PLAINTIFF'S EXHIBIT

MON-1727

MCC 950920

Monsanto

FROM (NAME & LOCATION) J. T. Payne, (SS-18), Texas City, Texas

February 8, 1984 cc G. L. Tromblee

SUBJECT SHAC MINUTES - 2/8/84

REFERENCE

TO : ATTENDEES:

E. P. Bailey
S. W. Moncla
J. D. Richards
J. A. Stal, Jr.
J. T. Payne
R. T. Hammann

These are the minutes of the February 8, 1984, SHAC committee.

Fourth Quarter Inspection Awards

Awards will be presented from 2:00 til 3:00 p.m. on Friday, February 10, 1984.

2:00 p.m. Department 33

2:15 p.m. Fire Department

2:30 p.m. Insulator Shop

2:45 p.m. 3rd Floor Research 1 Conference Room

SHAC will meet at the pool cars at 1:50 p.m., Friday. Signs showing the winners of the safety awards are displayed at the plant gates.

SAFETY AWARDS

Approval has been received for the individual safety award program (jackets). A bulletin board announcement will be developed to announce this to the plant.

JANUARY/FEBRUARY SAFETY SYNDROME

1. The need for an expanded staff meeting to discuss safety will be discussed by the PMSB next week.

2. A feature article on units with the best safety records will be put into the plant news (Joe Stal; by the end of February).

STOP Emphasis

STOP observations should be statistically analyzed in 1984. This should be considered by the PMSB.

Unit Laboratory Inspection

The following units have not completed their unit lab audits:

1. Methanol

2. Acetic Acid

3. Department 53

Hourly Safety Committee

SHAC has been asked to survey the leaking PA blind incident and the plant O_2, flammable checking procedures (S. Moncla, before 2/28).

SHAC has been asked to survey the problem of people not leaving a key in the ignition of vehicles (P. Bailey, before 2/28).

Goals

A goals document was developed.

Annual Inspection

It was felt that the best time for an annual inspection was the week of September 17, 1984 (or the preceding or following week).

New Business

Incident investigation TC 84-1 is attached. The ownership of ex-battery limits piping (recommendation 1) will be referred to SAC for policy.

Corrugated fiberglass has been installed in the plant that is flammable and does not meet Monsanto's standards. A memo will be sent to key personnel.

J. T. Payne

JTP:sr
Attachments

Monsanto COMPANY CONFIDENTIAL | JRA/GOALS | 19 84

NAME	TITLE	LOCATION	JRA DATE	GOALS DATE
	Safety & Housekeeping Action Committee	Texas City, Texas	2-9-84	2-9-84

PRINCIPAL THRUST
Improve individual involvement in plant safety.

GENERAL CONDITIONS - PREMISES
Planned safety and housekeeping programs are funded.

RESULTS TO BE WORKED TOWARD * RELATES TO PRINCIPAL THRUST ✓ MAJOR RESULT	GOALS (Include Joint Accountability in This Column)	RANGE BASIC	RANGE OUTSTANDING	Weight
1. Improved plant safety performance.	In 1984, achieve targeted plant safety performance of no more than 11 recordable injuries and 2 lost work day injuries.	16 R.I. 4 T.L.W.I.	8 R.I. 1 T.L.W.I.	
2. Sustained and improved high level of safety and housekeeping. In 1984, Emphasis will be on preparation for Annual Corporate Safety Housekeeping Inspection by improving the competitive quarterly safety and housekeeping inspections. Additional data will be given to the inspectors (unit performance on STOP, hearing areas, AVIP, RV's, etc.). The competition groups will be changed.	Re-institute Annual Corporate Safety and Housekeeping Inspection and achieve excellent rating.	Improve competitive quarterly inspections.	Implement competitive quarterly inspections ~~by 1st quarter~~. Achieve outstanding rating in Annual Safety and Housekeeping Inspection.	
3. Improved effectiveness of STOP. In 1984, Emphasis will be on monitoring STOP program effectiveness.	Monitor effectiveness of STOP program.	Develop methods to evaluate the STOP program.	Monitor effectiveness of STOP program and provide feedback to plant.	
4. Improved plant wide safety teams. In 1984, Emphasis will be on increasing individual involvement.				

JRA APPROVED BY

DATE

GOALS APPROVED BY

DATE

GOALS REPRESENT % OF TOTAL PERFORMANCE

G 3083 (REV 4/83)

LAM002201

SC 001003

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NAME	TITLE	LOCATION	JRA DATE	GOALS DATE
Safety & Housekeeping Action Committee		Texas City, Texas	2-9-84	2-9-84

PRINCIPAL THRUST

GENERAL CONDITIONS - PREMISES

RESULTS TO BE WORKED TOWARD * RELATES TO PRINCIPAL THRUST ✓ MAJOR RESULT	GOALS (Include Joint Accountability in This Column)	RANGE BASIC	RANGE OUTSTANDING	Weight
5. Improved safety awareness of contractor personnel. Emphasis in 1984 will be to implement the contractor safety program.				
6. Improved level of safety awareness through implementation of plant safety promotional efforts. In 1984, emphasis will be plant safety publicity.				
7. Improved emergency response, procedures and drills.				

JRA APPROVED BY

DATE

GOALS APPROVED BY

DATE

GOALS REPRESENT % OF TOTAL PERFORMANCE

G 3083 (REV 4/83)

LAM002202

SC 001004

INCIDENT INVESTIGATION

No. TC 84-1

DISTRIBUTION

G. L. Tromblee
J. G. Trafton
J. S. Haygood
G. T. Ryan
R. L. Hammond
B. C. Lancaster
G. W. Bostick
D. W. Metten
W. G. Juhl
R. T. Hammann
E. P. Bailey
D. D. Kos
H. Bessire
R. W. Fransham
W. Nonnenmacher
R. E. Supak
G. R. Vogtmann
D. R. Wise

Report No. TC 84-1

CONTRACT PIPEFITTER EXPOSED TO STYRENE SPILL IN PIPERACK NEAR STYRENE TRUCK LOADING STATION

I. INCIDENT

An Opel pipefitter was sprayed with styrene monomer when materials handling tried to load a truck through the line that was being worked on. The line had not been isolated and prepared for maintenance.

II. CAUSE & CONTRIBUTING FACTORS

Primary cause of this incident was trying to load styrene through a line which was being worked on. A major contributing factor was failure of the Styrene Manufacturing Foreman to ascertain the nature of the work to be done, which led to decontamination and isolation of the wrong line.

III. RECOMMENDATIONS

1. The plant should reexamine the question of ownership of and operational responsibility for ex-battery limits pipelines and systems, with particular attention to material handling systems.
   Responsibility: SHAC
   Complete by: Initial report to PMSB by 3/84.

2. Review this incident with all operators and craftsmen, including Capital Projects, stressing the importance of thorough communication on work to be done, and the obligation of the responsible person to inspect the job site.
   Responsibility: Manufacturing Supt.s
   Capital Projects Supv.
   Complete by: 2/29/84

3. Safety shower/eyebath repairs should be worked to completion or alternate facilities provided.
   Responsibility: Maintenance & Mfg supt.s
   Timing: immediate

4. Re-emphasise the need to provide proper access to scaffolds and work platforms.
   Responsibility: Maintenance Supt.s
   Capital Projects Supv.
   Complete by: 2/29/84

IV. DETAILS

a) Chronological Description of Incident

On Wednesday, January 11th an Opel Foreman asked the Styrene Manufacturing Foreman to get a styrene loading line ready for

Capital Projects to make a tie-in for the Truck Entry project on the following day.

On Thursday morning Styrene operations indicated the line was ready and three Opel pipefitters prepared to make the tie-in, which consisted of removing a flanged "L" shaped spool from the 4 inch truck loading line and replacing it with a "T" section. They loosened flange bolts at about 1015 hours. Considerable styrene ran out and was still dripping from the flange as lunch time approached. The fitters washed down the area and went to lunch.

When the three returned from lunch the flange had stopped dripping. They removed the "L" spool and cleaned the flanges in preparation for installing the new "T" section. The fixed pipe end had drooped several inches when the spool was removed and one of the men was in the process of & tieing the end of the pipe up with wire. He was standing directly in front of the open flange, which was about three feet above the scaffold floor, and bending down toward the flange. At the same time Material Handling was preparing to load a truck with styrene from T18-2 (see piping Flow sketch, Figure 1). They had loaded a tank car at about 0945 hours that morning and had left the line lined up from the pump to both the tank car and tank truck loading racks (valves 4 and 7 open). One pumper gauger stood by at the truck loading station while the other went to start the loading pump which is located about 100 yards to the East. When the pump was started, styrene gushed from the open flange where the Opel fitters were working striking the Opel fitter on the left hip and drenching him. The injured and the other two fitters moved about 20 ft south along the pipe rack to a caged ladder and decended to the ground. (The spill alarm was turned in by a Materials Handling chief pumper-gauger who was working nearby, and sounded at 1310 hours.)

The injured man went to a safety shower at the ACY loading station, about 90 ft to the West, got under the shower, stripped to his shorts, and washed for 10 to 15 minutes. The eyebath did not have enough flow to work properly so he washed his eyes as well as he could by turning his face up into the shower flow. Two Plant nurses showed up at the scene and took the injured to the dispensary.

The shower in the dispensary was not working properly so the injured was taken to the main gate locker room where he showered again and put on clean coveralls. He then returned to the dispensary where he was examined by Dr. O'Bryant. Blood and urine samples were taken. (Urine samples were also taken from the other two Opel pipefitters.) Ointment was used to treat the injured's eyes. He went home at the end of his regular shift and returned to work on his normal shift next day.

The pumper-gauger who started the loading pump returned to the truck loading area and saw the styrene spilling from the pipe rack. It took him and the other materials handling personnel a minute or two to realize that the spill was coming from the loading pump, after which he returned to the pump and shut it off. The pump was on for an estimated 5 minutes and a total spill of 1900 gallons occurred (determined from tank level).

b) Findings

1. The "injured" was sprayed with styrene from his face to his feet and his clothing saturated. The only injury was irritation to the eyes, for which first aid treatment was provided.

2. Styrene is not considered to be a serious industrial hazard. Toxicity is low. Vapor concentrations above 400 ppm cause moderate irritation to the eyes and respiratory tract. Liquid styrene will cause severe eye irritation, but no permanent damage, and can cause skin irritation and, with prolonged contact, blistering

3. The wrong line was decontaminated and isolated. The Styrene Manufacturing foreman was familiar with the styrene loading area. He did not go into the field to inspect the work site, and instructed an operator to prepare the 16T18-1 recirculation line for maintenance, which was done.

4. The Opel Foreman and the Opel pipefitters did not check the line out, before breaking into it, to verify it had been isolated and locked out.

5. When starting the styrene loading pump the pumper-gaugers at the pump and truck loading rack are not in visual or voice contact.

6. An uninvolved Opel pipefitter working in the area "guestimated" that as much as 2 to 3 barrels of liquid drained from the truck loading line after the flange was cracked open.

7. Styrene manufacturing personnel are generally not familiar with the styrene loading system and do not know how the lines are interconnected and what valving exists.

8. EB/Styrene has a written procedure that outlines ownership and operational responsibility for ex-battery limits process and utility headers.

9. The three Opel fitters were wearing hard hats and safety glasses on this job. Styrene internal practice would have called for wearing full protective gear when breaking the first flange of a closed piping system. In this incident Manufacturing provided no direction on protective equipment. (Note that the incident did not occur until about 3 hours after the first flange was broken.)

No Styrene manufacturing personnel were in the area while the job was in progress.

10. The scaffold constructed for this job, consisting of boards placed across horizontal I beams in the pipe rack, terminated 10 feet from the permanent cage ladder used for access. No means for bridging the gap was provided. The area is very congested and getting across this 10 foot gap would pose a significant hazard.

11. The injured tried to use a safety shower located at the foot of the cage ladder at the job site but it was out of service due to freeze damage. The Opel fitters knew some showers in the area were out of service but did not know which ones.

12. The LP&S review for the Truck Entry project was held about 1 1/2 years ago. Meanwhile, the project engineer for the project had left and been replaced. Styrene operations did not have a clear understanding of what the project was all about.

c. Discussion

1. Ex-Battery Limits Responsibility

The plant does not have a clear policy or procedure delineating ownership and operational responsibility for ex-battery limits lines. Loading systems are a particular problem. They are generally remote from the operating unit. Manufacturing owns them, but has little to do with their operation, and is generally not very knowledgeable about physical details of the system. In some instances Materials Handling has essentially complete operational responsibility. This split responsibility increases the probability of incidents such as the one reported here.

P-0117 (Fire, Entry and Special Permit Procedure) incidentally addresses the ownership/responsibility question in Section IV. Many of the statements in this procedure are fuzzy or contradictory in the case where one group owns a system and another uses it. Also, since P-0117 deals with permitted work, does it apply, or would people consider it, when dealing with work not requiring a permit?

P-0118 (Work Permit for Off-Battery Work, and Use of Heavy Equipment Near Electrical Lines) also refers to ownership and responsibility in a number of places. It does not say, however, that use of a work permit is required for off-battery work other than that near electrical lines. Most of the plant apparently does not use P-0118, except for work near electrical lines, and the people we talked to were generally unaware of its non-electrical provisions.

The key to safe and proper maintenance is to specify clearly one person who has responsibility for a system and to hold that individual accountable for understanding the job and taking the actions necessary to insure it can be done safely.

2. Communications

The pipe line tie-in involved in this incident was one which clearly required the involvement of 3 groups: Manufacturing, Materials Handling, and Capital Projects. All the people necessary to insure a safe job were readily available, and the Opel Foreman took the first step by requesting the line be prepared for maintenance. The Styrene Manufacturing Foreman, as the "owner" of the pipeline, should have assumed responsibility for being sure he understood the work to be done, specified preparations to be made and safety equipment to be worn, and communicated with Materials Handling to be sure they knew what was being done.

3. Safety Showers

Three malfunctioning showers were involved in this incident. The safety shower at the spill site was not working (no water) delaying the time required to get under a shower by 30 seconds to a minute. This could have been critical if a severely corrosive or toxic exposure had been involved. The eye bath on the safety shower at the ACY rack did not have sufficient water pressure to function properly, and the shower in the dispensary did not work properly due to low water pressure. These problems were apparently due to potable water system damage that occurred during the heavy freeze between Christmas and New Years -- about 2 weeks before the incident. We are being too complacent about repairs and creating a situation that could lead to a major injury.

V. APPENDIX

Figure 1: Styrene Loading Area Piping Flow Diagram

Figure 2: Sketch of injury area

Figure 3: Cause and Effect Diagram

VI. PERSONNEL

Involved:
William C. Birdwell, Opel pipefitter (injured)
James C. Fuller, Opel pipefitter
Rick D. Brown, Opel pipefitter
Gary L. Hood, Opel Foreman
John F. Couch, Styrene Mfg. Foreman
Harlan Bessire, Mat'l. Handling Chief Pumper-Gauger

Investigators:
Harlan Bessire
Robert Fransham
Weldon Nonnenmacher
Ray Supak
Glenn Vogtman
Doyle Wise

Doyle R. Wise
Chairman

APPROVED BY:

Date: 2/3/84

Figure 1.

PIPING FLOW DIAGRAM OF STYRENE LOADING AREA

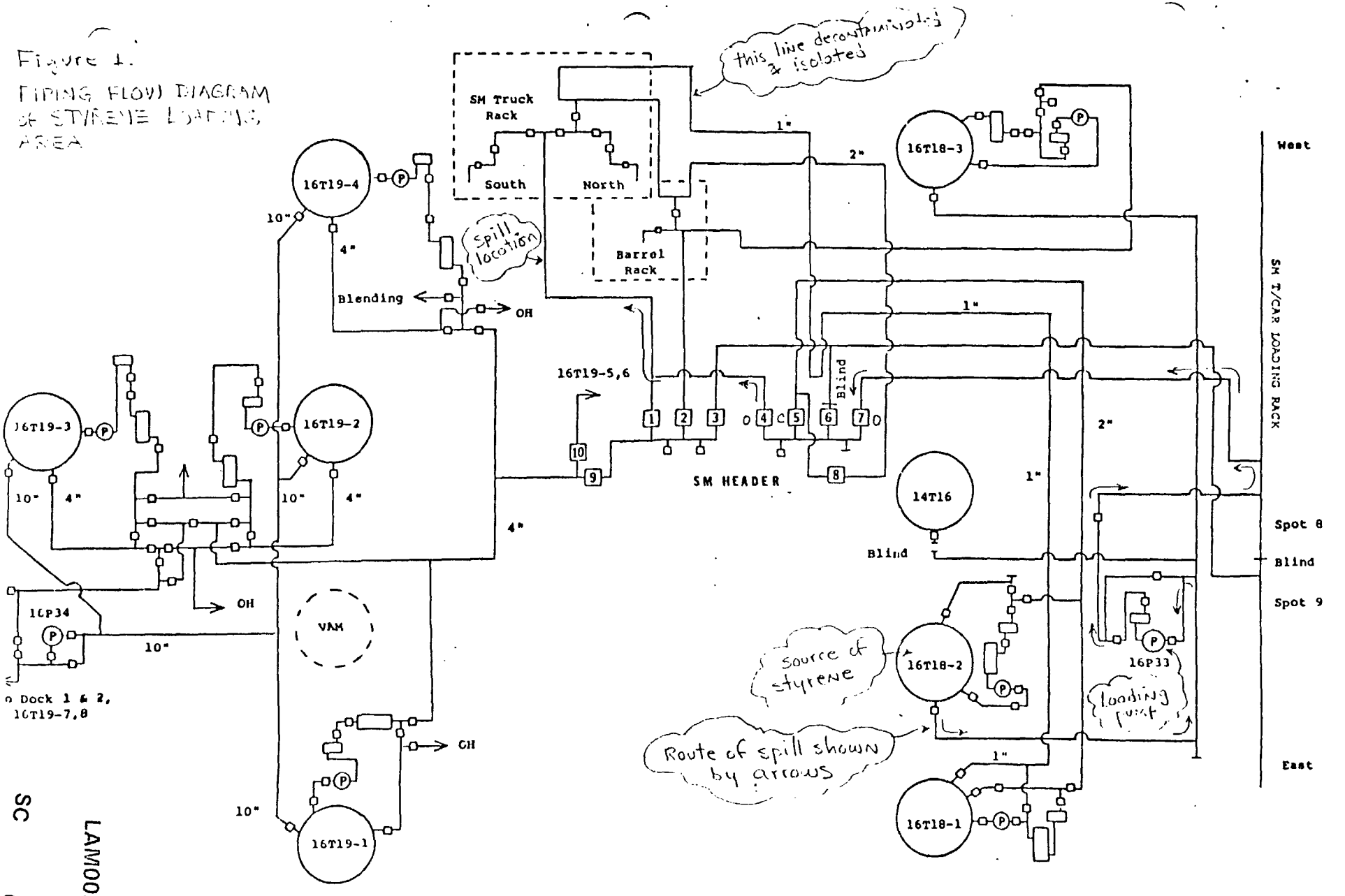

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Figure 2

SKETCH of SPILL AREA

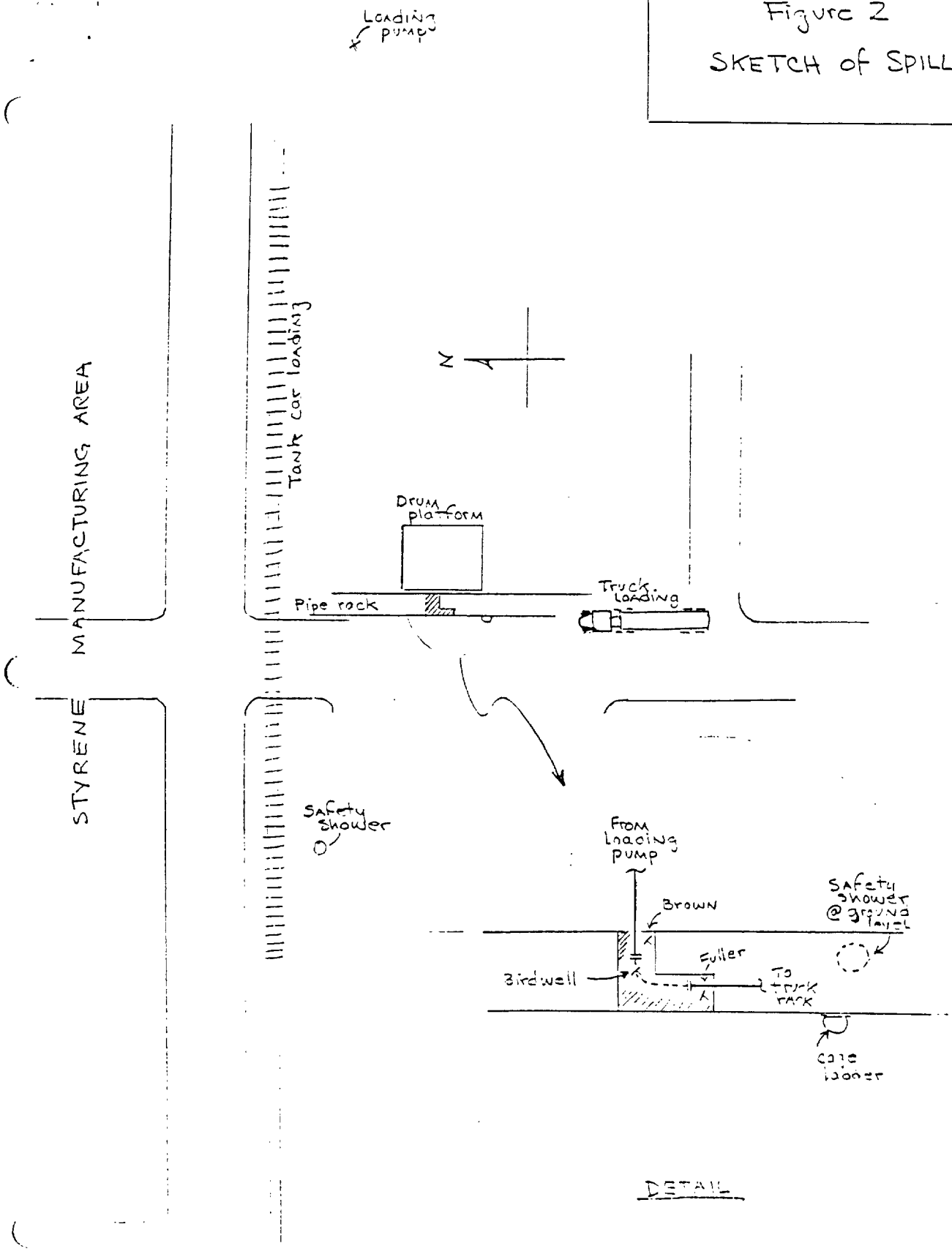

Figure 3

CAUSE AND EFFECT DIAGRAM