INVESTIGATION WORK PLAN
Revised June 21, 1994

Sherwin Williams Company Plant
1450 Sherwin Avenue
Emeryville, California

property of

The Sherwin Williams Company
101 Prospect Avenue Northwest
Cleveland, Ohio 44115

June 21, 1994

Prepared For

Mr. Frank Satterwhite, Receiver for Rifkin Property
3220 Monika Lane
Hayward, California 94541

Prepared By

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Project Number 115093

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1. INTRODUCTION

Mr. Frank Satterwhite, Receiver for the Rifkin property, has authorized TMC Environmental, Inc. (TMC) to submit a workplan for subsurface investigation of up gradient soil and groundwater. The workplan is based upon the results of previous investigation at the Rifkin and Sherwin Williams Company properties completed by Levine-Fricke and Erler & Kalinowski.

2. SITE LOCATION

The property to be investigated, called the "Plant" in this workplan, is located at the following address:

Sherwin-Williams Company Plant
1450 Sherwin Avenue, City of Emeryville
County of Alameda, State of California

The Plant is at the corner of Horton Street and Sherwin Avenue. Horton Street bounds the Plant on the east. Sherwin Avenue bounds the Plant on the south. Railroad tracks bound the Plant on the west. The Rifkin property is adjacent to the Plant on the north.

3. BACKGROUND

According to a review of agency files, Sherwin Williams Company voluntarily initiated the environmental investigation and cleanup of its property in 1989 after it closed a portion of its paint manufacturing plant. The investigation and cleanup was conducted under the auspices of the Regional Water Quality Control Board (RWQCB). Sherwin William Company's environmental consultant, Levine-Fricke, found that contamination of the Sherwin William's property is caused by two sources: 1) releases associated with two former tank farms used for the storage of oils and solvents that were located to the west and southwest of the Rifkin property, and 2) an arsenic source area located to the south and adjacent of the Rifkin property. Groundwater flows in the direction of the Rifkin property.

To determine the extent of the Sherwin Williams Company plant contamination, Levine-Fricke drilled 16 soil borings, installed nine monitoring wells and analyzed the soil borings and groundwater samples from both the new wells and seven existing wells. Levine-Fricke concluded that off-site migration (in the direction of the Rifkin property) has probably occurred. Levine-Fricke is currently monitoring the site, under a plan approved by the RWQCB, and developing interim remedial measures to contain the contaminants and eventually conduct the environmental cleanup. Levine Fricke has partially completed the installation of a slurry wall surrounding the Sherwin Williams Company plant site.

During the summer of 1993, Erler & Kalinowski, Inc. (EKI) performed soil and groundwater sampling on the Rifkin property. The purpose of the site characterization was to evaluate the

nature and potential magnitude of likely remediation activities which may need to be undertaken on the Rifkin property prior to redevelopment for Chiron's planned R&D/industrial use. EKI reported that free petroleum product was observed at the groundwater table in boring 4525-7. This boring is at the southwest corner of the Rifkin property near the Plant. Chlorinated volatile organic compounds including 1,2-DCA were found in the shallow aquifer zone along the up gradient edge of the Rifkin property.

EKI also reviewed the Levine Fricke reports on file with the RWQCB for the Plant. EKI's summary reports that elevated concentrations of arsenic and petroleum hydrocarbons have been detected in shallow groundwater, and in soils, on the Sherwin Williams facility. Evaluation of chemical distribution maps and groundwater gradient maps from the Sherwin Williams site indicates that these compounds are migrating onto the southwestern portion of the Rifkin site. These compounds appear to be migrating onto the Rifkin property from the direction of the Sherwin Williams plant.

In April 1994, Levine-Fricke performed a soil and ground water investigation on the southern portion of the Rifkin property. Levine-Fricke presented the procedures and findings of the investigation in a "Field Investigation Report" dated May 19, 1994. The results of the sampling and laboratory analyses indicates substantial ground water contamination along the southern margin of the Rifkin property. One boring, SB-8, located on the Sherwin-Williams property has substantial soil and ground water contamination. Excessive laboratory detection limits prevented the complete characterization of the contamination in boring SB-8. The ground water contamination in boring SB-8 directly concerns the water quality on the Rifkin property.

4. PROPOSED SCOPE OF WORK

The objective of the investigation is to explore for the up gradient presence of petroleum and volatile organic compound contamination in the groundwater and soils adjacent to the Rifkin property. Arsenic contamination is already known to be impacting the soil and ground water of the Rifkin property. The completion of the slurry wall surrounding the Plant will drastically alter the groundwater flow from the Plant onto the Rifkin property. This change in groundwater flow will eliminate irrecoverable data on up gradient sources of contamination. The target chemicals for this investigation will be total petroleum hydrocarbons as gasoline, diesel, benzene, toluene, ethylbenzene, total xylenes, petroleum oil & grease, total lead, and volatile organic compounds (VOC).

Upon the request of the Receiver for the Rifkin property, TMC is proposing the following scope of the work:

- The drilling of four exploratory borings to a depth of 15 feet below grade. The collection of soil samples at depths of three, six, nine, and 12 feet bsg. The laboratory analysis of samples from the exploratory borings for the target chemicals. Plate 2, Site Map, shows the proposed locations of the exploratory borings.

- The collection of a grab water sample from each boring. Temporary well casing will be installed in each boring to allow the purging and recovery of a water sample. The laboratory analysis of samples from the exploratory borings for the target chemicals.

The tasks completed during this investigation agree with the guidelines of the State enforcing agency, the San Francisco Bay Regional Water Quality Control Board.

5. SAMPLING AND ANALYSIS PROCEDURES

The sampling and analysis procedures that will be observed by field personnel participating in the sampling of soil and water are described in herein.

DRILLING OF EXPLORATORY BORINGS

- Permits required for drilling the soil borings will be obtained before the start of work from the local permitting agency if required. A copy of the permit will be present on site during drilling operations.

- The drilling method used for the exploratory borings will be similar to the method used by Erler & Kalinowski, Inc. and Levine-Fricke during previous investigation. Boreholes for collecting soil and grab water samples will be drilled by hydraulically driving a 1 ½ " diameter core rod lined with sample liners inside a 1 5/8" diameter hollow steel sampling tube. Upon removal of each sampler, the bottom sample will be retained for laboratory analysis. The adjacent soil sample from the sampler will be collected for lithologic description.

- Following the advancement of a boring and prior to sealing, TMC will collect a semi-representative or grab groundwater sample from the boring hole. Grab samples will be collected by slowly purging the boring hole with a bailer until the hole is evacuated or three boring hole volumes are removed. Samples will be collected with a clean Teflon or a dedicated, disposable PVC bailer. Samples will be handled and transported as if a representative groundwater sample. No quality control samples or assessment will be collected with grab samples.

- Each boring will be sealed with cement to surface grade.

LITHOLOGIC LOGGING

- Under the supervision of a certified engineering geologist will be a field geologist, or soil scientist, or environmental specialist and a qualified field technician on site to direct drilling operations, supervise sampling procedures, and record information needed for bore hole and monitoring well logs, cross sectional charts, and site maps.

- Cuttings and other samples from all borings will be visually logged and samples will be classified according to methods recommended by the U.S. Environmental Protection Agency. In addition all boring logs will include a geologic description of the lithology encountered at the sampling intervals.

6. SAMPLE COLLECTION AND HANDLING

SOIL SAMPLE COLLECTION

- The soil sampling in borings will commence at a depth of 3½-5 feet below surface grade with a 1½-foot interval of drive sampling, unless prior investigation or site conditions warrant modification. Samples will be taken at three-foot increments to the depth of the boring. Continuous sampling may be utilized where additional detail is regarded as necessary by TMC staff to define the lithologic or contamination characteristics.

- Soil sampler casings will be disassembled, steam-cleaned or cleaned in soapy (TSP) water. The casing is then rinsed with clean tap water and with de-ionized water, then air-dried just before taking each sample. The cleaned casings will then be reassembled with similarly cleaned and dried brass, sample liners and carefully lowered into the hollow stem of the augers for the collection of the sample.

- The soil samples in the bottom liners of the sampling casings (if in good condition) will be taken as the samples to be tested. The samples will be labeled and sealed in the field in their original liners. The ends of the sample liners will be capped with teflon tape, then sealed in place by clean plastic caps and tape. The sample liners will be placed in waterproof, plastic bags and stored in an ice chest.

- The middle liners from the sampler casing will be extruded in the field and examined to help provide information for the boring logs. The cuttings from the borings will be examined during the drilling to provide a continuous log of the materials encountered.

- The middle liners from the sample casing will extruded in the field into a clear plastic ziplock bag and immediately sealed. The soil material will then be broken into small pieces. After approximately five minutes of solar exposure, the probe of the hydrocarbon vapor monitor will be inserted into the bag to the record the vapor level. Vapor levels will be recorded on the field boring log.

- A geologic drilling log will be maintained of the materials encountered and sample locations in all borings and wells. The log will include field descriptions of the soil properties, lithologic variations, moisture conditions, and any unusual characteristics noted that may suggest the presence of chemical contamination.

- Selected samples at three foot intervals from surface grade to the ground water interface will be submitted for laboratory analysis. If field screening is appropriate, selected representative soil samples will be submitted to the environmental laboratory for chemical analyses based upon field screening results. All samples retained for chemical analysis will be stored on ice in a clean, covered cooler-box for transport to the laboratory.

7. LABORATORY PROCEDURES

- The designated laboratories for chemical analysis of environmental samples from the Plant is Curtis & Tompkins, Ltd., Berkeley, California, DOHS laboratory certification number 159 and/or Advanced Materials Engineering Research, Inc., Sunnyvale, California, DOHS laboratory certification number 1909.

- All chemical sampling, handling, and storage will be conducted according to Environmental Protection Agency and California Regional Water Quality Control Board guidelines.

- The samples will be delivered to the laboratory within two days of their acquisition. Samples will be kept on ice or refrigerated to 4 degrees Celsius, or cooler, continuously during storage and transport to the laboratory.

- Unless otherwise requested by the laboratory, no preservatives will be added to the sample unless provided with the sample bottles. The sealed sample will only be opened by laboratory personnel who will do the chemical analysis. The samples will be analyzed within 7-14 days from their collection date depending on EPA quality control criteria appropriate for each analysis method.

- Selected soil and "grab" groundwater samples will be chemically analyzed for TPH as gasoline and diesel with BTEX distinction, EPA methods 8015/LUFT and EPA 8020, petroleum oil & grease, EPA method 5520, total lead (LUFT methods), and volatile organic compounds by EPA method 8240.

SAMPLE RECORDS

- All samples for transport to an off site laboratory will be labeled with the following information using waterproof ink: site name, specific sample location identifier, date and time collected, name of the sample collector and affiliation.

- A field-data-sheet will be filled out for each group of samples. The data sheet will contain the following information: label information, sampling method, type of container, physical characteristics (texture, color, odor, etc.), disposition, used for field analysis, stored, sent for laboratory analyses.

CHAIN OF CUSTODY

- A chain of positive, signature custody and transference will be strictly maintained. The chain-of custody form will be included with any samples leaving the job site and will follow the samples until they are analyzed or disposed. The chain-of custody form will contain the following information: sample number, signature of collector, date and time of collection, sample type, identification of well or boring, number of containers, parameters requested for analysis,

signature of person(s) involved in sample chain of possession, inclusive dates of possession, and laboratory sample number if relevant.

- When the samples arrive at the laboratory, the receiver will sign the chain of custody forms and enter a laboratory identification number onto the sample label and chain of custody form. The identification number will be used by the laboratory in its internal tracking system, thus the status of a particular sample can be determined at any time by referring to the laboratory log books. Both the laboratory identification and field sample numbers will be cited when the analytical results are reported.

- A copy of the certified analytical report and the completed chain of custody will be retained by TMC on file for a period of three years from release of the report.

8. DECONTAMINATION

- All equipment that will come in contact with potentially contaminated soil or water will be decontaminated prior to and after each use. Decontamination will consist of high pressure hot water rinsing, or phosphate free detergent washing followed by deionized, reverse osmosis or distilled water rinse.

- Equipment probes, filtration apparatus, measuring tapes, transducers, foot valves, and well sounders will be cleaned with a phosphate-free detergent solution and rinsed with distilled water. These devices will be cleaned prior to initial use at the Plant, and following each use.

- Water sample containers will be cleaned appropriately by the analytical laboratory.

- Field personnel will wear clean nitrile or latex gloves whenever they are handling sampling equipment or samples.

- All protective equipment worn by field personnel will be appropriately decontaminated or disposed of, as necessary, after use at each drilling or sampling location to avoid transporting contaminants to new work locations, and to meet health and safety objectives. Clean water will be available to rinse any exposed area of skin, clothing, or equipment that may accidently come in contact with potentially contaminated material.

9. STORAGE AND DISPOSAL PRACTICES

- Equipment wash and rinse water will be collected in clean 55-gallon drums. Barrels will be labelled immediately upon use and stored in a secure area. Drill cuttings and waste soil sample material will be placed on the existing contaminated soil stockpiles.

- TMC cannot accept ownership or responsibility for disposal of any contaminated material encountered at the Site, nor can TMC accept ownership of responsibility for disposal of any

contaminated drill cuttings, well development-purge water, or rinse water from cleaning of equipment produced as a result of investigation or remediation activities. The property owner will handle and dispose of contaminated substances in accordance with applicable regulations of local, state, and federal agencies.

10. SITE SPECIFIC SAFETY PLAN

The safety plan describes the health and safety procedures for the activities planned in performing drilling and sampling at the Sherwin Williams Company plant, 1450 Sherwin Avenue in Emeryville, California.

INTRODUCTION

All personnel and subcontractors will follow this plan. Each company has the prime responsibility for it's own employee safety. It is expressly intended that all project work will comply with applicable sections of the California Occupational Health and Safety Code. All parties working on this project will maintain a general responsibility to identify and correct any health and safety hazards. All parties are responsible for working in a legally safe manner. In the vicinity of the Sherwin Williams Company plant, contaminated areas of petroleum hydrocarbons, chlorinated hydrocarbons, petroleum oil and fuels, volatile organic compounds, and metal (arsenic and lead) contamination may be expected.

PROJECT DESCRIPTION

The project involves the coring of concrete, the drilling and sampling of contaminated soil, and the handling and sampling of contaminated ground water.

KEY PERSONNEL

The project personnel who will have responsibility for the safe operation of this project are:

Field Manager:	Michael Princevalle	(510) 232-8366
Safety Officer:	Tom Ghigliotto	(510) 232-8366
Project Director:	Mark Youngkin	(510) 232-8366

SAFETY OFFICER RESPONSIBILITIES

The responsibilities of the Project Managers and Safety Officers are as follows:

- To conduct initial site safety training for all project field team members as described in this document.
- To assure all field team personnel have read and understand the Health and Safety Plan and have the appropriate health and safety training.
- To assure all work done by field personnel is conducted according to safe practices outlined in this plan.
- To coordinate with safety personnel traffic control and site security.
- To monitor activities to assure the proper use of personal protective equipment

such as hard hats, protective eye wear, gloves, coveralls, respirators, etc.
- To monitor ambient hydrocarbon vapors.
- To make certain personnel safety equipment is in a usable condition.
- To modify field work activity based on criteria presented in this document.
- Safety training is to be provided to the field team specific to this project.

SUBCONTRACTOR RESPONSIBILITIES

The responsibilities of the subcontractor with respect to safety are:

- To read, understand and accept this Health and Safety Plan.
- To assure all members of the subcontractor crew attend the safety training program required by OSHA and EPA regulations, that the workers understand and read the English language and therefore understand the safety requirements in this safety plan.
- To make certain equipment and other machines are properly inspected and maintained and are complying with applicable sections of the California Health and Safety Code.
- To supply and maintain safety related protective equipment such as hard hats, safety boots, protective coveralls, gloves, safety eye wear, respirators, etc., as specified in this plan.
- To assure each employee working at this site read and comply with this Health and Safety Plan.
- To enforce corrective action under the direction of the Site Safety Officer.
- To enforce all regulations according to OSHA guidelines. All subcontractors agree to accept sole responsibility for complying with these regulations.
- To post all applicable EPA, OSHA, and proposition 65 signs and labels.

Each subcontractor is responsible for the health and safety of its associated employees. Each subcontractor is obligated to comply with all applicable statutory safety and health requirements. Each subcontractor shall provide written incident / accident reports within 24 hours of occurrence. Each subcontractor shall identify one of its qualified employees as the Site Health and Safety Officer for its employer and operations.

FIELD TEAM MEMBER RESPONSIBILITIES

The responsibilities of the field team members are:

- Read, understand and follow this plan.
- Do all work safety.
- Cooperate with safety personnel.
- Report any unsafe conditions to the immediate supervisor.
- Be aware and alert for signs and symptoms of potential exposure to site contaminants and heat stress.

POTENTIAL HAZARD

As air, water, soil and chemical substance monitoring data become available for all site work, the information will be evaluated by the Site Safety Officer. Appropriate action as Health and Safety modifications will be initiated by the Safety Officer if necessary.

The anticipated activities of this project include:

- Drilling of contaminated fill material and soil
- Collection of contaminated soil and water samples
- Coring of potentially contaminated concrete
- Monitoring of ambient hydrocarbons and visible dust

Plate 2, Site Map, shows the location of the work. Job hazard analyses associated with each major work activity are presented in the following sections.

HAZARD EVALUATION

SOIL DRILLING AND HANDLING

Drilling and handling contaminated soil will potentially expose field personnel to the following hazards:

- Chemical hazards: Exposure to various chemical substances, including but not limited to, petroleum hydrocarbon liquids and vapors, volatile organic compounds, chlorinated hydrocarbons, arsenic, lead, and liquid and solid chemically contaminated soil and construction equipment. Levine-Fricke has provided to TMC a list of known chemical contaminants and concentrations, see attachment 1.

- Physical hazards: operating machinery; falling objects; and exposure to outside temperature extremes; working around drill rigs and coring machines; and tripping hazards.

- Fire, Electrical and Noise Hazards: underground gas and product lines, and excessive machinery noise from drill rigs and coring machines.

Drilling and coring activities will be conducted by licensed subcontractors who specialize in the drilling and sampling of contaminated soils and water. The subcontractors are responsible for the adequate training, equipment and enforcement of OSHA and EPA regulations. Subcontractors will pay special attention to these regulations and take appropriate action to implement them.

SOLID AND LIQUID MATERIALS SAMPLING

The sampling of soil and liquid exposes personnel to the same potential health hazards as listed above in soil drilling and handling. Soil samples are collected in all of these activities. Soil will be collected for analyses from a drilling sampler. Groundwater samples will be collected from the boreholes with bailers. Some samples may contain high levels of hazardous chemicals

creating the potential for chemical exposure through inhalation and skin contact. Sample collecting may pose the greatest risks of chemical exposure for site workers. Sampling operations on a drill rig use a metal hammer that may generate excessive noise.

PACKAGING AND SHIPMENT OF SAMPLES

The potential for overexposure to hazardous volatile constituents still exists during the shipment of samples to the lab. After the samples have been collected in brass tubes or appropriate sample bottles, the containers will be properly packaged to protect shipping and laboratory personnel from exposure. The hazards associated with shipping samples are small provided the containers do not leak or break.

HAZARD CRITERIA

Hydrocarbon vapors expected to be encountered consist of mostly gasoline and volatile organic compound vapors. Relatively small amounts of vapor are expected to be encountered because of the low level of disturbance created by a small bore drill rig. Exposure to elevated levels of hydrocarbon vapors presents potential health risks that need to be properly controlled. Work practices and methods will be started to limit exposures. When elevated exposures persist, respiratory protection will be the primary control method to protect personnel from inhalation of hydrocarbon vapors.

Petroleum fuel and volatile organic compounds include hundreds of chemical compounds. There are certain compounds (for example benzene) that present significant hazards and must be properly controlled. To do so, a working limit of 30 ppm total hydrocarbon vapor is the maximum acceptable level of exposure without respiratory protection. In a typical situation with <1% of the hydrocarbon vapors being benzene, a 30 ppm concentration of total hydrocarbon vapor will result in a breathing zone of less than 1 ppm benzene vapor. This level is one tenth of the current occupational Permissible Exposure Limit (PEL) for an 8 hour exposure to benzene.

A hydrocarbon vapor analyzer (OVA-FID) will be used to measure real time breathing zone concentration for comparison with the 30 ppm hydrocarbon vapor working limit. When a persistent vapor level of 30 ppm occurs, appropriate respirators will be donned and other vapor measurements will be made. If hydrocarbon vapors exceed 30 ppm as measured on the field instrument, work will be stopped. The field crew will be instructed to stay up wind. The site Safety Officer will make determinations as to appropriate additional safety measures as monitoring results warrant. The smelling of soil and water samples is prohibited.

Dust control during soil disturbance activities such as soil drilling and sampling is required due to the presence of arsenic and lead. Well drilling and sampling is not anticipated to produce significant airborne dust. Visual inspection for air borne dust will be performed during the drilling and sampling activities. No visible air borne dust is allowed in the work area. If visible air borne dust is observed, the soil during disturbance must be wetted as practical to prevent generation of any arsenic or lead contaminated dust. Failure to prevent generation of dust will

require the usage of respirators. Precautions are required to prevent dermal contact and inhalation of arsenic contaminated soil.

PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

This section specifies personal protective equipment required for the various tasks of this project. The level of protection required is described as Level D (modified). Level D personal protective equipment will be used when hazard evaluation indicates that activities will be conducted in areas with low potential for contact with contaminants. Level C (modified) protection includes Level D protection and also respiratory protection. Level C protection or higher is not anticipated on this work. Level C protection will be availlable in case hydrocarbon monitoring or visible air borne dust monitoring indicates the need for respiratory protection.

SOIL AND LIQUID SAMPLE COLLECTION, HANDLING AND SHIPPING OF SAMPLES

Personnel who are likely to be exposed to contaminated soil or water samples will be required to wear the same personal protective equipment as outlined below:

Eye Protection: Personnel will wear chemical resistant safety glasses with attached side shield while packaging samples.

Hand Protection: butyl rubber or nitrile gloves will be worn while packaging the samples.

Packaging and Shipping Requirements: all samples that are to be shipped for analysis must comply with Department of Transportation (DOT) regulations, as follows:

- Package the primary container to protect it from breaking,
- tape all lids with hydrocarbon resistant tape,
- wrap the primary container with absorbent brown paper (wadding), and
- place the primary container in a plastic (Ziploc) bag.

DECONTAMINATION PROCEDURES

Arsenic and hydrocarbon liquids and vapors may occur within the work zones. Due to the nonvolatile nature of potential oil or diesel and arsenic that may be encountered, decontamination of equipment and vehicles will be important. Formal decontamination procedure will be followed including general cleaning of soil from all equipment and tools. No eating, drinking or smoking will be permitted in the exclusion zone. All personnel involved in work activities will be instructed to wash their hands, face, neck and forearms after the work day. Soap, water and towels will be provided at the Site for this purpose. The field personnel will be instructed to shower at home after each work day.

In the event extreme contamination is encountered, decontamination of personnel, equipment and vehicles will be important to insure that contamination does not spread to unsuspecting people and property. Personal decontamination mainly involves personal hygiene. Contamination

should not be present on the skin if the proper protective methods specified in this plan are used. However all field personnel will be instructed to follow these guidelines to ensure that contamination does not remain on equipment, sample containers or in contact with their bodies.

MONITORING PROGRAM

Personal exposure to ambient airborne hazards will be monitored to assure that personnel exposures do not exceed acceptable limits and the appropriate selection of protective equipment items. Airborne hydrocarbon vapor concentrations will be measured primarily by a hydrocarbon vapor meter. If concentrations approach criteria levels, all personnel will be notified of possible site safety changes. Field audits will be conducted by the Safety Officer to insure compliance with the Safety Plan and to provide additional support as required.

AMBIENT VAPOR READING

A hydrocarbon vapor monitor will be used during sampling and excavation activities. This instrument will be used to measure both excavation and breathing zone concentrations of hydrocarbon vapors. The instrument will be calibrated before and after field measurements each day using known calibration gases. Readings will be taken in the area where the field team members are working and surrounding down-wind areas. Measurements will be taken every 10 minutes when hydrocarbon vapors show levels above 30 ppm.

EXPLOSIVE VAPORS

In the event that explosive or flammable gases or vapors are detected the following criteria will apply:

<1% LEL	Work proceeds with occasional monitoring.
1% to 5% LEL	Contact safety officer and work may proceed with continuous monitoring if the source and type of vapor is known.
5% to 9% LEL	Safety officer must be on location, work may proceed with caution and continuous monitoring.
10% or >10%	Stop work, then contact project manager and safety officer. Special controls will be implemented as necessary.

OXYGEN READINGS

Because the explosive and flammable gas indicator is often combined with an atmospheric oxygen meter the following criteria will be observed:

>22% Oxygen	Stop work. Area may be oxygen enriched leading to possible flash fire. Notify safety officer.
20.7% to 21%	Normal atmospheric content. Continue work.
19.5% to 20.0%	Proceed with caution. Atmosphere may be oxygen deficient or oxygen displacing gas may be present. Be prepared to stop work and evacuate.

<19.5% Oxygen Stop work and evacuate area.

In the event that an atmosphere is discovered that is equal to or less than 19.5% oxygen, the area shall be evacuated immediately. For operations where entry into a confined space such as a tank is necessary, special permits and safety procedures must be followed. No entry of confined space is allowed in this site safety plan.

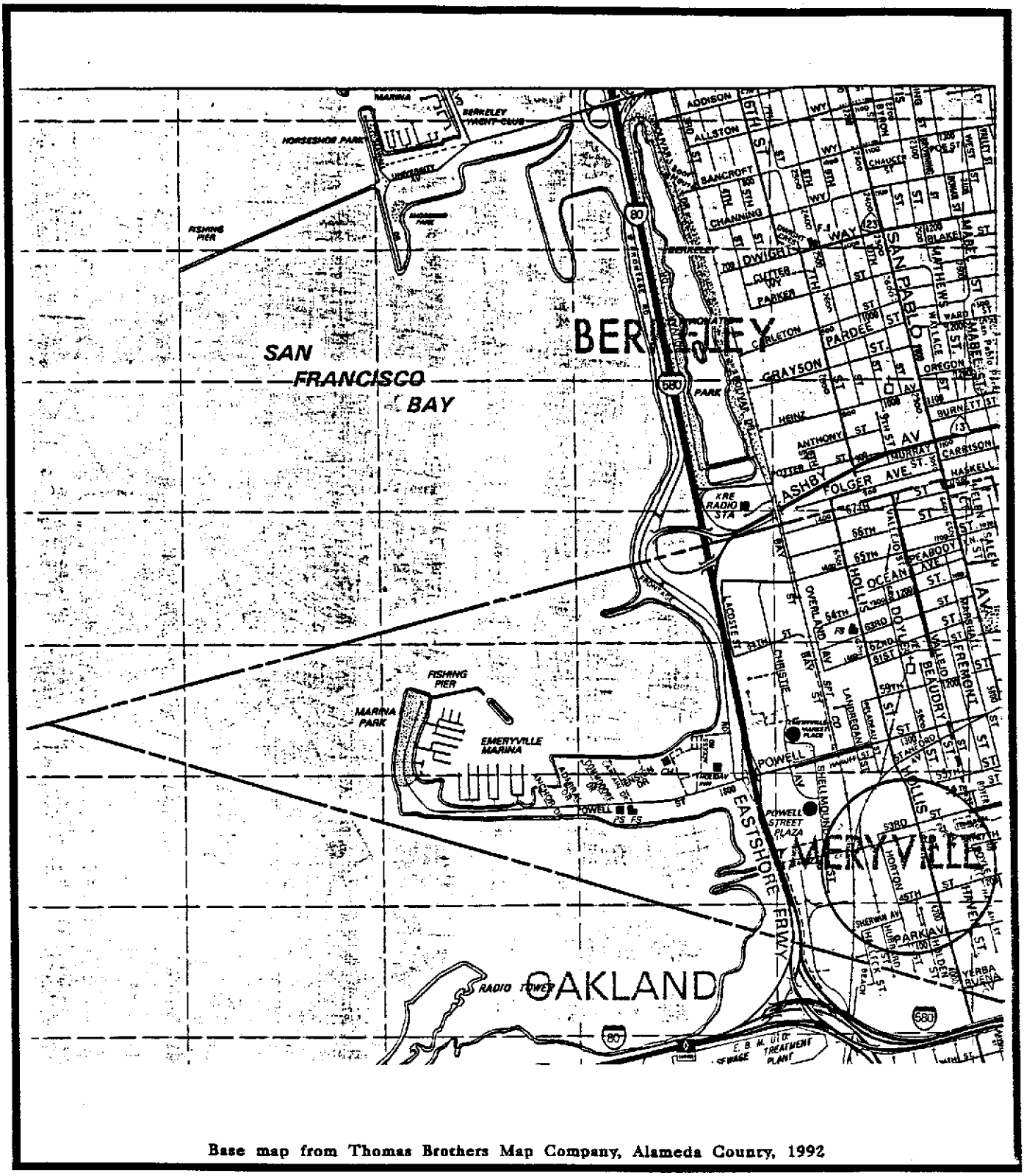
ENVIRONMENTAL INCIDENT NOTIFICATION LIST
The following personnel should be contacted in an emergency:
Sherwin-Williams Company contact: Bob Stem pho9ne number 510-420-7203

The following agency should be contacted as required during an environmental emergency:

AGENCY	PHONE NUMBER
Fire Department	911
Police	911
Ambulance	911
Sate Office of Emergency Services	800-852-7550
National Response Center	800-424-8802
Regional Water Quality Control Board	510-464-8802
Fish and Game (day)	415-326-0324
(night)	415-557-0220
Bay Area Air Quality Management	415-771-6000
Department of Health	415-363-4607
Coast Guard	415-437-3073
Environmental Protection Agency	415-974-8131
Hospital	510-540-1303
	510-540-0337

Hospital: Alta Bates Hospital
3001 Colby Avenue, Berkeley, California

Directions to Hospital: Alta Bates Hospital, From the site take 45th Street to Adeline and turn left; proceed to Ashby and turn right. The hospital is on the corner of Colby and Ashby.



Base map from Thomas Brothers Map Company, Alameda County, 1992

TMC
Environmental, Inc.

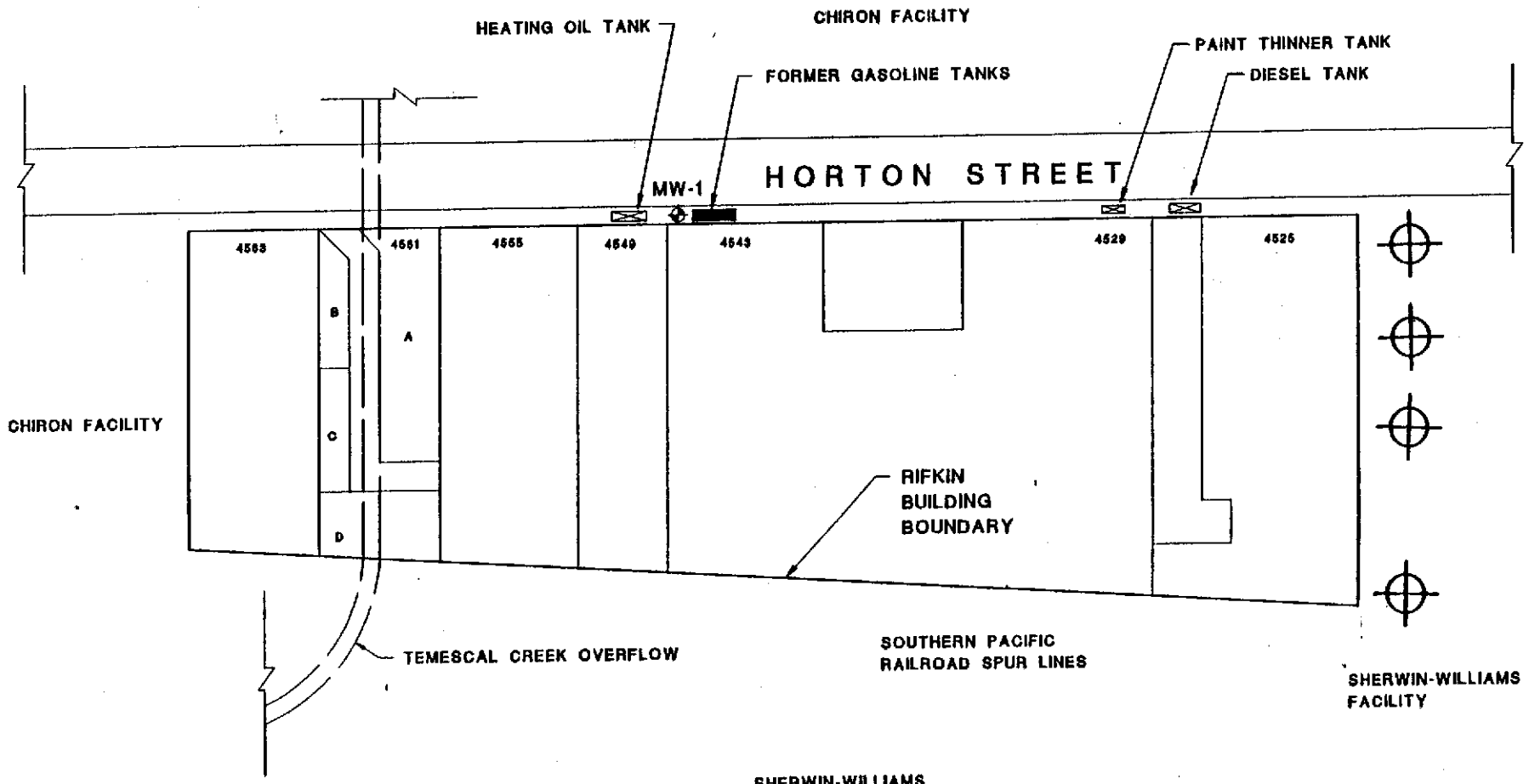
SITE VICINITY MAP

Investigation Work Plan

Sherwin Williams Plant
1450 Sherwin Avenue
Emeryville, California

PLATE

1



NORTH ARROW

APPROXIMATE

SCALE IN FEET

0 60 120

APPROXIMATE

EXPLANATION OF MAP SYMBOLS

- MONITORING WELL MW-1
- UNDERGROUND TANKS REMOVED IN 1993
- FORMER GASOLINE TANKS REMOVED IN 1988

TMC Environmental, Inc.

TMC ENVIRONMENTAL, INC.

13908 SAN PABLO AVENUE, SUITE 101
SAN PABLO, CALIFORNIA 94806
510-232-8366 FAX 510-232-5133

SITE MAP

RIFKIN PROPERTY
EMERYVILLE, CALIFORNIA

DATE OF DRAWING: FEBRUARY, 1994 JOB NO. 113093

PLATE

2

Alta Bates Hospital, 3001 Colby St., Berkeley, California
Directions from site: Horton Street to 53rd Street, 53rd Street to Hollis Street, Hollis Street to Ashby Avenue, Ashby Avenue to Colby Street.

TMC
Environmental, Inc.

HOSPITAL LOCATION MAP

Investigation Work Plan

Sherwin Williams Plant
1450 Sherwin Avenue
Emeryville, California

PLATE

3

ATTACHMENT 1

LEVINE-FRICKE LIST OF CONTAMINANTS

material from

Revised Health and Safety Plan
Sherwin-Williams Company
Emeryville, California
by Levine-Fricke, dated June 8, 1994, document 2616.10

B. CHEMICAL CONTAMINANTS AND CONCENTRATIONS (ATTACH A LIST TO PACKAGE IF NECESSARY)

Name of Material	Max. Soil Conc. (mg/kg)	Max. Water Conc. (mg/L)	TLV or PEL	Action Level	Hazard to Personnel
Arsenic*	52000	320	0.01 mg/m3	0.005 mg/m3	Skin contact and dust inhal.
Lead*	2300	0.2	0.05 mg/m3	0.03 mg/m3	Skin contact and dust inhal.
Acetone	ND	280	750 ppm	375 ppm	Inhal. and skin contact
Benzene	ND	0.110	1 ppm	0.5 ppm	Not expected
Ethylbenzene	1500	6.3	100 ppm	50 ppm	Inhal. and skin contact
Methyl Ethyl Ketone	ND	720	200 ppm	50 ppm	Inhal. and skin contact
Xylenes	9900	210	100 ppm	50 ppm	Inhal. and skin contact
2-hexanone	ND	24	5 ppm	2.5 ppm	Not expected
Toluene	14000	310	50 ppm	25 ppm	Inhal. and skin contact
PCE	ND	45	25 ppm	12.5 ppm	Inhal. and skin contact
Chlorobenzene	ND	1	10 ppm	5 ppm	Not expected
TPH	20000	1500	NA	NA	Inhal. and skin contact
Bis (2-ethyl hexyl) phthalate	10.2	0.034	NA	NA	Not expected
Isophorone	8	ND	25 ppm	12.5 ppm	Not expected
Naphthalene	11	ND	10 ppm	5 ppm	Not expected

* = See Table 1 for additional information

ppm = parts per million
ND = Not Detected
NA = Not Applicable
Inhal. = Inhalation
PCE = Perchloroethylene
TPH = Total Petroleum Hydrocarbons

APPENDIX A

Physical Description of Chemicals and Symptoms of Exposure

Acetone

Acetone is a colorless liquid with a fragrant, mint-like odor.

Short-term exposure to acetone can cause eye irritation, dryness of the mouth and throat, nausea, vomiting, headaches, drowsiness, dizziness, light-headedness, weakness, incoordination, loss of energy, fainting, and unconsciousness. Acetone easily penetrates intact skin and is toxic by this route of exposure.

The PEL for acetone is 750 ppm in air.

Arsenic (All Forms)

Metallic arsenic is most commonly a grey, brittle, crystalline solid. It can also be in a black or yellow amorphous form. Arsenic is also commonly found in its volatile white trioxide form. Arsenic is also used in several insecticides, herbicides, silvicides, defoliants, desiccants, and rodenticides and appears in a variety of forms.

Arsenic is classified by the U.S. Environmental Protection Agency as a known human carcinogen.

Short-term exposure to arsenic can cause marked irritation of the stomach and intestines with nausea, vomiting, and diarrhea. In severe cases the vomiting and stools are bloody and the exposed individual goes into collapse and shock with weak, rapid pulse, cold sweats, coma, and death. Inorganic arsenicals are more toxic than organic arsenicals, and the trivalent form is more toxic than the pentavalent form. Acute arsenic poisoning usually results from ingestion exposures.

The PEL for arsenic is 0.01 mg/m^3 and for organic arsenic the PEL is 0.5 mg/m^3.

Benzene

Benzene is a clear colorless liquid.

Exposure to high concentrations (3,000 ppm) may result in acute poisoning, characterized by the narcotic action of benzene on the central nervous system. Chronic poisoning occurs most commonly through inhalation and dermal absorption. Benzene is also a recognized carcinogen.

The PEL for benzene is 1 ppm in air.

Bis(2-ethylhexyl)phthalate

bis(2-ethylhexyl)phthalate, also known as di-sec-octyl phthalate, is a light-colored, viscous, odorless, combustible liquid.

Bis(2-ethylhexyl)phthalate is classified by the U.S. Environmental Protection Agency as a Group B2 probable human carcinogen.

The PEL for bis(2-ethylhexyl)phthalate is 5 mg/m^3.

Chlorobenzene

Chlorobenzene is a colorless liquid with a mild aromatic odor.

Short-term exposure to chlorobenzene may cause drowsiness, incoordination, and unconsciousness. It may also cause irritation of the eyes, nose, and skin. Exposure to high levels of chlorobenzene also may damage the liver. Dermal absorption occurs to a moderate degree.

The PEL for chlorobenzene is 75 ppm in air. The TLV is 10 ppm.

Ethylbenzene

Ethylbenzene is a clear, colorless liquid.

Exposure to high concentrations of ethylbenzene vapor may result in irritation of the skin and mucous membranes, dizziness, irritation of the nose and throat and a sense of constriction of the chest.

The PEL for ethylbenzene is 100 ppm in air.

2-Hexanone

2-Hexanone is clear and colorless liquid.

Moderately toxic by ingestion. Mildly toxic by inhalation and skin contact. Dangerous fire and explosion hazard. Flash point is 95 F and the explosive limits range is 1.2% to 8% in air.

The PEL for 2-Hexanone 5 ppm.

Isophorone

Isophorone is a white colored liquid.

Moderately toxic by ingestion and skin contact. A skin and severe eye irritant. Flammable and explosive. Flash point is 184 F and the explosive limit range is 0.8% to 3.8% in air.

The PEL for Isophorone is 25 ppm. The TLV for Isophorone is 5 ppm.

Lead

Lead (inorganic) is a bluish-white, silver, or grey odorless solid.

Short-term exposure to lead can cause decreased appetite, insomnia, headache, muscle and joint pain, colic, and constipation.

The PEL for lead is 0.05 mg/m^3.

Methyl Ethyl Ketone (2-Butanone)

Methyl ethyl ketone (MEK) is a clear and colorless liquid with an odor like acetone.

Short-term exposure to MEK can cause headache, dizziness, drowsiness, vomiting, and numbness of the extremities. Irritation of the eyes, nose, and throat can also occur.

The PEL for MEK is 200 ppm.

Naphthalene [CAS: 91-20-3]

Naphthalene occurs commonly as white, crystalline flakes with a strong coal tar odor.

Exposure to naphthalene vapors may cause headache, loss of appetite, nausea, and eye injury. Ingestion of relatively large amounts of naphthalene may cause hemolytic anemia and hemoglobinuria.

The TWA of the PEL for naphthalene is 10 ppm in air.

Perchloroethylene (PCE)

PCE, also known as tetrachloroethylene, is a colorless liquid with an ether-like odor.

Short-term exposure to PCE may cause headaches, nausea, drowsiness, dizziness, incoordination, unconsciousness, irritation of the eyes, nose, and throat, and flushing of the face and neck. In addition, it may cause liver damage with such findings as yellow jaundice and dark urine. Liver damage may become evident several weeks after exposure.

PCE is classified by the U.S. Environmental Protection Agency as a Group B2 probable human carcinogen.

The TLV for PCE is 25 ppm in air.

Toluene

Toluene is a colorless liquid with a benzol-like odor.

Inhalation of high vapor concentrations may cause impairment of coordination and reaction time, headaches, nausea, eye irritation, loss of appetite, a bad taste, and lassitude.

The PEL for toluene is 200 ppm in air. The TLV is 50 ppm.

Xylenes

Xylenes are clear, colorless liquids.

Exposure to high concentrations of xylene vapor may result in eye and skin irritation. Eye irritation may occur at concentrations of about 200 ppm.

The PEL for total xylene is 100 ppm in air.