkbox"/> bbls	<input type="checkbox"/> gal
Chemical Name:						
Other		<input type="checkbox"/> bbls	<input type="checkbox"/> gal		<input type="checkbox"/> bbls	<input type="checkbox"/> gal
Specify:						

Risk Factors		
Did the spill cause a sheen on Navigable Waters?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Was spill contained within diked area? (liquid spills only)	<input type="checkbox"/> yes	<input type="checkbox"/> no
Is there a public area (town, road, house, etc.) within 1/4 mile?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Did spill impact Groundwater?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Surface Area Affected (ft <sup>2</sup> )		
Est. Spill Cost (supervisor to fill in)		
<input type="checkbox"/> Caliche/Prepared Surface <input type="checkbox"/> Vegetation / Land Affected <input type="checkbox"/> Limited Vegetation <input type="checkbox"/> Cropland		
<input type="checkbox"/> Wildlife/Livestock Affected <input type="checkbox"/> No impact <input type="checkbox"/> Affected (no animals killed) <input type="checkbox"/> Significant impact (animals killed)		

Failure Source -- PIPELINE								
inch Flowline	feet	<input type="checkbox"/> N	<input type="checkbox"/> S	<input type="checkbox"/> W	<input type="checkbox"/> E	of	Well / Header	<input type="checkbox"/>
<input type="checkbox"/> Buried <input type="checkbox"/> Steel <input type="checkbox"/> Externally coated <input type="checkbox"/> Surface <input type="checkbox"/> Fiberglass <input type="checkbox"/> <input type="checkbox"/> Transite <input type="checkbox"/> <input type="checkbox"/> Plastic								
Was the Line Chemically Treated? <input type="checkbox"/> yes <input type="checkbox"/> no								

Possible Reasons for Failure - (choose all that apply)	
<input type="checkbox"/> Internal Corrosion	<input type="checkbox"/> Instrumentation
<input type="checkbox"/> External Corrosion	<input type="checkbox"/> Weather
<input type="checkbox"/> Pressure	<input type="checkbox"/> Age
<input type="checkbox"/> Mechanical	<input type="checkbox"/> Vandalism
<input type="checkbox"/> Fatigue	<input type="checkbox"/> Inadequate Training

Failure Source - OTHER			
<input type="checkbox"/> Tank	<input type="checkbox"/> Wellhead/Stuffing Box	<input type="checkbox"/> Vessel Piping	<input type="checkbox"/> Line Connection Failure
<input type="checkbox"/> Tank Piping	<input type="checkbox"/> Chemical Storage Containers	<input type="checkbox"/> Vessel (dehy, stack pack, line heater, etc.)	<input type="checkbox"/> Breach of Reserve Pit/Cellar
<input type="checkbox"/> Other - explain			

Immediate Action Being Taken:	
Root Cause(s):	
Corrective Action(s):	



SECTION 6

**Injured Person's Name:** \_\_\_\_\_ **Date of Birth:** \_\_\_\_\_

**Address:** \_\_\_\_\_ **Time Employee Began Work:** \_\_\_\_\_ **AM/PM**

**Date Hired:** \_\_\_\_\_

**Home Phone No.:** \_\_\_\_\_ **Occupation of Injured Person:** \_\_\_\_\_

**Employer's Name:** \_\_\_\_\_ **ConocoPhillips Empl No.:** \_\_\_\_\_

**Witness:** \_\_\_\_\_ **Witness Name** \_\_\_\_\_ **Company** \_\_\_\_\_

**Section 7 to 9 should be completed after investigation.**

SECTION 7

<p><b>Type of Incident:</b></p> <p><input type="checkbox"/> Caught, Pinched between objects</p> <p><input type="checkbox"/> Fall</p> <p><input type="checkbox"/> Object dropped, released, or thrown</p> <p><input type="checkbox"/> Fire, Flame, Intense heat</p> <p><input type="checkbox"/> Load-lifting</p> <p><input type="checkbox"/> Chemicals</p> <p><input type="checkbox"/> Heat or cold</p> <p><input type="checkbox"/> Struck by</p> <p><input type="checkbox"/> Other</p>	<p><b>Unsafe Acts and Conditions: (Check all that apply)</b></p> <table style="width: 100%;"> <tr> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> Employee did not recognize hazard  <input type="checkbox"/> JSA did not address hazard  <input type="checkbox"/> Sense of urgency  <input type="checkbox"/> Procedure not followed  <input type="checkbox"/> JSA not followed  <input type="checkbox"/> PPE not used or inadequate  <input type="checkbox"/> Defective equipment  <input type="checkbox"/> Proper tool/equipment not used                 </td> <td style="width: 33%; vertical-align: top;"> <input type="checkbox"/> Design deficiencies  <input type="checkbox"/> Poor access to equipment  <input type="checkbox"/> Equipment not maintained  <input type="checkbox"/> Failure of safety device/system  <input type="checkbox"/> Poor housekeeping  <input type="checkbox"/> Communication ineffective  <input type="checkbox"/> Poor weather conditions:  <input type="checkbox"/> Other:                 </td> </tr> </table>	<input type="checkbox"/> Employee did not recognize hazard <input type="checkbox"/> JSA did not address hazard <input type="checkbox"/> Sense of urgency <input type="checkbox"/> Procedure not followed <input type="checkbox"/> JSA not followed <input type="checkbox"/> PPE not used or inadequate <input type="checkbox"/> Defective equipment <input type="checkbox"/> Proper tool/equipment not used	<input type="checkbox"/> Design deficiencies <input type="checkbox"/> Poor access to equipment <input type="checkbox"/> Equipment not maintained <input type="checkbox"/> Failure of safety device/system <input type="checkbox"/> Poor housekeeping <input type="checkbox"/> Communication ineffective <input type="checkbox"/> Poor weather conditions: <input type="checkbox"/> Other:
<input type="checkbox"/> Employee did not recognize hazard <input type="checkbox"/> JSA did not address hazard <input type="checkbox"/> Sense of urgency <input type="checkbox"/> Procedure not followed <input type="checkbox"/> JSA not followed <input type="checkbox"/> PPE not used or inadequate <input type="checkbox"/> Defective equipment <input type="checkbox"/> Proper tool/equipment not used	<input type="checkbox"/> Design deficiencies <input type="checkbox"/> Poor access to equipment <input type="checkbox"/> Equipment not maintained <input type="checkbox"/> Failure of safety device/system <input type="checkbox"/> Poor housekeeping <input type="checkbox"/> Communication ineffective <input type="checkbox"/> Poor weather conditions: <input type="checkbox"/> Other:		

SECTION 8

**Immediate Actions Taken:**

SECTION 9

**Investigation Team Lead:** \_\_\_\_\_

**Comments by ConocoPhillips  
Site Supervisor:**

**All Actions Have Been Completed:**     Yes     No    \_\_\_\_\_ **Signature**    \_\_\_\_\_ **Date**



**A. Date and Time of Accident**

Date of accident	Day of week	Hour (military time preferred)
------------------	-------------	--------------------------------

**B. Where Accident Occurred**

City or town	County/Parish	State
Location (street, road or intersection)		Distance from nearest town (if outside limits)
Other		

**C. Company Vehicle (No. 1)**

Purpose of trip <input type="checkbox"/> Company business <input type="checkbox"/> Personal business	Legal owner of vehicle		
Base location of vehicle	Company unit no.(s)	Department	
Name of driver	Age	Social Security no.	Driver's department (if different)
Driver's headquarters (terminal/facility)	Other occupant's name		Occupant company employee <input type="checkbox"/> Yes <input type="checkbox"/> No
Driver's home address	City	State	Zip
Vehicle description (year, make, model, including trailer)	Estimated damage \$		
Has vehicle/unit been repaired <input type="checkbox"/> Yes <input type="checkbox"/> No	Cost \$		

**D. Other Vehicle (No. 2)**

Pedestrian  Train  Bicyclist

Name of driver/operator	Age	Phone no. ( ) -	Driver licensed <input type="checkbox"/> Yes <input type="checkbox"/> No	License no.
Legal owner of vehicle	Estimated damage to vehicle \$		Has vehicle been repaired <input type="checkbox"/> Yes <input type="checkbox"/> No, for \$	
Owner's address	City, state		Zip	Owner's phone no. ( ) -
Vehicle description (year, make, model)	License tag (year, number, state)			
Insurance carrier	Policy no.			
Agent's name and location	Agent's phone no. ( ) -			
Name(s) of other occupant(s) in Unit No. 2				

**E. Post Accident Communication**

What did driver of Unit No. 2 say after accident?

Contact with No. 2 insurance representative?  
 Yes  No  
 (explain)

Has COPC insurance carrier been contacted <input type="checkbox"/> Yes <input type="checkbox"/> No	Insurance office where report was filed-City	State
---	--	-------

**F. Property Damage Other Than Vehicle**

Describe	Estimated cost \$
Owner's name and address	Owner's phone ( ) -

**G. Witnesses (Attach cards if available)**

Name 1.	Phone ( ) -	License tag (year, number, state)	
Address	City	State	Zip
Name 2.	Phone ( ) -	License tag (year, number, state)	
Address	City	State	Zip

**H. Personal Injuries**

Name, Address 1.	Taken for treatment to	<input type="checkbox"/> Driver <input type="checkbox"/> Pedestrian <input type="checkbox"/> Passenger In vehicle no.:
Nature of injuries		
Name, Address 2.	Taken for treatment to	<input type="checkbox"/> Driver <input type="checkbox"/> Pedestrian <input type="checkbox"/> Passenger In vehicle no.:
Nature of injuries		

**Environmental Conditions**

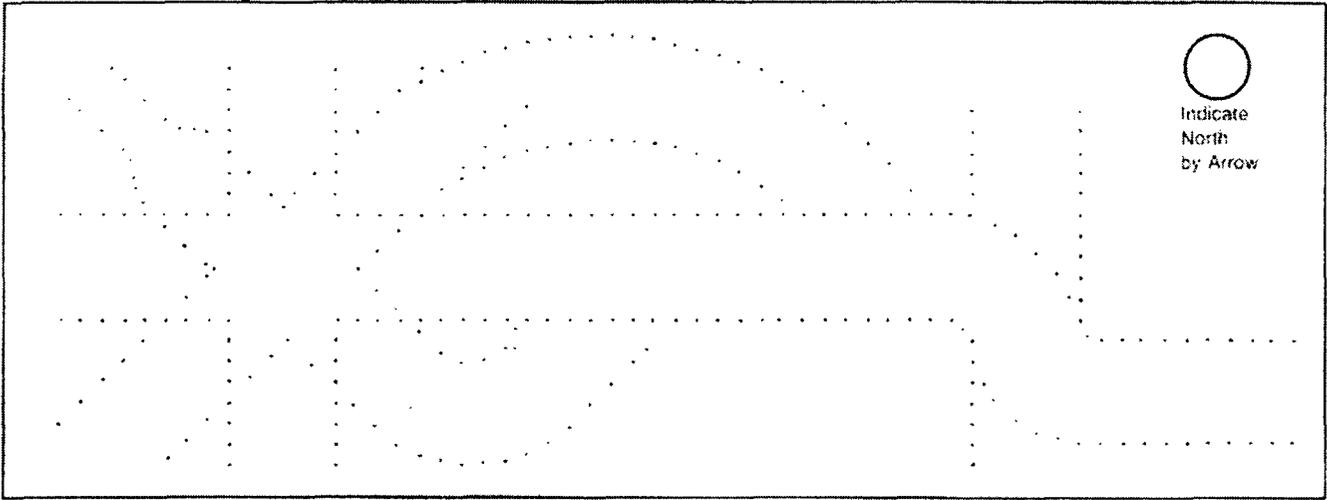
<b>Character of Road</b> (Check two) <input type="checkbox"/> Straight road <input type="checkbox"/> Curve <input type="checkbox"/> Level <input type="checkbox"/> On grade <input type="checkbox"/> Hillcrest	<b>Surface Condition of Road</b> (Check one) <input type="checkbox"/> Dry <input type="checkbox"/> Wet <input type="checkbox"/> Muddy <input type="checkbox"/> Snowy <input type="checkbox"/> Icy	<b>Light</b> (Check one) <input type="checkbox"/> Daylight <input type="checkbox"/> Dark <input type="checkbox"/> Dusk <input type="checkbox"/> Dawn <input type="checkbox"/> Darkness - street lights <input type="checkbox"/> Darkness- no streets lights	<b>Driver Vision Obscured</b> (Check one or more in each section) Driver 1 2 <input type="checkbox"/> Rain, snow, etc., on windshield <input type="checkbox"/> Windshield otherwise obscured <input type="checkbox"/> Vision obscured by load on vehicle <input type="checkbox"/> _____ Specify Other <input type="checkbox"/> Vision not obscured
<b>Road Surface</b> (Check one) <input type="checkbox"/> Concrete <input type="checkbox"/> Blacktop <input type="checkbox"/> Brick <input type="checkbox"/> Gravel <input type="checkbox"/> Dirt <input type="checkbox"/> _____ Specify Other	<b>Road Defects</b> (Check one or more) <input type="checkbox"/> Defective shoulders <input type="checkbox"/> Holes, deep ruts, Bumps, etc. <input type="checkbox"/> Loose material on surface <input type="checkbox"/> Under construction <input type="checkbox"/> Specify Other <input type="checkbox"/> No Defects	<b>Weather</b> (Check one) <input type="checkbox"/> Clear <input type="checkbox"/> Raining <input type="checkbox"/> Snowing <input type="checkbox"/> Fog <input type="checkbox"/> _____ Specify Other	Driver 1 2 <input type="checkbox"/> Trees, crops, <input type="checkbox"/> Building <input type="checkbox"/> Embankment <input type="checkbox"/> Signboard <input type="checkbox"/> Hillcrest <input type="checkbox"/> Parked vehicles <input type="checkbox"/> Moving vehicles <input type="checkbox"/> _____ Specify Other <input type="checkbox"/> Not obscured
<b>What Drivers Were Doing</b> Driver (Check one for each driver) 1 2 <input type="checkbox"/> Going straight ahead <input type="checkbox"/> Making right turn <input type="checkbox"/> Making left turn <input type="checkbox"/> Making U turn <input type="checkbox"/> Slowing or stopping <input type="checkbox"/> Starting in traffic lane <input type="checkbox"/> Start from park position <input type="checkbox"/> Stopped in traffic lane <input type="checkbox"/> Parked <input type="checkbox"/> Backing	Driver (Check applicable items) 1 2 <input type="checkbox"/> Passing <input type="checkbox"/> Avoiding vehicle, <input type="checkbox"/> Object, or ped. <input type="checkbox"/> Skidded before <input type="checkbox"/> applying brakes <input type="checkbox"/> Skidded after <input type="checkbox"/> applying brakes <input type="checkbox"/> Driverless moving <input type="checkbox"/> vehicle	<b>Condition of Drivers and Pedestrian(s)</b> Driver (Check one or more) 1 2 Ped. <input type="checkbox"/> Ill <input type="checkbox"/> Fatigued <input type="checkbox"/> Apparently asleep <input type="checkbox"/> Body defect (arms, legs, hearing, eyesight, paralysis, etc.) <input type="checkbox"/> Apparently normal <input type="checkbox"/> Condition not known Explain condition	<b>Vehicle Condition</b> (Check one or more) Driver 1 2 <input type="checkbox"/> Defective brakes <input type="checkbox"/> Improper lights <input type="checkbox"/> Defective steering mechanism <input type="checkbox"/> Defective tires <input type="checkbox"/> Other defects <input type="checkbox"/> Defects not known <input type="checkbox"/> Chains in use



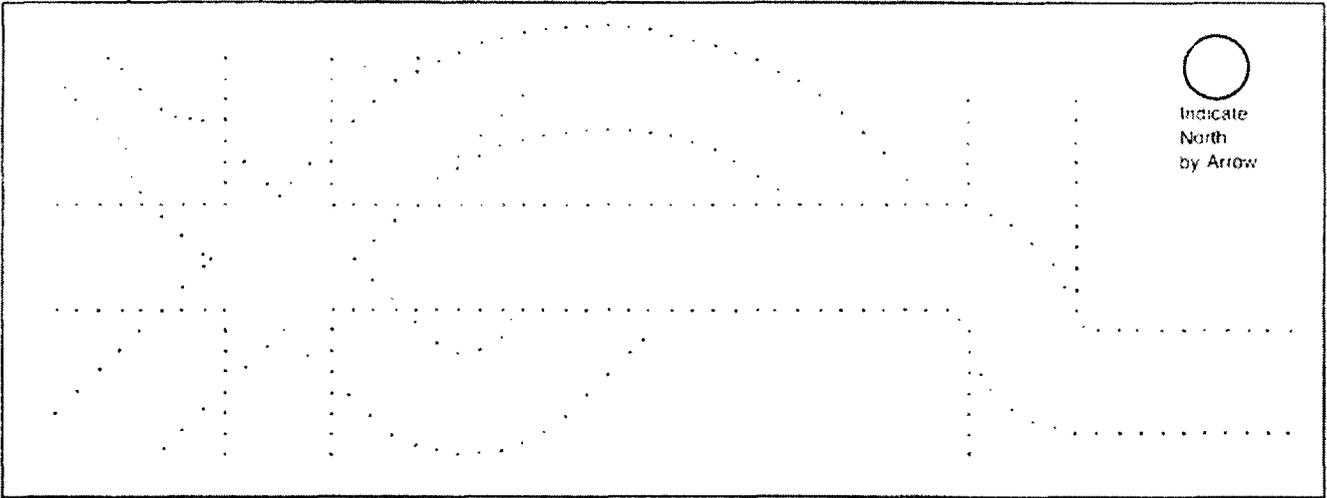
**Collision Diagram**

If appropriate or instructed, please indicate by diagrams below the positions of vehicles in all three phases as noted. Identify Company vehicle as Unit 1, second vehicle as Unit 2, etc.

**A. Indicate on this diagram the positions of the vehicles before impact**



**B. Indicate positions at point of impact**



**C. Indicate resting points after collision**

